

**In the Supreme Court of the United States**

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STATE OF ALABAMA, *et al.*,

*Plaintiffs,*

v.

STATES OF CALIFORNIA, CONNECTICUT, MINNESOTA, NEW  
JERSEY, AND RHODE ISLAND,

*Defendants.*

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ON MOTION FOR LEAVE TO FILE A BILL OF COMPLAINT

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**APPENDIX VOLUME TWO**

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**TABLE OF CONTENTS**

**Page**

**VOLUME ONE**

**Appendix A**  
State of California—**First Amended  
Complaint; Jury Trial Demanded**  
(filed June 10, 2024) .....1a

**Appendix B**  
State of Connecticut—**First Amended  
Complaint**  
(filed November 20, 2023) .....207a

**Appendix C**  
State of Minnesota— **Complaint**  
(filed June 24, 2020) .....262a

**VOLUME TWO**

**Appendix D**  
State of New Jersey—**Complaint and  
Jury Demand**  
(filed October 18, 2022).....372a

**Appendix E**  
State of Rhode Island—**Jury Trial  
Demanded**  
(filed July 2, 2018) .....611a

**APPENDIX D**

SUPERIOR COURT OF NEW JERSEY  
LAW DIVISION, MERCER COUNTY  
DOCKET NO. \_\_\_\_\_

MATTHEW J. PLATKIN, ATTORNEY  
GENERAL OF THE STATE OF NEW JERSEY;  
NEW JERSEY DEPARTMENT OF  
ENVIRONMENTAL PROTECTION; and CARI  
FAIS, ACTING DIRECTOR OF THE NEW JERSEY  
DIVISION OF CONSUMER AFFAIRS,

Plaintiffs,

v.

EXXON MOBIL CORPORATION;  
EXXONMOBIL OIL CORPORATION; BP P.L.C.; BP  
AMERICA INC.; CHEVRON CORPORATION;  
CHEVRON U.S.A. INC.; CONOCOPHILLIPS;  
CONOCOPHILLIPS COMPANY; PHILLIPS 66;  
PHILLIPS 66 COMPANY; SHELL PLC; SHELL OIL  
COMPANY; and AMERICAN PETROLEUM  
INSTITUTE,

Defendants.

Filed October 18, 2022

Civil Action

**COMPLAINT AND JURY DEMAND**

**TABLE OF CONTENTS**

|   |           |
|---|-----------|
| I. INTRODUCTION .....   | 1 [376a]  |
| II. PARTIES .....   | 13 [391a] |
| A. Plaintiffs .....   | 13 [391a] |
| B. Defendants .....   | 14 [392a] |
| C. Relevant Non-Parties: Defendants' Agents and<br>Front Groups .....   | 36 [418a] |
| III. JURISDICTION AND VENUE.....  | 37 [420a] |
| IV. FACTUAL BACKGROUND.....   | 40 [423a] |
| A. Defendants Are Responsible for Causing and<br>Accelerating Climate Change. ....  | 40 [423a] |
| B. Defendants Went to Great Lengths to<br>Understand, and Either Knew or Should Have<br>Known About, the Dangers Associated with Their<br>Fossil Fuel Products.....   | 45 [429a] |
| C. Defendants Did Not Disclose Known Harms<br>Associated with the Extraction, Promotion, and<br>Consumption of Their Fossil Fuel Products, and<br>Instead Affirmatively Acted to Obscure Those<br>Harms and Engaged in a Campaign to Deceptively<br>Protect and Expand the Use of Their Fossil Fuel<br>Products. .... | 71 [461a] |
| D. In Contrast to Their Public Statements,<br>Defendants' Internal Actions Demonstrate Their<br>Awareness of and Intent to Profit from the<br>Unabated Use of Fossil Fuel Products. ....  | 98 [493a] |

|  |            |
|--|------------|
| E. Defendants' Actions Have Exacerbated the Costs of Adapting to and Mitigating the Adverse Impacts of the Climate Crisis. ....  | 101 [496a] |
| F. Defendants Continue to Mislead About the Impact of Their Fossil Fuel Products on .... Climate Change Through Greenwashing Campaigns and Other Misleading Advertisements in New Jersey and Elsewhere. .... | 109 [507a] |
| i. Exxon's Misleading and Deceptive Greenwashing Campaigns.....  | 112 [510a] |
| ii. Shell's Misleading and Deceptive Greenwashing Campaigns.....   | 114 [513a] |
| iii. BP's Misleading and Deceptive Greenwashing Campaigns.....   | 116 [516a] |
| iv. Chevron's Misleading and Deceptive Greenwashing Campaigns.....   | 120 [520a] |
| v. ConocoPhillips's Misleading and Deceptive Greenwashing Campaigns.....   | 124 [524a] |
| vi. API's Misleading and Deceptive Greenwashing Campaigns.....   | 125 [525a] |
| G. Defendants Also Made Misleading Claims About Specific "Green" or "Greener" Fossil Fuel Products. ....   | 127 [528a] |
| H. Defendants Intended for Consumers to Rely on Their Concealments and Omissions Regarding the Dangers of Their Fossil Fuel Products. ...  | 134 [536a] |
| I. Defendants' Deceit Only Recently Came to Light, and Their Misconduct Is Ongoing.  | 137 [540a] |

|   |            |
|---|------------|
| J. The State Has Suffered, Is Suffering, and Will Suffer Injuries from Defendants' Wrongful Conduct.....  | 140 [543a] |
| V. CAUSES OF ACTION .....   | 159 [566a] |
| FIRST CAUSE OF ACTION<br>(Failure to Warn) .....  | 159 [566a] |
| SECOND CAUSE OF ACTION<br>(Negligence).....   | 163 [570a] |
| THIRD CAUSE OF ACTION (Impairment of the Public Trust).....   | 167 [575a] |
| FOURTH CAUSE OF ACTION<br>(Trespass).....   | 170 [578a] |
| FIFTH CAUSE OF ACTION<br>(Public Nuisance).....   | 174 [583a] |
| SIXTH CAUSE OF ACTION<br>(Private Nuisance) .....   | 180 [590a] |
| SEVENTH CAUSE OF ACTION<br>(Violations of New Jersey's Consumer Fraud Act, N.J.S.A. 56:8-1 to -227) ..... | 187 [597a] |
| EIGHTH CAUSE OF ACTION<br>(Violations of New Jersey's Consumer Fraud Act, N.J.S.A 56:8-1 to -227) .....   | 190 [601a] |
| VI. PRAYER FOR RELIEF .....   | 193 [605a] |
| VII. REQUEST FOR JURY TRIAL.....  | 194 [606a] |
| DESIGNATION OF TRIAL COUNSEL.....   | 196 [609a] |

Plaintiffs Matthew J. Platkin, Attorney General of the State of New Jersey (the “Attorney General”), the New Jersey Department of Environmental Protection (“NJDEP”), and Cari Fais, Acting Director of the New Jersey Division of Consumer Affairs (the “Acting Director”) (collectively, “Plaintiffs”) file this Complaint against the above-named defendants (“Defendants”), and allege as follows:

## **I. INTRODUCTION**

1. For decades, the fossil fuel industry has misled consumers and the public about climate change. Since at least the 1950s, its own scientists have consistently concluded 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, teachers, policymakers, and the public about the climate change impacts of burning fossil fuels; and delay the energy economy’s transition to a lower-carbon future. This successful climate deception campaign had the purpose and effect of inflating and sustaining the market for fossil fuels, which—in turn—drove up greenhouse gas emissions, accelerated global warming, and brought about devastating climate change impacts to the State of New Jersey and its Overburdened Communities—sometimes referred to

as environmental justice communities—in particular.<sup>1</sup> As a result of the fossil fuel industry’s lies and deceit, the State has paid billions of dollars to clean up climate change-induced disasters like Superstorm Sandy; to fortify the Jersey Shore from future storms; and to protect its people, businesses, infrastructure, and natural resources from a myriad of other climate change hazards. Despite the clear harm to New Jersey and other communities across the country, Exxon, BP, Chevron, ConocoPhillips, Shell, and the American Petroleum Institute—all Defendants here—continue to peddle climate misinformation and to misdirect the public from their ever-expanding efforts to cement dependency on fossil fuels. It is time to halt this deceptive conduct and place responsibility for remedying its effects on Defendants, where it belongs, rather than the taxpayers of New Jersey.

2. Plaintiffs—the Attorney General, NJDEP, and the Acting Director—now bring this lawsuit for civil monetary penalties and damages to the State of New Jersey (the “State”)<sup>2</sup> and to its residents,

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<sup>1</sup> “‘Overburdened Community’ means any census block group, as determined in accordance with the most recent United States Census, in which: (1) at least 35 percent of the households qualify as low-income households; (2) at least 40 percent of the residents identify as minority or as members of a State recognized tribal community; or (3) at least 40 percent of the households have limited English proficiency.” N.J.S.A. 13:1D-158. Residents of all communities should receive fair and equitable treatment in matters affecting their environment, community, homes, and health without regard to race, language, or income. See, e.g., Exec. Order No. 23 (April 20, 2018), 50 N.J.R. 1241(b) (May 21, 2018); Environmental Justice Law, N.J.S.A. 13:1D-157 to -161.

<sup>2</sup> In this Complaint, the term “State” refers to the State of New Jersey, unless otherwise stated. The term “New Jersey” refers to



infrastructure, lands, assets, and natural resources caused by Defendants' decades-long campaign of misleading marketing and deceptive promotion of oil, coal, and natural gas (collectively, "fossil fuel products").

3. Defendants are major corporate members of the fossil fuel industry, including extractors, producers, refiners, manufacturers, distributors, promoters, marketers, and/or sellers of fossil fuel products. Each Defendant funded, staffed, organized, and otherwise supported efforts to deceive the public and consumers—in and outside of New Jersey—about the role of fossil fuel products in causing the global climate crisis.

4. The rate at which Defendants have extracted and sold fossil fuel products has exploded since the Second World War, as have carbon dioxide ("CO<sub>2</sub>") and other emissions from those products. Fossil fuel emissions—especially CO<sub>2</sub>—are far and away the dominant driver of global warming.<sup>3</sup> 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."<sup>4</sup> About three-quarters of all industrial CO<sub>2</sub> emissions in history have occurred since the

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the area falling within the State's geographic boundaries, excluding federal land, unless otherwise stated.

<sup>3</sup> 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](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf).

<sup>4</sup> Will Steffen et al., The Trajectory of the Anthropocene: The Great Acceleration, 2 The Anthropocene Review 81, 81 (2015).

1960s,<sup>5</sup> and more than half have occurred since the late 1980s.<sup>6</sup> The annual rate of CO<sub>2</sub> emissions from extraction, production, and consumption of fossil fuels has increased substantially since 1990.<sup>7</sup>

5. Defendants' awareness of the negative impacts of fossil fuel consumption almost exactly tracks the onset of the Great Acceleration—meaning that 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 harms and risks through immense internal investment in research, infrastructure improvements, and plans to exploit new business opportunities in a warming world.

6. But instead of warning the public of—or representing truthfully—the known consequences flowing from the intended and foreseeable use of their products or working to minimize the damage associated with the use and combustion of such products, Defendants concealed and misrepresented the dangers of fossil fuels; disseminated false and misleading information about the existence, causes, and effects of climate change; and aggressively promoted the ever-increasing use of their products at ever-greater volumes. Since at least the late 1980s,

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<sup>5</sup> R.J. Andres et al., A Synthesis of Carbon Dioxide Emissions from Fossil-Fuel Combustion, 9 Biogeosciences 1845, 1851 (2012).

<sup>6</sup> Ibid.

<sup>7</sup> Global Carbon Project, Global Carbon Budget 2021, [https://www.globalcarbonproject.org/global/images/carbonbudget/Infographic\\_Emissions2021.pdf](https://www.globalcarbonproject.org/global/images/carbonbudget/Infographic_Emissions2021.pdf).

Defendants have spent millions of dollars orchestrating a massive disinformation campaign to cast doubt on the science of climate change; to mainstream climate denialist theories that their own scientists had already debunked; 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, while failing to disclose that those investments represent a negligible share of their overall business and that they are—in fact—continuing to ramp up fossil fuel production. 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 the people of New Jersey.

7. All Defendants’ actions in concealing the dangers of, promoting false and misleading information about, and engaging in massive campaigns to promote increasing use of their fossil fuel products have successfully delayed transitioning to a lower carbon footprint, deepened consumers’ dependence on fossil fuel products, and contributed substantially to the buildup of CO<sub>2</sub> in the atmosphere that drives global warming and its physical, environmental, and socioeconomic consequences, including those affecting the State.

8. Defendants’ deceptive and tortious conduct was therefore a substantial factor in bringing about devastating climate change impacts in New Jersey,

including: sea-level rise, disruption to the hydrologic cycle,<sup>8</sup> more frequent and intense extreme precipitation events and associated flooding, more frequent and intense heat waves along with exacerbation of localized “heat island” effects,<sup>9</sup> more frequent and intense droughts, ocean acidification, degradation of air and water quality, and habitat and species loss. The associated consequences of these physical and environmental changes have compounding effects in New Jersey’s Overburdened Communities, who often live in the most environmentally vulnerable areas. Accordingly, Defendants are directly responsible for a substantial portion of the climate crisis-related impacts in New Jersey.

9. All of New Jersey’s eastern and southern borders are coastal or tidal, as is much of its western border. Many of its major rivers are tidal estuaries, and New Jersey is the sixth lowest-lying state in the nation, with a mean elevation of approximately 250 feet above sea level.<sup>10</sup> In addition, the coastal communities and tourism sector are an essential pillar of the State’s economy. As a result, New Jersey is extremely vulnerable to the effects of sea-level rise

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<sup>8</sup> The hydrologic cycle is “the continuous circulation of water in the Earth-Atmosphere system.” Nat’l Weather Serv., The Hydrologic Cycle, <https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html> (last visited Oct. 17, 2022).

<sup>9</sup> Heat islands are “urbanized areas that experience higher temperatures than outlying areas.” See U.S. Env’tl. Prot. Agency, Heat Island Effect, <https://www.epa.gov/heatislands> (last visited Oct. 16, 2022).

<sup>10</sup> World Atlas, US States With the Lowest Average Elevations, <https://www.worldatlas.com/articles/us-states-with-the-lowest-average-elevations.html> (last visited Oct. 14, 2022).

and other climate change impacts. In fact, the average sea level in New Jersey is increasing at almost twice the global rate and will continue to rise substantially along New Jersey's coast and estuarine rivers, causing flooding, inundation, saltwater intrusion, erosion, tidal wetland losses, and beach loss.<sup>11</sup> In addition, extreme weather events—including coastal storms, severe inland flooding from increased precipitation, drought, and heat waves, among others—will become more frequent, longer-lasting, and more severe. The cascading social, economic, and other consequences of those and other environmental changes—all due to anthropogenic global warming—will continue to increase in New Jersey.<sup>12, 13</sup>

10. The human, natural, and economic devastation wrought by Superstorm Sandy previews the grave climate-related consequences New Jersey faces as a direct result of Defendants' tortious deception. On October 29, 2012, Superstorm Sandy made landfall near Atlantic City, battering coastal communities with hurricane-force winds and

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<sup>11</sup> See Jennifer Runkle et al., New Jersey State Climate Summary 2022, in NOAA Technical Report NESDIS 150-NJ, 1–5 (2022); Robert Kopp et al., New Jersey's Rising Seas and Changing Coastal Storms: Report of the 2019 Science and Technical Advisory Panel, Rutgers University, 1–53 (2019), [https://climatechange.rutgers.edu/images/STAP\\_FINAL\\_FINAL\\_12-4-19.pdf](https://climatechange.rutgers.edu/images/STAP_FINAL_FINAL_12-4-19.pdf).

<sup>12</sup> See generally Art DeGaetano, Projected Changes in Extreme Rainfall in New Jersey Based on an Ensemble of Downscaled Climate Model Projections (Oct. 2021), <https://www.nj.gov/dep/dsr/publications/projected-changes-rainfall-model.pdf>.

<sup>13</sup> See generally Art DeGaetano & Harrison Tran, Changes in Hourly and Daily Extreme Rainfall Amounts in NJ Since the Publication of NOAA Atlas 14 Volume (Oct. 2021), <https://www.nj.gov/dep/dsr/publications/nj-atlas-14.pdf>.

inundating them under a fourteen-foot storm surge. In towns located along the Jersey Shore, the storm surge destroyed roads and bridges and swept homes into the ocean. The waves dragged the famous Seaside Heights boardwalk and pier—including its roller coaster track—into the sea. Across the state, Sandy caused 38 deaths, \$29.4 billion in damage, and destroyed more than 70,000 buildings. Superstorm Sandy remains the most destructive storm to ever hit New Jersey. Its immense toll was exacerbated by the effects of climate change, as rising sea levels over the past century allowed the storm surge to reach tens of thousands more New Jerseyans than otherwise would have been affected.



**Figure 1: Superstorm Sandy Drags Seaside Heights Boardwalk into the Sea<sup>14</sup>**

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<sup>14</sup> State of New Jersey, Office of the Governor, New Jersey Five Years Post-Sandy: STRONGER Than the Storm 210 (2017), <https://nj.gov/governor/Sandy-Play-Book/#p=219>.



**Figure 2: View of New Jersey Coastline on October 30, 2012<sup>15</sup>**

11. A decade later, Defendants' tortious deception continues to have grave consequences for the State and its residents. In early August 2020, Tropical Storm Isaias left more than 1.4 million homes and

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<sup>15</sup> Id. at 118.

businesses in the dark.<sup>16</sup> On September 1, 2021, the remnants of Hurricane Ida swept through New Jersey, leaving behind a trail of death and destruction. At least 30 people died statewide—more than in any other state—even though the storm first made landfall 1,300 miles away and was no longer a hurricane by the time it arrived in New Jersey.<sup>17</sup> The storm also caused an estimated \$2.02 billion in damage across New Jersey.<sup>18</sup> In Newark, the State’s most populous city with approximately 280,000 residents, communities suffered over 8 inches of rainfall—more than double the expected monthly rainfall—with 3.65 inches of rain falling in one hour.<sup>19</sup> In early October 2022, the remnants of Hurricane Ian brought heavy rain and flooding to parts of the state,<sup>20</sup> in addition to

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<sup>16</sup> Anthony G. Attrino, More Than 1.4 Million Power Outages in N.J. From Isaias. Restoration Could Take Days, Officials Say, NJ.com (Aug. 4, 2020), <https://www.nj.com/weather/2020/08/more-than-1-million-power-outages-in-nj-from-isaias-restoration-could-take-days-officials-say.html>.

<sup>17</sup> Tracey Tully, He Was Swept Down a Sewer Pipe: ‘I Just Let the Water Take Me’, N.Y. Times (Sept. 17, 2021), <https://www.nytimes.com/2021/09/17/nyregion/nj-flooding-ida-damage.html>.

<sup>18</sup> Mike Deak, A Year Since Hurricane Ida: Horror, Heroism, Anxiety Awaiting the Next Catastrophic Storm, My Central Jersey (Sept. 1, 2022), <https://www.mycentraljersey.com/story/news/local/2022/09/01/nj-hurricane-ida-floods-deaths/65418809007/>.

<sup>19</sup> David A. Robinson, Ida Remnants Strike New Jersey, Rutgers University (Oct. 6, 2021), <https://climate.rutgers.edu/stateclim/?section=menu&target=Ida>.

<sup>20</sup> Bryanna Gallagher, Remnants of Hurricane Ian Bring Flooding to Jersey Shore, 6ABC (Oct. 3, 2022), <https://6abc.com/hurricane-ian-2022-jersey-shore-weather-forecast-flooding/12289006/>.



substantial beach erosion and damage to dune ecosystems.<sup>21</sup> While Superstorm Sandy and subsequent destructive weather events are some of the most dramatic climatic consequences to assail New Jersey, the true and complete extent of the State's climate-related injuries are far more sweeping.

12. As a direct result of climate crisis-caused environmental changes, the State has suffered and will continue to suffer severe injuries, including but not limited to: inundation and loss of State property; inundation and loss of private property and businesses with associated loss of tax revenue; injury or destruction of State-owned or -operated facilities critical for operations, utility services, and risk management, as well as other assets essential to community health, safety, and well-being; damage or loss of the State's natural resources and their associated ecosystem benefits; increased costs of strengthening and maintaining the resilience of public infrastructure; increased costs of providing government services; increased health care and public health costs; increased planning and preparation costs for community adaptation and resilience to the effects of the climate crisis; displacement, disruption and loss of coastal communities, including loss of life, with associated harm to the State; and decreased tax

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<sup>21</sup> Serena Tara, [Hurricane Ian Carved 12-Foot Cliffs Into These New Jersey Beaches](https://www.thrillist.com/news/new-york/hurricane-ian-beach-erosion-new-jersey), [Thrillist](https://www.thrillist.com/news/new-york/hurricane-ian-beach-erosion-new-jersey) (Oct. 5, 2022), <https://www.thrillist.com/news/new-york/hurricane-ian-beach-erosion-new-jersey>; Brianna Kudisch, [Ian Remnants Erode N.J. Beaches, Creating Dramatic 12-Foot Cliffs in Some Spots](https://www.nj.com/weather/2022/10/ian-remnants-erode-nj-beaches-creating-dramatic-12-foot-cliffs-in-some-spots-photos.html), [NJ.com](https://www.nj.com/weather/2022/10/ian-remnants-erode-nj-beaches-creating-dramatic-12-foot-cliffs-in-some-spots-photos.html) (Oct. 4, 2022), <https://www.nj.com/weather/2022/10/ian-remnants-erode-nj-beaches-creating-dramatic-12-foot-cliffs-in-some-spots-photos.html>.

revenue due to impacts on New Jersey's tourism- and ocean-based economy.<sup>22</sup>

13. These consequences will disproportionately afflict New Jersey's Overburdened Communities, as climate change exacerbates existing environmental and public health stressors associated with socioeconomic and racial disparities. Socially vulnerable New Jerseyans—who already suffer from higher rates of adverse health effects like asthma, cancer, and respiratory disease—are often least equipped to adapt to a warming world because their communities lack the infrastructure and resources needed to withstand the threats posed by climate change.

14. Climate change exacerbates the disproportionate risk to which Overburdened Communities are already subject due to heightened existing pollution in their neighborhoods. For instance, the Ironbound neighborhood of Newark risks additional polychlorinated biphenyl (“PCB”) and dioxin contamination from a nearby Superfund site when the Passaic River floods, as it did during Hurricane Irene in 2011 and Superstorm Sandy in 2012.<sup>23</sup>

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<sup>22</sup> See N.J. Dep't of Env'tl. Prot., 2020 New Jersey Scientific Report on Climate Change (June 30, 2020), <https://www.nj.gov/dep/climatechange/docs/nj-scientific-report-2020.pdf>; N.J. Dep't of Env'tl. Prot., Climate Change Impacts on Human Health & Communities: Addendum to the 2020 New Jersey Scientific Report on Climate Change (“New Jersey Human Health Addendum”) (Sept. 2022), <https://www.nj.gov/dep/climatechange/docs/nj-scientific-report-human-health-addendum.pdf>.

<sup>23</sup> See Ilya Marritz, Sandy Stirs Up Superfund Site in New

15. Atlantic City, which consists entirely of Overburdened Communities,<sup>24</sup> now experiences tidal flooding ten times more often than it did in the middle of the last century.<sup>25</sup> This climate change-caused flooding is causing home values to fall,<sup>26</sup> and Atlantic City is among the 20 cities on the eastern seaboard facing the largest decreases in home values due to sea-level rise.<sup>27</sup>

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Jersey, Nat'l Pub. Radio (Nov. 19, 2012), <https://www.npr.org/2012/11/19/165454215/sandy-stirs-up-superfund-site-in-new-jersey>; Impacts of Superstorm Sandy on Ironbound in Newark – A Vulnerable, Environmental Justice Community, Ironbound Community Corporation, . See also N.J. Dep't of Env'tl. Prot., Overburdened Communities Under the New Jersey Environmental Justice Law in Newark City, Essex County, <https://dep.nj.gov/wp-content/uploads/ej/docs/essex-newark-city-maps-obc.pdf>. Superstorm Sandy resulted in the inundation of the Passaic Valley Sewerage Commission's 140-acre plant and underground utility tunnels, destroying much critical process equipment in addition to jeopardizing communities. See Passaic Valley Sewerage Comm'n, Five Years After Sandy, PVSC Is the Model of Resiliency and Recovery, <https://www.nj.gov/pvsc/news/sandy/> (last visited Oct. 17, 2022).

<sup>24</sup> N.J. Dep't of Env'tl. Prot., Overburdened Communities Under the New Jersey Environmental Justice Law in Atlantic City, Atlantic County.

<sup>25</sup> Tracey Tully, With 130-Mile Coast, New Jersey Marks a First in Climate Change Fight, N.Y. Times (Jan. 27, 2020), <https://www.nytimes.com/2020/01/27/nyregion/climate-change-nj-environmental-rules.html>.

<sup>26</sup> Ian Urbina, Perils of Climate Change Could Swamp Coastal Real Estate, N.Y. Times (Nov. 14, 2016), <https://www.nytimes.com/2016/11/24/science/global-warming-coastal-real-estate.html>.

<sup>27</sup> Frank Kummer, Sea Level Rise's Impact on Property Values Will Be Greatest in N.J. Shore Towns, Study Says, N.H. Union

16. The consequences of climate change will not be felt only in New Jersey's coastal communities. As the most densely populated state, with the highest percentage of nondraining surfaces impervious to water, New Jersey is unusually vulnerable to flash floods even in towns with no significant river or ocean frontage.<sup>28</sup> In South Plainfield, New Jersey, a city with several Overburdened Community neighborhoods<sup>29</sup> and two Superfund sites,<sup>30</sup> the remnants of Hurricane Ida in 2021 caused flooding eight feet deep in places and swept two pedestrians through a thirty-six-inch sewer pipe.<sup>31</sup> Those flash floods will only increase as climate change continues.

17. 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 posed to the world's climate; their wrongful promotion of fossil fuel products, including the

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Leader (Mar. 7, 2019), [https://www.unionleader.com/news/homes/sea-level-rises-impact-on-property-values-will-be-greatest-in-n-j-shore-towns/article\\_2b9d707d-0403-57db-8b10-f341eebeb391.html](https://www.unionleader.com/news/homes/sea-level-rises-impact-on-property-values-will-be-greatest-in-n-j-shore-towns/article_2b9d707d-0403-57db-8b10-f341eebeb391.html).

<sup>28</sup> Tully, He Was Swept Down a Sewer Pipe: 'I Just Let the Water Take Me.'

<sup>29</sup> N.J. Dep't of Env'tl. Prot., Overburdened Communities Under the New Jersey Environmental Justice Law in South Plainfield Borough, Middlesex County, <https://dep.nj.gov/wp-content/uploads/ej/docs/middlesex-south-plainfield-boro-maps-obc.pdf>.

<sup>30</sup> U.S. Env'tl. Prot. Agency, Search for Superfund Sites Where You Live, <https://www.epa.gov/superfund/search-superfund-sites-where-you-live> (last visited Oct. 16, 2022) (select "New Jersey" in dropdown list of states and filter to "Show All entries").

<sup>31</sup> See Tully, He Was Swept Down a Sewer Pipe: 'I Just Let the Water Take Me.'

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 substantial factor in bringing about the State’s injuries. In other words, Defendants’ concealment and misrepresentation of fossil fuel products’ known dangers—together with their simultaneous promotion of those products’ unrestrained use—drove fossil fuel consumption and delayed transition to a lower carbon future, resulting in greater greenhouse gas pollution and more dire impacts from the climate crisis in New Jersey and elsewhere.

18. Accordingly, Plaintiffs bring this action against Defendants for failure to warn, negligence, impairment of the public trust, trespass, public nuisance, private nuisance, and violations of the New Jersey Consumer Fraud Act.

19. 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.

20. 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, rather than the State, its taxpayers, its residents, or broader segments of the public.

## II. PARTIES

### A. Plaintiffs

21. Plaintiff the Attorney General is the chief law enforcement officer and chief legal officer of New Jersey. The Attorney General is authorized to enforce the New Jersey Consumer Fraud Act (“CFA”). N.J.S.A. 52:17B-5.7. The Director of the New Jersey Division of Consumer Affairs is charged with administering the CFA on behalf of the Attorney General. N.J.S.A. 52:17B-120, -124. The Attorney General and the Acting Director bring this action pursuant to their authority under the CFA, specifically N.J.S.A. 56:8-8, -11, -13, and -19.

22. Plaintiff the New Jersey Department of Environmental Protection (“NJDEP”) is a principal department within the State’s Executive Branch. Led by Commissioner Shawn LaTourette, NJDEP is vested with the authority to conserve natural resources and protect public health and safety, including by seeking injunctive relief and recovery of fines and penalties through legal proceedings. N.J.S.A. 13:1D-9. Under Executive Order No. 89, the Governor of New Jersey has specifically charged NJDEP with directing the development and implementation of statewide climate adaption and resilience measures.<sup>32</sup> The State holds in trust all natural resources within its jurisdiction for the benefit of New Jersey’s citizens and residents. N.J.S.A. 13:1D-150. The NJDEP is authorized to protect this public trust and to seek compensation for any injury to the natural resources of New Jersey. The State also retains parens patriae authority to protect its “quasi-

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<sup>32</sup> Exec. Order No. 89 (Oct. 29, 2019), 51 N.J.R. 1707(a) (Dec. 2, 2019).

sovereign” interests in protecting the health and welfare of New Jersey’s residents and natural resources. Further, the State possesses fundamental police powers to, among other actions, prevent injuries and pollution of the State’s property and waters, to prevent and abate nuisances, and to prevent and abate hazards to public health, safety, welfare, and the environment. NJDEP brings this action in its capacity as trustee of New Jersey’s natural resources, and pursuant to its parens patriae, proprietary, and regulatory powers.

### **B. Defendants**

23. When this Complaint references an act or omission of Defendants, unless specifically attributed or 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.

#### **24. Exxon Entities: Exxon Mobil Corporation, ExxonMobil Oil Corporation**

a. Defendant **Exxon Mobil Corporation** is a New Jersey corporation headquartered in Irving, Texas. It 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 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., Exxon Corporation, Standard Oil Company (NJ), and Mobil Corporation.

b. 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 Irving, Texas. 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 has been registered to do business in New Jersey since 1933.

c. Exxon Mobil Corporation controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries. Exxon Mobil Corporation's 2021 Form 10-K filed with the United States Securities and Exchange Commission represents that its success, including its "ability to mitigate risk and provide attractive returns to stockholders, depends on [its] ability to successfully manage [its] overall portfolio, including diversification among types and locations of [its] projects."<sup>33</sup> Exxon Mobil Corporation determines whether and to what extent its subsidiaries market, produce, and/or distribute fossil fuel products.

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<sup>33</sup> Exxon Mobil Corp., Form 10-K: Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 5 (Feb. 23, 2022), <https://ir.exxonmobil.com/static-files/73aca83c-e65f-42ec-9a13-a7b04a302b7f>.



d. Exxon Mobil Corporation controls and has controlled companywide 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-related impacts on the environment and humans. Exxon Mobil Corporation's Board holds the highest level of direct responsibility for climate change policy within the company. Exxon Mobil Corporation's Chairman of the Board and Chief Executive Officer, its President, and the other members of its Management Committee are 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 to provide an estimate of greenhouse gas-related emissions costs in their economic projections when seeking funding for capital investments.

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

f. Plaintiffs' claims against Exxon arise out of the acts and omissions of Exxon in New Jersey and Exxon's actions elsewhere that caused injuries in New Jersey.

g. 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.

h. Exxon has purposefully directed and continues to purposefully direct its tortious conduct toward New Jersey by intentionally and wrongfully distributing, marketing, advertising, promoting, and supplying its fossil fuel products in New Jersey, with knowledge that those products have caused and will continue to cause climate crisis-related injuries in New Jersey, including the State's injuries. Exxon's statements in and outside of New Jersey made in furtherance of its campaign of deception and denial, and its inveterate failure to warn consumers of global warming-related hazards when it marketed, advertised, and sold its products both in and outside of New Jersey, were intended to conceal and mislead consumers and the public, including the State and its residents, about the serious adverse consequences from continued use of Exxon's products. That conduct was intended to reach and influence the State, as well as its residents, among others, to continue unabated use of Defendants' fossil fuel products in and outside New Jersey, thereby resulting in the State's injuries.

i. Over the past several decades, Exxon spent millions of dollars on radio, television, and outdoor advertisements in the New Jersey market related to its fossil fuel products. At least as far back as 1972 and as recently as 2020, Exxon also advertised its fossil fuel products in print publications circulated widely to New Jersey consumers, including but not limited to: The Atlantic, The Economist, Fortune Magazine, The New York Times, People, Sports Illustrated, Time Magazine, The Washington Post, and The Wall Street Journal. These advertisements contained no warning commensurate with the risks of their products.

Moreover, these advertisements also contained false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between Exxon's fossil fuel products and climate change, and/or misrepresenting Exxon's products or Exxon itself as environmentally friendly.

j. A significant amount of Exxon's fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in New Jersey, from which Exxon derives and has derived substantial revenue. Exxon—directly and through its subsidiaries and/or predecessors-in-interest—supplied substantial quantities of fossil fuel products to New Jersey during the period relevant to this litigation. For instance, as Standard Oil Company of New Jersey, Exxon constructed and operated the Bayway and Bayonne refineries for decades. Currently, Exxon promotes, markets, and sells gasoline and other fossil fuel products to New Jersey consumers through approximately 347 Exxon-branded and Mobil-branded petroleum service stations in the state.<sup>34</sup> During the period relevant to this Complaint, Exxon sold a substantial percentage of all retail gasoline in New Jersey. Exxon also markets and sells petroleum products, including engine lubricants and motor oils sold under the Mobil 1 brand name, to New Jersey customers through local retailers.

k. Exxon historically directed its fossil fuel product advertising, marketing, and promotional campaigns to New Jersey residents, including through maps that identify the locations of its service stations

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<sup>34</sup> ExxonMobil, Find a Station, <https://www.exxon.com/en/find-station/new-jersey> (last visited Oct. 17, 2022).

in New Jersey. To this day, Exxon continues to market and advertise its fossil fuel products in New Jersey to New Jersey residents by maintaining an interactive website available to prospective customers that directs New Jersey residents to Exxon's nearby retail service stations and lubricant distributors.<sup>35</sup> Further, Exxon promotes its products in New Jersey by regularly updating and actively promoting its mobile device application, "Exxon Mobil Rewards+," throughout the state of New Jersey, which encourages New Jersey users to consume fuel at Exxon stations in New Jersey in exchange for rewards on every fuel purchase.

25. **BP Entities: BP P.L.C., BP America Inc.**

a. 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 power and renewables. 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, fuel, 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.

b. BP P.L.C. controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of

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<sup>35</sup> Ibid.

its subsidiaries. BP P.L.C. is the ultimate decisionmaker on fundamental decisions about the BP Group's core business, i.e., the level of companywide fossil fuels to produce, including production 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. expects 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.

c. BP P.L.C. controls and has controlled companywide 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-related impacts on the environment and humans. BP P.L.C. makes fossil fuel production decisions for the entire BP Group based on factors including climate change. BP P.L.C.'s Board of Directors is the highest decisionmaking body within the company, with direct responsibility for the BP Group's climate change policy. 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-related matters and consists of two committees—both overseen directly by the board—that focus on climate-related investments.

d. 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 New Jersey. 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, and/or is the successor in liability to Amoco Corporation, Amoco Oil Company, ARCO Products Company, Atlantic Richfield New Jersey Corporation, Atlantic Richfield Company (a Delaware Corporation), BP Exploration & Oil, Inc., BP Products North America Inc., BP Amoco Corporation, BP Amoco Plc, BP Oil, Inc., BP Oil Company, Sohio Oil Company, Standard Oil of Ohio (SOHIO), Standard Oil (Indiana), and The Atlantic Richfield Company (a Pennsylvania Corporation) and its division, the Arco Chemical Company.

e. 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."

f. Plaintiffs' claims against BP arise out of the acts and omissions of BP in New Jersey and BP's actions elsewhere that caused injuries in New Jersey.

g. BP has purposefully directed and continues to purposefully direct its tortious conduct toward New

Jersey by intentionally and wrongfully distributing, marketing, advertising, promoting, and supplying its fossil fuel products in New Jersey, with knowledge that those products have caused and will continue to cause climate crisis-related injuries in New Jersey, including the State's injuries. BP's statements in and outside of New Jersey made in furtherance of its campaign of deception and denial—as well as its inveterate failure to warn consumers of global warming-related hazards when it marketed, advertised, and sold its products both in and outside of New Jersey—were intended to conceal and mislead consumers and the public, including the State and its residents, about the serious adverse consequences of continued use of BP's products. That conduct was intended to reach and influence the State, as well as its residents, among others, to continue unabated use of Defendants' fossil fuel products in and outside New Jersey, thereby resulting in the State's injuries.

h. Over the last several decades, BP, and specifically BP P.L.C., spent millions of dollars on radio, television, and outdoor advertisements in the New Jersey market related to its fossil fuel products. At least as far back as 1988 and as recently as 2020, BP also advertised its fossil fuel products in print publications circulated widely to New Jersey consumers, including but not limited to: The Atlantic, Fortune Magazine, The New York Times, Newsweek, Time Magazine, The Washington Post, and The Wall Street Journal. These advertisements contained no warning commensurate with the risks of BP's products. Moreover, these advertisements also contained false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between BP's fossil fuel

products and climate change, and/or misrepresenting BP's products or BP itself as environmentally friendly.

i. A significant amount of BP's fossil fuel products are or have been transported, traded, distributed, marketed, manufactured, promoted, sold, and/or consumed in New Jersey, from which BP derives and has derived substantial revenue. BP advertises that New Jersey contains the "largest concentration of bp workers . . . anywhere in the eastern United States"<sup>36</sup> and that the company owns a 25% interest in New Jersey's Carteret terminal, a major fossil fuel distribution center that serves the New York Harbor area. BP conducts and controls, either directly or through franchise agreements, retail fossil fuel sales at gas station locations throughout New Jersey, at which it promotes, markets, and advertises its fossil fuel products under its BP and/or Amoco brand names. BP operates over 230 petroleum service stations in New Jersey and advertises that "bp's Helios logo remains a familiar sight for New Jersey motorists."<sup>37</sup> During the period relevant to this Complaint, BP sold a substantial percentage of all retail gasoline in New Jersey. Additionally, BP markets and sells other products, including engine lubricant and motor oils, to New Jersey consumers under its Castrol brand name. Castrol Industrial North America, Inc., which is owned by BP, is registered to do business in New Jersey.

j. BP historically directed its fossil fuel product advertising, marketing, and promotional campaigns to

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<sup>36</sup> BP, Where We Operate: New Jersey, [https://www.bp.com/en\\_us/united-states/home/where-we-operate/new-jersey.html](https://www.bp.com/en_us/united-states/home/where-we-operate/new-jersey.html) (last visited Oct. 14, 2022).

<sup>37</sup> Ibid.



New Jersey residents, including through maps that identify the locations of its service stations in New Jersey. To this day, BP continues to market and advertise its fossil fuel products in New Jersey to New Jersey residents by maintaining an interactive website available to prospective customers in New Jersey by which it directs New Jersey residents to BP's nearby retail service stations and/or lubricant distributors.<sup>38</sup> Further, BP promotes its products in New Jersey by regularly updating and actively promoting its mobile device application, "BPme Rewards," throughout the state of New Jersey, encouraging New Jersey users to consume fuel at its stations in New Jersey in exchange for rewards and/or savings on every fuel purchase.

**26. Chevron Entities: Chevron Corporation, Chevron USA, Inc.**

a. 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 is registered to do business in New Jersey.

b. Chevron Corporation operates through a web of United States and international subsidiaries at all levels of the fossil fuel supply chain. Chevron Corporation's and its subsidiaries' operations consist of: (1) exploring for, developing, and producing crude oil and natural gas; (2) processing, liquefying, transporting, and regassing associated with liquefied natural gas; (3) transporting crude oil by major international oil export pipelines; (4) transporting,

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<sup>38</sup> BP, [Find a Gas Station](https://www.bp.com/en_us/united-states/home/find-a-gas-station.html), [https://www.bp.com/en\\_us/united-states/home/find-a-gas-station.html](https://www.bp.com/en_us/united-states/home/find-a-gas-station.html) (last visited Oct. 14, 2022).

storing, and marketing natural gas; (5) refining crude oil into petroleum products; (6) marketing crude oil and refined products; (7) transporting crude oil and refined products by pipeline, marine vessel, motor equipment, and rail car; (8) conducting basic and applied research in multiple scientific fields including chemistry, geology, and engineering; and (9) manufacturing and marketing commodity petrochemicals, plastics for industrial uses, and fuel and lubricant additives.

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

d. Chevron Corporation controls and has controlled companywide 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-related impacts on the environment and communities.

e. Defendant **Chevron U.S.A.** Inc. is a Pennsylvania corporation with its principal place of business located in San Ramon, California. Chevron U.S.A. Inc. is registered to do business in New Jersey. 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. 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, and Chevron Chemical Company.

f. 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.”

g. Plaintiffs’ claims against Chevron arise out of the acts and omissions of Chevron in New Jersey and Chevron’s actions elsewhere that caused the injuries in New Jersey.

h. Chevron has purposefully directed and continues to purposefully direct its tortious conduct toward New Jersey by intentionally and wrongfully distributing, marketing, advertising, promoting, and supplying its products in New Jersey, with knowledge that those products have caused and will continue to cause climate crisis-related injuries in New Jersey, including the State’s injuries. Chevron’s statements in and outside of New Jersey made in furtherance of its campaign of deception and denial—as well as its chronic failure to warn consumers of global warming-related hazards when it marketed, advertised, and sold its products both in and outside of New Jersey—were intended to conceal and mislead consumers and the public, including the State and its residents, about the serious adverse consequences from continued use of Chevron’s products. That conduct was intended to reach and influence the State, as well as its residents, among others, to continue unabated use of Defendants’ fossil fuel products in and outside New Jersey, resulting in the State’s injuries.

i. Over the last several decades, Chevron spent millions of dollars on radio, television, and outdoor

advertisements in the New Jersey market related to its fossil fuel products. At least as far back as 1971 and as recently as 2020, Chevron also advertised in print publications circulated widely to New Jersey consumers, including but not limited to: The Atlantic, Fortune Magazine, The New York Times, Newsweek, People, Sports Illustrated, Time Magazine, and The Washington Post. These advertisements contained no warning commensurate with the risks of Chevron's products. Moreover, these advertisements also contained false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between Chevron's fossil fuel products and climate change, and/or misrepresenting Chevron's products or Chevron itself as environmentally friendly.

j. A significant amount of Chevron's fossil fuel products have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in New Jersey, from which Chevron has derived substantial revenue. Chevron acquired the Perth Amboy Refinery in New Jersey in 1945 and operated it to refine petroleum into products such as gasoline, heating oil, and asphalt until 2012. Chevron has conducted and controlled, either directly or through franchise agreements, retail fossil fuel sales at its branded gas station locations throughout New Jersey, at which it has engaged in the promotion, marketing, and advertisement of its fossil fuel products under its various brand names, including Chevron, Texaco, and other brand names, at times relevant to this complaint. Chevron historically directed its fossil fuel product advertising, marketing, and promotional campaigns to New Jersey residents, including through maps that identified the locations of its service stations in New Jersey. To this day,

Chevron markets and sells engine lubricants and motor oils to New Jersey customers under its Delo, IsoClean, Techron, and Havoline brand names at retail outlets.<sup>39</sup> Until 2010, Chevron offered a proprietary credit card known as the “Chevron Techron Advantage Card,” which allowed consumers in New Jersey to pay for gasoline and other products at Chevron-branded service stations, and which encouraged New Jersey consumers to use Chevron-branded service stations by offering various rewards, including discounts on gasoline purchases at Chevron service stations and cash rebates.

**27. ConocoPhillips Entities: ConocoPhillips, ConocoPhillips Company, Phillips 66, Phillips 66 Company**

a. Defendant **ConocoPhillips** is a multinational energy company incorporated in Delaware and with its principal place of business in Houston, Texas. ConocoPhillips consists of numerous divisions, subsidiaries, and affiliates that execute ConocoPhillips’s fundamental decisions related to all aspects of the fossil fuel industry, including exploration, extraction, production, manufacture, transport, and marketing.

b. ConocoPhillips controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of

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<sup>39</sup> Chevron Lubricants, Where to Buy, [https://www.chevronlubricants.com/en\\_us/home/where-to-buy/find-a-distributor.html?gclid=Cj0KCQjw1vSZBhDuARIsAKZlijQOwvNu-O\\_1u7qmUk kvXNnEyLThzaA\\_gtG\\_gQHh0nsXH0y7JRPNGHcaAkMrEALw\\_wcB&gclsrc=aw.ds](https://www.chevronlubricants.com/en_us/home/where-to-buy/find-a-distributor.html?gclid=Cj0KCQjw1vSZBhDuARIsAKZlijQOwvNu-O_1u7qmUk kvXNnEyLThzaA_gtG_gQHh0nsXH0y7JRPNGHcaAkMrEALw_wcB&gclsrc=aw.ds) (last visited Oct. 14, 2022); Chevron Lubricants, Find Your Nearest Oil Change Station, [https://www.chevronlubricants.com/en\\_us/home/where-to-buy/find-an-installer.html](https://www.chevronlubricants.com/en_us/home/where-to-buy/find-an-installer.html) (last visited Oct. 14, 2022).

its subsidiaries. ConocoPhillips determines whether and to what extent its holdings market, produce, and/or distribute fossil fuel products. ConocoPhillips's most recent annual report subsumes the operations of the entire ConocoPhillips group of subsidiaries under its name. Therein, ConocoPhillips represents that its value—for which ConocoPhillips maintains ultimate responsibility—is a function of its decisions to direct subsidiaries to explore for and produce fossil fuels: “Unless we successfully add to our existing proved reserves, our future crude oil, bitumen, natural gas and natural gas liquids production will decline, resulting in an adverse impact to our business.”<sup>40</sup> ConocoPhillips optimizes the ConocoPhillips group's oil and gas portfolio to fit ConocoPhillips's strategic plan. For example, 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.

c. ConocoPhillips controls and has controlled companywide 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-related impacts on the environment and communities. For instance, ConocoPhillips's board has the highest level of direct responsibility for climate change policy within the company. ConocoPhillips has developed and

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<sup>40</sup> ConocoPhillips, Form 10-K: Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 23 (Dec. 31, 2019).

purportedly implements a corporate Climate Change Action Plan to govern climate change decisionmaking across all entities in the ConocoPhillips group.

d. Defendant **ConocoPhillips Company** is a wholly owned subsidiary of ConocoPhillips that acts on ConocoPhillips's behalf and is subject to ConocoPhillips's control. ConocoPhillips Company is incorporated in Delaware and has its principal office in Bartlesville, Oklahoma. ConocoPhillips Company is registered to do business in New Jersey.

e. Defendant **Phillips 66** is a multinational energy and petrochemical company incorporated in Delaware and 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.

f. 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 and has its principal office in Houston, Texas. Phillips 66 Company is registered to do business in New Jersey. Phillips 66 Company was formerly known as, did or does business as, and/or is the successor in liability to Phillips Petroleum Company, Conoco, Inc., Tosco Corporation, and Tosco Refining Co.

g. 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."

h. ConocoPhillips has purposefully directed and continues to purposefully direct its tortious conduct

toward New Jersey by intentionally and wrongfully distributing, marketing, advertising, promoting, and supplying its fossil fuel products in New Jersey, with knowledge that those products have caused and will continue to cause climate crisis-related injuries in New Jersey, including the State's injuries. ConocoPhillips's statements in and outside of New Jersey made in furtherance of its campaign of deception and denial—as well as its chronic failure to warn consumers of global warming-related hazards when it marketed, advertised, and sold its products—were intended to conceal and mislead consumers and the public about the serious adverse consequences from continued use of ConocoPhillips's products. That conduct was intended to reach and influence the State, as well as its residents, among others, to continue unabated use of Defendants' fossil fuel products, resulting in the State's injuries.

i. ConocoPhillips transacts and has transacted substantial fossil fuel-related business in New Jersey. In 2011, it acquired the Bayway Refinery, which refines more than 250,000 barrels of fossil fuel products per day, and transferred the refinery to its successor Phillips 66 in 2012. ConocoPhillips and its affiliates have continued to expand Bayway, which remains one of the largest refineries in operation on the East Coast. ConocoPhillips markets and sells, and has marketed and sold, a significant quantity of gasoline and other fossil fuel products to New Jersey consumers. Currently, ConocoPhillips operates more than 140 Conoco-branded and Phillips 66-branded petroleum service stations throughout New Jersey. ConocoPhillips also markets and sells lubricants to New Jersey consumers under its Phillips 66 brand, and motor oils to New Jersey consumers under its Kendall Motor Oil brand.



**28. Shell Entities: Shell plc, Shell Oil Company**

a. 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 the fossil fuel industry including exploration, development, extraction, manufacturing and energy production, transport, trading, marketing, and sales.

b. Shell plc controls and has controlled companywide 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. For instance, in 2015, a Shell plc subsidiary employee admitted in a deposition that its Board of Directors made the decision about whether to drill a particular oil deposit off the coast of Alaska.

c. Shell plc controls and has controlled companywide 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-related impacts on the environment and communities. Overall accountability for climate change within the Shell group of companies lies with Shell plc’s Chief Executive Officer

and Executive Committee. For instance, at least as early as 1988, Royal Dutch Shell PLC, through its subsidiaries, was researching companywide CO<sub>2</sub> emissions and concluded that the Shell group of companies accounted for “4% of the CO<sub>2</sub> emitted worldwide from combustion,” and that climatic changes could compel the Shell group, as controlled by Royal Dutch Shell PLC, to “examine the possibilities of expanding and contracting [its] business accordingly.”<sup>41</sup> Royal Dutch Shell PLC’s CEO has stated that Royal Dutch Shell PLC would reduce the carbon footprint of its products, including those of its subsidiaries “by reducing the net carbon footprint of the full range of Shell emissions, from our operations and from the consumption of our products.”<sup>42</sup> Additionally, in November 2017, Royal Dutch Shell PLC announced it would reduce the carbon footprint of “its energy products” by “around” half by 2050.<sup>43</sup> Royal Dutch Shell PLC’s effort is inclusive of all fossil fuel products produced under the Shell brand, including those of its subsidiaries.

d. Defendant **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 Oil Company is incorporated in Delaware and with its

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<sup>41</sup> Health, Safety, & Env’t Div., Shell Internationale Petroleum Maatschappij B.B., The Greenhouse Effect (Report Series HSE 88-001) 29 (1988).

<sup>42</sup> Royal Dutch Shell PLC, Management Day 2017: Shell Updates Company Strategy and Financial Outlook, and Outlines Net Carbon Footprint Ambition, Shell Global Company Website (Nov. 28, 2017), <https://www.shell.com/media/news-and-media-releases/2017/management-day-2017-shell-updates-company-strategy.html>.

<sup>43</sup> Ibid.

principal place of business in Houston, Texas. Shell Oil Company was formerly known as, did or does business as, and/or is the successor in liability to Deer Park Refining LP, Shell Oil, Shell Oil Products, Shell Chemical, Shell Trading US, Shell Trading (US) Company, Shell Energy Services, Texaco Inc., The Pennzoil Company, Shell Oil Products Company LLC, Shell Oil Products Company, Star Enterprise, LLC, and Pennzoil-Quaker State Company.

e. Defendants Shell plc, Shell Oil Company, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions are collectively referred to herein as “Shell.”

f. Plaintiffs’ claims against Shell arise out of the acts and omissions of Shell in New Jersey and Shell’s actions elsewhere that caused the injuries in New Jersey.

g. Shell has purposefully directed and continues to purposefully direct its tortious conduct toward New Jersey by intentionally and wrongfully distributing, marketing, advertising, promoting, and supplying its products in New Jersey, with knowledge that those products have caused and will continue to cause climate crisis-related injuries in New Jersey, including the State’s injuries. Shell’s statements in and outside of New Jersey made in furtherance of its campaign of deception and denial—as well as its chronic failure to warn consumers of global warming-related hazards when it marketed, advertised, and sold its products both in and outside of New Jersey—were intended to conceal and mislead consumers and the public, including the State and its residents, about the serious adverse consequences from continued use of Shell’s products. That conduct was intended to reach and influence the State, as well as its residents,

among others, to continue unabated use of Defendants' fossil fuel products in and outside New Jersey, resulting in the State's injuries.

h. Over the last several decades, Shell spent millions of dollars on radio, television, and outdoor advertisements in the New Jersey market related to its fossil fuel products. At least as far back as 1970 and as recently as 2020, Shell also advertised in print publications circulated widely to New Jersey consumers, including but not limited to: The Atlantic, Life Magazine, The New York Times, People, Sports Illustrated, Time Magazine, The Washington Post, and The Wall Street Journal. These advertisements contained no warning commensurate with the risks of Shell's products. Moreover, these advertisements also contained false or misleading statements, misrepresentations, and/or material omissions obfuscating the connection between Shell's fossil fuel products and climate change, and/or misrepresenting Shell's products or Shell itself as environmentally friendly.

i. A significant amount of Shell's fossil fuel products are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in New Jersey, from which 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 New Jersey, at which it promotes, advertises, and sells its fossil fuel products under its Shell brand name. Shell operates approximately 200 Shell-branded petroleum service stations in New Jersey. During the period relevant to this Complaint, Shell sold a substantial percentage of all retail gasoline sold in New Jersey. Shell also

supplies, markets, and promotes its Pennzoil line of lubricants at retail and service stations throughout New Jersey, including at Target and Walmart.

j. Shell historically directed its fossil fuel product advertising, marketing, and promotional campaigns to New Jersey, including through maps that identified the locations of its service stations in New Jersey. Shell markets and advertises its fossil fuel products in New Jersey to New Jersey residents by maintaining an interactive website available to prospective customers by which it directs New Jersey 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 New Jersey 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 New Jersey consumers a cashless payment method for gasoline and other products at Shell-branded service stations. New Jersey consumers utilize the payment method by providing their credit card information through the application. New Jersey 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.

29. The Exxon, BP, Chevron, ConocoPhillips, and Shell entities set forth above are collectively referred to as "Fossil Fuel Defendants."

**30. American Petroleum Institute**

a. Defendant American Petroleum Institute (“API”) is a nonprofit corporation based in the District of Columbia and registered to do business in New Jersey. API was created in 1919 to represent the American petroleum industry as a whole. With more than 600 members, API is the country’s largest oil trade association. API’s purpose is to advance its individual members’ collective business interests, which includes increasing consumer consumption of oil and gas to the Fossil Fuel Defendants’ financial profit. 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.

b. Acting on behalf of and under the supervision and control of the Fossil Fuel Defendants, API has 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 provide climate disinformation and advocacy from a purportedly objective source, when, in fact, they were financed and controlled by Fossil Fuel Defendants. Fossil Fuel 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 Fossil Fuel Defendants.

c. API’s stated mission includes “influenc[ing] public policy in support of a strong, viable U.S. oil and

natural gas industry,”<sup>44</sup> which includes increasing consumers’ consumption of oil and gas to Fossil Fuel Defendants’ financial benefit. In effect, API acts and has acted as a marketing arm for its member companies, including Fossil Fuel Defendants. Over the last several decades, API spent millions of dollars on television, newspaper, radio, and internet advertisements in the New Jersey market.

d. Member companies participate in API strategy, governance, and operation through membership dues and by contributing company officers and other personnel to API boards, committees, and task forces. Fossil Fuel Defendants have collectively steered the policies and trade practices of API through membership, Executive Committee roles, and/or budgetary funding of API. Fossil Fuel Defendants used their control over and involvement in API to further their goal of influencing consumer demand for their fossil fuel products through a long-term advertising and communications campaign centered on climate change denialism. Fossil Fuel Defendants directly controlled, supervised, and participated in API’s misleading messaging regarding climate change.

e. In addition to national promotional campaigns circulated in New Jersey, API has also directly targeted New Jersey consumers by creating and disseminating misleading advertisements designed to promote consumption of fossil fuel products in the State. In 2017, for example, API released a thirty-second advertisement called “Natural Gas Works for New Jersey,” which misleadingly described natural

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<sup>44</sup> American Petroleum Institute, About API, <https://www.api.org/about> (last visited Oct. 17, 2022).

gas as “clean energy.”<sup>45</sup> In 2016, API launched a campaign in New Jersey seeking to turn public opinion against stricter standards for ethanol content in gasoline. The campaign claimed stricter standards would “hurt consumers and threaten to reverse America’s energy renaissance.”<sup>46</sup>

f. All Fossil Fuel Defendants and/or their predecessors-in-interest have been core API members at times relevant to this litigation. All Fossil Fuel Defendants are currently members of API. Executives from Exxon, Shell, BP, Chevron, and ConocoPhillips have served on the API Executive Committee and/or as API Chairman, which is akin to serving as a corporate officer. For example, Exxon’s CEO served on API’s Executive Committee for 15 of 25 years between 1991 and 2016 (1991, 1996–97, 2001, 2005–2016). BP’s CEO served as API’s Chairman in 1988, 1989, and 1998. Chevron’s CEO served as API Chairman in 1994, 1995, 2003, and 2012. Shell’s President served on API’s Executive Committee from 2005–06. ConocoPhillips Chairman and CEO Ryan Lance was Board President from 2016 to 2018, and Exxon President and CEO Darren Woods was Board President from 2018 to 2020. In 2020, API elected Phillips 66 Chairman and CEO Greg Garland to serve a two-year term as the Board President. Executives

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<sup>45</sup> American Petroleum Institute, Natural Gas Works for New Jersey, <https://www.youtube.com/watch?v=rb9jQiGgdLQ> (Sept. 19, 2017).

<sup>46</sup> Reid Porter, API Launches New RFS Advocacy Campaign in New Jersey Focused on Consumers, American Petroleum Institute (Aug. 9, 2016), <https://www.api.org/news-policy-and-issues/news/2016/08/09/api-launches-new-rfs-advocacy-campaign-f>.



from ConocoPhillips also served as members of API's Board of Directors at various times.

g. Relevant information was shared among API and Fossil Fuel Defendants and their predecessors-in-interest through (1) API distributing information it held to its members and/or (2) participation of officers and other personnel from Fossil Fuel Defendants and their predecessors-in-interest on API boards, committees, and task forces.

### **C. Relevant Non-Parties: Defendants' Agents and Front Groups**

31. As detailed below, each Fossil Fuel Defendant had actual knowledge that its fossil fuel products were hazardous. Fossil Fuel Defendants obtained knowledge of the hazards of their products independently and through their membership and involvement in trade associations such as API.

32. Fossil Fuel Defendants employed and financed several industry associations, such as API, and 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 the supervision and control of Fossil Fuel Defendants, assisted the deception campaign by implementing public advertising and outreach campaigns to discredit climate science, funding scientists to cast doubt upon climate science, and denying the human connection to climate change. In sum, Fossil Fuel 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 Fossil Fuel Defendants' sales to consumers, including consumers

in New Jersey. Defendants actively supervised, facilitated, consented to, and/or directly participated in the misleading messaging of these front groups, from which Fossil Fuel Defendants profited significantly, including in the form of increased sales in New Jersey.

33. **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).

34. **The Global Climate Coalition (“GCC”)** was an industry group formed to preserve and expand consumer demand for fossil fuels, including by publicly casting doubt on climate science and opposing greenhouse gas emission reduction initiatives. GCC was founded in 1989 shortly after the first meeting of the Intergovernmental Panel on Climate Change (“IPCC”), the United Nations body for assessing the science related to climate change. GCC disbanded in or around 2001. Founding members included API, PMAA, and the National Coal Association, a predecessor of the National Mining Association.<sup>47</sup> Over the course of its existence, GCC corporate members included Amoco (BP), API, Chevron, Exxon, Shell Oil, Texaco (Chevron), and Phillips Petroleum (ConocoPhillips). Over its existence, other members and funders included ARCO (BP), and the Western Fuels Association.

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<sup>47</sup> ClimateFiles, Global Climate Coalition Membership (Nov. 16, 1989), <http://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1989-membership>.

### III. JURISDICTION AND VENUE

35. Jurisdiction of this Court is proper under Article VI, Section III, Paragraph 2, of the New Jersey Constitution; New Jersey Court Rule 4:4-4; and New Jersey Court Rule 4:3-1(a)(5).

36. This Court has personal jurisdiction over each Defendant pursuant to N.J.S.A. 14A:1-1 et seq., and R. 4:4-4(a)(6), and because each Defendant is, or was during the relevant time, incorporated in New Jersey and/or licensed to do business in New Jersey; maintained or maintains their principal place of business in New Jersey; is transacting or has transacted substantial business in New Jersey or is otherwise “at home” in New Jersey; is contracting or has contracted to supply services or things in New Jersey; has or does derive substantial revenue from New Jersey or engages in a persistent course of conduct in New Jersey; had or has interests in, used or uses, or possessed or possesses real property in New Jersey; and/or caused tortious injury in New Jersey and has intentionally engaged in conduct aimed at New Jersey, which has caused harm they knew was likely to be incurred in New Jersey. Each Defendant has sufficient contacts with New Jersey to give rise to the current action, has continuous and systematic contacts with New Jersey, and/or has consented either explicitly or implicitly to the jurisdiction of this Court.

37. Additionally, jurisdiction is proper over each non-resident defendant:

a. With respect to its subsidiaries, each non-resident defendant parent <sup>48</sup> controls and has controlled decisions about the quantity and extent of

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<sup>48</sup> Except Chevron USA, Inc., which is itself a subsidiary.

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 decisions related to its marketing and advertising, and specifically communications strategies concerning climate change and the link between fossil fuel use and impacts on the environment. Each non-resident defendant parent has the power to direct and control the resident subsidiaries named here. Thus, the subsidiaries are agents of the parents. As agents, the subsidiaries of each non-resident defendant conducted activities in New Jersey at the direction of their parent companies and for the parent companies' benefit. Specifically, the subsidiaries furthered the parents' campaign of deception and denial through misrepresentations, omissions, and failures to warn, which resulted in climate injuries in the State and increased sales to the parents. Therefore, the subsidiaries' jurisdictional activities are properly attributed to the parents and serve as a basis to assert jurisdiction over the non-resident defendant parents.

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

c. All Fossil Fuel Defendants—by and through API and other organizations like ICE, GCC, and International Petroleum Industry Environmental

Conservation Association (“IPIECA”)—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 engage in massive campaigns to promote heavy use of their fossil fuel products, which they knew would result in injuries to the State. Through their own actions and through their membership and participation in climate denialist front groups, API and each Fossil Fuel Defendant was and is a member of that conspiracy. Defendants committed substantial acts to further the conspiracy in New Jersey by making misrepresentations and misleading omissions to New Jersey consumers about the existence, causes, and effects of global warming, as well as by failing to warn them about the disastrous impacts of fossil fuel use. A substantial effect of the conspiracy has also and will also occur in New Jersey, as the State has suffered and will suffer injuries from Defendants’ wrongful conduct, including but not limited to: sea-level rise, flooding, erosion, loss of wetlands and beaches, ocean acidification, and other social and economic consequences of these environmental changes. Defendants knew or should have known—based on information passed to them from their internal research divisions, affiliates, trade associations, and industry groups—that their actions in New Jersey and elsewhere would result in these injuries in and to New Jersey. Finally, the climate effects described herein are direct and foreseeable results of Defendants’ conduct in furtherance of the conspiracy.

38. Venue in this Court is proper, pursuant to R. 4:3-2, because Plaintiffs’ claims arose, in part, in

Mercer County, and Defendants conduct business there.

#### **IV. FACTUAL BACKGROUND**

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

39. Human-caused warming of the Earth is unequivocal. The atmosphere and oceans are warming, sea level is rising, snow and ice cover is diminishing, oceans are acidifying, and hydrologic systems have been altered, among other environmental changes.<sup>49</sup>

40. The mechanism by which human activity causes global warming and climate disruption is well established: ocean and atmospheric warming is overwhelmingly caused by anthropogenic greenhouse gas emissions.

41. Greenhouse gases are largely byproducts of humans combusting fossil fuels to produce energy and using fossil fuels to create petrochemical products. While there are several greenhouse gases contributing to climate change, CO<sub>2</sub> is the primary greenhouse gas emitted from human activities.

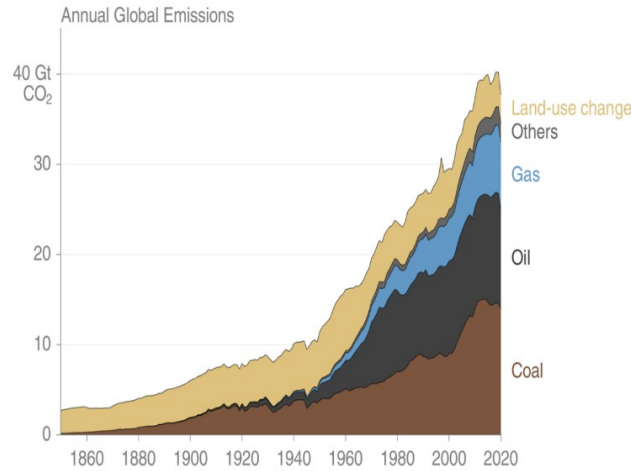
42. Prior to World War II, most anthropogenic CO<sub>2</sub> emissions were caused by land-use practices, such as forestry and agriculture, which altered the ability of the land and global biosphere to absorb CO<sub>2</sub> from the atmosphere; the impacts of such activities on Earth's climate were relatively minor.

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<sup>49</sup> 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).

43. Since that time, however, both the annual rate and total volume of anthropogenic CO<sub>2</sub> emissions have increased enormously following the advent of major uses of oil, gas, and coal.

44. The graph below illustrates that fossil fuel emissions are the dominant source of increases in atmospheric CO<sub>2</sub> since the mid-twentieth century:



**Figure 3: Annual Global Emissions, 1850–2020**<sup>50</sup>

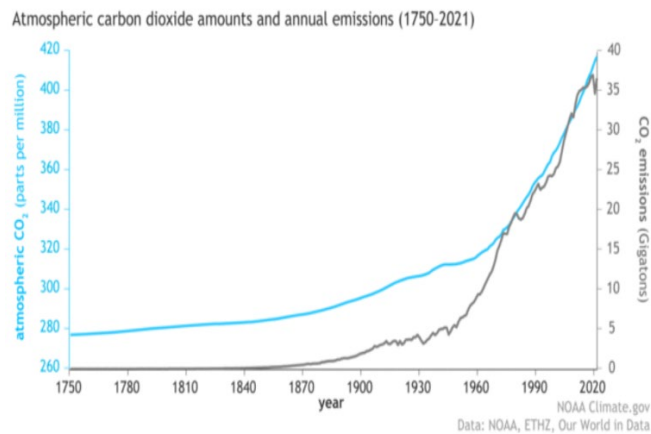
45. The recent acceleration of fossil fuel emissions has led to a correspondingly sharp rise in atmospheric concentration of CO<sub>2</sub>. Since 1960, the concentration of CO<sub>2</sub> in the atmosphere has spiked from under 320 parts per million (“ppm”) to approximately 419 ppm.<sup>51</sup>

<sup>50</sup> Global Carbon Project, Global Carbon Budget 2021 83 (Nov. 4, 2021), [https://www.globalcarbonproject.org/carbonbudget/21/files/GCP\\_CarbonBudget\\_2021.pdf](https://www.globalcarbonproject.org/carbonbudget/21/files/GCP_CarbonBudget_2021.pdf).

<sup>51</sup> Global Monitoring Laboratory, Trends in Atmospheric Carbon

The rate of growth of atmospheric CO<sub>2</sub> has also been increasing. From 1960 to 1970, atmospheric CO<sub>2</sub> increased by an average of approximately 1 ppm per year; over the last five years, it has increased by around 2.5 ppm per year.<sup>52</sup>

46. The graph below 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<sub>2</sub>.



**Figure 4: Atmospheric CO<sub>2</sub> Concentration and Annual Emissions<sup>53</sup>**

Dioxide, NOAA (last visited Sept. 30, 2022), <https://www.esrl.noaa.gov/gmd/ccgg/trends>.

<sup>52</sup> Ibid.

<sup>53</sup> Rebecca Lindsey, Climate Change: Atmospheric Carbon Dioxide, NOAA (June 23, 2022), <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>.



47. Because of the increased burning of fossil fuel products, concentrations of greenhouse gases in the atmosphere are now at a level unprecedented in at least three million years.<sup>54</sup>

48. As greenhouse gases accumulate in the atmosphere, the Earth radiates less energy back to space. This accumulation and associated disruption of the Earth's energy balance have myriad environmental and physical consequences, including, but not limited to, the following:

a. Warming of the Earth's average surface temperature both locally and globally, and increased frequency and intensity of heat waves; to date, global average air temperatures have risen approximately 1.09°C (1.9°F) above preindustrial temperatures; temperatures in particular locations have risen more;

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

c. 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;

d. Changes to the global climate generally toward longer dry periods interspersed with fewer and more severe periods of precipitation, and associated impacts on the quantity and quality of water resources available to both human and ecological systems;

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<sup>54</sup> Science Daily, [More CO<sub>2</sub> Than Ever Before in 3 Million Years, Shows Unprecedented Computer Simulation](https://www.sciencedaily.com/releases/2019/04/190403155436.htm) (Apr. 3, 2019), <https://www.sciencedaily.com/releases/2019/04/190403155436.htm>.

e. Ocean acidification, due to the increased uptake of atmospheric carbon dioxide by the oceans;

f. Increased frequency and intensity of precipitation and extreme weather events due to the increase in the atmosphere's ability to hold moisture and increased evaporation;

g. Changes to terrestrial and marine ecosystems, and consequent impacts on the range of flora and fauna; and

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

49. As discussed below, these consequences of Defendants' tortious and deceptive conduct and its exacerbation of the climate crisis are already impacting New Jersey, its communities, and its natural resources, and will continue to increase in severity in New Jersey. Without Defendants' exacerbation of global warming caused by their deceptive and tortious conduct as alleged herein, the current physical and environmental changes caused by global warming would have been far less than those observed to date. Similarly, effects that will occur in the future would also be far less detrimental or would be avoided entirely.<sup>55</sup>

50. From at least 1965 until the present, Defendants unduly inflated the market for fossil fuel products by aggressively promoting the use of fossil

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<sup>55</sup> See, e.g., Peter U. Clark et al., Consequences of Twenty-First-Century Policy for Multi-Millennial Climate and Sea-Level Change, 6 Nature Climate Change 360, 365 (2016) ("Our modelling suggests that the human carbon footprint of about [470 billion tons] by 2000 . . . has already committed Earth to a [global mean sea level] rise of ~1.7m (range of 1.2 to 2.2 m).").

fuel products despite knowing the dangers associated with those products, and by deceiving consumers and the public about the consequences of the normal use of fossil fuel products, including by misrepresenting and concealing the hazards of those products. Consequently, substantially more anthropogenic greenhouse gases have been emitted into the environment than would have been emitted absent that tortious and deceptive conduct.

51. By quantifying greenhouse gas pollution attributable to Fossil Fuel Defendants' products and conduct, climatic and environmental responses to those emissions are also calculable and can be attributed to Fossil Fuel Defendants on an individual and aggregate basis.<sup>56</sup>

52. Defendants' tortious, deceptive, and unconscionable conduct, as alleged herein, caused a substantial portion of the global atmospheric greenhouse gas concentrations, and the past, ongoing, and future disruptions to the environment—and consequent injuries to New Jersey, its communities, and its resources—associated therewith.

53. Defendants, individually and together, have substantially and measurably contributed to New Jersey's climate crisis-related injuries.

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<sup>56</sup> See Richard Heede, Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010, 122 Climatic Change 229 (2014), <https://link.springer.com/article/10.1007/s10584-013-0986-y>.

**B. Defendants Went to Great Lengths to Understand, and Either Knew or Should Have Known About, the Dangers Associated with Their Fossil Fuel Products.**

54. The fossil fuel industry has known about the potential warming effects of greenhouse gas emissions since as early as the 1950s, developing a sophisticated understanding of climate change that far exceeded the knowledge of the public, ordinary consumers, and the State. 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.<sup>57</sup> 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.<sup>58</sup> API funded the scientists 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.<sup>59</sup>

55. In 1957, H.R. Brannon of Humble Oil (predecessor-in-interest to ExxonMobil) measured an increase in atmospheric carbon dioxide similar to that measured by Harrison Brown. Brannon

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<sup>57</sup> See discussion infra ¶¶ 137–38.

<sup>58</sup> See Benjamin Franta, Early Oil Industry Knowledge of CO<sub>2</sub> and Global Warming, 8 Nature Climate Change 1024, 1024–25 (2018).

<sup>59</sup> Id.

communicated this information to API. Brannon knew of Brown's measurements, compared them with his, and found they agreed. Brannon published his results in the scientific literature, which was available to Fossil Fuel Defendants and/or their predecessors-in-interest.<sup>60</sup>

56. In 1959, API organized a centennial celebration of the American oil industry at Columbia University in New York City.<sup>61</sup> High-level representatives of Fossil Fuel Defendants were in attendance. One of the keynote speakers was the 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."<sup>62</sup>

57. Following his speech, Teller was asked to "summarize briefly the danger from increased carbon dioxide content in the atmosphere in this century." He responded that "there is a possibility the icecaps will

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<sup>60</sup> H.R. Brannon, Jr. et al., Radiocarbon Evidence on the Dilution of Atmospheric and Oceanic Carbon by Carbon from Fossil Fuels, 38 Am. Geophysical Union Transactions 643, 643–50 (1957).

<sup>61</sup> See Allan Nevins & Robert G. Dunlop, Energy and Man: A Symposium (Appleton-Century-Crofts, New York 1960). See also Franta, Early Oil Industry Knowledge of CO<sub>2</sub> and Global Warming at 1024–25.

<sup>62</sup> Edward Teller, Energy Patterns of the Future, in Energy and Man: A Symposium 53–72 (1960).

start melting and the level of the oceans will begin to rise.”<sup>63</sup>

58. By 1965, concern over the potential for fossil fuel products to cause disastrous global warming reached the highest levels of the United States’ scientific community. In that year, President Lyndon B. Johnson’s Science Advisory Committee’s Environmental Pollution Panel reported that a 25% increase in carbon dioxide concentrations could occur by the year 2000, that such an increase could cause significant global warming, that melting of the Antarctic ice cap and rapid sea-level rise could result, and that fossil fuels were the clearest source of the carbon dioxide pollution.<sup>64</sup>

59. Three days after President Johnson’s Science Advisory Committee report was published, the president of API, Frank Ikard, addressed leaders of the petroleum industry in Chicago at the trade association’s annual meeting. Ikard relayed the findings of the report to industry leaders, saying,

The substance of the report is that there is still time to save the world’s peoples from the catastrophic consequence of pollution, but time is running out.<sup>65</sup>

Ikard also relayed that “by the year 2000 the heat balance will be so modified as possibly to cause

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<sup>63</sup> Id.

<sup>64</sup> President’s Science Advisory Committee, Restoring the Quality of Our Environment: Report of the Environmental Pollution Panel 9, 119–24 (Nov. 1965), <https://hdl.handle.net/2027/uc1.b4315678>.

<sup>65</sup> See Franta, Early Oil Industry Knowledge of CO<sub>2</sub> and Global Warming at 1024–25.

marked changes in climate beyond local or even national efforts” and quoted the report’s finding that “the pollution from internal combustion engines is so serious, and is growing so fast, that an alternative nonpolluting means of powering automobiles, buses, and trucks is likely to become a national necessity.”<sup>66</sup>

60. 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.

61. 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.<sup>67</sup> The assessment endorsed the findings of President Johnson’s Scientific Advisory Council from three years prior, stating, “Significant temperature changes are almost certain to occur by the year 2000, and . . . there seems to be no doubt that the potential damage to our environment could be severe.” The scientists warned of “melting of the Antarctic ice cap” and informed API that “[p]ast and present studies of CO<sub>2</sub> are detailed and seem to explain adequately the present state of CO<sub>2</sub> in the atmosphere.” What was missing, the scientists said, was work on “air pollution technology

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<sup>66</sup> Id.

<sup>67</sup> Elmer Robinson & R.C. Robbins, Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants, Stanford Rsch. Inst. (Feb. 1968), <https://www.smokeandfumes.org/documents/document16>.

and . . . systems in which CO<sub>2</sub> emissions would be brought under control.”<sup>68</sup>

62. In 1969, the Stanford Research Institute delivered a supplemental report on air pollution to API, projecting with alarming particularity that atmospheric CO<sub>2</sub> concentrations would reach 370 parts per million (“ppm”) by 2000.<sup>69</sup> This projection turned out to almost exactly match the actual CO<sub>2</sub> concentrations measured in 2000 of 369.64 ppm.<sup>70</sup> The report explicitly connected the rise in CO<sub>2</sub> levels to the combustion of fossil fuels, finding it “unlikely that the observed rise in atmospheric CO<sub>2</sub> has been due to changes in the biosphere.”

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

64. In 1972, API members—including Fossil Fuel 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. Fossil Fuel Defendants and/or their predecessors-in-interest that received this report included but were not limited to:

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<sup>68</sup> Ibid.

<sup>69</sup> Elmer Robinson & R.C. Robbins, Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants Supplement, Stanford Rsch. Inst. (June 1969).

<sup>70</sup> NASA Goddard Institute for Space Studies, Global Mean CO<sub>2</sub> Mixing Ratios (ppm): Observations, <https://data.giss.nasa.gov/modelforce/ghgases/Fig1A.ext.txt>.



American Standard of Indiana (BP), Asiatic (Shell), Atlantic Richfield (BP), British Petroleum (BP), Chevron Standard of California (Chevron), Esso Research (ExxonMobil), Ethyl (formerly affiliated with Esso, which was subsumed by ExxonMobil), Getty (ExxonMobil), Gulf (Chevron, among others), Humble Standard of New Jersey (ExxonMobil, Chevron, BP), Mobil (ExxonMobil), Pan American (BP), Shell, Standard of Ohio (BP), Texaco (Chevron), Union (Chevron), Skelly (ExxonMobil), Colonial Pipeline (ownership has included BP, ExxonMobil, and Chevron entities, among others), Continental (ConocoPhillips), Dupont (former owner of Conoco), Phillips (ConocoPhillips), and Caltex (Chevron).<sup>71</sup>

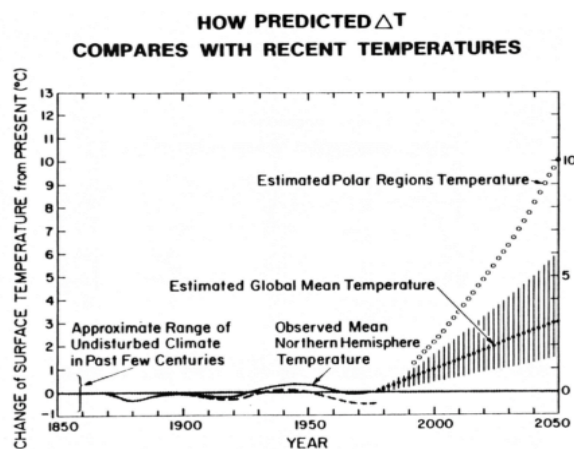
65. In 1977, James Black of Exxon's Products Research Division presented to the Exxon Corporation Management Committee on the greenhouse effect. The next year, Black presented to another internal Exxon group, PERCC. In a letter to the Vice President of Exxon Research and Engineering, Black summarized his presentations.<sup>72</sup> He reported that "current scientific opinion overwhelmingly favors attributing atmospheric carbon dioxide increase to fossil fuel consumption," and that doubling atmospheric carbon dioxide would, according to the best climate model available, "produce a mean

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<sup>71</sup> American Petroleum Institute, Committee for Air and Water Conservation, Environmental Research: A Status Report (Jan. 1972), <http://files.eric.ed.gov/fulltext/ED066339.pdf>.

<sup>72</sup> Letter from J.F. Black, Exxon Research and Engineering Co., to F.G. Turpin, Exxon Research and Engineering Co., The Greenhouse Effect, ClimateFiles (June 6, 1978), <http://www.climatefiles.com/exxonmobil/1978-exxon-memo-on-greenhouse-effect-for-exxon-corporation-management-committee>.

temperature increase of about 2°C to 3°C over most of the earth,” with two to three times as much warming at the poles. The figure below, reproduced from Black’s memo, illustrates Exxon’s understanding of the timescale and magnitude of global warming that its products would cause.



**Figure 5: Future Global Warming Predicted Internally by Exxon in 1977<sup>73</sup>**

66. The impacts of such global warming, Black reported, would include “more rainfall,” which would “benefit some areas and would harm others.” “Some countries would benefit, but others could have their agricultural output reduced or destroyed.” “Even those nations which are favored, however, would be damaged for a while since their agricultural and industrial patterns have been established on the basis

<sup>73</sup> *Ibid.* The company predicted global warming of 3°C by 2050, with 10°C warming in polar regions. The difference between the dashed and solid curves prior to 1977 represents global warming that Exxon believed may already have been occurring.

of the present climate.” Black reported that “[i]t is currently estimated that mankind has a 5–10 yr. time window to obtain the necessary information” and “establish what must be done,” at which time, “hard decisions regarding changes in energy strategies might become critical.”<sup>74</sup>

67. 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[.]”<sup>75</sup>

68. In 1979, Exxon’s W. L. Ferrall distributed an internal memorandum.<sup>76</sup> According to that memo, “The most widely held theory [about global warming] is that: The increase [in carbon dioxide] is due to fossil fuel combustion; [i]ncreasing CO<sub>2</sub> 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,

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<sup>74</sup> Ibid.

<sup>75</sup> Henry Shaw, Environmental Effects of Carbon Dioxide, Climate Investigations Ctr. (Oct. 31, 1977), <https://www.industrydocuments.ucsf.edu/docs/tpwl0228>.

<sup>76</sup> Letter from W.L. Ferrall, Exxon Research and Engineering Co., to Dr. R.L. Hirsch, Controlling Atmospheric CO<sub>2</sub>, Climate Investigations Ctr. (Oct. 16, 1979), <https://www.industrydocuments.ucsf.edu/docs/mqwl0228>.

Noticeable temperature changes would occur around 2010 as the [carbon dioxide] concentration reaches 400 ppm [parts per million]. 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[.]<sup>77</sup>

Those projections proved remarkably accurate: annual average atmospheric CO<sub>2</sub> concentrations surpassed 400 ppm in 2015 for the first time in millions of years.<sup>78</sup> Limiting the carbon dioxide concentration in the atmosphere to 440 ppm, or a 50% increase over preindustrial levels, which the 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.

69. But instead of heeding the repeated warnings of the catastrophic impacts of climate change resulting from burning fossil fuels, in November 1979, Exxon's Henry Shaw wrote to Exxon's Harold Weinberg urging “a very aggressive defensive program in . . .

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<sup>77</sup> Ibid.

<sup>78</sup> Nicola Jones, How the World Passed a Carbon Threshold and Why It Matters, Yale Env't 360 (Jan. 26, 2017), <http://e360.yale.edu/features/how-the-world-passed-a-carbon-threshold-400ppm-and-why-it-matters>.

atmospheric science and climate because there is a good probability that legislation affecting our business will be passed.”<sup>79</sup> Shaw stated that an expanded research effort was necessary to “influence possible legislation on environmental controls” and “respond” to environmental groups, which had already opposed synthetic fuels programs based on CO<sub>2</sub> emissions. Shaw suggested the formation of a “small task force” to evaluate a potential program in CO<sub>2</sub> and climate, acid rain, carcinogenic particulates, and other pollution issues caused by fossil fuels.<sup>80</sup>

70. In 1979, API and its members, including the Fossil Fuel Defendants, convened a Task Force to monitor and share cutting edge climate research among the oil industry. The group was initially called the CO<sub>2</sub> and Climate Task Force, but in 1980 changed its name to the Climate and Energy Task Force (hereinafter referred to as “CO<sub>2</sub> Task Force”). Membership included senior scientists and engineers from nearly every major U.S. and multinational oil and gas company, including Exxon, Mobil (ExxonMobil), Amoco (BP), Phillips (ConocoPhillips), Texaco (Chevron), Shell, Sohio (BP), Standard Oil of California (BP), and Gulf Oil (Chevron), among others. The Task Force was charged with monitoring government and academic research, evaluating the implications of emerging science for the petroleum and gas industries, and identifying where reductions in

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<sup>79</sup> Memorandum from H. Shaw to H.N. Weinberg, Research in Atmospheric Science, Climate Investigations Ctr. (Nov. 19, 1979), <https://www.industrydocuments.ucsf.edu/docs/yqwl0228>.

<sup>80</sup> Ibid.

greenhouse gas emissions from Defendants' fossil fuel products could be made.<sup>81</sup>

71. In 1979, API prepared a background paper on carbon dioxide and climate for the CO<sub>2</sub> Task Force, stating that CO<sub>2</sub> concentrations were rising steadily in the atmosphere, and predicting when the first clear effects of global warming might be detected.<sup>82</sup> API reported to its members that although global warming would occur, it would likely go undetected until approximately the year 2000 because, API believed, its effects were being temporarily masked by a natural cooling trend. However, this cooling trend, API warned its members, would reverse around 1990, adding to the warming caused by CO<sub>2</sub>.

72. In 1980, API's CO<sub>2</sub> Task Force invited Dr. John Laurmann, "a recognized expert in the field of CO<sub>2</sub> and climate," to present to its members.<sup>83</sup> 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<sub>2</sub> buildup, impact on society, methods of modeling and their consequences,

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<sup>81</sup> Neela Banerjee, Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too, Inside Climate News (Dec. 22, 2015), <https://insideclimatenews.org/news/22122015/exxon-mobil-oil-industry-peers-knew-about-climate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco>.

<sup>82</sup> Memorandum from R.J. Campion to J.T. Burgess, The API's Background Paper on CO<sub>2</sub> Effects, Climate Investigations Ctr. (Sep. 6, 1979), <https://www.industrydocuments.ucsf.edu/docs/lqw10228>.

<sup>83</sup> Letter from Jimmie J. Nelson, American Petroleum Institute, to AQ-9 Task Force, The CO<sub>2</sub> Problem: Addressing Research Agenda Development, Climate Investigations Ctr. (Mar. 18, 1980), <https://www.industrydocuments.ucsf.edu/docs/gffl0228>.

uncertainties, policy implications, and conclusions that can be drawn from present knowledge.” Representatives from Standard Oil of Ohio (predecessor to BP), Texaco (now Chevron), Exxon, and API were present, and the minutes of the meeting were distributed to the entire API CO<sub>2</sub> Task Force. Laurmann informed the Task Force of the “scientific consensus on the potential for large future climatic response to increased CO<sub>2</sub> levels” and that there was “strong empirical evidence that [the carbon dioxide] rise [was] caused by anthropogenic release of CO<sub>2</sub>, mainly from fossil fuel burning.” Unless fossil fuel production and use were controlled, atmospheric carbon dioxide would be twice preindustrial levels by 2038, with “likely impacts” along the following trajectory:

1°C RISE (2005): BARELY NOTICEABLE

2.5°C RISE (2038): MAJOR ECONOMIC  
CONSEQUENCES, STRONG REGIONAL  
DEPENDENCE

5°C RISE (2067): GLOBALLY  
CATASTROPHIC EFFECTS

Laurmann warned the CO<sub>2</sub> Task Force that global warming of 2.5°C would “bring[] world economic growth to a halt[.]” Laurmann also suggested that action should be taken immediately, asking, “Time for action?” and noting that if achieving high market penetration for new energy sources would require a long time (i.e., decades), then there would be “no leeway” for delay. The minutes of the CO<sub>2</sub> Task Force’s meeting show that one of the Task Force’s goals was “to help develop ground rules for [ . . . ] the

cleanup of fuels as they relate to CO<sub>2</sub> creation,” and the Task Force discussed the requirements for a worldwide “energy source changeover” away from fossil fuels.<sup>84</sup>

73. In 1980, Imperial Oil Limited (a Canadian ExxonMobil subsidiary) reported to managers and environmental staff at multiple affiliated Esso and Exxon companies that there was “no doubt” that fossil fuels were aggravating the build-up of CO<sub>2</sub> in the atmosphere.<sup>85</sup> Imperial noted that “[t]echnology exists to remove CO<sub>2</sub> from stack gases but removal of only 50% of the CO<sub>2</sub> would double the cost of power generation.”<sup>86</sup>

74. In December 1980, Exxon’s Henry Shaw distributed a memorandum on the “CO<sub>2</sub> Greenhouse Effect.”<sup>87</sup> Shaw stated that the future buildup of carbon dioxide was a function of fossil fuel use, and that internal calculations performed at Exxon indicated that atmospheric carbon dioxide would double by around the year 2060. According to the “most widely accepted” climate models, Shaw reported, this doubling of carbon dioxide would “most likely” result in global warming of approximately 3°C,

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<sup>84</sup> Ibid.

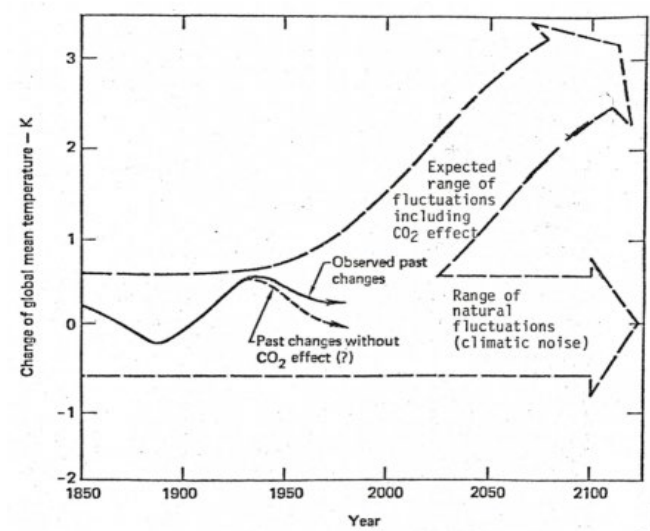
<sup>85</sup> Imperial Oil Ltd., Review of Environmental Protection Activities for 1978–1979 (Aug. 6, 1980), <http://www.documentcloud.org/documents/2827784-1980-Imperial-Oil-Review-of-Environmental.html#document/p2>.

<sup>86</sup> Ibid.

<sup>87</sup> Memorandum from Henry Shaw to T.K. Kett, Exxon Research and Engineering Company’s Technological Forecast: CO<sub>2</sub> Greenhouse Effect (Dec. 18, 1980), <https://www.documentcloud.org/documents/2805573-1980-Exxon-Memo-Summarizing-Current-Models-And.html>.



with a greater effect in polar regions. Calculations predicting a lower temperature increase, such as  $0.25^{\circ}\text{C}$ , were “not held in high regard by the scientific community,” Shaw said. Shaw also noted that the ability of the oceans to absorb heat could delay (but not prevent) the temperature increase “by a few decades,” and that natural, random temperature fluctuations would hide global warming from  $\text{CO}_2$  until around the year 2000. The memo included the Figure 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.



**Figure 6: Future Global Warming Predicted Internally by Exxon in 1980<sup>88</sup>**

<sup>88</sup> Ibid. 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  $3^{\circ}\text{C}$  warming by the end of the century.

The memo 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.” Some areas would turn to desert, and the American Midwest would become “much drier.” “[W]eeds and pests,” the memo reported, “would tend to thrive with increasing global average temperature.” Other “serious global problems” could also arise, such as the melting of the West Antarctic ice sheet, which “could cause a rise in the sea level on the order of 5 meters.” 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 (i.e., \$400 billion in 2018).<sup>89</sup> Exxon predicted that national policy action would not occur until around 1989, when the Department of Energy would finish a ten-year study of carbon dioxide and global warming.<sup>90</sup> 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.”<sup>91</sup>

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<sup>89</sup> Ibid.; see Gross National Product, Fed. Reserve Bank of St. Louis (updated Mar. 26, 2020), <https://fred.stlouisfed.org/series/GNPA>.

<sup>90</sup> Memorandum from Henry Shaw to T.K. Kett, Exxon Research and Engineering Company’s Technological Forecast: CO<sub>2</sub> Greenhouse Effect (Dec. 18, 1980), <https://www.documentcloud.org/documents/2805573-1980-Exxon-Memo-Summarizing-Current-Models-And.html>.

<sup>91</sup> Ibid.

75. In February 1981, Exxon's Contract Research Office prepared and distributed a "Scoping Study on CO<sub>2</sub>" to the leadership of Exxon Research and Engineering Company.<sup>92</sup> The study reviewed Exxon's current research on carbon dioxide and considered whether to expand Exxon's research on carbon dioxide or global warming further at that time. The study recommended against expanding Exxon's research activities in those areas because its 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<sub>2</sub> and global warming. However, the study recommended that Exxon centralize its activities in monitoring, analyzing, and disseminating outside research on CO<sub>2</sub> and global warming. The study stated that Exxon's James Black was actively monitoring and keeping the company apprised of outside research developments, including those on climate modeling and "CO<sub>2</sub>-induced effects." The study also noted that other companies in the fossil fuel industry were "auditing Government meetings on the subject." In discussing "options for reducing CO<sub>2</sub> build-up in the atmosphere," the study noted that although capturing CO<sub>2</sub> from flue gases (i.e., 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."<sup>93</sup>

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<sup>92</sup> Letter from G.H. Long, Exxon Research and Engineering Co., to P.J. Lucchesi et al., Atmospheric CO<sub>2</sub> Scoping Study, Climate Investigations Ctr. (Feb. 5, 1981), <https://www.industrydocuments.ucsf.edu/docs/yxfl0228>.

<sup>93</sup> Ibid.

76. Thus, by 1981, Exxon and other fossil fuel companies were actively monitoring all aspects of CO<sub>2</sub> and global warming research both nationally and internationally, and Exxon had recognized that a shift to renewable energy sources would be necessary to avoid a large CO<sub>2</sub> build-up in the atmosphere and resultant global warming.

77. 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<sub>2</sub> 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.”<sup>94</sup> Cohen had expressed concern that the memorandum understated the potential effects of unabated CO<sub>2</sub> emissions from Defendants’ fossil fuel products, saying, “it is distinctly possible that [Exxon Planning Division’s] . . . scenario will produce effects which will indeed be catastrophic (at least for a substantial fraction of the world’s population).”<sup>95</sup>

78. 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, stating in relevant part:

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<sup>94</sup> Memorandum from R.W. Cohen to W. Glass, ClimateFiles (Aug. 18, 1981), <http://www.climatefiles.com/exxonmobil/1981-exxon-memo-on-possible-emission-consequences-of-fossil-fuel-consumption>.

<sup>95</sup> Ibid.

- “Atmospheric CO<sub>2</sub> will double in 100 years if fossil fuels grow at 1.4%/a.
- 3°C global average temperature rise and 10°C at poles if CO<sub>2</sub> doubles.
  - Major shifts in rainfall/agriculture
  - Polar ice may melt”<sup>96</sup>

79. In 1982, another report prepared for API by scientists at the Lamont-Doherty Geological Observatory at Columbia University recognized that atmospheric CO<sub>2</sub> concentration had risen significantly compared to the beginning of the industrial revolution—from about 290 ppm to about 340 ppm in 1981. The report also acknowledged that despite differences in climate modelers’ predictions, there was scientific consensus that “a doubling of atmospheric CO<sub>2</sub> from . . . pre-industrial revolution value would result in an average global temperature rise of (3.0 ± 1.5)°C [5.4 ± 2.7 °F].” It went further, warning that “[s]uch a warming can have serious consequences for man’s comfort and survival since patterns of aridity and rainfall can change, the height of the sea level can increase considerably and the world food supply can be affected.”<sup>97</sup> Exxon’s own modeling research confirmed this, and the company’s results were later

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<sup>96</sup> Memorandum from Henry Shaw to Dr. E.E. David, CO<sub>2</sub> Position Statement, Inside Climate News (May 15, 1981) (footnote omitted), <https://insideclimatenews.org/documents/exxon-position-co2-1981>.

<sup>97</sup> American Petroleum Institute, Climate Models and CO<sub>2</sub> Warming: A Selective Review and Summary (Columbia Univ., Mar. 1982), <https://assets.documentcloud.org/documents/2805626/1982-API-Climate-Models-and-CO2-Warming-a.pdf>.

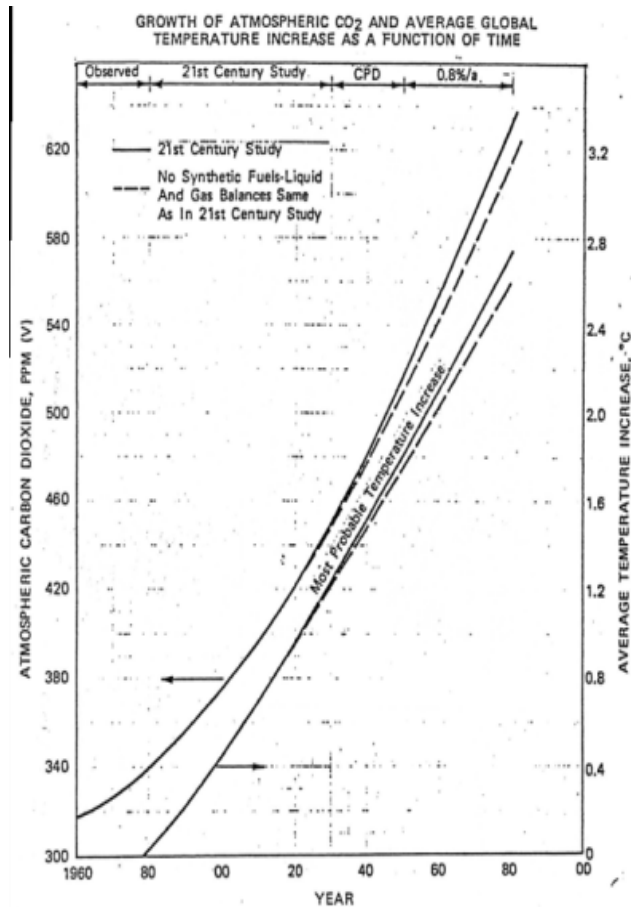
published in at least three peer-reviewed scientific papers.<sup>98</sup>

80. 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."<sup>99</sup> The primer was "restricted to Exxon personnel and not to be distributed externally." The primer compiled science on climate change, confirmed fossil fuel combustion as a primary anthropogenic contributor to global warming, and estimated a CO<sub>2</sub> doubling (i.e., 580 ppm) by 2070 with a "Most Probable Temperature Increase" of more than 2°C over the 1979 level, as shown in the Figure below.

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<sup>98</sup> See Memorandum from Roger W. Cohen, Exxon Research and Engineering Co., to A.M. Natkin, Exxon Corp. Office of Science and Technology, ClimateFiles (Sept. 2, 1982), <http://www.climatefiles.com/exxonmobil/1982-exxon-memo-summarizing-climate-modeling-and-co2-greenhouse-effect-research> (discussing research articles and summarizing the findings of research in climate modeling).

<sup>99</sup> Memorandum from M.B. Glaser, CO<sub>2</sub> "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>.



**Figure 7: Exxon's Internal Prediction of Future CO<sub>2</sub> Increase and Global Warming from 1982<sup>100</sup>**

The report also warned of “uneven global distribution of increased rainfall and increased evaporation,” explaining that “disturbances in the existing global

<sup>100</sup> *Ibid.* The company predicted a doubling of atmospheric carbon dioxide concentrations above preindustrial levels by around 2070 (left curve), with a temperature increase of more than 2°C over the 1979 level (right curve). The same document indicated that Exxon estimated that by 1979 a global warming effect of approximately 0.25°C may already have occurred.

water distribution balance would have dramatic impact on soil moisture, and in turn, on agriculture,” and that the American Midwest would dry out. In addition to effects on global agriculture, the report stated, “there are some potentially catastrophic effects that must be considered.” Melting of the Antarctic ice sheet could result in global sea-level rise of five meters, which would “cause flooding on much of the U.S. East Coast, including the state of Florida and Washington, D.C.” Weeds and pests would “tend to thrive with increasing global temperature.” The primer warned of “positive feedback mechanisms” in polar regions, which could accelerate global warming, such as deposits of peat “containing large reservoirs of organic carbon” becoming “exposed to oxidation” and releasing their carbon into the atmosphere. “Similarly,” the primer warned, “thawing might also release large quantities of carbon currently sequestered as methane hydrates” on the sea floor. “All biological systems would be affected,” and “the most severe economic effects could be on agriculture.”

81. 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[.]” The report 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” (i.e., \$400 billion in 2018).<sup>101</sup> To avoid such impacts, the report discussed an analysis from the Massachusetts Institute of Technology and

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<sup>101</sup> See Gross National Product, Fed. Reserve Bank of St. Louis (updated Mar. 26, 2020), <https://fred.stlouisfed.org/series/GNPA>.



Oak Ridge National Laboratory, 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.”<sup>102</sup> The primer also noted that other greenhouse gases related to fossil fuel production, such as methane, would contribute significantly to global warming, and that concerns over CO<sub>2</sub> would be reduced if fossil fuel use were decreased due to “high price, scarcity, [or] unavailability.” “Mitigation of the ‘greenhouse effect’ would require major reductions in fossil fuel combustion,” the primer stated. The primer was widely distributed to Exxon leadership.

82. 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.<sup>103</sup> Cohen reported:

[O]ver the past several years a clear scientific consensus has emerged regarding the expected climatic effects of increased atmospheric CO<sub>2</sub>. The consensus is that a

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<sup>102</sup> Memorandum from M.B. Glaser, CO<sub>2</sub> “Greenhouse” Effect, Exxon Research and Engineering Company (Nov. 12, 1982), <https://insideclimatenews.org/sites/default/files/documents/1982%20Exxon%20Primer%20on%20CO2%20Greenhouse%20Effect.pdf>.

<sup>103</sup> Memorandum from Roger W. Cohen, Exxon Research and Engineering Co., to A.M. Natkin, Exxon Corp. Office of Science and Technology, ClimateFiles (Sept. 2, 1982), <http://www.climatefiles.com/exxonmobil/1982-exxon-memo-summarizing-climate-modeling-and-co2-greenhouse-effect-research>.

doubling of atmospheric CO<sub>2</sub> from its pre-industrial revolution value would result in an average global temperature rise of  $(3.0 \pm 1.5)$  °C. . . . 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<sub>2</sub> depends on future world consumption of fossil fuels.

Cohen described Exxon's own climate modeling experiments, reporting that they produced "a global average temperature increase that falls well within the range of the scientific consensus," were "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<sub>2</sub> on climate." Cohen noted that the results would be presented to the scientific community by Exxon's collaborator Martin Hoffert at a Department of Energy meeting, as well as by Exxon's Brian Flannery at the Exxon-supported Ewing Symposium, later that year.

83. 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<sub>2</sub> 'Greenhouse Effect.'" <sup>104</sup> His remarks included the following statement: "Few people doubt that the world has entered an energy transition away from dependence upon fossil fuels and toward some mix of renewable resources that will not pose problems of CO<sub>2</sub> accumulation." He went on, discussing the human opportunity to address anthropogenic climate change before the point of no return:

It is ironic that the biggest uncertainties about the CO<sub>2</sub> buildup are not in predicting what the climate will do, but in predicting what people will do. . . . It appears we still have time to generate the wealth and knowledge we will need to invent the transition to a stable energy system.

84. Throughout the early 1980s, at Exxon's direction, Exxon climate scientist Henry Shaw forecasted emissions of CO<sub>2</sub> 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<sub>2</sub> concentrations would double in 2090 per the Exxon model, with an attendant 2.3–5.6°F average global temperature increase. Shaw compared his model results to those of the EPA, the National Academy of

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<sup>104</sup> 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>.

Sciences, and the Massachusetts Institute of Technology, indicating that the Exxon model predicted a longer delay than any of the other models, although its temperature increase prediction was in the mid-range of the four projections.<sup>105</sup>

85. During the 1980s, many Defendants formed their own research units focused on climate modeling. API, including the API CO<sub>2</sub> Task Force, provided a forum for Fossil Fuel Defendants to share their research efforts and corroborate their findings related to anthropogenic greenhouse gas emissions.<sup>106</sup>

86. During this time, Defendants' statements expressed an understanding of their obligation to consider and mitigate the externalities of unabated promotion, marketing, and sale 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. . . .

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<sup>105</sup> 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-senior-executives-engage-and-warming-forecast>.

<sup>106</sup> Neela Banerjee, Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too, Inside Climate News (Dec. 22, 2015), <https://insideclimatenews.org/news/22122015/exxon-mobil-oil-industry-peers-knew-about-climate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco/>.

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.<sup>107</sup>

87. Also 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

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<sup>107</sup> 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>.

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<sub>2</sub> buildup and warned that warming would “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).”<sup>108</sup>

88. Similar to early warnings by Exxon scientists, the 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.”

89. In 1989, Esso Resources Canada (ExxonMobil) 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

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<sup>108</sup> Shell Internationale Petroleum, Greenhouse Effect Working Group, The Greenhouse Effect (May 1988), <https://www.documentcloud.org/documents/4411090-Document3.html#document/p9/a411239>.

crossing Canada's Northwest Territory.<sup>109</sup> 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."<sup>110</sup> 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.<sup>111</sup> 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."

90. Ken Croasdale, a senior ice researcher for Exxon's subsidiary Imperial Oil, stated to an audience of engineers in 1991 that greenhouse gases are rising "due to the burning of fossil fuels. Nobody disputes this fact."<sup>112</sup>

91. Also in 1991, Shell produced a film called "Climate of Concern." The film advises that while "no two [climate change projection] scenarios fully agree,

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<sup>109</sup> 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).

<sup>110</sup> Id. at 369, 376.

<sup>111</sup> Id. at 360, 377–78.

<sup>112</sup> Ronald C. Kramer, Carbon Criminals, Climate Crimes 66 (1st ed. 2020).

... [they] have each prompted the same serious warning. A warning endorsed by a uniquely broad consensus of scientists in their report to the UN at the end of 1990.” The warning referred to was of an increasing frequency of abnormal weather, and of sea-level rise of about one meter over the coming century. Shell specifically described the impacts of anthropogenic sea-level rise on tropical islands, “barely afloat even now, . . . [f]irst made uninhabitable and then obliterated beneath the waves. Wetland habitats destroyed by intruding salt. Coastal lowlands suffering pollution of precious groundwater.” It warned of “greenhouse refugees,” people who abandoned homelands inundated by the sea, or displaced because of catastrophic changes to the environment. The video concludes with a stark admonition: “Global warming is not yet certain, but many think that the wait for final proof would be irresponsible. Action now is seen as the only safe insurance.”<sup>113</sup>

92. Also in 1991, BP released a short film called “The Earth – What Makes Weather?” In it, a narrator states: “Our . . . dependence on carbon-based fuels is now a cause for concern. When coal, oil or gas are burned, they release carbon dioxide and other reactive gases.” The narrator then went on to explain:

As the earth gives off heat, carbon dioxide, together with water vapor, absorbs and radiates it back, acting like a blanket. . . . If world population growth is matched by energy

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<sup>113</sup> Jelmer Mommers, Shell Made a Film About Climate Change in 1991 (Then Neglected To Heed Its Own Warning), de Correspondent (Feb. 27, 2017), <https://thecorrespondent.com/6285/shell-made-a-film-about-climate-change-in-1991-then-neglected-to-heed-its-own-warning>.



consumption, even more carbon dioxide will be released, making this greenhouse effect even stronger. An overall increase in temperature of even a few degrees could disrupt our climate with devastating consequences. If the oceans got warmer and the ice sheets began to melt, sea levels would rise, encroaching on coastal lowlands. From warmer seas, more water would evaporate, making storms and the havoc they cause more frequent. . . . Catastrophic floods could become commonplace, and low-lying countries like Bangladesh would be defenseless against them. Too much water or too little. Away from the coasts we could see a return to the conditions which devastated America's Midwest in the 1930s. Global warming could repeat on a more disastrous scale the dustbowl phenomenon which virtually destroyed farming on the Great Plains. . . . The threat of such climatic change is now one of our most urgent concerns.<sup>114</sup>

The film was not widely distributed.

93. The fossil fuel industry was at the forefront of carbon dioxide research for much of the latter half of the twentieth century. It developed cutting edge and innovative technology and worked with many of the field's top researchers to produce exceptionally sophisticated studies and models. For instance, in the mid-1990s, Shell began using scenarios to plan how

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<sup>114</sup> Vatan Hüzeir, [BP Knew the Truth About Climate Change 30 Years Ago, Follow the Money](https://www.ftm.nl/artikelen/bp-video-climate-change-1990-engels) (May 26, 2020), <https://www.ftm.nl/artikelen/bp-video-climate-change-1990-engels>; see also BP Video Library, [This Earth – What Makes Weather?](https://www.bpvideolibrary.com/record/463) (1991), <https://www.bpvideolibrary.com/record/463>.

the company could respond to various global forces in the future. In one 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.<sup>115</sup>

94. Fossil fuel companies did not just consider climate change impacts in scenarios. In the mid-1990s, ExxonMobil, Shell, and Imperial Oil (ExxonMobil) jointly undertook the Sable Offshore Energy Project in Nova Scotia. The project’s own

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<sup>115</sup> Royal Dutch/Shell Group, Group Scenarios 1998–2020 115, 122 (1998), <http://www.documentcloud.org/documents/4430277-27-1-Compiled.html>.

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 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).”<sup>116</sup>

95. Climate change research conducted by Defendants and their industry associations frequently acknowledged uncertainties in their climate modeling. Those uncertainties, however, were merely with respect to the magnitude and timing of climate impacts resulting from fossil fuel consumption, not that 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.

96. Despite the overwhelming information about the threats to people and the planet posed by continued unabated use of their fossil fuel products, Fossil Fuel Defendants failed to act as they reasonably should have to mitigate or avoid those dire adverse impacts. Fossil Fuel Defendants instead adopted the position, as described below, that they had a license to continue the unfettered pursuit of profits from those products. This position was an abdication of Fossil Fuel Defendants’ responsibility to consumers and the public, including the State, to act on their unique knowledge of the reasonably foreseeable hazards of

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<sup>116</sup> ExxonMobil, Sable Project Development Plan, vol. 3, 4-77, <http://soep.com/about-the-project/development-plan-application>.

unabated production and consumption of their fossil fuel products.

**C. Defendants Did Not Disclose Known Harms Associated with the Extraction, Promotion, and Consumption of Their Fossil Fuel Products, and Instead Affirmatively Acted to Obscure Those Harms and Engaged in a Campaign to Deceptively Protect and Expand the Use of Their Fossil Fuel Products.**

97. By 1988, Defendants had amassed a compelling body of knowledge about the role of anthropogenic greenhouse gases, specifically those emitted from the normal use of fossil fuel products, in causing global warming and its cascading impacts, including disruptions to the hydrologic cycle, extreme precipitation, drought, heat waves, and associated consequences for human communities and the environment. On notice that their products were causing global climate change and dire effects on the planet, Fossil Fuel Defendants and API faced the decision of whether to take steps to limit the damages fossil fuel products were causing and would continue to cause Earth's inhabitants, including the people of New Jersey.

98. Before or thereafter, Defendants could and reasonably should have taken any number of steps to mitigate the damages caused by fossil fuel products. Their own comments reveal an awareness of what steps should have been taken. Defendants should have warned civil society and New Jersey consumers of the dangers known to Defendants of the unabated consumption of fossil fuel products, and they could and should have taken reasonable steps to limit the potential greenhouse gas emissions emitted by

consumption of their products. Simply put, Defendants should have issued warnings commensurate with their own understanding of the risks posed by expected and intended uses of their products.

99. Several key events during the period between 1988 and 1992 appear to have prompted Defendants to change their tactics from general research and internal discussion on climate change to a public campaign aimed at deceiving consumers and the public, including those in New Jersey. These include:

a. In 1988, National Aeronautics and Space Administration (“NASA”) scientists confirmed that human activities were actually contributing to global warming.<sup>117</sup> 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.

b. On July 28, 1988, Senator Robert Stafford and four bipartisan co-sponsors introduced S. 2666, “The Global Environmental Protection Act,” to regulate CO<sub>2</sub> and other greenhouse gases. Four more bipartisan bills to significantly reduce CO<sub>2</sub> 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.”<sup>118</sup> Political will in the United States to reduce

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<sup>117</sup> See Peter C. Frumhoff et al., The Climate Responsibilities of Industrial Carbon Producers, 132 Climatic Change 161 (2015).

<sup>118</sup> The White House and the Greenhouse, N.Y. Times (May 9, 1989), <http://www.nytimes.com/1989/05/09/opinion/the-white-house-and-the-greenhouse.html>.

anthropogenic greenhouse gas emissions and mitigate the harms associated with Defendants' fossil fuel products was gaining momentum.

c. 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.

d. In 1990, the IPCC published its First Assessment Report on anthropogenic climate change,<sup>119</sup> 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.<sup>120</sup>

The IPCC reconfirmed those conclusions in a 1992 supplement to the First Assessment Report.<sup>121</sup>

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<sup>119</sup> See IPCC, Reports, [ipcc.ch/reports](https://www.ipcc.ch/reports).

<sup>120</sup> IPCC, Climate Change: The IPCC Scientific Assessment xi (1990), <https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments>.

<sup>121</sup> IPCC, 1992 IPCC Supplement to the First Assessment Report (1992), <https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments>.

e. The United Nations began preparing for 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 “stabiliz[ing] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”<sup>122</sup>

100. Those world events marked a shift in public discussion of climate change, and the initiation of international efforts to curb anthropogenic greenhouse emissions—developments that had stark implications for, and would have diminished the profitability of, Defendants’ fossil fuel products.

101. Rather than collaborating with the international community by acting to forestall, or at least decrease, fossil fuel products’ contributions to global warming and its impacts, including sea-level rise, disruptions to the hydrologic cycle, and associated consequences to New Jersey and other communities, Defendants embarked on a decades-long campaign designed to perpetuate and maximize continued dependence on fossil fuel products.

102. Defendants’ campaign, which focused on concealing, discrediting, and/or misrepresenting information that tended to support restricting consumption of (and thereby decreasing demand for)

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<sup>122</sup> United Nations, United Nations Framework Convention on Climate Change art. 2 (1992), <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

Defendants' fossil fuel products, and of transitioning society to a lower-carbon footprint and future, took several forms. The campaign enabled Fossil Fuel Defendants to accelerate their business practice of exploiting fossil fuel reserves and concurrently externalize the social and environmental costs of their fossil fuel products. Those activities directly contradicted Defendants' own prior recognition that the science of anthropogenic climate change was clear and that action was needed to avoid or mitigate dire consequences to the planet and communities like the State's.

103. Fossil Fuel Defendants—on their own and jointly through industry and front groups such as API, the Information Council for the Environment (“ICE”), and the Global Climate Coalition (“GCC”)—funded, conceived, planned, and carried out a sustained and widespread campaign of denial and disinformation about the existence of climate change and their products' contribution to it. The campaign 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 dissemination of misleading research to the press, government, and academia. Although Fossil Fuel Defendants were competitors in the marketplace, they combined and collaborated with each other and with API on this public campaign to misdirect and stifle public knowledge in order to increase sales and protect profits. The effort 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 consumers to continue using Fossil Fuel Defendants'



fossil fuel products irrespective of those products' damage to communities and the environment.

104. For example, 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.”<sup>123</sup> 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.”<sup>124</sup>

105. 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<sub>2</sub> is proceeding faster than the

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<sup>123</sup> 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>.

<sup>124</sup> Ibid.

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.<sup>125</sup>

106. A 1994 Shell report entitled “The Enhanced Greenhouse Effect: A Review of the Scientific Aspects” by Royal Dutch Shell environmental advisor Peter Langcake stands in stark contrast to the company's 1988 report on the same topic. Whereas before the authors recommended consideration of policy solutions early on, Langcake warned of the potentially dramatic “economic effects of ill-advised policy measures.” While the report recognized the IPCC conclusions as the mainstream view, Langcake still emphasized scientific uncertainty, noting, for example, that “the postulated link between any observed temperature rise and human activities has

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<sup>125</sup> 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>.

to be seen in relation to natural variability, which is still largely unpredictable.” The Shell position is stated clearly in the report: “Scientific uncertainty and the evolution of energy systems indicate that policies to curb greenhouse gas emissions beyond ‘no regrets’ measures could be premature, divert resources from more pressing needs and further distort markets.”<sup>126</sup>

107. In 1991, the ICE, whose members included affiliates, predecessors and/or subsidiaries of Fossil Fuel 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.”<sup>127</sup>

108. 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, asked members to contribute to the ICE campaign because “policymakers are prepared to act [on global warming]. Public opinion polls reveal that 60% of the

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<sup>126</sup> 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>.

<sup>127</sup> 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](http://www.ucsusa.org/sites/default/files/attach/2015/07/Climate-Deception-Dossier-5_ICE.pdf).

American people already believe global warming is a serious environmental problem. Our industry cannot sit on the sidelines in this debate.”<sup>128</sup>

109. 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.<sup>129</sup>



**Figure 8: Information Council for the Environment Advertisements**

110. 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

<sup>128</sup> 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).

<sup>129</sup> 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](http://www.ucsusa.org/sites/default/files/attach/2015/07/Climate-Deception-Dossier-5_ICE.pdf).

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<sub>2</sub> 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 unabated 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 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 attacking advocates for limiting the use 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.<sup>130</sup>

111. API published an extensive report in the same year warning against concern over CO<sub>2</sub> buildup and any need to curb consumption or regulate the fossil fuel industry. The introduction stated that "there is no persuasive basis for forcing Americans to dramatically change their lifestyles to use less oil." The authors discouraged the further development of certain alternative energy sources, writing that "government agencies have advocated the increased use of ethanol and the electric car, without the facts to support the assertion that either is superior to existing fuels and technologies" and that "policies that mandate replacing oil with specific alternative fuel technologies freeze progress at the current level of technology, and reduce the chance that innovation will develop better solutions." The paper also denied the human connection to climate change, by falsely stating that no "scientific evidence exists that human activities are significantly affecting sea levels, rainfall, surface temperatures or the intensity and frequency of storms." The report's message was false but clear: "Facts don't support the arguments for restraining oil use."<sup>131</sup>

112. In a speech presented at the World Petroleum Congress in Beijing in 1997 at which many of the Defendants were present, Exxon CEO Lee Raymond

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<sup>130</sup> Exxon Corp., Global Warming: Who's Right? (1996), <https://www.documentcloud.org/documents/2805542-Exxon-Global-Warming-Whos-Right.html>.

<sup>131</sup> Sally Brain Gentile et al., Reinventing Energy: Making the Right Choices, American Petroleum Institute (1996), <http://www.climatefiles.com/trade-group/american-petroleum-institute/1996-reinventing-energy>.

reiterated those views. This time, he presented a false dichotomy between stable energy markets and abatement of the marketing, promotion, and sale of fossil fuel products Defendants knew to be hazardous. He stated:

Some people who argue that we should drastically curtail our use of fossil fuels for environmental reasons . . . my belief [is] that such proposals are neither prudent nor practical. With no readily available economic alternatives on the horizon, fossil fuels will continue to supply most of the world's and this region's energy for the foreseeable future.

Governments also need to provide a stable investment climate . . . They should avoid the temptation to intervene in energy markets in ways that give advantage to one competitor over another or one fuel over another.

We also have to keep in mind that most of the greenhouse effect comes from natural sources . . . Leaping to radically cut this tiny sliver of the greenhouse pie on the premise that it will affect climate defies common sense and lacks foundation in our current understanding of the climate system.

Let's agree there's a lot we really don't know about how climate will change in the 21st century and beyond . . . It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now. It's bad public policy to impose very costly

regulations and restrictions when their need has yet to be proven.<sup>132</sup>

113. Imperial Oil (ExxonMobil) 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.<sup>133</sup>

114. Mobil (ExxonMobil) paid for a series of "advertorials," advertisements located in the editorial section of The New York Times and meant to look like

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<sup>132</sup> Lee R. Raymond, Chairman and Chief Executive Officer, Exxon Corp., Address at the World Petroleum Congress (Oct. 13, 1997), <https://assets.documentcloud.org/documents/2840902/1997-Lee-Raymond-Speech-at-China-World-Petroleum.pdf>.

<sup>133</sup> 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>.



editorials rather than paid ads. Many of those advertorials communicated doubt about the reality and severity of human-caused climate change, even as industry scientists contemporaneously concluded that climate change was real, serious, and caused by human activity. The ads addressed various aspects of the public discussion of climate change and sought to undermine the justifications for tackling greenhouse gas emissions as unsettled science. The 1997 advertorial below<sup>134</sup> argued that economic analysis of emissions restrictions was faulty and inconclusive and therefore a justification for delaying action on climate change.

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<sup>134</sup> Mobil, When Facts Don't Square with the Theory, Throw Out the Facts, N.Y. Times A31 (Aug. 14, 1997), <https://www.documentcloud.org/documents/705550-mob-nyt-1997-aug-14-whenfactsdentsquare.html>.

like race. But when we no longer allow those choices, both civility and common sense will have been diminished. □ who was dragged from his sister's car by police officers and shot in the face a post-blank range. The cops who have the power to do something about those officers, but choose not to. □


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### When facts don't square with the theory, throw out the facts

 That seems to characterize the administration's attitude on two of its own studies which show that international efforts to curb global warming could spark a big run-up in energy prices. For months, the administration—playing its cards close to the vest—has promised to provide details of the emission reduction plan it will put on the table at the climate change meeting in Kyoto, Japan, later this year. It also promised to evaluate the economics of that policy and measure its impact. Those results are important because the proposals submitted by other countries thus far would be disruptive and costly to the U.S. economy.

Yet, when the results from its own economic models were finally generated, the administration started distancing itself from the findings and models that produced them. The administration's top economic advisor said that economic models can't provide a "definitive answer" on the impact of controlling emissions. The effort, she said, was "futile." At best, the models can only provide a "range of potential impacts."

Frankly, we're puzzled. The White House has promised to lay the economic facts before the public. Yet, the administration's top advisor said such an analysis won't be based on models and it will "preclude...detailed numbers." If you don't provide numbers and don't rely on models, what kind of rigorous economic examination can Congress and the public expect?

We're also puzzled by ambivalence over models. The administration downplays the utility of economic models to forecast cost impacts 10-15 years from now, yet its regulators accept as gospel the 50-100-year predictions of global warming that have been generated by climate models—many of which have been criticized as seriously flawed.

The second study, conducted by Argonne National Laboratory under a contract with the Energy Department, examined what would

happen if the U.S. had to commit to higher energy prices under the emission reduction plans that several nations had advanced last year. Such increases, the report concluded, would result in "significant reductions in output and employment" in six industries—aluminum, cement, chemical, paper and pulp, petroleum refining and steel.

Hit hardest, the study noted, would be the chemical industry, with estimates that up to 30 percent of U.S. chemical manufacturing capacity would move offshore to developing countries. Job losses could amount to some 200,000 in that industry, with another 100,000 in the steel sector. And despite the substantial loss of U.S. jobs and manufacturing capacity, the net emission reduction could be insignificant since developing countries will not be bound by the emission targets of a global warming treaty.

Downplaying Argonne's findings, the Energy Department noted that the study used outdated energy prices (mid-1990s), didn't reflect the gains that would come from international emissions trading and failed to factor in the benefits of accelerated developments in energy efficiency and low-carbon technologies.

What it failed to mention is just what these new technologies are and when we can expect their benefits to kick in. As for emissions trading, many economists have theorized about the role they could play in reducing emissions, but few have grappled with the practicality of implementing and policing such a scheme.

We applaud the goals the U.S. wants to achieve in these upcoming negotiations—namely, that a final agreement must be "flexible, cost-effective, realistic, achievable and ultimately global in scope." But until we see the details of the administration's policy, we are concerned that plans are being developed in the absence of rigorous economic analysis. Too much is at stake to simply ignore facts that don't square with preconceived theories.



<http://www.mobil.com>

©1997 Mobil Corporation

Figure 9: 1997 Mobil Advertorial

115. 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.”<sup>135</sup>
- “[G]reenhouse-gas emissions, which have a warming effect, are offset by another combustion product—particulates—which leads to cooling.”<sup>136</sup>
- “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.”<sup>137</sup>
- “[I]t is impossible for scientists to attribute the recent small surface temperature increases to human causes.”<sup>138</sup>

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<sup>135</sup> Mobil, Climate Change: A Prudent Approach, in N.Y. Times (Nov. 13, 1997), <https://www.documentcloud.org/documents/705548-mob-nyt-1997-11-13-climateprudentapproach.html>.

<sup>136</sup> Mobil, Less Heat, More Light on Climate Change (July 18, 1996), <https://www.documentcloud.org/documents/705544-mob-nyt-1996-jul-18-lessheatmorelight.html>.

<sup>137</sup> Mobil, Climate Change: Where We Come Out, in N.Y. Times (Nov. 20, 1997), <https://www.documentcloud.org/documents/705549-mob-nyt-1997-11-20-ccwherewecomeout.html>.

<sup>138</sup> 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>.

116. A quantitative analysis of ExxonMobil'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.<sup>139</sup> ExxonMobil's tendency to contradict its own peer-reviewed research in statements meant for lay audiences also appeared at a year-to-year scale. Based on this "statistically significant" discrepancy between internal and external communications, the authors concluded that "ExxonMobil misled the public."<sup>140</sup>

117. Fossil Fuel Defendants—individually and through API, other trade associations, and various front groups—mounted a deceptive public campaign in order to continue wrongfully promoting and marketing their fossil fuel products, despite their own knowledge and the growing national and international scientific consensus about the hazards of doing so.

118. One of the key organizations formed by Fossil Fuel 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

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<sup>139</sup> 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>.

<sup>140</sup> Ibid.

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, call for further research, and promote industry-friendly policies that would leave the fossil fuel business intact.<sup>141</sup>

119. The Global Climate Coalition (“GCC”), on behalf of Defendants and other fossil fuel companies, also funded deceptive advertising campaigns and distributed misleading material to generate public uncertainty around the climate debate, seeking to prevent U.S. adoption of the Kyoto Protocol and thereby inflate the market for fossil fuels, despite the leading role that the U.S. had played in negotiating the Protocol.<sup>142</sup> Created in 1989, the GCC’s founding members included Defendants Exxon, Shell, Phillips Petroleum Company (ConocoPhillips), and API. Defendants BP and Chevron also participated as members of the GCC. Its 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

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<sup>141</sup> Benjamin A. Franta, Big Carbon’s Strategic Response to Global Warming, 1950-2020 140 (2022), <https://purl.stanford.edu/hq437ph9153>.

<sup>142</sup> Ibid.

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.<sup>143</sup>

120. The GCC's promotion of overt climate change skepticism also contravened its internal assessment that such theories lacked scientific support. Despite an internal primer acknowledging that various "contrarian theories" (i.e., climate change skepticism) do not "offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change," the GCC excluded this section from the publicly released version of the backgrounder<sup>144</sup> and instead funded and promoted some of those same contrarian theories. Between 1989 and 1998, the GCC spent \$13 million on advertisements as part of a campaign to obfuscate the public's understanding of climate science and undermine its trust in climate scientists.<sup>145</sup>

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<sup>143</sup> 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/>.

<sup>144</sup> 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>.

<sup>145</sup> 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->

121. For example, in a 1994 report, the GCC stated that “observations have not yet confirmed evidence of global warming that can be attributed to human activities,” that “[t]he claim that serious impacts from climate change have occurred or will occur in the future simply has not been proven,” so “there is no basis for the design of effective policy action that would eliminate the potential for climate change.”<sup>146</sup> 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.”<sup>147</sup>

122. 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.”<sup>148</sup> This statement contradicted the established scientific consensus as well as Defendants’ own knowledge. Yet Defendants did nothing to correct

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State%20Actors%20in%20the%20Greenhouse%20-%20E-98-18.pdf.

<sup>146</sup> 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>.

<sup>147</sup> 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>.

<sup>148</sup> 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/>.

the public record, and instead continued to fund the GCC's anti-scientific climate skepticism.

123. 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."<sup>149</sup> The GCC also arranged to spread the accusation among legislators, reporters, editors of scientific journals, and even the op-ed page of the Wall Street Journal.<sup>150</sup> This effort "was widely perceived to be an attempt on the part of the GCC to undermine the credibility of the IPCC."<sup>151</sup>

124. In the late 1990s, Defendants shifted away from openly denying anthropogenic warming toward peddling a subtler form of climate change skepticism.

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<sup>149</sup> Franz, Science, Skeptics and Non-State Actors in the Greenhouse at 14.

<sup>150</sup> 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).

<sup>151</sup> Franz, Science, Skeptics, and Non-State Actors in the Greenhouse at 15.



Defendants became alarmed by the enormous 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.”<sup>152</sup> Defendants began to shift their communications strategy, claiming they had accepted climate science all along.<sup>153</sup> Several large fossil fuel companies, including BP and Shell, left the GCC (although all Fossil Fuel Defendants remained members of API).<sup>154</sup> At this point in time, Defendants publicly claimed to accept the reality of anthropogenic climate change while insisting that the costs of climate action were unacceptably high in light of the yet-unresolved uncertainties in climate science—especially around the severity and timeframe of future climate impacts. Reflecting this new strategy, API Executive Vice President (and GCC spokesman) William O’Keefe announced in November 1998 that “[w]e are committed to being part of the solution to the climate risk and to active participation in the debate to forge a clear, defensible policy.” “[T]he debate is not about action or inaction,” O’Keefe wrote, “but what set of actions is consistent with our state of knowledge and economic well-being.”<sup>155</sup> Rather than publicly deny the need to address climate change, Defendants’ new communications strategy sought to forestall

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<sup>152</sup> Nathaniel Rich, Losing Earth: A Recent History, London: Picador 186 (2020).

<sup>153</sup> Franta, Big Carbon’s Strategic Response to Global Warming, 1950-2020 at 170.

<sup>154</sup> Id. at 177.

<sup>155</sup> API: U.S. oil industry recognizes climate change risk, Oil & Gas Journal 28 (Nov. 2, 1998).

policy actions that might decrease consumption of fossil fuel products.

125. Despite their public about-face, 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 (“GCSCCT”) whose members included Exxon’s senior environmental lobbyist, an API public relations representative, and representatives from Chevron. There were no scientists on the “Global Climate Science Communications Team.” Steve Milloy (a key player in the tobacco industry’s front group) and his organization, The Advancement of Sound Science Coalition (“TASSC”), were founding members of the GCSCCT. 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 had 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 Fossil Fuel Defendants, also became a front group for the fossil fuel industry, 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 was funded by 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.<sup>156</sup> The GCSCT represented a continuation of Defendants' concerted actions to sow doubt and confusion about climate change in order to further Defendants' business interests.

126. Starting in 1998, the GCSCT continued Defendants' efforts to deceive the public about the dangers of fossil fuel use by launching a campaign to convince 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 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" to "begin to erect a barrier against further efforts to impose Kyoto-like measures in the future"<sup>157</sup> —a blatant attempt to disrupt international efforts to negotiate any treaty curbing greenhouse gas emissions and to ensure a

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<sup>156</sup> 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>.

<sup>157</sup> 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>.

continued and unimpeded market for their fossil fuel products.

127. 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.’”<sup>158</sup> 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 maintain consumer demand for their fossil fuel products and their large profits.

128. Soon after, API distributed a memo to its members illuminating API’s and Fossil Fuel Defendants’ concern over the potential regulation of their fossil fuel products: “Climate is at the center of the industry’s business interests. Policies limiting carbon emissions reduce petroleum product use. That is why it is API’s highest priority issue and defined as ‘strategic.’”<sup>159</sup> Further, the API memo stressed many of the strategies that Defendants collectively utilized to combat the perception of their fossil fuel products as hazardous. They included:

a. Influencing the tenor of the climate change “debate” as a means to establish that greenhouse gas

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<sup>158</sup> Ibid.

<sup>159</sup> Allegations of Political Interference with Government Climate Change Science, Hearing Before the Comm. on Oversight and Government Reform, 110th Cong. 324 (Mar. 19, 2007) <https://ia601904.us.archive.org/25/items/gov.gpo.fdsys.CHRG-110hhr37415/CHRG-110hhr37415.pdf>.

reduction policies like the Kyoto Protocol were not necessary to responsibly address climate change;

b. Maintaining strong working relationships between government regulators and communications-oriented organizations like the Global Climate Coalition, the Heartland Institute, and other groups carrying Defendants' message minimizing the hazards of the unabated use of their fossil fuel products and opposing regulation thereof;

c. Building the case for (and falsely dichotomizing) Defendants' positive contributions to a "long-term approach" (ostensibly for regulation of their products) as a reason for society to reject short term fossil fuel emissions regulations, and engaging in climate change science uncertainty research; and

d. Presenting Defendants' positions on climate change in domestic and international forums, including by preparing rebuttals to IPCC reports.

129. In furtherance of the strategies described in these memoranda, Defendants made misleading statements 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 New Jersey, including national publications such as the New York Times, Wall Street Journal, and Washington Post.

130. Phillip 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 climate change. Among the groups to which API provided funding were the Heartland Institute,

Competitive Enterprise Institute, and the American Council on Capital Formation, each of which issued publications challenging the scientific consensus that fossil fuels were causing climate change and opposing restrictions on Fossil Fuel Defendants' extraction, production, and sale of fossil fuels.<sup>160</sup>

131. Another key strategy in Defendants' efforts to discredit scientific consensus on climate change and the IPCC was to bankroll scientists who, although accredited, held fringe opinions that became even more questionable given the sources of their research funding. Those scientists obtained part or all of their research budget from Fossil Fuel Defendants directly or through Fossil Fuel Defendant-funded organizations like API,<sup>161</sup> but they frequently failed to disclose their fossil fuel industry underwriters.<sup>162</sup> At least one such scientist, 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.<sup>163</sup> Defendants intended for the research

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<sup>160</sup> Ibid.

<sup>161</sup> 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>.

<sup>162</sup> 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>.

<sup>163</sup> 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->

of scientists they funded to be distributed to and relied on by consumers when buying Defendants' products, including by consumers in New Jersey.

132. Creating a false perception of disagreement in the scientific community (despite the consensus that its own scientists, experts, and managers had previously acknowledged) has evidently disrupted vital channels of communication between scientists and the public. A 2007 Yale University-Gallup poll found that while 71% of Americans personally believed global warming was happening, only 48% believed that there was a consensus among the scientific community, and 40% believed there was a lot of disagreement among scientists over whether global warming was occurring.<sup>164</sup> 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.”<sup>165</sup> Further, it found that 33% of Americans believe that climate change is mostly due to natural causes, compared to the 97% of

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Climate-Deception-Dossiers.pdf [<https://perma.cc/JL2V-XYGL>]  
& [https://s3.amazonaws.com/ucs-documents/global-warming/Climate-Deception-Dossier-1\\_Willie-Soon.pdf](https://s3.amazonaws.com/ucs-documents/global-warming/Climate-Deception-Dossier-1_Willie-Soon.pdf).

<sup>164</sup> 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>.

<sup>165</sup> 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>.

peer-reviewed papers that acknowledge that global warming is real and at least partly human-caused.<sup>166</sup> 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.

133. 2007 was the same year the IPCC published its Fourth Assessment Report, in which it concluded that “there is very high confidence that the net effect of human activities since 1750 has been one of warming.”<sup>167</sup> The IPCC defined “very high confidence” as at least a 9 in 10 chance.<sup>168</sup>

134. Defendants, individually and through their trade association memberships, worked directly, and often in a deliberately obscured manner, to conceal and misrepresent fossil fuel products’ known dangers from consumers, the public, and the State.

135. Defendants have 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. From 1998 to 2014 ExxonMobil spent almost \$31

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<sup>166</sup> Id. at 7.

<sup>167</sup> IPCC, Summary for Policymakers: A Report of Working Group I to the Fourth Assessment Report 3 (2007), <https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-spm-1.pdf>.

<sup>168</sup> Ibid.



million funding numerous organizations misrepresenting the scientific consensus that fossil fuel products were causing climate change, sea-level rise, and injuries to New Jersey, among other communities.<sup>169</sup> 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.

136. Exxon acknowledged its own previous success in sowing uncertainty and slowing mitigation through funding of climate denial groups. In its 2007 Corporate Citizenship Report, Exxon declared: “In 2008, we will discontinue contributions to several public policy research groups whose position on climate change could divert attention from the important discussion on how the world will secure the energy required for economic growth in an environmentally responsible manner.”<sup>170</sup> Despite this pronouncement, Exxon remained financially associated with several such groups after the report’s publication.

137. In September 2015, journalists at Inside Climate News reported that Exxon Mobil had sophisticated knowledge of the causes and consequences of climate change and the role its products played in causing climate change as far back

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<sup>169</sup> ExxonSecrets.org, ExxonMobil Climate Denial Funding 1998–2014, <http://exxonsecrets.org/html/index.php> (last visited Oct. 14, 2022).

<sup>170</sup> ExxonMobil, 2007 Corporate Citizenship Report 41 (Dec. 31, 2007), <http://www.documentcloud.org/documents/2799777-ExxonMobil-2007-Corporate-Citizenship-Report.html>.

as the 1970s.<sup>171</sup> These journalists uncovered ExxonMobil's superior knowledge through an exhaustive investigation of thousands of archived documents and through interviews with former ExxonMobil employees.

138. 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 ExxonMobil 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.<sup>172</sup> These journalists uncovered ExxonMobil's superior knowledge through an exhaustive investigation of archived documents, through interviews with former ExxonMobil employees, and through a review of scientific journals.

139. In November 2017, the Center for International Environmental Law issued a report revealing that Defendants, including API, had

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<sup>171</sup> Neela Banerjee et al., Exxon: The Road Not Taken, InsideClimate News (Sept. 16, 2015), <https://insideclimatenews.org/content/Exxon-The-Road-Not-Taken>.

<sup>172</sup> 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>; 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>.

superior knowledge of the causes and consequences of climate change and the role fossil fuel products played in causing climate change since the 1970s.<sup>173</sup>

140. Defendants could have contributed to the global effort to mitigate the impacts of greenhouse gas emissions by, for example, delineating practical technical strategies, policy goals, and regulatory structures that would have allowed them to continue their business ventures while reducing greenhouse gas emissions and supporting a transition to a lower carbon future. Instead, Defendants undertook a momentous effort to deceive consumers and the public about the existential hazards of burning fossil fuels—all with the purpose and effect of perpetuating and hyperinflating fossil fuel consumption and delaying the advent of alternative energy sources not based on fossil fuels.

141. As a result of Defendants' tortious, false, and misleading conduct, consumers of Defendants' fossil fuel products, the public, and policymakers, in New Jersey as 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, drought, 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 New

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<sup>173</sup> Carroll Muffett & Steven Feit, Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis, Ctr. for Int'l Env'tl. Law 10 (2017), <https://www.ciel.org/reports/smoke-and-fumes>.

Jersey. Consumers, the public, and policymakers in New Jersey and elsewhere have also been 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, drought, and associated consequences.

142. 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, thereby ensuring that the damage caused by climate change will be substantially more severe than if Defendants had acted forthrightly, commensurate with their internal knowledge of climate risks.

**D. In Contrast to Their Public Statements, Defendants' Internal Actions Demonstrate Their Awareness of and Intent to Profit from the Unabated Use of Fossil Fuel Products.**

143. In contrast to their public-facing efforts challenging the validity of the scientific consensus about anthropogenic climate change, Fossil Fuel 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-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.<sup>174</sup>

144. For example, in 1973, Exxon obtained a patent for a cargo ship capable of breaking through sea ice<sup>175</sup> and for an oil tanker<sup>176</sup> designed specifically for use in previously unreachable areas of the Arctic.

145. In 1974, Chevron obtained a patent for a mobile arctic drilling platform designed to withstand significant interference from lateral ice masses,<sup>177</sup> allowing for drilling in areas with increased ice floe movement due to elevated temperature.

146. That same year, Texaco (Chevron) worked toward obtaining a patent for a method and apparatus

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<sup>174</sup> Lieberman & Rust.

<sup>175</sup> ExxonMobil Research Engineering Co., Patent US3727571A: Icebreaking cargo vessel (granted Apr. 17, 1973), <https://www.google.com/patents/US3727571>.

<sup>176</sup> ExxonMobil Research Engineering Co., Patent US3745960A: Tanker vessel (granted July 17, 1973), <https://www.google.com/patents/US3745960>.

<sup>177</sup> Chevron Research & Technology Co., Patent US3831385A: Arctic offshore platform (granted Aug. 27, 1974), <https://www.google.com/patents/US3831385>.

for reducing ice forces on a marine structure prone to being frozen in ice through natural weather conditions,<sup>178</sup> allowing for drilling in previously unreachable Arctic areas that would become seasonally accessible.

147. Shell obtained a patent similar to Texaco's (Chevron) in 1984.<sup>179</sup>

148. 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.<sup>180</sup>

a. The Troll 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.

b. 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

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<sup>178</sup> Texaco Inc., Patent US3793840A: Mobile, arctic drilling and production platform (granted Feb. 26, 1974), <https://www.google.com/patents/US3793840>.

<sup>179</sup> Shell Oil Co., Patent US4427320A: Arctic offshore platform (granted Jan. 24, 1984), <https://www.google.com/patents/US4427320>.

<sup>180</sup> 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>.

A platform was projected to operate for approximately 70 years.

c. 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.

d. 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.<sup>181</sup>

e. 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.

**E. Defendants' Actions Have Exacerbated the Costs of Adapting to and Mitigating the Adverse Impacts of the Climate Crisis.**

149. As greenhouse gas pollution accumulates in the atmosphere, some of which does not dissipate for potentially thousands of years (namely CO<sub>2</sub>), 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 resulting therefrom.

150. Delayed introduction of alternative energy sources and related efforts to curb anthropogenic greenhouse gas emissions have therefore increased

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<sup>181</sup> Id.; Lieberman & Rust.

environmental harms and increased the magnitude and cost to address harms, including to New Jersey, that have already occurred or are locked in by previous emissions.

151. Therefore, Defendants' campaign to obscure the science of climate change to protect and expand the use of fossil fuels greatly increased and continues to increase the injuries suffered by New Jersey and its residents.

152. The costs of inaction on anthropogenic climate change and its adverse environmental effects were not lost on Defendants. In a 1997 speech by John Browne, Group Executive for BP America, at Stanford University, Browne described Defendants' and the entire fossil fuel industry's responsibility and opportunities to reduce use of fossil fuel products, reduce global CO<sub>2</sub> emissions, and mitigate the harms associated with the use and consumption of such products:

A new age demands a fresh perspective of the nature of society and responsibility.

We need to go beyond analysis and to take action. It is a moment for change and for a rethinking of corporate responsibility. . . .

[T]here 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.

The prediction of the IPCC is that over the next century temperatures might rise by a further 1 to 3.5 degrees centigrade [1.8°—6.3°



F], and that sea levels might rise by between 15 and 95 centimetres [5.9 and 37.4 inches]. Some of that impact is probably unavoidable, because it results from current emissions. . . .

[I]t would be unwise and potentially dangerous to ignore the mounting concern.

The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven . . . but when the possibility cannot be discounted and is taken seriously by the society of which we are part. . . .

We [the fossil fuel industry] have a responsibility to act, and I hope that through our actions we can contribute to the much wider process which is desirable and necessary.

BP accepts that responsibility and we're therefore taking some specific steps.

To control our own emissions.

To fund continuing scientific research.

To take initiatives for joint implementation.

To develop alternative fuels for the long term.

And to contribute to the public policy debate in search of the wider global answers to the problem.<sup>182</sup>

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<sup>182</sup> John Browne, BP Climate Change Speech to Stanford, ClimateFiles (May 19, 1997), <http://www.climatefiles.com/bp/bp-climate-change-speech-to-stanford>.

153. Despite Defendants' knowledge of the foreseeable, measurable, and significant harms associated with the unrestrained consumption and use of their fossil fuel products, in New Jersey as elsewhere, 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 New Jersey consumers, along with consumers elsewhere. 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:

a. In 1961, Phillips Petroleum Company filed a patent application for a method to purify gas, among other things, as "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."<sup>183</sup>

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<sup>183</sup> Phillips Petroleum Co., Patent US3228874A: Method for recovering a purified component from a gas (filed Aug. 22, 1961), <https://patents.google.com/patent/US3228874>.

b. In 1963, Esso (Exxon Mobil) obtained multiple patents on technologies for fuel cells,<sup>184</sup> including on the design of a fuel cell and necessary electrodes,<sup>185</sup> and on a process for increasing the oxidation of a fuel, specifically methanol, to produce electricity in a fuel cell.<sup>186</sup>

c. In 1970, Esso (Exxon Mobil) obtained a patent for a “low-polluting engine and drive system” that used an interburner and air compressor to reduce pollutant emissions, including CO<sub>2</sub> emissions, from gasoline combustion engines (the system also increased the efficiency of the fossil fuel products used in such engines, thereby lowering the amount of fossil fuel product necessary to operate engines equipped with this technology).<sup>187</sup>

d. 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<sub>2</sub> in the atmosphere. Technology exists to remove CO<sub>2</sub> from stack gases but

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<sup>184</sup> 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> (last visited Oct. 16, 2022).

<sup>185</sup> ExxonMobil Research Engineering Co., Patent US3116169A: Fuel cell and fuel cell electrodes (granted Dec. 31, 1963), <https://www.google.com/patents/US3116169>.

<sup>186</sup> ExxonMobil Research Engineering Co., Patent US3113049A: Direct production of electrical energy from liquid fuels (granted Dec. 3, 1963), <https://www.google.com/patents/US3113049>.

<sup>187</sup> ExxonMobil Research Engineering Co., Patent US3513929A: Low-polluting engine and drive system (granted May 26, 1970), <https://www.google.com/patents/US3513929>.

removal of only 50% of the CO<sub>2</sub> would double the cost of power generation.”<sup>188</sup>

e. A 1987 company briefing produced by Shell 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.”<sup>189</sup>

f. A 1989 article in a publication from Exxon Corporate Research for company use only stated: “CO<sub>2</sub> emissions contribute about half the forcing leading to a potential enhancement of the Greenhouse Effect. Since energy generation from fossil fuels dominates modern CO<sub>2</sub> emissions, strategies to limit

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<sup>188</sup> 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>.

<sup>189</sup> Synthetic Fuels and Renewable Energy, Shell Service Briefing, no. 2, 1987, <https://assets.documentcloud.org/documents/4411089/Document2.pdf>.

CO<sub>2</sub> 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 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.”<sup>190</sup>

154. Despite these repeated recognitions of opportunities to reduce emissions and mitigate corresponding harms from climate change, Defendants continued to sow doubt and disinformation to the public and consumers regarding the causes and effects of climate change and ways to reduce emissions. Examples of those efforts include, but are not limited to, the following:

a. In 1996, more than 30 years after API’s president warned that “time is running out” for the world to address the “catastrophic consequences of pollution,” API published the book Reinventing Energy: Making the Right Choices to refute this very conclusion. Contradicting the scientific consensus known by its members for decades, the book claims: “Currently, no conclusive—or even strongly suggestive—scientific evidence exists that human activities are significantly affecting sea levels, rainfall, surface temperatures, or the intensity and frequency of storms.”<sup>191</sup>

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<sup>190</sup> 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>.

<sup>191</sup> American Petroleum Institute, Reinventing Energy: Making the Right Choices 79 (1996), <http://www.climatefiles.com/trade-group/american-petroleum-institute/1996-reinventing-energy>.

b. The book downplayed nearly every aspect of established climate science. API baldly claimed that scientists do not understand how carbon flows in and out of the atmosphere and whether fossil fuels are even responsible for increasing concentrations of atmospheric CO<sub>2</sub>. It then explained that even if some warming does occur, such warming “would present few if any problems” because, for example, farmers could be “smart enough to change their crop plans” and low-lying areas would “likely adapt” to sea-level rise.<sup>192</sup>

c. In the publication, API also contended that “the state of the environment does not justify the call for the radical lifestyle changes Americans would have to make to substantially reduce the use of oil and other fossil fuels” and that the “benefits of alternatives aren’t worth the cost of forcing their use.” “Some jobs definitely will be created in making, distributing and selling alternatives. But they will come at the expense of lost jobs in the traditional automobile and petroleum industries,” the authors continued. “Alternatives will likely be more expensive than conventional fuel/vehicle technology. Consumers, obviously, will bear these increased expenses, which means they will have less to spend on other products and cost jobs [sic].”<sup>193</sup>

d. API published this book in service of one goal—ensuring its members could continue to produce and sell fossil fuels in massive quantities that it knew would devastate the planet. The book’s final section reveals this purpose. API concluded: “[S]evere reduction in greenhouse gas emissions by the United

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<sup>192</sup> Id. at 86–87.

<sup>193</sup> Id. at 59, 68, 69.

States or even all developed countries would impose large costs on countries but yield little in the way of benefits—even under drastic climate change scenarios.”<sup>194</sup>

155. Fossil Fuel Defendants could have made major inroads to mitigate the State’s injuries by developing and employing technologies to capture and sequester greenhouse gas emissions associated with conventional use of their fossil fuel products. Fossil Fuel Defendants had knowledge dating at least back to the 1960s and, indeed, internally researched and perfected many such technologies. For instance:

a. Phillips Petroleum Company (ConocoPhillips) obtained a patent in 1966 for a “Method for recovering a purified component from a gas” outlining a process to remove carbon from natural gas and gasoline streams;<sup>195</sup> and

b. In 1973, Shell was granted a patent for a process to remove acidic gases, including CO<sub>2</sub>, from gaseous mixtures.<sup>196</sup>

156. Even if Fossil Fuel Defendants did not adopt technological or energy source alternatives that would have reduced use of fossil fuel products, reduced global greenhouse gas pollution, and/or mitigated the harms associated with the use and consumption of such products, Fossil Fuel Defendants could have taken

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<sup>194</sup> Id. at 89.

<sup>195</sup> Phillips Petroleum Co., Patent US3228874A: Method for recovering a purified component from a gas (granted Jan. 11, 1966), <https://patents.google.com/patent/US3228874>.

<sup>196</sup> Shell Oil Co., Patent US3760564A: Process for the removal of acidic gases from a gas mixture, (granted Sept. 25, 1973), <https://www.google.com/patents/US3760564A>.

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

a. Acknowledging and sharing the validity of scientific evidence on anthropogenic climate change and the damages it will cause people, communities (including the State), 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.

b. Forthrightly communicating with consumers, the public, regulators, stockholders, banks, insurers, and the State 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;

c. Refraining from affirmative efforts, whether directly, through coalitions, or through front groups, to distort public debate, and to cause many consumers and business and political leaders to think the relevant science was far less certain than it actually was;



d. 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;

e. Supporting and encouraging policies to avoid dangerous climate change, and demonstrating corporate leadership in addressing the challenges of transitioning to a low-carbon economy;

f. Prioritizing development of alternative sources of energy through sustained investment and research on renewable energy sources to replace dependence on Defendants' hazardous fossil fuel products; and

g. Adopting their shareholders' concerns about Fossil Fuel Defendants' need to protect their businesses from the inevitable consequences of profiting from their fossil fuel products. Over the period of 1990–2015, Fossil Fuel Defendants' shareholders proposed hundreds of resolutions to change Fossil Fuel Defendants' policies and business practices regarding climate change. Those included increasing renewable energy investment, cutting emissions, and performing carbon risk assessments, among others.

157. Despite their knowledge of the foreseeable harms associated with the consumption of Defendants' fossil fuel products, and despite the existence and fossil fuel industry knowledge of opportunities that would have reduced the foreseeable dangers associated with those products, Defendants wrongfully and falsely promoted and concealed the hazards of using their fossil fuel products.

**F. Defendants Continue to Mislead About the Impact of Their Fossil Fuel Products on Climate Change Through Greenwashing Campaigns and Other Misleading Advertisements in New Jersey and Elsewhere.**

158. Defendants' coordinated campaign of disinformation and deception continues today, even as the scientific consensus about the causes and consequences of climate change has strengthened. Fossil Fuel Defendants have falsely claimed through advertising campaigns in New Jersey and/or campaigns intended to reach New Jersey that their businesses are substantially invested in lower-carbon technologies and renewable energy sources. In truth, each Fossil Fuel Defendant has invested minimally in renewable energy while continuing to expand its fossil fuel production. Reasonable consumers exposed to Fossil Fuel Defendants' advertisements would understand Fossil Fuel Defendants to be far more substantially invested in alternative energy sources than in fact is the case. Each has also claimed that certain of their fossil fuel products are "green" or "clean," and that using these products will sufficiently reduce or mitigate the dangers of climate change. None of Fossil Fuel Defendants' fossil fuel products are "green" or "clean" because they all ultimately continue to warm the planet.

159. After having engaged in a long campaign to deceive consumers and the public about the weight of climate science, Defendants are now engaging in "greenwashing" by employing false and misleading advertising campaigns promoting themselves as sustainable energy companies committed to finding solutions to climate change, including by investing in

alternative energy. These campaigns were intended to and did reach and influence the public and consumers, including in New Jersey.

160. These misleading “greenwashing” campaigns are intended to capitalize on consumers’ concerns about climate change and lead New Jersey consumers to believe that Fossil Fuel Defendants are substantially diversified energy companies making meaningful investments in low-carbon energy compatible with minimizing catastrophic climate change.

161. Contrary to this messaging, however, Fossil Fuel Defendants’ spending on low-carbon energy is substantially and materially less than Fossil Fuel Defendants indicate to consumers. According to a recent analysis, between 2010 and 2018, BP spent 2.3% of total capital spending on low-carbon energy sources, Shell spent 1.2%, and Chevron and Exxon just 0.2% each.<sup>197</sup> Meanwhile, Fossil Fuel Defendants continue to expand fossil fuel production and typically do not even include non-fossil energy systems in their key performance indicators or reported annual production statistics.<sup>198</sup>

162. Ultimately, although Defendants currently claim to support reducing greenhouse gas emissions, their conduct belies these statements. Fossil Fuel

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<sup>197</sup> Anjali Raval & Leslie Hook, Oil and Gas Advertising Spree Signals Industry’s Dilemma, Financial Times (Mar. 6, 2019), <https://www.ft.com/content/5ab7edb2-3366-11e9-bd3a-8b2a211d90d5>.

<sup>198</sup> See, e.g., BP Annual Report and Form 20-F 24 (2017), <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/investors/bp-annual-report-and-form-20f-2017.pdf>.

Defendants have continued to ramp up fossil fuel production globally; to invest in new fossil fuel development, including in tar sands crude and shale gas fracking, some of the most carbon-intensive extraction projects; and to plan for unabated oil and gas exploitation indefinitely into the future.

163. For example, Exxon is projected to increase oil production by more than 35% between 2018 and 2030—a sharper rise than over the previous 12 years.<sup>199</sup> Shell is forecast to increase output by 38% by 2030, by increasing its crude oil production by more than half and its gas production by over a quarter.<sup>200</sup> BP is projected to increase production of oil and gas by 20% by 2030.<sup>201</sup> Chevron set an oil production record in 2018 of 2.93 million barrels per day.<sup>202</sup> Like the other Fossil Fuel Defendants, it sees the next 20 years—the crucial window in which the world must reduce greenhouse gas emissions to avert the most catastrophic effects of the climate crisis—as a time of increased investment and production in its fossil fuel operations. For example, a 2019 investor report touted Chevron’s “significant reserve additions in 2018” in the multiple regions in North America and around the

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<sup>199</sup> Jonathan Watts et al., Oil Firms to Pour Extra 7m Barrels Per Day Into Markets, Data Shows, The Guardian (Oct. 10, 2019), <https://www.theguardian.com/environment/2019/oct/10/oil-firms-barrels-markets>.

<sup>200</sup> Id.

<sup>201</sup> Id.

<sup>202</sup> Kevin Crowley & Eric Roston, Chevron Aligns Strategy with Paris Deal But Won’t Cap Output, Bloomberg (Feb. 7, 2019), <https://www.bloomberg.com/news/articles/2019-02-07/chevron-pledges-alignment-with-paris-accord-but-won-t-cap-output>.

world, as well as significant capital projects involving construction of refineries worldwide.<sup>203</sup>

164. Defendants' greenwashing campaigns deceptively minimize their own role in causing climate change, including by suggesting that small changes in consumer choice and behavior can adequately address climate change. These campaigns misleadingly portray Fossil Fuel Defendants as part of the solution to climate change and distract from the fact that their fossil fuel products are the primary driver of global warming.

165. Below are representative excerpts from Defendants' greenwashing campaigns, which present a false image of Fossil Fuel Defendants as clean energy innovators taking meaningful action to address climate change. Defendants' actions to further entrench fossil fuel production and consumption squarely contradict their public affirmations of corporate responsibility and support for reducing global greenhouse gas emissions. Functionally, Defendants have cut fossil fuels from their brand but not their business operations. Their greenwashing advertisements to the contrary are deceptive to New Jersey consumers.

**i. Exxon's Misleading and Deceptive Greenwashing Campaigns**

166. Exxon is currently running a series of full-page advertisements in print editions and posts in the electronic edition of The New York Times, as well as on Exxon's YouTube channel, in which Exxon misleadingly promotes its efforts to develop energy

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<sup>203</sup> Chevron, Chevron 2019 Investor Presentation (Feb. 2019), <https://chevroncorp.gcs-web.com/static-files/c3815b42-4deb-4604-8c51-bde9026f6e45>.

from alternative sources such as algae and plant waste—efforts that are vanishingly small in relation to the investments Exxon continues to make in fossil fuel production.

167. For example, an online advertisement in The New York Times, accessible to and marketed toward New Jersey consumers, promotes the company's development of algae biofuels. The advertisement misleadingly tells consumers that Exxon is “working to decrease [its] overall carbon footprint,” and that the company's “sustainable and environmentally friendly” biodiesel fuel could reduce “carbon emissions from transportation” by greater than 50%.<sup>204</sup> Exxon is not investing anywhere near sufficient resources in algae biofuels to achieve the emissions reductions touted in its advertisements.

168. Exxon's advertisements promoting its investments in “sustainable and environmentally friendly” energy sources also fail to mention that the company's investment in alternative energy is miniscule compared to its ongoing “business as usual” ramp-up in global fossil fuel exploration, development, and production activities. From 2010 to 2018, Exxon spent only 0.2% of its capital expenditures on low-carbon energy systems, with nearly the totality of its spending (99.8%) focused on maintaining and expanding fossil fuel production. The company has simultaneously invested billions of dollars into development of Canadian tar sands projects, some of

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<sup>204</sup> The Future of Energy? It May Come From Where You Least Expect (ExxonMobil Paid Post), N.Y. Times, <https://www.nytimes.com/paidpost/exxonmobil/the-future-of-energy-it-may-come-from-where-you-least-expect.html>.

the most carbon-intensive oil extraction projects in the world.<sup>205</sup>

169. In 2016, for example, Exxon earned \$198 billion in revenue but invested less than 1% of that amount in alternative energy research, including algae.

170. Exxon's investment is not nearly enough to produce alternative energy on the scale falsely implied and touted by Exxon in its advertisements. A 2019 report by InfluenceMap documents that Exxon's advertised goal of producing 10,000 barrels of biofuel per day by 2025 would equate to only 0.2% of its current refinery capacity—an amount the report referred to as “a rounding error.”<sup>206</sup> This is in sharp contrast to Exxon's projected increases in oil production by more than 35%, meaning any alternative fuel efforts are offset by massive oil emissions.<sup>207</sup>

171. Supplementing this misleading campaign, Exxon has promoted dozens of multimedia advertisements on platforms such as Instagram, Twitter, Facebook, and LinkedIn, where Exxon has millions of social media followers and its content has received hundreds of thousands of “likes” and “views.” These advertisements overwhelmingly emphasize its claimed leadership in research on lowering emissions,

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<sup>205</sup> Raval & Hook. Exxon has invested more than 20 billion dollars in capital expenditures at its open-pit tar sands mining operation at Kearn Lake in Alberta, Canada.

<sup>206</sup> InfluenceMap, Big Oil's Real Agenda on Climate Change (Mar. 2019), <https://influencemap.org/report/How-Big-Oil-Continues-to-Oppose-the-Paris-Agreement-38212275958aa21196dae3b76220bddc>.

<sup>207</sup> Watts et al., supra note 200.

algae biofuel, climate change solutions, and clean energy research. These advertisements were intended to and did reach the public and consumers in New Jersey. An ordinary consumer witnessing these advertisements would come away believing that Exxon is meaningfully invested in developing and deploying alternative energy technologies, whereas in truth nearly all the company's expenditures are directed toward present and future oil and gas development that hurtles the world toward climate catastrophe. Exxon's failure to inform ordinary consumers that its touted clean energy investments comprise only a miniscule percentage of its expenditures—and that it intends to ramp up fossil fuel production and sales in the future—renders these advertisements materially misleading.

#### **ii. Shell's Misleading and Deceptive Greenwashing Campaigns**

172. Like Exxon, Shell has misleadingly promoted itself to New Jersey consumers as environmentally conscientious through advertisements in publications such as The New York Times. The advertisements are targeted to and read by New Jersey consumers and intended to influence consumer demand for Shell's products.

173. As part of Shell's "Make the Future" campaign, the company has published numerous advertisements currently viewable on The New York Times website,<sup>208</sup> in which the company touts its investment in new energy sources, including liquified

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<sup>208</sup> See, e.g., Moving Forward: A Path To Net-Zero Emissions By 2070 (Shell Paid Post), N.Y. Times, <https://www.nytimes.com/paidpost/shell/ul/moving-forward-a-path-to-net-zero-emissions-by-2070.html>.



natural gas (“LNG”) and biofuel, which Shell refers to as “cleaner sources.”

174. One Shell advertisement in the Washington Post, “The Making of Sustainable Mobility,” refers to LNG as “a critical component of a sustainable energy mix” and a “lower-carbon fuel” that could “help decrease” CO<sub>2</sub> emissions.<sup>209</sup> The ad emphasizes Shell’s leadership in “setting the course” for a “lower-carbon mobility future.” Similarly, another Shell advertisement in The Washington Post, “The Mobility Quandary,” emphasizes Shell’s role in working to counteract climate change through investments in alternative energy: “Shell is a bigger player than you might expect in this budding movement to realize a cleaner and more efficient transportation future.”<sup>210</sup>

175. Shell’s statements emphasizing its involvement in these many areas of energy-related research, development, and deployment are misleading; the company’s investments and activities are substantially smaller than its advertisements lead consumers to believe. In reality, only 1.2% of Shell’s capital spending from 2010 to 2018 was in low-carbon energy sources, and that number continues to be heavily outweighed by Shell’s continued expansion of its fossil fuel business.<sup>211</sup>

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<sup>209</sup> See, e.g., The Making of Sustainable Mobility (Content from Shell), Wash. Post, <https://www.washingtonpost.com/brand-studio/shell/the-making-of-sustainable-mobility>.

<sup>210</sup> The Mobility Quandary (Content from Shell), Wash. Post, <https://www.washingtonpost.com/brand-studio/shell/the-mobility-quandary> (“Another critical component of a sustainable energy mix in transportation is further investment in natural gas, a cleaner-burning fossil fuel . . .”).

<sup>211</sup> Raval & Hook, supra note 198.

176. Shell’s “Make the Future” advertisements also misled consumers about the extent to which Shell has invested in clean energy technology. For example, “The Mobility Quandary” touts Shell’s investments in hydrogen fuel cell technology, promoting hydrogen as “sustainable in the long-term” and “[o]ne of the cleaner sources” that power electric vehicles, stating that “[h]ydrogen fuel cell vehicles . . . emit nothing from their tailpipes but water vapor.”<sup>212</sup> Shell’s “In for the Long Haul” advertisement in The New York Times similarly promotes its investment in hydrogen fuel cells, as well as biofuels, as meaningful attempts to mitigate climate change.<sup>213</sup> But in reality, Shell’s spending plans show that it will spend four times more money on oil and gas development than on renewable technology in 2022.<sup>214</sup> Independent analysis of Shell’s spending plans shows that the company will be emitting more greenhouse gas by 2030 than it currently emits.<sup>215</sup> On its current trajectory, Shell is projected to miss its emissions reduction targets for both 2030 and 2050.<sup>216</sup> Shell’s failure to inform ordinary consumers that its touted clean energy investments comprise only a miniscule percentage of its expenditures—and that it intends to ramp up fossil

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<sup>212</sup> Shell, The Mobility Quandary, *supra* note 211.

<sup>213</sup> Moving Forward: A Path to Net-Zero Emissions by 2070 (Content from Shell), N.Y. Times, <https://www.nytimes.com/paidpost/shell/ul/moving-forward-a-path-to-net-zero-emissions-by-2070.html>.

<sup>214</sup> Simon Jack, Oil Giant Shell Says It Needs Oil to Pay for Green Shift, BBC News (Nov. 3, 2021), <https://www.bbc.com/news/business-59154930>.

<sup>215</sup> Id.

<sup>216</sup> Id.

fuel production and sales in the future—renders these advertisements materially misleading.

### **iii. BP's Misleading and Deceptive Greenwashing Campaigns**

177. BP also has misleadingly portrayed itself as diversifying its energy portfolio and reducing its reliance on fossil fuel sales, when its alternative energy portfolio is negligible compared to the company's ever-expanding fossil fuel portfolio. To this end, BP has employed a series of misleading greenwashing advertisements, which are intended to influence consumer demand for its products, including consumers in New Jersey.

178. BP ran its extensive "Beyond Petroleum" advertising and rebranding campaign from 2000 to 2008 and even changed its logo to a sunburst, evoking the renewable resource of the sun. BP uses the sunburst logo to advertise at its New Jersey gas stations, where consumers purchase BP's gas. The "Beyond Petroleum" advertising campaign falsely portrayed the company as heavily engaged in low-carbon energy sources and no longer investing in but rather moving "beyond" petroleum and other fossil fuels. In truth, BP invested a small percentage of its total capital expenditure during this period on alternative energy research. The vast majority of its capital expenditure was focused on fossil fuel exploration, production, refining, and marketing.<sup>217</sup> The company ultimately abandoned its solar and wind

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<sup>217</sup> See BP, Annual Reports and Accounts 2008, <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/investors/bp-annual-report-accounts-2008.pdf>.

assets in 2011 and 2013, respectively, and even the “Beyond Petroleum” moniker in 2013.<sup>218</sup>

179. In 2019, BP launched an advertising campaign called “Possibilities Everywhere.” These advertisements were misleading both in their portrayal of BP as heavily involved in non-fossil energy systems, including wind, solar, and electric vehicles, as well as in their portrayal of natural gas as environmentally friendly.

180. One Possibilities Everywhere advertisement, called “Better fuels to power your busy life,” stated:

We [] want—and need—[] energy to be kinder to the planet. At BP, we’re working to make our energy cleaner and better. . . . At BP, we’re leaving no stone unturned to provide [the] extra energy the world needs while finding new ways to produce and deliver it with 53 fewer emissions. . . . We’re bringing solar and wind energy to homes from the US to India. We’re boosting supplies of cleaner burning natural gas. . . . More energy with fewer emissions? We see possibilities everywhere to help the world keep advancing.<sup>219</sup>

The accompanying video showed a busy household while a voiceover said, “We all want more energy, but

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<sup>218</sup> Javier E. David, ‘Beyond Petroleum’ No More? BP Goes Back to Basics, CNBC (Apr. 20, 2013), <http://www.cnbc.com/id/100647034>.

<sup>219</sup> See BP, Better fuels to Power Your Busy Life, <https://web.archive.org/web/20191130155554/https://www.bp.com/en/global/corporate/who-we-are/possibilities-everywhere/energy-for-busy-lives.html>.

with less carbon footprint. That's why at BP we're working to make energy that's cleaner and better."<sup>220</sup>

181. But BP's claim that non-fossil energy systems constitute a substantial portion of BP's business was materially false and misleading. For example, BP owns only approximately 1.7 gigawatts ("GW") of wind capacity, which is dwarfed by other companies including GE, Siemens, and Vestas (with about 39 GW, 26 GW, and 23 GW capacities, respectively).<sup>221</sup> Overall, installed wind capacity in the United States is approximately 100 GW, meaning BP's installed capacity is a mere 1% of the market.<sup>222</sup> Yet, "Blade runners," another advertisement in BP's "Possibilities Everywhere" campaign, described the company as "one of the major wind energy businesses in the US."<sup>223</sup> In short, BP's relatively small wind power portfolio is materially smaller than that conveyed in the company's advertisements.

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<sup>220</sup> Id.

<sup>221</sup> For BP's wind capacity, see Press Release, BP Advances Offshore Wind Growth Strategy (Feb. 8, 2021), <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-advances-offshore-wind-growth-strategy.html>. For wind capacity of GE, Siemens, and Vestas, see Abby McClain, The 15 Largest Wind Power Companies in the World (July 12, 2022), <https://www.zippia.com/advice/largest-wind-power-companies/>.

<sup>222</sup> See Elizabeth Ingram, U.S. Wind Capacity Grew 8% in 2019, AWEA says, Renewable Energy World (Apr. 10, 2019), <https://www.renewableenergyworld.com/wind-power/u-s-wind-capacity-grew-8-in-2018-awea-says/>.

<sup>223</sup> See BP, Blade Runners, <https://web.archive.org/web/20191130192545/https://www.bp.com/en/global/corporate/who-we-are/possibilities-everywhere/wind-and-natural-gas.html>.

182. The same is true for BP's activities in solar energy, which consist predominantly of its purchase of a minority interest in the solar company Lightsource (rebranded Lightsource BP).<sup>224</sup> The purchase price for this interest represents only 0.4% of BP's annual capital expenditure of approximately \$16 billion, nearly all of which focuses on fossil fuels.<sup>225</sup> This is a far cry from BP's claim that it was "leaving no stone unturned" to find "new" ways to produce lower-emissions energy and playing a "leading role" in "advancing a low carbon future." These claims convey the misleading impression to ordinary consumers that BP is substantially invested in developing and deploying clean energy technology, whereas in truth nearly all the company's present and future expenditures are directed toward oil and gas development that hurtles the world toward climate catastrophe. BP's failure to inform ordinary consumers that its touted clean energy investments comprise only a miniscule percentage of its expenditures—and that it intends to ramp up fossil fuel production and sales in the future—renders these advertisements materially misleading.

183. In BP's web advertisement "Rise and shine," the company nevertheless specifically touted its Lightsource partnership. "Our economics gurus believe [solar power] could account for 10% of the

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<sup>224</sup> BP Annual Report and Form 20-F 42 (2017), <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/investors/bp-annual-report-and-form-20f-2017.pdf>.

<sup>225</sup> See BP to Maintain Reduced Capital Spending Through 2021, Oil & Gas Journal (Feb. 28, 2017), <https://www.ogj.com/general-interest/article/17290398/bp-to-maintain-reduced-capital-spending-through-2021>.

world's power by 2040," the ad stated, and "to help make that a reality, we've teamed up with Europe's largest solar company, [Lightsource BP]."<sup>226</sup> The ad highlighted Lightsource BP's 6.3 MW floating solar power station near London and Lightsource BP's deal with Budweiser to supply renewable energy to its U.K. breweries. "Projects like these are advancing the possibilities of solar," BP claimed, "and even rainy days can't dampen the excitement for this fast-growing energy source. That's because, whatever the weather, our cleaner-burning natural gas can play a supporting role to still keep your kettle ready for action."<sup>227</sup>

184. This portrayal of solar power as BP's strong interest, with natural gas used only as a backup, is also false. BP's investments in natural gas outstrip its solar investments by a factor of approximately 100 or more, and only a small fraction of its natural gas products, an estimated 5% or less, are used to backup renewables. Thus, the overall impression given by the advertisements—that BP is substantially invested in solar energy, with its natural gas used only for backup—is materially misleading to consumers.

#### **iv. Chevron's Misleading and Deceptive Greenwashing Campaigns**

185. Chevron also engaged in greenwashing campaigns designed to deceive consumers about Chevron's products and its commitment to address climate change, including consumers in New Jersey.

186. In 2001, Chevron developed and shared a sophisticated information management system to

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<sup>226</sup> BP, Rise and Shine.

<sup>227</sup> Id.

gather greenhouse gas emissions data from its explorations and production to help regulate and set reduction goals.<sup>228</sup> Beyond this technological breakthrough, Chevron touted “profitable renewable energy” as part of its business plan for several years and launched a 2010 advertising campaign promoting the company’s move towards renewable energy. Despite this rhetoric—and Chevron renewable power group’s \$27 million profit in 2013—Chevron sold its renewable energy unit in 2014.<sup>229</sup>

187. Chevron’s 2007 “Will You Join Us?” campaign and its 2008 “I Will” campaign both misleadingly portrayed the company as a leader in renewable energy. The campaigns’ advertisements portrayed minor changes in consumer choices (e.g., changing light bulbs) as sufficient to address environmental problems such as climate change.<sup>230</sup>

188. The overall thrust of the campaigns was to shift the perception of fault and responsibility for global warming to consumers and make Chevron’s role and that of the broader fossil fuel industry appear small. The misleading solution promoted to consumers

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<sup>228</sup> Press Release, Chevron, [Chevron Introduces New System to Manage Energy Use](https://web.archive.org/web/20170207205638/https://www.chevron.com/stories/chevron-introduces-new-system-to-manage-energy-use) (Sept. 25, 2001), <https://web.archive.org/web/20170207205638/https://www.chevron.com/stories/chevron-introduces-new-system-to-manage-energy-use>.

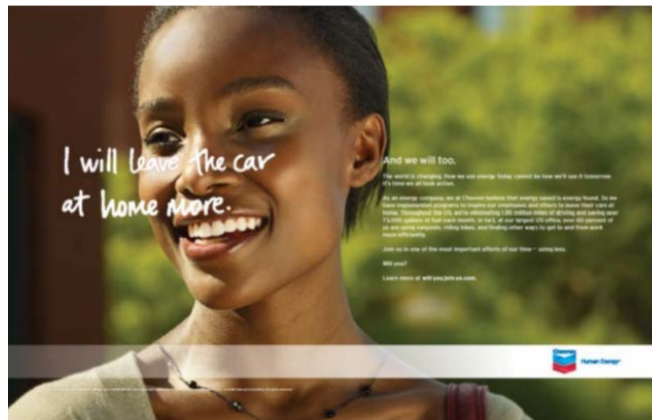
<sup>229</sup> Ben Elgin, [Chevron Dims the Lights on Green Power, Bloomberg](https://www.bloomberg.com/news/articles/2014-05-29/chevron-dims-the-lights-on-renewable-energy-projects) (May 29, 2014), <https://www.bloomberg.com/news/articles/2014-05-29/chevron-dims-the-lights-on-renewable-energy-projects>.

<sup>230</sup> See Duncan MacCleod, [Chevron Will You Join Us?](http://theinspirationroom.com/daily/2007/chevron-will-you-join-us), [Inspiration Room](http://theinspirationroom.com/daily/2007/chevron-will-you-join-us) (Oct. 9, 2007), <http://theinspirationroom.com/daily/2007/chevron-will-you-join-us>. See also Jean Halliday, [Chevron: We’re Not Big Bad Oil](https://adage.com/article/news/chevron-big-bad-oil/120785), [AdAge](https://adage.com/article/news/chevron-big-bad-oil/120785) (Sept. 28, 2007), <https://adage.com/article/news/chevron-big-bad-oil/120785>.



was not to switch away from fossil fuels, but instead to implement small changes in consumer behavior with continued reliance on fossil fuel products. By portraying greenhouse gas emissions as deriving from numerous sources in addition to fossil fuels, Chevron's ads obfuscated the fact that fossil fuels are the primary cause of increased greenhouse gas emissions and the primary driver of climate change.

189. Misleading messages were emblazoned over images of everyday Americans, as in the example highlighted below:



**Figure 10: “Will You Join Us?” Chevron Advertisement**

190. In 2010, Chevron launched an advertising campaign titled “We Agree.” The print, internet, and television ad campaign expanded across the United States and internationally. For example, the ad below highlighted Chevron's supposed commitment to the development of renewable energy, stating in large letters next to a photo of a young girl, “It’s time oil companies get behind the development of renewable energy. We agree.” The ad emphasized: “We’re not

just behind renewables. We're tackling the challenge of making them affordable and reliable on a large scale."



**Figure 11: “We Agree” Chevron Advertisement**

191. Chevron’s portrayal of itself as a renewable energy leader was false and misleading. In reality, only 0.2% of Chevron’s capital spending from 2010 to 2018 was in low-carbon energy sources, and 99.8% was in continued fossil fuel exploration and development—a stark contrast to the message communicated to consumers through the company’s advertisements.<sup>231</sup>

192. Chevron’s “We Agree” campaign also featured misleading television advertisements. In one focused on renewable energy, a teacher says, “Ok, listen. Somebody has got to get serious. We need renewable energy.” To which a Chevron environmental operations employee responds, “At Chevron we’re investing millions in solar and biofuel technologies to

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<sup>231</sup> Raval & Hook, supra note 198.

make it work.” In reality, Chevron has continued to overwhelmingly focus on fossil fuel extraction and development, and its investment of “millions” in renewables is miniscule in comparison to its investment of billions in fossil fuels. An ordinary consumer watching the “We Agree” advertisements would be misled into believing Chevron has meaningfully invested in developing and deploying clean technologies, whereas nearly all the company’s spending is directed toward oil and gas development. Chevron’s failure to inform ordinary consumers that its touted clean energy investments comprise only a miniscule percentage of its expenditures—and that it intends to ramp up fossil fuel production and sales in the future—renders these advertisements materially misleading.

**v. ConocoPhillips’s Misleading and Deceptive Greenwashing Campaigns**

193. In 2012, ConocoPhillips released a Sustainable Development Report in which it “recognize[d] that human activity, including the burning of fossil fuels, is contributing to increased concentrations of greenhouse gases (GHG) in the atmosphere that can lead to adverse changes in global climate.”<sup>232</sup> The Report’s goals included “[u]nderstanding our GHG footprint,” “[r]educing our GHG emissions,” and “evaluating and developing technologies for renewable energy.”<sup>233</sup>

194. This Report contrasts starkly with ConocoPhillips’ 2012 10-K filing with SEC, which

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<sup>232</sup> ConocoPhillips, Sustainable Development: Climate Change Position 17 (2012), <http://static.conocophillips.com/files/resources/2012-sd-report.pdf>.

<sup>233</sup> Id. at 17, 20.

reveals the company's sole focus on producing fossil fuels for global distribution: "As an independent E&P company, we are solely focused on our core business of exploring for, developing and producing crude oil and natural gas globally." The filing further highlighted the company's "growing North American shale and oil sands businesses . . . and a global exploration program,"<sup>234</sup> making clear it had no intent to honor the commitments in its Sustainable Development Report.

195. Indeed, in 2019, ConocoPhillips produced over 700,000 of barrels of crude oil per day and over 2.8 million cubic feet of natural gas per day.<sup>235</sup> ConocoPhillips' failure to inform ordinary consumers that its touted clean energy investments comprise only a miniscule percentage of its expenditures—and that it intends to ramp up fossil fuel production and sales in the future—renders its touted sustainability targets materially misleading.

#### **vi. API's Misleading and Deceptive Greenwashing Campaigns**

196. Acting on behalf of and under the supervision and control of the Fossil Fuel Defendants, API has also devoted considerable resources to deceiving consumers throughout the country about fossil fuels' role in climate change. During the 2017 Super Bowl, the most-watched television program in the United States, API debuted its "Power Past Impossible"

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<sup>234</sup> ConocoPhillips, Annual Report (Form 10-K) 32 (Dec. 31, 2012), <https://www.sec.gov/Archives/edgar/data/1163165/000119312513065426/d452384d10k.htm>.

<sup>235</sup> ConocoPhillips, 2019 Annual Report 168 (2019), <https://static.conocophillips.com/files/resources/2019-conocophillips-annual-report-19-0895.pdf>.

campaign, with advertisements that told Americans that the petroleum industry could help them “live better lives.” A 2018 study of the advertisements by Kim Sheehan, a Professor at the University of Oregon, concluded that the “campaign provides evidence of greenwashing through both explicit communications (such as unsubstantiated claims that ‘gas comes cleaner’ and ‘oil runs cleaner’) and implicit communications (the use of green imagery).”<sup>236</sup>

197. In lockstep with its member companies, API has also shifted its messaging from climate denial to greenwashing in the last decade. API touts its members’ purported commitments to reducing their carbon footprint while continuing its core mission of promoting its members’ extraction, production, and sale of fossil fuels to consumers in New Jersey and throughout the United States at unprecedented rates.

198. Many of API’s television, radio, and internet advertisements, including those directed at New Jersey consumers, lead to a website run by API entitled “America’s Natural Gas and Oil: Energy for Progress.” Among many articles and images promoting fossil fuel companies’ claimed contributions to clean energy, the website advertises “Creating climate solutions and essential energy,” and “Four Ways Energy Companies Are Protecting Land and Wildlife.”<sup>237</sup> These messages are not meant to

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<sup>236</sup> Kim Sheehan, [This Ain’t Your Daddy’s Greenwashing: An Assessment of the American Petroleum Institute’s Power Past Impossible Campaign, in Intellectual Property and Clean Energy](#) 301–21 (Matthew Rimmer ed., 2018).

<sup>237</sup> See American Petroleum Institute, [5 Ways We’re Using Energy for Progress, Energy for Progress](https://energyforprogress.org/the-basics), <https://energyforprogress.org/the-basics> (last visited Oct. 17, 2022).

encourage consumers to transition to low-carbon energy sources—just the opposite. By obfuscating the reality that fossil fuels are the driving force behind anthropogenic climate change, they are designed to increase consumers’ use of fossil fuels in order to advance API’s core mission of growing its member companies’ oil and natural gas businesses.

199. In addition, in 2016, API launched a “campaign in New Jersey focused on consumers” that sought to turn public opinion against stricter standards for ethanol content in gasoline. The campaign speciously claimed that such standards would “hurt consumers and threaten to reverse America’s energy renaissance which has made [it] the number one producer of oil and natural gas in the world.”<sup>238</sup>

200. As part of its “Energy for Progress” campaign, API has run a series of Facebook advertisements, many of which have reached a substantial number of New Jersey consumers, that falsely paint the fossil fuel industry as a leader on climate change action. For example, in 2020, API ran advertisements with statements such as:

- “We can tackle climate change and meet the world’s energy needs by embracing new innovations together.”<sup>239</sup>

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<sup>238</sup> Reid Porter, API Launches New RFS Advocacy Campaign in New Jersey Focused on Consumers, American Petroleum Institute (Aug. 9, 2016), <https://www.api.org/news-policy-and-issues/news/2016/08/09/api-launches-new-rfs-advocacy-campaign-f>.

<sup>239</sup> See Facebook Ad Library, <https://www.facebook.com/ads/library/?id=281395386281089> (last visited Oct. 17, 2022).

- “Through innovative partnerships, we’ve reduced CO<sub>2</sub> emissions to the lowest in a generation—and now we’re working to reduce methane, too.”<sup>240</sup>
- “How are natural gas and oil companies helping cars emit less CO<sub>2</sub>? They’ve developed engine oils that improve fuel efficiency. See the science.”<sup>241</sup>

### **G. Defendants Also Made Misleading Claims About Specific “Green” or “Greener” Fossil Fuel Products.**

201. Defendants also have engaged in extensive and highly misleading marketing efforts aimed at promoting certain of their fossil fuel products as “green” and environmentally beneficial.

202. Defendants’ advertising and promotional materials fail to disclose the extreme safety risk associated with the use of fossil fuel products, which are causing “catastrophic” climate change, as understood by Defendants for decades. Defendants continue to omit that important information to this day, consistent with their goal of maintaining consumer demand for their fossil fuel products despite the risks they pose for the planet and its people.

203. Defendants misleadingly represent that consumer use of certain fossil fuel products actually helps customers reduce emissions and gain increased fuel economy. But emphasizing relative climate and “green” benefits while concealing the dangerous

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<sup>240</sup> See Facebook Ad Library, <https://www.facebook.com/ads/library/?id=640075440224515> (last visited Oct. 17, 2022).

<sup>241</sup> See Facebook Ad Library, <https://www.facebook.com/ads/library/?id=1883177471814564> (last visited Oct. 17, 2022).

effects of continued high rates of fossil fuel use creates an overall misleading picture that hides the dire climate impacts resulting from normal consumer use of Defendants' fossil fuel products. Contrary to Defendants' "green" claims, the development, production, refining, and consumer use of Defendants' fossil fuel products (even products that may yield relatively more efficient engine performance) increase greenhouse gas emissions to the detriment of public health and consumer welfare. No matter what chemicals are added to the fuel mixture, burning gasoline always emits greenhouse gases, thereby contributing to climate change and its associated impacts. Defendants' additive marketing cloaks their gasoline products in an environmentally friendly veneer while misleadingly concealing the hazardous climatic effects of burning fossil fuels.

204. In addition, at the same time Fossil Fuel Defendants have been actively promoting their "greener" gasoline products at New Jersey gas stations and on their company websites, Fossil Fuel Defendants have been massively expanding fossil fuel production and increasing emissions. If consumers understood the full degree to which Fossil Fuel Defendants' products contributed to climate change and that Fossil Fuel Defendants had not in fact materially invested in alternative energy sources or were otherwise environmentally cautious, they likely would have acted differently, e.g., by not purchasing Defendants' products or purchasing less of them.

205. In the promotion of these and other fossil fuel products, including at their branded gas stations in New Jersey, Defendants fail to disclose the fact that fossil fuels are a leading cause of climate change and that current levels of fossil fuel use—even purportedly



“cleaner” or more efficient products—represent a direct threat to New Jerseyans and the environment. Defendants’ omissions in this regard are consistent with their goal of influencing consumer demand for their fossil fuel products through greenwashing. Defendants also fail to require their vendors and third-party retail outlets to disclose facts pertaining to the impact the consumption of fossil fuels and their “cleaner” alternatives have on climate change when selling Defendants’ products.

206. Defendants’ marketing of these fossil fuel products to New Jersey consumers as “safe,” “clean,” “emissions-reducing,” and impliedly beneficial to the climate—when production and use of such products is the leading cause of climate change—is reminiscent of the tobacco industry’s effort to promote “low-tar” and “light” cigarettes as an alternative to quitting smoking after the public became aware of the life-threatening health harms associated with smoking.

207. Defendants’ product promotions are positioned to reassure consumers that the purchase and use of their products is beneficial in addressing climate change, when in truth, continued use of such fossil fuels is extremely harmful, just as the tobacco companies misleadingly promoted “low tar” and “light” cigarettes as a healthier, less harmful choice, when the tobacco companies knew any use of cigarettes was harmful.

208. As with tobacco companies’ misleading use of scientific and engineering terms in advertising to enhance the credibility of their representations, Defendants’ promotional materials for their fossil fuel products also misleadingly invoke similar terminology to falsely convey to New Jersey consumers that the use of these products benefits the environment. For

example, Exxon’s advertisements of its Synergy™ and “green” Mobil 1™ products similarly referenced “meticulous[] engineer[ing],” “breakthrough technology,” “rigorously tested in the lab,” “proprietary formulation,” “test data,” “engineers,” “innovat[ion],” and the claim that “Scientists Deliver [] Unexpected Solution[s].”<sup>242</sup> Shell advertised that its Shell Nitrogen Enriched Cleaning System and V-Power Nitro+ Premium “produce[] fewer emissions” and that not using them can lead to “higher emissions.”<sup>243</sup> BP markets its Invigorate gasoline as a “cleaning agent that helps . . . give you more miles per tank,” and “help[s] cars become clean, mean, driving machines,” and its bp Diesel as “a powerful, reliable, and efficient fuel made” to help “reduce emissions.”<sup>244</sup> Chevron advertises its Techron fuel with claims that emphasize its supposed positive environmental qualities, such as: “less is more,” “minimizing emissions,” and “up to 50% cleaner.”<sup>245</sup> In a Q and A on Chevron’s website, one question says, “I care for the environment. Does Techron impact my car’s emissions?” Chevron answers that “[g]asolines

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<sup>242</sup> See, e.g., EnergyFactor by ExxonMobil, Green Motor Oil? ExxonMobil Scientists Deliver an Unexpected Solution (July 19, 2016); Exxon Mobil, Fuels, <https://www.exxon.com/en/fuels> (last visited Oct. 14, 2022).

<sup>243</sup> See, e.g., Shell, Shell Nitrogen Enriched Gasolines, <https://www.shell.us/motorist/shell-fuels/shell-nitrogen-enriched-gasolines.html> (last visited Oct. 14, 2022).

<sup>244</sup> See, e.g., BP, Our Fuels, [https://www.bp.com/en\\_us/united-states/home/products-and-services/fuels.html](https://www.bp.com/en_us/united-states/home/products-and-services/fuels.html) (last visited Oct. 14, 2022).

<sup>245</sup> See, e.g., Chevron, Techron, <https://www.techron.com> (last visited Oct. 14, 2022).

with Techron” clean up carburetors, fuel injectors, and intake valves, “giving you reduced emissions.”<sup>246</sup>

209. These misrepresentations, which were intended to and did in fact reach and influence New Jersey consumers, were misleading because they emphasize the fuels’ supposedly environmentally beneficial qualities without disclosing the key role fossil fuels play in causing climate change.

210. As with the tobacco companies’ use of scientific terms to promote “light” cigarettes, Defendants’ claim that its purportedly high-tech new fossil fuel products help consumers reduce emissions renders their promotional materials misleading, because they seek to convey—with the imprimatur of scientific credibility—an overall message that is false, and contradicted by Defendants’ own decades-old internal knowledge regarding the dangers of fossil fuel use.

211. In addition, at the same time Defendants have been actively promoting their “greener” gasoline products at New Jersey gas stations and on their company websites, Defendants have been massively expanding fossil fuel production and increasing emissions. If consumers understood the full degree to which Defendants’ products contributed to climate change and that Defendants had not in fact materially invested in alternative energy sources or were otherwise environmentally cautious, they likely would have acted differently, e.g., by not purchasing Defendants’ products or purchasing less of them.

212. Below is a selection of Defendants’ fossil fuel products that they currently advertise to New Jersey consumers as environmentally beneficial, while

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<sup>246</sup> Id.

simultaneously omitting any mention of the products' role in causing catastrophic climate change. These advertisements are representative of other advertisements and public communications, all of which are consistent with Defendants' greenwashing strategy to influence consumer demand for their products by misleading consumers to believe Defendants invest materially in and support the development of alternative energy sources and that Defendants' fossil fuel products will help consumers reduce emissions.

### **213. Exxon Synergy™ Fuels**

a. In July 2016, ExxonMobil began to supply and market its Synergy™ fuel, including at the Exxon-branded gas stations in New Jersey.

b. All gasoline sold at Exxon-branded stations in New Jersey has received the Exxon Synergy additive, and therefore constitutes Exxon Synergy™ fuel.

c. In its advertisements for its Synergy fuel, including in labelling on gasoline pumps at Exxon-branded gas stations in New Jersey, which Exxon controls, Exxon claims that the fuel will “take you further,” and contains more detergents than required by the Environmental Protection Agency, earning it the so-called “Top Tier” certification.

d. Similarly, Exxon advertises its Synergy Diesel Efficient fuel as the “latest breakthrough technology” and the “first diesel fuel widely available in the US” that helps “increase fuel economy” and “[r]educ[e] emissions and burn cleaner,” and “was created to let you drive cleaner, smarter and longer.”

e. Exxon recently began offering a new Synergy product, “Synergy Supreme+,” targeted to purchasers of so-called “premium” gasoline, including New Jersey

consumers. The messaging for this product represents that Synergy Supreme+ is “Our Best Fuel Ever,” and “2X cleaner for better gas mileage.” According to Exxon, Synergy Supreme+ will enhance vehicle fuel economy in newer engines designed to meet tougher vehicle emissions standards.

f. In its advertising to consumers, Exxon emphasizes the “cleanness” and fuel efficiency benefits of its Synergy fossil fuel products, which are misleading without mention of the key role fossil fuels play in causing climate change.

#### **214. Exxon “Green” Mobil 1™ Motor Oil**

a. In addition to Synergy™ fuels, Exxon misleadingly promotes “green” Mobil 1™ motor oil to New Jersey consumers as an environmentally friendly product with low environmental impact.

b. ExxonMobil “green” Mobil 1™ is a synthetic oil used for engine lubrication. Synthetic oils are typically extracted from petroleum, including crude oil and its byproducts.

c. Exxon also publishes online content under the banner “Energy Factor,” wherein Exxon claims that it is “develop[ing] safe and reliable energy sources for the future.” The Energy Factor webpage includes posts such as “Green Motor Oil? ExxonMobil Scientists Deliver an Unexpected Solution,” in which Exxon promotes its green-colored motor oil, with a heading in bold typeface advertising that it can “contribute to . . . carbon dioxide emission-reduction efforts.”

d. Exxon also produced a commercial that aired nationally, including to New Jersey consumers, promoting its “green” Mobil 1 oil, which touts Mobil 1 as the “technology of tomorrow,” and “so advanced it

can help advance engine performance and improve fuel economy,” all the while showing the flowing green motor oil.

e. These representations are misleading because they emphasize the fossil fuel product’s supposed environmentally beneficial qualities without disclosing the key role fossil fuels play in causing climate change.

#### **215. Shell Nitrogen Enriched Cleaning System and Shell V-Power NITRO+ Premium**

a. All grades of Shell gasoline sold in New Jersey have the Shell Nitrogen Enriched Cleaning System, and Shell introduced a line for its premium-grade gasoline called V-Power Nitro+ Premium.

b. Shell advertises on its website that these fuels “produce[] fewer emissions” and that not using them can lead to “higher emissions.”

c. This representation is misleading because it emphasizes the fuels’ supposedly environmentally beneficial qualities without disclosing the key role fossil fuels play in causing climate change.

#### **216. BP Invigorate Fuels**

a. All grades of BP gasoline sold in New Jersey have Invigorate, an additive that BP describes on its website as better than “ordinary fuels” that have problems like “increased emissions.”

b. BP’s website advertises its fuel selection as “including a growing number of lower-carbon and carbon-neutral products.”

c. These representations are misleading because they omit any mention of the products’ role in causing catastrophic climate change. Additionally, they seek

to influence consumer demand for their products by misleading New Jersey consumers to believe BP invests materially in low-carbon energy products and that BP's fossil fuel products will help consumers reduce emissions.

#### **217. Chevron With Techron**

a. All grades of Chevron and/or Texaco gasoline sold in New Jersey since at least 1995 have contained the additive Techron.

b. Chevron advertises its Techron fuel with claims that emphasize its supposed positive environmental qualities, such as: "less is more," "minimizing emissions," and "up to 50% cleaner."

c. In a Q and A on Chevron's website, one question says, "I care for the environment. Does Techron impact my car's emissions?" Chevron answers that "[g]asolines with Techron" clean up carburetors, fuel injectors, and intake valves, "giving you reduced emissions."

d. These representations are misleading because they emphasize the products' supposed environmentally beneficial qualities without disclosing the key role fossil fuels play in causing climate change.

#### **H. Defendants Intended for Consumers to Rely on Their Concealments and Omissions Regarding the Dangers of Their Fossil Fuel Products.**

218. Consumer use of fossil fuel products, particularly by driving gasoline-powered cars and other vehicles, is a significant contributor to climate change. However, as a result of Defendants' sustained and widespread campaign of disinformation, many

New Jersey consumers have been unaware of the magnitude of the threat posed by their use of fossil fuels, or of the relationship between their purchasing behavior and climate change.

219. Defendants have been aware for decades that clean energy presents a feasible alternative to their fossil fuel products. In 1980, Exxon forecasted that non-fossil fuel energy sources, if pursued, could penetrate half of a competitive energy market in approximately 50 years.<sup>247</sup> This internal estimate was based on extensive modeling within the academic community, including research conducted by MIT'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."<sup>248</sup> But instead of pursuing a clean energy transition or warning the public about the dangers of burning fossil fuels, Defendants chose to deceive consumers to preserve their profits and assets.

220. By misleading New Jersey consumers about the climate impacts of using fossil fuel products, even to the point of claiming that certain of their products may benefit the environment, and by failing to disclose to consumers the climate risks associated with their purchase and use of those products, Defendants have deprived and are continuing to deprive consumers of

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<sup>247</sup> H. Shaw and P. P. McCall, Exxon Research and Engineering Company's Technological Forecast: CO<sub>2</sub> Greenhouse Effect 5 (Dec. 18, 1980).

<sup>248</sup> CO<sub>2</sub> Greenhouse Effect: A Technical Review, Coordination and Planning Division, Exxon Research and Engineering Company 18 (Apr. 1, 1982).



information about the consequences of their purchasing decisions.

221. In addition to Defendants misleading New Jersey consumers by affirmatively misrepresenting the state of their and the scientific community's knowledge of climate change and by failing to disclose the dangerous effects of using their products, Defendants have sought to mislead consumers, and induce purchases and brand affinity, with greenwashing advertisements designed to represent Defendants as environmentally responsible companies developing innovative green technologies and products. In reality, Defendants' investment in renewable energy sources is miniscule, and their business models continue to center on developing, producing, and selling more of the very same fossil fuel products driving climate change.

222. Defendants intended for New Jersey consumers to rely on their omissions and concealments and to continue purchasing Defendants' fossil fuel products without regard for the damage such products cause.

223. Knowledge of the risks associated with the routine use of fossil fuel products is material to New Jersey consumers' decisions to purchase and use those products. As with cigarettes, history demonstrates that when consumers are made aware 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 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.

224. For example, a consumer who received accurate information that fossil fuel use was a primary driver of climate change and the resultant dangers to the environment and people might purchase less fossil fuel products, or decide to buy none at all. Consumers might opt to avoid or combine car travel trips; carpool; switch to more fuel-efficient vehicles, hybrid vehicles, or electric vehicles; use a car-sharing service; seek transportation alternatives all or some of the time, if available (e.g., public transportation, biking, or walking); or adopt any combination of these choices. In addition, informed consumers contribute toward solving environmental problems by supporting companies that they perceive to be developing “green” or more environmentally friendly products.

225. By concealing and affirmatively misrepresenting the catastrophic climatic effects of consuming fossil fuels, Defendants deprived consumers of the facts necessary to make informed decisions about how and where to purchase energy. Consumers equipped with complete and accurate knowledge about the public health risks of burning fossil fuels might have formed a receptive customer base for clean energy alternatives decades before such demand in fact developed. The delayed emergence of a scalable market for non-fossil fuel energy is attributable to consumers’ industry-induced ignorance of the reality and severity of the climatic consequences associated with normal use of fossil

fuels. The societal transition to a low-carbon economy would have been far cheaper and more efficient had Defendants publicly acknowledged the conclusions reached by their own scientists and the broader scientific community. As a result of this delay, huge quantities of avoidable greenhouse gas emissions have been released into the atmosphere, causing greater total emissions, higher peak emissions, and all associated climatic effects.

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

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

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

b. Defendants' efforts to discredit climate change science and create the appearance such science is uncertain;

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

d. Defendants' use of front groups such as API, the Global Climate Coalition, and the National Mining Association to obscure their involvement in these actions, which put the State off the trail of inquiry.

227. Moreover, Defendants' tortious misconduct—in the form of misrepresentations, omissions, and deceit—began decades ago and continues to this day. 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.

228. 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."<sup>249</sup> However, this statement is not supported by valid scientific research, and was and is contradicted by various studies.<sup>250</sup>

229. 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."<sup>251</sup> In

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<sup>249</sup> 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>.

<sup>250</sup> 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>.

<sup>251</sup> Chevron, Climate Change Resilience: A Framework for

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.”<sup>252</sup>

230. 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 temperatures data and see that. The question and debate is around how much, and how much is caused by humans.”<sup>253</sup>

231. Similarly, ConocoPhillips’s “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 (GHG) in the atmosphere that can lead to adverse changes in global climate. . . . While uncertainties remain, we continue to manage greenhouse gas emissions in our

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Decision Making 20 (Mar. 2018), <https://www.chevron.com/-/media/shared-media/documents/climate-change-resilience.pdf>.

<sup>252</sup> IPCC, Summary 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](https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_SPM_FINAL.pdf).

<sup>253</sup> Columbia Energy Exchange Podcast, John Watson, CEO, Chevron (Apr. 10, 2017), <https://www.energypolicy.columbia.edu/us-energy-markets-policy>.

operations and to integrate climate change related activities and goals into our business planning.”<sup>254</sup>

232. In 2015, then-Exxon Mobil CEO Rex Tillerson argued that climate models were not strong enough to justify a shift away from fossil fuels, saying: “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.”<sup>255</sup>

**J. The State Has Suffered, Is Suffering, and Will Suffer Injuries from Defendants’ Wrongful Conduct.**

233. Defendants’ individual and collective conduct—including, but not limited to: their failures to warn of the threats 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—is a direct and proximate cause that brought about or helped bring about climate change and consequent harms to New Jersey. Such harms

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<sup>254</sup> 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/>.

<sup>255</sup> 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>.

include: sea-level rise and attendant flooding, erosion, damage to riparian lands and submerged lands, and loss of wetlands and beaches; increased frequency and intensity of extreme weather events, including coastal and inland storms and associated flooding, drought, extreme heat, extreme precipitation events, wildfires, habitat loss, species impacts, and others; ocean warming and acidification; 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 New Jersey and disproportionately impact Overburdened Communities.<sup>256</sup>

234. As actual and proximate results of Defendants' conduct, which was a substantial factor in bringing about the aforementioned environmental changes, the State has suffered and will continue to suffer severe harms and losses, including but not limited to: injury or destruction of State-owned or -operated facilities and property deemed critical for operations, utility services, and risk management, as well as other assets that are essential to community health, safety, and well-being; increased planning and preparation costs for community adaptation and resilience to climate change's effects; and increased costs associated with public health impacts, environmental impacts, and economic impacts.

235. The State already has incurred, and will foreseeably continue to incur, injuries and damages due to the climate crisis caused by Defendants' tortious and deceptive conduct, as described in this Complaint. As a result of Defendants' wrongful

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<sup>256</sup> See, e.g., 2020 New Jersey Scientific Report on Climate Change: New Jersey Human Health Addendum.

conduct, New Jersey has experienced, is experiencing, and will experience significant adverse impacts, including, but not limited to, the following:

a. As a state with a large and economically important coastline, New Jersey is particularly vulnerable to severe harms from sea-level rise. The rate of sea-level rise in New Jersey has exceeded the global rate over the last several decades, and New Jersey will experience significant additional and accelerating sea-level rise over the coming decades.<sup>257</sup> By 2050, there is a 50% chance New Jersey experiences sea-level rise that meets or exceeds 1.4 feet, and a 17% chance that sea-level rise exceeds 2.1 feet, which will be experienced regardless of present and ongoing efforts to reduce greenhouse gas emissions.<sup>258</sup> By the end of the century, those numbers rise to 3.3 and 5.1 feet, respectively, under a moderate emissions scenario.<sup>259</sup> More than 352,000 New Jersey residents are at risk of coastal flooding, and many thousands more will face flooding risk in the coming decades.<sup>260</sup> Eighty percent of New Jersey residents live in the coastal zone, which is especially vulnerable to flooding from sea-level rise.<sup>261</sup> As the sea level has risen, the occurrence of high-tide floods also has increased in recent years. In Atlantic City, the

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<sup>257</sup> 2020 New Jersey Scientific Report on Climate Change at 44.

<sup>258</sup> Id. at 43

<sup>259</sup> Ibid.

<sup>260</sup> See States at Risk, New Jersey Coastal Flooding, <https://statesatrisk.org/new-jersey/coastal-flooding> (last visited Oct. 17, 2022).

<sup>261</sup> State of New Jersey, State of New Jersey Climate Change Resilience Strategy 98 (Oct. 12, 2021), <https://www.nj.gov/dep/climatechange/docs/nj-climate-resilience-strategy-2021.pdf>.



frequency of tidal flooding events has increased from an average of one per year in the 1950s to an average of eight per year from 2007 to 2016.<sup>262</sup> By the year 2100, it is extremely likely (i.e., a greater than 95% chance) that Atlantic City will experience high-tide flooding at least 95 days per year.<sup>263</sup> Saltwater intrusion from sea-level rise is also expected to impair water quality in coastal groundwater aquifers, as well as surface water supplies, as the salt front moves upstream.<sup>264</sup> Water quality will also be degraded as rising sea levels submerge sewer discharge points, allowing contaminants to move into waterways and the surrounding environment.<sup>265</sup> Industrial sites located in coastal areas will be at a greater risk of pollutant discharge into the State's waters.<sup>266</sup>

b. The destructive force and flooding potential from storm surges during coastal storms and other weather events have increased as the mean sea level of New Jersey has increased, and the combined effects of storm surge and sea-level rise will continue to exacerbate flooding impacts on the State. Even if all carbon emissions were to cease immediately, New Jersey would continue to experience sea-level rise due to the greenhouse gases already emitted and the lag time between emissions and sea-level rise. In fact, sea-level rise projections through 2050 do not take into account future emissions, meaning that New Jersey's

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<sup>262</sup> 2020 New Jersey Scientific Report on Climate Change at 45.

<sup>263</sup> Ibid.

<sup>264</sup> Ibid. at xi.

<sup>265</sup> Ibid.

<sup>266</sup> Ibid.

coastal communities will face increasing sea-level rise in the coming decades even if emissions decrease.<sup>267</sup>

c. Climate change is expected to significantly alter the frequency and intensity of precipitation events in New Jersey. By 2100, annual precipitation levels in New Jersey are expected to rise between 6% and 9%,<sup>268</sup> while the amount of precipitation in a 100-year storm event is projected to increase by up to 50% in northern counties.<sup>269</sup> The state is already witnessing this effect, as total annual precipitation in New Jersey has been about 3.7 inches above the long-term average for the past 16 years.<sup>270</sup> Over the past 50 years, extreme rainstorms in New Jersey increased by 55%, more than anywhere else in the United States.<sup>271</sup> This rise in precipitation levels has subjected and will subject New Jersey residents to more frequent and severe flooding events, such as the

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<sup>267</sup> Robert Kopp et al., New Jersey's Rising Seas and Changing Coastal Storms: Report of the 2019 Science and Technical Advisory Panel at 28 (Nov. 2019), [https://climatechange.rutgers.edu/images/STAP\\_FINAL\\_FINAL\\_12-4-19.pdf](https://climatechange.rutgers.edu/images/STAP_FINAL_FINAL_12-4-19.pdf).

<sup>268</sup> T. Wang et al., AdaptWest Project, Gridded Current and Projected Climate Data for North America at 1km Resolution, Generated Using the ClimateNA V7.01 Software (2022).

<sup>269</sup> Art DeGaetano, Projected Changes in Extreme Rainfall in New Jersey Based on an Ensemble of Downscaled Climate Model Projections (Oct. 2021), <https://www.nj.gov/dep/dsr/publications/projected-changes-rainfall-model.pdf>.

<sup>270</sup> Runkle et al., New Jersey State Climate Summary 2022 at 1–5.

<sup>271</sup> D.R. Easterling et al., 2017: Precipitation Change in the United States, in Climate Science Special Report: Fourth National Climate Assessment, Volume I 207–230 (D. J. Wuebbles et al eds., 2017).

major floods that inundated the State in 2000, 2004, 2005, 2006, 2007, 2010, 2011, 2012, and 2016.<sup>272</sup> Additionally, extreme precipitation events will degrade water quality as increased runoff deposits excess sediment and contaminants into the State's surface water, thereby causing eutrophic conditions and increasing the potential for harmful algal blooms.<sup>273</sup>

d. The State has incurred significant costs on projects to address sea-level rise, including but not limited to: conducting comprehensive surveys of sea-level rise threats to the State, analyzing sea-level rise in certain transportation infrastructure projects, incorporating sea-level rise as a core criterion in storm and flood reduction and coastal resilience projects, funding local resilience planning efforts for coastal communities, providing floodplain management assistance to local communities, buying out homes located in flooding zones, rebuilding beaches and barrier islands along the Atlantic coastline, restoring coastal wetlands and sea grass beds, and incurring past and future cost commitments of approximately 2.5 billion dollars for flood resilience and shore protection projects.

e. Climate change is causing more extreme weather events in New Jersey, with attendant physical and environmental consequences, including coastal flooding, coastal erosion, inland flooding, extreme heat events, and drought.<sup>274</sup> Coastal storms have already caused tens of billions of dollars in damages in New Jersey, along with floods, power

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<sup>272</sup> 2020 New Jersey Scientific Report on Climate Change at 42.

<sup>273</sup> Id. at xi.

<sup>274</sup> See generally id.

outages, sewage spills, and other disasters. In October 2012, Superstorm Sandy slammed into New Jersey, causing widespread inundation and almost thirty billion dollars in damage. In addition to causing thirty-eight deaths, Sandy's economic toll on New Jersey included \$7.8 billion in property damage and \$833 million in lost wages for its residents, \$3.56 billion in lost sales and structural damage for the commercial sector, and \$2.2 billion in damage to public buildings and infrastructure as well as emergency municipal expenses.<sup>275</sup> The National Oceanic and Atmospheric Administration ("NOAA") estimates that the storm caused a total of \$29.4 billion in damage to New Jersey and destroyed or damaged approximately 72,000 buildings in the State.<sup>276</sup> The destruction wrought by Superstorm Sandy was exacerbated by the effects of climate change: sea-level rise over the past century allowed its storm surge to affect 71,000 additional people overall, adding \$8 billion in damages to Sandy's toll on the northeast United States.<sup>277</sup> In the coming decades, increased rainfall and windspeeds during already-destructive coastal storms

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<sup>275</sup> Stephanie Hoopes Halpin, PhD, Rutgers School of Public Affairs and Administration, [The Impact of Superstorm Sandy on New Jersey Towns and Households](https://rucore.libraries.rutgers.edu/rutgers-lib/44886/PDF/1/play/) 8–9 (Oct. 25, 2013), <https://rucore.libraries.rutgers.edu/rutgers-lib/44886/PDF/1/play/>.

<sup>276</sup> NOAA, [Storm Events Database: Tropical Storm Sandy in New Jersey](https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=416939), <https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=416939> (last visited Oct. 14, 2022).

<sup>277</sup> Ayesha Tandon, [Hurricane Sandy Caused an 'Extra \\$8bn' Damage Due to Human-Caused Sea-Level Rise](https://www.carbonbrief.org/hurricane-sandy-caused-an-extra-8bn-damage-due-to-human-caused-sea-level-rise/#:~:text=More%20than%20%248bn%20of,%2460bn%20of%20economic%20damage.), [CarbonBrief](https://www.carbonbrief.org/hurricane-sandy-caused-an-extra-8bn-damage-due-to-human-caused-sea-level-rise/#:~:text=More%20than%20%248bn%20of,%2460bn%20of%20economic%20damage.) (May 18, 2021), <https://www.carbonbrief.org/hurricane-sandy-caused-an-extra-8bn-damage-due-to-human-caused-sea-level-rise/#:~:text=More%20than%20%248bn%20of,%2460bn%20of%20economic%20damage.>

will cause even more severe damage to public and private property, infrastructure, and natural resources in New Jersey. Today, less severe storms than Superstorm Sandy will produce similar flooding impacts. Compared to the conditions of 1950, flood levels reached by Sandy could reoccur in one- to two-thirds less time.<sup>278</sup> This century, the time between Sandy-level flooding events is expected to decrease by 3 to 17 times.<sup>279</sup> Just last year, Hurricane Ida caused at least thirty deaths in New Jersey,<sup>280</sup> along with an estimated \$2.02 billion in damage statewide,<sup>281</sup> including \$83.6 million in damage to New Jersey schools alone.<sup>282</sup>

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<sup>278</sup> William V. Sweet et al., Hurricane Sandy Inundation Probabilities Today and Tomorrow, 94(9) Bull. Am. Meteorological Soc’y S17–S20 (2013).

<sup>279</sup> Ning Lin et al., Hurricane Sandy’s Flood Frequency Increasing from Year 1800 to 2100, PNAS (Oct. 10, 2016), <https://doi.org/10.1073/pnas.1604386113>.

<sup>280</sup> Tully, He Was Swept Down a Sewer Pipe: ‘I Just Let the Water Take Me.’

<sup>281</sup> Mike Deak, A Year Since Hurricane Ida: Horror, Heroism, Anxiety Awaiting the Next Catastrophic Storm, My Central Jersey (Sept. 1, 2022), <https://www.mycentraljersey.com/story/news/local/2022/09/01/nj-hurricane-ida-floods-deaths/65418809007/>.

<sup>282</sup> Jackie Roman, Ida caused \$83.6M in damage to 49 N.J. Schools. They have to Pay Up Front Before FEMA Aid, NJ.com (Dec. 14, 2021), <https://www.nj.com/news/2021/12/ida-caused-836m-in-damage-to-49-nj-schools-but-they-have-to-pay-up-front-before-fema-aid.html>



**Figure 12: Atlantic City Inundated by Superstorm Sandy Storm Surge<sup>283</sup>**



**Figure 13: House in Mantoloking Knocked Off Foundation by Superstorm Sandy Storm Surge<sup>284</sup>**

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<sup>283</sup> N.J. Dep't of Env'tl. Prot., Coastal Vulnerability Assessment: Atlantic City, NJ 6 (May 2017), <https://www.nj.gov/dep/bcrp/docs/cva/atlantic-city-cva-final-05-2017.pdf>.

<sup>284</sup> New Jersey Department of Environmental Protection (2012).



**Figure 14: Hoboken Underwater due to Superstorm Sandy Storm Surge<sup>285</sup>**

f. The impacts of these extreme weather events are exacerbated where flooding in residential areas is coincident with environmental contamination from factories, warehouses, power plants, chemical refineries, and already-polluted sites, including New Jersey's 114 Superfund sites—the most in the nation.

g. Oceans are acidifying at an alarming rate because of fossil-fuel burning, endangering New Jersey's coastal ecosystems and economy. Acidity levels have already increased by roughly 30% since the Industrial Revolution, and they are expected to rise at a faster rate over time.<sup>286</sup> This radical change in ocean chemistry has serious and far-reaching consequences. For example, the accumulation of carbonic acid in coastal waters threatens the survival of organisms that build shells and skeletons from calcium carbonate—including commercially

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<sup>285</sup> Photograph taken at the intersection of Adams Street and Newark Street in Hoboken. New Jersey Department of Environmental Protection (Oct. 2012).

<sup>286</sup> 2020 New Jersey Scientific Report on Climate Change at x.

important shellfish species for New Jersey (e.g., hard clams, scallops, and oysters). Acidification also risks destabilizing whole marine ecosystems by altering the behavior, growth, reproduction, and migration patterns of critical aquatic organisms. New Jersey is particularly vulnerable to the effects of human-caused ocean acidification, as its identity, industries, and economy are closely intertwined with its coastal waters. Indeed, southern New Jersey counties rank second in the United States in economic dependence on shelled mollusks.<sup>287</sup> Fisheries play an important role in New Jersey's recreational and commercial opportunities, valued at approximately \$2 billion per year.<sup>288</sup> Ocean acidification threatens the survival of these fisheries.<sup>289</sup>

h. The average air temperature has increased and will continue to increase in New Jersey due to climate change. New Jersey has already experienced a nearly 4°F (2.22°C) increase in average annual temperature (between 1895 and 2021),<sup>290</sup> which is faster than the rest of the Northeast region.<sup>291</sup> The rate of warming in New Jersey has also increased

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<sup>287</sup> Ibid.

<sup>288</sup> N.J. Dep't of Env'tl. Prot. Bureau of Marine Fisheries, Flipping the Switch on Ecosystem Management: Studying the Delaware River – 2019 Report (June 9, 2021), <https://www.nj.gov/dep/fgw/marhome.htm>.

<sup>289</sup> State of New Jersey Climate Change Resilience Strategy at 36.

<sup>290</sup> James Shope et al., Rutgers, The State University of New Jersey, State of the Climate: New Jersey 2021 8 (2022), <https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2022/04/State-of-the-Climates-Report-NJ-2021-4-18.pdf>.

<sup>291</sup> 2020 New Jersey Scientific Report on Climate Change at vii.



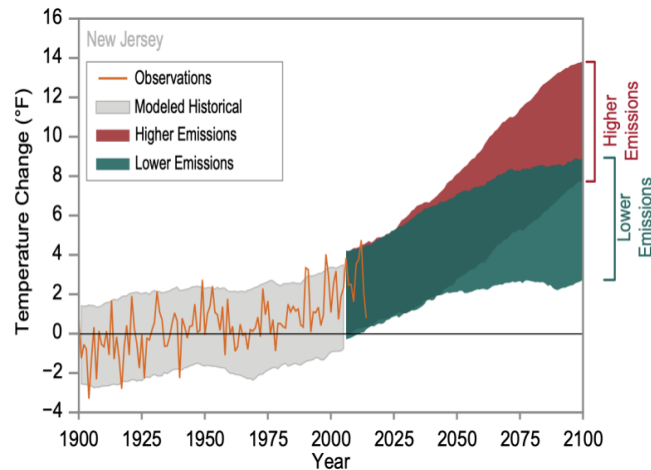
since 1970.<sup>292</sup> By 2050, temperatures in New Jersey are expected to increase by between 4.1°F and 5.7°F (2.3°C to 3.2°C).<sup>293</sup> Warming air temperatures have led and will lead to poorer air quality, more heat waves, expanded pathogen and pest ranges, disruption to agricultural production, greater need for irrigation for agricultural production, thermal stress for native flora and fauna, increased forest fires (especially in the Pinelands), increased electricity demand from increased air conditioning usage, and threats to human health—such as from heat stroke and dehydration, due to increased evaporation and demand, and increased allergen exposure. Rising air temperatures will increase ground-level concentrations of ozone and particulate matter, raising the incidence of serious health risks like respiratory distress, cancer, chronic obstructive pulmonary disease (“COPD”), and cardiovascular disease among New Jersey residents, particularly among Overburdened Communities, children, the elderly, and other vulnerable populations.<sup>294</sup>

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<sup>292</sup> Id. at 32.

<sup>293</sup> Ibid.

<sup>294</sup> Id. at x; see also N.J. Dep’t of Env’tl. Prot., New Jersey Human Health Addendum at 12–13, 16, 20.



**Figure 15: Projected New Jersey Temperature Increases**<sup>295</sup>

i. More than 180,000 New Jerseyans are especially vulnerable to extreme heat due to their age or economic status.<sup>296</sup> Due to systemic inequities, Overburdened Communities are particularly vulnerable to extreme heat events. Pregnant women exposed to high temperatures or air pollution are more likely to have children who are premature, underweight, or stillborn, and African-American mothers and babies are harmed at a much higher rate than the population at large.<sup>297</sup> The urban heat island

<sup>295</sup> Jennifer Runkle et al., New Jersey State Climate Summary, NOAA Technical Report NESDIS 149-NJ (2017), <https://statesummaries.ncics.org/chapter/nj/>.

<sup>296</sup> See States at Risk, New Jersey Extreme Heat, <https://statesatrisk.org/new-jersey/extreme-heat> (last visited Oct. 17, 2022).

<sup>297</sup> Christopher Flavelle, Climate Change Tied to Pregnancy Risks, Affecting Black Mothers Most, N.Y. Times (June 18, 2020), <https://www.nytimes.com/2020/06/18/climate/climate-change-pregnancy-study.html>.

effect, which affects urban areas across New Jersey, exacerbates the health impacts of extreme heat on Overburdened Communities in those areas. New Jerseyans who face housing insecurity are also more vulnerable to the extreme temperatures and air pollution exacerbated by climate change.

j. New Jersey’s wetlands are already facing, and will continue to face, significant damage due to climate change. Rising sea levels are already inundating freshwater wetlands, creating “ghost forests”—i.e., stands of dead trees surrounded by transitional marshes.<sup>298</sup> Coastal wetlands are threatened with deterioration and area loss in the face of accelerating rates of sea-level rise.<sup>299</sup> By the end of the century, New Jersey may lose 92% of brackish marshes, 32% of tidal swamps, and 6% of tidal fresh marshes in the Delaware Estuary.<sup>300</sup> New Jersey’s wetlands provide valuable ecosystem services to the State, including by filtering water contaminants, mitigating storm damage by absorbing floodwaters, and supporting the State’s fishing and hunting industries.<sup>301</sup> Marshes play a critical role in

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<sup>298</sup> 2020 New Jersey Scientific Report on Climate Change at xii.

<sup>299</sup> L. Haaf et al., Sediment Accumulation, Elevation Change, and the Vulnerability of Tidal Marshes in the Delaware Estuary and Barnegat Bay to Accelerated Sea-Level Rise, 45(2) Estuaries and Coasts 413–27 (2022); J.S. Weis et al., The Status and Future of Tidal Marshes in New Jersey Faced with Sea-Level Rise, 4(1) Anthropocene Coasts 168–92 (2021).

<sup>300</sup> 2020 New Jersey Scientific Report on Climate Change at xii.

<sup>301</sup> Amanda O’Lear et al. New Jersey Climate Change Alliance, Wetland Resource Considerations for a New Jersey Natural and Working Lands Strategy, 4 (Feb. 2022), [https://njadapt.rutgers.edu/images/NJCCA\\_NWL\\_Wetlands\\_Report\\_FINAL.pdf](https://njadapt.rutgers.edu/images/NJCCA_NWL_Wetlands_Report_FINAL.pdf).

protecting back bay communities—including residents, their property, and community infrastructure—from flooding brought about by waves and storm surges.<sup>302</sup> For instance, one study estimated that coastal marshes spared more than \$625 million in damage during Superstorm Sandy.<sup>303</sup>

k. Further, the State’s wetlands act as carbon sinks, removing more carbon from the atmosphere than they emit and storing it in vegetation and soil.<sup>304</sup> Loss of wetlands through sea-level rise will result in the release of stored carbon and degraded capacity to store CO<sub>2</sub>, thereby increasing New Jersey’s carbon emissions.

l. New Jersey’s forests, which comprise 40% of the State’s land area, are vulnerable to the consequences of a warming climate. Increased instances of drought will likely stress the State’s forests, especially moisture tolerant species like maples.<sup>305</sup> Pests and invasive species are also expected to take advantage of warmer temperatures to spread into new areas. Pine forests will be particularly vulnerable to infestation by the southern pine beetle, which has the potential to kill tens of thousands of acres.<sup>306</sup> Indeed, southern pine beetle outbreaks have been recorded in New Jersey since

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<sup>302</sup> State of New Jersey Climate Change Resilience Strategy at 88.

<sup>303</sup> Siddharth Narayan et al., Lloyd’s Tercentenary Research Foundation, London Coastal Wetlands and Flood Damage Reduction: Using Risk Industry-based Models to Assess Natural Defenses in the Northeastern USA 2 (2016).

<sup>304</sup> Id. at 16.

<sup>305</sup> 2020 New Jersey Scientific Report on Climate Change at xii.

<sup>306</sup> Ibid.

2000, and the pests continue to move steadily northward because of higher winter temperatures.<sup>307</sup> In addition, rising temperatures and more frequent droughts could lead to a longer and more intense wildfire season. The Pinelands area of southern New Jersey is vulnerable to wildfires, as most of the area is classified as a high to extreme fire hazard level.<sup>308</sup>

m. Climate change is stressing important natural and cultural resources in New Jersey. New Jersey is home to 2,100 native plant species, including several globally rare species (e.g., sea-level fens and Atlantic white cedar); a little over 800 rare or endangered species; and several plant species that are found nowhere else in the world (e.g., Hammond's yellow spring beauty and bog asphodel).<sup>309</sup> Climate change represents a substantial threat to many of these rare or endangered species. At least 50 rare plant species in New Jersey are considered vulnerable to climate change due to shrinking wetlands and increased temperatures.<sup>310</sup> Unique habitats like the maritime forests found on New Jersey's barrier islands and endangered species like the Nantucket serviceberry are particularly vulnerable to sea-level rise, flooding, and erosion caused by climate change.<sup>311</sup> Atlantic white cedar, a globally rare species, grows in low-lying coastal areas but is completely intolerant of saltwater, making it extremely susceptible to rising seas.<sup>312</sup>

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<sup>307</sup> Id. at 91.

<sup>308</sup> Ibid.

<sup>309</sup> Id. at 122.

<sup>310</sup> Ibid.

<sup>311</sup> Id. at xiv.

<sup>312</sup> Ibid.

Moreover, 29% of New Jersey's 248 bird species are vulnerable to climate change, including the American Goldfinch—the state bird of New Jersey.<sup>313</sup> Shorebirds like Common Terns, Red Knots, and Saltmarsh Sparrows are more vulnerable to climate change than other bird species.<sup>314</sup> Saltmarsh Sparrows, a globally endangered species, may reach quasi-extinction population numbers by 2040 due to habitat loss from sea-level rise.<sup>315</sup> New Jersey is an important area to migratory birds, with harm to New Jersey wetlands and coastal areas disrupting the reproductive success of many migratory birds.<sup>316</sup>

n. By driving up temperatures and precipitation levels, climate change will have major impacts on agriculture in New Jersey. As winter season temperatures increase, New Jersey may no longer experience the periods of winter chill needed for certain plant species to produce fruit. Blueberries and cranberries—both New Jersey specialty crops that form a substantial portion of the state's agricultural economy—depend on a long winter chill for optimal flowering and fruit development.<sup>317</sup> Increased ground-level ozone caused by rising temperatures will also slow the growth of crops and render them more susceptible to disease.<sup>318</sup> Moreover, changes in the frequency and intensity of precipitation will negatively affect crops by reducing growth, delaying

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<sup>313</sup> Ibid.

<sup>314</sup> Ibid.

<sup>315</sup> Ibid.

<sup>316</sup> Id. at 124.

<sup>317</sup> Id. at 81.

<sup>318</sup> Id. at 82.

spring planting, washing out planted crops, and increasing root disease through contact with wet soils.<sup>319</sup> In terms of livestock, higher temperatures will very likely negatively reduce productivity in summer months, as dairy cows produce less milk when temperatures exceed 75°F.<sup>320</sup> As a result, New Jersey is expected to suffer a \$3.3 million loss to its dairy industry per year by the end of the century.<sup>321</sup>

o. Rising sea levels and changing marine habitat conditions have and will continue to affect New Jersey's fisheries. Because fish are cold-blooded, warming oceans alter the reproduction, growth, and survival of fish traditionally caught along the mid-Atlantic coast. Many important commercial and recreational species, such as summer flounder, lobster, and black sea bass, have shifted northward toward colder waters.<sup>322</sup> In addition, the loss of New Jersey's coastal wetlands and estuaries may shrink the population of many commercially important fish species, which rely on wetlands to host larval fish during early life stages.<sup>323</sup> Many economically significant fish species are classified as highly sensitive to climate change in the mid-Atlantic region, including Atlantic cod and winter flounder.<sup>324</sup> Sea-

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<sup>319</sup> Ibid.

<sup>320</sup> Id. at 83.

<sup>321</sup> Ibid.

<sup>322</sup> Zoe Kitchel and Douglas Zemeckis, Climate Change Impacts on New Jersey's Marine Fisheries, Rutgers Cooperative Extension Bulletin E369 (June 2021), <https://njaes.rutgers.edu/e369/#:~:text=Rising%20sea%20levels%20have%20the,as%20summer%20and%20winter%20flounder>.

<sup>323</sup> Id.

<sup>324</sup> Id.

level rise and associated flooding will also place fishing infrastructure at risk, such as docks and marinas, processing and storage facilities, and transportation routes on the seafood supply chain.<sup>325</sup>

p. Sea-level rise, tidal and inland flooding, storms, wildfires, and other hazards also threaten to destroy or impair access to both public and private property in New Jersey.<sup>326</sup> Storm surges and flooding threaten to render portions of State property unusable. Private property loss and displacement resulting from catastrophic climate events increases the potential for mental illnesses including post-traumatic stress disorder, depression, and insomnia, and the fragmenting of communities from such events can also have negative mental health impacts.<sup>327</sup> Low-income New Jerseyans with fewer resources to evacuate face higher risks of experiencing inhospitable living conditions following such events.<sup>328</sup>

q. The tourism industry in New Jersey will also be significantly affected by rising seas, loss of coastland, and increased flooding. Tourism contributes \$30 billion to New Jersey's economy each year, 70% of which comes from the state's coastal counties.<sup>329</sup> As sea levels continue to rise, the state's

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<sup>325</sup> Id.

<sup>326</sup> See State of New Jersey Climate Change Resilience Strategy at 77; 2020 New Jersey Scientific Report on Climate Change at ii, 91–93; New Jersey Human Health Addendum at 16.

<sup>327</sup> New Jersey Human Health Addendum at 39-40.

<sup>328</sup> Ibid.

<sup>329</sup> N.J. Dep't of Env'tl. Prot., DEP Combats Threat of Global Warming and Climate Change, Focus DEP 1 (Fall 2008),



beaches will continue to erode and its coastal communities will have to contend with more frequent flooding that puts recreational infrastructure at risk. Loss of tidal wetlands, which provide more than \$2.18 billion per year in ecosystem services,<sup>330</sup> severely jeopardizes crab, fish, and bird populations, further threatening New Jersey's recreational and commercial fishing and ecotourism industries.<sup>331</sup>

r. Climate change has caused and will cause significant public health-related injuries to New Jersey and its residents.<sup>332</sup> Greater numbers of extreme heat events in New Jersey will result in increased risk of heat-related illnesses (from mild heat stress to fatal heat stroke) and the exacerbation of pre-existing conditions in the medically fragile, chronically ill, and vulnerable. In New Jersey, heat-related hospital admissions during the warm season (May to September) increased approximately 156% between 2004 and 2013.<sup>333</sup> Heavy precipitation, sea-level rise, and extreme weather events will lead to more frequent flooding events, which cause death and injury in addition to secondary health risks such as damage to sanitation infrastructure, aggravation of chronic diseases, and contamination of drinking

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[https://www.nj.gov/dep/focus/pdfs/0808global\\_warming.pdf](https://www.nj.gov/dep/focus/pdfs/0808global_warming.pdf); see also State of New Jersey Climate Change Resilience Strategy at 77.

<sup>330</sup> S. Liu, Valuing New Jersey's ecosystem services and natural capital: A spatially explicit benefit transfer approach, 45 Envtl. Mgmt. 1271 (2010) (adjusted for inflation).

<sup>331</sup> State of New Jersey Climate Change Resilience Strategy at 88.

<sup>332</sup> See generally New Jersey Human Health Addendum.

<sup>333</sup> Id. at 4.

water.<sup>334</sup> These risks are particularly acute for New Jersey because 80% of the state's population lives in the coastal zone.<sup>335</sup> Further, air quality will deteriorate due to rising temperatures, as ground-level ozone and particulate matter concentrations rise. Ozone and particulate matter are associated with a wide range of harmful health effects in humans, including cardiovascular disease, cancer, COPD, and asthma.<sup>336</sup> New Jersey residents already suffer from excessive ozone levels, with much of northern New Jersey in non-attainment of 2008 ozone standards due in part to interstate emissions from upwind states.<sup>337</sup> Climate change will exacerbate health risks associated with ozone pollution for many New Jerseyans. In particular, vulnerable populations such as the disabled, the elderly, those with prior health issues, children, people who live alone, people of color, and less-resourced communities are more likely to suffer health effects from higher air temperatures, flooding, and air pollution.<sup>338</sup> As pest seasons and ranges expand, vector-borne illnesses will increase in New Jersey's population. The State has borne and will continue to bear costs associated with mitigating and responding to these public health threats.

231. The State has already incurred damages as a direct and proximate result of Defendants' conduct.

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<sup>334</sup> Id. at 6-8.

<sup>335</sup> State of New Jersey Climate Change Resilience Strategy at 98.

<sup>336</sup> 2020 New Jersey Scientific Report on Climate Change at x.

<sup>337</sup> U.S. Env'tl. Prot. Agency, New Jersey 8-Hour Ozone Nonattainment Areas (2008 Standard) (Sept. 30, 2022), [https://www3.epa.gov/airquality/greenbook/map/nj8\\_2008.pdf](https://www3.epa.gov/airquality/greenbook/map/nj8_2008.pdf).

<sup>338</sup> New Jersey Human Health Addendum at 40-41.

The State has planned and is planning, at significant expense, adaptation and mitigation strategies to address climate change-related impacts in order to preemptively mitigate and/or prevent injuries to itself and its citizens. These efforts include, but are not limited to, partnership initiatives to guide and fund local climate resilience plans across New Jersey, particularly in the coastal zone;<sup>339</sup> allocating funds to the Blue Acres program to buy out homes built on vulnerable floodplains and restore those floodplain ecosystems;<sup>340</sup> developing a risk communication campaign to educate New Jersey residents about the dangers of climate change;<sup>341</sup> and introducing sweeping regulatory reforms, branded as Protecting Against Climate Threats (PACT), to empower state agencies to mitigate and adapt to the consequences of climate change.<sup>342</sup>

232. New Jersey has already spent billions of dollars to mitigate and adapt to climate change. The State has incurred approximately \$2.5 billion in costs to construct 21 existing and planned coastal and flood protection projects, including the Greenbrook Flood Control Project, Rebuild by Design Hudson River, and shore protection projects in the Meadowlands. Additionally, the Department of Community Affairs has allocated over \$19 million to local resilience planning efforts since Superstorm Sandy. The State has also spent a total of \$1.2 billion rebuilding the barrier island beach and dune system to protect its

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<sup>339</sup> State of New Jersey Climate Change Resilience Strategy at 18.

<sup>340</sup> Id. at 34.

<sup>341</sup> Id. at 53.

<sup>342</sup> Id. at 21-22.

coastal communities from rising seas and extreme weather.<sup>343</sup> Since 2018, almost all \$25 million from the State's yearly Shore Protection Fund appropriation has been allocated to the State's cost-share responsibility for coastal resilience projects administered by the U.S. Army Corps of Engineers.<sup>344</sup> Through its Blue Acres program, New Jersey has spent more than \$203 million to buy out 802 homes located in flood-prone areas to increase flood mitigation and protect vulnerable communities. New Jersey's expenditures on climate mitigation and adaptation are only beginning and are expected to increase with each passing year. In April 2022, the State allocated \$21 million to climate change-related projects, including providing grants to restore wetlands, sea grass beds, and forests in Jersey City.<sup>345</sup>

233. Defendants' tortious and deceptive conduct was a substantial factor in bringing these and other climate related injuries suffered by the State, including harms to its infrastructure, environment, socioeconomic condition, and public health—than it has endured, and foreseeably will endure, due to the climate crisis. The brunt of these injuries and harms will fall on Overburdened Communities, as climate change exacerbates existing public health and environmental disparities.<sup>346</sup>

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<sup>343</sup> Id. at 95-96.

<sup>344</sup> Ibid.

<sup>345</sup> Wayne Perry, New Jersey Spending \$21M on Projects to Fight Climate Change, The Associated Press (April 21, 2022), <https://apnews.com/article/climate-technology-environment-electric-vehicles-jersey-city-e0be0db62edd3fdf0304350a009dc0d4>.

<sup>346</sup> See New Jersey Human Health Addendum at 40–41.

234. Defendants' tortious and deceptive conduct as described herein is therefore an actual, direct, and proximate substantial-factor cause of the State's climate crisis-related injuries and was necessary to those injuries and brought about or helped to bring about those injuries.

## **V. CAUSES OF ACTION**

### **FIRST CAUSE OF ACTION**

#### **(Failure to Warn)**

##### **(Against All Fossil Fuel Defendants)**

235. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

236. Under New Jersey law, Fossil Fuel Defendants each had a duty to adequately warn consumers, the public, and the State of the reasonably foreseeable or knowable risks posed by their fossil fuel products.

237. Fossil Fuel Defendants produced, marketed, distributed, and/or sold fossil fuel products at all relevant times.

238. At all relevant times, the State purchased fossil fuels for its operations, including fueling state vehicles.

239. Fossil Fuel Defendants knew or should have known—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—of the dangers from climate change, which is inherently caused by the normal use and operation of their fossil fuel products. Climate change results in harms, including but not limited to: global and local sea-level rise, more

frequent and extreme drought, more frequent and extreme precipitation events, increased frequency and severity of heat waves and extreme temperatures, other adverse environmental changes, and the associated consequences of those physical and environmental changes in New Jersey and elsewhere, with compounding effects in Overburdened Communities.

240. Fossil Fuel Defendants also knew or should have known—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 the climate effects described herein rendered their fossil fuel products dangerous when used as intended or in a reasonably foreseeable manner.

241. Given the grave dangers presented by the climate effects that inevitably flow from the normal and foreseeable use of fossil fuel products, a reasonable manufacturer, seller, or other entity responsible for introducing fossil fuel products into the stream of commerce would have warned of those known, inevitable climate effects.

242. At all relevant times, however, Fossil Fuel Defendants breached their duty of care by failing to adequately warn any consumers—including, but not limited to, the State and its residents—of the harmful climate effects that inevitably flow from the intended and foreseeable use of their fossil fuel products.

243. In fact, far from warning about the climate impacts of their products, Fossil Fuel Defendants—individually and in concert—engaged in widespread, sophisticated advertising and media campaigns to disseminate false and misleading information about

the climate impacts of their fossil fuel products and to mislead consumers and the public about the existence, causes, and consequences of climate change. These and other efforts to conceal and misrepresent the climate risks of fossil fuels prevented reasonable consumers—including, but not limited to, the State and its residents—from fully recognizing the climate dangers posed by fossil fuel products, thereby undermining and rendering ineffective any warnings that Fossil Fuel Defendants may have also disseminated.

244. To this day, Fossil Fuel Defendants fail to adequately warn of the climate impacts of their fossil fuel products, and they continue to spread false and misleading information about climate change, the role of their fossil fuel products and their businesses in driving climate change, and their investments in low-emission energy resources.

245. Throughout the time periods at issue, the full extent of the risks posed by the use of Fossil Fuel Defendants' fossil fuel products was not obvious or generally known and recognized, and users of fossil fuel products did not have actual knowledge of the full extent of the danger, because (among other reasons) Fossil Fuel Defendants actively sought to conceal those risks by disseminating false and misleading information about the climate impacts of fossil fuel products, both inside and outside of New Jersey.

246. Fossil Fuel Defendants knew or should have known that consumers—including but not limited to the State and its residents—were not aware of the risks posed by the use of Fossil Fuel Defendants' fossil fuel products because, among other reasons, Fossil Fuel Defendants actively sought to conceal those risks by disseminating false and misleading information

about the climate impacts of fossil fuel products, both inside and outside of New Jersey.

247. Fossil Fuel Defendants' failure to adequately warn of their products' climate impacts was a substantial factor in bringing about the State's injuries alleged herein. If Fossil Fuel Defendants had provided adequate warnings starting when they knew or should have known of the climate dangers posed by their fossil fuel products, total fossil fuel consumption would have been substantially less, resulting in less climate change and less severe climate impacts in New Jersey and elsewhere. Instead, Fossil Fuel Defendants chose to hyper-inflate fossil fuel consumption by failing to adequately warn of the climate impacts of fossil fuel products, by intentionally discrediting the science of climate change, by disseminating false and misleading information about the causes and effects of climate change, and by aggressively promoting fossil fuel products for uses that they knew would cause widespread climate-related harms in New Jersey and elsewhere. Further, Fossil Fuel Defendants' failure to provide adequate warnings about the climatic consequences of burning fossil fuels delayed the emergence of viable clean energy alternatives by preventing consumers, including in New Jersey, from having access to full and accurate information material to their energy purchasing decisions. This delayed transition to a lower-carbon economy caused the emission of huge amounts of avoidable greenhouse gases into the atmosphere, ensuring that the damage caused by climate change will be substantially more severe than if Defendants had issued warnings commensurate with their internal knowledge of climate risks. As a direct and proximate result of this tortious and deceptive conduct, the State has sustained and will sustain substantial expenses and



damages as set forth in this Complaint, including damage to publicly owned infrastructure and real property, and injuries to public resources that interfere with the rights of the State and its residents.

248. Fossil Fuel Defendants' acts and omissions as alleged herein are indivisible causes of the State's injuries and damage as alleged herein, because, inter alia, it is not possible to determine the source of any particular individual greenhouse gas molecule in the atmosphere attributable to anthropogenic sources, because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gases quickly diffuse and comeingle in the atmosphere.

249. Plaintiffs seek damages, including compensatory and natural resource damages, in an amount to be determined at trial. Plaintiffs pursue these remedies in the State's sovereign, parens patriae, and proprietary capacity for the benefit of the general public. Plaintiffs also request an award of punitive damages, in an amount to be determined by the trier of fact, because Fossil Fuel Defendants' wrongful conduct, as set forth in this Complaint, exhibited a wanton or willful disregard for the rights of the State and its residents, and was committed with actual malice.

## **SECOND CAUSE OF ACTION**

### **(Negligence)**

#### **(Against All Defendants)**

250. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

251. Under New Jersey law, each Fossil Fuel Defendant has a duty to exercise reasonable care in

manufacturing, marketing, promoting, distributing, and selling fossil fuel products that inevitably cause harm to the State. All Defendants have 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.

252. For decades, Defendants knew or should have known—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—of the foreseeable harms arising from climate change, which is inherently caused by the normal use and operation of fossil fuel products. Climate change results in harms, including but not limited to: global and local sea-level rise, more frequent and extreme drought, more frequent and extreme precipitation events, increased frequency and severity of heat waves and extreme temperatures, other adverse environmental changes, and the associated consequences of those physical and environmental changes in New Jersey and elsewhere, with compounding effects in Overburdened Communities.

253. For decades, Defendants knew or should have known—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 unrestrained consumption of fossil fuels would lead to climate catastrophe and cause billions of dollars of physical, economic, and ecological harm to New Jersey and other coastal localities like it.

254. Defendants knew or should have known that the widespread dissemination of false and misleading

information about the science of climate change, the climate impacts of fossil fuels, and the causes and effects of climate change would artificially inflate overall consumption of fossil fuels, thereby accelerating climate change and exacerbating the local impacts of climate change in New Jersey and around the world.

255. Defendants also knew or should have known that the climate change impacts alleged herein could have been reduced or avoided if leading members of the fossil fuel industry—such as Defendants—had shared with consumers and the public their own superior knowledge concerning the climate impacts of fossil fuel products.

256. Nevertheless, Defendants intentionally engaged in a decades-long campaign to undermine the science of climate change, discredit climate researchers, and conceal the existence, causes, and consequences of climate change from public awareness; knowingly failed to warn consumers, the public, and the State about the climate impacts of fossil fuel consumption; and aggressively promoted fossil fuel consumption to levels that Defendants knew would create a climate crisis in New Jersey and elsewhere, with disproportionate impacts on Overburdened Communities, children, the elderly, and other vulnerable populations.

257. Through this wrongful conduct, which continues to this day, Defendants breached—and continue to breach—their duty of care to the State because, inter alia:

a. It was foreseeable—and foreseen by Defendants—that unrestrained fossil fuel

consumption would result in harmful climate impacts in coastal states, like New Jersey;

b. It was foreseeable—and foreseen by Defendants—that the fossil fuel industry could maintain or increase total fossil fuel consumption by manufacturing doubt about the existence of climate change, by flooding the marketplace with debunked scientific theories of climate change, by concealing the role of fossil fuels in driving the climate crisis, and by downplaying the risks of climate change to the planet and its communities;

c. As compared to ordinary consumers, the public, and the State, Defendants had superior knowledge of the harmful risks posed by fossil fuel products at all times relevant to this Complaint;

d. Defendants had the opportunity and ability to avoid or mitigate those risks by, inter alia, adequately warning of the climate impacts of fossil fuel consumption and by stopping their campaigns of climate disinformation;

e. Knowing full well the harms that would inevitably result from their deceptive and tortious commercial conduct, Defendants took affirmative steps to protect their own assets and infrastructure from the ravages of climate change and to exploit new profit opportunities that would come with a warming world;

f. For multiple decades, Defendants have profited immensely from their failure to warn and deception, which has maintained and increased fossil fuel consumption;

g. There is no public interest in allowing Defendants to intentionally and knowingly spread false and misleading information about the dangers of

fossil fuels or the existence, causes, and consequences of climate change;

h. There is no social value in allowing Defendants to use deceptive business practices to artificially inflate the market for fossil fuel products;

i. Fairness demands that Defendants should bear the costs of their failure to warn and of their deceptive promotion, not the State and its taxpayers.

258. Defendants' ongoing breach of their duty of care was a substantial factor in bringing about widespread and significant injuries to the State by inflating fossil fuel consumption, which in turn increased greenhouse gas pollution, accelerated climate change, and exacerbated deadly climate change impacts in New Jersey that have damaged land, buildings, infrastructure, natural resources, communities—in particular, Overburdened Communities—and the economy. Further, Defendants' breach of their duty of care delayed the emergence of viable clean energy alternatives by preventing consumers, including in New Jersey, from having access to full and accurate information material to their energy purchasing decisions. This delayed transition to a lower-carbon economy caused the emission of huge amounts of avoidable greenhouse gases into the atmosphere, ensuring that the damage caused by climate change will be substantially more severe than if Defendants' actions had conformed to their duty of care.

259. Plaintiffs seek damages, including compensatory and natural resource damages, in an amount to be determined at trial. Plaintiffs pursue these remedies in the State's sovereign, proprietary, and parens patriae capacity for the benefit of the

general public. Plaintiffs also request an award of punitive damages, in an amount to be determined by the trier of fact, because Defendants' wrongful conduct, as set forth in this Complaint, exhibited a wanton or willful disregard for the rights of the State and its residents, and was committed with actual malice.

**THIRD CAUSE OF ACTION**  
**(Impairment of the Public Trust)**  
**(Against All Defendants)**

260. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

261. Under New Jersey's centuries-old public trust doctrine, the State has the authority and the duty to protect natural resources held by the State in the public trust for its people.

262. As the common law has long recognized and the Legislature has repeatedly reaffirmed, the State's public-trust duties broadly extend to all air, land, waterways, bays, beaches, wetlands, flora, fauna, and other natural resources in New Jersey that are owned, managed, administered, or otherwise controlled by the State.

263. This includes, inter alia, all riparian lands and submerged lands within the State of New Jersey, as well as many dry sand beaches, which must be administered by the State in the public interest pursuant to the public trust doctrine.

264. Through their acts and omissions, Defendants have—individually and in concert with each other—directly and proximately caused severe damage to the State's natural resources by, inter alia, intentionally, knowingly, recklessly, and negligently failing to warn

of the climate impacts of fossil fuel products; discrediting climate science and climate scientists; inundating markets with false and misleading information about the existence, causes, and consequences of climate change; and aggressively promoting the unrestrained expansion of fossil fuel consumption. As alleged above, that tortious and deceptive commercial conduct has driven fossil fuel consumption—and thus greenhouse gas pollution, and thus climate change, and thus sea-level rise, flooding, storm surges, deadly weather events, and other climate change impacts in New Jersey, which disproportionately threaten Overburdened Communities. Further, Defendants' deceptive acts and omissions delayed the emergence of viable clean energy alternatives by preventing consumers, including in New Jersey, from having access to full and accurate information material to their energy purchasing decisions. This delayed transition to a lower-carbon economy caused the emission of huge amounts of avoidable greenhouse gases into the atmosphere, ensuring that the damage caused by climate change will be substantially more severe than if Defendants had acted forthrightly, commensurate with their internal assessments of climate risk.

265. Defendants' tortious and deceptive conduct—which continues to this day—has already significantly impaired, and will continue to significantly impair, public trust resources throughout New Jersey, including but not limited to:

a. Loss of dry coastline, riparian lands, submerged lands, beaches, and coastal wetlands, along with their associated unique ecological and recreational values, due to sea-level rise and storm surges;

b. Impairment of coastal groundwater aquifers, surface water supplies, and estuaries due to saltwater intrusion;

c. Reduced availability of drinking water due to increased temperatures and changing precipitation patterns;

d. Worsened air quality, including through increased ground-level concentrations of ozone and particulate matter, and the resulting suite of serious health consequences for New Jerseyans—particularly populations already facing increased vulnerability to respiratory illnesses, including certain Overburdened Communities, children, the elderly, and those located near sources of pollution;

e. Destabilization of marine ecosystems and fisheries due to, among other things, ocean acidification and warming waters, with rippling impacts on recreational, tourism, and maritime industries; and

f. Loss of flora, fauna, and endangered species due to increased temperatures, more frequent forest fires, shrinking wetlands, more severe storms, and the spread of pests and invasive plant species.

266. Defendants' resource-impairing acts and omissions, as alleged herein, are indivisible causes of the alleged injuries and damages to the State's public trust resources because, *inter alia*, it is not possible to determine the source of any particular individual molecule of greenhouse gas pollution in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gases quickly diffuse and comingle in the atmosphere.



267. Plaintiffs seek compensatory and natural resource damages in an amount to be determined at trial. Plaintiffs pursue these remedies in the State's sovereign, proprietary, and parens patriae capacity for the benefit of the general public. Plaintiffs also request an award of punitive damages, in an amount to be determined by the trier of fact, because Defendants' wrongful conduct, as set forth in this Complaint, exhibited a wanton or willful disregard for the rights of the State and its residents, and was committed with actual malice. The State's lawsuit is exempt from the Comparative Negligence Act because the public trust doctrine is an "environmental law[]" within the meaning of N.J.S.A. 2A:15-5.4.

#### **FOURTH CAUSE OF ACTION**

##### **(Trespass)**

##### **(Against All Fossil Fuel Defendants)**

268. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

269. New Jersey law prohibits Defendants from intentionally, recklessly, or negligently causing tangible matter to enter land, real property, and natural resources over which the State has the right to exclusive possession, without first obtaining the State's consent.

270. The State has actual and exclusive possession of land, real property, and natural resources throughout New Jersey.

271. Fossil Fuel Defendants—individually and in concert with each other—engaged in tortious and deceptive conduct that was a substantial factor in causing flood waters, extreme precipitation, saltwater, debris, and other tangible materials to enter land, real

property, and natural resources over which the State holds the right of exclusive possession. Defendant caused these trespasses by, inter alia:

a. Affirmatively and knowingly promoting the sale and use of fossil fuel products that Fossil Fuel Defendants knew to be hazardous and knew would cause or exacerbate climate change and related consequences, including, but not limited to, sea-level rise and extreme precipitation events.

b. Affirmatively and knowingly concealing the hazards that Fossil Fuel Defendants knew would result from the normal use of their fossil fuel products by misrepresenting and casting doubt on the integrity of scientific information related to climate change;

c. Affirmatively promoting fossil fuel products for uses that Fossil Fuel Defendants knew would be hazardous to consumers, the public, and the State;

d. Disseminating and funding the dissemination of information intended to mislead customers, consumers, and civil society regarding the risk of climate change and its consequences, which follow from the normal, intended use of fossil fuel products;

e. Intentionally and misleadingly advertising many of their fossil-fuel products as clean, green, or climate friendly, while failing to disclose that these very same products are a driving cause of climate change;

f. Intentionally and misleadingly exaggerating their business's investments in low-emission resources, while failing to disclose that those investments actually comprise a miniscule percentage of Fossil-Fuel Defendants' total business and that Fossil-Fuel Defendants are actually ramping up their fossil fuel extraction, production, and sales;

g. Delaying the emergence of viable clean energy alternatives by preventing consumers, including in New Jersey, from having access to full and accurate information material to their energy purchasing decisions, thereby causing the emission of huge amounts of avoidable greenhouse gases into the atmosphere; and

h. Failing to warn the public about the hazards associated with the use of fossil fuel products.

272. At all relevant times, Fossil Fuel Defendants performed this tortious and deceptive conduct in locations within the control of Fossil Fuel Defendants, including at their corporate headquarters and offices, and at advertising agencies, consulting firms, and similar agents and employees of Fossil Fuel Defendants.

273. At all relevant times, moreover, Fossil Fuel Defendants controlled every step of the fossil fuel product supply chain—from the extraction of raw fossil fuel products, to the refining and marketing of those products, to the placement of those products into the stream of commerce, to the ultimate sale of those products to end users, including in New Jersey.

274. Fossil Fuel Defendants' trespass-causing conduct continues to this day, including through greenwashing campaigns that falsely and misleadingly portray Fossil Fuel Defendants as leaders in the fight against climate change.

275. Fossil Fuel Defendants intentionally, recklessly, and negligently engaged in—and continue to engage in—this trespass-causing conduct, knowing with substantial certainty that this conduct would hyper-inflate fossil-fuel consumption and thereby accelerate climate change, exacerbate the impacts of

climate change in New Jersey, and cause water and other tangible materials to enter the State's real property and natural resources—further impacting, among others, Overburdened Communities, who already face disproportionate harm from the impacts of climate change.

276. The State did not give Fossil Fuel Defendants permission to cause floodwaters, extreme precipitation, saltwater encroachment, and other materials to enter the State's property and natural resources. Nor did the State authorize Fossil Fuel Defendants to conceal and misrepresent the climate impacts of fossil fuel products; to disseminate false and misleading information about the science, causes, and effects of climate change; to affirmatively promote fossil fuel products for uses that Fossil Fuel Defendants knew were hazardous to the planet and its people; or to engage in any of the other trespass-causing conduct alleged herein.

277. The State has been and will continue to be actually injured as a result of Fossil Fuel Defendants having caused flood waters, extreme precipitation, saltwater, and other materials to enter its real property by, inter alia, submerging real property owned by the State, causing flooding that has invaded real property owned by the State and rendered it unusable, and causing storm surges and heightened waves that have invaded and threatened to invade real property owned by the State, and in so doing rendering the State's property unusable.

278. The trespasses alleged herein are continuing because, inter alia:

a. Fossil Fuel Defendants have continued their campaign of climate disinformation into the present,

and in doing so, continue to contribute to the ongoing and recurring trespasses of saltwater, floodwater, precipitation, and other tangible materials onto the State's lands;

b. Fossil Fuel Defendants' past tortious conduct continues to cause trespasses onto the State's land because greenhouse gas emissions can remain in the atmosphere for thousands of years;

c. The trespass is reasonably abatable through local climate adaptation measures that prevent or reduce intrusions of saltwater, floodwater, precipitation, and other tangible materials from entering the State's lands.

279. Fossil Fuel Defendants are a direct, proximate, and substantial-factor cause of unauthorized and unlawful trespasses onto the State's land, real property, and natural resources, as well as all harms flowing from those trespasses.

280. Fossil Fuel Defendants' trespass-causing acts and omissions, as alleged herein, are indivisible causes of the alleged injuries and damages to the State's property because, inter alia, it is not possible to determine the source of any particular individual molecule of greenhouse gas pollution in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gases quickly diffuse and comingle in the atmosphere.

281. Plaintiffs seek an order that provides for abatement of the trespasses created by Fossil Fuel Defendants, and that awards the State damages—including compensatory and natural resource damages—in an amount to be determined at trial.

Plaintiffs pursue these remedies in the State's sovereign, proprietary, and parens patriae capacity for the benefit of the general public. Plaintiffs also request an award of punitive damages in an amount to be determined by the trier of fact because Fossil Fuel Defendants' wrongful conduct, as set forth in this Complaint, exhibited a wanton or willful disregard for the rights of the State and its residents, and was committed with actual malice.

## **FIFTH CAUSE OF ACTION**

### **(Public Nuisance)**

#### **(Against All Fossil Fuel Defendants)**

282. The State realleges each and every allegation contained above, as though set forth herein in full.

283. New Jersey law prohibits Fossil Fuel Defendants from participating in the creation of a public nuisance, which is defined as an unreasonable interference with public rights.

284. Through their acts and omissions, Fossil Fuel Defendants have—individually and in concert with each other—created, caused, contributed to, and assisted in creating hazardous climate-related conditions throughout New Jersey, including sea-level rise, coastal flooding, coastal erosion, inland flooding, extreme heat events, drought, and coastal storms (among others), with compounding effects in Overburdened Communities. Fossil Fuel Defendants created, caused, contributed to, and assisted in the creation of these and other climate-related hazards in New Jersey by, inter alia:

a. Affirmatively and knowingly promoting the sale and use of fossil fuel products that Fossil Fuel Defendants knew to be hazardous and knew would

cause or exacerbate climate change and related consequences, including, but not limited to, sea-level rise, drought, extreme precipitation events, and extreme heat events;

b. Affirmatively and knowingly concealing the hazards that Fossil Fuel Defendants knew would result from the normal use of their fossil fuel products by misrepresenting and casting doubt on the integrity of scientific information related to climate change;

c. Affirmatively promoting fossil fuel products for uses that Fossil Fuel Defendants knew would be hazardous to consumers, the public, and the State;

d. Disseminating and funding the dissemination of information intended to mislead customers, consumers, and civil society regarding the known and foreseeable risk of climate change and its consequences, which follow from the normal, intended use of fossil fuel products;

e. Intentionally and misleadingly advertising many of their fossil-fuel products as clean, green, or climate friendly, while failing to disclose that these very same products are a driving cause of climate change;

f. Intentionally and misleadingly exaggerating their business's investments in low-emission resources, while failing to disclose that those investments actually comprise a miniscule percentage of Fossil-Fuel Defendants' total business and that Fossil-Fuel Defendants are actually ramping up their fossil fuel extraction, production, and sales;

g. Delaying the emergence of viable clean energy alternatives by preventing consumers, including in New Jersey, from having access to full and accurate information material to their energy purchasing

decisions, thereby causing the emission of huge amounts of avoidable greenhouse gases into the atmosphere; and

h. Failing to warn the public about the hazards associated with the use of fossil fuel products.

285. At all relevant times, Fossil Fuel Defendants performed this tortious and deceptive conduct in locations within the control of Fossil Fuel Defendants, including at their corporate headquarters and offices, and at advertising agencies, consulting firms, and similar agents and employees of Fossil Fuel Defendants.

286. At all relevant times, moreover, Fossil Fuel Defendants controlled every step of the fossil fuel product supply chain—from the extraction of raw fossil fuel products, to the refining and marketing of those products, to the placement of those products into the stream of commerce, to the ultimate sale of those products to end users, including in New Jersey.

287. Defendants' nuisance-creating conduct continues to this day, including through greenwashing campaigns that falsely and misleadingly portray Fossil Fuel Defendants as leaders in the fight against climate change.

288. The hazardous conditions in New Jersey that were caused, contributed to, and created by Defendants have substantially and unreasonably interfered with rights general to the public, including the public health, the public safety, the public peace, the public comfort, and the public convenience. These interferences with public rights include, inter alia:

a. The destruction of billions of dollars of State- and privately-owned property due to coastal erosion,



sea-level rise, and flooding precipitated or exacerbated by anthropogenic climate change;

b. The impairment of the State's natural resources due to more frequent and extreme drought, more frequent and extreme precipitation events, increased frequency and severity of heat waves and extreme temperatures, and the associated consequences of those physical and environmental changes as described above, which disproportionately jeopardize New Jersey's Overburdened Communities;

c. The loss suffered by the State and its residents due to loss of access to and use of natural, cultural, historic, and economic resources; damage to public health, safety, and general welfare; and diversion of tax dollars away from other public services to the mitigation of and/or adaptation to climate change effects; and

d. The loss of tax revenue due to depressed property values and the slowdown of economic activity due to anthropogenic climate change.

289. The hazardous conditions in New Jersey that were caused, contributed to, and created by Fossil Fuel Defendants continue and will continue to substantially and unreasonably interfere with public rights held by the people of New Jersey.

290. At all relevant times, Fossil Fuel Defendants intentionally, recklessly, and negligently engaged in the alleged nuisance-creating conduct, knowing full well that their conduct would exacerbate climate change and contribute substantially to the creation of climate-related hazards and impacts in New Jersey and elsewhere.

291. The harms caused by Fossil Fuel Defendants' nuisance-creating conduct are extremely grave and far

outweigh the social utility of that conduct because, inter alia:

a. Interference with the public's rights due to sea-level rise, more frequent and extreme drought, more frequent and extreme precipitation events, increased frequency and severity of heat waves and extreme temperatures, and the associated consequences of those physical and environmental changes as described above, is expected to become so regular and severe that it will cause material deprivation of and interference with the use and enjoyment of public and private property in the State;

b. The harm suffered by the State and its people is not mere annoyance, but rather the destruction of land, property, and infrastructure; the loss of public cultural, historic, and economic resources; the damage to the public health, safety, and general welfare; and the loss of natural resources;

c. The State's residents will ultimately bear the costs of Fossil Fuel Defendants' nuisance-creating conduct, including the costs associated with the loss of use of public and private property and infrastructure as well as the costs of recovery and rebuilding from storms, flooding, and other climate impacts; loss of cultural, historic, and economic resources along with resource restoration costs; damage to the public health, safety, and general welfare; costs of implementing climate adaptation and resilience measures, including relocating residents from flood-prone areas; and diversion of tax dollars away from other public services to the mitigation of and/or adaptation to climate change impacts;

d. New Jersey's land and property—which serves myriad uses including residential, infrastructural,

commercial, and ecological—is not suited to regular inundation, flooding, landslides, or other physical or environmental consequences of anthropogenic climate change;

e. There is no social utility to misleading consumers and the public about the science, causes, and impacts of climate change; to concealing and misrepresenting the climate change impacts of fossil fuels; or to greenwashing Fossil Fuel Defendants' businesses, investments, or products;

f. Fossil Fuel Defendants intentionally disseminated false and misleading information with the goal of artificially inflating fossil fuel consumption, knowing that this conduct would exacerbate climate change, including climate change impacts in New Jersey;

g. It was practical for Fossil Fuel Defendants to avoid, prevent, or reduce climate change impacts in New Jersey, including by, inter alia, adequately warning of the climate impacts of fossil fuel products and refraining from disseminating false and misleading information about the science, causes, and consequences of climate change;

h. Because of their superior knowledge of fossil fuel products, Fossil Fuel Defendants were in the best position to prevent or mitigate the alleged nuisance, but they failed to do so and instead affirmatively worked to conceal the climate change impacts of fossil fuels from the public consciousness.

292. Fossil Fuel Defendants are therefore a direct, proximate, and substantial-factor cause of an unreasonable and substantial interference with common rights held by the residents of New Jersey, as well as all harms flowing from that public nuisance.

293. Fossil Fuel Defendants' nuisance-creating acts and omissions, as alleged herein, are indivisible causes of the State's alleged injuries and damages because, inter alia, it is not possible to determine the source of any particular individual molecule of greenhouse gas pollution in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gases quickly diffuse and coningle in the atmosphere.

294. The public nuisances alleged herein are continuing because, inter alia:

a. Fossil Fuel Defendants have continued their campaign of climate disinformation into the present, and in doing so, continue to exacerbate severe climate impacts that unreasonably interfere public rights and resources in New Jersey;

b. Fossil Fuel Defendants' past tortious conduct continues to cause severe climate impacts in New Jersey because greenhouse gas emissions can remain in the atmosphere for thousands of years.

c. The public nuisance created by Fossil Fuel Defendants' tortious and deceptive conduct is reasonably abatable through local climate adaptation measures to, inter alia, fortify public infrastructure against flooding and storm surges, restore coastal wetlands and beaches, relocate structures and communities threatened by sea-level rise, and construct new drainage and stormwater treatment infrastructure.

295. Plaintiffs seek an order that provides for abatement of the public nuisance created by Fossil Fuel Defendants, and that awards the State

damages—including compensatory and natural resource damages—in an amount to be determined at trial. Plaintiffs pursue these remedies in the State’s sovereign and parens patriae capacity for the benefit of the general public. Plaintiffs also request an award of punitive damages in an amount to be determined by the trier of fact because Fossil Fuel Defendants’ wrongful conduct, as set forth in this Complaint, exhibited a wanton or willful disregard for the rights of the State and its residents, and was committed with actual malice.

## **SIXTH CAUSE OF ACTION**

### **(Private Nuisance)**

#### **(Against All Fossil Fuel Defendants)**

296. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

297. New Jersey law prohibits Fossil Fuel Defendants from participating in the creation of a private nuisance, which is defined as an invasion of another’s interest in the private use and enjoyment of land.

298. The State owns, occupies, and manages extensive real property throughout New Jersey—property that has been and will continue to be injured by rising sea levels, higher storm surges, more frequent and extreme drought, more frequent and extreme precipitation events, increased frequency and severity of heat waves and extreme temperatures, and the associated consequences of those physical and environmental changes.

299. Through their acts and omissions, Fossil Fuel Defendants have—individually and in concert with each other—created, caused, contributed to, and

assisted in creating hazardous climate-related conditions throughout New Jersey, including sea-level rise, coastal flooding, coastal erosion, inland flooding, extreme heat events, drought, and coastal storms (among others), with compounding effects in Overburdened Communities. Fossil Fuel Defendants specifically created, caused, contributed to, and assisted in the creation of these and other climate-related hazards in New Jersey by, inter alia:

a. Affirmatively and knowingly promoting the sale and use of fossil fuel products that Fossil Fuel Defendants knew to be hazardous and knew would cause or exacerbate climate change and related consequences, including, but not limited to, sea-level rise, drought, extreme precipitation events, and extreme heat events;

b. Affirmatively and knowingly concealing the hazards that Fossil Fuel Defendants knew would result from the normal use of their fossil fuel products by misrepresenting and casting doubt on the integrity of scientific information related to climate change;

c. Affirmatively promoting fossil fuel products for uses that Fossil Fuel Defendants knew would be hazardous to consumers, the public, and the State;

d. Disseminating and funding the dissemination of information intended to mislead customers, consumers, and civil society regarding the known and foreseeable risk of climate change and its consequences, which follow from the normal, intended use of fossil fuel products;

e. Intentionally and misleadingly advertising many of their fossil-fuel products as clean, green, or climate friendly, while failing to disclose that these

very same products are a driving cause of climate change;

f. Intentionally and misleadingly exaggerating their business's investments in low-emission resources, while failing to disclose that those investments actually comprise a miniscule percentage of Fossil-Fuel Defendants' total business and that Fossil-Fuel Defendants are actually ramping up their fossil fuel extraction, production, and sales;

g. Delaying the emergence of viable clean energy alternatives by preventing consumers, including in New Jersey, from having access to full and accurate information material to their energy purchasing decisions, thereby causing the emission of huge amounts of avoidable greenhouse gases into the atmosphere; and

h. Failing to warn the public about the hazards associated with the use of fossil fuel products.

300. At all relevant times, Fossil Fuel Defendants performed this tortious and deceptive conduct in locations within the control of Fossil Fuel Defendants, including at their corporate headquarters and offices, and at advertising agencies, consulting firms, and through similar agents and employees of Fossil Fuel Defendants.

301. At all relevant times, moreover, Fossil Fuel Defendants controlled every step of the fossil fuel product supply chain—from the extraction of raw fossil fuel products, to the refining and marketing of those products, to the placement of those products into the stream of commerce, to the ultimate sale of those products to end users, including in New Jersey.

302. Defendants' nuisance-creating conduct continues to this day, including through greenwashing

campaigns that falsely and misleadingly portray Fossil-Fuel Defendants as leaders in the fight against climate change.

303. The hazardous conditions in New Jersey that were caused, contributed to, and created by Defendants have substantially and unreasonably interfered with the State's use of its property for the public benefit and welfare, including by destroying or damaging millions of dollars of State-owned land, buildings, and public infrastructure due to coastal erosion, sea-level rise, and flooding precipitated or exacerbated by Fossil Fuel Defendants' tortious conduct.

304. To this day, the hazardous conditions in New Jersey that were caused, contributed to, and created by Fossil Fuel Defendants continue—and will continue—to substantially and unreasonably interfere with the State's use of its property for the public benefit and welfare.

305. At all relevant times, Fossil Fuel Defendants intentionally, recklessly, and negligently engaged in the alleged nuisance-creating conduct, knowing full well that their conduct would exacerbate climate change and contribute substantially to the creation of climate-related hazards and impacts in New Jersey and elsewhere.

306. The harms caused by Fuel Fossil Defendants' nuisance-creating conduct are extremely grave and far outweigh the social utility of that conduct because, inter alia:

a. Interference with the State's use of its land due to sea-level rise, more frequent and extreme drought, more frequent and extreme precipitation events, increased frequency and severity of heat waves



and extreme temperatures, and the associated consequences of those physical and environmental changes, as described above, is expected to become so regular and severe that it will cause material deprivation of and interference with the use and enjoyment of public and private property in the State;

b. The harm suffered by the State is not mere annoyance, but rather the destruction of land, property, and infrastructure; the loss of public cultural, historic, and economic resources; the damage to the public health, safety, and general welfare, including disproportionate impacts on Overburdened Communities; and the loss of natural resources;

c. The State's residents will ultimately bear the costs of Fossil Fuel Defendants' nuisance-creating conduct, including the costs associated with the loss of public property, infrastructure, and natural resources in the State; the loss of cultural, historic, and economic resources; the damage to the public health, safety, and general welfare; and the diversion of tax dollars away from other public services to the mitigation of and/or adaptation to climate change impacts;

d. The State's land and property—which serves myriad uses including residential, infrastructural, commercial, and ecological—is not suitable for regular inundation, flooding, landslides, and/or other physical or environmental consequences of anthropogenic climate change;

e. There is no social utility to misleading consumers and the public about the science, causes, and impacts of climate change; to concealing and misrepresenting the climate change impacts of fossil fuels; or to greenwashing Fossil Fuel Defendants' businesses, investments, or products;

f. Fossil Fuel Defendants intentionally disseminated false and misleading information with the goal of artificially inflating fossil fuel consumption and the knowledge that this conduct would exacerbate climate change, including climate change impacts in New Jersey;

g. It was practical for Fossil Fuel Defendants to avoid, prevent, and reduce climate change impacts in New Jersey, including, *inter alia*, by adequately warning of the climate impacts of fossil fuel products and by refraining from disseminating false and misleading information about the science, causes, and consequences of climate change;

h. Because of their superior knowledge of fossil fuel products, Fossil Fuel Defendants were in the best position to prevent or mitigate the alleged nuisance, but they failed to do so and instead affirmatively worked to conceal the climate change impacts of fossil fuels from the public consciousness.

307. Fossil Fuel Defendants are therefore a direct, proximate, and substantial-factor cause of an unreasonable and substantial interference with the State's use of its land, as well as all harms flowing from that private nuisance.

308. Fossil Fuel Defendants' nuisance-creating acts and omissions, as alleged herein, are indivisible causes of the State's alleged injuries and damages because, *inter alia*, it is not possible to determine the source of any particular individual molecule of greenhouse gas pollution in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because

greenhouse gases quickly diffuse and comeingle in the atmosphere.

309. The private nuisance alleged herein is continuing because, inter alia:

a. Defendants have continued their campaign of climate disinformation into the present, and in doing so, continue to contribute to the ongoing and recurring sea-level rise, erosion, flooding, and extreme weather events that are harming and impairing the use of the State's land, property, and infrastructure, with compounding effects in Overburdened Communities.

b. Greenhouse gas emissions can remain in the atmosphere for thousands of years, meaning that Fossil Fuel Defendants' past tortious conduct continues to contribute to hazardous environmental conditions in New Jersey that substantially and unreasonably interfere with the State's use of its land, property, and infrastructure.

c. The private nuisance is reasonably abatable through local climate adaptation measures that mitigate the risk of flooding, erosion, and other climate-related hazards to the State's land.

310. The State did not give Fossil Fuel Defendants permission to destroy, damage, unreasonably interfere with the use of, or create hazardous environmental conditions on the State's real property. Nor did the State authorize Fossil Fuel Defendants to conceal and misrepresent the climate impacts of fossil fuel products; to disseminate false and misleading information about the science, causes, and effects of climate change; to affirmatively promote fossil fuel products for uses that Fossil Fuel Defendants knew were hazardous to the planet and its people; or to

engage in any of the other nuisance-causing conduct alleged herein.

311. Plaintiffs seek an order that provides for abatement of the private nuisance created by Fossil Fuel Defendants, and that awards the State damages—including compensatory and natural resource damages—in an amount to be determined at trial. Plaintiffs pursue these remedies in the State’s sovereign, proprietary, and *parens patriae* capacity for the benefit of the general public. Plaintiffs also request an award of punitive damages in an amount to be determined by the trier of fact because Fossil Fuel Defendants’ wrongful conduct, as set forth in this Complaint, exhibited a wanton or willful disregard for the rights of the State and its residents, and was committed with actual malice.

### **SEVENTH CAUSE OF ACTION**

**(Violations of New Jersey’s Consumer Fraud Act, N.J.S.A. 56:8-1 to -227)**

**(Unconscionable Commercial Practices and Deception)**

**(Against All Defendants)**

312. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

313. The New Jersey Consumer Fraud Act (“CFA”) prohibits the “act, use or employment by any person of any commercial practice that is unconscionable or abusive, deception, fraud, false pretense, false promise, misrepresentation, or the knowing, concealment, suppression, or omission of any material fact with intent that others rely upon such concealment, suppression, or omission, in connection

with the sale or advertisement of any merchandise.” N.J.S.A. 56:8-2.

314. The CFA defines “merchandise” as including “any objects, wares, goods, commodities, services or anything offered, directly or indirectly to the public for sale.” N.J.S.A. 56:8-1(c). Fossil fuel products are “merchandise” within the meaning of the CFA.

315. The CFA defines “person” as “any natural person or his legal representative, partnership, corporation, company, trust, business entity or association, and any agent, employee, salesman, partner, officer, director, member, stockholder, associate, trustee or cestuis que trustent thereof.” N.J.S.A. 56:8-1(d). All Defendants are “persons” within the meaning of the CFA.

316. The CFA defines “sale” as including “any sale, rental or distribution, offer for sale, rental or distribution or attempt directly or indirectly to sell, rent or distribute.” N.J.S.A. 56:8-1(e). Fossil Fuel Defendants have sold, distributed, offered for sale, and attempted to directly or indirectly sell and distribute fossil fuel products in New Jersey.

317. The CFA defines “advertisement” as including “the attempt directly or indirectly by publication, dissemination, solicitation, indorsement or circulation or in any other way to induce directly or indirectly any person to enter or not enter into any obligation or acquire any title or interest in any merchandise or to increase the consumption thereof or to make any loan.” N.J.S.A. 56:8-1(a). All Defendants have advertised fossil fuel products in New Jersey, including by attempting directly or indirectly to induce the purchase and increase the consumption of fossil fuels in New Jersey through the publication,

dissemination, solicitation, endorsement, and/or circulation of promotional materials.

318. The CFA makes it unlawful for a business to engage in any unconscionable commercial practice in connection with the sale or advertisement of fossil fuel products. N.J.S.A. 56:8-2.

319. More than half a century ago, Defendants knew of the climate impacts of fossil fuel products and knew that unrestrained fossil fuel consumption would lead to catastrophic climate change, resulting in sea-level rise, changing precipitation patterns, more frequent heat waves, more extreme weather events, more severe flooding, and a host of other climate impacts that would wreak havoc on the State and others like it, with compounding effects on Overburdened Communities. Despite this sophisticated knowledge of the existence, causes, and effects of climate change, Defendants chose to engage in unconscionable and deceptive commercial practices intended to preserve their profits and hyper-inflate the market for fossil fuel energy.

320. Defendants violated N.J.S.A. 56:8-2 by engaging in the following unconscionable commercial practices and acts of deception:

a. Conceiving, organizing, and implementing a decades-long public relations campaign to misrepresent the weight of climate science and to discredit scientists seeking to warn the public about the hazardous climatic effects of consuming fossil fuel products;

b. Taking affirmative steps to protect their fossil fuel infrastructure and assets from threats posed by climate change, while denying publicly the scientific

basis for implementing climate mitigation or adaptation measures;

c. Funding front groups, fake grassroots organizations, think tanks, and industry-aligned scientists to obscure the climate science consensus—i.e., that climate change is real, severe, and caused primarily by burning fossil fuels—from consumers and the public.

d. Portraying Fossil Fuel Defendants as substantially invested in non-fossil fuel energy sources while failing to disclose that those investments represent a negligible percentage of Fossil Fuel Defendants' investment portfolios and that Fossil Fuel Defendants are ramping up fossil fuel production and sale; and

e. Touting certain fossil fuel products as climate-friendly while failing to disclose that those same products are primary drivers of climate change.

321. These acts or practices are unconscionable and unfair in that they violate notions of good faith, honesty in fact, and observance of fair dealing; they have the capacity to mislead, and have misled, reasonable consumers and members of the public; and they offend public policy reflected in the CFA, which protects consumers and competitors from deceptive marketing to ensure an honest marketplace.

322. These acts or practices are unconscionable because they unethically deprive consumers of material facts they need to make informed decisions about where, how, and how much fossil fuel products to purchase. Consumers who are accurately apprised of the hazards associated with consuming a product frequently change their purchasing habits to buy

alternative products that do not pose the same risks or choose to buy less of a risky product.

323. Each unconscionable commercial practice and act of deception by Defendants constitutes a separate violation of the CFA, N.J.S.A. 56:8-2.

324. Plaintiffs request an order that (i) permanently enjoins Defendants from engaging in the unlawful practices described in this Complaint, (ii) assesses maximum statutory civil penalties for each violation of the CFA, (iii) awards the costs of the suit, including attorneys' fees, and (iv) directs disgorgement of profits unlawfully acquired or retained, as authorized by N.J.S.A. 56:8-8.

### **EIGHTH CAUSE OF ACTION**

**(Violations of New Jersey's Consumer Fraud Act, N.J.S.A 56:8-1 to -227)**

**(Misrepresentations and Omissions of Material Facts)**

**(Against All Defendants)**

325. Plaintiffs reallege each and every allegation contained above, as though set forth herein in full.

326. At all times relevant to this Complaint, Defendants violated N.J.S.A. 56:8-2 by making numerous misrepresentations. Defendants' violations include but are not limited to the following:

a. Misrepresenting the climate science consensus—i.e., that climate change is real, severe, and primarily caused by burning fossil fuels—to consumers and the public, including through advertisements; paid editorials; op-eds; publicly-



distributed books, reports, and pamphlets; and press releases;

b. Attempting to discredit scientists warning of the climatic consequences of burning fossil fuels via false or misleading claims of bias;

c. Misrepresenting the causal connection between fossil fuel consumption and climate change, in direct contradiction of Defendants' own internal knowledge;

d. Falsely or misleadingly downplaying the likelihood and magnitude of climate change impacts;

e. Failing to correct prior misrepresentations and omissions about the climatic risks of burning fossil fuels;

f. Misrepresenting the environmental and climate benefits of certain fossil fuel products, including fuel additives; and

g. Misleadingly portraying Fossil Fuel Defendants as substantially invested in non-fossil fuel energy sources.

327. Defendants' misrepresentations regarding the state of climate science and the effects of climate change were not supported by or were contrary to substantial scientific evidence, as evidenced by the contradiction between Defendants' public statements and the internal conclusions reached by Defendants' own scientists, as well as the inconsistency between Defendants' representations and the IPCC's successive assessment reports describing the climate science consensus.

328. At all times relevant to this Complaint, Defendants violated N.J.S.A. 56:8-2 by knowingly concealing, suppressing, or omitting material facts

with the intent that consumers and others rely upon those concealments, suppressions, or omissions. Defendants' violations include but are not limited to the following:

a. Omitting or concealing material facts known to Defendants since the 1960s about the climatic hazards of consuming their fossil fuel products;

b. Omitting or concealing Defendants' own internal research predicting the harmful effects of unrestrained fossil fuel consumption on the climate, the environment, and communities around the world, including in New Jersey;

c. Omitting or concealing the central role Defendants played in funding, organizing, and executing climate denialist campaigns;

d. Omitting or concealing information regarding the negligible percentage of Fossil Fuel Defendants' expenditures spent on clean energy, while portraying Fossil Fuel Defendants as substantially invested in non-fossil fuel energy sources;

e. Omitting or concealing information regarding Fossil Fuel Defendants' intent to ramp up fossil fuel production in the coming decades, while portraying Fossil Fuel Defendants as leaders on climate mitigation action; and

f. Omitting or concealing the climatic hazards of fuel treated with additives, while portraying additive-enhanced fossil fuels as beneficial to the climate and the environment.

329. Defendants' material omissions, which were and are false and misleading, render even seemingly truthful statements about climate change or Defendants' products false and misleading because

they are incomplete. At the time they made or disseminated false or misleading statements, or caused false or misleading statements to be made or disseminated, Defendants knowingly failed to include material facts about the risks of fossil fuel consumption—particularly with respect to unrestrained, long-term use—and Defendants intended that recipients of its sophisticated public relations campaign would rely on those misrepresentations and omissions when making energy purchasing decisions.

330. To this day, Defendants continue to make—or cause to be made—false and misleading statements and omissions about the climate impacts of fossil fuel products and businesses in advertisements and promotional materials that are directed at or disseminated to consumers in New Jersey.

332. Defendants' affirmative misrepresentations and material omissions had the capacity to mislead New Jersey consumers about material facts concerning fossil fuel products, including those products' hazardous impacts on the property, health, safety, economic wellbeing, and shared natural resources of New Jerseyans. Each misrepresentation and knowing omission by Defendants constitutes a separate violation of the CFA, N.J.S.A. 56:8-2.

333. Plaintiffs request an order that (i) permanently enjoins Defendants from engaging in the unlawful practices described in this Complaint, (ii) assesses maximum statutory civil penalties for each violation of the CFA, (iii) awards the costs of the suit, including attorneys' fees, and (iv) directs disgorgement of profits unlawfully acquired or retained, as authorized by N.J.S.A. 56:8-8.

**VI. PRAYER FOR RELIEF**

**Wherefore**, Plaintiffs request that this Court enter judgment against Defendants:

1. Awarding compensatory damages, jointly and severally, in an amount according to proof;
2. Awarding natural resource damages, jointly and severally, in an amount according to proof;
3. Awarding punitive damages in an amount according to proof;
4. Awarding costs and fees in this action, including attorneys' fees, together with prejudgment interest, to the full extent permitted by law, including as authorized by the CFA, N.J.S.A. 56:8-11, -19;
5. Compelling Defendants to abate the ongoing nuisance their deceptive and tortious conduct has created in New Jersey, and to pay the costs of such abatement, including, inter alia, costs of fortifying public infrastructure from storm damage, natural resource restoration, funding local climate resilience measures, and rebuilding natural barriers to protect communities from sea-level rise and climate-influenced storms;
6. Compelling Defendants to abate the ongoing trespass their deceptive and tortious conduct has caused to the State's lands and property, and to pay the costs of such abatement;
7. Finding that the acts and practices of Defendants, as described in the Complaint, constitute multiple instances of unlawful practices in violation of the CFA, N.J.S.A. 56:8-1 to -227;
8. Permanently enjoining Defendants from engaging in the unlawful practices that are described

in the Complaint and that violate the CFA, as authorized by the CFA, N.J.S.A. 56:8-8;

9. Directing Defendants to pay the maximum statutory civil penalties for each violation of the CFA, in accordance with N.J.S.A. 56:8-13;

10. Directing Defendants to disgorge all profits unlawfully acquired or retained, as authorized by the CFA, N.J.S.A. 56:8-8;

11. Awarding such other relief as this Court deems proper.

**VII. REQUEST FOR JURY TRIAL**

Plaintiffs respectfully request that all issues presented by the above Complaint be tried by a jury, with the exception of those issues that, by law, must be tried before the Court.

Dated: October 18, 2022

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Attorney for Plaintiffs

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**CERTIFICATION PURSUANT TO R. 4:5-1**

I hereby certify that, to the best of my knowledge and belief, the matter in controversy is not the subject of any other action pending in any court or of any pending arbitration proceedings. No other action or arbitration proceeding is contemplated at this time. I know of no other parties who should be joined in this action at this time.

**DESIGNATION OF TRIAL COUNSEL**

Pursuant to R. 4:25-4, Plaintiffs designate Deputy Attorneys General Andrew Reese, Monisha A. Kumar, Daniel P. Resler, and Monica E. Finke as trial counsel in this matter.

Dated: October 18, 2022

MATTHEW J. PLATKIN  
ATTORNEY GENERAL OF NEW JERSEY  
Attorney for Plaintiffs

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**APPENDIX E**

STATE OF RHODE ISLAND  
PROVIDENCE, S.C.  
SUPERIOR COURT

CASE NUMBER: PC-2018-4716

STATE OF RHODE ISLAND

Plaintiff,

v.

CHEVRON CORP.; CHEVRON U.S.A. INC.;  
EXXONMOBIL CORP.; BP P.L.C.; BP AMERICA,  
INC.; BP PRODUCTS NORTH AMERICA, INC.;  
ROYAL DUTCH SHELL PLC; MOTIVA  
ENTERPRISES, LLC; SHELL OIL PRODUCTS  
COMPANY LLC; CITGO PETROLEUM CORP.;  
CONOCOPHILLIPS; CONOCOPHILLIPS  
COMPANY; PHILLIPS 66; MARATHON OIL  
COMPANY; MARATHON OIL CORPORATION;  
MARATHON PETROLEUM CORP.; MARATHON  
PETROLEUM COMPANY LP; SPEEDWAY LLC;  
HESS CORP.; LUKOIL PAN AMERICAS, LLC;  
GETTY PETROLEUM MARKETING, INC.; AND  
DOES 1 through 100, inclusive,

Defendants.

Filed July 2, 2018

**JURY TRIAL DEMANDED**

**TABLE OF CONTENTS**

|      |   |    |        |
|------|---|----|--------|
| I.   | INTRODUCTION .....  | 1  | [615a] |
| II.  | PARTIES .....   | 5  | [620a] |
| A.   | Plaintiff.....  | 5  | [620a] |
| B.   | Defendants .....  | 7  | [622a] |
| III. | AGENCY .....  | 27 | [644a] |
| IV.  | JURISDICTION AND VENUE.....   | 27 | [645a] |
| V.   | FACTUAL BACKGROUND .....  | 27 | [645a] |
| A.   | Global Warming—Observed Effects and<br>Known Cause .....                      | 27 | [645a] |
| B.   | Sea Level Rise—Known Causes and<br>Observed Effects .....                     | 33 | [652a] |
| C.   | Warming Air Temperatures—Known<br>Causes and Observed Effects .....           | 38 | [658a] |
| D.   | Disruption to the Hydrologic Cycle—<br>Known Causes and Observed Effects..... | 41 | [662a] |
|      | i. Extreme Precipitation .....  | 43 | [664a] |
|      | ii. Drought .....   | 44 | [666a] |
| E.   | Ocean Warming and Acidification—Known<br>Causes and Observed Effects .....    | 45 | [667a] |
| F.   | Public Health Impacts of Anthropogenic<br>Global Warming .....                | 46 | [668a] |
| G.   | Attribution.....  | 47 | [669a] |

|     |   |            |
|-----|---|------------|
| H.  | Defendants Went to Great Lengths to Understand the Hazards Associated with, and Knew or Should Have Known of the Dangers Associated with the Extraction, Promotion, and Sale of Their Fossil Fuel Products.....                                       | 50 [672a]  |
| I.  | Defendants Did Not Disclose Known Harms Associated with the Extraction, Promotion, and Consumption of Their Fossil Fuel Products, and Instead Affirmatively Acted to Obscure Those Harms and Engaged in a Concerted Campaign to Evade Regulation..... | 70 [698a]  |
| J.  | In Contrast to Their Public Statements, Defendants' Internal Actions Demonstrate Their Awareness of and Intent to Profit from the Unabated Use of Fossil Fuel Products.....   | 87 [719a]  |
| K.  | Defendants' Actions Prevented the Development of Alternatives That Would Have Eased the Transition to a Less Fossil Fuel Dependent Economy.....   | 89 [722a]  |
| L.  | Defendants Caused Rhode Island's Injuries. ....   | 97 [732a]  |
| VI. | CAUSES OF ACTION .....  | 115 [751a] |
|     | FIRST CAUSE OF ACTION .....   | 115 [751a] |
|     | Public Nuisance .....   | 115 [752a] |
|     | SECOND CAUSE OF ACTION .....  | 120 [757a] |
|     | Strict Liability for Failure to Warn ..   | 120 [757a] |
|     | THIRD CAUSE OF ACTION .....   | 123 [760a] |
|     | Strict Liability for Design Defect .....  | 123 [760a] |

|  |     |        |
|--|-----|--------|
| FOURTH CAUSE OF ACTION .....                                     | 128 | [766a] |
| Negligent Design Defect .....                                    | 128 | [766a] |
| FIFTH CAUSE OF ACTION .....                                      | 131 | [769a] |
| Negligent Failure to Warn .....                                  | 131 | [769a] |
| SIXTH CAUSE OF ACTION .....                                      | 133 | [772a] |
| Trespass .....   | 133 | [772a] |
| SEVENTH CAUSE OF ACTION .....                                    | 135 | [774a] |
| Impairment of Public Trust<br>Resources .....                    | 135 | [774a] |
| EIGHTH CAUSE OF ACTION .....                                     | 138 | [777a] |
| State Environmental Rights Act,<br>Equitable Relief Action ..... | 138 | [777a] |
| VII. PRAYER FOR RELIEF .....                                     | 140 | [779a] |
| REQUEST FOR JURY TRIAL .....                                     | 141 | [780a] |

**PLAINTIFF'S COMPLAINT****I. INTRODUCTION**

1. Defendants, major corporate members of the fossil fuel industry, have known for nearly a half century that unrestricted production and use of their fossil fuel products create greenhouse gas pollution that warms the planet and changes our climate. They have known for decades that those impacts could be catastrophic and that only a narrow window existed to take action before the consequences would be irreversible. They have nevertheless engaged in a coordinated, multi-front effort to conceal and deny their own knowledge of those threats, discredit the growing body of publicly available scientific evidence, and persistently create doubt in the minds of customers, consumers, regulators, the media, journalists, teachers, and the public about the reality and consequences of the impacts of their fossil fuel pollution. At the same time, Defendants have promoted and profited from a massive increase in the extraction and consumption of oil, coal, and natural gas, which has in turn caused an enormous, foreseeable, and avoidable increase in global greenhouse gas pollution and a concordant increase in the concentration of greenhouse gases,<sup>1</sup> particularly carbon dioxide ("CO<sub>2</sub>") and methane, in the Earth's atmosphere. Those disruptions of the Earth's otherwise balanced carbon cycle have substantially contributed to a wide range of dire climate-related effects, including, but not limited to, global warming,

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<sup>1</sup> As used in this Complaint, "greenhouse gases" refers collectively to carbon dioxide, methane, and nitrous oxide. Where a source refers to a specific gas or gases, or when a process relates only to a specific gas or gases, this Complaint refers to them by name.

rising atmospheric and ocean temperatures, ocean acidification, melting polar ice caps and glaciers, more extreme and volatile weather, drought, and sea level rise. Plaintiff, the State of Rhode Island,<sup>2</sup> along with the State's citizens, infrastructure, and natural resources, suffer the consequences.

2. Defendants are vertically integrated extractors, producers, refiners, manufacturers, distributors, promoters, marketers, and sellers of fossil fuel products. Decades of scientific research show that pollution from the production and use of Defendants' fossil fuel products plays a direct and substantial role in the unprecedented rise in emissions of greenhouse gas pollution and increased atmospheric CO<sub>2</sub> concentrations since the mid-20<sup>th</sup> century. This dramatic increase in atmospheric CO<sub>2</sub> and other greenhouse gases is the main driver of the gravely dangerous changes occurring to the global climate.

3. Anthropogenic (human-caused) greenhouse gas pollution, primarily in the form of CO<sub>2</sub>, is far and away the dominant cause of global warming, and results in severe impacts including, but not limited to, sea level rise, disruption to the hydrologic cycle, more frequent and more intense drought, more frequent and more extreme precipitation, more frequent and more intense heatwaves, and associated consequences of those physical and environmental changes.<sup>3</sup> The

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<sup>2</sup> As used in this Complaint when referring to geographic locations, "Rhode Island" and "State" refer to all non-federal lands within the geographic boundaries of the State of Rhode Island.

<sup>3</sup> See IPCC, *Climate Change 2014: Synthesis Report*, Contribution of Working Groups I, II and III to the Fifth Assessment Report of

primary source of this pollution is the extraction, production, and consumption of coal, oil, and natural gas, referred to collectively in this Complaint as “fossil fuel products.”<sup>4</sup>

4. The rate at which Defendants have extracted and sold fossil fuel products has exploded since the Second World War, as have emissions from those products. The substantial majority of all greenhouse gas emissions in history has occurred since the 1950s, a period known as the “Great Acceleration.”<sup>5</sup> About three quarters of all industrial CO<sub>2</sub> emissions in history have occurred since the 1960s,<sup>6</sup> and more than half have occurred since the late 1980s.<sup>7</sup> The annual rate of CO<sub>2</sub> emissions from extraction, production, and

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the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland (2014), 6, Figure SMP.3, <https://www.ipcc.ch/report/ar5/syr>.

<sup>4</sup> See C. Le Quéré et al., *Global Carbon Budget 2016*, EARTH SYST. SCI. DATA 8, 632 (2016), <http://www.earth-syst-sci-data.net/8/605/2016>. Cumulative emissions since the beginning of the industrial revolution to 2015 were 413 gigatons of carbon (“GtC”) attributable to fossil fuels, and 190 GtC attributable to land use change. *Id.* Global CO<sub>2</sub> emissions from fossil fuels and industry remained nearly constant at 9.9 GtC in 2015, distributed among coal (41 %), oil (34 %), gas (19 %), cement (5.6 %), and gas flaring (0.7 %). *Id.* at 629.

<sup>5</sup> Will Steffen et al., *The Trajectory of the Anthropocene: The Great Acceleration*, 2 THE ANTHROPOCENE REVIEW 81, 81 (Jan. 2015), <http://journals.sagepub.com/doi/abs/10.1177/2053019614564785>.

<sup>6</sup> R. J. Andres et al., *A Synthesis of Carbon Dioxide Emissions from Fossil-Fuel Combustion*, 9 BIOGEOSCIENCES 1845, 1851 (May 2012), <http://www.biogeosciences.net/9/1845/2012>.

<sup>7</sup> *Id.* at 1848.



consumption of fossil fuels has increased by more than 60% since 1990.<sup>8</sup>

5. Defendants have known for nearly 50 years that greenhouse gas pollution from their fossil fuel products has a significant impact on the Earth's climate and sea levels. Defendants' awareness of the negative implications of their own behavior corresponds almost exactly with the Great Acceleration, and with skyrocketing greenhouse gas emissions. With that knowledge, Defendants took steps to protect their own assets from these threats through immense internal investment in research, infrastructure improvements, and plans to exploit new opportunities in a warming world.

6. Instead of working to reduce the use and combustion of fossil fuel products, lower the rate of greenhouse gas emissions, minimize the damage associated with continued high use and combustion of such products, and ease the transition to a lower carbon economy, Defendants concealed the dangers, sought to undermine public support for greenhouse gas regulation, and engaged in massive campaigns to promote the ever-increasing use of their products at ever greater volumes. Thus, each Defendant's conduct has contributed substantially to the buildup of CO<sub>2</sub> in the environment that drives global warming and its physical, environmental, and socioeconomic consequences.

7. Defendants are directly responsible for 182.9 gigatons of CO<sub>2</sub> emissions between 1965 and 2015, representing 14.81% of total emissions of that potent greenhouse gas during that period. Accordingly, Defendants are directly responsible for a substantial

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<sup>8</sup> C. Le Quéré et al., *supra* note 4, at 630.

portion of past and committed sea level rise (sea level rise that will occur even in the absence of any future emissions), as well as for a substantial portion of changes to the hydrologic cycle, because of the consumption of their fossil fuel products.

8. As a direct and proximate consequence of Defendants' wrongful conduct described in this Complaint, average sea level will rise substantially along Rhode Island's coast; average temperatures and extreme heat days will increase; flooding, extreme precipitation events such as tropical storms and hurricanes, and drought will become more frequent and more severe; and the ocean will warm and become more acidic. The State, situated on the coast of Southern New England boasting over 400 miles of coastline is particularly vulnerable to sea level rise, cyclones, and flooding, and already has spent significant funds to study, mitigate, and adapt to the effects of global warming. Climate change impacts already adversely affect Rhode Island and jeopardize State-owned or operated facilities critical for operations, utility services, and risk management, as well as real property and other assets that are essential to community health, safety, and well-being.

9. The State of Rhode Island has engaged in several planning processes to prepare for the multitude of impacts from climatic shifts and has recognized increasingly severe consequences.

10. Defendants' production, promotion, and marketing of fossil fuel products, simultaneous concealment of the known hazards of those products, and their championing of anti-science campaigns, actually and proximately caused Rhode Island's injuries.

11. Accordingly, the State brings claims against Defendants for Public Nuisance, and Strict Liability for Failure to Warn, Strict Liability for Design Defect, Negligent Design Defect, Negligent Failure to Warn, Trespass, Impairment of Public Trust Resources, and violations of the State Environmental Rights Act.

12. By this action, Rhode Island seeks to ensure that the parties who have profited from externalizing the responsibility for sea level rise, drought, extreme precipitation events, heatwaves, other results of the changing hydrologic and meteorological regime caused by global warming, and associated consequences of those physical and environmental changes, bear the costs of those impacts on Rhode Island, rather than the State, local taxpayers, residents, or broader segments of the public. Rhode Island does not seek to impose liability on Defendants for harms other than those to the State, including in its *parens patriae* capacity, nor for their direct emissions of greenhouse gases, and does not seek to restrain Defendants from engaging in their business operations.

## **II. PARTIES**

### **A. Plaintiff**

13. Plaintiff, the State of Rhode Island, by and through the Attorney General of the State of Rhode Island (“Rhode Island” or the “State”), brings this action as an exercise of its authority to protect public trust resources and its police power, which includes, but is not limited to, its power to prevent pollution of the State’s property and waters, to prevent and abate nuisances, and to prevent and abate hazards to public health, safety, welfare, and the environment.

14. The State also brings this action in its *parens patriae* capacity for the benefit of the citizens of the State.

15. Rhode Island is already experiencing sea level rise and associated impacts. The State will experience significant additional sea level rise over the coming decades through at least the end of the century.<sup>9</sup>

16. The sea level rise impacts to the State associated with an increase in average mean sea level height include, but are not limited to, permanent increased inundation and temporary flooding in natural and built environments because of higher tides and intensified wave and storm surge events; aggravated wave impacts, including erosion, damage, and destruction of built structures and infrastructure, as well as natural features such as cliffs, beaches, and dunes, with consequent landslides; changes in sediment supply that could alter or destroy natural coastal habitats such as beaches and wetlands, which otherwise would have naturally mitigated sea level rise impacts; and saltwater intrusion on groundwater and built infrastructure.

17. In addition, Rhode Island is and will continue to be impacted by increased temperatures and disruptions to the hydrologic cycle. The State is already experiencing a climatic and meteorological shift toward winters and springs with more extreme precipitation events contrasted by hotter, drier, and longer summers. These changes have led to increased

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<sup>9</sup> Erika Spanger-Siegfried et al., *When Rising Seas Hit Home: Hard Choices Ahead for Hundreds of US Coastal Communities*, Union of Concerned Scientists, 10–11 (Apr. 2017), <https://www.ucsusa.org/sites/default/files/attach/2017/07/when-rising-seas-hit-home-full-report.pdf>.

property damage, economic injuries, and impacts to public health. The State must spend substantial funds to plan for and respond to these phenomena, and to mitigate their secondary and tertiary impacts.

18. Compounding these environmental impacts are cascading social and economic impacts that cause injuries to the State and that arise out of localized climate change-related conditions.

### **B. Defendants**

19. Defendants are responsible for a substantial portion of the total greenhouse gases emitted since 1965. Defendants, individually and collectively, are responsible for extracting, refining, processing, producing, promoting, and marketing fossil fuel products, the normal and intended use of which has led to the emission of a substantial percentage of the total volume of greenhouse gases released into the atmosphere since 1965. Indeed, between 1965 and 2015, the named Defendants extracted from the earth enough fossil fuel materials (i.e. crude oil, coal, and natural gas) to account for more than one in every seven tons of CO<sub>2</sub> and methane emitted worldwide. Accounting for their wrongful promotion and marketing activities, Defendants bear a dominant responsibility for global warming generally, and for Plaintiff's injuries in particular.

20. When this Complaint references an act or omission of the Defendants, unless specifically attributed or otherwise stated, such references should be interpreted to mean that the officers, directors, agents, employees, or representatives of the 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.

21. **Chevron Entities**

a. Chevron Corporation is a multinational, vertically integrated energy and chemicals company incorporated in the State of Delaware, with its global headquarters and principal place of business in San Ramon, California.

b. Chevron Corporation operates through a web of United States and international subsidiaries at all levels of the fossil fuel supply chain. Chevron Corporation's and its subsidiaries' operations consist of exploring for, developing, and producing crude oil and natural gas; processing, liquefaction, transportation, and regasification associated with liquefied natural gas; transporting crude oil by major international oil export pipelines; transporting, storage, and marketing of natural gas; refining crude oil into petroleum products; marketing of crude oil and refined products; transporting crude and refined oil products by pipeline, marine vessel, motor equipment, and rail car; basic and applied research in multiple scientific fields including of chemistry, geology, and engineering; and manufacturing and marketing of commodity petrochemicals, plastics for industrial uses, and fuel and lubricant additives.

c. Chevron Corporation controls and has controlled company-wide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries.

d. Chevron Corporation controls and has controlled company-wide decisions related to climate

change and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries.

e. Chevron U.S.A. Inc. is a Pennsylvania corporation with its principal place of business located in San Ramon, California. Chevron U.S.A. Inc. is qualified to do business in Rhode Island. Chevron U.S.A. Inc. is a wholly owned subsidiary of Chevron Corporation that acts on Chevron Corporation's behalf and subject to Chevron Corporation's control. Chevron U.S.A. Inc. was formerly known as, and 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, Chevron Energy Solutions Company, ChevronTexaco Products Company, Chevron U.S.A. Production Company, and Chevron U.S.A. Products Company.

f. "Chevron" as used hereafter, means collectively, Defendants Chevron Corporation and Chevron U.S.A. Inc., and their predecessors, successors, parents, subsidiaries, affiliates, and divisions.

g. Chevron directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Chevron's fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufactured, sold, and/or consumed in Rhode Island, from which Chevron derives and has derived substantial revenue. For instance, Chevron formerly owned and operated a petroleum products terminal on Veteran's Memorial Parkway in East Providence that was used for oil storage and fossil fuel product distribution, marketing, and/or sales. Additionally, Chevron markets and/or has marketed gasoline and

other fossil fuel products to consumers, including through Chevron- and Gulf-branded petroleum service stations in Rhode Island.

22. **ExxonMobil**

a. Exxon Mobil Corporation, doing business as ExxonMobil, is a multinational, vertically integrated energy and chemicals company incorporated in the State of New Jersey with its headquarters and principal place of business in Irving, Texas. Exxon is among 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 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., Exxon Corporation, and Mobil Corporation.

b. Exxon Mobil Corporation controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries. Exxon Mobil Corporation recently represented 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 our projects.”

c. Exxon Mobil Corporation controls and has controlled companywide decisions related to climate change and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries. Exxon Mobil Corporation’s Board, or an individual/sub-set of the Board, or another committee



appointed by the Board, holds the highest level of direct responsibility for climate change policy within the company. Exxon Mobil Corporation's Chairman of the Board and Chief Executive Officer, its President and the other members of its Management Committee are actively engaged in discussions relating to greenhouse gas emissions and the risks of climate change on an ongoing basis. Exxon Mobil Corporation require its subsidiaries to provide an estimate of greenhouse gas-related emissions costs in their economic projections when seeking funding for capital investments.

d. ExxonMobil Oil Corporation is wholly-owned subsidiary of Exxon Mobil Corporation that acts on Exxon Mobil Corporation's behalf and subject to Exxon Mobil Corporation's control. ExxonMobil Oil Corporation is incorporated in the State of New York with its principal place of business in Irving, Texas. ExxonMobil Oil Corporation is qualified to do business in Rhode Island. ExxonMobil Oil Corporation was formerly known as, did or does business as, and/or is the successor in liability to Mobil Oil Corporation.

e. "Exxon" as used hereafter, means collectively defendants Exxon Mobil Corporation and ExxonMobil Oil Corporation, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions.

f. 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, marketing, promotion, and sale of crude oil, natural gas, and petroleum products. Exxon is also a major manufacturer and marketer of commodity petrochemical products.

g. Exxon directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Exxon's fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufactured, sold, and/or consumed in Rhode Island, from which Exxon derives and has derived substantial revenue. For example, Exxon markets and/or has marketed gasoline and other fossil fuel products to consumers, including through Mobil-branded petroleum service stations in Rhode Island. Additionally, Exxon has owned and operated a fossil fuel product terminal in East Providence that was used for petroleum product storage, formulation, repackaging, and marketing, among other uses.

### 23. **BP Entities**

a. 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 power and renewables. BP P.L.C. is the ultimate parent company for numerous subsidiaries that find and produce oil and gas worldwide, that refine oil into fossil fuel products such as gasoline, and that market and sell oil, fuel, 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.

b. BP P.L.C. controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries. BP P.L.C. is the ultimate

decisionmaker on fundamental decisions about the company's core business, *i.e.*, the level of companywide fossil fuels to produce, including production among BP P.L.C.'s subsidiaries. For instance, BP P.L.C. reported that in 2016-2017 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. expects the company 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 and added 143% reserves replacement for the group.

c. BP P.L.C. controls and has controlled companywide decisions about the quantity and extent of fossil fuel production, including those of its subsidiaries. BP P.L.C. makes fossil fuel production decisions for the entire BP group based on a number of factors, including climate change. BP P.L.C.'s Board, an individual/subset of the Board, or a committee appointed by the Board, is the highest level within the company with direct responsibility for climate change policy. 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. reviews climate change risks facing the BP group through two executive committees chaired by the group chief executive and one working group chaired by the executive vice president and group chief of staff, as part of BP group's established management structure.

d. BP America Inc. is a wholly-owned subsidiary of BP P.L.C. that acts on BP P.L.C.'s behalf and

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., 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. has been qualified to do business in Rhode Island. BP America Inc. was formerly known as, did or does business as, and/or is the successor in liability to BP Products North America Inc., Atlantic Richfield Company, BP Amoco Corporation, Amoco Corporation, Amoco Oil Company, The American Oil Company, BP Exploration & Oil Inc., Sohio Oil Company, Standard Oil of Ohio (SOHIO), Standard Oil (Indiana), BP Amoco Plc, BP Oil Inc., BP Oil Company, Atlantic Richfield Delaware Corporation, Atlantic Richfield Company (a Pennsylvania corporation), ARCO Products Company, and Arco Chemical Company, a division of Atlantic Richfield Company.

e. BP Products North America Inc. is a subsidiary of BP P.L.C. that acts on BP P.L.C.'s behalf and subject to BP P.L.C.'s control. BP Products North America Inc. is engaged in fossil fuel exploration, production, refining, and marketing. BP Products North America Inc. is incorporated in Maryland and has its principal office in Naperville, Illinois. BP Products North America Inc. qualified to do business in Rhode Island.

f. Defendants BP P.L.C., BP America, Inc., BP Products North America, Inc., and their predecessors,

successors, parents, subsidiaries, affiliates, and divisions are collectively referred to herein as “BP.”

g. BP directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of BP’s fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufactured, sold, and/or consumed in Rhode Island, from which BP derives and has derived substantial revenue. For example, BP predecessors-in-interest Arco and Amoco owned and operated a petroleum terminal at Kettle Point in East Providence that began operating in the early 20th century. The terminal was used for fossil fuel product storage and marketing. BP is the current owner of the terminal property. Additionally, BP markets and/or has marketed gasoline and other fossil fuel products to consumers through BP- and Amoco-branded petroleum service stations in Rhode Island. BP owns and operates an interactive webpage that allow consumers to locate BP-branded gas stations in the state.

#### 24. **Shell Entities**

a. Royal Dutch Shell PLC is a vertically integrated, multinational energy and petrochemical company. Royal Dutch Shell PLC is incorporated in England and Wales, with its headquarters and principle place of business in the Hague, Netherlands. Royal Dutch Shell PLC consists of over a thousand divisions, subsidiaries, and affiliates engaged in all aspects of the fossil fuel industry, including exploration, development, extraction, manufacturing, and energy production, transport, trading, marketing, and sales.

b. Royal Dutch Shell PLC controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries. Royal Dutch Shell PLC's Board of Directors in the Hague determines whether and to what extent Shell subsidiary holdings around the globe produce Shell-branded fossil fuel products. For instance, Royal Dutch Shell PLC's Board of Directors makes individual decisions on whether and when to initiate drilling in particular oil reserves.

c. Royal Dutch Shell PLC controls and has controlled companywide decisions related to climate change and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries. Overall accountability for climate change within the Shell group of companies lies with Royal Dutch Shell PLC's Chief Executive Officer and Executive Committee. Additionally, Royal Dutch Shell PLC has directed its subsidiaries to reduce the carbon footprint of all fossil fuel products produced under the Shell brand, including those of its subsidiaries, and across all upstream and downstream segments of its operations.

d. Shell Oil Company is a wholly owned subsidiary of Royal Dutch Shell PLC that acts on Royal Dutch Shell PLC's behalf and subject to Royal Dutch Shell PLC's control. Shell Oil Company is incorporated in Delaware and with its principal place of business in Houston, Texas. Shell Oil Company is qualified to do business in Rhode Island. Shell Oil Company was formerly known as, did or does business as, and/or is the successor in liability to Deer Park Refining LP, Shell Oil, Shell Oil Products, Shell Chemical, Shell Trading US, Shell Trading (US)

Company, Shell Energy Services, Texaco Inc., The Pennzoil Company, Shell Oil Products Company LLC, Shell Oil Products Company, Star Enterprise, LLC, Star Enterprise LLC, Pennzoil-Quaker State Company, and Motiva Enterprises LLC.

e. Motiva Enterprises LLC has refined and marketed and continues to refine and market Shell-branded products through approximately 8,300 Shell-branded petroleum service stations in the eastern and southern United States. Motiva Enterprises LLC is incorporated in Delaware with its principal place of business in Houston, Texas. Motiva Enterprises LLC is qualified to do business and is registered in Rhode Island as a petroleum product merchant. At times relevant to this Complaint, Motiva Enterprises LLC has been a wholly owned subsidiary of Royal Dutch Shell PLC that acts on Royal Dutch Shell PLC's behalf and subject to Royal Dutch Shell PLC's control.

f. Defendants Royal Dutch Shell PLC, Shell Oil Company, Motiva Enterprises LLC, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions are collectively referred to as "Shell."

g. Shell directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Shell's fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufacturer, sold, and/or consumed in Rhode Island, from which Shell derives and has derived substantial revenue. For example, Shell until 2017 operated the largest capacity fossil fuel terminal in Rhode Island, at 520 Allens Avenue in Providence. The terminal was used for fossil fuel product storage, distribution, and sales. Additionally, Shell markets and/or has marketed

gasoline and other fossil fuel products to consumers through Shell-branded petroleum service stations in Rhode Island. Shell owns and operates an interactive webpage that allows consumers to locate Shell-branded gas stations in the state.

**25. ConocoPhillips Entities**

a. ConocoPhillips is a multinational energy company incorporated in the State of Delaware and with its principal place of business in Houston, Texas. ConocoPhillips consists of numerous divisions, subsidiaries, and affiliates that carry out ConocoPhillips's fundamental decisions related to all aspects of the fossil fuel industry, including exploration, extraction, production, manufacture, transport, and marketing.

b. ConocoPhillips controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries. ConocoPhillips' most recent annual report subsumes the operations of the entire ConocoPhillips group of subsidiaries under its name. Therein, ConocoPhillips represents that its value—for which ConocoPhillips maintains ultimate responsibility—is a function of its decisions to direct subsidiaries to explore for and produce fossil fuels: "Unless we successfully add to our existing proved reserves, our future crude oil, bitumen, natural gas and natural gas liquids production will decline, resulting in an adverse impact to our business." ConocoPhillips optimizes the ConocoPhillips group's oil and gas portfolio to fit ConocoPhillips' strategic plan. For example, 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.

c. ConocoPhillips controls and has controlled companywide decisions related to global warming and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries. For instance, ConocoPhillips' Board has the highest level of direct responsibility for climate change policy within the company. ConocoPhillips has developed and implements a corporate Climate Change Action Plan to govern climate change decision-making across all entities in the ConocoPhillips group.

d. ConocoPhillips Company is a wholly owned subsidiary of ConocoPhillips that acts on ConocoPhillips' behalf and subject to ConocoPhillips' control. ConocoPhillips Company is incorporated in Delaware and has its principal office in Bartlesville, Oklahoma. ConocoPhillips Company is qualified to do business in Rhode Island and has a registered agent for service of process in Rhode Island.

e. Phillips 66 is a multinational energy and petrochemical company incorporated in Delaware and 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.

f. Phillips 66 Company is a subsidiary of Phillips 66 that acts on Phillips 66's behalf and subject to Phillips 66's control. Phillips 66 Company is incorporated in Delaware and has its principal office in Houston, Texas. Phillips 66 Company is qualified to do business in Rhode Island and has a registered agent for service of process in Rhode Island. Phillips

66 Company was formerly known as, did or does business as, and/or is the successor in liability to Phillips Petroleum Company, Conoco, Inc., Tosco Corporation, and Tosco Refining Co.

g. Defendants ConocoPhillips, ConocoPhillips Company, Phillips 66, Phillips 66 Company, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions are collectively referred to herein as “ConocoPhillips.”

h. ConocoPhillips transacts and has transacted substantial fossil fuel-related business in Rhode Island. A substantial portion of ConocoPhillips’s fossil fuel products are or have been extracted, refined, transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in Rhode Island, from which ConocoPhillips derives and has derived substantial revenue. For instance, ConocoPhillips shipped gasoline manufactured at their refineries via common carrier pipelines intended to deliver gasoline to Petroleum Administration for Defense District 1, including Rhode Island.

26. **Citgo Petroleum Corporation**

a. Citgo Petroleum Corporation (“Citgo”) is a direct, wholly owned subsidiary of PDV America, Incorporated, which is a wholly owned subsidiary of PDV Holding, Incorporated. These organizations’ ultimate parent is Petróleos de Venezuela, S.A. (“PDVSA”), an entity wholly owned by the Republic of Venezuela that plans, coordinates, supervises, and controls activities carried out by its subsidiaries. Citgo is incorporated in the State of Delaware and maintains its headquarters in Houston, Texas. Citgo is qualified to do business in Rhode Island.

b. Citgo controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries.

c. Citgo controls and has controlled companywide decisions related to climate change and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries.

d. Citgo and its subsidiaries are engaged in refining, marketing, and transporting petroleum products, including gasoline, diesel fuel, jet fuel, petrochemicals, lubricants, asphalt, and refined waxes.

e. Citgo directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Citgo's fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufactured, sold, and/or consumed in Rhode Island, from which Citgo derives and has derived substantial revenue. For instance, Citgo has marketed, sold, and/or distributed heating oil in Rhode Island including through the CITGO – Venezuela Heating Oil program, a heating oil assistance program. Additionally, Citgo markets and/or has marketed gasoline and other fossil fuel products to consumers, including through Citgo-branded petroleum service stations in Rhode Island. Citgo owns and operates an interactive webpage that allows consumers to locate Citgo-branded gas stations in the state. Citgo also supplied gasoline to 7-Eleven gas stations located in Rhode Island.

## 27. **Marathon Entities**

a. Marathon Oil Company is an energy company incorporated in the State of Ohio with its principal

place of business in Houston, Texas. Marathon Oil Company is a corporate ancestor of Marathon Oil Corporation and Marathon Petroleum Company.

b. Marathon Oil Corporation is a multinational energy company incorporated in the State of Delaware and with its principal place of business in Houston, Texas. Marathon Oil Corporation consists of multiple subsidiaries and affiliates involved in the exploration for, extraction, production, and marketing of fossil fuel products.

c. Marathon Petroleum Corporation is a multinational energy company incorporated in Delaware and with its principal place of business in Findlay, Ohio. Marathon Petroleum Corporation was spun off from the operations of Marathon Oil Corporation in 2011. It consists of multiple subsidiaries and affiliates involved in fossil fuel product refining, marketing, retail, and transport, including both petroleum and natural gas products.

d. Marathon Oil Corporation and Marathon Petroleum Corporation control and have controlled their companywide decisions about the quantity and extent of fossil fuel production and sales, including those of their subsidiaries.

e. Marathon Oil Corporation and Marathon Petroleum Corporation control and have controlled their companywide decisions about the quantity and extent of fossil fuel production, including those of their subsidiaries.

f. Marathon Petroleum Company LP is a wholly owned subsidiary of Marathon Petroleum Corporation that acts on Marathon Petroleum Corporation's behalf and subject to Marathon Petroleum Corporation's control. Marathon Petroleum Company LP is

incorporated in Delaware with its principal place of business in Findlay, Ohio. Marathon Petroleum Company LP is qualified to do business in Rhode Island. Marathon Petroleum Company LP is engaged in the marketing of motor fuels and other refined products.

g. Speedway LLC is a wholly owned subsidiary of Marathon Petroleum Corporation that acts on Marathon Petroleum Corporation's behalf and subject to Marathon Petroleum Corporation's control. Speedway LLC is incorporated in the State of Delaware with its principal place of business in Enon, Ohio. Speedway LLC is qualified to do business in Rhode Island and has a registered agent for service of process in Rhode Island.

h. Defendants Marathon Oil Company, Marathon Oil Corporation, Marathon Petroleum Corporation, Marathon Petroleum Company LP, Speedway LLC, and their predecessors, successors, parents, subsidiaries, affiliates, and divisions, are collectively referred to as "Marathon."

i. Marathon directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Marathon's fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufactured, sold, and/or consumed in Rhode Island, from which Marathon derives and has derived substantial revenue. For example, Marathon markets and/or has marketed gasoline and other fossil fuel products to consumers, including through Speedway-branded petroleum service stations in Rhode Island. Marathon owns and operates an interactive webpage that allow consumers to locate Speedway-branded gas stations in the state.

**28. Hess Corporation**

a. Hess Corporation (“Hess”) is a global, vertically integrated petroleum exploration and extraction company incorporated in the State of Delaware with its headquarters and principal place of business in New York, New York. Hess is qualified to do business in Rhode Island and has a registered agent for service of process in Rhode Island. Hess was formerly known as, did or does business as, and/or is the successor in liability to Amerada Hess Corporation, WilcoHess LLC, Hess Oil Virgin Islands Corporation, Hess Energy Trading Company, LLC, and Hartree Partners, LP.

b. Hess is engaged in the exploration, development, production, transportation, purchase, marketing, and sale of crude oil and natural gas. Its oil and gas production operations are located primarily in the United States, Denmark, Equatorial Guinea, Malaysia, Thailand, and Norway. Prior to 2014, Hess also conducted extensive retail operations in its own name and through its subsidiaries.

c. Hess controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries.

d. Hess controls and has controlled companywide decisions related to climate change and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries.

e. Hess directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Hess’s fossil fuel products are or have been extracted, refined, transported, traded, distributed, marketed, promoted, manufactured, sold,

and/or consumed in Rhode Island, from which Hess derives and has derived substantial revenue. For example, Hess markets and/or has marketed gasoline and other fossil fuel products to consumers, including through Hess-branded petroleum service stations in Rhode Island.

29. **Lukoil Pan Americas, LLC**

a. Lukoil Pan Americas, LLC (“Lukoil”) is a global, vertically integrated petroleum exploration and extraction company incorporated in the State of Delaware with its headquarters and principal place of business in New York, New York. Lukoil is qualified to do business in Rhode Island and has a registered agent for service of process in Rhode Island.

b. Lukoil is engaged in the exploration, development, production, transportation, purchase, marketing, and sale of crude oil and natural gas; gas processing; oil refining; generation, transmission and distribution of heat and power; and manufacturing and marketing of commodity petrochemicals. Lukoil is the ultimate parent company for numerous subsidiaries.

c. Lukoil controls and has controlled companywide decisions about the quantity and extent of fossil fuel production and sales, including those of its subsidiaries.

d. Lukoil controls and has controlled companywide decisions related to climate change and greenhouse gas emissions from its fossil fuel products, including those of its subsidiaries.

e. Lukoil directs and has directed substantial fossil fuel-related business to Rhode Island. A substantial portion of Lukoil’s fossil fuel products are or have been extracted, refined, transported, traded,

distributed, marketed, promoted, manufactured, sold, and/or consumed in Rhode Island, from which Lukoil derives and has derived substantial revenue. For example, Lukoil markets and/or has marketed gasoline and other fossil fuel products to consumers, including through Lukoil-branded petroleum service stations in Rhode Island.

f. Getty Petroleum Marketing, Inc. markets and/or marketed gasoline and petroleum products. Getty Petroleum Marketing Inc. is registered in Rhode Island as a non-resident landlord, as the owner of at least one gas station located at 7780 Post Road, North Kingstown, Rhode Island. At times relevant to this Complaint, Getty Petroleum Marketing, Inc. has been a wholly owned subsidiary of Lukoil that acted on Lukoil's behalf and subject to Lukoil's control. During that time, Getty Petroleum Marketing leased a pipeline at the East Providence Terminal in Rhode Island.

30. **Doe Defendants:** The true names and capacities, whether individual, corporate, associate, or otherwise of Defendants Does 1 through 100, inclusive, are unknown to Plaintiff, who therefore sues said Defendants by such fictitious names pursuant to R.I. Gen. Laws § 9-5-20. Plaintiff is informed and believes, and on that basis alleges, that each of the fictitiously named Defendants is responsible in some manner for the acts and occurrences herein alleged, and that Plaintiff's damages were caused by such Defendants.

31. **Relevant Non-Parties: Fossil Fuel Industry Associations:** As set forth in greater detail below, each Defendant had actual knowledge that its fossil fuel products were hazardous. Defendants obtained knowledge of the hazards of their products



independently and through their membership and involvement in trade associations.

32. Each Defendant's fossil fuel promotion and marketing efforts were assisted by the trade associations described below. Acting on behalf of the Defendants, the industry associations engaged in a long-term course of conduct to misrepresent, omit, and conceal the dangers of Defendants' fossil fuel products.

- a. **The American Petroleum Institute (API)**: API is a national trade association representing the oil and gas industry, formed in 1919. The following Defendants and/or their predecessors in interest are and/or have been API members at times relevant to this litigation: Chevron, ExxonMobil, BP, Shell, Total, Marathon, and Hess.<sup>10</sup>
- b. **The Western States Petroleum Association (WSPA)**: WSPA is a trade association representing oil producers in Arizona, California, Nevada, Oregon, and Washington.<sup>11</sup> Membership has included, among other entities: BP, Chevron, Shell, and ExxonMobil.<sup>12</sup>
- c. **The American Fuel and Petrochemical Manufacturers (AFPM)** is a national association of petroleum and petrochemical companies, formerly known as the National Petroleum Refiners Association. At relevant

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<sup>10</sup> American Petroleum Institute, *Members* (webpage) (accessed June 18, 2018), <http://www.api.org/membership/members>.

<sup>11</sup> Western States Petroleum Association, *About* (webpage) (accessed June 18, 2018), <https://www.wspa.org/about>.

<sup>12</sup> Western States Petroleum Association, *Member Companies* (webpage) (accessed June 27, 2018), <https://www.wspa.org/about>.

times, its members included, but were not limited to, Chevron, Exxon, BP, Shell, Citgo, Total, and Marathon.<sup>13</sup>

- d. **U.S. Oil & Gas Association (USOGA)** is a national trade association representing oil and gas producers, formerly known as the Mid-Continent Oil & Gas Association. USOGA's membership has included BP, Chevron, Citgo, Exxon, Shell, Marathon, and Hess.<sup>14</sup>
- e. **Western Oil & Gas Association (WOGA)** was a California nonprofit trade association representing the oil and gas industries, consisting of over 75 member companies. Its members included companies and individual responsible for more than 65% of petroleum production and 90% of petroleum refining and marketing in the Western United States.<sup>15</sup> WOGA membership likely included, but was not limited to, defendants Chevron, Exxon, and Shell.<sup>16</sup> Other fossil fuel company members of WOGA may have included, but were not limited to ConocoPhillips, Champlin Petroleum

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<sup>13</sup> American Fuel and Petrochemical Manufacturers, *Membership Directory* (webpage) (accessed June 18, 2018), <https://www.afpm.org/membership-directory>.

<sup>14</sup> See, e.g., Louisiana Mid-Continent Oil & Gas Association, *Member Companies* (webpage) (accessed June 18, 2018), <http://www.lmoga.com/members/member-companies>. USOGA's membership is divided among its four subsidiary divisions.

<sup>15</sup> *Am. Petroleum Inst. v. Knecht*, 456 F. Supp. 889, 894 n.2 (C.D. Cal. 1978), *aff'd*, 609 F.2d 1306 (9th Cir. 1979).

<sup>16</sup> See *id.* at 894 n.3.

Company (Anadarko)<sup>17</sup> and Reserve Oil & Gas Company.<sup>18</sup>

- f. **The Information Council for the Environment (ICE)**: 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).
- g. **The Global Climate Coalition (GCC)**: GCC was an industry group formed to oppose greenhouse gas emission reduction policies and the Kyoto Protocol. It was founded in 1989 shortly after the first Intergovernmental Panel on Climate Change meeting was held, and disbanded in 2001. Founding members included the National Association of Manufacturers, the National Coal Association, the Edison Electric Institute, and the United States Chamber of Commerce. The GCC's early individual corporate members included Amoco (BP), API, Chevron, Exxon, Ford, Shell, and Texaco (Chevron). Over its existence other members and funders included ARCO (BP), and the Western Fuels Association. The coalition also operated for several years out of the National Association of Manufacturers' offices.

### **III. AGENCY**

33. At all times herein mentioned, each of the Defendants was the agent, servant, partner, aider and abettor, co-conspirator, and/or joint venturer of each of

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<sup>17</sup> Hereinafter, parenthetical references to Defendants indicate corporate ancestry and/or affiliation.

<sup>18</sup> See *Am. Petroleum Inst.*, *supra* note 15, 456 F. Supp. at 894 n.3.

the remaining Defendants herein and was at all times operating and acting within the purpose and scope of said agency, service, employment, partnership, conspiracy, and joint venture and rendered substantial assistance and encouragement to the other Defendants, knowing that their conduct was wrongful and/or constituted a breach of duty.

#### **IV. JURISDICTION AND VENUE**

34. Each Defendant named here maintains sufficient minimum contacts with Rhode Island, as described above, such that this Court's exercise of jurisdiction over it is not contrary to the provisions of the constitution or laws of the United States, and this Court therefore has jurisdiction pursuant to R.I. Gen. Laws § 9-5-33.

35. The Providence County Superior Court is a court of general jurisdiction and therefore has subject matter jurisdiction over this action. Because the amount in controversy exceeds \$10,000, this Court has exclusive original jurisdiction pursuant to R.I. Gen. Laws § 8-2-14(a).

36. Venue is proper in Providence County pursuant to R.I. Gen. Laws § 9-4-2 because this matter concerns rights and interests in real property lying within this County; and pursuant to R.I. Gen. Laws § 9-4-5 because some of the Defendants maintain operations and may be found in this County.

#### **V. FACTUAL BACKGROUND**

##### **A. Global Warming—Observed Effects and Known Causes**

37. Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes to the climate system are unprecedented over decades to

millennia. Globally, the atmosphere and ocean have warmed, sea level has risen, and the amounts of snow and ice have diminished, thereby altering hydrologic systems.<sup>19</sup> As a result, extreme weather events have increased, including, but not limited to, heat waves, droughts, and extreme precipitation events.<sup>20</sup>

38. Ocean and land surface temperatures have increased at a rapid pace during the late 20th and early 21st centuries:

a. 2016 was the hottest year on record by globally averaged surface temperatures, exceeding mid-20th century mean ocean and land surface temperatures by approximately 1.69°F.<sup>21</sup> Eight of the twelve months in 2016 were hotter by globally averaged surface temperatures than those respective months in any previous year. October, November, and December 2016 showed the second hottest average surface temperatures for those months, second only to temperatures recorded in 2015.<sup>22</sup>

b. The Earth's hottest month ever recorded was February 2016, followed immediately by the second hottest month on record, March 2016.<sup>23</sup>

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<sup>19</sup> IPCC, *Climate Change 2014: Synthesis Report*, *supra* note 3, at 40.

<sup>20</sup> *Id.* at 8.

<sup>21</sup> NOAA, *Global Climate Report – Annual 2017*, <https://www.ncdc.noaa.gov/sotc/global/201713>; NASA, “NASA, NOAA Data Show 2016 Warmest Year on Record Globally” (press release) (Jan. 18, 2017), <https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-on-record-globally>.

<sup>22</sup> *Id.*

<sup>23</sup> Jugal K. Patel, “How 2016 Became Earth’s Hottest Year on

c. The second hottest year on record by globally averaged surface temperatures was 2015, and the third hottest was 2017.<sup>24</sup>

d. The ten hottest years on record by globally averaged surface temperature have all occurred since 1998,<sup>25</sup> and sixteen of the seventeen hottest years have occurred since 2001.<sup>26</sup>

e. Each of the past three decades has been warmer by average surface temperature than any preceding decade on record.<sup>27</sup>

f. The period between 1983 and 2012 was likely the warmest 30-year period in the Northern Hemisphere since approximately 700 AD.<sup>28</sup>

39. The average global surface and ocean temperature in 2016 was approximately 1.7°F warmer than the 20th century baseline, which is the greatest positive anomaly observed since at least 1880.<sup>29</sup> The increase in hotter temperatures and more frequent

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Record,” N.Y. TIMES (Jan. 18, 2017), <https://www.nytimes.com/interactive/2017/01/18/science/earth/2016-hottest-year-on-record.html>.

<sup>24</sup> NOAA, *Global Climate Report – Annual 2017*, *supra* note 21.

<sup>25</sup> *Id.*

<sup>26</sup> NASA, “NASA, NOAA Data Show 2016 Warmest Year on Record Globally” (press release) (Jan. 18, 2017), <https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-on-record-globally>.

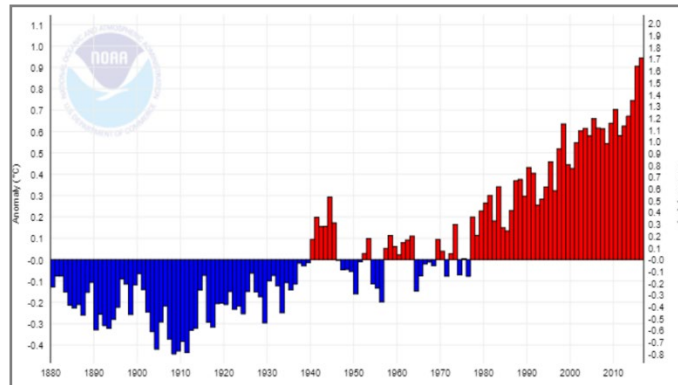
<sup>27</sup> IPCC *Climate Change 2014: Synthesis Report*, *supra* note 3, 2.

<sup>28</sup> *Id.*

<sup>29</sup> NOAA, National Centers for Environmental Information, *Climate at a Glance (Global Time Series)* (June 2017), [https://www.ncdc.noaa.gov/cag/time-series/global/globe/land\\_ocean/ytd/12/1880-2016](https://www.ncdc.noaa.gov/cag/time-series/global/globe/land_ocean/ytd/12/1880-2016).

positive anomalies during the Great Acceleration is occurring both globally and locally, including in Rhode Island. The graph below shows the increase in global land and ocean temperature anomalies since 1880, as measured against the 1910–2000 global average temperature.<sup>30</sup>

**Fig. 1: Global Land and Ocean Temperature Anomalies, January – December**



40. The mechanism by which human activity causes global warming and climate change is well established: ocean and atmospheric warming is overwhelmingly caused by anthropogenic greenhouse gas emissions.<sup>31</sup>

41. When emitted, greenhouse gases trap heat within the Earth's atmosphere that would otherwise radiate into space.

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<sup>30</sup> *Id.*

<sup>31</sup> IPCC, *Climate Change 2014: Synthesis Report*, supra note 3, at 4.

42. Greenhouse gases are largely byproducts of humans combusting fossil fuels to produce energy and using fossil fuels to create petrochemical products.

43. Human activity, particularly greenhouse gas emissions, is the primary cause of global warming and its associated effects on Earth's climate.

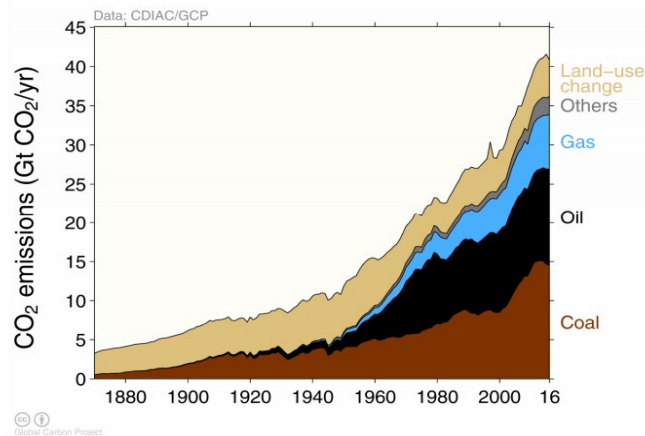
44. Prior to World War II, most anthropogenic CO<sub>2</sub> emissions were caused by land-use practices, such as forestry and agriculture, which altered the ability of the land and global biosphere to absorb CO<sub>2</sub> from the atmosphere; the impacts of such activities on Earth's climate were relatively minor. Since the beginning of the Great Acceleration, however, both the annual rate and total volume of anthropogenic CO<sub>2</sub> emissions have increased enormously following the advent of major uses of oil, gas, and coal. The graph below shows that while CO<sub>2</sub> emissions attributable to forestry and other land-use change have remained relatively constant, total emissions attributable to fossil fuels have increased dramatically since the 1950s.<sup>32</sup>

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<sup>32</sup> Global Carbon Project, Global Carbon Budget 2017 (Nov. 13, 2017), [http://www.globalcarbonproject.org/carbonbudget/17/files/GCP\\_CarbonBudget\\_2017.pdf](http://www.globalcarbonproject.org/carbonbudget/17/files/GCP_CarbonBudget_2017.pdf) (citing CDIAC; R.A. Houghton & Alexander A. Nassikas, *Global and Regional Fluxes of Carbon from Land Use and Land Cover Change 1850–2015*, 31 GLOBAL BIOCHEMICAL CYCLES 3, 456 (Feb. 2017)).



**Fig. 2 Total Annual Carbon Dioxide Emissions by Source, 1860-2016**



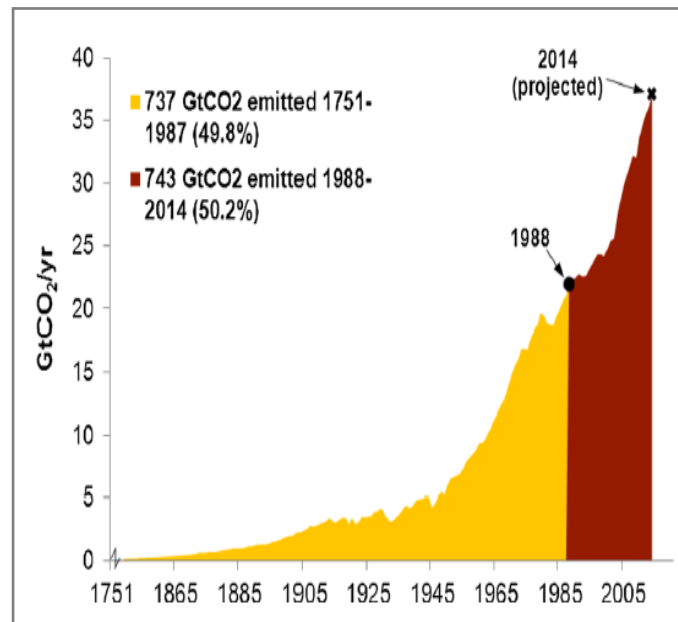
45. As human reliance on fossil fuels for industrial and mechanical processes has increased, so too have greenhouse gas emissions, especially of CO<sub>2</sub>. The Great Acceleration is marked by a massive increase in the annual rate of fossil fuel emissions: more than half of all cumulative CO<sub>2</sub> emissions have occurred since 1988.<sup>33</sup> The rate of CO<sub>2</sub> emissions from fossil fuels and industry, moreover, has increased threefold since the 1960s, and by more than 60% since 1990.<sup>34</sup> The graph below illustrates the increasing rate of global CO<sub>2</sub> emissions since the industrial era began.<sup>35</sup>

<sup>33</sup> R. J. Andres et al., *supra* note 6, at 1851.

<sup>34</sup> C. Le Quéré et al., *supra* note 4, at 630 (“Global CO<sub>2</sub> emissions from fossil fuels and industry have increased every decade from an average of 3.1±0.2 GtC/yr in the 1960s to an average of 9.3±0.5 GtC/yr during 2006–2015.”).

<sup>35</sup> Peter Frumhoff et al., *The Climate Responsibilities of Industrial Carbon Producers*, 132 CLIMATIC CHANGE 157, 164 (2015).

**Fig. 3 Cumulative Annual Anthropogenic Carbon Dioxide Emissions, 1751-2014**

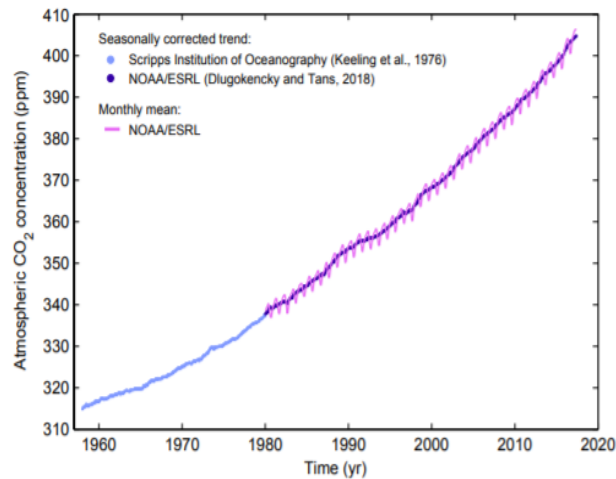


46. Because of the increased use of fossil fuel products, concentrations of greenhouse gases in the atmosphere are now at a level unprecedented in at least 800,000 years.<sup>36</sup> The graph below illustrates the nearly 30% increase in atmospheric CO<sub>2</sub> concentration above pre-Industrial levels since 1960.<sup>37</sup>

<sup>36</sup> IPCC, *Climate Change 2014: Synthesis Report*, *supra* note 3, at 4.

<sup>37</sup> C. Le Quéré et al., *Global Carbon Budget 2017*, 10 EARTH SYST. SCI. DATA 405, 408 (Mar. 2018)).

**Fig. 4: Atmospheric Carbon Dioxide Concentration in Parts Per Million, 1960-2017**



### **B. Sea Level Rise—Known Causes and Observed Effects**

47. Sea level rise is the physical consequence of (a) the thermal expansion of ocean waters as they warm; (b) increased mass loss from land-based glaciers that are melting as ambient air temperature increases; and (c) the shrinking of land-based ice sheets due to increasing ocean and air temperature.<sup>38</sup>

48. Of the increase in energy that has accumulated in the Earth's atmosphere between 1971 and 2010, more than 90% is stored in the oceans.<sup>39</sup>

<sup>38</sup> NOAA, *Is Sea Level Rising?* (webpage) (last updated June 25, 2018), <http://oceanservice.noaa.gov/facts/sealevel.html>.

<sup>39</sup> IPCC, *Climate Change 2014: Synthesis Report*, *supra* note 3, at 4.

49. Anthropogenic forcing, in the form of greenhouse gas pollution largely from the production, use, and combustion of fossil fuel products, is the dominant cause of global mean sea level rise since 1970, explaining at least 70% of the sea level rise observed between 1970 and 2000.<sup>40</sup> Natural radiative forcing—that is, causes of climate change not related to human activity—“makes essentially zero contribution [to observed sea level rise] over the twentieth century (2% over the period 1900–2005).”<sup>41</sup>

50. Anthropogenic greenhouse gas pollution is the dominant factor in each of the independent causes of sea level rise, including the increase in ocean thermal expansion,<sup>42</sup> in glacier mass loss, and in more negative surface mass balance from the ice sheets.<sup>43</sup>

51. There is a well-defined relation between cumulative emissions of CO<sub>2</sub> and committed global mean sea level. This relation, moreover, holds proportionately for committed regional sea level rise.<sup>44</sup>

52. Nearly 100% of the sea level rise from any projected greenhouse gas emissions scenario will persist for at least 10,000 years.<sup>45</sup> This owes to the long residence time of CO<sub>2</sub> in the atmosphere that

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<sup>40</sup> Aimée B. A. Slangen, et al., *Anthropogenic Forcing Dominates Global Mean Sea-Level Rise Since 1970*, 6 NATURE CLIMATE CHANGE 701, 701 (2016).

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> Peter U. Clark, et al., *Consequences of Twenty-First-Century Policy for Multi-Millennial Climate and Sea-Level Change*, 6 NATURE CLIMATE CHANGE 360, 365 (2016).

<sup>45</sup> *Id.* at 361.

sustains temperature increases, and inertia in the climate system.<sup>46</sup>

53. Anthropogenic greenhouse gas pollution caused the increased frequency and severity of extreme sea level events (temporary sea level height increases due to storm surges or extreme tides, exacerbated by elevated baseline sea level) observed during the Great Acceleration.<sup>47</sup> The incidence and magnitude of extreme sea level events has increased globally since 1970.<sup>48</sup> The impacts of such events, which generally occur with large storms, high tidal events, offshore low-pressure systems associated with high winds, or the confluence of any of these factors,<sup>49</sup> are exacerbated with higher average sea level, which functionally raises the baseline for the destructive impact of extreme weather and tidal events. Indeed, the magnitude and frequency of extreme sea level events can occur in the absence of increased intensity of storm events, given the increased average elevation from which flooding and inundation events begin. These effects, and others, significantly and adversely affect Rhode Island, with increased severity in the future.

54. Historical greenhouse gas emissions alone through 2000 will cause a global mean sea level rise of

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<sup>46</sup> *Id.* at 360.

<sup>47</sup> IPCC, *Climate Change 2013: Summary for Policymakers*, 7 Table SPM.1 (2013), [https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5\\_SPM\\_brochure\\_en.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5_SPM_brochure_en.pdf).

<sup>48</sup> IPCC, Thomas F. Stocker et al., *Climate Change 2013: The Physical Science Basis*, Intergovernmental Panel on Climate Change, Cambridge University Press, 290 (2013), <http://www.ipcc.ch/report/ar5/wg1>.

<sup>49</sup> *Id.*

at least 7.4 feet.<sup>50</sup> Additional greenhouse gas emissions from 2001–2015 have caused approximately 10 additional feet of committed sea level rise. Even immediate and permanent cessation of all additional anthropogenic greenhouse gas emissions would not prevent the eventual inundation of land at elevations between current average mean sea level and 17.4 feet of elevation in the absence of adaptive measures.

55. The relationship between anthropogenic CO<sub>2</sub> emissions and committed sea level rise is nearly linear and always positive. For emissions, including future emissions, from the year 2001, the relation is approximately 0.25 inches of committed sea level rise per 1 Gt CO<sub>2</sub> released. For the period 1965 to 2000, the relation is approximately 0.05 inches of committed sea level rise per 1 Gt CO<sub>2</sub> released. For the period 1965 to 2015, normal use of Defendants' fossil fuel products caused a substantial portion of committed sea level rise. Each and every additional unit of CO<sub>2</sub> emitted from the use of Defendants' fossil fuel products will add to the sea level rise already committed to the geophysical system.

56. Projected onshore impacts associated with rising sea temperature and water level include, but are not limited to, increases in flooding and erosion; increases in the occurrence, persistence, and severity of storm surges; infrastructure inundation; saltwater intrusion in groundwater; public and private property damage; and pollution associated with damaged wastewater infrastructure. All of these effects significantly and adversely affect Rhode Island.

57. Sea level rise has already taken grave tolls on inhabited coastlines. For instance, the U.S. National

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<sup>50</sup> Peter U. Clark et al., *supra* note 44, at 365.

Oceanic and Atmospheric Administration (“NOAA”) estimates that nuisance flooding occurs from 300% to 900% more frequently within U.S. coastal communities today than just 50 years ago.<sup>51</sup>

58. Nationwide, more than three quarters (76%) of flood days caused by high water levels from sea level rise between 2005 and 2014 (2,505 of the 3,291 flood days) would not have happened but for human-caused climate change. More than two-thirds (67%) of flood days since 1950 would not have happened without the sea level rise caused by increasing greenhouse gas emissions.<sup>52</sup>

59. Regional expressions of sea level rise will differ from the global mean, and are especially influenced by changes in ocean and atmospheric dynamics, as well as the gravitational, deformational, and rotational effects of the loss of glaciers and ice sheets.<sup>53</sup> Over the past half century, sea levels in the Northeast have been increasing 3 to 4 times faster than the global average rate.<sup>54</sup> Rhode Island is experiencing and will continue to experience greater sea level rise than the global average, due to several factors including changes in ocean circulation as a result of climate change and land subsistence.<sup>55</sup>

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<sup>51</sup> NOAA, *Is Sea Level Rising?*, *supra* note 38.

<sup>52</sup> Climate Central, *Sea Level Rise Upping Ante on ‘Sunny Day’ Floods* (Oct. 17, 2016), <http://www.climatecentral.org/news/climate-change-increases-sunny-day-floods-20784>.

<sup>53</sup> Peter U. Clark et al., *supra* note 44, at 364.

<sup>54</sup> Rhode Island Sea Grant et al., *Sea Level Rise in Rhode Island: Trends and Impacts*, 2 (Jan 2013) [http://www.beachsamp.org/wp-content/uploads/2016/09/climate\\_SLR\\_factsheet2013.pdf](http://www.beachsamp.org/wp-content/uploads/2016/09/climate_SLR_factsheet2013.pdf)

<sup>55</sup> Rhode Island Department of Health, *Rhode Island Climate*

60. Rhode Island has experienced over 10 inches of sea level rise since 1930, averaging over an inch per decade.<sup>56</sup> The mean annual rate of sea level rise has increased in recent decades and will continue to rise significantly. According to NOAA, Rhode Island could experience 9 feet of sea level rise by 2100, along with substantial increase in the frequency of nuisance tidal flooding.<sup>57</sup>

61. Rhode Island's topography, geography, and land use patterns make it particularly susceptible to injuries from sea level rise. Rhode Island has substantial public assets in 21 coastal municipalities along its 400 miles of coastline.<sup>58</sup> Twenty Rhode Island municipalities have acreage lying below the floodplain.<sup>59</sup>

62. Without Defendants' fossil fuel-related greenhouse gas pollution, current sea level rise would have been far less than the observed sea level rise to

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*Change and Resiliency Report*, 10 (2015), <http://health.ri.gov/publications/reports/ClimateChangeAndHealthResiliency.pdf>.

<sup>56</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, 12 (July 2018).

<sup>57</sup> *Id.*

<sup>58</sup> Final Report: "Special House Commission to Study Economic Risk Due to Flooding and Sea Level Rise," 6, 32 (May 12, 2016), <http://www.rilin.state.ri.us/commissions/fsrcomm/commdocs/20160512%20Economic%20Risk%20Due%20to%20Flooding%20and%20Sea%20Level%20Rise%20-%20final.pdf>.

<sup>59</sup> *Id.* at 6.



date.<sup>60</sup> Similarly, committed sea level rise that will occur in the future would also be far less.<sup>61</sup>

### **C. Warming Air Temperatures—Known Causes and Observed Effects**

63. Carbon dioxide and other greenhouse gases are impairing the radiation of heat back into the atmosphere. This is slowly driving up temperatures, especially nighttime lows, as the concentration of greenhouse gases thickens.<sup>62</sup>

64. As the Earth's surface temperature warms, there is not only an overall increase in average temperature but also in frequency of extremely warm temperatures, corresponding with a decrease in frequency of extremely cold temperatures. The following graph illustrates the statistical shift in expected average and extreme temperatures due to anthropogenic global warming.<sup>63</sup>

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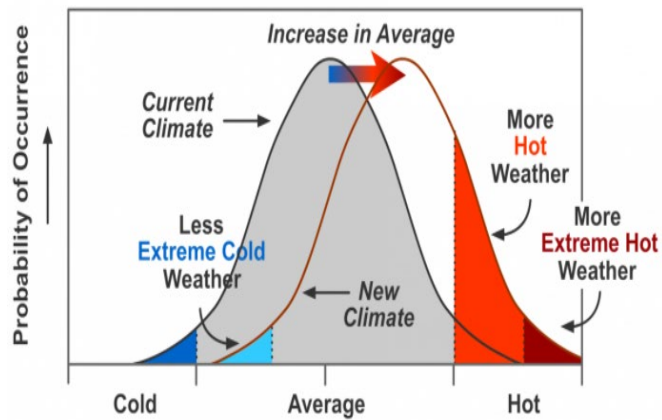
<sup>60</sup> Robert E. Kopp et al., *Temperature-driven Global Sea-level Variability in the Common Era*, 113 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, No. 11, E1434-E1441, E1438 (2016), <http://www.pnas.org/content/113/11/E1434.full>.

<sup>61</sup> Peter U. Clark et al., *supra* note 44, at 365.

<sup>62</sup> IPCC, Thomas F. Stocker et al., *Climate Change 2013: The Physical Science Basis*, *supra* note 48.

<sup>63</sup> IPCC, *Fourth Assessment Report: Climate Change 2007: Working Group I: The Physical Science*, Basis Box TS.5, Figure 1, [https://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/box-ts-5-figure-1.html](https://www.ipcc.ch/publications_and_data/ar4/wg1/en/box-ts-5-figure-1.html).

**Fig. 5: Effect of Mean Temperature on Extreme Temperature Occurrence**



65. Record-breaking high temperatures are now outnumbering record lows by an average decadal ratio of 2:1 across the United States.<sup>64</sup> This represents an increase from approximately 1.09 high temperature records for every one low temperature record in the 1950s, and 1.36 high temperature records for every one low temperature record in the 1990s.<sup>65</sup>

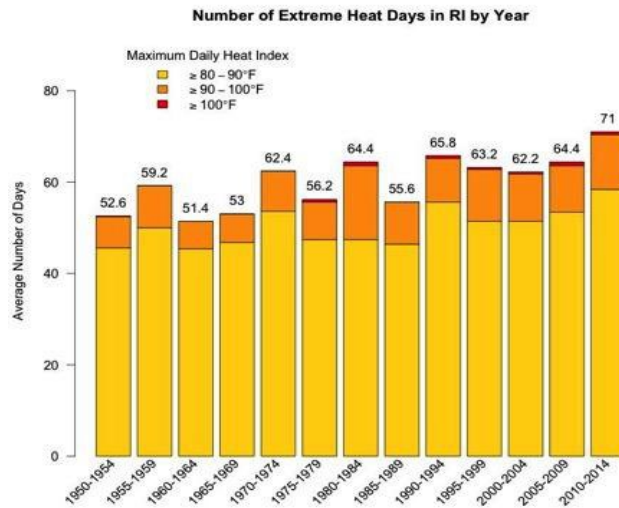
66. Rhode Island has already begun experiencing a substantial increase in extreme heat days. As the figure below shows, 1950s and 1960s, an average summer included 54 days with a heat index above 80

<sup>64</sup> Gerald A. Meehl et al., *Relative Increase of Record High Maximum Temperatures Compared to Record Low Minimum Temperatures in the U.S.*, GEOPHYSICAL RESEARCH LETTERS, L23701 at 3 (2009).

<sup>65</sup> See Climate Signals, *Record High Temps vs. Record Low Temps* (last accessed June 27, 2018), <http://www.climatesignals.org/data/record-high-temps-vs-record-low-temps>.

degrees. By the 1990s and 2000s, that average had climbed to nearly 64 days. In 2010 through 2014, that number rose to 71 days above 80 degrees.<sup>66</sup>

**Fig. 6: Number of Extreme Heat Days Per Year in Rhode Island, 1950-2014**



*Melissa Eliot/Brown University*

67. Heatwaves are prolonged periods with excessive ambient temperatures, often (but not necessarily) defined with reference to historical temperatures at a given locale. Since as early as the 1950s, increases in the duration, intensity, and especially the frequency of heatwaves have been

<sup>66</sup> “Number of 80°-plus days rising steadily in RI,” BROWN UNIVERSITY NEWS (Sept. 8, 2015), <https://news.brown.edu/articles/2015/09/temperature>.

detected over many regions,<sup>67</sup> including the eastern United States.<sup>68</sup>

68. With future emissions, the annual average number of extreme heat days and heat waves will continue to increase substantially. For instance, under a moderate rising emissions scenario, the ratio of record high maximum to record low minimum temperatures in the United States will continue to increase, reaching ratios of about 20:1 by 2050, and roughly 50:1 by 2100.<sup>69</sup> Even under a pathway of lower greenhouse gas emissions, average annual temperatures are projected to most likely exceed historical record levels by the middle of the 21st century.<sup>70</sup>

69. Because of Rhode Island's urban infrastructure, increased temperatures will add to the heat load of buildings and exacerbate existing urban heat islands, adding to the risks of high ambient temperatures.

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<sup>67</sup> S.E. Perkins-Kirkpatrick & P.B. Gibson, *Changes in Regional Heatwave Characteristics as a Function of Increasing Global Temperature*, SCIENTIFIC REPORTS, 7:12256, 1 (2017).

<sup>68</sup> Noah. S. Diffenbaugh & Moestasim Ashfaq, *Intensification of Hot Extremes in the United States*, 37 GEOPHYSICAL RESEARCH LETTERS L15701 (2010).

<sup>69</sup> Gerald A. Meehl et al., *supra* note 64, at 3.

<sup>70</sup> NOAA, National Centers for Environmental Information, *Climate at a Glance (Global Time Series)* (June 2017), [https://www.ncdc.noaa.gov/cag/time-series/global/globe/land\\_ocean/ytd/12/1880-2016](https://www.ncdc.noaa.gov/cag/time-series/global/globe/land_ocean/ytd/12/1880-2016).

#### **D. Disruption to the Hydrologic Cycle— Known Causes and Observed Effects**

70. The “hydrologic cycle” describes the temporal and spatial movement of water through oceans, land, and the atmosphere.<sup>71</sup> “Evapotranspiration” is the process by which water on the Earth’s surface turns to vapor and is absorbed into the atmosphere. The vast majority of evapotranspiration is due to the sun’s energy heating water molecules, resulting in evaporation.<sup>72</sup> Plants also draw water into the atmosphere from soil through transpiration. Volcanoes, sublimation (the process by which solid water changes to water vapor), and human activity also contribute to atmospheric moisture.<sup>73</sup> As water vapor rises through the atmosphere and reaches cooler air, it becomes more likely to condense and fall back to Earth as precipitation.

71. Upon reaching Earth’s surface as precipitation, water may take several different paths. It can be reevaporated into the atmosphere; seep into the ground as soil moisture or groundwater; run off into rivers and streams; or stop temporarily as snowpack or ice. It is during these phases, when water is available at or near the Earth’s surface, that water is captured for use by humans.

72. Anthropogenic global warming caused by Defendants’ fossil fuel products is disrupting and will

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<sup>71</sup> NASA Earth Observatory, *The Water Cycle*, (webpage) (accessed June 27, 2018), <https://earthobservatory.nasa.gov/Features/Water/page1.php>.

<sup>72</sup> See USGS, *The Water Cycle: Evaporation* (webpage) (accessed June 27, 2018), <https://water.usgs.gov/edu/watercycle/evaporation.html>.

<sup>73</sup> NASA Earth Observatory, *The Water Cycle*, *supra* note 71.

continue to disrupt the hydrologic cycle in Rhode Island by changing evapotranspiration patterns.<sup>74</sup> As the lower atmosphere becomes warmer, evaporation rates have and will continue to increase, resulting in an increase in the amount of moisture circulating throughout the lower atmosphere. As the Earth's surface temperature has increased, so has evaporation.<sup>75</sup> For every 1.8°F of anthropogenic global warming, the atmosphere's capacity to hold water vapor increases by 7%.<sup>76</sup> Thus, anthropogenic global warming has increased substantially the total volume of water vapor in the atmosphere at any given time.<sup>77</sup>

73. An observed consequence of higher water vapor concentrations is a shift toward increased frequency of intense precipitation events, mainly over land areas. Furthermore, because of warmer temperatures, more precipitation is falling as rain rather than snow. These changes affect both the quantity and quality of water resources available to both human and ecological systems, including in Rhode Island.

74. As a result of anthropogenic climate change, Rhode Island has experienced and will experience increased precipitation extremes, leading to both increased frequency of intense precipitation events and extremely dry periods.<sup>78</sup>

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<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> IPCC, Thomas F. Stocker et al., *Climate Change 2013: The Physical Science Basis*, *supra* note 48.

<sup>77</sup> NASA Earth Observatory, *The Water Cycle*, *supra* note 71.

<sup>78</sup> SafeWater RI, *Ensuring Water for Rhode Island's Future*, 11

### i. Extreme Precipitation

75. Global warming has contributed and will contribute to more intense and wetter precipitation events, now and into the future. Average annual precipitation in Providence, Rhode Island, has increased by 0.4 inches per decade since 1895.<sup>79</sup> Intense rainfall events (heaviest 1% of all daily events from 1901 to 2012 in New England) increased 71% between 1958 and 2000.<sup>80</sup> Climate models project that annual precipitation will continue to increase by up to three inches per decade locally and that more precipitation will fall during intense storms.<sup>81</sup>

76. Over the past 80 years, Rhode Island has experienced a significant increase in both flood frequency and flood severity. Along with most of southern New England, the State has experienced a doubling of the frequency of flooding and an increase in the magnitude of flood events.<sup>82</sup> Rhode Island experienced more extreme precipitation events

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(July 2013), <http://www.health.ri.gov/publications/reports/2013EnsuringSafeWaterForRhodeIslandsFuture.pdf>.

<sup>79</sup> Radley Horton et al., CLIMATE CHANGE IMPACTS IN THE UNITED STATES, Ch. 16: *Northeast* 373 (2014), [http://s3.amazonaws.com/nca2014/low/NCA3\\_Full\\_Report\\_16\\_Northeast\\_LowRes.pdf](http://s3.amazonaws.com/nca2014/low/NCA3_Full_Report_16_Northeast_LowRes.pdf).

<sup>80</sup> *Id.*

<sup>81</sup> Narragansett Bay Estuary Program, *State of Narragansett Bay and Its Watershed Summary Report*, 21 (2017), <http://nbep.org/01/wp-content/uploads/2017/10/State-of-Narragansett-Bay-and-Its-Watershed-Summary-Report.pdf>.

<sup>82</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 15.

between 2005 and 2014 than any prior decade in the State's history.<sup>83</sup>

77. Due to anthropogenic climate change, seasonality of precipitation will shift so that more precipitation occurs during winter, as rain, and less during summer.<sup>84</sup>

78. Tropical cyclone rainfall rates will increase in the future due to anthropogenic warming and accompanying increase in atmospheric moisture content. Models project an increase on the order of 10–15% for rainfall rates averaged within about 100 km of the storm for a 2°C global warming scenario. The intensity of tropical cyclones will also increase by 1 to 10% according to model projections for a 2°C global warming.<sup>85</sup> Increased intensity of storms means that the destructive potential per storm increases.<sup>86</sup>

79. Heavy precipitation events (defined as rainfall equal to or greater than the historical 95th percentile) will significantly increase in frequency at least through the year 2100.<sup>87</sup>

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<sup>83</sup> NOAA National Centers for Environmental Information, *State Summaries 149-RI, "Rhode Island,"* 1 (2017), <http://climatechange.ri.gov/documents/noaa-climate-rhode-island-state-summary.pdf>.

<sup>84</sup> Narragansett Bay Estuary Program, *supra* note 81, at 21.

<sup>85</sup> Princeton University Geophysical Fluid Dynamics Laboratory, "Global Warming and Hurricanes" (website) (last revised June 6, 2018), <https://www.gfdl.noaa.gov/global-warming-and-hurricanes>.

<sup>86</sup> *Id.*

<sup>87</sup> Xiang Gao et al., *21st Century Changes in U.S. Heavy Precipitation Frequency Based on Resolved Atmospheric Patterns*, MIT Joint Program on the Science and Policy of Global Change: Report 302, 15 (2016).



**ii. Drought**

80. Drought is a period of moisture deficit defined either by a deficiency in the amount or timing of precipitation relative to a reference period (“meteorological drought”), or by a shortage of water supply for specific human, ecological, or other uses (“hydrologic drought”). Drought originates from a deficiency in precipitation and/or an elevation of temperature (and therefore evaporation) relative to normal conditions, resulting in a water shortage for an activity, group, or ecological use.<sup>88</sup>

81. As rising temperatures lead to greater rainfall variability, Rhode Island will begin to experience more frequent seasonal droughts in the summer and fall.<sup>89</sup>

82. As annual rainfall concentrates into a shorter time span, the annual dry period is growing longer, resulting in conditions of moisture deficiency over longer periods. Even in the absence of substantial changes in average precipitation in the State, precipitation will fall in a shorter time span and therefore be less susceptible to retention and use.

83. Thus, future droughts in the State will be more severe than historical droughts, with an attendant exacerbation of drought impacts.

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<sup>88</sup> See, e.g., Donald A. Wilhite & Michael H. Glantz, *Understanding the Drought Phenomenon: The Role of Definitions*, Drought Mitigation Center Faculty Publications 20 (1985)

<sup>89</sup> Rhode Island Department of Health, *Rhode Island Climate Change and Resiliency Report*, *supra* note 55, at 10.

### **E. Ocean Warming and Acidification— Known Causes and Observed Effects**

84. The ocean has played an unparalleled role in response to climate change, storing approximately 93% of the excess heat energy over the last 50 years.<sup>90</sup>

85. As the atmospheric greenhouse gas concentrations increase, the water in Narragansett Bay is getting warmer and more acidic. Over the past 50 years, the average surface temperature of the Bay has increased 1.4° to 1.6°C (2.5° to 2.9°F). Winter water temperatures in the Bay have increased even more, from 1.6° to 2.0°C (2.9° to 3.6°F).<sup>91</sup>

86. Due to increased water temperatures among other factors, iconic cold-water fishery species such as cod, red hake, and winter flounder are being increasingly displaced by scup and black sea bass. Overtime, Narragansett Bay is expected to increasingly resemble that of a more southerly, mid-Atlantic estuary with associated shifts in species that are iconic in southern New England's culture.<sup>92</sup>

87. Uptake of carbon dioxide is also causing changes to ocean chemistry, including in Narragansett Bay, by changing the pH to be more

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<sup>90</sup> IPCC, *Observations: Oceans*, Ch. 3 260, [https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_Chapter03\\_FINAL.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter03_FINAL.pdf).

<sup>91</sup> R.W. Fulweiler et al., *Whole truths vs. half truths – And a search for clarity in long-term water temperature records*, 157 ESTUARINE, COASTAL AND SHELF SCIENCE A1–A6 (May 2015), <https://www.sciencedirect.com/science/article/pii/S0272771415000426>.

<sup>92</sup> Narragansett Bay Estuary Program, *supra* note 81, at 24.

acidic.<sup>93</sup> Ocean acidification, is expected to continue as global warming progresses.<sup>94</sup> Increased ocean acidity makes the formation and maintenance of shells and other calcareous structure by bivalves and other shellfish more energetically expensive or even impossible.<sup>95</sup>

#### **F. Public Health Impacts of Anthropogenic Global Warming**

88. Sea level rise, increased air temperatures and changes to the hydrologic cycle associated with anthropogenic climate change have resulted and will result in public health impacts for the state of Rhode Island.

89. Extreme weather events, such as hurricanes and inland flooding, have immediate health consequences, including danger to personal safety and longer-term consequences, including social and economic disruption, population displacement, and mental trauma.<sup>96</sup>

90. Extreme heat-induced public health impacts in the State will result in increased risk of heat-related illnesses such as heat exhaustion and dehydration, increased hospitalizations, and death.<sup>97</sup>

91. Increased heat also intensifies the photochemical reactions that produce smog, ground

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<sup>93</sup> *Id.* at 45.

<sup>94</sup> *Id.*

<sup>95</sup> *Id.* at 46.

<sup>96</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 63.

<sup>97</sup> Rhode Island Department of Health, *Rhode Island Climate Change and Resiliency Report*, *supra* note 55, at 14.

level ozone, and fine particulate matter (PM<sub>2.5</sub>), which contribute to and exacerbate respiratory disease in children and adults. Increased heat and CO<sub>2</sub> enhance the growth of plants that produce pollen, which are associated with allergies.<sup>98</sup>

92. In addition, the warming climate system will create disease-related public health impacts in the State, including but not limited to, increased incidence of cyanobacteria blooms (toxic alga) in aquatic systems and vector-borne disease with migration of animal and insect disease vectors.<sup>99</sup>

93. Public health impacts of these climatological changes are likely to be disproportionately borne by communities made vulnerable by geographic, racial, or income disparities.

### **G. Attribution**

94. “Carbon factors” analysis, devised by the International Panel on Climate Change (IPCC), the United Nations International Energy Agency, and the U.S. Environmental Protection Agency, quantifies the amount of CO<sub>2</sub> emissions attributable to a unit of raw fossil fuel extracted from the Earth.<sup>100</sup> Emissions factors for oil, coal, liquid natural gas, and natural gas are different for each material but are nevertheless known and quantifiable for each.<sup>101</sup> This analysis accounts for the use of Defendants’ fossil fuel products,

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<sup>98</sup> *Id.* at 25–26.

<sup>99</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 15.

<sup>100</sup> See Richard Heede, *Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854-2010*, 122 CLIMATIC CHANGE 229, 232–33 (2014).

<sup>101</sup> See, e.g., *id.*

including non-combustion purposes that sequester CO<sub>2</sub> rather than emit it (e.g., asphalt production).

95. Defendants' historical and current fossil fuel extraction and production records are publicly available in various fora. These include university and public library collections, company websites, company reports filed with the U.S. Securities and Exchange Commission, company histories, and other sources. The cumulative CO<sub>2</sub> and methane emissions attributable to Defendants' fossil fuel products were calculated by reference to such publicly available documents.

96. Cumulative carbon analysis allows an accurate calculation of net annual CO<sub>2</sub> and methane emissions attributable to each Defendant by quantifying the amount and type of fossil fuels products each Defendant extracted and placed into the stream of commerce, and multiplying those quantities by each fossil fuel product's carbon factor.

97. Defendants, through their extraction, promotion, marketing, and sale of their fossil fuel products, caused over 14.5% of global fossil fuel product-related CO<sub>2</sub> between 1965 and 2015, with contributions currently continuing unabated. This constitutes a substantial portion of all such emissions in history, and the attendant historical, projected, and committed sea level rise and disruptions to the hydrologic cycle associated therewith.

98. By quantifying CO<sub>2</sub> and methane pollution attributable to Defendants by and through their fossil fuel products, ambient air and ocean temperature, sea level, and hydrologic cycle responses to those emissions are also calculable, and can be attributed to Defendants on an individual and aggregate basis.

Individually and collectively, Defendants' through their control of the extraction, sale, and promotion of their fossil fuel products are responsible for substantial increases in ambient (surface) temperature, ocean temperature, sea level, droughts, extreme precipitation events, heat waves, and other adverse impacts on Rhode Island described herein.

99. Anthropogenic CO<sub>2</sub> emissions have caused a substantial portion of both observed and committed mean global sea level rise.<sup>102</sup>

100. Anthropogenic CO<sub>2</sub> emissions have caused and will continue to cause increased maximum temperature extremes relative to the historical baseline.<sup>103</sup>

101. Anthropogenic CO<sub>2</sub> emissions have caused and will continue to cause increases in daily precipitation extremes over land.<sup>104</sup>

102. Anthropogenic CO<sub>2</sub> emissions have caused and will continue to cause increased frequency and severity of droughts.<sup>105</sup>

103. Defendants, through their extraction, promotion, marketing, and sale of their fossil fuel products, caused a substantial portion of both those emissions and the attendant historical, projected, and committed sea level rise and other consequences of the

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<sup>102</sup> Peter U. Clark et al., *supra* note 44, at 365.

<sup>103</sup> *Id.*

<sup>104</sup> See, e.g., E.M. Fischer & R. Knutti, *Anthropogenic Contribution to Global Occurrence of Heavy-Precipitation and High-Temperature Extremes*, 5 NATURE CLIMATE CHANGE 560–64 (2015).

<sup>105</sup> Rhode Island Department of Health, *Rhode Island Climate Change and Resiliency Report*, *supra* note 55, at 10.

resulting climatic changes described herein, including increased incidences of extreme temperatures and extreme weather events.

104. As explained above, this analysis considers only the volume of raw material actually extracted from the Earth by these Defendants. Many of these Defendants actually are responsible for far greater volumes of emissions because they also refine, manufacture, produce, market, promote, and sell more fossil fuel derivatives than they extract themselves by purchasing fossil fuel products extracted by independent third parties.

105. In addition, considering the Defendants' lead role in promoting, marketing, and selling their fossil fuels products between 1965 and 2015; their efforts to conceal the hazards of those products from consumers; their promotion of their fossil fuel products despite knowing the dangers associate with those products; their dogged campaign against regulation of those products based on falsehoods, omissions, and deceptions; and their failure to pursue less hazardous alternatives available to them, Defendants, individually and together, have substantially and measurably contributed to the State's climate change-related injuries.

**H. Defendants Went to Great Lengths to Understand the Hazards Associated with, and Knew or Should Have Known of the Dangers Associated with the Extraction, Promotion, and Sale of Their Fossil Fuel Products.**

106. By 1965, concern about the risks of anthropogenic greenhouse gas emissions reached the highest level of the United States' scientific community. In that year, President Lyndon B.

Johnson's Science Advisory Committee Panel on Environmental Pollution reported that by the year 2000, anthropogenic CO<sub>2</sub> emissions would "modify the heat balance of the atmosphere to such an extent that marked changes in climate . . . could occur."<sup>106</sup> President Johnson announced in a special message to Congress that "[t]his generation has altered the composition of the atmosphere on a global scale through . . . a steady increase in carbon dioxide from the burning of fossil fuels."<sup>107</sup>

107. These statements from the Johnson Administration, at a minimum, put Defendants on notice of the potentially substantial dangers to people, communities, and the planet associated with unabated use of their fossil fuel products. Moreover, Defendants had amassed a considerable body of knowledge on the subject through their own independent efforts.

108. A 1963 Conservation Foundation report on a conference of scientists referenced in the 1966 World Book Encyclopedia, as well as in presidential panel reports and other sources around that time, described many specific consequences of rising levels of greenhouse gas pollution in the atmosphere. It warned that a doubling of carbon dioxide "could be enough to bring about immense flooding of lower portions of the world's land surface, resulting from increased melting of glaciers." The publication also asserted that "a

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<sup>106</sup> President's Science Advisory Committee, *Restoring the Quality of Our Environment: Report of the Environmental Pollution Panel*, 9 (Nov. 1965), <https://hdl.handle.net/2027/uc1.b4315678>.

<sup>107</sup> President Lyndon B. Johnson, *Special Message to Congress on Conservation and Restoration of Natural Beauty* (Feb. 8, 1965), <http://acsc.lib.udel.edu/items/show/292>.



continuing rise in the amount of atmospheric carbon dioxide is likely to be accompanied by a significant warming of the surface of the earth which by melting the polar ice caps would raise sea level and by warming the oceans would change considerably the distributions of marine species including commercial fisheries.” It warned of the potential inundation of “many densely settled coastal areas, including the cities of New York and London” and the possibility of “wiping out the world’s present commercial fisheries.” The report, in fact, noted that “the changes in marine life in the North Atlantic which accompanied the temperature change have been very noticeable”.<sup>108</sup>

109. But industry interest in carbon accumulation goes back at least to 1958. A review in that year of the American Petroleum Institute (“API”) Smoke and Fumes Committee’s Air Pollution Research Program by Charles Jones (the committee secretary and Shell executive), mentions a project focused on analyzing gaseous carbon data to determine the amount of carbon of fossil origin compared to the total amount.<sup>109</sup>

110. At that point in time API’s stance was that “the petroleum industry supplies the fuel used by the automobile, and thus has a sincere interest in the solution to the problem of pollution from automobile

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<sup>108</sup> The Conservation Foundation, *Implications of Rising Carbon Dioxide Content of the Atmosphere: A statement of trends and implications of carbon dioxide research reviewed at a conference of scientists* (Mar. 1963), <https://babel.hathitrust.org/cgi/pt?id=mdp.39015004619030>.

<sup>109</sup> Charles A. Jones, *A Review of the Air Pollution Research Program of the Smoke and Fumes Committee of the American Petroleum Institute*, JOURNAL OF THE AIR POLLUTION CONTROL ASSOCIATION (1958), <https://www.tandfonline.com/doi/pdf/10.1080/00966665.1958.10467854>.

exhaust,” according to an API presentation at the 1958 National Conference on Air Pollution. API acknowledged the industry’s responsibility in mitigating some of the negative impacts of its products, stating that the objective of its Smoke and Fumes committee was to “determine the causes and methods of control of objectional atmospheric pollution resulting from the production, manufacture, transportation, sale, and use of petroleum and its products.”<sup>110</sup>

111. In 1968, a Stanford Research Institute (“SRI”) report commissioned by the API and made available to all its members, concluded, among other things:

If the Earth’s temperature increases significantly, a number of events might be expected to occur including the melting of the Antarctic ice cap, a rise in sea levels, warming of the oceans and an increase in photosynthesis. . . .

It is clear that we are unsure as to what our long-lived pollutants are doing to our environment; however, there seems to be no doubt that the potential damage to our environment could be severe. . . . [T]he prospect for the future must be of serious concern.<sup>111</sup>

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<sup>110</sup> C.A. Jones, *Sources of Air Pollution – Transportation (Petroleum)* (Nov. 19, 1958), <https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=xrcm0047>.

<sup>111</sup> Elmer Robinson & R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, Stanford Research Institute (Feb. 1968), <https://www.smokeandfumes.org/documents/document16>.

112. In a supplement to the 1968 report prepared for API in 1969, authors Robinson and Robbins projected that based on current fuel usage, atmospheric CO<sub>2</sub> concentrations would reach 370 ppm by 2000<sup>112</sup>—almost exactly what it turned out to be (369.34 ppm, according to data from NASA).<sup>113</sup> The report also draws the connection between the rising concentration and the use of fossil fuels stating that “balance between environmental sources and sinks has been disturbed by the emission to the atmosphere of additional CO<sub>2</sub> from the increased combustion of carbonaceous fuels” and that it seemed “unlikely that the observed rise in atmospheric CO<sub>2</sub> has been due to changes in the biosphere.” The authors warn repeatedly of the temptations and consequences of ignoring CO<sub>2</sub> as a problem and pollutant:

CO<sub>2</sub> is so common and such an integral part of all our activities that air pollution regulations typically state that CO<sub>2</sub> emissions are not to be considered as pollutants. This is perhaps fortunate for our present mode of living, centered as it is around carbon combustion. However, this seeming necessity, the CO<sub>2</sub> emission, is the only air pollutant, as we shall see, that has been shown to be of global importance as a factor that could change

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<sup>112</sup> Elmer Robinson & R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants Supplement*, Stanford Research Institute (June 1969).

<sup>113</sup> “Global Mean CO<sub>2</sub> Mixing Ratios (ppm): Observations,” NASA Goddard Institute for Space Studies, <https://data.giss.nasa.gov/modelforce/ghgases/fig1A.ext.txt> (webpage) (accessed June 16, 2018).

man's environment on the basis of a long period of scientific investigation.<sup>114</sup>

113. In 1969, Shell memorialized an on-going 18-month project to collect ocean data from oil platforms to develop and calibrate environmental forecasting theories related to predicting wave, wind, storm, sea level, and current changes and trends.<sup>115</sup> Several Defendants and/or their predecessors in interest participated in the project, including Esso Production Research Company (ExxonMobil), Mobil Research and Development Company (ExxonMobil), Pan American Petroleum Corporation (BP), Gulf Oil Corporation (Chevron), Texaco Inc. (Chevron), and the Chevron Oil Field Research Company (Chevron).

114. In a 1970 report by H.R. Holland from the Engineering Division of Imperial Oil (Exxon), he stated: "Since pollution means disaster to the affected species, the only satisfactory course of action is to prevent it – to maintain the addition of foreign matter at such levels that it can be diluted, assimilated or destroyed by natural processes – to protect man's environment from man." He also noted that "a problem of such size, complexity and importance cannot be dealt with on a voluntary basis." CO<sub>2</sub> was listed as an air pollutant in the document.<sup>116</sup>

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<sup>114</sup> Elmer Robinson & R.C. Robbins, *supra* note 112.

<sup>115</sup> M.M. Patterson, *An Ocean Data Gathering Program for the Gulf of Mexico*, Society of Petroleum Engineers (1969), <https://www.onepetro.org/conference-paper/SPE-2638-MS>.

<sup>116</sup> H.R. Holland, *Pollution is Everybody's Business*, Imperial Oil (1970), <https://www.desmogblog.com/sites/beta.desmogblog.com/files/DeSmogBlog-Imperial%20Oil%20Archive-Pollution-Everyone-Business-1970.pdf>.

115. 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 attendant consequences. Defendants and/or their predecessors in interest that received this report include, but were not limited to: American Standard of Indiana (BP), Asiatic (Shell), Ashland (Marathon), Atlantic Richfield (BP), British Petroleum (BP), Chevron Standard of California (Chevron), Cities Service (Citgo), Esso Research (ExxonMobil), Ethyl (formerly affiliated with Esso, which was subsumed by ExxonMobil), Getty (ExxonMobil), Gulf (Chevron, among others), Humble Standard of New Jersey (ExxonMobil/Chevron/BP), Marathon, Mobil (ExxonMobil), Pan American (BP), Shell, Standard of Ohio (BP), Texaco (Chevron), Union (Chevron), Skelly (ExxonMobil), Colonial Pipeline (ownership has included BP, Citgo, ExxonMobil, and Chevron entities, among others) and Caltex (Chevron).<sup>117</sup> Other members of the fossil fuel industry that received the report include, but were not limited to, Continental (ConocoPhillips), Dupont (former owner of Conoco), Phillips (ConocoPhillips), Sun (Sunoco), Rock Island (Koch Industries), Signal (Honeywell), Great Northern, Edison Electric Institute (representing electric utilities), Bituminous Coal Research (coal industry research group), Mid-Continent Oil & Gas Association (presently the U.S. Oil & Gas Association, a national trade association),

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<sup>117</sup> American Petroleum Institute, *Environmental Research, A Status Report*, Committee for Air and Water Conservation (January 1972), <http://files.eric.ed.gov/fulltext/ED066339.pdf>.

Western Oil & Gas Association, National Petroleum Refiners Association (presently the American Fuel and Petrochemical Manufacturers Association, a national trade association), and Champlin (Anadarko), among others.<sup>118</sup>

116. In a 1977 presentation and again in a 1978 briefing, Exxon scientists warned the Exxon Corporation Management Committee that CO<sub>2</sub> concentrations were building in the Earth's atmosphere at an increasing rate, that CO<sub>2</sub> emissions attributable to fossil fuels were retained in the atmosphere, and that CO<sub>2</sub> was contributing to global warming.<sup>119</sup> The report stated:

There 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 . . . [and 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.<sup>120</sup>

117. One presentation slide read: "Current scientific opinion overwhelmingly favors attributing atmospheric carbon dioxide increase to fossil fuel combustion."<sup>121</sup> The report also warned that "a study

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<sup>118</sup> *Id.*

<sup>119</sup> Memo from J.F. Black to F.G. Turpin, *The Greenhouse Effect*, Exxon Research and Engineering Company (June 6, 1978), <http://www.climatefiles.com/exxonmobil/1978-exxon-memo-on-greenhouse-effect-for-exxon-corporation-management-committee>.

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

of past climates suggests that if the earth does become warmer, more rainfall should result. But an increase as large as 2°C would probably also affect the distribution of the rainfall.” Moreover, the report concluded that “doubling in CO<sub>2</sub> could increase average global temperature 1°C to 3°C by 2050 A.D. (10°C predicted at poles).”<sup>122</sup>

118. Thereafter, Exxon engaged in a research program to study the environmental fate of fossil fuel-derived greenhouse gases and their impacts, which included publication of peer-reviewed research by Exxon staff scientists and the conversion of a supertanker into a research vessel to study the greenhouse effect and the role of the oceans in absorbing anthropogenic CO<sub>2</sub>. Much of this research was shared in a variety of fora, symposia, and shared papers through trade associations and directly with other Defendants.

119. Exxon scientists made the case internally for using company resources to build corporate knowledge about the impacts of the promotion, marketing, and consumption of Defendants’ fossil fuel products. Exxon climate researcher Henry Shaw wrote in 1978: “The rationale for Exxon’s involvement and commitment of funds and personnel is based on our need to assess the possible impact of the greenhouse effect on Exxon business. Exxon must develop a credible scientific team that can critically evaluate the information generated on the subject and be able to carry bad news, if any, to the corporation.”<sup>123</sup> Moreover, Shaw

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<sup>122</sup> *Id.*

<sup>123</sup> Henry Shaw, *Memo to Edward David Jr. on the “Greenhouse Effect*, Exxon Research and Engineering Company (Dec. 7, 1978),

emphasized the need to collaborate with universities and government to more completely understand what he called the “CO<sub>2</sub> problem.”<sup>124</sup>

120. 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<sub>2</sub> and Climate Task Force, but changed its name to the Climate and Energy Task Force in 1980 (hereinafter referred to as “API CO<sub>2</sub> Task Force”). Membership included senior scientists and engineers from nearly every major U.S. and multinational oil and gas company, including Exxon, Mobil (ExxonMobil), Amoco (BP), Phillips (ConocoPhillips), Texaco (Chevron), Shell, Sunoco, Sohio (BP) as well as Standard Oil of California (BP) 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.<sup>125</sup>

121. In 1979, API sent its members a background memo related to the API CO<sub>2</sub> and Climate Task Force’s efforts, stating that CO<sub>2</sub> concentrations were rising steadily in the atmosphere, and predicting

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<http://insideclimatenews.org/sites/default/files/documents/Credible%20Scientific%20Team%201978%20Letter.pdf>.

<sup>124</sup> *Id.*

<sup>125</sup> 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 “CO<sub>2</sub> and Climate” Task Force).



when the first clear effects of climate change might be felt.<sup>126</sup>

122. Also in 1979, Exxon scientists advocated internally for additional fossil fuel industry-generated atmospheric research in light of the growing consensus that consumption of fossil fuel products was changing the Earth's climate:

We should determine how Exxon can best participate in all these [atmospheric science research] areas and influence possible legislation on environmental controls. It is important to begin to anticipate the strong intervention of environmental groups and be prepared to respond with reliable and credible data. It behooves [Exxon] to start a very aggressive defensive program in the indicated areas of atmospheric science and climate because there is a good probability that legislation affecting our business will be passed. Clearly, it is in our interest for such legislation to be based on hard scientific data. The data obtained from research on the global damage from pollution, e.g., from coal combustion, will give us the needed focus for further research to avoid or control such pollutants.<sup>127</sup>

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<sup>126</sup> Neela Banerjee, *Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too*, INSIDE CLIMATE NEWS (Dec. 22, 2015), <https://insideclimatenews.org/news/22122015/exxon-mobil-oil-industry-peers-knew-about-climate-change-dangers-1970s-american-petroleum-institute-api-shell-chevron-texaco>.

<sup>127</sup> Henry Shaw, *Exxon Memo to H.N. Weinberg about "Research in Atmospheric Science"*, Exxon Inter-Office Correspondence

123. That same year, Exxon Research and Engineering reported that: “The most widely held theory [about increasing CO<sub>2</sub> concentration] is that the increase is due to fossil fuel combustion, increasing CO<sub>2</sub> concentration will cause a warming of the earth’s surface, and the present trend of fossil fuel consumption will cause dramatic environmental effects before the year 2050.”<sup>128</sup> According to the report, “ecological consequences of increased CO<sub>2</sub>” to 500 ppm (1.7 times 1850 levels) could mean: “a global temperature increase of 3°F;” “the southwest states would be hotter, probably by more than 3°F, and drier;” “most of the glaciers in the North Cascades and Glacier National Park would be melted;” “there would be less of a winter snow pack in the Cascades, Sierras, and Rockies, necessitating a major increase in storage reservoirs;” “marine life would be markedly changed;” and “maintaining runs of salmon and steelhead and other subarctic species in the Columbia River system would become increasingly difficult.”<sup>129</sup> With a doubling of the 1860 CO<sub>2</sub> concentration, “ocean levels would rise four feet” and “the Arctic Ocean would be ice free for at least six months each year, causing major shifts in weather patterns in the northern hemisphere.”<sup>130</sup>

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(Nov. 19, 1979), [https://insideclimatenews.org/sites/default/files/documents/Probable%20Legislation%20Memo%20\(1979\).pdf](https://insideclimatenews.org/sites/default/files/documents/Probable%20Legislation%20Memo%20(1979).pdf).

<sup>128</sup> W.L. Ferrall, *Exxon Memo to R.L. Hirsch about “Controlling Atmospheric CO<sub>2</sub>”*, Exxon Research and Engineering Company (Oct. 16, 1979), <http://insideclimatenews.org/sites/default/files/documents/CO2%20and%20Fuel%20Use%20Projections.pdf>.

<sup>129</sup> *Id.*

<sup>130</sup> *Id.*

124. Further, the report stated that unless fossil fuel use was constrained, there would be “noticeable temperature changes” associated with an increase in atmospheric CO<sub>2</sub> from about 280 parts per million before the Industrial Revolution to 400 parts per million by the year 2010.<sup>131</sup> Those projections proved remarkably accurate—atmospheric CO<sub>2</sub> concentrations surpassed 400 parts per million in May 2013, for the first time in millions of years.<sup>132</sup> In 2015, the annual average CO<sub>2</sub> concentration rose above 400 parts per million, and in 2016 the annual low surpassed 400 parts per million, meaning atmospheric CO<sub>2</sub> concentration remained above that threshold all year.<sup>133</sup>

125. In 1980, API’s CO<sub>2</sub> Task Force members discussed the oil industry’s responsibility to reduce CO<sub>2</sub> emissions by changing refining processes and developing fuels that emit less CO<sub>2</sub>. The minutes from the Task Force’s February 29, 1980, meeting included a summary of a presentation on “The CO<sub>2</sub> Problem” given by Dr. John Laurmann, which identified the “scientific consensus on the potential for large future climatic response to increased CO<sub>2</sub> levels” as a reason for API members to have concern with the “CO<sub>2</sub> problem” and informed attendees that there was “strong empirical evidence that rise [in CO<sub>2</sub> concentration was] caused by anthropogenic release of

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<sup>131</sup> *Id.*

<sup>132</sup> Nicola Jones, *How the World Passed a Carbon Threshold and Why it Matters*, YALE ENVIRONMENT 360 (Jan. 26, 2017), <http://e360.yale.edu/features/how-the-world-passed-a-carbon-threshold-400ppm-and-why-it-matters>.

<sup>133</sup> *Id.*

CO<sub>2</sub>, mainly from fossil fuel combustion.”<sup>134</sup> Moreover, Dr. Laurmann warned that the amount of CO<sub>2</sub> in the atmosphere could double by 2038, which he said would likely lead to a 2.5°C (4.5°F) rise in global average temperatures with “major economic consequences.” He then told the Task Force that models showed a 5°C (9°F) rise by 2067, with “globally catastrophic effects.”<sup>135</sup> A taskforce member and representative of Texaco (Chevron) leadership present at the meeting posited that the API CO<sub>2</sub> Task Force should develop ground rules for energy release of fuels and the cleanup of fuels as they relate to CO<sub>2</sub> creation.

126. In 1980, the API CO<sub>2</sub> Task Force also discussed a potential area for investigation: alternative energy sources as a means of mitigating CO<sub>2</sub> 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.<sup>136</sup>

127. By 1980, Exxon’s senior leadership had become intimately familiar with the greenhouse effect and the role of CO<sub>2</sub> in the atmosphere. In that year, Exxon Senior Vice President and Board member George Piercy questioned Exxon researchers on the

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<sup>134</sup> American Petroleum Institute, *AQ-9 Task Force Meeting Minutes* (Mar. 18, 1980), <http://insideclimatenews.org/sites/default/files/documents/AQ-9%20Task%20Force%20Meeting%20%281980%29.pdf> (AQ-9 refers to the “CO<sub>2</sub> and Climate” Task Force).

<sup>135</sup> *Id.*

<sup>136</sup> *Id.*

minutiae of the ocean's role in absorbing atmospheric CO<sub>2</sub>, including whether there was a net CO<sub>2</sub> flux out of the ocean into the atmosphere in certain zones where upwelling of cold water to the surface occurs, because Piercy evidently believed that the oceans could absorb and retain higher concentrations of CO<sub>2</sub> than the atmosphere.<sup>137</sup> This inquiry aligns with Exxon supertanker research into whether the ocean would act as a significant CO<sub>2</sub> sink that would sequester atmospheric CO<sub>2</sub> long enough to allow unabated emissions without triggering dire climatic consequences. As described below, Exxon eventually discontinued this research before it produced enough data from which to derive a conclusion.<sup>138</sup>

128. Also in 1980, Imperial Oil (ExxonMobil) reported to Esso and Exxon managers and environmental staff that increases in fossil fuel usage aggravates CO<sub>2</sub> in the atmosphere. Noting that the United Nations was encouraging research into the carbon cycle, Imperial reported that “[t]echnology exists to remove CO<sub>2</sub> from [fossil fuel power plant] stack gases but removal of only 50% of the CO<sub>2</sub> would double the cost of power generation.”

129. Exxon scientist Roger Cohen warned his colleagues in a 1981 internal memorandum that

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<sup>137</sup> 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-senior-executives-engage-and-warming-forecast>.

<sup>138</sup> Neela Banerjee et al., *Exxon Believed Deep Dive into Climate Research Would Protect Its Business*, INSIDE CLIMATE NEWS (Sept. 17, 2015), <https://insideclimatenews.org/news/16092015/exxon-believed-deep-dive-into-climate-research-would-protect-its-business>.

“future developments in global data gathering and analysis, along with advances in climate modeling, may provide strong evidence for a delayed CO<sub>2</sub> 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.”<sup>139</sup> Cohen had expressed concern that the memorandum mischaracterized potential effects of unabated CO<sub>2</sub> emissions from Defendants’ fossil fuel products: “. . . it is distinctly possible that the . . . [Exxon Planning Division’s] scenario will produce effects which will indeed be catastrophic (at least for a substantial fraction of the world’s population).”<sup>140</sup>

130. 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, stating in relevant part:

- “Atmospheric CO<sub>2</sub> will double in 100 years if fossil fuels grow at 1.4%/a<sup>2</sup>.
- 3°C global average temperature rise and 10°C at poles if CO<sub>2</sub> doubles.
  - Major shifts in rainfall/agriculture
  - Polar ice may melt”<sup>141</sup>

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<sup>139</sup> Roger W. Cohen, *Exxon Memo to W. Glass about possible “catastrophic” effect of CO<sub>2</sub>*, Exxon Inter-Office Correspondence (Aug. 18, 1981), <http://www.climatefiles.com/exxonmobil/1981-exxon-memo-on-possible-emission-consequences-of-fossil-fuel-consumption>.

<sup>140</sup> *Id.*

<sup>141</sup> Henry Shaw, *Exxon Memo to E. E. David, Jr. about “CO<sub>2</sub>*

131. In 1982, another report prepared for API by scientists at the Lamont-Doherty Geological Observatory at Columbia University recognized that atmospheric CO<sub>2</sub> concentration had risen significantly compared to the beginning of the industrial revolution from about 290 parts per million to about 340 parts per million in 1981 and acknowledged that despite differences in climate modelers' predictions, all models indicated a temperature increase caused by anthropogenic CO<sub>2</sub> within a global mean range of 4°C (7.2°F). The report advised that there was scientific consensus that "a doubling of atmospheric CO<sub>2</sub> from [] pre-industrial revolution value would result in an average global temperature rise of (3.0 ± 1.5)°C [5.4 ± 2.7°F]." It went further, warning that "[s]uch a warming can have serious consequences for man's comfort and survival since patterns of aridity and rainfall can change, the height of the sea level can increase considerably and the world food supply can be affected."<sup>142</sup> Exxon's own modeling research confirmed this, and the company's results were later published in at least three peer-reviewed scientific papers.<sup>143</sup>

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*Position Statement*", Exxon Inter-Office Correspondence (May 15, 1981), <https://insideclimatenews.org/sites/default/files/documents/Exxon%20Position%20on%20CO2%20%281981%29.pdf>.

<sup>142</sup> American Petroleum Institute, *Climate Models and CO<sub>2</sub> Warming: A Selective Review and Summary*, Lamont-Doherty Geological Observatory (Columbia University) (Mar. 1982), <https://assets.documentcloud.org/documents/2805626/1982-API-Climate-Models-and-CO2-Warming-a.pdf>.

<sup>143</sup> See Roger W. Cohen, *Exxon Memo summarizing findings of research in climate modeling*, Exxon Research and Engineering Company (Sept. 2, 1982), <https://insideclimatenews.org/>

132. 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."<sup>144</sup> The primer also was "restricted to Exxon personnel and not to be distributed externally."<sup>145</sup> 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 report estimated a CO<sub>2</sub> doubling around 2090 based on Exxon's long-range modeled outlook. The author warned that "uneven global distribution of increased rainfall and increased evaporation" were expected to occur, and that "disturbances in the existing global water distribution balance would have dramatic impact on soil moisture, and in turn, on agriculture."<sup>146</sup>

133. Moreover, 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."<sup>147</sup> Exxon's primer warned that "there are some potentially catastrophic events that must be considered," including sea level rise from melting

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sites/default/files/documents/%2522Consensus%2522%20on%20CO2%20Impacts%20(1982).pdf (discussing research articles).

<sup>144</sup> M. B. Glaser, *Exxon Memo to Management about "CO<sub>2</sub> 'Greenhouse' Effect"*, Exxon Research and Engineering Company (Nov. 12, 1982), <http://insideclimatenews.org/sites/default/files/documents/1982%20Exxon%20Primer%20on%20CO2%20Greenhouse%20Effect.pdf>.

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

<sup>147</sup> *Id.*



polar ice sheets. It noted that some scientific groups were concerned “that once the effects are measurable, they might not be reversible.”<sup>148</sup>

134. In a summary of Exxon’s climate modeling research from 1982, Director of Exxon’s Theoretical and Mathematical Sciences Laboratory Roger Cohen wrote that “the time required for doubling of atmospheric CO<sub>2</sub> depends on future world consumption of fossil fuels.” Cohen concluded that Exxon’s own results were “consistent with the published predictions of more complex climate models” and “in accord with the scientific consensus on the effect of increased atmospheric CO<sub>2</sub> on climate.”<sup>149</sup>

135. At the fourth biennial Maurice Ewing Symposium at the Lamont-Doherty Geophysical Observatory in October 1982, attended by members of API, Exxon Research and Engineering Company president E.E. David delivered a speech titled: “Inventing the Future: Energy and the CO<sub>2</sub> ‘Greenhouse Effect.’”<sup>150</sup> His remarks included the following statement: “[F]ew people doubt that the world has entered an energy transition away from dependence upon fossil fuels and toward some mix of renewable resources that will not pose problems of CO<sub>2</sub> accumulation.” He went on, discussing the human

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<sup>148</sup> *Id.*

<sup>149</sup> Roger W. Cohen, *Exxon Memo summarizing findings of research in climate modeling*, *supra* note 143.

<sup>150</sup> E. E. David, Jr., *Inventing the Future: Energy and the CO<sub>2</sub> Greenhouse Effect: Remarks at the Fourth Annual Ewing Symposium, Tenafly, NJ* (1982), <http://sites.agu.org/publications/files/2015/09/ch1.pdf>.

opportunity to address anthropogenic climate change before the point of no return:

It is ironic that the biggest uncertainties about the CO<sub>2</sub> buildup are not in predicting what the climate will do, but in predicting what people will do. . . .[It] appears we still have time to generate the wealth and knowledge we will need to invent the transition to a stable energy system.

136. Throughout the early 1980s, at Exxon's direction, Exxon climate scientist Henry Shaw forecasted emissions of CO<sub>2</sub> from fossil fuel use. Those estimates were incorporated into Exxon's 21st century energy projections and were distributed among Exxon's various divisions. Shaw's conclusions included an expectation that atmospheric CO<sub>2</sub> concentrations would double in 2090 per the Exxon model, with an attendant 2.3–5.6°F average global temperature increase. Shaw compared his model results to those of the U.S. EPA, the National Academy of Sciences, and the Massachusetts Institute of Technology, indicating that the Exxon model predicted a longer delay than any of the other models, although its temperature increase prediction was in the mid-range of the four projections.<sup>151</sup>

137. During the 1980s, many Defendants formed their own research units focused on climate modeling. The API, including the API CO<sub>2</sub> Task Force, provided a forum for Defendants to share their research efforts

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<sup>151</sup> 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-senior-executives-engage-and-warming-forecast>.

and corroborate their findings related to anthropogenic greenhouse gas emissions.<sup>152</sup>

138. During this time, Defendants' statements express an understanding of their obligation to consider and mitigate the externalities of unabated promotion, marketing, and sale 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 civilities, 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

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<sup>152</sup> Neela Banerjee, *Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too*, *supra* note 126.

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.<sup>153</sup>

139. Also 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<sub>2</sub> buildup and warned that warming could “create significant changes in sea level, ocean currents, precipitation patterns, regional temperature and weather.” Taking it a step further, they pointed to the potential for “direct operational consequences” of sea level rise on “offshore installations, coastal facilities and operations (e.g. platforms, harbours, refineries, depots).”<sup>154</sup>

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<sup>153</sup> 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=522>.

<sup>154</sup> Greenhouse Effect Working Group, *The Greenhouse Effect*, Shell Internationale Petroleum, 30 (May 1988), <https://www.documentcloud.org/documents/4411090-Documents3.html#document/p9/a411239>.

140. Similar to early warnings by Exxon scientists, the Shell report notes 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 stabilize the situation.” The authors mention 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.”

141. In 1989, Esso Resources Canada (ExxonMobil) 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.<sup>155</sup> 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.” 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,

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<sup>155</sup> 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 (Oct. 1, 1989), <http://journals.sagepub.com/doi/abs/10.1177/014459878900700508>.

sea level rise and erosion damage. The authors recommended factoring these eventualities into future development planning and also warned that “a rise in sea level could cause increased flooding and erosion damage on Richards Island.”<sup>156</sup>

142. In 1991, Shell produced a film called “Climate of Concern.” The film advises that while “no two [climate change projection] scenarios fully agree, . . . [they] have each prompted the same serious warning. A warning endorsed by a uniquely broad consensus of scientists in their report to the UN at the end of 1990.” The warning was of an increasing frequency of abnormal weather and of sea level rise of about one meter over the coming century. Shell specifically described the impacts of anthropogenic sea level rise on tropical islands, “barely afloat even now, . . . [f]irst made uninhabitable and then obliterated beneath the waves. Wetland habitats destroyed by intruding salt. Coastal lowlands suffering pollution of precious groundwater.” It warned of “greenhouse refugees,” people who abandoned homelands inundated by the sea, or displaced because of catastrophic changes to the environment. The video concludes with a stark admonition: “Global warming is not yet certain, but many think that the wait for final proof would be irresponsible. Action now is seen as the only safe insurance.”<sup>157</sup>

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<sup>156</sup> *Id.*

<sup>157</sup> Jelmer Mommers, *Shell Made a Film About Climate Change in 1991 (Then Neglected To Heed Its Own Warning)*, DE CORRESPONDENT (Feb. 27, 2017), <https://thecorrespondent.com/6285/shell-made-a-film-about-climate-change-in-1991-then-neglected-to-heed-its-own-warning/692663565-875331f6>.

143. The fossil fuel industry, including Defendants, was at the forefront of carbon dioxide research for much of the latter half of the 20th century. They developed cutting edge and innovative technology and worked with many of the field's top researchers to produce exceptionally sophisticated studies and models. For instance, in the mid-nineties Shell began using scenarios to plan how the company could respond to various global forces in the future. In one 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<sup>158</sup>

144. Fossil fuel companies did not just consider climate change impacts in scenarios. In the mid-1990s, ExxonMobil, Shell, and Imperial Oil (ExxonMobil) 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 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)."<sup>159</sup>

145. Climate change research conducted by Defendants and their industry associations frequently acknowledged uncertainties in their climate modeling—those uncertainties, however, were merely with respect to the magnitude and timing of climate impacts resulting from fossil fuel consumption, not that significant changes would eventually occur. The 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.

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<sup>158</sup> Royal Dutch/Shell Group, *Group Scenarios 1998–2020*, 115 (1998), <http://www.documentcloud.org/documents/4430277-27-1-Compiled.html>.

<sup>159</sup> ExxonMobil, Sable Project, Development Plan, *Volume 3 – Environmental Impact Statement* Ch 4: Environmental Setting, 4-77, <http://soep.com/about-the-project/development-plan-application>.



146. Despite the overwhelming information about the threats to people and the planet posed by continued unabated use of their fossil fuel products, Defendants failed to act as they reasonably should have to mitigate or avoid those dire adverse impacts. Defendants instead adopted the position, as described below, that the absence of meaningful regulations on the consumption of their fossil fuel products was the equivalent of a license to continue the pursuit of profits from those products. This position was an abdication of Defendants' responsibility to consumers and the public, including the State, to act on their superior knowledge of the reasonably foreseeable hazards of unabated production and consumption of their fossil fuel products.

**I. Defendants Did Not Disclose Known Harms Associated with the Extraction, Promotion, and Consumption of Their Fossil Fuel Products, and Instead Affirmatively Acted to Obscure Those Harms and Engaged in a Concerted Campaign to Evade Regulation.**

147. By 1988, Defendants had amassed a compelling body of knowledge, unavailable to the general public and the broader scientific community, about the role of anthropogenic greenhouse gases and specifically those emitted from the normal use of Defendants' fossil fuel products, in causing global warming, disruptions to the hydrologic cycle, extreme precipitation and drought, heatwaves, and associated consequences for human communities and the environment. On notice that their products were causing global climate change and dire effects on the planet, Defendants were faced with the decision and were in control of whether to take steps to limit the damages their fossil fuel products were causing and

would continue to cause for virtually every one of Earth's inhabitants, including the State of Rhode Island and its citizens.

148. Defendants at any time before or thereafter could and reasonably should have taken any of a number of steps to mitigate the damages caused by their fossil fuel products, and their own comments reveal an awareness of what some of these steps may have been. Defendants should have made reasonable warnings to consumers, the public, and regulators of the dangers known to Defendants of the unabated consumption of their fossil fuel products, and they should have taken reasonable steps to limit the potential greenhouse gas emissions arising out of their fossil fuel products.

149. But several key events during the period 1988–1992 appear to have prompted Defendants to change their course of action from general research and internal discussion on climate change to a public campaign aimed at evading regulation of their fossil fuel products and/or emissions therefrom. These include:

a. In 1988, National Aeronautics and Space Administration (“NASA”) scientists confirmed that human activities were actually contributing to global warming.<sup>160</sup> 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.

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<sup>160</sup> See Peter C. Frumhoff et al., *The Climate Responsibilities of Industrial Carbon Producers*, 132 CLIMATIC CHANGE 161 (2015).

b. On July 28, 1988, Senator Robert Stafford and four bipartisan co-sponsors introduced S. 2666, “The Global Environmental Protection Act,” to regulate CO<sub>2</sub> and other greenhouse gases. Four more bipartisan bills to significantly reduce CO<sub>2</sub> 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.”<sup>161</sup> 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.

c. In December 1988, the United Nations formed the Intergovernmental Panel on Climate Change (“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.

d. In 1990, the IPCC published its First Assessment Report on anthropogenic climate change,<sup>162</sup> in which it 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)

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<sup>161</sup> N.Y. TIMES, *The White House and the Greenhouse* (May 9, 1998), <http://www.nytimes.com/1989/05/09/opinion/the-white-house-and-the-greenhouse.html>.

<sup>162</sup> See IPCC, *Reports*, [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml).

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.<sup>163</sup>

The IPCC reconfirmed these conclusions in a 1992 supplement to the First Assessment report.<sup>164</sup>

e. The United Nations began preparation for 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 “stabiliz[ing] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”<sup>165</sup>

150. These world events marked a shift in public discussion of climate change, and the initiation of international efforts to curb anthropogenic greenhouse emissions – developments that had stark

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<sup>163</sup> IPCC, *Climate Change: The IPCC Scientific Assessment, Policymakers Summary* (1990), [http://www.ipcc.ch/ipccreports/far/wg\\_I/ipcc\\_far\\_wg\\_I\\_spm.pdf](http://www.ipcc.ch/ipccreports/far/wg_I/ipcc_far_wg_I_spm.pdf).

<sup>164</sup> IPCC, *1992 IPCC Supplement to the First Assessment Report* (1992), [http://www.ipcc.ch/publications\\_and\\_data/publications\\_ipcc\\_90\\_92\\_assessments\\_far.shtml](http://www.ipcc.ch/publications_and_data/publications_ipcc_90_92_assessments_far.shtml).

<sup>165</sup> United Nations, *United Nations Framework Convention on Climate Change, Article 2* (1992), <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

implications for, and would have diminished the profitability of, Defendants' fossil fuel products.

151. But rather than collaborating with the international community by acting to forestall, or at least decrease, their fossil fuel products' contributions to global warming, sea level rise, disruptions to the hydrologic cycle, and associated consequences to Rhode Island and other communities, Defendants embarked on a decades-long campaign designed to maximize continued dependence on their products and undermine national and international efforts like the Kyoto Protocol to rein in greenhouse gas emissions.

152. Defendants' campaign, which focused on concealing, discrediting, and/or misrepresenting information that tended to support restricting consumption of (and thereby decreasing demand for) Defendants' fossil fuel products, took several forms. The campaign enabled Defendants to accelerate their business practice of exploiting fossil fuel reserves, and concurrently externalize the social and environmental costs of their fossil fuel products. These activities stood in direct contradiction to Defendants' own prior recognition that the science of anthropogenic climate change was clear and that the greatest uncertainties involved responsive human behavior, not scientific understanding of the issue.

153. Defendants took affirmative steps to conceal, from the State and the general public, the foreseeable impacts of the use of their fossil fuel products on the Earth's climate and associated harms to people and communities. Defendants embarked on a concerted public relations campaign to cast doubt on the science connecting global climate change to fossil fuel products and greenhouse gas emissions, in order to influence public perception of the existence of

anthropogenic global warming and sea level rise, disruptions to weather cycles, extreme precipitation and drought, and associated consequences. The effort included promoting their hazardous products through advertising campaigns and the initiation and funding of climate change denialist organizations, designed to influence consumers to continue using Defendants' fossil fuel products irrespective of those products' damage to communities and the environment.

154. For example, in 1988, Joseph Carlson, an Exxon public affairs manager, described the "Exxon Position," which included among others, two important messaging tenets: (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 non-fossil fuel resources."<sup>166</sup>

155. A 1994 Shell report entitled "The Enhanced Greenhouse Effect: A Review of the Scientific Aspects" by Royal Dutch Shell environmental advisor Peter Langcake stands in stark contrast to the company's 1988 report on the same topic. Whereas before, the authors recommended consideration of policy solutions early on, Langcake warned of the potentially dramatic "economic effects of ill-advised policy measures." While the report recognized the IPCC conclusions as the mainstream view, Langcake still emphasized scientific uncertainty, noting, for example, that "the postulated link between any

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<sup>166</sup> Joseph M. Carlson, *Exxon Memo on "The Greenhouse Effect"* (Aug. 3, 1988), <https://assets.documentcloud.org/documents/3024180/1998-Exxon-Memo-on-the-Greenhouse-Effect.pdf>.

observed temperature rise and human activities has to be seen in relation to natural variability, which is still largely unpredictable.” The Group position is stated clearly in the report: “Scientific uncertainty and the evolution of energy systems indicate that policies to curb greenhouse gas emissions beyond 'no regrets' measures could be premature, divert resources from more pressing needs and further distort markets.”<sup>167</sup>

156. In 1991, for example, the Information Council for the Environment (“ICE”), whose members included affiliates, predecessors and/or subsidiaries of Defendants, including Pittsburg and Midway Coal Mining (Chevron) and Island Creek Coal Company (Occidental), 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.”<sup>168</sup>

157. An implicit goal of ICE’s advertising campaign was to change public opinion and avoid regulation. A memo from Richard Lawson, president of the National Coal Association asked members to contribute to the ICE campaign with the justification that

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<sup>167</sup> P. Langcake, *The Enhanced Greenhouse Effect: A review of the Scientific Aspects*, (Dec. 1994), <https://www.documentcloud.org/documents/4411099-Document11.html#document/p15/a411511>.

<sup>168</sup> 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](http://www.ucsusa.org/sites/default/files/attach/2015/07/Climate-Deception-Dossier-5_ICE.pdf).

“policymakers are prepared to act [on global warming]. Public opinion polls reveal 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.”<sup>169</sup>

158. 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 and induce political inertia to address it.<sup>170</sup>

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<sup>169</sup> 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).

<sup>170</sup> Union of Concerned Scientists, *Deception Dossier #5: Coal’s “Information Council on the Environment” Sham*, *supra* note 168, at 47–49.





that “taking drastic action immediately is unnecessary since many scientists agree there’s ample time to better understand the climate system.” The subsequent article 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<sub>2</sub> concentration on the Earth’s climate. Instead, it characterized the greenhouse effect as simply “what makes the earth’s atmosphere livable.” Directly contradicting their own internal reports and peer-reviewed science, the article ascribed the rise in temperature since the late 19th century to “natural fluctuations that occur over long periods of time” rather than to the anthropogenic emissions that Exxon and other scientists had confirmed were responsible. The article also falsely challenged the computer models that projected the future impacts of unabated fossil fuel product consumption, including those developed by Exxon’s own employees, as having been “proved to be inaccurate.” The article contradicted the numerous reports circulated among Exxon’s staff, and by the API, by stating that “the indications are that a warmer world would be far more benign than 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 attacking advocates for limiting the use 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.<sup>171</sup>

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<sup>171</sup> Exxon Corp., *Global Warming: Who’s Right?*, (1996),

160. API published an extensive report in the same year warning against concern over CO<sub>2</sub> buildup and any need to curb consumption or regulate the industry. The introduction states that “there is no persuasive basis for forcing Americans to dramatically change their lifestyles to use less oil.” The authors discourage the further development of certain alternative energy sources, writing that “government agencies have advocated the increased use of ethanol and the electric car, without the facts to support the assertion that either is superior to existing fuels and technologies” and that “policies that mandate replacing oil with specific alternative fuel technologies freeze progress at the current level of technology, and reduce the chance that innovation will develop better solutions.” The paper also denies the human connection to climate change, saying that no “scientific evidence exists that human activities are significantly affecting sea levels, rainfall, surface temperatures or the intensity and frequency of storms.” The message the report repeatedly sends is clear: “Facts don’t support the arguments for restraining oil use.”<sup>172</sup>

161. In a speech presented at the World Petroleum Congress in Beijing in 1997 at which many of the Defendants were present, Exxon CEO Lee Raymond reiterated these views. This time, he presented a false dichotomy between stable energy markets and abatement of the marketing, promotion, and sale of

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<https://www.documentcloud.org/documents/2805542-Exxon-Global-Warming-Whos-Right.html>.

<sup>172</sup> Sally Brain Gentile et al., *Reinventing Energy: Making the Right Choices*, American Petroleum Institute, (1996), <http://www.climatefiles.com/trade-group/american-petroleum-institute/1996-reinventing-energy>.

fossil fuel products known to Defendants to be hazardous. He stated:

Some people who argue that we should drastically curtail our use of fossil fuels for environmental reasons . . . my belief [is] that such proposals are neither prudent nor practical. With no readily available economic alternatives on the horizon, fossil fuels will continue to supply most of the world's and this region's energy for the foreseeable future.

Governments also need to provide a stable investment climate . . . They should avoid the temptation to intervene in energy markets in ways that give advantage to one competitor over another or one fuel over another.

We also have to keep in mind that most of the greenhouse effects comes from natural sources . . . Leaping to radically cut this tiny sliver of the greenhouse pie on the premise that it will affect climate defies common sense and lacks foundation in our current understanding of the climate system.

Let's agree there's a lot we really don't know about how climate will change in the 21st century and beyond . . . It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now. It's bad public policy to impose very costly regulations and restrictions when their need has yet to be proven.<sup>173</sup>

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<sup>173</sup> Lee R. Raymond, *Energy – Key to growth and a better environment for Asia-Pacific nations*, World Petroleum Congress

162. Imperial Oil (ExxonMobil) 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.<sup>174</sup>

163. Mobil (ExxonMobil) 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

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(Oct. 13, 1997), <https://assets.documentcloud.org/documents/2840902/1997-Lee-Raymond-Speech-at-China-World-Petroleum.pdf>.

<sup>174</sup> Robert Peterson, *A Cleaner Canada in Imperial Oil Review* (1998), <http://www.documentcloud.org/documents/2827818-1998-Imperial-Oil-Robert-Peterson-A-Cleaner-Canada.html>.

science. The 1997 advertorial below<sup>175</sup> argued that economic analysis of emissions restrictions was faulty and inconclusive and therefore a justification for delaying action on climate change.

like race, But when we no longer allow those choices, both civility and common sense will have been diminished. □ who was dragged from his sister's car by police officers and shot in the face at point-blank range. The cops who have the power to do something about those officers, but choose not to. □

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**When facts don't square with the theory, throw out the facts**

That seems to characterize the administration's attitude on two of its own studies which show that international efforts to curb global warming could spark a big run-up in energy prices.

For months, the administration—playing its cards close to the vest—has promised to provide details of the emission reduction plan it will put on the table at the climate change meeting in Kyoto, Japan, later this year. It also promised to evaluate the economics of that policy and measure its impact. Those results are important because the proposals submitted by other countries thus far would be disruptive and costly to the U.S. economy.

Yet, when the results from its own economic models were finally generated, the administration started distancing itself from the findings and models that produced them. The administration's top economic advisor said that economic models can't provide a "definitive answer" on the impact of controlling emissions. The effort, she said, was "futile." At best, the models can only provide a "range of potential impacts."

Frankly, we're puzzled. The White House has promised to lay the economic facts before the public. Yet, the administration's top advisor said such an analysis won't be based on models and it will "preclude...detailed numbers." If you don't provide numbers and don't rely on models, what kind of rigorous economic examination can Congress and the public expect?

We're also puzzled by ambivalence over models. The administration downplays the utility of economic models to forecast cost impacts 10–15 years from now, yet its negotiators accept as gospel the 50–100-year predictions of global warming that have been generated by climate models—many of which have been criticized as seriously flawed.

The second study, conducted by Argonne National Laboratory under a contract with the Energy Department, examined what would happen if the U.S. had to commit to higher energy prices under the emission reduction plans that several nations had advanced last year. Such increases, the report concluded, would result in "significant reductions in output and employment" in six industries—aluminum, cement, chemical, paper and pulp, petroleum refining and steel.

Hit hardest, the study noted, would be the chemical industry, with estimates that up to 30 percent of U.S. chemical manufacturing capacity would move offshore to developing countries. Job losses could amount to some 200,000 in that industry, with another 100,000 in the steel sector. And despite the substantial loss of U.S. jobs and manufacturing capacity, the net emission reduction could be insignificant since developing countries will not be bound by the emission targets of a global warming treaty.

Downplaying Argonne's findings, the Energy Department noted that the study used outdated energy prices (mid-1995), didn't reflect the gains that would come from international emissions trading and failed to factor in the benefits of accelerated developments in energy efficiency and low-carbon technologies.

What it failed to mention is just what these new technologies are and when we can expect their benefits to kick in. As for emissions trading, many economists have theorized about the role they could play in reducing emissions, but few have grappled with the practicality of implementing and policing such a scheme.

We applaud the goals the U.S. wants to achieve in these upcoming negotiations—namely, that a final agreement must be "flexible, cost-effective, realistic, achievable and ultimately global in scope." But until we see the details of the administration's policy, we are concerned that plans are being developed in the absence of rigorous economic analysis. Too much is at stake to simply ignore facts that don't square with preconceived theories.

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<http://www.mobil.com> ©1997 Mobil Corporation

<sup>175</sup> Mobil, *When Facts Don't Square with the Theory, Throw Out the Facts*, N.Y. TIMES, A31 (Aug. 14, 1997), <https://www.documentcloud.org/documents/705550-mob-nyt-1997-aug-14-whenfactsdentsquare.html>.

164. In 1998, API, on behalf of Defendants, among other fossil fuel companies and organizations supported by fossil fuel corporate grants, developed a Global Climate Science Communications Plan that stated that unless “climate change becomes a non-issue . . . there may be no moment when we can declare victory for our efforts.” Rather, API proclaimed that “[v]ictory will be achieved when . . . average citizens ‘understand’ (recognize) uncertainties in climate science; [and when] recognition of uncertainties becomes part of the ‘conventional wisdom.’”<sup>176</sup> The multi-million-dollar, multi-year proposed budget included public outreach and the dissemination of educational materials to schools to “begin to erect a barrier against further efforts to impose Kyoto-like measures in the future”<sup>177</sup> – a blatant attempt to disrupt international efforts, pursuant to the UNFCCC, to negotiate a treaty that curbed greenhouse gas emissions.

165. Soon after, API distributed a memo to its members identifying public agreement on fossil fuel products’ role in climate change as its highest priority issue.<sup>178</sup> The memorandum illuminates API’s and Defendants’ concern over the potential regulation of Defendants’ fossil fuel products: “Climate is at the

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<sup>176</sup> Joe Walker, *E-mail to Global Climate Science Team, attaching the Draft Global Science Communications Plan* (Apr. 3, 1998), <https://assets.documentcloud.org/documents/784572/api-global-climate-science-communications-plan.pdf>.

<sup>177</sup> *Id.*

<sup>178</sup> Committee on Oversight and Government Reform, *Allegations of Political Interference with Government Climate Change Science*, 51 (Mar. 19, 2007), <https://ia601904.us.archive.org/25/items/gov.gpo.fdsys.CHRG-110hhr37415/CHRG-110hhr37415.pdf>.

center of the industry's business interests. Policies limiting carbon emissions reduce petroleum product use. That is why it is API's highest priority issue and defined as 'strategic.'" <sup>179</sup> Further, the API memo stresses many of the strategies that Defendants individually and collectively utilized to combat the perception of their fossil fuel products as hazardous. These included:

a. Influencing the tenor of the climate change "debate" as a means to establish that greenhouse gas reduction policies like the Kyoto Protocol were not necessary to address climate change responsibly;

b. Maintaining strong working relationships between government regulators and communications-oriented organizations like the Global Climate Coalition, the Heartland Institute, and other groups carrying Defendants' message minimizing the hazards of the unabated use of their fossil fuel products and opposing regulation thereof;

c. Building the case for (and falsely dichotomizing) Defendants' positive contributions to a "long-term approach" (ostensibly for regulation of their products) as a reason for society to reject short term fossil fuel emissions regulations, and engaging in climate change science uncertainty research; and

d. Presenting Defendants' positions on climate change in domestic and international forums, including by preparing rebuttals to IPCC reports.

166. Additionally, Defendants mounted a campaign against regulation of their business practices in order to continue placing their fossil fuel products into the stream of commerce, despite their

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<sup>179</sup> *Id.*



own knowledge and the growing national and international scientific consensus about the hazards of doing so. These efforts came despite Defendants' recent recognition that "risks to nearly every facet of life on Earth . . . could be avoided only if timely steps were taken to address climate change."<sup>180</sup>

167. The Global Climate Coalition ("GCC"), on behalf of Defendants and other fossil fuel companies, funded advertising campaigns and distributed material to generate public uncertainty around the climate debate, with the specific purpose of preventing U.S. adoption of the Kyoto Protocol, despite the leading role that the U.S. had played in the Protocol negotiations.<sup>181</sup> Despite an internal primer stating that various "contrarian theories" [i.e., climate change skepticism] do not "offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change," GCC excluded this section from the public version of the backgrounder and instead funded efforts to promote some of those same contrarian theories over subsequent years.<sup>182</sup>

168. A key strategy in Defendants' efforts to discredit scientific consensus on climate change and the IPCC was to bankroll scientists who, although accredited, held fringe opinions that were even more questionable given the sources of their research

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<sup>180</sup> Neela Banerjee, *Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too*, *supra* note 126.

<sup>181</sup> *Id.*

<sup>182</sup> Gregory J. Dana, *Memo to AIAM Technical Committee Re: Global Climate Coalition (GCC) – Primer on Climate Change Science – Final Draft*, Association of International Automobile Manufacturers (Jan. 18, 1996), <http://www.webcitation.org/6FyqHawb9>.

funding. These scientists obtained part or all of their research budget from Defendants directly or through Defendant-funded organizations like API,<sup>183</sup> but they frequently failed to disclose their fossil fuel industry underwriters.<sup>184</sup>

169. Creating a false sense of disagreement in the scientific community (despite the consensus that its own scientists, experts, and managers had previously acknowledged) has had an evident impact on public opinion. A 2007 Yale University-Gallup poll found that while 71% of Americans personally believed global warming was happening, only 48% believed that there was a consensus among the scientific community, and 40% believed there was a lot of disagreement among scientists over whether global warming was occurring.<sup>185</sup>

170. 2007 was the same year the IPCC published its Fourth Assessment Report, in which it concluded that “there is *very high confidence* that the net effect of human activities since 1750 has been one of

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<sup>183</sup> *E.g.*, Willie Soon & Sallie Baliunas, *Proxy Climatic and Environmental Changes of the Past 1000 Years*, 23 CLIMATE RESEARCH 88, 105 (Jan. 31, 2003), <http://www.int-res.com/articles/cr2003/23/c023p089.pdf>.

<sup>184</sup> *E.g.*, Newsdesk, *Smithsonian Statement: Dr. Wei-Hock (Willie) Soon*, SMITHSONIAN (Feb. 26, 2015), <http://newsdesk.si.edu/releases/smithsonian-statement-dr-wei-hock-willie-soon>.

<sup>185</sup> *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>.

warming.”<sup>186</sup> The IPCC defined “very high confidence” as at least a 9 out of 10 chance.<sup>187</sup>

171. Defendants borrowed pages out of the playbook of prior denialist campaigns. A “Global Climate Science Team” (“GCST”) was created that mirrored a front group created by the tobacco industry, known as The Advancement of Sound Science Coalition, whose purpose was to sow uncertainty about the fact that cigarette smoke is carcinogenic. The GCST’s membership included Steve Milloy (a key player on the tobacco industry’s front group), Exxon’s senior environmental lobbyist; an API public relations representative; and representatives from Chevron and Southern Company that drafted API’s 1998 Communications Plan. There were no scientists on the “Global Climate Science Team.” GCST developed a strategy to spend millions of dollars manufacturing climate change uncertainty. Between 2000 and 2004, Exxon donated \$110,000 to Milloy’s efforts and another organization, the Free Enterprise Education Institute and \$50,000 to the Free Enterprise Action Institute, both registered to Milloy’s home address.<sup>188</sup>

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<sup>186</sup> IPCC, *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007), <https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.

<sup>187</sup> *Id.*

<sup>188</sup> Seth Shulman et al., *Smoke, Mirrors & Hot Air: How ExxonMobil Uses Big Tobacco’s Tactics to Manufacture Uncertainty on Climate Science*, Union of Concerned Scientists, 19 (Jan. 2007), [http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global\\_warming/exxon\\_report.pdf](http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/exxon_report.pdf).

172. Defendants by and through their trade association memberships, worked directly, and often in a deliberately obscured manner, to evade regulation of the emissions resulting from use of their fossil fuel products.

173. Defendants have funded dozens of think tanks, front groups, and industry-controlled 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. From 1998 to 2014 ExxonMobil spent almost \$31 million funding numerous organizations misrepresenting the scientific consensus that Defendants' fossil fuel products were causing climate change, sea level rise, and injuries to coastal communities, including Rhode Island.<sup>189</sup> Several Defendants have been linked to other groups that undermine the scientific basis linking Defendants' fossil fuel products to climate change and sea level rise, including the Frontiers of Freedom Institute and the George C. Marshall Institute.

174. Exxon acknowledged its own previous success in sowing uncertainty and slowing mitigation through funding of climate denial groups. In its 2007 Corporate Citizenship Report, Exxon declared: "In 2008, we will discontinue contributions to several public policy research groups whose position on climate change could divert attention from the important discussion on how the world will secure the energy required for economic growth in an environmentally responsible

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<sup>189</sup> ExxonSecrets.org, *ExxonMobil Climate Denial Funding 1998–2014* (accessed June 27, 2018), <http://exxonsecrets.org/html/index.php>.

manner.”<sup>190</sup> Despite this pronouncement, Exxon remained financially associated with several such groups after the report’s publication.

175. Today, Defendants, including Exxon, Chevron, BP, Shell, and ConocoPhillips publicly purport to accept the consensus embodied in the most recent IPCC reports, that global warming is occurring, and that human activity has been the dominant cause of global warming and related climactic changes since the beginning of the Great Acceleration. At the same time, however, Defendants continue to play up the uncertainty of future climate modeling, and the purported historic uncertainty, imprecision, and inconsistency of climate science to disguise and distract from their own knowledge and intensive research dating back to at least 1960s. While Defendants claim to accept the scientific consensus on climate change, moreover, they still continue to promote and expand their exploration, production, promotion, marketing, and sale of fossil fuels that are the dominant cause of anthropogenic global warming.

176. Defendants could have contributed to the global effort to mitigate the impacts of greenhouse gas emissions by, for example delineating practical technical strategies, policy goals, and regulatory structures that would have allowed them to continue their business ventures while reducing greenhouse gas emissions and supporting a transition to a lower carbon future. Instead, Defendants undertook a momentous effort to evade international and national regulation of greenhouse gas emissions to enable them to continue unabated fossil fuel production.

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<sup>190</sup> ExxonMobil, *2007 Corporate Citizenship Report* (Dec. 31, 2007).

177. As a result of Defendants' tortious, misleading conduct, reasonable consumers of Defendants' fossil fuel products and policy-makers, 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, extreme temperatures, and drought; the acceleration of global warming since the mid-20th century and the continuation thereof; and about the fact that the continued increase in fossil fuel product consumption that creates severe environmental threats and significant economic costs for coastal communities, including Rhode Island. Reasonable consumers and policy makers have also been 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, heatwaves, drought, and associated consequences.

**J. In Contrast to Their Public Statements, Defendants' Internal Actions Demonstrate Their Awareness of and Intent to Profit from the Unabated Use of Fossil Fuel Products.**

178. 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. These 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-related change. These investments include (among others), raising offshore oil platforms to protect against sea level rise; reinforcing offshore oil platforms to withstand increased wave strength and storm severity; 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.<sup>191</sup>

179. For example, in 1973 Exxon obtained a patent for a cargo ship capable of breaking through sea ice<sup>192</sup> and for an oil tanker<sup>193</sup> designed specifically for use in previously unreachable areas of the Arctic.

180. In 1974, Chevron obtained a patent for a mobile arctic drilling platform designed to withstand significant interference from lateral ice masses,<sup>194</sup> allowing for drilling in areas with increased ice floe movement due to elevated temperature.

181. 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

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<sup>191</sup> Amy Lieberman & Suzanne Rust, *Big Oil braced for global warming while it fought regulations*, L.A. TIMES (Dec. 31, 2015), <http://graphics.latimes.com/oil-operations>.

<sup>192</sup> Patents, *Icebreaking cargo vessel*, Exxon Research Engineering Co. (Apr. 17, 1973), <https://www.google.com/patents/US3727571>.

<sup>193</sup> Patents, *Tanker vessel*, Exxon Research Engineering Co. (July 17, 1973), <https://www.google.com/patents/US3745960>.

<sup>194</sup> Patents, *Arctic offshore platform*, Chevron Res (Aug. 27, 1974), <https://www.google.com/patents/US3831385>.

conditions,<sup>195</sup> allowing for drilling in previously unreachable Arctic areas that would become seasonally accessible.

182. Shell obtained a patent similar to Texaco's (Chevron) in 1984.<sup>196</sup>

183. 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.<sup>197</sup>

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

b. 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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<sup>195</sup> Patents, *Mobile, arctic drilling and production platform*, Texaco Inc. (Feb. 26, 1974), <https://www.google.com/patents/US3793840>.

<sup>196</sup> Patents, *Arctic offshore platform*, Shell Oil Company (Jan. 24, 1984), <https://www.google.com/patents/US4427320>.

<sup>197</sup> *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>.



c. 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.

d. In 1989, Shell engineers revised their plans to increase the above-water height of the platform by 3–6 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.<sup>198</sup>

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

**K. Defendants’ Actions Prevented the Development of Alternatives That Would Have Eased the Transition to a Less Fossil Fuel Dependent Economy.**

184. The harms and benefits of Defendants’ conduct can be balanced in part by weighing the social benefit of extracting and burning a unit of fossil fuels against the costs that a unit of fuel imposes on society, known as the “social cost of carbon” or “SCC.”

185. Because climatic responses to atmospheric temperature increases are non-linear, and because greenhouse gas pollution accumulates in the atmosphere, some of which does not dissipate for potentially thousands of years (namely CO<sub>2</sub>), there is broad agreement that SCC increases as emissions rise, and as the climate warms. Relatedly, as atmospheric CO<sub>2</sub> levels and surface temperature

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<sup>198</sup> *Id.*; Amy Lieberman & Suzanne Rust, *Big Oil Braced for Global Warming While It Fought Regulations*, L.A. TIMES (Dec. 31, 2015), <http://graphics.latimes.com/oil-operations>

increase, the costs of remediating any individual environmental injury—for example, infrastructure to mitigate sea level rise, and changes to agricultural processes—also increase. In short, each additional ton of CO<sub>2</sub> emitted into the atmosphere will have a greater net social cost as emissions increase, and each additional ton of CO<sub>2</sub> will have a greater net social cost as global warming accelerates.

186. A critical corollary of the non-linear relationship between atmospheric CO<sub>2</sub> concentrations and SCC is that delayed efforts to curb those emissions have increased environmental harms and increased the magnitude and cost to remediate harms that have already occurred or are locked in by previous emissions. Therefore, Defendants' campaign to obscure the science of climate change and to expand the extraction and use of fossil fuels greatly increased and continues to increase the harms and rate of harms suffered by the State and the People.

187. The consequences of delayed action on climate change, exacerbated by Defendants' actions, already have drastically increased the cost of mitigating further harm. Had concerted action begun even as late as 2005, an annual 3.5% reduction in CO<sub>2</sub> emissions to lower atmospheric CO<sub>2</sub> to 350 ppm by the year 2100 would have restored earth's energy balance<sup>199</sup> and

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<sup>199</sup> "Climate equilibrium" is the balance between Earth's absorption of solar energy and its own energy radiation. Earth is currently out of equilibrium due to the influence of anthropogenic greenhouse gases, which prevent radiation of energy into space. Earth therefore warms and move back toward energy balance. Reduction of global CO<sub>2</sub> concentrations to 350 ppm is necessary to re-achieve energy balance, if the aim is to stabilize climate without further global warming and attendant sea level rise. *See*

halted future global warming, although such efforts would not forestall committed sea level rise already locked in.<sup>200</sup> If efforts do not begin until 2020, however, a 15% annual reduction will be required to restore the Earth's energy balance by the end of the century.<sup>201</sup> Earlier steps to reduce emissions would have led to smaller—and less disruptive—measures needed to mitigate the impacts of fossil fuel production.

188. The costs of inaction and the opportunities to confront anthropogenic climate change and sea level rise caused by normal consumption of their fossil fuel products, were not lost on Defendants. In a 1997 speech by John Browne, Group Executive for BP America, at Stanford University, Browne described Defendants' and the entire fossil fuel industry's responsibility and opportunities to reduce use of fossil fuel products, reduce global CO<sub>2</sub> emissions, and mitigate the harms associated with the use and consumption of such products:

A new age demands a fresh perspective of the nature of society and responsibility.

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James Hansen et al., *Assessing "Dangerous Climate Change." Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, 8 PLOS ONE 1, 4–5 (Dec. 3, 2013), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648>.

<sup>200</sup> James Hansen et al., *Assessing "Dangerous Climate Change." Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, 8 PLOS ONE 1, 10 (Dec. 3, 2013), <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0081648>.

<sup>201</sup> *Id.*

We need to go beyond analysis and to take action. It is a moment for change and for a rethinking of corporate responsibility. . . .

[T]here 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.

The prediction of the IPCC is that over the next century temperatures might rise by a further 1 to 3.5 degrees centigrade [1.8° – 6.3°F], and that sea levels might rise by between 15 and 95 centimeters [5.9 and 37.4 inches]. Some of that impact is probably unavoidable, because it results from current emissions. . . .

[I]t would be unwise and potentially dangerous to ignore the mounting concern.

The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven ... but when the possibility cannot be discounted and is taken seriously by the society of which we are part. . .

We [the fossil fuel industry] have a responsibility to act, and I hope that through our actions we can contribute to the much wider process which is desirable and necessary.

BP accepts that responsibility and we're therefore taking some specific steps.

To control our own emissions.

To fund continuing scientific research.

To take initiatives for joint implementation.

To develop alternative fuels for the long term.

And to contribute to the public policy debate in search of the wider global answers to the problem.”<sup>202</sup>

189. Despite Defendants’ knowledge of the foreseeable, measurable harms associated with the unabated consumption and use of their fossil fuel products, and despite the existence and Defendants’ knowledge of technologies and practices that could have helped to reduce the foreseeable dangers associated with their fossil fuel products, Defendants continued to market and promote heavy fossil fuel use, dramatically increasing the cost of abatement. At all relevant times, Defendants were deeply familiar with opportunities to reduce the use of their fossil fuel products, reduce global CO<sub>2</sub> emissions associated therewith, and mitigate the harms associated with the use and consumption of such products. Examples of that recognition include, but are not limited to the following:

a. In 1963, Esso (Exxon) obtained multiple patents on technologies for fuel cells, including on the design of a fuel cell and necessary electrodes,<sup>203</sup> and on a process for increasing the oxidation of a fuel,

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<sup>202</sup> John Browne, *BP Climate Change Speech to Stanford*, Climate Files (May 19, 1997), <http://www.climatefiles.com/bp/bp-climate-change-speech-to-stanford>.

<sup>203</sup> Patents, *Fuel cell and fuel cell electrodes*, Exxon Research Engineering Co. (Dec. 31, 1963), <https://www.google.com/patents/US3116169>.

specifically methanol, to produce electricity in a fuel cell.<sup>204</sup>

b. In 1970, Esso (ExxonMobil) obtained a patent for a “low-polluting engine and drive system” that used an interburner and air compressor to reduce pollutant emissions, including CO<sub>2</sub> emissions, from gasoline combustion engines (the system also increased the efficiency of the fossil fuel products used in such engines, thereby lowering the amount of fossil fuel product necessary to operate engines equipped with this technology).<sup>205</sup>

190. Defendants could have made major inroads to mitigate the State’s injuries through technology by developing and employing technologies to capture and sequester greenhouse gases emissions associated with conventional use of their fossil fuel products. Defendants had knowledge dating at least back to the 1960s, and indeed, internally researched and perfected many such technologies. For instance:

a. The first patent for enhanced oil recovery technology, a process by which CO<sub>2</sub> is captured and reinjected into oil deposits, was granted to an ARCO (BP) subsidiary in 1952.<sup>206</sup> This technology could

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<sup>204</sup> Patents, *Direct production of electrical energy from liquid fuels*, Exxon Research Engineering Co. (Dec. 3, 1963), <https://www.google.com/patents/US3113049>.

<sup>205</sup> Patents, *Low-polluting engine and drive system*, Exxon Research Engineering Co. (May 16, 1970), <https://www.google.com/patents/US3513929>.

<sup>206</sup> James P. Meyer, *Summary of Carbon Dioxide Enhanced Oil Recovery (CO<sub>2</sub>EOR) Injection Well Technology*, American Petroleum Institute, 1, <http://www.api.org/~media/Files/EHS/climate-change/Summary-carbon-dioxide-enhanced-oil-recovery-well-tech.pdf>.

have been further developed as a carbon capture and sequestration technique;

b. Phillips Petroleum Company (ConocoPhillips) obtained a patent in 1966 for a “Method for recovering a purified component from a gas” outlining a process to remove carbon from natural gas and gasoline streams;<sup>207</sup> and

c. In 1973, Shell was granted a patent for a process to remove acidic gases, including CO<sub>2</sub>, from gaseous mixtures.

191. Despite this knowledge, Defendants did not commit to or follow through on later forays into the alternative energy sector. For instance, in 2001, Chevron developed and shared a sophisticated information management system to gather greenhouse gas emissions data from its explorations and production to help regulate and set reduction goals.<sup>208</sup> Beyond this technological breakthrough, Chevron touted “profitable renewable energy” as part of its business plan for several years and launched a 2010 advertising campaign promoting the company’s move towards renewable energy. Despite all this, Chevron rolled back its renewable and alternative energy projects in 2014.<sup>209</sup>

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<sup>207</sup> Patents, *Method for recovering a purified component from a gas*, Phillips Petroleum Co (Jan. 11, 1966), <https://www.google.com/patents/US3228874>.

<sup>208</sup> Chevron, Chevron Press Release – *Chevron Introduces New System to Manage Energy Use* (Sept. 25, 2001).

<sup>209</sup> Benjamin Elgin, *Chevron Dims the Lights on Green Power*, BLOOMBERG (May 29, 2014), <https://www.bloomberg.com/news/articles/2014-05-29/chevron-dims-the-lights-on-renewable-energy-projects>.

192. Likewise, while Shell orchestrated an entire public relations campaign around energy transitions towards net zero emissions, a fine-print disclaimer in its 2016 net-zero pathways report reads: “We have no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10–20 years.”<sup>210</sup>

193. BP, appearing to abide by the representations Lord Browne made in his speech described in paragraph 188, above, engaged in a rebranding campaign to convey an air of environmental stewardship and renewable energy to its consumers. This included renouncing its membership in the GCC in 2007, changing its name from “British Petroleum” to “BP” while adopting the slogan “Beyond Petroleum,” and adopting a conspicuously green corporate logo. However, BP’s self-touted “alternative energy” investments during this turnaround included investments in natural gas, a fossil fuel, and in 2007 the company reinvested in Canadian tar sands, a particularly high-carbon source of oil.<sup>211</sup> The company ultimately abandoned its wind and solar assets in 2011 and 2013, respectively, and even the “Beyond Petroleum” moniker in 2013.<sup>212</sup>

194. After posting a \$10 billion quarterly profit, Exxon in 2005 stated that “We’re an oil and gas

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<sup>210</sup> *Energy Transitions Towards Net Zero Emissions* (NZE), Shell (2016).

<sup>211</sup> Fred Pearce, *Greenwash: BP and the Myth of a World ‘Beyond Petroleum’*, THE GUARDIAN, (Nov. 20, 2008), <https://www.theguardian.com/environment/2008/nov/20/fossilfuels-energy>.

<sup>212</sup> Javier E. David, *‘Beyond Petroleum’ No More? BP Goes Back to Basics*, CNBC (Apr. 20, 2013), <http://www.cnbc.com/id/100647034>.



company. In times past, when we tried to get into other businesses, we didn't do it well. We'd rather re-invest in what we know."<sup>213</sup>

195. Even if Defendants did not adopt technological or energy source alternatives that would have reduced use of fossil fuel products, reduced global greenhouse gas pollution, and/or mitigated the harms associated with the use and consumption of such products, Defendants could have taken other practical, cost-effective steps to reduce the use of their fossil fuel products, reduce global greenhouse gas pollution associated therewith, and mitigate the harms associated with the use and consumption of such products. These alternatives could have included, among other measures:

a. Accepting scientific evidence on the validity of anthropogenic climate change and the damages it will cause people and communities, including Plaintiff, and the environment. Mere acceptance of that information would have altered the debate from whether to combat climate change and sea level rise to how to combat it; and avoided much of the public confusion that has ensued over nearly 30 years, since at least 1988;

b. Forthrightly communicating with Defendants' shareholders, banks, insurers, the public, regulators and Plaintiff about the global warming and sea level rise hazards of Defendants' fossil fuel products that were known to Defendants, would have enabled those groups to make material, informed decisions about

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<sup>213</sup> James R. Healy, *Alternate Energy Not in Cards at ExxonMobil* (Oct. 28, 2005), [https://usatoday30.usatoday.com/money/industries/energy/2005-10-27-oil-invest-usat\\_x.htm](https://usatoday30.usatoday.com/money/industries/energy/2005-10-27-oil-invest-usat_x.htm).

whether and how to address climate change and sea level rise vis-à-vis Defendants' products;

c. Refraining from affirmative efforts, whether directly, through coalitions, or through front groups, to distort public debate, and to cause many consumers and business and political leaders to think the relevant science was far less certain than it actually was;

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

e. Supporting and encouraging policies to avoid dangerous climate change, and demonstrating corporate leadership in addressing the challenges of transitioning to a low-carbon economy;

f. Prioritizing alternative sources of energy through sustained investment and research on renewable energy sources to replace dependence on Defendants' inherently hazardous fossil fuel products;

g. Adopting their shareholders' concerns about Defendants' need to protect their businesses from the inevitable consequences of profiting from their fossil fuel products. Over the period of 1990-2015, Defendants' shareholders proposed hundreds of resolutions to change Defendants' policies and business practices regarding climate change. These included increasing renewable energy investment, cutting emissions, and performing carbon risk assessments, among others.

196. Despite their knowledge of the foreseeable harms associated with the consumption of Defendants' fossil fuel products, and despite the existence and

fossil fuel industry knowledge of opportunities that would have reduced the foreseeable dangers associated with those products, Defendants wrongfully promoted, campaigned against regulation of, and concealed the hazards of use of their fossil fuel products.

**L. Defendants Caused Rhode Island's Injuries.**

197. Defendants, individually and collectively, extracted a substantial percentage of all raw fossil fuels recovered globally since 1965. Defendants also individually and collectively manufactured, promoted, marketed, and sold a substantial percentage of all fossil fuel products used and combusted during that period. Defendants further played leadership roles in campaigns to deny the link between their products and the adverse effects of global warming, to avoid regulation, and to stifle transition away from fossil fuels that would reduce the carbon footprint affecting the world climate system.

198. CO<sub>2</sub> emissions attributable to fossil fuels that Defendants extracted from the Earth and injected into the market are responsible for a substantial percentage of greenhouse gas pollution since 1965.

199. Defendants' individual and collective conduct, including, but not limited to, their extraction, refining, and/or formulation of fossil fuel products; their introduction of fossil fuel products into the stream of commerce; their wrongful promotion of their fossil fuel products and concealment of known hazards associated with use of those products; and their failure to pursue less hazardous alternatives available to them; is a substantial factor in causing the increase in global mean temperature and consequent increase in

global mean sea surface height and disruptions to the hydrologic cycle, including, but not limited to, more frequent and extreme droughts, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes, since 1965.

200. Defendants have actually and proximately caused sea levels to rise, increased the destructive impacts of storm surges, increased coastal erosion, exacerbated the onshore impact of regular tidal ebb and flow, caused saltwater intrusion, disrupted the hydrologic cycle, caused increased frequency and severity of drought, caused increased frequency and severity of extreme precipitation events, caused increased frequency and severity of heat waves, and caused consequent social and economic injuries associated with the aforementioned physical and environmental impacts, among other impacts, resulting in inundation, destruction, and/or other interference with the State's property and citizenry.

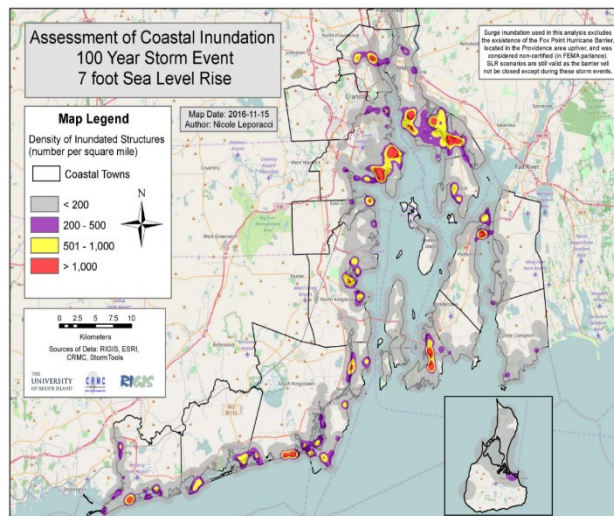
201. Rhode Island has already incurred, and will foreseeably continue to incur, injuries and harms from sea level rise; increased ambient temperatures and extreme heat days; disruptions to the hydrologic cycle including increased frequency and severity of drought; increased frequency and severity of extreme precipitation events; and social and economic harms associated with those physical and environmental changes, all of which have been caused and/or exacerbated by Defendants' conduct.

202. Sea level rise has created and will continue to create significant impacts attributable to Defendants' conduct.

203. The State of Rhode Island is particularly vulnerable to the impacts of sea level rise because of its long coastline, substantial low-lying land area, and extensive coastal development.

204. Under a seven-foot sea level rise scenario, ocean water will inundate approximately seventeen square miles of land along Rhode Island's Narragansett Bay coastline, encompassing 3,765 buildings and the residences of over 10,000 people.<sup>214</sup> The figure below depicts inundated structures during a 100-year storm event with seven feet of sea level rise.

**Fig. 8: Rhode Island Coastal Inundation Projection**



<sup>214</sup> Narragansett Bay Estuary Program, *supra* note 81, at 22; see also STORMTOOLS, <http://www.beachsamp.org/stormtools>.

205. The impacts of sea level rise will occur unevenly across the state depending on local factors including location, natural features, and development. The lower Taunton River watershed is especially vulnerable to sea level rise, for example, because of its shallow slopes.

206. Sea level rise endangers major public and private property and infrastructure by causing coastal flooding of low-lying areas, erosion, salinity intrusion, and storm surges. Critical facilities, existing roadways, wastewater treatment facilities, residential neighborhoods, industrial areas including ports, highways, rail lines, emergency response routes and facilities, beaches, and parks have suffered and/or will suffer injuries due to sea level rise expected by the end of this century.

207. The State will experience continuing significant and dangerous sea level rise through at least the end of this century,<sup>215</sup> and those increases in sea level will accelerate over time. The State will suffer greater overall sea level rise than the global average,<sup>216</sup> and even if all carbon emissions ceased, Rhode Island would still experience greater committed sea level rise in the future due to the “locked in” greenhouse gases already emitted.<sup>217</sup>

208. In addition to direct damage to State property, infrastructure, and natural resources, sea level rise will require the State to expend resources to

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<sup>215</sup> Erika Spanger-Siegfried et al., Union of Concerned Scientists, *supra* note 9, at 10–11.

<sup>216</sup> Rhode Island Department of Health, *Rhode Island Climate Change and Resiliency Report*, *supra* note 55, at 10.

<sup>217</sup> Peter U. Clark et al., *supra* note 44, at 363–65.

disseminate flood risk information to communities; set new policies, such as building regulations to account for increased risks; to invest in adaptive measures such as raising or relocating coastal roads and structures; and/or to invest in defensive measures such as seawalls or levees to prevent property damage.<sup>218</sup> By the end of the century, 6,660 Rhode Island coastal properties, worth roughly \$3.6 billion, will be at risk under a high-sea level rise scenario, reducing property tax revenue by as much as \$47.8 million.<sup>219</sup> That lost tax revenue could in turn reduce resources available to the State to prevent and mitigate further the harms suffered by Rhode Island municipalities. Even with resiliency measures in place under a low emissions scenario, coastal properties will face increased flooding risk and associated harms, and depression in property value.<sup>220</sup>

209. Furthermore, Rhode Island has experienced and will continue to experience injuries due to changes in the hydrologic cycle caused by Defendants' conduct. Increased intensity and frequency of storms results in flooding and erosion and impacts transportation, infrastructure, businesses, homes, and public health. Dry extremes impact water supply, infrastructure and public health.

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<sup>218</sup> Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for US Coastal Real Estate*, 16–17 (June 2018), <https://www.ucsusa.org/underwater>.

<sup>219</sup> Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for US Coastal Real Estate*, “Complete data by state” (June 2018), <https://www.ucsusa.org/sites/default/files/attach/2018/06/underwater-data-by-state.xlsx>.

<sup>220</sup> *See id.*

210. More frequent and intense storms, including Nor'easters (extra-tropical storms), and "bomb cyclones" riding on top of rising seas, are contributing to coastal flooding that is as damaging as flooding typically associated with hurricanes.<sup>221</sup> Under a 3-foot rise in sea level, even a Nor'easter could submerge coastal areas of the state, including areas sufficient to cut off the southwestern peninsula of Newport, RI from the mainland.<sup>222</sup>

211. The state's coastline is highly vulnerable to flood damage from winter storms and hurricanes. In October 2012, Superstorm Sandy (a post-tropical storm) caused a storm surge 9.4 feet above normal high tide in Providence, resulting in extensive flooding.<sup>223</sup> One year earlier, heavy rainfall and strong southeast winds—up to 70 mph—from Hurricane Irene knocked down power lines, leaving half of Rhode Island's one million residents without power.<sup>224</sup>

212. Sea level rise, changes to the hydrologic cycle, and increased air and ocean temperatures resulting from anthropogenic climate change have and will result in injury to public, industrial, commercial, and residential assets within the State either directly, or through secondary and tertiary impacts that cause the State to expend resources in resiliency planning, responding to these impacts, and repairing

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<sup>221</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 15.

<sup>222</sup> Rhode Island Department of Health, *Rhode Island Climate Change and Resiliency Report*, *supra* note 55, at 10.

<sup>223</sup> NOAA National Centers for Environmental Information, *supra* note 83, at 2.

<sup>224</sup> *Id.*



infrastructure damage; lost revenue due to decreased economic activity in the State; injury to natural resources which the State holds in trust for the use and enjoyment of the people of the State; and cause the State to suffer other injuries. Among the properties and natural resources in the State that have and/or will be injured as a result of anthropogenic climate change are:

a. **Roads and Bridges:** With over 400 miles of coastline and large inland watersheds, Rhode Island's transportation and transit infrastructure (roads, bridges, intermodal facilities, culverts, etc.) is vulnerable to sea level rise and flooding.<sup>225</sup> Much of the State's extensive network of roads, bridges, and parking areas are state owned or maintained. Rhode Island's transportation system Federal regulations require the state to engage in asset management to weigh climate change risks (among others).<sup>226</sup> According to an analysis conducted in 2016 (that excluded riverine flooding), 175 miles of roadway will be exposed with seven feet of sea level rise. In a storm surge event with seven feet of sea level rise, 573 miles of roadway will be exposed, over 200 additional miles of roadway over a similar surge at today's sea level.<sup>227</sup> Riverine inundation will present additional challenge to the State's transportation infrastructure.<sup>228</sup> Ten of the most vulnerable segments of roads under state jurisdiction are projected to experience daily high tide flooding at either one or three feet of sea level rise, and

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<sup>225</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 32.

<sup>226</sup> *Id.*

<sup>227</sup> *Id.* at 33

<sup>228</sup> *Id.*

all but one are hurricane evacuation routes.<sup>229</sup> In addition, 90 bridges are vulnerable to sea level rise, and 148 bridges vulnerable to storm surge.<sup>230</sup> Increased flooding of coastal roads, evacuation routes, and bridges creates the risk of coastal populations becoming trapped with no means of accessing emergency services during high tides and storm surge events.<sup>231</sup> Rising temperatures and more frequent extreme weather events also contribute to degradation of roads and bridges increasing maintenance and repair costs.

b. **Other Transportation Infrastructure.** Sea level rise will also impact railroad systems. Several rail segments will be flooded under three- and five-foot sea level rise scenarios, including portions of the Newport Secondary, a state-owned track.<sup>232</sup> Sea level rise and increased flooding will also impact the State's statewide bus network, both disrupting service and requiring relocation of a number of stops and the Newport Gateway hub to upland locations.<sup>233</sup>

c. **Energy Infrastructure:** Rhode Island has experienced many severe weather-related events over

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<sup>229</sup> Rhode Island Statewide Planning Program, *Vulnerability of Transportation Assets to Sea Level Rise*, 11–12 (Jan. 2015).

<sup>230</sup> Rhode Island Statewide Planning Program, *Vulnerability of Municipal Transportation Assets to Sea Level Rise and Storm Surge*, 21 (Sept. 28, 2016).

<sup>231</sup> Rhode Island Sea Grant et al., *Sea Level Rise in Rhode Island: Trends and Impacts*, 4 (Jan. 2013), [http://www.beachsamp.org/wp-content/uploads/2016/09/climate\\_SLR\\_factsheet2013.pdf](http://www.beachsamp.org/wp-content/uploads/2016/09/climate_SLR_factsheet2013.pdf).

<sup>232</sup> Rhode Island Statewide Planning Program, *Vulnerability of Transportation Assets to Sea Level Rise*, 12 (Jan. 2015).

<sup>233</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 35–36.

the last eight years, including floods, blizzards, extended heat waves, extreme cold snaps and hurricanes. One of the most direct energy security impacts of major storm events is power outages. Power outages result in direct costs to repair damaged or flooded infrastructure or downed poles and wires and to restore service, indirect costs such as lost business and tax revenue, and health impacts from loss of electricity and air conditioning.<sup>234</sup> Increased extreme heat days also put stress on the state's electricity grid, by requiring increased air conditioning. State agencies are playing key roles in overseeing energy assurance and resiliency in Rhode Island.<sup>235</sup>

d. **Dams:** The state has 668 inventoried dams, 96 of which are classified as “high hazard” (meaning that failure or mis-operation will result in probable loss of human life) and 81 of which are classified as “significant hazard” (meaning failure can cause major economic loss, disrupt critical facilities or infrastructure, or detriment public's health, safety or welfare).<sup>236</sup> The Rhode Island Department of Environmental Management (RIDEM) has the statutory duty to inspect dams and to take necessary action to make dams safe. RIDEM is in the process of studying hazardous dams to determine what actions are necessary to withstand a 500-year storm event.<sup>237</sup>

e. **Ports:** Maritime transportation, including through the Port of Providence and Port of Galilee,

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<sup>234</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 28–29.

<sup>235</sup> *Id.* at 29.

<sup>236</sup> *Id.* at 23.

<sup>237</sup> *Id.*

serves a critical role in the Rhode Island economy by providing access to products, raw materials, and export revenue. Numerous ancillary businesses depend on the ports' functionality. The Port of Providence alone generated more than \$200 million in economic benefits for the region and over 2,400 jobs. The State's commercial fishing industry generates approximately \$200 million in annual sales and supports about 7,000 jobs. Impacts of climate change on fishing resources, including flooding from major storms and associated damage and closure of fisheries and loss of profitable aquatic species, have caused and will cause both short and long-term disruptions in the Rhode Island economy, causing the State to lose revenue. The State is actively engaged in studying resilience of its ports and informing the public to encourage long-term planning.<sup>238</sup>

f. **Beaches:** Coastal beaches and barriers are dynamic systems that define much of Rhode Island's south-facing shore and are popular recreational destinations for both residents and out-of-state visitors. Climate change has and will subject beaches to increased storm surge, erosion, coastal flooding and sea level rise. The State owns numerous beaches open for public use and enjoyment. Beaches will migrate landward and if impeded by development will narrow or disappear altogether, reducing the area available for public recreation and tourism, and affecting habitats for plants and for birds migrating or nesting on shore.<sup>239</sup> Because bacteria grows more quickly in

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<sup>238</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 26–27.

<sup>239</sup> Rhode Island Sea Grant et al., *Sea Level Rise in Rhode Island: Trends and Impacts*, 4 (Jan. 2013), [http://www.beachsamp.org/wp-content/uploads/2016/09/climate\\_SLR\\_factsheet2013.pdf](http://www.beachsamp.org/wp-content/uploads/2016/09/climate_SLR_factsheet2013.pdf).

warm water, warming ocean temperatures will result in increased beach closures.<sup>240</sup> As a result of climate change the State will lose real property to inundation and flooding and revenue from decreased tourism and use of Rhode Island beaches. The State is expending resources to analysis coastal adaptations strategies to protect beaches and dunes.

g. **Water Supply:** Sea level rise and increased summer and fall droughts will stress Rhode Island's water supply.<sup>241</sup> Reduced seasonal precipitation will increase public reliance on groundwater sources to provide drinking water, and simultaneously slow replenishment of groundwater aquifers. At the same time, sea level rise will result in saltwater intruding into coastal groundwater aquifers and wells, contaminating drinking water resources.<sup>242</sup> This is a large concern for southern Rhode Island, which relies heavily on coastal ground water supplies.<sup>243</sup> For example, Aquidneck Island's primary reservoir is highly vulnerable to storm surge from hurricanes and coastal storm events.<sup>244</sup> Sea level rise and storm events can also result in or exacerbate intrusion into drinking water systems by toxic and hazardous substances that are dangerous to human health. Many brownfield and superfund sites within the State susceptible to climate impacts are located next to

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<sup>240</sup> Narragansett Bay Estuary Program, *supra* note 81, at 20.

<sup>241</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 20.

<sup>242</sup> *Id.*

<sup>243</sup> SafeWater RI, *Ensuring Water for Rhode Island's Future*, *supra* note 78, at 11.

<sup>244</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 19.

water bodies which they may contaminate if disturbed.<sup>245</sup>

h. **Wastewater Management:** The State is home to nineteen major wastewater treatment facilities and over 250 pumping stations to transport sewage to these systems. Most of these wastewater systems are located in floodplains to take advantage of gravity fed flows.<sup>246</sup> Sea level rise, and increased flooding and storms associated with climate change will exceed infrastructure capacity, overwhelming and submerging infrastructure, including pipelines, wastewater pumping stations and treatment systems.<sup>247</sup> Treatment systems and pumping stations will require upgrades to withstand future conditions, and the State has already begun requiring resiliency analysis as part of major wastewater treatment facility permit reissuances. Local authorities will need to assess local conditions and take necessary steps to improve resilience of wastewater treatment infrastructure.

i. **Stormwater/Flood Management Infrastructure:** More frequent and more intense extreme weather events and flooding will damage the States' stormwater infrastructure, which was not designed to withstand the intense storms and floods that will become more common with climate change. Climate change is already challenging capacity and performance of these drainage systems.<sup>248</sup> As storm

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<sup>245</sup> *Id.* at 63.

<sup>246</sup> *Id.* at 21.

<sup>247</sup> SafeWater RI, *Ensuring Water for Rhode Island's Future*, *supra* note 78, at 14.

<sup>248</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 24.

patterns change, they will exceed existing capacity of local stormwater infrastructure. Overburdened and inadequate stormwater infrastructure will result likely release pathogens and other pollutants during storm events, causing property damage, water quality impairments, beach closures, closure of shellfish growing areas, and other public health risks.<sup>249</sup> Given the extensive network of State-owned or maintained roads, bridges, and parking areas within Rhode Island, the Rhode Island Department of Transportation (“RIDOT”) has significant responsibilities for stormwater management. RIDOT manages stormwater infrastructure that includes an estimated 25,000 catch basins and 3,800 outfalls. RIDOT has recently embarked on a ten-year strategic program to improve stormwater management consistent with a federal consent decree issued in 2015.<sup>250</sup> The State lacks adequate funding to support necessary retrofitting and ongoing maintenance of the stormwater infrastructure, in particular under a high-emission scenario.<sup>251</sup>

**j. Residential and Commercial Property:** Sea level rise and extreme weather events have harmed and will harm residential and commercial property. A study evaluating the State’s 21 coastal communities found that with 3 feet of sea level rise, over 300 homes will be in the inundation zone.<sup>252</sup>

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<sup>249</sup> *Id.*

<sup>250</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 25.

<sup>251</sup> *Id.*

<sup>252</sup> Rhode Island State Planning Program, *Socioeconomics of Sea Level Rise Technical Paper 168*, 15 & 18 (Sept. 2015),

With 7 feet of sea level rise, over 4,000 occupied residential units and 800 commercial units would be within the inundation zone.<sup>253</sup> Indeed, over fifty percent of the State's parcels lie within or touch the flood plain.<sup>254</sup> These properties are particularly vulnerable to inundation and flooding due to extreme weather events and sea level rise. The city of Newport alone contains hundreds of businesses and historic properties lining its waterfront. Like many older cities in the State, Newport was built on landfill placed into large portions of Narragansett Bay, placing it only slightly above sea level.

k. **Aquatic Resources:** Laboratory studies have already shown ocean acidification reduces the survival of larval finfish and shellfish. Ocean acidification will impact ocean food webs and economically important organisms such as shellfish in the coastal environment.<sup>255</sup> In addition, shellfish perform important ecological functions, such as removing nutrients and bacteria from the water. Consequently, decreased shellfish populations may result in a positive feedback loop, further decreasing marine

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[http://www.planning.ri.gov/documents/sea\\_level/socio/Technical%20Paper%20168.pdf](http://www.planning.ri.gov/documents/sea_level/socio/Technical%20Paper%20168.pdf).

<sup>253</sup> *Id.*

<sup>254</sup> Final Report: *Special House Commission to Study Economic Risk Due to Flooding and Sea Level Rise*, 31 (May 12, 2016), <http://www.rilin.state.ri.us/commissions/fsrcomm/commdocs/20160512%20Economic%20Risk%20Due%20to%20Flooding%20and%20Sea%20Level%20Rise%20-%20final.pdf>.

<sup>255</sup> Stephanie C. Talmage & Christopher J. Gobler, "Effects of past, present, and future ocean carbon dioxide concentrations on the growth and survival of larval shellfish," 107 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 17246–17251 (Oct. 2010), <http://www.pnas.org/content/107/40/17246>.



water quality in Rhode Island. Warmer ocean temperatures associated with climate change are also harming ocean ecosystems. The fisheries of Narragansett Bay are changing from being dominated by bottom dwelling fish and invertebrates to being dominated by fish that occur throughout the water column.<sup>256</sup> Warmer ocean temperatures also impact the abundance and diversity of phytoplankton, resulting in changes across the food web, including reduction in seagrass that helps cycle nutrients, stabilize marine sediment and provides critical habitat to ecologically and economically valuable species.<sup>257</sup> Warming temperatures and acidification not only harm natural resources, but also harm the industries that rely on them, including fishing and tourism, thus injuring the State's economy and reducing tax revenue. Rhode Island is ranked seventh in the nation in economic dependence on shellfishing.

1. **Marshes and Coastal Wetlands:** Sea level rise will cause changes in coastal habitats that are important centers of biodiversity. Salt marshes provide critical habitat for fish and shellfish. Vegetated coastal wetlands perform critical ecosystem functions and have been shown to reduce storm surge duration and height by providing a storage reservoir for encroaching water. For example, areas that contained wetlands had an average of 10% reduction in damages from Hurricane Sandy when compared to those without wetlands, and coastal wetlands were predicted to have reduced wave heights during the storm across 80% of the Northeastern coastal

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<sup>256</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 15.

<sup>257</sup> Narragansett Bay Estuary Program, *supra* note 81, at 20.

floodplain.<sup>258</sup> Salt marshes will either drown or migrate landward as a consequence of sea level rise.<sup>259</sup> With only one foot of sea level rise in Rhode Island, 13% of the state's remaining salt marshes will be lost. At five feet, lost salt marsh ecosystems will increase to 83% resulting in substantial loss of critical ecosystem functions and increased threats from storms to coastal property.<sup>260</sup>

m. **Terrestrial Natural Resources:** Warmer temperatures also impact terrestrial species. In southern New England, including Rhode Island, spring is arriving sooner and leaf-out (the period when trees produce new leaves) and flowering is occurring earlier each year. Changes in the timing of leaf-out, flowering, and fruiting in plants can be very disruptive to plant pollinators and seed dispersers.<sup>261</sup> Warmer temperatures are also impacting the timing of migratory cycles in birds.<sup>262</sup>

213. The State has incurred and will continue to incur expenses in planning, preparing for, and treating the public health impacts associated with anthropogenic global warming. Rhode Islanders are more likely to seek emergency on hotter days. On days when the temperatures reach 90°F, hospitalizations in

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<sup>258</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 42.

<sup>259</sup> *Id.* at 15.

<sup>260</sup> Frank Carini, *Rhode Island Losing Ground in Battle Against Sea-Level Rise*, Ecori News (Feb. 17, 2018), <https://www.ecori.org/climate-change/2018/2/16/rhode-island-losing-ground-in-battle-against-sea-level-rise>.

<sup>261</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 15.

<sup>262</sup> *Id.*

the State for heat and dehydration increase 60% amongst those aged between 18 and 64, compared to the hospitalization rate on 80°F days.<sup>263</sup> Climate models predict that ambient surface temperature will increase by an average of 1.6°F by 2022, resulting in 378 more emergency department visits due to extreme heat in the months of April through October.<sup>264</sup> Vulnerable populations such as the disabled, elderly, children, communities of color, and low income are more likely to suffer health effects from high air temperatures.<sup>265</sup> Increased prevalence of vector-borne diseases, increased pollution, and increased airborne allergens caused by increased surface temperatures will further contribute to increased hospitalizations in the State.

214. Rhode Island will shoulder a portion of the costs for increased hospitalizations to treat recipients of State-funded medical insurance.

215. To address heat-related illnesses, the State is incurring expenses planting and maintaining trees in urban centers as an adaptive strategy to provide cooling and shade.<sup>266</sup> Climate change complicates the care for urban forests by increasing extreme weather events and invasive plants and pests.<sup>267</sup>

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<sup>263</sup> Rhode Island Department of Health, *Rhode Island Climate Change and Resiliency Report*, *supra* note 55, at 20.

<sup>264</sup> *Id.* at 10.

<sup>265</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 13.

<sup>266</sup> *Resilient Rhody: Statewide Climate Resilience Action Strategy*, *supra* note 56, at 47.

<sup>267</sup> *Id.*

216. Increased incidents of extreme weather have still more public health consequences, including danger to personal safety, economic disruption, and population displacement.<sup>268</sup> As climate change impacts and severe weather events increase, they will place greater demands on emergency response and sheltering services. The Rhode Island Emergency Management Agency (“RIEMA”) has already incurred costs to improve the State’s resiliency to future disasters through planning and preparedness activities, trainings, and adaptation programs.<sup>269</sup>

217. Rhode Island is undertaking extensive planning efforts across State agencies, as well as funding independent research efforts, to assess the State’s vulnerability to a broad range of anticipated climate change related impacts, and to develop adaptation and resilience strategies. For example, the State has conducted studies to ensure drinking water supplies will be adequate to meet the State’s future needs.<sup>270</sup> RIDOT has also funded researchers to conduct a vulnerability and resilience strategy assessment of maritime infrastructure.<sup>271</sup> Execution of these research and planning projects have come at a substantial cost to the State, and State will continue to incur substantial costs for these and similar projects.

218. The State has incurred significant expenses educating and engaging the public to better

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<sup>268</sup> *Id.* at 62-63.

<sup>269</sup> *Id.* at 53.

<sup>270</sup> *Id.* at 20.

<sup>271</sup> *Hurricane Resilience: Long Range Planning for the Port of Providence*, The University of Rhode Island, <https://www.portofprovidenceresilience.org>.

understand climate change, and promoting community involvement in actions to reduce climate change risks. These efforts include by educating vulnerable populations about the public health impacts of extreme heat waves (such as heat stroke), drought (diminished water supply), and other climate change-related impacts. Implementation of these planning and public outreach processes represent substantial cost to the State.

219. As a direct and proximate result of Defendants' acts and omissions alleged herein, Rhode Island has incurred significant expenses related to predicting and planning for future climate change-related injuries to its real property, natural resources, and improvements thereon; State-owned or operated infrastructure; citizens; and other community assets, to preemptively mitigate and/or prevent injuries to itself and the public.

220. As a direct and proximate result of Defendants' acts and omissions alleged herein, Rhode Island has incurred sea level rise-related, extreme heat-related, and hydrologic regime change-related injuries and harms. These include, but are not limited to, infrastructural repair, planning costs, and response costs to flooding and other acute incidents.

221. As a direct and proximate result of Defendants' acts and omissions alleged herein, Rhode Island has been inundated by sea water, and extreme precipitation, among other climate-change related intrusions, which has caused injury and harms to its real property and to improvements thereon, and has prevented free passage on, use of, and normal enjoyment of that real property, or permanently destroying it.

222. As a direct and proximate result of Defendants' acts and omissions alleged herein, natural resources held in trust by Rhode Island for the benefit of the people of the State, including the State's fisheries, shores, groundwater, and terrestrial plant and animal life, have been threatened and damaged to the public's detriment.

223. But for Defendants' conduct, Rhode Island would have suffered no or far less injuries and damages than they have endured, and foreseeably will endure, due to increased air and ocean temperatures, anthropogenic sea level rise, disruption of the hydrologic cycle, and associated consequences of those physical and environmental changes.

224. Defendants' conduct as described herein is therefore an actual, substantial, and proximate cause of Rhode Island's climate change-related injuries.

## **VI. CAUSES OF ACTION**

### **FIRST CAUSE OF ACTION**

#### **Public Nuisance**

#### **(Against All Defendants)**

225. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

226. In Rhode Island, the public is entitled by right to the protection, preservation, and enhancement of the air, water, land, and other natural resources located within the State, and it is the policy of the State to create and maintain within the State conditions under which man and nature can exist in productive harmony in order that present and future generations may enjoy clean air and water, productive

land, and other natural resources with which this State has been endowed.

227. Defendants, and each of them, by their affirmative acts and omissions, have created, contributed to, and assisted in creating, conditions in the State of Rhode Island that constitute a nuisance, and has permitted those conditions to persist, by, *inter alia*, increasing local sea level, and associated flooding, inundation, erosion, and other impacts within the State; increasing the frequency and intensity of drought in the State; increasing the frequency and intensity of extreme heat days in the State; and increasing the frequency and intensity of extreme precipitation events in the State.

228. The nuisance created and contributed to by Defendants unreasonably endangers and injures the property, health, peace, comfort, safety, and welfare of the general public and the natural resources of State of Rhode Island, interfering with the comfort and convenience of communities state-wide, as well as with the State's *parens patriae* ability to protect, conserve, and manage the water, land, and wildlife of the State, which are by law precious and invaluable public resources.

229. Defendants specifically created, contributed to, assisted in creating, and/or were a substantial contributing factor in the creation of the public nuisance by, *inter alia*:

a. Controlling every step of the fossil fuel product supply chain, including the extraction of raw fossil fuel products, including crude oil, coal, and natural gas from the Earth; the refining and marketing of those fossil fuel products, and the placement of those fossil fuel products into the stream of commerce;

b. Affirmatively and knowingly promoting the sale and use of fossil fuel products which Defendants knew to be hazardous and knew would cause or exacerbate global warming and related consequences, including, but not limited to, sea level rise, drought, extreme precipitation events, and extreme heat events;

c. Affirmatively and knowingly concealing the hazards that Defendants knew would result from the normal use of their fossil fuel products by misrepresenting and casting doubt on the integrity of scientific information related to climate change;

d. Disseminating and funding the dissemination of information intended to mislead customers, consumers, and regulators regarding known and foreseeable risk of climate change and its consequences, which follow from the normal, use of Defendants' fossil fuel products;

e. Affirmatively and knowingly campaigning against the regulation of their fossil fuel products, despite knowing the hazards associated with the normal use of those products, in order to continue profiting from use of those products by externalizing those known costs onto the public, the environment, and communities; and failing to warn the public about the hazards associated with the use of fossil fuel products.

230. Because of their superior knowledge of fossil fuel products, and their position controlling the extraction, refining, development, marketing, and sale of fossil fuel products, Defendants were in the best position to prevent the nuisance as the harm occurred and continues to occur, but failed to do so, including by failing to warn customers, retailers, regulators,



public officials, or the State of the risks posed by their fossil fuel products, and failing to take any other precautionary measures to prevent or mitigate those known harms.

231. The public nuisance caused, contributed to, maintained, and/or participated in by Defendants has caused and/or imminently threatens to cause substantial injury to the environment of the State, in which the public has interests represented by and protected by the State in its *parens patriae* capacity. The public nuisance has also caused and/or imminently threatens to cause substantial injury to property directly owned by the State. In particular, higher sea level, more frequent and extreme droughts, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes: (1) are harmful and dangerous to human health; (2) are indecent and offensive to the senses of the ordinary person; (3) obstruct and threaten to obstruct the free use of public property within the State so as to interfere with the comfortable enjoyment of life and property; and (4) obstruct and threaten to obstruct the free passage and use of navigable lakes, rivers, bays, streams, canals, basins, public parks, squares, streets, and/or highways within the State.

232. The seriousness of rising sea levels, higher sea level, more frequent and extreme drought, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes, is extremely grave and outweighs the social utility of Defendants' conduct because, *inter alia*,

- a. interference with the public's rights due to sea level rise, more frequent and extreme drought, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes as described above, is expected to become so regular and severe that it will cause material deprivation of and/or interference with the use and enjoyment of public and private property in the State;
- b. the ultimate nature of the harm is the destruction of real and personal property, and loss of natural resources, rather than mere annoyance;
- c. the interference borne is the loss of property, infrastructure, and natural resources within the State, which will actually be borne by the public as loss of use of public and private property and infrastructure and diversion of tax dollars away from other public services to the mitigation of and/or adaptation to climate change impacts;
- d. Rhode Island's property, which serves myriad uses including residential, infrastructural, commercial, and ecological, is not suitable for regular inundation, flooding, landslides, and/or other physical or environmental consequences of anthropogenic global warming;
- e. the social benefit of placing fossil fuels into the stream of commerce is outweighed by the availability of other sources of energy that could have been placed into the stream of commerce that would not have caused anthropogenic climate change and its physical and environmental consequences as described herein; Defendants, and each of them, knew of the external costs of placing their fossil fuel products into the stream of commerce, and rather than striving to

mitigate those externalities, Defendants instead acted affirmatively to obscure them from public consciousness;

f. the cost to society of each ton of greenhouse gases emitted into the atmosphere increases as total global emissions increase, so that unchecked extraction and consumption of fossil fuel products is more harmful and costly than moderated extraction and consumption; and

g. it was practical for Defendants, and each of them, considering their extensive knowledge of the hazards of placing fossil fuel products into the stream of commerce and extensive scientific engineering expertise, to develop better technologies and to pursue and adopt known, practical, and available technologies, energy sources, and business practices that would have mitigated greenhouse gas pollution and eased the transition to a lower carbon economy.

233. As a direct and proximate result of Defendants' conduct, as set forth above, the common rights enjoyed by the citizens of the State of Rhode Island have been unreasonably interfered with because Defendants knew or should have known that their conduct would create a continuing problem with long-lasting significant negative effects on the rights of the public.

234. Defendants' acts and omissions as alleged herein are an actual and legal cause of the public nuisance.

235. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in

the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and comingle in the atmosphere.

236. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

237. Wherefore, the State of Rhode Island prays for relief as set forth below.

## **SECOND CAUSE OF ACTION**

### **Strict Liability for Failure to Warn**

#### **(Against All Defendants)**

238. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

239. Defendants, and each of them, extracted raw fossil fuel products, including crude oil, coal, and natural gas from the Earth, and placed those fossil fuel products into the stream of commerce; and at all times had a duty to issue adequate warnings to Plaintiff, the public, consumers, and public officials of the reasonably foreseeable or knowable risks posed by their fossil fuel products.

240. Defendants, and each of them, extracted, refined, formulated, designed, packaged, distributed,

tested, constructed, fabricated, analyzed, recommended, merchandised, advertised, promoted, and/or sold fossil fuel products, which were intended by Defendants, and each of them, to be combusted for energy, refined into petrochemicals, and refined and/or incorporated into petrochemical products including fuels and plastics.

241. Defendants, and each of them, heavily marketed, promoted, and advertised fossil fuel products and their derivatives, which were sold or used by their respective affiliates and subsidiaries. Defendants received direct financial benefit from their affiliates' and subsidiaries' sales of fossil fuel products. 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.

242. Throughout the times at issue, Defendants individually and collectively had actual and/or constructive knowledge, in light of the scientific knowledge generally accepted at the time, that fossil fuel products release greenhouse gases into the atmosphere that inevitably cause, *inter alia*, global warming, sea level rise, more frequent and extreme droughts, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes.

243. Throughout the times at issue and continuing today, fossil fuel products presented and still present a substantial risk of injury to Plaintiff and its citizens

and natural resources through the climate effects described above.

244. Throughout the times at issue, the ordinary consumer would not recognize that the use of fossil fuel products causes global and localized changes in climate, including those effects described herein, and could not ordinarily discover or protect themselves against those dangers in the absence of adequate warnings.

245. Throughout the times at issue, Defendants individually and in concert widely disseminated marketing materials, refuted the scientific knowledge generally accepted at the time, advanced pseudo-scientific theories of their own, and developed public relations campaigns and materials that prevented reasonable consumers from recognizing the risk that fossil fuel products would cause grave climate changes, including those described herein.

246. Defendants, and each of them, breached their duty to warn by failing to adequately warn customers, consumers, regulators, and the general public of the known and foreseeable risks posed by their fossil fuel products, and the consequences that inevitably follow from their use.

247. As a direct and proximate result of the defects previously described, fossil fuel products, Plaintiff State of Rhode Island has sustained and will sustain other substantial expenses and damages set forth in this Complaint within the jurisdictional limits of this Court, including damage to publicly owned infrastructure and real property, and injuries to public trust resources that interfere with the rights of the State and its citizens.

248. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and comele in the atmosphere.

249. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

250. Wherefore, the State of Rhode Island prays for relief as set forth below.

### **THIRD CAUSE OF ACTION**

#### **Strict Liability for Design Defect**

##### **(Against All Defendants)**

251. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

252. Defendants, and each of them, extracted raw fossil fuel products, including crude oil, coal, and natural gas from the Earth and placed those fossil fuel products into the stream of commerce; and owed a duty to all persons whom Defendants' fossil fuel

products might foreseeably harm, including Plaintiff, not to market any product which is unreasonably dangerous for its intended use.

253. Defendants, and each of them, extracted, refined, formulated, designed, packaged, distributed, tested, constructed, fabricated, analyzed, recommended, merchandised, advertised, promoted, and/or sold fossil fuel products, which were intended by Defendants, and each of them, to be burned for energy, refined into petrochemicals, and refined and/or incorporated into petrochemical products including but not limited to fuels and plastics.

254. Defendants, and each of them, heavily marketed, promoted, and advertised fossil fuel products and their derivatives, which were sold or used by their respective affiliates and subsidiaries. Defendants' received direct financial benefit from their affiliates' and subsidiaries' sales of fossil fuel products. 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.

255. Throughout the time at issue, fossil fuel products have not performed as safely as an ordinary consumer would expect them to, and have been unreasonably dangerous for their intended, foreseeable, and ordinary use, because greenhouse gas emissions from their use cause numerous global and local changes to Earth's climate. In particular, ordinary consumers did not expect that:



- a. fossil fuel products are the primary cause of global warming since the dawn of the Industrial Revolution, and by far the primary cause of global warming acceleration in the 20th and 21st centuries;
- b. fossil fuel products would cause acceleration of sea level rise since the beginning of the 20th century;
- c. normal use of fossil fuel products would cause more frequent and extreme drought;
- d. normal use of fossil fuel products would cause more frequent and extreme precipitation events;
- e. normal use of fossil fuel products would cause more frequent and extreme heat waves;
- f. normal use of fossil fuel products would cause other injurious changes to the environment as alleged herein;
- g. by increasing sea level rise and increasing the severity and intensity of droughts, extreme precipitation events, heat waves, and the associated consequences of those physical and environmental changes, fossil fuel products cause damage to publicly and privately-owned infrastructure and buildings, including homes;
- h. the social cost of each ton of CO<sub>2</sub> emitted into the atmosphere increases as total global emissions increase, so that unchecked extraction and consumption of fossil fuel products is more harmful and costly than moderated extraction and consumption; and
- i. for these reasons and others, the unmitigated use of fossil fuel products present significant threats to the environment and human health and welfare.

256. Throughout the times at issue, Defendants individually and in concert widely disseminated marketing materials, refuted the scientific knowledge generally accepted at the time, advanced pseudo-scientific theories of their own, and developed public relations materials, among other public messaging efforts, that prevented reasonable consumers from forming an expectation that fossil fuel products would cause grave climate changes, including those described herein.

257. The risks posed to consumers and the general public, including and especially to Rhode Island and its citizens, by Defendants' defective fossil fuel products outweigh those products' benefits, because, *inter alia*:

a. the gravity of the potential harms caused by fossil fuel products is extreme; global warming and its attendant consequences are guaranteed to occur following the use of fossil fuel products because such use inherently releases greenhouse gases into the atmosphere; and global warming would continue to occur for decades even if all greenhouse gas emissions ceased;

b. the social benefit of the purpose of placing fossil fuels into the stream of commerce is overshadowed by the availability of other sources of energy that could have been placed into the stream of commerce that would not have caused global warming, its associated consequences including those described herein, and accordingly Plaintiff's injuries; Defendants, and each of them, knew of the external costs of placing their fossil fuel products into the stream of commerce, and rather than striving to mitigate those externalities, instead acted

affirmatively to obscure them from public consciousness;

c. Defendants' campaign of disinformation regarding global warming and the climatic effects of fossil fuel products prevented customers, consumers, regulators, and the general public from taking steps to mitigate the inevitable consequences of fossil fuel consumption, and incorporating those consequences into either short-term decisions or long-term planning;

d. the cost to society of each ton of CO<sub>2</sub> emitted into the atmosphere increases as total global emissions increase so that unchecked extraction and consumption of fossil fuel products is more harmful and costly than moderated extraction and consumption; and

e. it was practical for Defendants, and each of them, in light of their extensive knowledge of the hazards of placing fossil fuel products into the stream of commerce, to pursue and adopt known, practical, and available technologies, energy sources, and business practices that would have mitigated their greenhouse gas pollution and eased the transition to a lower carbon economy, reduced global CO<sub>2</sub> emissions, and mitigated the harms associated with the use and consumption of such products.

258. The above-described defects were beyond the knowledge of an ordinary consumer, and neither Plaintiff nor any ordinary consumer could have avoided the harm caused by Defendants' defective fossil fuel products by the exercise of reasonable care.

259. Defendants' individual and aggregate fossil fuel products reached the consumer in a condition substantially unchanged from that in which it left Defendants' control; and were used in the manner in

which they were intended to be used by individual and corporate consumers; the result of which was the addition of CO<sub>2</sub> emissions to the global atmosphere with attendant global and local consequences.

260. As a direct and proximate result of the defects previously described, fossil fuel products, Plaintiff State of Rhode Island has sustained and will sustain other substantial expenses and damages set forth in this Complaint within the jurisdictional limits of this Court, including damage to publicly owned infrastructure and real property, and injuries to public trust resources that interfere with the rights of the State and its citizens.

261. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and commingle in the atmosphere.

262. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

263. Wherefore, the State of Rhode Island prays for relief as set forth below.

**FOURTH CAUSE OF ACTION**

**Negligent Design Defect**

**(Against All Defendants)**

264. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

265. Defendants knew or should have known of the climate effects inherently caused by the normal use and operation of their fossil fuel products, including the likelihood and likely severity of global and local sea level rise and its consequences, and including injuries to Plaintiff, its citizens, and its natural resources, as described herein.

266. Defendants, collectively and individually, had a duty to use due care in developing, designing, testing, inspecting, and distributing their fossil fuel products. That duty obligated Defendants collectively and individually to, *inter alia*, prevent defective products from entering the stream of commerce, and prevent reasonably foreseeable harm that could have resulted from the ordinary use of Defendants' products.

267. Defendants, and each of them, breached their duty of due care by, *inter alia*:

a. allowing fossil fuel products to enter the stream of commerce, despite knowing them to be defective due to their inevitable propensity to cause sea level rise, more frequent and extreme drought, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated

consequences of those physical and environmental changes;

b. failing to act on the information and warnings they received from their own internal research staff, as well as from the international scientific community, that the unabated extraction, promotion, and sale of their fossil fuel products would result in material dangers to the public, including the State of Rhode Island and its citizens and natural resources;

c. failing to take actions including, but not limited to, pursuing and adopting known, practical, and available technologies, energy sources, and business practices that would have mitigated greenhouse gas pollution caused by Defendants' fossil fuel products and eased the transition to a lower carbon economy; shifting to non-fossil fuel products, and researching and/or offering technologies to mitigate CO<sub>2</sub> emissions in conjunction with sale and distribution of their fossil fuel products; and pursuing other available alternatives that would have prevented or mitigated the injuries to Plaintiff, its citizens, and its natural resources caused by sea level rise, more frequent and extreme drought, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes, that Defendants, and each of them, knew or should have foreseen would inevitably result from use of Defendants' fossil fuel products;

d. engaging in a campaign of disinformation regarding global warming and the climatic effects of fossil fuel products that prevented customers, consumers, regulators, and the general public from staking steps to mitigate the inevitable consequences of fossil fuel consumption, and incorporating those

consequences into either short-term decisions or long-term planning.

268. Defendants' individual and collective acts and omissions were actual, substantial causes of sea level rise, more frequent and extreme drought, more frequent and extreme precipitation events, more frequent and extreme heat waves, and the associated consequences of those physical and environmental changes, including injuries and damages set forth herein to Plaintiff, its citizens, and its natural resources, as sea levels would not have risen to the levels that caused those injuries, and prevailing climatic and meteorological regimes would not have been disrupted to a magnitude that caused those injuries, but for Defendants' introduction of their fossil fuel products into the stream of commerce.

269. As a direct and proximate result of Defendants' and each of their acts and omissions, Plaintiff State of Rhode Island has sustained and will sustain other substantial expenses and damages set forth in this Complaint within the jurisdictional limits of this Court, including damage to publicly owned infrastructure and real property, and injuries to public trust resources that interfere with the rights of the State and its citizens.

270. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and commingle in the atmosphere.

271. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

272. Wherefore, the State of Rhode Island prays for relief as set forth below.

**FIFTH CAUSE OF ACTION**

**Negligent Failure to Warn**

**(Against All Defendants)**

273. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

274. Defendants, and each of them, at all times had a duty to issue adequate warnings to Plaintiff, the public, consumers, and public officials of the reasonably foreseeable or knowable risks posed by their fossil fuel products.

275. Defendants knew or should have known, based on information passed to them from their internal research divisions and affiliates and/or from the international scientific community, of the climate effects inherently caused by the normal use and operation of their fossil fuel products, including the likelihood and likely severity of global warming, global and local sea level rise, more frequent and extreme drought, more frequent and extreme precipitation events, more frequent and extreme heat waves, and



the associated consequences of those physical and environmental changes, including Plaintiff's injuries and damages described herein.

276. Defendants knew or should have known, based on information passed to them from their internal research divisions and affiliates and/or from the international scientific community, that the climate effects described herein rendered their fossil fuel products dangerous, or likely to be dangerous, when used as intended.

277. Throughout the times at issue, Defendants breached their duty of care by failing to adequately warn any consumers or any other party of the climate effects that inevitably flow from the intended use of their fossil fuel products.

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

279. Given the grave dangers presented by the climate effects that inevitably flow from the normal use of fossil fuel products, a reasonable extractor, manufacturer, formulator, seller, or other participant responsible for introducing fossil fuel products into the stream of commerce, would have warned of those known, inevitable climate effects.

280. Defendants' conduct was a direct and proximate cause of Plaintiff's injuries and a

substantial factor in the harms suffered by Plaintiff as alleged herein.

281. As a direct and proximate result of Defendants' and each of their acts and omissions, Plaintiff State of Rhode Island has sustained and will sustain other substantial expenses and damages set forth in this Complaint within the jurisdictional limits of this Court, including damage to publicly owned infrastructure and real property, and injuries to public trust resources that interfere with the rights of the State and its citizens.

282. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and come in in the atmosphere.

283. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

284. Wherefore, the State of Rhode Island prays for relief as set forth below.

**SIXTH CAUSE OF ACTION****Trespass****(Against All Defendants)**

285. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

286. Plaintiff owns, leases, occupies, and/or controls real property throughout the State.

287. Defendants, and each of them, have intentionally, recklessly, or negligently caused flood waters, extreme precipitation, landslides, saltwater, and other materials, to enter Plaintiff's property, by extracting, refining, formulating, designing, packaging, distributing, testing, constructing, fabricating, analyzing, recommending, merchandising, advertising, promoting, marketing, and/or selling fossil fuel products, knowing those products in their normal operation and use would cause global and local sea levels to rise, more frequent and extreme droughts to occur, more frequent and extreme precipitation events to occur, more frequent and extreme heat waves to occur, and the associated consequences of those physical and environmental changes.

288. The State of Rhode Island did not give permission for Defendants, or any of them, to cause floodwaters, extreme precipitation, landslides, saltwater, and other materials to enter its property as a result of the use of Defendants' fossil fuel products.

289. The State of Rhode Island has been and continues to be actually injured and continues to suffer damages within the jurisdictional limits of this Court as a result of Defendants and each of their

having caused flood waters, extreme precipitation, landslides, saltwater, and other materials, to enter its real property, by *inter alia* submerging real property owned by Rhode Island and causing flooding which has invaded and threatens to invade real property owned by Rhode Island and rendered it unusable, causing storm surges and heightened waves which have invaded and threatened to invade real property owned by Rhode Island, and causing landslides to enter the State's property, and in so doing, rendering the property unusable.

290. Defendants' and each Defendant's introduction of their fossil fuel products into the stream of commerce was a substantial factor in causing the injuries and harms to Rhode Island's public and private real property as alleged herein.

291. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and comingle in the atmosphere.

292. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and

deter Defendants from ever committing the same or similar acts.

293. Wherefore, the State of Rhode Island prays for relief as set forth below.

### **SEVENTH CAUSE OF ACTION**

#### **Impairment of Public Trust Resources**

##### **(Against All Defendants)**

294. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

295. The Rhode Island Constitution has enshrined common law to provide for broad protection of the State's natural resources, and guarantees that its citizens "shall continue to enjoy and freely exercise all the rights of fishery, and the privileges of the shore, to which they have been heretofore entitled under the charter and usages of this state, including but not limited to fishing from the shore, the gathering of seaweed, leaving the shore to swim in the sea and passage along the shore; and they shall be secure in their rights to the use and enjoyment of the natural resources of the state with due regard for the preservation of their values." R.I. Const. art. I, § 17.

296. The Rhode Island Constitution provides that the "powers of the state" to "regulate and control the use of land and waters in the furtherance of the preservation, regeneration, and restoration of the natural environment . . . as those rights and duties are set forth in Section 17, shall be an exercise of the police powers of the state, [and] shall be liberally construed." R.I. Const. art. I, § 16.

297. The General Assembly has repeatedly declared that coastal resources of the State, plant and

animal life within the State, and the State's watershed are critical natural resources inuring to the benefit of the public. The General Assembly has thus found and declared that "the coastal resources of Rhode Island, a rich variety of natural, commercial, industrial, recreational, and aesthetic assets, are of immediate and potential value to the present and future development of this state," and that "it shall be the policy of this state to preserve, protect, develop, and, where possible, restore the coastal resources of the state for this and succeeding generations." R.I. Gen. Laws §§ 46-6.1-2(5); 46-23-1(a)(2).

298. The General Assembly has further found and declared that "Narragansett Bay may be the greatest natural resource of the state of Rhode Island," and that failure to protect the environmental integrity of the Narragansett Bay will create "severe and detrimental ecological and economic impact upon the people of the state of Rhode Island." R.I. Gen. Laws § 46 5 2(a)(2).

299. The General Assembly has further found and declared that "the bays, rivers, and associated watersheds of Rhode Island are unique and unparalleled natural resources that provide significant cultural, ecological, and economic benefit to the state," and that "it is in the best interest of the state and its citizens to preserve, protect, and restore our bays, rivers, and associated watersheds." R.I. Gen. Laws § 46 31 .1-1(1),(3).

300. The General Assembly has further found and declared that "animal life inhabiting the lands of the state, its lakes, ponds, streams, and rivers, and the marine waters within its territorial jurisdiction, are a precious, renewable, natural resource of the state." R.I. Gen. Laws § 20-1-1(a).

301. As alleged above, Defendants, through their affirmative acts and omissions have interfered with the use and enjoyment of public trust resources within Rhode Island including the fisheries, shores, and other coastal resources of the State; plant and animal life within the State; and the State's watershed by, *inter alia*, increasing local sea level, and associated flooding, inundation, erosion, and other impacts within the State; increasing the frequency and intensity of drought in the State; altering and harming the diversity of wildlife in the State's coastal waters and fisheries; harming salt marsh ecosystems within the State; increasing the frequency and intensity of extreme heat days in the State; and increasing the frequency and intensity of extreme precipitation events in the State.

302. As a direct and proximate result of the defects previously described, fossil fuel products, the public trust resources over which the State serves as trustee have been injured, and the use and enjoyment of those resources by Rhode Island and its citizens has been impaired. As a result, the State of Rhode Island has incurred and will continue to incur substantial expenses and damages set forth in this Complaint within the jurisdictional limits of this Court to investigate, remediate, prevent, and restore injuries to public trust resources, for which Defendants are jointly and severally liable.

303. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear

markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and come in in the atmosphere.

304. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

305. Wherefore, the State of Rhode Island prays for relief as set forth below.

### **EIGHTH CAUSE OF ACTION**

#### **State Environmental Rights Act, Equitable Relief Action**

#### **(Against All Defendants)**

306. Plaintiff State of Rhode Island realleges each and every allegation contained above, as though set forth herein in full.

307. The General Assembly has further found and declared that "each person is entitled by right to the protection, preservation, and enhancement of air, water, land, and other natural resources located within the state," and that "it is in the public interest to provide an adequate civil remedy to protect air, water, land and other natural resources located within the state from pollution, impairment, or destruction." R.I. Gen. Laws § 10-20-1.

308. The General Assembly has defined "pollution, impairment, or destruction" to include "any conduct



which materially adversely affects or is likely to materially adversely affect the environment.” R.I. Gen. Laws § 10-20-2(6).

309. The Attorney General “may maintain an action in any court of competent jurisdiction for declaratory and equitable relief against any other person for the protection of the environment, or the interest of the public therein, from pollution, impairment, or destruction,” and may “take all possible action, including . . . formal legal action, to secure and insure compliance with the provisions of this chapter.” R.I. Gen. Laws § 10-20-3(b), (d)(1), (d)(5).

310. In such an action maintained by the Attorney General, “[t]he court may grant declaratory relief, temporary and permanent equitable relief, or may impose such conditions upon a party as are necessary or appropriate to protect the air, water, land, or other natural resources located within the state from pollution, impairment, or destruction, considering the health, safety, and welfare of the public, and the availability of feasible, prudent, and economically viable alternatives.” R.I. Gen. Laws § 10-20-6.

311. As alleged above, Defendants, through their affirmative acts and omissions have polluted, impaired, and/or destroyed natural resources of the state by, *inter alia*, increasing local sea level, and associated flooding, inundation, erosion, and other impacts within the State; increasing the frequency and intensity of drought in the State; increasing the frequency and intensity of extreme heat days in the State; and increasing the frequency and intensity of extreme precipitation events in the State.

312. As a direct and proximate result of Defendants' fossil fuel products, Defendants have polluted, impaired, and/or destroyed natural resources of the state. Rhode Island has incurred and will continue to incur substantial expenses and damages set forth in this Complaint within the jurisdictional limits of this Court to investigate, remediate, prevent, and restore injuries to public trust resources, for which Defendants are jointly and severally liable.

313. Defendants' acts and omissions as alleged herein are indivisible causes of Plaintiff State of Rhode Island's injuries and damage as alleged herein, because, *inter alia*, it is not possible to determine the source of any particular individual molecule of CO<sub>2</sub> in the atmosphere attributable to anthropogenic sources because such greenhouse gas molecules do not bear markers that permit tracing them to their source, and because greenhouse gasses quickly diffuse and coningle in the atmosphere.

314. Defendants' wrongful conduct was willful, reckless, or wicked, with conscious disregard for the probable dangerous consequences of that conduct and its foreseeable impact upon the rights of others, including the State of Rhode Island. Therefore, the State requests an award of punitive damages in an amount reasonable, appropriate, and sufficient to punish these Defendants for the good of society and deter Defendants from ever committing the same or similar acts.

315. Wherefore, the State of Rhode Island prays for relief as set forth below.

## **VII. PRAYER FOR RELIEF**

The Plaintiff, **STATE OF RHODE ISLAND**, seeks judgment against these Defendants for:

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1. Compensatory damages in an amount according to proof;
2. Equitable relief, including abatement of the nuisances complained of herein;
3. Reasonable attorneys' fees as permitted by law;
4. Punitive damages;
5. Disgorgement of profits;
6. Costs of suit; and
7. For such and other relief as the court may deem proper.

**REQUEST FOR JURY TRIAL**

Plaintiff hereby demands a jury trial on all causes of action for which a jury is available under the law.

Dated: July 2, 2018

**STATE OF RHODE ISLAND**

By Its Attorneys,

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