ANNEX A

I. Defendants are responsible for causing and accelerating climate change.

1. Human-caused warming of the Earth is unequivocal. The atmosphere and the oceans are warming, sea levels are rising, snow and ice cover is declining, the oceans are acidifying and hydrological systems have been altered, among other environmental changes.[1]

2. The mechanism by which human activity causes global warming and Climate disruption is well established: warming of the oceans and atmosphere is overwhelmingly caused by anthropogenic greenhouse gas emissions (caused by man).

3. Greenhouse gases are largely byproducts of burning fossil fuels by humans to produce energy and the use of fossil fuels to create petrochemical products. Although there are several greenhouse gases greenhouse that contribute to climate change, CO2 is the main greenhouse gas greenhouse emitted by human activities.

4. Before World War II, most anthropogenic emissions of CO2 were due to land use practices, such as forestry and agriculture, which altered the ability of the earth and the global biosphere to absorb CO2 from the atmosphere; the The impacts of such activities on the Earth's climate were relatively minor.

5. However, since then, both the annual rate and the total volume of Anthropogenic CO2 emissions have increased enormously following the arrival of large uses of oil, gas and coal.

6. The following graph illustrates that fossil fuel emissions are the source dominant increase in atmospheric CO2 since the mid-20th century:

[1] 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).

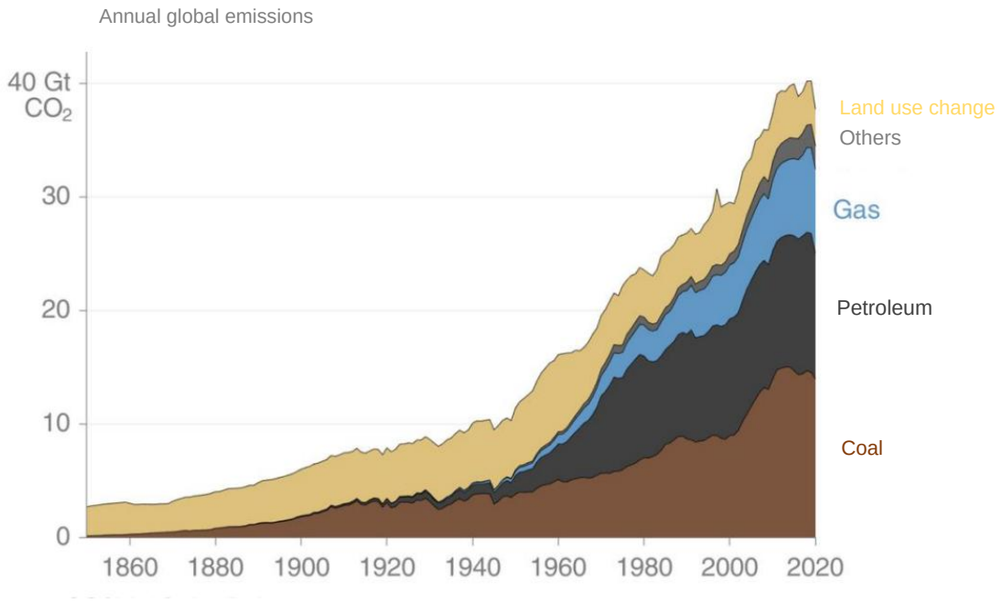

Figure 3: Annual global emissions, 1850-20202

7. The recent acceleration of fossil fuel emissions has caused the correspondingly pronounced increase in the atmospheric concentration of CO2. Since 1960, the CO2 concentration in the atmosphere has increased from less than 320 parts per million ("ppm") to approximately 419 ppm.3 The growth rate of atmospheric CO2 has also been increasing. From 1960 to 1970, atmospheric CO2 increased by an average of about 1 ppm per year; over the past five years, it has increased about 2.5 ppm per year.4

8. The following graph indicates the close link between the sharp increase in emissions from the burning of fossil fuels and the sharp increase in atmospheric CO2 concentrations.

[2] Global Carbon Project, Global Carbon Budget 2021 https://www.globalcarbonproject.org/ 83 (Nov. 4, 2021), carbonbudget/21/files/GCP_CarbonBudget_2021.pdf.

[3] Global Monitoring Laboratory, Trends in Atmospheric Carbon Dioxide, NOAA (last visited Sept. 30, 2022), https://www.esrl.noaa.gov/gmd/ccgg/trends.

[4] Ibid.

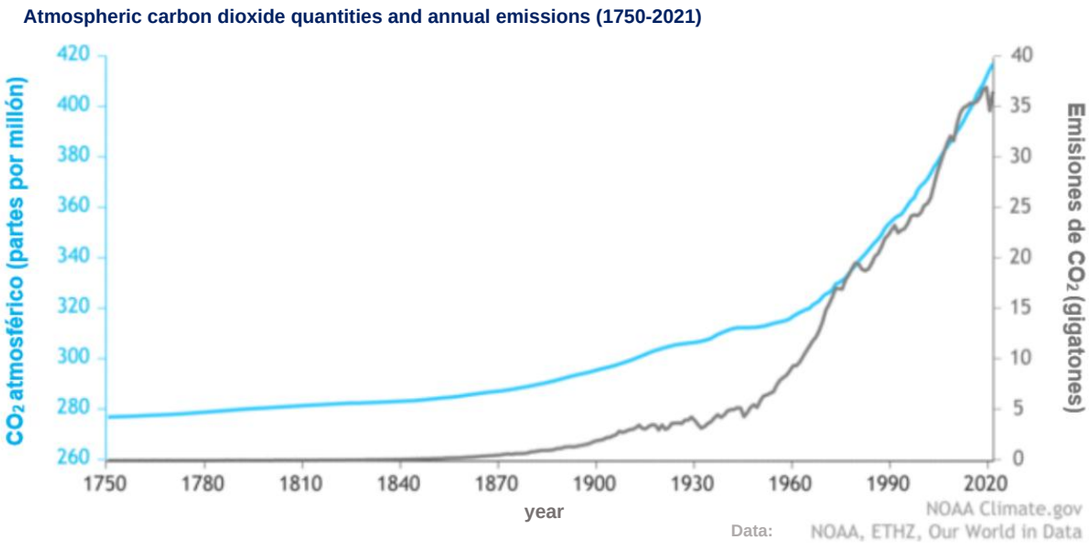

Figure 4: Atmospheric CO2 concentration and annual emissions5

9. Due to the increased burning of fossil fuel products, concentrations of greenhouse gases in the atmosphere have reached a level without precedents for at least three million years.6

10. As greenhouse gases accumulate in the atmosphere, the Earth radiates less energy into space. This accumulation and the associated disturbance of balance Earth's energy has innumerable environmental and physical consequences, including, among others, the following:

a. Warming of the average temperature of the Earth's surface, both at a local and global level, and an increase in the frequency and intensity of heat waves; until the To date, the global average air temperature has increased by approximately 1.09 °C (1.9 °F) per above pre-industrial temperatures; temperatures in certain places have increased more;

b. Rise in sea level, due to thermal expansion of the warming ocean waters and runoff from melting glaciers and ice sheets;

c. Floods and waterlogging of land and infrastructure, increase in erosion, increase in waves and tides, increase in frequency and severity of storm surges cyclonic, saltwater intrusion and other impacts of sea level rise;

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

[6] Science Daily, More CO2 Than Ever Before in 3 Million Years, Shows Unprecedented Computer Simulation (Apr. 3, 2019), https://www.sciencedaily.com/releases/2019/04/190403155436.htm.

d. Changes in global climate generally towards more dry periods prolonged periods interspersed with fewer and more severe periods of precipitation, and the impacts associated in the quantity and quality of water resources available for human systems and ecological;

It is. Ocean acidification, due to increased absorption of carbon dioxide atmospheric carbon through the oceans;

f. Greater frequency and intensity of precipitation and phenomena extreme weather due to the increased capacity of the atmosphere to retain humidity and increased evaporation;

g. Changes in terrestrial and marine ecosystems and the consequent impacts on the variety of flora and fauna; and

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

11. As discussed below, these consequences of unlawful conduct and Defendants' misleading and exacerbating climate crisis is already impacting Puerto Rico, its communities and its natural resources, and will continue to increase in severity in Puerto Rico. Without Defendants' exacerbation of global warming caused for your deceptive and unlawful conduct as alleged herein, the physical changes and current environmental impacts caused by global warming would have been much smaller than the observed to date. Similarly, the effects that will occur in the future will also would be much less harmful or avoided altogether.7

12. From at least 1965 to the present, Defendants improperly inflated the market for fossil fuel products by aggressively promoting the use of fossil fuel products fossil fuels despite knowing the dangers associated with those products, and at the same time mislead consumers and the public about the consequences of normal use of fossil fuels, including failing to warn and misrepresenting and concealing the dangers of such products. As a result, a substantially of anthropogenic greenhouse gases than would have been emitted without that unlawful and deceptive conduct, exacerbating the effects of those emissions than would otherwise have been the case.

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7 See, eg, 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 model suggests that the footprint of human carbon of around [470 billion tonnes] by the year 2000...has already committed the Earth to a global average sea level rise of ~1.7m (range 1.2 to 2.2 m).”

produced in another way and causing greater damage to Puerto Rico. illicit conduct, Defendants' misleading and unconscionable conduct, as alleged herein, caused a substantial portion of greenhouse gas emissions in the global atmosphere. concentrations, and past, current and future disturbances to the environment (and consequent damages to Puerto Rico, its communities and its resources) associated with them.

13. The Defendants, individually and collectively, have contributed substantial and measurable damage related to the climate crisis in Puerto Rico.

II. Defendants made every effort to understand and knew, or should have known, the dangers associated with their fossil fuel products.

14. The fossil fuel industry is aware of the possible effects of warming greenhouse gas emissions since the 1950s, developing a sophisticated understanding of climate change that far surpassed the knowledge of the public, common consumers and the Commonwealth. Although hidden at that time, industry knowledge was later discovered by journalists from Inside Climate News and the Los Angeles Times, among others.[8] In 1954, geochemist Harrison Brown and his colleagues at the California Institute of Technology wrote to API to inform the trade association that preliminary measurements of natural carbon archives in the Tree rings indicated that fossil fuels had caused levels of Atmospheric carbon dioxide will increase by approximately 5% since 1840.[9] The API funded scientists for several research projects, and measurements of carbon dioxide carbon continued for at least a year and possibly longer, although the results never were published or made available to the public.[10]

15. In 1957, H.R. Brannon of Humble Oil (exxonMobil's predecessor in interest) measured an increase in atmospheric carbon dioxide similar to that measured by Harrison Brown. Brannon reported this information to API. Brannon knew Brown's measurements, the He compared them with his own and found that they matched. Brannon published his results in the scientific literature, which was available to the Defendants and/or their predecessors in interest.[11]

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[8] See discussion infra ¶¶ 137–38.

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

[10] Id.

[11] 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).

16. In 1959, the API organized a centennial celebration of the oil industry American at Columbia University in New York City.12 They attended high-level representatives of the Defendants. One of the keynote speakers was physicist Nuclear Edward Teller. Teller warned the industry that "an increase in temperature corresponding to a 10 [%] increase in carbon dioxide will be enough to melt the ice layer and submerge. . . [a]ll coastal cities." Teller added that since "A considerable percentage of the human race lives in coastal regions, I believe this chemical pollution is more serious than most people believe."13

17. After his speech, Teller was asked to "briefly summarize the danger of the increase in the carbon dioxide content in the atmosphere in this century." He responded that "There is a possibility that the polar caps will begin to melt and the level of oceans begin to rise."14

18. In 1965, concern about the potential of fuel products fossils of causing disastrous global warming reached the highest levels of the scientific community of the United States. That year, the Environmental Pollution Panel of the President Lyndon B. Johnson's Scientific Advisory Committee reported that a 25% increase in carbon dioxide concentrations could occur by the year 2000, such an increase could cause significant global warming, which could lead to melting of the Antarctic ice sheet and rapid sea level rise, and that fuels fossils were the clearest source of carbon dioxide pollution.15

19. Three days after the report of the Scientific Advisory Committee of the President Johnson, API President Frank Ikard Addressed Industry Leaders oil company in Chicago at the trade association's annual meeting. Ikard transmitted the report findings to industry leaders and said:

> The gist of the report is that there is still time to save the world's people from the catastrophic consequences of pollution, but time is running out.16

Ikard also reported that "by the year 2000, the thermal balance will have changed so much that possibly cause marked changes in climate beyond local efforts or even

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12 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 CO2 and Global Warming at 1024–25.

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

14 Id.

15 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.

16 See Franta, Early Oil Industry Knowledge of CO2 and Global Warming at 1024–25.

"and cited the report's conclusion that "pollution from diesel engines
combustion is so severe and increasing so rapidly that it is likely that a medium
non-polluting alternative to power cars, buses and trucks becomes
a national need."17

20. Thus, in 1965, Defendants and their predecessors in interest knew that the scientific community had discovered that fossil fuel products, if used wastefully, would cause global warming by the end of the century, and that Such global warming would have broad and costly consequences.

21. In 1968, API received a report from the Stanford Research Institute, which he had hired to evaluate the status of research on environmental contaminants, including carbon dioxide.18 The evaluation supported the conclusions of the Advisory Council President Johnson's Scientist from three years earlier, where he stated: "It is almost certain that will produce significant temperature changes by the year 2000, and... there seems no doubt that that the potential damage to our environment could be serious." Scientists warned about the "melting of the Antarctic ice sheet" and informed the API that "studies past and present reports on CO2 are detailed and seem to adequately explain the state current of CO2 in the atmosphere". What was missing, the scientists said, was work on "air pollution technology and… systems in which CO2 emissions would be under control".19

22. In 1969, the Stanford Research Institute submitted a report to API supplementary on air pollution, in which he projected with alarming particularity that atmospheric concentrations of CO2 would reach 370 parts per million ("ppm") in the year 2000.20 This projection turned out to coincide almost exactly with the actual CO2 concentrations measured in 2000 of 369.64 ppm.21 The report explicitly linked the increase in CO2 levels with the combustion of fuels fossils, and considered "it is unlikely that the observed increase in atmospheric CO2 has been due to changes in the biosphere.

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[17] Id.

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

[19] Ibid.

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

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

23. By virtue of their membership and participation in the API at that time, the Defendants received or should have received reports from the Research Institute of Stanford and/or summaries of those reports, and were notified of their conclusions.

24. In 1972, API members, including Defendants, received a report of status on all environmental research projects funded by the API. He report summarized the 1968 SRI report that described the impact of fossil fuels (including those of Defendants) into the environment, including global warming and its attendant consequences. The Defendants and/or their predecessors Interested recipients of this report included, among others: 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 entities BP, ExxonMobil and Chevron, among others), Continental (ConocoPhillips), Dupont (former owner of Conoco), Phillips (ConocoPhillips), y Caltex (Chevron).22

25. In 1977, James Black of Exxon's Product Research Division presented before the Management Committee of Exxon Corporation regarding the greenhouse effect. To the The following year, Black appeared before another Exxon internal group, PERCC. In a letter to vice president of Exxon Research and Engineering, Black summarized his presentations.23 He reported that “current scientific opinion is overwhelmingly in favor of attributing the increase in carbon dioxide of atmospheric carbon to the consumption of fossil fuels”, and that doubling carbon dioxide atmospheric carbon, according to the best available climate model, “would produce an increase in average temperature of approximately 2 °C to 3 °C over most of the Earth”, with two or three times more warming at the poles. The following figure, taken from Black's report, illustrates Exxon's understanding of the time scale and magnitude of global warming that their products would cause.

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

[23] 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.

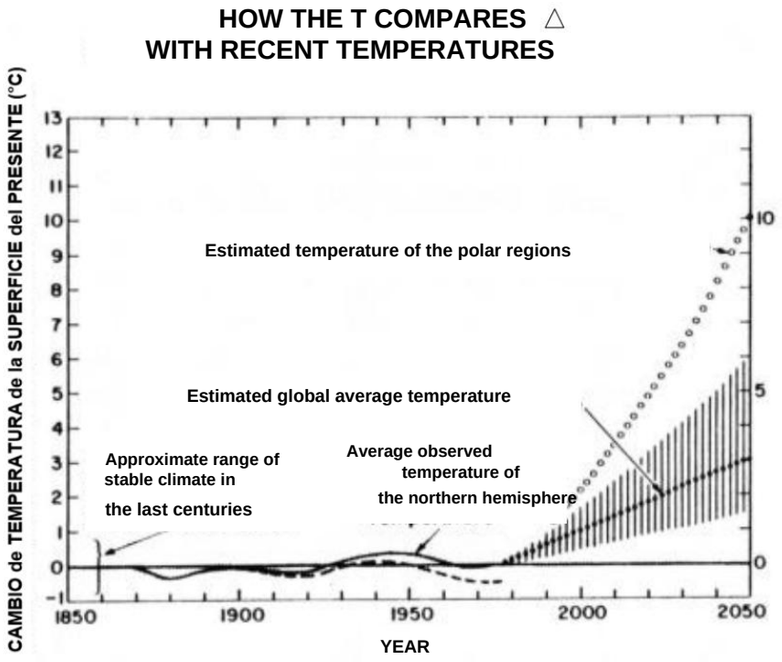

Figure 5: Future global warming predicted internally by Exxon in 197724

26. The effects of this global warming, according to Black, would include “more rain,” which that “would benefit some areas and harm others.” "Some countries would benefit, but others could see their agricultural production reduced or destroyed." "However, even the favored nations would be harmed for a time, as their agricultural patterns and industries have been established based on the current climate." Black reported that “currently It is estimated that humanity has a period of between 5 and 10 years to obtain the information necessary” and “establishing what must be done”, at which point “difficult decisions about changes in energy strategies could become critical.”25

27. Also in 1977, Henry Shaw of the Technology Feasibility Center Exxon Engineering and Research, attended a meeting of scientists and officials governments in Atlanta, Georgia, on developing research programs to study carbon dioxide and global warming. Shaw's internal memo to John W. Harrison of Exxon reported that “[t]he climate effects of the release of carbon dioxide Carbon can be the main limiting factor in the production of energy from fossil fuels[.]”26

[24] Ibid. The company predicted global warming of 3°C by 2050, with warming of 10°C in the polar regions. The difference between the dashed and solid curves before 1977 represents global warming that Exxon believed could already be occurring.

[25] Ibid.

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

28. In 1979, Exxon's WL Ferrall distributed an internal memo.27 According to that memo, “The most widespread theory [about global warming] is that: The increase [in carbon dioxide] is due to the burning of fossil fuels; [t]he increase in CO2 concentration will cause warming of the Earth's surface; [and] the trend current consumption of fossil fuels will cause dramatic environmental effects before the year 2050… The potential problem is big and urgent.” The memo adds that, if they do not put limits on fossil fuel production,

> Noticeable temperature changes would occur around 2010, when the concentration [of carbon dioxide] reaches 400 ppm [parts per million].
> Major climate changes will occur around 2035, when the concentration approaches 500 ppm. Around 2050 there will be a doubling of the pre-industrial concentration [i.e. 580 ppm]. This duplication would cause dramatic changes in the global environment[.]28

Those projections turned out to be remarkably accurate: the average annual concentrations of CO2 in the atmosphere exceeded 400 ppm in 2015 for the first time in millions of years.29 Limit the concentration of carbon dioxide in the atmosphere to 440 ppm, or an increase of 50% of pre-industrial levels, which, according to the memo, "is supposed to be a relatively safe level for the environment", would require that emissions of fossil fuels peaking in the 1990s and rapid deployment of systems non-fossil energy. The memo estimated that eighty percent of the resources of Fossil fuels would have to be left underground to avoid doubling carbon dioxide concentrations in the atmosphere. Some fossil fuels, such as shale oil, could not be exploited substantially at all.

29. But instead of heeding repeated warnings about the impacts catastrophic effects of climate change resulting from the burning of fossil fuels, in November In 1979, Henry Shaw of Exxon wrote to Harold Weinberg of Exxon urging “a program very aggressive defensive in… atmospheric science and climate because there is a good probability passing legislation that affects our business.”30 Shaw stated that it was necessary expand the research effort to “influence possible legislation on controls “environmental” and “respond” to environmental groups, who had already opposed the

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[27] Letter from W.L. Ferrall, Exxon Research and Engineering Co., to Dr. R.L. Hirsch, Controlling Atmospheric CO2, Climate Investigations Ctr. (Oct. 16, 1979), https://www.industrydocuments.ucsf.edu/docs/mqwl0228.

[28] Ibid.

[29] 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.

[30] 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.

synthetic fuel programs based on CO2 emissions. Shaw suggested formation of a “small working group” to evaluate a potential program on CO2 and climate, acid rain, carcinogenic particles and other pollution problems caused by fossil fuels.31

30. In 1979, the API and its members, including the Defendants, convened a group to monitor and share cutting-edge climate research among the oil industry. The group was initially called the CO2 and Climate Working Group, but in In 1980 it changed its name to the Climate and Energy Working Group (hereinafter, “Group of Work on CO2”). Among the members were high-level scientists and engineers of almost all major US oil and gas and multinational companies, including Exxon, Mobil (ExxonMobil), Amoco (BP), Phillips (ConocoPhillips), Texaco (Chevron), Shell, Sohio (BP), Standard Oil of California (Chevron), and Gulf Oil (Chevron), among others. The group of Labor was responsible for monitoring academic and government research, evaluating implications of emerging science for the oil and gas industries, and identify where reductions could be made in greenhouse gas emissions from Defendants' fossil fuel products.32

31. In 1979, API prepared an information document on carbon dioxide and climate for the CO2 Working Group, stating that CO2 concentrations were steadily rising in the atmosphere and predicting when they might be detected the first clear effects of global warming.33 The API informed its members that, Although global warming would occur, it would probably not be detected until around the year 2000 because, API believed, its effects were temporarily masked by a natural cooling trend. However, the API warned its members that this cooling trend would reverse around 1990, adding to the warming caused by CO2.

32. In 1980, the API CO2 Working Group invited Dr. John Laurmann, “a recognized expert in the field of CO2 and climate”, to make a presentation to his

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31 Ibid.

32 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.

33 Memorandum from R.J. Campion to J.T. Burgess, The API’s Background Paper on CO2 Effects, Climate Investigations Ctr. (Sep. 6, 1979), https://www.industrydocuments.ucsf.edu/docs/lqwl0228.

members.34 The meeting lasted seven hours and included a “full technical discussion” on the global warming caused by fossil fuels, including “the scientific basis and technical evidence of CO2 accumulation , impact on society, methods of modeling and its consequences, uncertainties and political and conclusions that can be drawn from current knowledge. They were present representatives from Standard Oil of Ohio (predecessor of BP), Texaco (now Chevron), Exxon and API, and the minutes of the meeting were distributed to the entire API CO2 Working Group . Laurmann informed the Working Group about the “scientific consensus on the potential of a large future climate response to rising CO2 levels ” and that there was “evidence strong empirical evidence that [the increase in carbon dioxide] [was] caused by the release anthropogenic CO2 emissions, mainly from the burning of fossil fuels. Unless control the production and use of fossil fuels, atmospheric carbon dioxide would double pre-industrial levels by 2038, with “likely impacts” throughout the following trajectory:

> 1 °C INCREASE (2005): JUST PERCEPTIBLE
>
> INCREASE OF 2.5 °C (2038): MAIN CONSEQUENCES ECONOMIC, STRONG REGIONAL DEPENDENCY
>
> INCREASE OF 5 °C (2067): CATASTROPHIC EFFECTS AT THE LEVEL WORLD

Laurmann warned the CO2 Working Group that global warming of 2.5°C “would stop global economic growth[.]” Laurmann also suggested that take action immediately and asked, “Is it time to act?” and pointing out that if achieving a strong market introduction of new energy sources would require a long time (i.e. say, decades), then there would be “no room” to delay it. The minutes of the Group meeting of the Working Group on CO2 show that one of the objectives of the Working Group was “to help develop basic rules for fuel cleanliness in relation to the creation of CO2”, and the Working Group discussed the requirements for a “switching of energy sources” around the world, away from fossil fuels.35

33. In 1980, Imperial Oil Limited (a Canadian subsidiary of ExxonMobil) informed managers and environmental personnel of multiple affiliated companies of Esso and Exxon that “do not “There was no doubt” that fossil fuels were aggravating the accumulation of CO2 in the

[34] Letter from Jimmie J. Nelson, American Petroleum Institute, to AQ-9 Task Force, The CO2 Problem; Addressing Research Agenda Development, Climate 1980), https://www.industrydocuments.ucsf.edu/docs/gfbb0228 Ctr. (Mar. 18,

[35] Ibid.

atmosphere.36 Imperial noted that “there is technology to eliminate CO2 from exhaust gases. chimney, but removing only 50% of the CO2 would double the cost of generating energy.”37

34. In December 1980, Henry Shaw of Exxon distributed a memo on the “CO2 Greenhouse Effect .”38 Shaw stated that the future accumulation of carbon dioxide was a function of the use of fossil fuels and that internal calculations made at Exxon indicated that atmospheric carbon dioxide would double around the year 2060. According to the “more accepted” climate models, Shaw reported, this doubling of carbon dioxide “very likely” would result in global warming of approximately 3°C, with a greater effect in the polar regions. Calculations predicting an increase in Lower temperature, like 0.25°C, “were not very appreciated by the scientific community,” he said. Shaw. Shaw also noted that the oceans' ability to absorb heat could delay (but not prevent) the increase in temperature “a few decades”, and that the fluctuations natural and random changes in temperature would hide global warming due to CO2 until approximately the year 2000. The memo included the figure below, which illustrates the global warming anticipated by Exxon, as well as the company's idea that it would occur significant global warming before exceeding the range of natural variability.

[36] 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.

[37] Ibid.

[38] Memorandum from Henry Shaw to T.K. Kett, Exxon Research and Engineering Company’s Technological Forecast: CO2 Greenhouse Effect (Dec. 18, 1980), https://www.documentcloud.org/documents/2805573-1980-Exxon-Memo-Summarizing-Current-Models-And.html.

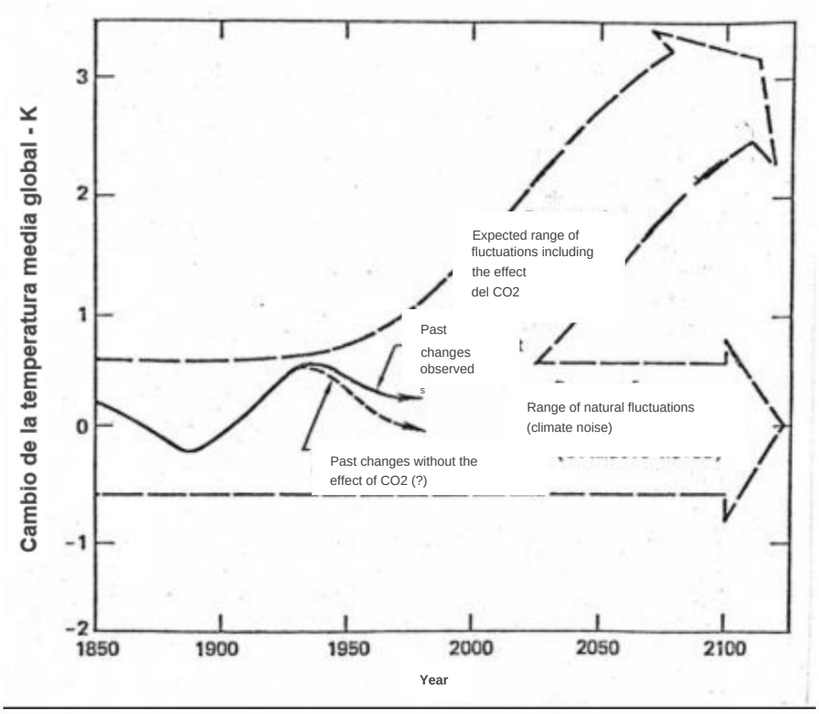

Figure 6: Future global warming predicted internally by Exxon in 198039

The memo reported that global warming would cause “an increase in precipitation […] and increased evaporation,” which would have a “dramatic impact on the soil moisture and, in turn, in agriculture.” Some areas would become deserts and the American Midwest would become “much drier.” “[T]he weeds and pests,” reported the memo, “would tend to thrive with rising global average temperatures.” Other “serious global problems” could also arise, such as the melting of the West Antarctic ice, which “could cause sea level rise on the order of 5 meters". The memo asked that “society” pay the bill, estimating that some adaptation measures would not cost more than “a small percentage” of the National Product Gross (i.e. $400 billion in 2018).40 Exxon predicted they would not adapt national policy measures until around 1989, when the Department of Energy would complete a ten-year study of carbon dioxide and global warming.41 Shaw also reported that Exxon had studied various responses to avoid or reduce the accumulation of carbon dioxide, including “stopping all combustion of fossil fuels at the rate of 1980” and “investigate the introduction into the market of non-fuel technologies

[39] Ibid. The company anticipated a doubling of carbon dioxide around 2060 and that the oceans would delay the warming effect by a few decades, leading to warming of about 3°C by the end of the century.

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

[41] Memorandum from Henry Shaw to T.K. Kett, Exxon Research and Engineering Company’s Technological Forecast: CO2 Greenhouse Effect (Dec. 18, 1980), https://www.documentcloud.org/documents/2805573-1980-Exxon-Memo-Summarizing-Current-Models-And.html.

fossils." The memo estimated that such non-fossil energy technologies "would require 50 years to enter and reach approximately half of the total [energy] market."42

35. In February 1981, Exxon's Contract Research Office prepared and distributed a "CO2 Scoping Study " to leaders at Exxon Research and Engineering Company.43 The study examined Exxon's current research on carbon dioxide. carbon and considered whether to further expand Exxon's carbon dioxide research or global warming at that time. The study recommended not expanding the activities of Exxon's research in those areas because its current research programs were sufficient to achieve the company's objectives of closely monitoring the investigation federal, build public relations credibility and value, and develop internal expertise with regarding CO2 and global warming. However, the study recommended that Exxon centralize your activities in the monitoring, analysis and dissemination of external research on CO2 and global warming. The study claimed that Exxon's James Black was actively monitoring and keeping the company informed of developments external research, including those on climate models and "weather-induced effects." CO2." The study also noted that other companies in the fossil fuel industry They were "auditing government meetings on the issue." Regarding the "options for reduce the accumulation of CO2 in the atmosphere," the study noted that although capturing CO2 from combustion gases (i.e. exhaust gases produced by combustion) was technologically possible, the cost was high and "energy conservation or switching to energy sources "Renewable energy represents the only options that could make sense."44

36. Thus, in 1981, Exxon and other fossil fuel companies were actively monitoring all aspects of CO2 and warming research globally, both nationally and internationally, and Exxon had recognized that it would be necessary a shift towards renewable energy sources to avoid a large accumulation of CO2 in the atmosphere and the resulting global warming.

37. Exxon scientist Roger Cohen warned colleagues in memo internal 1981 that "future developments in global data collection and analysis, together With advances in climate modeling, they can provide strong evidence for an effect

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42 Ibid.

43 Letter from G.H. Long, Exxon Research and Engineering Co., to P.J. Lucchesi et al., Atmospheric CO2 Scoping Study, Climate Investigations Ctr. (Feb. 5, 1981), https://www.industrydocuments.ucsf.edu/docs/yxfl0228.

44 Ibid.

delayed CO2 of a truly substantial magnitude", and that in certain circumstances would be "very likely that we will unambiguously recognize the threat for the year 2000."45 Cohen had expressed concern that the memo underestimated the effects potentials of incessant CO2 emissions from fuel products fossils of Defendants, stating that: "it is clearly possible that [the Division of Exxon Planning]. . produce effects that will in fact be catastrophic (at least for a substantial fraction of the world's population).46

38. In 1981, Exxon's Henry Shaw, the company's top climate researcher at the time, he prepared a summary of Exxon's current position on the greenhouse effect to Edward David Jr., president of Exxon Research and Engineering, which stated in the relevant part:

- "Atmospheric CO2 will double in 100 years if fossil fuels they grow 1.4% annually.
- Increase in global average temperature of 3 °C and 10 °C at the poles if CO2 doubles .
  - o Large changes in rainfall/agriculture
  - o The polar ice could melt"47

39. In 1982, another report prepared for the API by scientists from the Observatory Geologist Lamont-Doherty of Columbia University recognized that the concentration atmospheric CO2 had increased significantly compared to the beginning of the industrial revolution: from approximately 290 ppm to approximately 340 ppm in 1981. The report also acknowledged that, despite differences in model predictions climate, there was scientific consensus that "a doubling of atmospheric CO2 since . . he value of the pre-industrial revolution would result in an average increase in temperature global temperature of (3.0 ± 1.5) °C [5.4 ± 2.7 °F]". Furthermore, he warned that "heating of this type can have serious consequences for man's comfort and survival, as patterns of aridity and precipitation may change, the height of sea level may increase considerably and the global food supply may be affected."48 The

[45] Memorandum from R.W. Cohen to W. Glass, ClimateFiles 1981), http://www.climatefiles.com/exxonmobil/1981-exxon-memo-on-possible-emission-consequences-of-fossil-fuel-consumption.

[46] Ibid.

[47] Memorandum from Henry Shaw to Dr. E.E. David, CO2 Position Statement, Inside Climate News (May 15, 1981) (footnote omitted), https://insideclimatenews.org/documents/exxon-position-co2-1981.

[48] American Petroleum Institute, Climate Models and CO2 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.

Exxon modeling research confirmed this, and the company's results were published subsequently in at least three peer-reviewed scientific articles.49

40. Also in 1982, Exxon's Director of Environmental Affairs distributed a manual on climate change to a “wide circulation [of] Exxon management […] had The objective was to familiarize Exxon personnel with the subject.”50 The manual was “restricted to Exxon personnel and was not to be distributed externally.” The manual compiled scientific data on climate change, confirmed that the burning of fossil fuels is the main anthropogenic contributor to global warming and estimated a doubling of CO2 (i.e. 580 ppm) by 2070 with a "most likely temperature increase" of more than 2 °C during the 1979 level, as shown in the figure below.

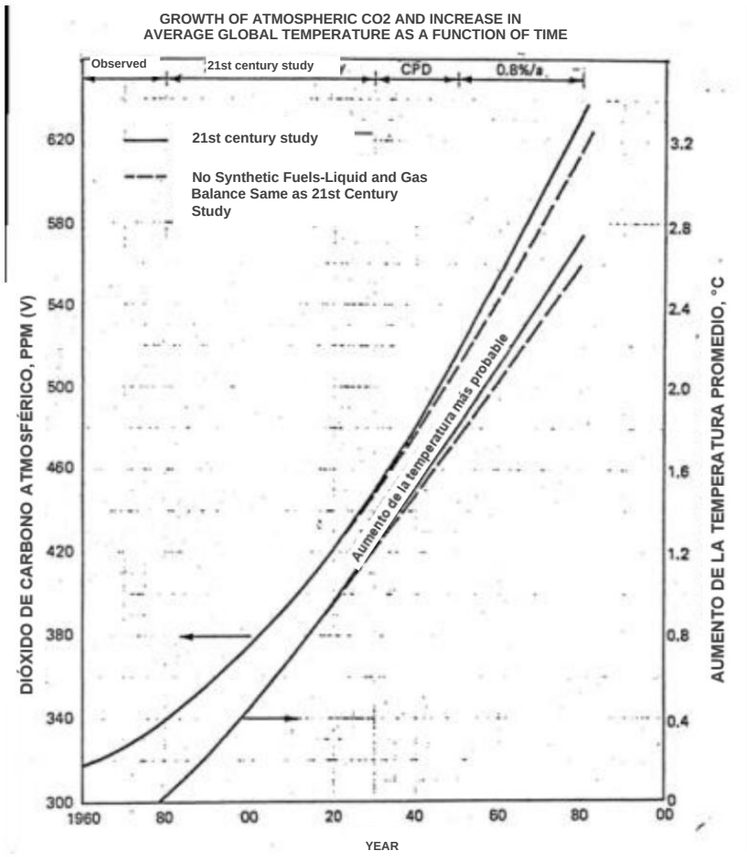

Figure 7: Exxon internal prediction of CO2 rise and future global warming since 198251

The report also warned about the “unequal global distribution of the increase in precipitation and evaporation”, and explained that “disturbances in the current equilibrium

[49] 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 research findings in climate modeling).

[50] Memorandum from M.B. Glaser, CO2 “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.

[51] Ibid. The company predicted that by around 2070 (left curve) atmospheric carbon dioxide concentrations would double from pre-industrial levels, with temperatures rising more than 2°C above the 1979 level (right curve). The same document indicated that Exxon estimated that by 1979 a global warming effect of approximately 0.25°C could have already occurred.

global water distribution would have a dramatic impact on soil moisture and, ultimately,
in turn, in agriculture," and that the American Midwest would be affected by droughts.
In addition to the effects on global agriculture, the report states, "there are some
potentially catastrophic events that must be considered." The melting of the ice sheet
Antarctica could cause a global rise in sea level of five meters, which
"would cause flooding across much of the US east coast, including the state of Florida
and Washington, D.C." Weeds and pests "would tend to thrive with increased temperatures."
global". The manual warned of "positive feedback mechanisms" in the regions
polar regions, which could accelerate global warming, such as peat deposits "that contain
large reserves of organic carbon" that are "exposed to oxidation" and release their
carbon to the atmosphere. "Likewise," the manual warned, "defrosting also
"could release large amounts of carbon currently sequestered as methane hydrates."
at the bottom of the sea. "All biological systems would be affected" and "the effects
more serious economic events could affect agriculture.

41. The report recommended studying "soil erosion, salinization or collapse
of irrigation systems" to understand how society could be affected and respond to the
global warming, as well as the "health effects" and "stress associated with famine or
climate-related migration[.]" The report estimated that undertaking "some mitigation measures
adaptation" (not all) would cost "a small percentage of the estimated gross national product at
mid-next century" (i.e., $400 billion in 2018).52 To avoid such
impacts, the report makes an analysis of the Massachusetts Institute of Technology and the Laboratory
Oak Ridge National Park, which studied energy alternatives and the requirements to introduce them in
its widespread use, and which recommended that "a vigorous development of energy sources be initiated
non-fossil" as soon as possible."53 The manual also noted that other greenhouse gases
related to the production of fossil fuels, such as methane, would contribute
significantly to global warming, and that concerns about CO2 would be reduced
if the use of fossil fuels were reduced due to "high price, scarcity [or] lack of
availability." "Mitigation of the 'greenhouse effect' would require significant reductions in

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[52] See Gross National Product, Fed. Reserve Bank of St. Louis (updated Mar. 26, 2020), https://fred.stlouisfed.org/series/GNPA.

[53] Memorandum from M.B. Glaser, CO2 "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.

burning fossil fuels," the manual stated. The manual was widely distributed among Exxon leaders.

42. In September 1982, the director of the Laboratory of Theoretical Sciences and Exxon mathematician, Roger Cohen, wrote to Alvin Natkin of the Office of Science and Exxon Technology to summarize Exxon's internal research on climate models.[54] Cohen reported:

> [I]n recent years, a clear scientific consensus has emerged regarding the expected climate effects of increased atmospheric CO2. The consensus is that doubling atmospheric CO2 from its pre-industrial value would result in an average global temperature increase of (3.0 ± 1.5)°C. . . The temperature increase is projected to be non-uniformly distributed across Earth, with above-average temperature rises 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 cause significant changes in the Earth's climate, including the distribution of precipitation and alterations of the biosphere. The time required to double atmospheric CO2 depends on future global consumption of fossil fuels.

Cohen described Exxon's own climate modeling experiments, reporting that produced “an increase in the global average temperature that falls within the range of scientific consensus,” were “consistent with published climate model predictions.” more complex” and “were also in agreement with the estimates of the distribution of the global temperature during a certain prehistoric period when the Earth was much warmer hotter than today.” "In summary," Cohen wrote, "the results of our research are in accordance with the scientific consensus on the effect of increased atmospheric CO2 on the climate." Cohen noted that the results would be presented to the scientific community by the Exxon collaborator Martin Hoffert at a Department of Energy meeting, as well as by Exxon's Brian Flannery at the Ewing Symposium, sponsored by Exxon, later that year.

43. In October 1982, at the fourth biennial Maurice Ewing Symposium at the Lamont-Doherty Geophysical Observatory, attended by members of API and Exxon Research and Engineering Company, the president of the Observatory, USA. David gave a speech titled “Inventing the future: energy and the 'greenhouse effect' of CO2.”[55] His comments included the following statement: "Few people doubt that the world has entered a transition energy that stops depending on fossil fuels and moves towards a combination of

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[54] 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.

[55] 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.

renewable resources that will not pose problems of CO2 accumulation." He continued talking about the human opportunity to address anthropogenic climate change before the point of no return:

> It's ironic that the biggest uncertainties about CO2 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 engineer the transition to a stable energy system.

44. In the early 1980s, under the direction of Exxon, scientist Exxon's climate changer, Henry Shaw, forecast CO2 emissions from the use of fossil fuels. Those estimates were incorporated into Exxon's energy projections for the 21st century and were distributed among the different divisions of Exxon. The conclusions of Shaw included the expectation that atmospheric CO2 concentrations would double in 2090 according to the Exxon model, with a concomitant increase in global temperature average 2.3 to 5.6°F. Shaw compared the results of his model with those of the 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 rise prediction was in the middle of the range of the four projections.56

45. During the 1980s, many Defendants formed their own units research focused on climate modeling. The API, including the Working Group on API CO2 , provided a forum for Defendants to share their research and corroborate their findings related to anthropogenic emissions of greenhouse gases.57

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

> Humanity, which has created the industrial system that has transformed civilization, is also responsible for the environment, which is sometimes at risk due to unintended consequences of industrialization. . . . Keep

[56] 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.

[57] 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/.

> The health of this life support system is becoming a top priority. . . . [E]ll should be environmentalists.
>
> The environmental pact requires action on many fronts. . . the lower 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 generated, to prevent problems at their source.
>
> Prevention means designing a new generation of fuels, lubricants and chemicals. . . . Prevention means designing catalysts and processes that minimize or eliminate the production of unwanted byproducts. . . .
> Prevention on a global scale may even require a drastic reduction in our dependence on fossil fuels and a shift towards solar energy, hydrogen and safe nuclear energy. It may be possible (just possible) that the energy industry will transform so completely that observers will declare it a new industry. .
>
> . . Brute force, low-tech responses, and money alone will not solve the challenges we face in the energy industry.[58]

47. In 1987, Shell published an “internal report for Royal Dutch/Shell Group” titled “Air Pollution: An Oil Industry Perspective.” In this report, the company described that the greenhouse effect occurs "largely as a result of the burning of fossil fuels and deforestation."[59] Shell recognized In addition, “concern that further increases in carbon dioxide levels could cause climate changes, in particular an increase in general temperature, with important environmental, social and economic consequences.”[60]

48. In 1988, the Shell Greenhouse Working Group published a confidential internal report, “The Greenhouse Effect,” which recognized the anthropogenic nature of global warming: "It is believed that the man-made carbon dioxide released and accumulated in the atmosphere warms the Earth through the so-called greenhouse effect." The authors also noted that the burning of fossil fuels is the main driver of the accumulation of CO2 and warned that warming “would create significant changes in the sea level, ocean currents, precipitation patterns, regional temperature and climate". They also noted the potential for “direct operational consequences” of the increase in sea level in “offshore facilities, coastal facilities and operations (e.g. platforms, ports, refineries, warehouses)”.[61]

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[58] 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.

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

[60] Id. at 5.

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

49. Similar to the early warnings from Exxon scientists, the report Shell noted that “by the time global warming is detectable, it could be too too late to take effective countermeasures to reduce the effects or even stabilize the situation". The authors stated that “the possible implications for the world are… . tan great that policy options must be considered much earlier” and that research should “be directed more to the analysis of political and energy options than to studies of what We will face each other exactly.”

50. 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 in the Beaufort Sea and a gas pipeline that crosses the Northwest Territory of Canada.62 He reported that “large areas of the Mackenzie Valley could be dramatically affected by climate change” and that “the major concern in Norman Wells [oil town in Northwest Territories, Canada] should be the changes in permafrost that are likely to occur under climate conditions. climate warming.”63 The report concluded that, in light of the climate models that show a “general trend towards a warmer and more humid climate”, the functioning of Those facilities would be compromised by increased rainfall, increased air temperature, changes in permafrost conditions and, significantly, the sea level rise and erosion damage.64 The authors recommended taking into account such eventualities in future development planning and also warned that “a Rising sea levels could cause increased flooding and erosion damage on the island Richards”.

51. Ken Croasdale, senior ice researcher at Exxon subsidiary Imperial Oil, told an audience of engineers in 1991 that greenhouse gases are increasing “due to the burning of fossil fuels. Nobody disputes this fact.”65

52. The fossil fuel industry was at the forefront of research on carbon dioxide during much of the second half of the 20th century. Development

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62 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).

63 Id. at 369, 376.

64 Id. at 360, 377–78.

65 Ronald C. Kramer, Carbon Criminals, Climate Crimes 66 (1st ed. 2020).

innovative and cutting-edge technology and worked with many of the best researchers in the world field to produce exceptionally sophisticated studies and models.

53. Defendants also meticulously examined plausible scenarios if They were not acting on their inner knowledge. For example, Shell evaluated in a document confidential planning report of 1989 the issue of "climate change: the effect greenhouse, global warming," which the document identified as "the most important for the energy industry."66 The document compared a scenario in which the society "addresses the potential problem" with another in which it does not. Recognizing that "[c]hanging emissions levels... and changing the concentration of atmospheric CO2 has been compared to changing a VLCC," even "substantial efforts" by 2010 would have "barely "no impact on CO2 concentration." However, in later years the impacts are "surprisingly different"; The first efforts "will not prevent the problem from arising, but... they could mitigate it." The document described the consequences of not addressing the problem immediately:

> These changes seem small, but they mask more dramatic temperature changes that would occur in temperate latitudes. There would be a more violent climate: more storms, more droughts, more floods. The average sea level would rise by at least 30 cm. Agricultural patterns would change more dramatically. Something as simple as a moderate change in rainfall patterns disrupts ecosystems, and many species of trees, plants, animals and insects would be unable to move or adapt.
>
> However, the changes would have a greater impact on humans. In ancient times, man could respond with his feet. Nowadays there is nowhere to go because people are already there. Perhaps those in industrialized countries could cope with a rise in sea level (the Dutch examples), but for poor countries such defenses are not possible. The potential refugee problem... could be unprecedented. The Africans would go to Europe, the Chinese to the Soviet Union, the Latinos to the United States and the Indonesians to Australia. The limits would count for little, overwhelmed by numbers. Conflicts would abound. Civilization could prove fragile.67

54. In another confidential internal planning document from 1989, Shell anticipated that "public and media pressures" to "adopt[] environmental programs" such as "much stricter targets for CO2 emissions" could provoke "reactions "effective consumer policies" that "will lead to intense conflicts and unpredictable pressures on businesses."68 The scenario anticipated that "[c]oncers about global warming global warming and depletion will depress fossil fuel production and market share

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66 Shell, Scenarios 1989–2010: Challenge and Response (Oct. 33, 1989), https://www.documentcloud.org/documents/23737837-1989-oct-confidential-shell-group-planning-scenarios-1989-2010-challenge-and-response-disc-climate-refugees-and-shift-to-non-fossil-fuels.

67 Id. at 36.

68 See Shell UK, UK Scenarios 1989), 34, https://embed.documentcloud.org/documents/24359062-snippets-of-confidential-shell-uk-november-1989-scenarios

will decrease as renewable energies are actively promoted," given that "[w]here there can be real choice for the consumer, it will be a dominant force, especially when interest is increased by a clear environmental impact."69

55. In yet another scenario published in a 1998 internal report, Shell paints a eerily prophetic scene:

> In 2010, a series of violent storms cause extensive damage along the US East Coast. Although it is unclear whether the storms are caused by climate change, people are unwilling to take any more risks. The insurance industry refuses to accept responsibility, sparking a fierce debate over who is responsible: the insurance industry or the government. After all, two successive IPCC reports since 1993 have reinforced the human connection to climate change. .
>
> . After the storms, a coalition of environmental NGOs files a class-action lawsuit against the US government and fossil fuel companies for ignoring what scientists (including their own) have been saying for years: that something must be done. Social reaction to the use of fossil fuels grows and individuals become "vigilant environmentalists" in the same way that, a generation earlier, they had become fiercely anti-smoking. Direct action campaigns against companies are intensifying. Young consumers, especially, demand action.70

56. Fossil fuel companies did not simply consider the impacts of climate change in scenarios. In the mid-1990s, ExxonMobil, Shell and Imperial Oil (ExxonMobil) jointly undertook the Sable Marine Energy Project in New Scotland. The project's own Environmental Impact Statement stated: "The impact of a rise in sea level due to global warming can be particularly significant in Nova Scotia. Long-term tide gauge records in Several locations along the coast of Nova Scotia have shown that sea level has increased during the last century. . For the design of coastal and marine structures, it can be assume an estimated rise in water level, due to global warming, of 0.5 m [1.64 feet] over the proposed useful life of the project (25 years)."71

57. Climate change research conducted by Defendants and their industry associations frequently acknowledged uncertainties in their models climatic. However, these uncertainties simply referred to the magnitude and timing of climate impacts resulting from fossil fuel consumption, not what significant changes will eventually occur. Defendants' investigators and Researchers from their industry associations had little doubt that the change

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[69] Id. at 34.

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

[71] ExxonMobil, Sable Project Development Plan, vol. 3, 4-77, http://soep.com/about-the-project/development-plan-application.

climate change was occurring and that fossil fuel products were and are the cause principal.

58. Despite overwhelming information about threats to people and the planet that poses the continuous and incessant use of its fossil fuel products, the Defendants failed to act as they reasonably should have done to mitigate or avoid those terrible adverse impacts. Instead, Defendants adopted the position, as described below, that they had a license to continue the unlimited search for profits from those products. This position was an abdication of the responsibility of the Defendants towards consumers and the public, including the Commonwealth, to act based on its unique knowledge of the reasonably foreseeable hazards of production and incessant consumption of their fossil fuel products.

III. Defendants failed to disclose known harms associated with the extraction, promotion, and consumption of their fossil fuel products and instead acted affirmatively to conceal those harms and engaged in campaigns to deceptively protect and expand the use of their fossil fuel products.

59. By 1988, Defendants had amassed a compelling set of knowledge about the role of anthropogenic greenhouse gases, specifically those emitted by the normal use of fossil fuel products, as causes of global warming and its cascading impacts, including alterations to the hydrological cycle, extreme precipitation, drought, heat waves and associated consequences for human communities and the environment. Upon learning that their products were causing global climate change and dire effects on the planet, Defendants faced the decision to take measures to limit the harm that fossil fuel products were causing and would continue to cause the inhabitants of Earth, including the people of Puerto Rico.

60. Sooner or later, Defendants could and reasonably should have taken any number of measures to mitigate the damage caused by the products of fossil fuels. His own comments reveal an awareness of the measures that they should have been taken. The Defendants should have warned civil society and the Puerto Rican consumers about the dangers that the Defendants knew about consumption incessant consumption of fossil fuel products, having told the truth about what they knew about the connection between the wasteful use of these products and having taken measures to facilitate the transition to low-carbon energy and fuel sources. At a minimum, the

Defendants should have issued warnings consistent with their own understanding of the risks posed by the expected and intended uses of their products, and having told the truth about those risks.

61. Several key events during the period between 1988 and 1992 appear to have prompted Defendants to change their overall investigation and internal discussion tactics on climate change to a public campaign aimed at deceiving consumers and the public, including those of Puerto Rico. These include:

a. In 1988, scientists at the National Aeronautics Administration and of Space ("NASA") confirmed that human activities were actually contributing to global warming.72 On June 23 of that year, the presentation of this information from NASA climate scientist James Hansen to Congress generated significant news coverage and publicity for the announcement, including coverage on the ported from The New York Times.

b. On July 28, 1988, Senator Robert Stafford and four bipartisan cosponsors introduced S. 2666, "Comprehensive Environmental Protection Act," to regulate CO2 and other greenhouse gases. In the following ten weeks introduced four other bipartisan bills to significantly reduce the CO2 pollution and, in August, US presidential candidate George H.W. Bush promised that his presidency would combat the greenhouse effect with "the House effect." White."73 The political will in the United States to reduce anthropogenic emissions of greenhouse gases and mitigate harms associated with fuel products Defendants' fossils was gaining momentum.

c. In December 1988, the United Nations formed the Group Intergovernmental Expert Group on Climate Change (in English, the Intergovernmental Panel on Climate Change, or "IPCC"), a scientific panel dedicated to providing governments of the world an objective scientific analysis of climate change and its impacts environmental, political and economic.

[72] See Peter C. Frumhoff et al., The Climate Responsibilities of Industrial Carbon Producers, 132 Climatic Change 161 (2015).

[73] The White House and the Greenhouse, Times (NY, May 9, http://www.nytimes.com/ 1989), 1989/05/09/opinion/the-white-house-and-the-greenhouse.html.

d. In 1990, the IPCC published its First Assessment Report on the anthropogenic climate change,74 which concluded that (1) “there is a natural greenhouse effect that already keeps the Earth warmer than it would otherwise be,” and (2) that

> Emissions resulting from human activities are substantially increasing atmospheric concentrations of the greenhouse gases carbon dioxide, methane, chlorofluorocarbons (CFCs), and nitrous oxide. These increases will intensify the greenhouse effect, causing, on average, additional warming of the Earth's surface. The main greenhouse gas, water vapor, will increase in response to global warming and intensify it further.75

The IPCC reconfirmed these conclusions in a 1992 supplement to the First Report of Evaluation.76

It is. The United Nations began preparing for the Summit for Earth 1992 in Rio de Janeiro, Brazil, an important and newsworthy meeting of 172 governments of the world, of which 116 sent their heads of state. The Summit gave as a result of the United Nations Framework Convention on Climate Change (“UNFCCC”), an international environmental treaty that provides protocols for future negotiations aimed at “stabilizing greenhouse gas concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the system climate”.77

62. These world events marked a change in the public debate on climate change and the beginning of international efforts to curb emissions anthropogenic greenhouse gases, events that had serious implications and would have decreased the profitability of Defendants' fossil fuel products.

63. Instead of collaborating with the international community by acting to prevent, or at least decrease, the contributions of fossil fuel products to global warming global climate and its impacts, including sea level rise, cycle disruptions hydrological and the associated consequences for Puerto Rico and other communities, the Defendants embarked on a decades-long campaign designed to perpetuate and maximize the continued dependence on fossil fuel products.

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[74] See IPCC, Reports, ipcc.ch/reports.
[75] IPCC, Climate Change: The IPCC Scientific Assessment xi (1990), https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments.
[76] IPCC, 1992 IPCC Supplement to the First Assessment Report (1992), https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments.
[77] United Nations, United Nations Framework Convention on Climate Change art. 2 (1992), https://unfccc.int/resource/docs/convkp/conveng.pdf.

64. Defendants' campaign, which focused on concealing, discrediting and/or distort information that tended to support the restriction of consumption (and therefore the decline in demand) for Defendants' fossil fuel products and the Society's transition to a lower carbon footprint and future took several forms. The campaign allowed the Defendants to accelerate their commercial practice of exploiting the reserves of fossil fuels and, at the same time, externalize the social and environmental costs of their fossil fuel products. These activities directly contradicted the recognition Defendants' own prior knowledge that the science of anthropogenic climate change was clear and that measures were needed to avoid or mitigate harmful consequences for the planet and communities such as those of the Commonwealth.

65. Defendants, alone and jointly through industry and groups façade such as the API, the Information Council for the Environment ("ICE") and the Global Climate Coalition ("GCC"), financed, conceived, planned and carried out a campaign sustained and widespread denial and misinformation about the existence of climate change and the contribution of its products to it. The campaign included a long-term pattern of direct misrepresentations and material omissions to consumers, as well as a plan to indirectly influence consumers by affecting public opinion through the dissemination of misleading investigations to the press, government and academia. Although Defendants were competitors in the market, they combined and collaborated with each other and with the API in this public campaign to divert and repress public knowledge in order to increase sales and protect profits. The effort included product promotion dangerous fossil fuels through advertising campaigns that did not warn about the existential risks associated with the use of those products and that were designed to influence on consumers to continue using fossil fuel products from the Sued regardless of the harm those products caused to communities and the environment.

66. For example, in 1988, Joseph Carlson, public affairs manager at Exxon, stated in an internal memo that Exxon "is providing leadership through the API in the development of the position of the oil industry" on "the greenhouse effect".78 He then went on to describe the "Exxon Position," which included two important messaging principles, among

[78] 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.

others: (1) “[highlight] the uncertainty in scientific conclusions about the potential increase of the Greenhouse Effect”; and (2) “[r]esist the exaggeration and sensationalism [sic] of the potential greenhouse effect that could lead to uneconomic development of natural resources non-fossil fuels”79

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

> [O]ur investigation [at Exxon] was consistent with the Group's findings United Nations Intergovernmental Climate Change Conference on the human impacts of burning fossil fuels, which are having an increasingly noticeable influence on the Earth's climate. . If anything, adverse climate change due to elevated CO2 levels is advancing faster than the average of the IPCC's previous mild projections and is entirely consistent with what we knew in the early 1980s at Exxon. .
>
> . I was very distressed by the climate science denial program campaign that Exxon's headquarters launched around the time I stopped working as a consultant (but not contributor) for Exxon. The ads Exxon ran in major newspapers raising questions about climate change contradicted 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 it because we were the main group working on this.80

68. A 1994 Shell report titled "The Enhanced Greenhouse Effect: A review of the scientific aspects” by Royal Dutch Shell environmental advisor, Peter Langcake, contrasts sharply with the company's 1988 report on the same topic. While While the authors previously recommended considering political solutions from the beginning, Langcake warned of the “potentially dramatic economic effects of political measures “unwise.” Although the report recognized the IPCC conclusions as the vision predominant, Langcake still emphasized scientific uncertainty, noting, for example, that “the postulated link between any observed temperature increase and the activities humans must be seen in relation to natural variability, which is still largely unpredictable."81

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[79] Ibid.

[80] 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 by Martin Hoffert, former Exxon consultant, Professor Emeritus of Physics at New York University), https://oversight.house.gov/legislation/hearings/examining-the-oil-industry-s-efforts-to -suppress-the-truth-about-climate-change.

[81] 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.

69. In accordance with this communication strategy, Shell had issued in 1992 a publication for wide external distribution that was intended to describe the "scientific facts basics" of the "enhanced greenhouse effect potential."82 This document downplayed the scientific consensus (which Shell recognized internally) in referring to the “relatively few established scientific foundations” regarding the causes of climate change.83 Also misleadingly suggested that a “particular cause” of global warming was “difficult” to identify, even though Shell had identified the use of its products as a contributor significant to the greenhouse effect in the previous decade.84 For example, in 1985, a scientist Shell in the United Kingdom published an article in which it exposes the fact scientist that “[t]he burning of fossil fuels that have taken millions of years to forming has effectively altered the balance [of the carbon cycle], leading to a increase of CO2 in the atmosphere.”85

70. In 1991, ICE, whose members included affiliates, predecessors and/or subsidiaries of the Defendants, launched a national campaign of scientific denial of the change climate with full-page newspaper ads, radio commercials, a calendar of public relations tours, correspondence” and research tools. to measure the success of the campaign. Campaign strategies included “repositioning warming global as theory (not as fact).” Their target audience included older men with less education who are “predisposed to favor the ICE agenda, and who are likely to support even more so after exposure to new information.”86

71. One 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, predecessor of the Association National Mining Commission, noted that “[p]ublic opinion surveys reveal that 60% of the

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

[83] Id. at 5. 84 Ibid.

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

[86] 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.

American people already believe that global warming is a serious environmental problem. Our industry cannot remain on the sidelines in this debate."87

72. The following images are examples of print advertisements funded by the ICEs that challenge the validity of climate science and seek to obscure scientific consensus on anthropogenic climate change.88

Figure 8: Environmental Information Council Announcements

73. In 1996, Exxon issued a publication called "Global Warming: Who Is right? Data on a debate that has generated more questions than answers." In it preface to the publication, Exxon CEO Lee Raymond incorrectly stated that "it is not necessary to take drastic measures immediately, as many scientists agree there is enough time to better understand the climate system." The publication described the greenhouse effect as "unquestionably real and definitely a good thing," ignoring the serious consequences that would result from the influence of the increase in CO2 concentration in the Earth's climate. Instead, he characterized the greenhouse effect simply as "what makes the Earth's atmosphere habitable." Directly contradicting the Exxon's own internal knowledge and peer-reviewed science, the publication attributed the increase in temperature since the end of the 19th century to "natural fluctuations that occur for long periods of time" rather than to the anthropogenic emissions that the Exxon and other scientists had confirmed that they were responsible. The publication also

[87] 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).

[88] 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.

falsely questioned computer models that projected the future impacts of the constant consumption of fossil fuel products, including those developed by Exxon's own employees, for having "turned out to be inaccurate." The publication contradicted the numerous reports prepared and distributed among Exxon personnel and the API, stating that “the indications are that a warmer world would be much more benign than many Imagine...moderate warming would reduce death rates in the United States, so a slightly warmer climate would be healthier.” Raymond concluded his preface attacking advocates of limiting the use of their fossil fuel products company, accusing them of “relying on bad science, flawed logic, or flawed assumptions.” realistic," despite the important role that Exxon's own scientists had played in the compilation of those same scientific foundations.89

74. In a speech presented at the World Petroleum Congress held in Beijing in 1997, at which many of the Defendants were present, the CEO Exxon's Lee Raymond reiterated those views. This time, he presented a false dichotomy between stable energy markets and the reduction of the marketing, promotion and sale of fossil fuel products that Defendants knew were dangerous. He claimed:

> Some people argue that we should drastically reduce our use of fossil fuels for environmental reasons. . . My belief [is] that such proposals are neither prudent nor practical. With no economic alternatives available on the horizon, fossil fuels will continue to supply the majority of the world's and this region's energy for the foreseeable future.
>
> Governments must also provide a stable investment climate. . . They should avoid the temptation to intervene in energy markets in ways that give one competitor an advantage over another or one fuel over another.
>
> We must also keep in mind that most of the greenhouse effect comes from natural sources. . . Jumping to radically cut this small slice of the greenhouse pie on the premise that it will affect the climate defies common sense and has no basis in our current understanding of the climate system.
>
> Let's agree that there is a lot we really don't know about how the climate will change in the 21st century and beyond. . . It is very unlikely that the temperature in the middle of the next century will be significantly affected whether the policies are implemented now or 20 years from now. It is bad public policy to impose costly regulations and restrictions when their need has not yet been demonstrated.90

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89 Exxon Corp., Global Warming: Who’s Right? (1996), https://www.documentcloud.org/documents/2805542-Exxon-Global-Warming-Whos-Right.html.

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

75. Imperial Oil (ExxonMobil) CEO Robert Peterson denied falsely establishes the connection between the fossil fuel products of the Defendants and Anthropogenic Climate Change in the Summer Imperial Oil Review de 1998, "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 capturing 'greenhouse' gases will cause global warming. . . It has no connection to our everyday climate. There is absolutely no agreement among climate scientists about whether or not the planet is warming, or, if so, whether the warming is the result of man-made factors or natural variations. in the climate. .
>
> . . I feel very confident in saying that the view that burning fossil fuels will cause global climate change remains an unproven hypothesis.91

76. Mobil (ExxonMobil) paid for a series of “advertorials,” advertisements placed in the editorial section of The New York Times and intended to appear editorial rather than paid ads. Many of these advertorials raised doubts about the reality and severity of human-caused climate change, even as scientists at the industry simultaneously concluded that climate change was real, serious and caused by human activity. The ads addressed various aspects of the public debate about change climate and sought to undermine justifications for addressing greenhouse gas emissions greenhouse as an unresolved science. The 1997 advertorial below92 argued that the economic analysis of emissions restrictions was flawed and inconclusive and, for the Therefore, it justified delaying action on climate change.

[91] 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.
[92] 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-whenfactsdontsquare.html.

When the facts do not agree with the theory, they must be discarded

That seems to characterize the Administration's attitude toward two of its own studies showing that international efforts to curb global warming could cause a big spike in energy prices.

For months, the administration has, taking no chances, promised to provide details of the emissions reduction plan it will present at the climate change meeting in Kyoto, Japan, later this year. He also promised to evaluate the economic aspects of that policy and measure its impact.

These results are important because the proposals put forward so far by other countries would be disruptive and costly to the US economy.

However, when the results of its own economic models were finally generated, the administration began to distance itself from the conclusions and the models that produced them. The administration's top economic adviser said economic models cannot give a “definitive answer” about the impact of emissions controls. The effort, he said, is “useless.” At best, models can only provide a “range of potential impacts.”

Frankly, we are perplexed. The White House promised to make economic data available to the public. However, the administration's top adviser said that analysis will not be based on models and will "exclude... detailed figures." Without numbers and modeling, what kind of hard economic scrutiny can Congress and the public expect?

Also ambivalence about management displays the usefulness of economic models for forecasting cost impacts 10-15 years from now. Yet their negotiators accept, as if it were the truth, the 50-100 year global warming predictions that were generated by climate models, many of which were criticized as seriously flawed.

The second study, carried out by Argonne National Laboratory under a contract with the Department of Energy, examined what would happen if the United States had to commit to raising energy prices in line with emissions reduction plans that several nations had advanced last year.

The report concluded that such increases would cause “significant reductions in production and employment” in six industries: aluminum, cement, chemicals, paper and pulp, oil refining and steel.

According to the study, the chemical industry would be hardest hit, with an estimated up to 30% of US chemical manufacturing capacity moving to developing countries. Job losses could amount to about 200,000 in that industry, with another 100,000 in the steel sector. And despite the substantial loss of jobs and manufacturing capacity in the United States, the net emissions reduction could be negligible since developing countries will not be bound by the emissions targets of a climate treaty.

global warming.

Downplaying Argonne's conclusions, the Energy Department noted that the study used outdated energy prices (mid-1996), did not reflect the gains that would accrue from international emissions trading, and did not take into account the benefits of accelerating of the development of energy efficiency and low-carbon technologies.

What he didn't mention is what these new technologies consist of or when we can expect their benefits to be felt. Regarding emissions trading, many economists have theorized about the role it could play in reducing emissions, but few have addressed the feasibility of implementing and monitoring such a scheme.

We applaud the goals the United States wants to achieve in these upcoming negotiations: that the final agreement 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 drawn up without rigorous economic analysis. There is too much at stake to simply ignore facts that do not match preconceived theories.

Mobil® The energy to make a difference™

Figure 9: Mobil advertorial from 1997

77. Many other Exxon and Mobil advertorials characterized false or misleadingly state the state of climate science research to website readers.

opinion of The New York Times. A sample of these false statements include:

- "We don't know enough about the factors that affect global warming and the extent to which, if any, human-caused emissions (i.e., carbon dioxide) contribute to rising Earth's temperature ".93

- “Greenhouse gas emissions, which have a warming effect, are offset by another product of combustion, particles, which cause cooling.”[94]

- “Even after two decades of progress, climatologists are still not sure how (or even if) the buildup of human-caused greenhouse gases is related to global warming. It could be at least a decade before climate models are able to unambiguously link greenhouse warming to human actions. There are still important scientific answers ahead.”95

- "[I]t is impossible for scientists to attribute recent small increases in surface temperature to human causes."96

78. A quantitative analysis of ExxonMobil's climate communications among 1989 and 2004 determined that, while 83% of peer-reviewed articles in the company and 80% of its internal documents recognized the reality and human origins of the

[93] 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.

[94] Car, Less Heat, More Light Climate (July 18, 1996), https://www.documentcloud.org/documents/705544-mob-nyt-1996-jul-18-lessheatmorelight.html.

[95] 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.

[96] 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.

climate change, 81% of their advertorials expressed doubts about these conclusions.97 ExxonMobil's tendency to contradict its own peer-reviewed research in Statements intended for non-professional audiences also appeared on a year scale after year. Based on this "statistically significant" discrepancy between the internal and external communications, the authors concluded that "ExxonMobil misled the public".98

79. The Defendants, individually and through the API, other associations commercial companies and various front groups, mounted a deceptive public campaign to continue improperly promoting and marketing their fossil fuel products, despite their own knowledge and the growing national and international scientific consensus on the dangers of continuing to do so.

80. One of the key organizations formed by Defendants to coordinate the fossil fuel industry's response to the growing global awareness of climate change was the International Environmental Conservation Association of the Food Industry Petroleum (in English, the International Petroleum Industry Environmental Conservation Association, or “IPIECA”). In 1987, IPIECA formed a “Working Group on Change Global Climate” chaired by Duane LeVine, director of science and strategic development of Exxon. The working group also included Brian Flannery of Exxon, Leonard Bernstein of Mobil, Terry Yosie of API and representatives from BP, Shell and Texaco (Chevron). In 1990, the Group of Labor sent a strategic memo created by LeVine to hundreds of oil companies from around the world, including Defendants. This memo explained that, to prevent a

[97] 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.

[98] Ibid.

global change that abandons the burning of fossil fuels for energy, the industry should emphasize the uncertainties in climate science, call for more research and promote industry-friendly policies that would leave the fuel business intact fossils.99

81. The Global Climate Coalition ("GCC"), on behalf of Defendants and others fossil fuel companies, also financed misleading advertising campaigns and distributed misleading material to generate public uncertainty around the climate debate, seeking to inflate the fossil fuel market.100 Created in 1989, the members Founders of the GCC included Exxon, Shell, Phillips Petroleum Company (ConocoPhillips) and the API. BP and Chevron also participated as members of the GCC. His position on climate change contradicted decades of internal scientific reports from its members by claim that natural tendencies, and not human combustion of fossil fuels, were responsible for the increase in global temperatures:

> The GCC believes that the preponderance of evidence indicates that most, if not all, of the observed warming is part of [a] natural warming trend that began approximately 400 years ago. If there is an anthropogenic component to this observed warming, the GCC believes it must be very small and must be superimposed on a much larger natural warming trend.101

82. GCC's promotion of open skepticism about change climate change also contradicted its internal assessment that such theories lacked support scientist. Despite an internal manual that acknowledges that several "contrary theories" (i.e., the skepticism about climate change) do not "offer convincing arguments against the model

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

100 Ibid.

101 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/.

"conventional climate change induced by greenhouse gas emissions", the GCC excluded this section from the published version of the background report102 and instead financed and promoted some of those same contrary theories. Between 1989 and 1998, the GCC spent $13 million in advertising as part of a campaign to obfuscate understanding of the public about climate science and undermine their trust in climate scientists.103

83. For example, in a 1994 report, the GCC stated that "observations are still have not confirmed evidence of global warming that can be attributed to activities "that "[t]he assertion that serious impacts of the climate change in the future simply has not been proven," so "there is no basis for the design of effective political actions that eliminate the potential for climate change."104 In In 1995, the GCC published a booklet titled "Climate Change: Your Passport to the Facts," which said: "Although many warnings about the consequences of a possible human-caused warming of the Earth's atmosphere over the next few years 100 years, there is no scientific evidence that such dangerous warming will actually cause happens."105

84. In 1997, William O'Keefe, president of the GCC and executive vice president of the API, falsely wrote in a Washington Post op-ed: "[t]he scientists of the climate do not say that the burning of oil, gas and coal is constantly warming the

102 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.

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

104 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.

105 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.

earth."106 This statement contradicted the established scientific consensus, as well as the knowledge of the Defendants. However, Defendants did nothing to correct public record and instead continued to fund anti-science climate skepticism of the GCC.

85. In addition to publicly disseminating false and misleading information from the consensus climate scientist, the GCC also sought to undermine the credibility of climate science from within the IPCC. After becoming a reviewer of the Second Assessment Report of the IPCC in 1996, the GCC used its position to accuse the convening author of a chapter key of the Report to modify its conclusions. The GCC stated that the author, the climatologist Ben Santer, had participated in a "scientific cleansing" that "underestimated the uncertainties on the causes and effects of climate change. . . increase the apparent scientific support for the attribution of climate changes to human activities."107 The GCC also established spread the accusation among legislators, journalists, editors of scientific journals and even the Wall Street Journal opinion page.[108] This effort "was widely perceived as a attempt by the GCC to undermine the credibility of the IPCC."109

86. In the late 1990s, Defendants stopped openly denying the anthropogenic warming and went on to sell a more subtle form of skepticism about the climate change. The Defendants were alarmed by the enormous legal lawsuits now Big Tobacco faces as a result of decades spent publicly denying the

106 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/.

107 Franz, Science, Skeptics and Non-State Actors in the Greenhouse at 14.

108 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).

109 Franz, Science, Skeptics, and Non-State Actors in the Greenhouse at 15.

health risks from smoking cigarettes, and a Shell employee explained that the company "does not "I wanted to fall into the same trap as the tobacco companies" who have been trapped in all their lies."110 The Defendants began to change their communication strategy, claiming that they had accepted climate science from the beginning.111 Several large companies fossil fuel companies, including BP and Shell, left the GCC (although all Defendants remained members of the API).112 At that time, Defendants publicly claimed to accept the reality of anthropogenic climate change while insisted that the costs of climate action were unacceptably high in light of the unresolved uncertainties in climate science, especially around gravity and time frame of future climate impacts. As a reflection of this new strategy, the API executive vice president (and GCC spokesperson), William O'Keefe, announced in November 1998 that "we are committed to being part of the solution to climate risk and to actively participate in the debate to forge a clear and defensible policy." "[T]he debate is not It is not about action or inaction," O'Keefe wrote, "but rather what set of actions is consistent with our state of knowledge and economic well-being."113 Instead of publicly denying the need to address climate change, the new communication strategy of the Defendants sought to prevent political actions that could reduce the consumption of products of fossil fuels.

87. Despite their change of public attitude, Defendants continued surreptitiously organizing and financing programs designed to deceive the public about the weight and veracity of the scientific consensus on the climate. In 1998, the API convened a

[110] Nathaniel Rich, Losing Earth: A Recent History, London: Picador 186 (2020).
[111] Franta, Big Carbon's Strategic Response to Global Warming, 1950-2020, at 170.
[112] Id. at 177.
[113] API: U.S. oil industry recognizes climate change risk, Oil & Gas Journal 28 (Nov. 2, 1998).

the Global Climate Science Communications Team

Science Communications Team, or “GCSCT”) whose members included the main lobbyist from Exxon, a public relations representative from API, and representatives from Chevron. There were no scientists on the “Climate Science Communications Team.” Global". Steve Milloy (a key player in the tobacco industry's deception campaign) and his organization, the Center for the Advancement of Sound Sciences (in English, The Advancement of Sound Science Coalition, or “TASSC”), were founding members of the GCSCT. The TASSC was a fake citizen group created by the tobacco industry to sow uncertainty in the debunk the scientific link between second-hand smoke exposure and increased of cancer and heart disease rates. Philip Morris had launched the TASSC by following the advice of his public relations firm, which warned him that the tobacco company itself would not be a credible voice on the issue of smoking and public health. The TASSC, through the API and with the approval of the Defendants, also became a front group for the fossil fuel industry, using the same tactics he had perfected while operating on behalf of tobacco companies to sow doubts about science climate. Although the TASSC posed as a grassroots group of concerned citizens, it was financed by the Defendants. For example, between 2000 and 2004, Exxon donated $50,000 to the Center of Milloy Sound Advancement Sciences; and an additional $60,000 for Free Enterprise Education Institute and $50,000 for the Free Enterprise Action Institute, both registered with the Milloy's private address.114 The GCSCT represented a continuation of the actions concerted actions by Defendants to sow doubt and confusion about climate change with the in order to promote the business interests of the Defendants.

[114] 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.

88. Beginning in 1998, the GCSCT continued Defendants' efforts to misleading the public about the dangers of using fossil fuels by writing a plan to convince the public that the scientific basis for climate change was in doubt. He multi-million dollar, multi-year plan, among other elements, sought: (a) “[d]evelop and implement a national media relations program to inform the media on uncertainties in climate science to generate national media coverage, regional and local on scientific uncertainties”; (b) “[d]evelop an information kit on global climate science for the media including peer-reviewed articles by peers that undermine 'conventional wisdom' about climate science”; (c) “[p]roduce. . . a constant flow of opinion columns”; and (d) “[d]evelop and implement a program of direct outreach to inform and educate members of Congress...and school teachers/students about uncertainties in climate science”115 to ensure a continuous and unimpeded market for its fossil fuel products.

89. Exxon, Chevron and API led and contributed to the development of the plan, which clearly established the criteria by which taxpayers would know when their Efforts to generate doubt had been successful. “Victory,” they wrote, “will be achieved when… average citizens 'understand' (recognize) the uncertainties in climate science” and “recognition of uncertainties becomes part of 'conventional wisdom'.”116 In other words, the scheme was part of the Defendants' goal of using disinformation to sow doubt about the reality of climate change in an effort to maintain the consumer demand for their fossil fuel products and their huge profits.

115 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.

116 Ibid.

90. To promote the strategies described in this memorandum, Defendants made misleading statements about climate change, the relationship between climate change and its fossil fuel products and the urgency of the problem. The Defendants did these statements in public forums and in advertisements published in newspapers and other media substantial circulation in Puerto Rico, including in national publications such as The New York Times, Wall Street Journal y Washington Post.

91. Phillip Cooney, API attorney from 1996 to 2001, testified at a hearing in Congress in 2007 that it was “typical” for API to fund think tanks and advocacy groups that They minimized the role of fossil fuels in climate change. Among the groups to which that API provided funding included the Heartland Institute, the Institute of Competitive Enterprises and the American Council on Capital Formation, each of which published publications that challenged the scientific consensus that fossil fuels were causing climate change and opposed restrictions on extraction and production of the Defendants. and sale of fossil fuels.117

92. Another key strategy in Defendants' efforts to discredit the scientific consensus on climate change and the IPCC was to fund scientists who, although accredited, they had marginal opinions that became even more questionable given the sources of funding for their research. These scientists obtained part or all of their research budget from Defendants directly or through organizations funded by Defendants such as the API,118 but often did not disclose it to their

[117] DeSmog, Competitive Enterprise Institute, https://www.desmog.com/competitive-enterprise-institute/; DeSmog, Heartland Institute, https://www.desmog.com/heartland-institute/; Desmog, American Council for Capital Formation, https://www.desmog.com/american-council-for-capital-formation/.

[118] 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.

fossil fuel industry insurers.119 At least one of those scientists, Dr. Wei-Hock Soon, contractually agreed to allow donors to review his research before publication, and your hosting institution agreed not to disclose the hosting agreement. financing without the prior permission of their fossil fuel donors.120 The Defendants They intended for the research of the scientists they funded to be distributed among the consumers and that they trust said research when purchasing the products of the Defendants, including consumers in Puerto Rico.

93. The creation of a false perception of disagreement in the scientific community (a despite the consensus that its own scientists, experts and administrators had recognized previously) has evidently disrupted vital channels of communication between scientists and the public. A 2007 Yale University/Gallup poll found that while the 71% of Americans personally believed that global warming was happening, only 48% believed there was a consensus among the scientific community, and 40% believed there was much disagreement among scientists about whether global warming was happening.121 Eight years later, a 2015 Yale-George Mason University survey found that "[o]nly one in ten Americans understands that almost all climate scientists (more 90%) are convinced that human-caused global warming is

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[119] 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.

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

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

happening, and only half... . . They believe that the majority believes it."122 Furthermore, it determined that 33% of Americans believe that climate change is primarily due to natural causes, compared to 97% of peer-reviewed articles that acknowledge that Global warming is real and at least partly caused by man.123 The lack of progress, and even setback, in public understanding of climate science during this period (during which Defendants professed to accept the conclusions of climate science conventional) attests to the success of Defendants' campaign of deception to thwart the dissemination of accurate scientific experience to the public on the effects of consumption of fossil fuels.

94. 2007 was the same year that the IPCC published its Fourth Assessment Report, in which he concluded that "there is a very high level of confidence that the net effect of the human activities since 1750 has been warming."124 The IPCC defined "very high confidence "high" as a probability of at least 9 in 10,125

95. Defendants, individually and through their association memberships commercials, worked directly, and often in deliberately hidden ways, to hide and misrepresent the known dangers of fossil fuel products to consumers consumers, the public and the Commonwealth.

96. Defendants have funded dozens of think tanks, front groups, and dark money foundations pushing climate change denial. These include the Competitive Enterprise Institute, el Heartland Institute, Frontiers for Freedom, el Committee for

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[122] 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.

[123] Id. at 7.

[124] 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.

[125] Ibid.

to Constructive Tomorrow and the Heritage Foundation. From 1998 to 2014, ExxonMobil spent almost 31 million dollars in funding numerous organizations that distorted the consensus scientist that fossil fuel products were causing climate change, sea level rise and damage to Puerto Rico, among other communities.126 Various Defendants have been linked to other groups that undermine the scientific basis linking the fossil fuel products with climate change and sea level rise, including the Frontiers of Freedom Institute and the George C. Marshall Institute.

97. Exxon recognized its own past success in sowing uncertainty and slowing down mitigation by funding climate denial groups. In his report of 2007 corporate citizenship, Exxon stated: "In 2008, we will stop contributing to several public policy research groups whose position on climate change could divert attention from the important debate about how the world will secure the necessary energy for economic growth in an environmentally responsible manner."127 Despite this statement, Exxon remained financially associated with several of those groups after the publication of the report.

98. In a secretly recorded video from 2021, an Exxon executive admitted: “Do we fight aggressively against some of the science? Yes. Shall we join some of these shadow groups to work against some of the early efforts? If that is TRUE. There is nothing illegal in that. We were taking care of our investments. We were watching for our shareholders.” [128]

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[126] ExxonSecrets.org, ExxonMobil Climate Denial Funding 1998–2014, http://exxonsecrets.org/html/index.php (last visited Oct. 14, 2022).

[127] ExxonMobil, 2007 Citizenship Report, http://www.documentcloud.org/documents/2799777-ExxonMobil-2007-Corporate-Citizenship-Report.html.

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

99. In September 2015, Inside Climate News journalists reported that Exxon Mobil had sophisticated knowledge about the causes and consequences of change climate and the role their products played in causing climate change already in the 1970s.129 These journalists discovered ExxonMobil's superior knowledge through through exhaustive research of thousands of archived documents and interviews with former ExxonMobil employees.

100. Between October and December 2015, several journalists from the Journalism Project on Energy and the Environment from the School of Journalism of the University of Columbia and the Los Angeles Times also exposed the fact that ExxonMobil and others Members of the fossil fuel industry had superior knowledge of the causes and consequences of climate change and the role its products played in cause climate change as early as the 1970s.130 These journalists discovered the Superior knowledge of ExxonMobil through extensive document research archived records, interviews with former ExxonMobil employees and a review of scientific journals.

101. In November 2017, the Center for International Environmental Law issued a report revealing that Defendants, including API, had superior knowledge of the causes and consequences of climate change and the role played by food products fossil fuels in causing climate change since the 1970s.131

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

[130] The Los Angeles Times publicó una serie de tres articulos entre octubre y diciembre de 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.

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

102. Defendants could have contributed to the overall effort to mitigate the impacts of greenhouse gas emissions, for example by issuing warnings proportional to the risks they knew of the wasteful use of their products and ceasing their activities that sought to undermine and delay the practical and technical strategies that would have enabled and supported a transition to a low-carbon future. Instead, Defendants undertook a major effort to deceive consumers and the public about the existential dangers of burning fossil fuels, all with the purpose and effect of perpetuating and hyperinflating the consumption of fossil fuels and delaying the arrival of alternative energy sources not based on fossil fuels.

103. As a result of the unlawful, false and misleading conduct of the Defendants, the consumers of Defendants' fossil fuel products and the public, in Puerto Rico as elsewhere, have been deliberately and unnecessarily deceived about: the role of fossil fuel products in causing global warming, rising sea level, alterations in the hydrological cycle and increases in extreme precipitation, heat waves, drought and other consequences of the climate crisis; the acceleration of global warming since the middle of the 20th century and its continuation; and the fact that the Continued increase in fossil fuel consumption creates serious environmental threats and significant economic costs to coastal communities, including Puerto Rico. The Consumers and the public in Puerto Rico and elsewhere have also been misled about the depth and breadth of scientific evidence on anthropogenic climate change and, in in particular, on the strength of the scientific consensus that demonstrates the role of fuels fossils in causing both climate change and a wide range of potentially

destructive, including sea level rise, alterations to the hydrological cycle, extreme precipitation, heat waves, droughts and associated consequences.

104. By sowing doubts about the future consequences of unrestricted consumption of fossil fuels, Defendants' campaign of deception successfully delayed the transition to alternative energy sources, which Defendants predicted could penetrate half of a competitive energy market in 50 years if they were allowed to develop without obstacles. This delay caused the emission of enormous amounts of avoidable greenhouse gases, thereby ensuring that the damage caused by climate change will be substantially more severe that if the Defendants had acted candidly, in proportion to their internal knowledge of climate risks.

IV. In contrast to their public statements, Defendants' internal actions demonstrate their knowledge of and intent to profit from the relentless use of fossil fuel products.

105. In contrast to your public efforts questioning the validity of the consensus scientist on anthropogenic climate change, Defendants' acts and omissions demonstrate their internal recognition of the reality of climate change and its probable consequences. These actions include, among others, making multi-million dollar investments in infrastructure for their own operations that recognize the reality of change anthropogenic related to the coming climate. Those investments included (among others): raise offshore oil platforms to protect them from rising sea levels; reinforce offshore oil platforms to resist increased wave force and storm severity; develop technology and infrastructure to extract, store and transporting fossil fuels in a warming Arctic environment; and develop and patent

designs of equipment intended to extract crude oil and/or natural gas in previously inaccessible areas due to the presence of polar ice caps.132

106. For example, in 1973, Exxon obtained a patent for a freighter capable of through sea ice133 and for a tanker134 designed specifically for use in areas of the Arctic that were previously unreachable.

107. In 1974, Chevron obtained a patent for a mobile drilling platform Arctic ice designed to withstand significant interference from lateral ice masses,135 allowing drilling in areas with greater movement of ice floes due to the elevated temperature.

108. That same year, Texaco (Chevron) worked to obtain a patent for a method and apparatus for reducing ice forces on a marine structure prone to freeze into ice due to natural weather conditions,136 allowing drilling in areas previously unreachable Arctic areas that would be accessible seasonally.

109. Shell obtained a patent similar to that of Texaco (Chevron) in 1984.137

110. In 1989, Norske Shell, the Norwegian subsidiary of Royal Dutch Shell, amended the designs for a natural gas platform that was planned to be built in the North Sea to have

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[132] Amy Lieberman & Susanne Rust, Big Oil Braced for Global Warming While It Fought Regulations, Los Angeles Times (Dec. 31, 2015), https://graphics.latimes.com/oil-operations/

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

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

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

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

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

taking into account the projected rise in sea level. Those design changes were ultimately carried out by Shell contractors, which added substantial costs to the project.138

a. It was shown that the Troll field, off the Norwegian coast in the Sea of North, contained large natural deposits of oil and gas in 1979, shortly after the Norwegian oil and gas regulators will approve Norske Shell to operate part of the field.

b. In 1986, the Norwegian parliament gave Norske Shell authority to complete the first phase of development of the Troll field gas deposits, and Norske Shell began designing the "Troll A" gas platform, with the intention of beginning to operate the platform in approximately 1995. Taking into account the large size of the deposits of gas in the Troll field, the Troll A platform was projected to operate for approximately 70 years.

c. The platform was originally designed to be approximately 100 feet above sea level, the amount needed to stay above the waves in a force storm that occurs once every hundred years.

d. In 1989, Shell engineers revised their plans to increase the height of the platform above the water between 3 and 6 feet, specifically to take into account the predicted higher average sea levels and increased storm intensity due to global warming during the 70-year operational life of the platform.139

It is. Shell projected that the additional 3 to 6 feet of construction above the water would increase the cost of the Troll A platform by up to $40 million.

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138 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.

139 Id.; Amy Lieberman & Susanne Rust, Big Oil Braced for Global Warming While It Fought Regulations, Los Angeles Times (Dec. 31, 2015), https://graphics.latimes.com/oil-operations/

V. Defendants' actions have exacerbated the costs of adapting and mitigating the adverse impacts of the climate crisis.

111. As greenhouse gas pollution accumulates in the atmosphere, some of which do not potentially dissipate for thousands of years (i.e. CO2), climate changes and the consequent adverse environmental changes are worsening, and their frequencies and magnitudes increase. As these adverse environmental changes occur aggravate and increase their frequencies and magnitudes, so do physical damages, environmental, economic and social that result from them.

112. Therefore, the delay in the introduction of alternative energy sources and the related efforts to curb anthropogenic greenhouse gas emissions environmental harms and the magnitude and cost of addressing those harms have increased, including Puerto Rico, which have already occurred or are trapped by previous emissions.

113. Therefore, Defendants' campaign to hide the science of change climate change to protect and expand the use of fossil fuels greatly aggravated and continues to aggravate the damage suffered by Puerto Rico and its residents.

114. The costs of inaction on anthropogenic climate change and its effects adverse environmental impacts did not go unnoticed by the Defendants. in a speech delivered in 1997 by John Browne, executive of the BP America group, at the University of Stanford, Browne described the responsibility and opportunities of the Defendants and all the fossil fuel industry to reduce the use of fossil fuel products and mitigate the harms associated with the use and consumption of such products:

> A new era demands a new perspective on the nature of society and responsibility.
>
> We need to go beyond analysis and take action. It is a time of change and rethinking 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 carbon dioxide concentration and temperature rise.

The IPCC predicts that over the next century temperatures could rise by 1 to 3.5 degrees Celsius [1.8°F-6.3°F], and sea levels could rise by 15 to 95 centimeters [5.9 and 37.4 inches]. Some of that impact is probably inevitable, because it is the result of current emissions. .

[I]t would be reckless and potentially dangerous to ignore the growing concern.

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

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

BP accepts that responsibility and therefore we are taking some specific actions.

Control our own emissions.

Fund continued scientific research.

Take initiatives for its joint implementation.

Develop alternative fuels in the long term.

And contribute to the public policy debate in search of broader global responses to the problem.140

115. Despite Defendants' knowledge of foreseeable damages,

measurable and significant variables associated with the unbridled consumption and use of their health products.

fossil fuels, in Puerto Rico as in other places, and despite the knowledge of the

Sued for technologies and practices that could have helped reduce hazards

associated with their fossil fuel products, Defendants continued

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

misleadingly and incorrectly marketing and promoting the intensive use of fossil fuels and organized campaigns to hide the connection between their fossil fuel products. fossil fuels and the climate crisis, dramatically increasing the cost of reduction. This campaign aimed to reach and influence consumers in Puerto Rico, along with consumers from other places. At all relevant times, the Defendants were deeply familiar with the need to reduce the use of their fossil fuels and associated global greenhouse gas emissions, mitigate damages associated with the use and consumption of its products and promote the development of sources alternative and clean energy. Examples of such recognition include, among others, the following:

f. In 1961, Phillips Petroleum Company filed a patent application for a method to purify gas, among other things, since "the natural gas containing Gasoline hydrocarbons may contain undesirable amounts of sulfur and other compounds such as carbon dioxide that are undesirable in the finished gasoline product."[141]

g. In 1963, Esso (Exxon Mobil) obtained multiple patents on technologies for fuel cells,142 including on the design of a fuel cell and the electrodes necessary,143 and about a process to increase the oxidation of a fuel, specifically methanol, to produce electricity in a fuel cell.144

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

[142] Fuel cells use the chemical energy of hydrogen or other fuels to produce electricity. See US Dep't of Energy, Fuel Cells, https://www.energy.gov/eere/fuelcells/fuel-cells (last visited Oct . 16, 2022).

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

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

h. In 1970, Esso (Exxon Mobil) obtained a patent for an “engine and “low-polluting propulsion system” that used an internal burner and a compressor of air to reduce polluting emissions, including CO2 , from gasoline engines. gasoline combustion (the system also increased the efficiency) of the products of fossil fuels used in such engines, thus reducing the amount of fuel products fossil fuels needed to operate engines equipped with this technology).145

i. In 1980, Imperial Oil wrote in its “Review of the Activities of environmental protection for 1978-79”: “There is no doubt that the increase in the use of fuels Fossils and declining forest cover are compounding the potential problem of increase of CO2 in the atmosphere. There is technology to eliminate CO2 from hymenea gases, but eliminating just 50% of CO2 would double the cost of energy generation.”146

j. A 1987 company report produced by Shell on "Synthetic fuels and renewable energy" noted that, although the "immediate prospects" were "limited", "however, it is looking for commercial opportunities now and in the future close that you will gain the valuable experience necessary to gain further development." The report also notes that “the task of replacing oil resources is likely to be will become increasingly difficult and expensive and there will be a growing need to develop alternatives efficient and convenient. Initially, these will complement and eventually replace valuable petroleum products. Many potential energy options are still unknown or are in very early stages of research and development. The news energy sources take decades to make a significant global contribution. Therefore it is

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

[146] 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.

Sustained commitment is needed over the rest of this century to ensure that the new technologies and those that are currently in a relatively early stage of development are available to meet energy needs in the next century."147

k. A 1989 article in an Exxon Corporate Research publication for company use only said: "CO2 emissions contribute approximately half of the forcing that leads to a possible enhancement of the greenhouse effect. Given that the Power generation from fossil fuels dominates modern CO2 emissions, Strategies to limit CO2 growth focus in the short term on efficiency energy and long term in the development of alternative energy sources. If they are practiced at a level that significantly reduces the growth of greenhouse gases, these actions would have a substantial impact on society and our industry: in the short term due to reduced demand for current products, and in the long term due to the transition to completely new energy systems."148

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

a. Recognize and share the validity of scientific evidence about the Anthropogenic climate change and the damage it will cause to people, communities (including the Commonwealth) and the environment. The acceptance of that evidence together with the associated warnings and actions would have advanced the agenda from determining whether must combat climate change and sea level rise until deciding how to combat it;

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

148 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.

would have avoided much of the public confusion that occurred for more than 30 years, by less since 1988; and would have contributed to an earlier and faster transition towards sources of energy compatible with the minimization of catastrophic climate consequences.

b. Communicate frankly with shareholders, banks, insurers of the Defendants, with consumers, the public, regulators and the Commonwealth, and warn them about the dangers of global warming from fossil fuel products of the Defendants who were known to the Defendants, which would have allowed those groups make material and informed decisions about whether and how to address climate change and sea level rise in relation to Defendants' products, including whether invest and how much to invest in alternative clean energy sources compared to the fossil fuels;

c. Refrain from affirmative efforts, either directly, through coalitions or front groups, to distort public debate and make many consumers and business and political leaders think that the relevant science was much less sure than she really was; and

d. Share your internal scientific research with consumers and the public, and with other scientists and business leaders, to increase public understanding of the scientific foundations of climate change and its relationship with food products fossil fuels of the Defendants.

117. Despite your knowledge of the foreseeable harms associated with the consumption of Defendants' fossil fuel products, and despite the existence and fossil fuel industry's awareness of opportunities that would have reduced

foreseeable dangers associated with those products, Defendants promoted and concealed the dangers of using their fossil fuel products unfairly and falsely.

SAW. Defendants continue to mislead about the impact of their fossil fuel products on climate change through greenwashing campaigns and other deceptive advertising in Puerto Rico and elsewhere.

118. Defendants' Coordinated Campaign of Disinformation and Deception Continues Today, even when the scientific consensus on the causes and consequences of climate change. Defendants have falsely stated through advertising campaigns in Puerto Rico and/or campaigns aimed at reaching Puerto Rico that their businesses invest in substantially in low-carbon technologies and energy sources renewable. In truth, each Defendant has invested the minimum in renewable energy while continues to expand its fossil fuel production. reasonable consumers exposed to Defendants' advertisements would understand that Defendants are much more committed to alternative energy sources than is actually the case they find. Each has also claimed that some of its fossil fuel products are “ecological” or “non-polluting” and that the use of these products will reduce or mitigate successfully address the dangers of climate change. None of the fuel products Defendants' fossil fuel is “green” or “non-polluting” because, ultimately, all continue to contribute to global warming.

119. These deceptive “eco-money laundering” campaigns aimed to reach and influence on the public and consumers, even in Puerto Rico, and they did. Its objective is to capitalize consumer concerns about climate change and make consumers Puerto Rico believe that the Defendants are substantially diversified energy companies

that make significant investments in low-carbon energy compatible with reduction of catastrophic climate change.

120. However, contrary to this message, Defendants' investments in low-carbon energy are substantially and materially less than what 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 only 0.2% each149 .

121. Ultimately, although Defendants currently claim to support the reduction of greenhouse gas emissions, their conduct renders these statements. Defendants Continue to Increase Fossil Fuel Production Worldwide; investing in the development of new fossil fuels, including production of shale oil and shale gas, some of the extraction projects with higher carbon emission; and planning relentless exploitation of oil and gas indefinite in the future.

122. For example, Exxon's 2023 Corporate Plan update states that the company expects its oil and gas production to increase from 3.8 million barrels oil equivalents per day in 2024 to approximately 4.2 million barrels oil equivalents per day in 2027150. Exxon forecasts capital expenditures of between 23,000 and 27 billion dollars annually until 2027, and says it will “seek” 20 billion dollars in vaguely defined “lower emissions opportunities” until 2027151. Only in 2023,

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149 Anji Raval & Leslie Hook, Oil and Gas Advertising Spree Signals Industry’s Dilemma, Financial Times (Mar. 9, 2019), https://www.ft.com/content/5ab7edb2-3366-11e9-bd3a-8b2a211d90d5.

150 ExxonMobil, Corporate Update Release 2023, https://d1io3yog0oux5.cloudfront.net/_bec7eef29898003542d79405ad8d25a5/exxonmobil/db/2261/22171/file/Corporate_Plan_Update_-_Press_Release.pdf

151 Ibid.

Exxon spent almost three times as much money acquiring the fossil fuel producer Pioneer Natural Resources ($59.5 billion) of what it said it will invest in "low carbon solutions" (mainly carbon capture technology) until 2027152 .

123. Similarly, Chevron announced in late 2023 that it would spend between $18,500 and $19.5 billion in new oil and gas projects in 2024, representing a 11% increase compared to the previous year153. By contrast, Chevron expects to spend only $2 billion in 2024 to "reduce the carbon intensity of operations" traditional and grow new lines of energy businesses"154. Only in 2023, Chevron spent more than five times as much money on acquiring the fossil fuel producer Hess than he said he will spend on low-carbon energy projects until 2028155 .

124. Shell also spent almost six times as much money on oil and gas development than in renewable technology in 2022156. In June 2023, Shell withdrew its 2021 promise of reduce oil production each year for the rest of the decade, and instead announced that would maintain its current level of oil production until 2030 and invest 40 billion of dollars in oil and gas production between 2023 and 2035157. And, although Shell claims that Approximately 12% of its capital expenditure in 2021 went to its "Renewables and Soluciones Energéticas", its own financial reports indicate that it dedicated only

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[152] Aryn Baker, How Chevron and Exxon's Latest Fossil Fuel Deals compare to Their Green Spending, Time Magazine (Oct. 25, 2023), https://time.com/6328441/chevron-exxon-fossil-fuel-acquisitions-vs-climate-efforts/

[153] Sabrina Valle, Chevron Increases Project Spending Budget by 11% for 2024, Reuters (Dec. 6, 2023), https://www.reuters.com/business/energy/chevron-forecasts-16-bln-capex-2024-2023-12-06/

[154] Chevron, Chevron Announces $16 Billion 2024 Capex Budget, (Dec. 6, 2023), https://www.chevron.com/newsroom/2023/q4/chevron-announces-2024-capex-budget

[155] Ibid.

[156] Ron Bousso, Exclusive: Shell Pivots Back to Oil to Win Over Investors, Reuters (June 9, 2023), https://www.reuters.com/business/energy/shell-pivots-back-oil-win-over-investors-sources-2023-06-09/

[157] Lottie Limb, Shell Joins BP and Total In U-Turning on Climate Pledges to "Reward Shareholders", euronews.green (June 15, 2023), https://www.euronews.com/green/2023/06/15/shell-joins-bp-and-total-in-u-turning-on-climate-pledges-to-reward-shareholders

approximately 1.5% of its capital expenditure to the development of renewable energy sources such as wind and solar energy production, and the vast majority of the rest of the spending goes to projects related to natural gas158. Shell also announced that, despite its profits record in 2022, spending on renewable energy and energy solutions would not increase and, in Instead, it would focus new spending on the production of fossil fuels159 .

125. BP has also lowered its stated decarbonization targets recently. In 2020, BP declared its intention to reduce the company's total upstream emissions. company by 20% by 2025 and between 35% and 40% by 2030. However, In February 2023, BP reduced those projections to a 10 to 15% reduction by 2025 and a reduction of 20 to 30% by 2030160, 161. BP had also committed in 2020 to reduce its total oil and gas production by 40% from 2019 levels to 2030162. However, again in 2023, BP lowered its target to a reduction in 25 %163 .

126. In 2023, ConocoPhillips announced that it planned to increase its production of oil and gas by up to 5% each year over the next decade, with growth expected significant increase in production at its shale oil assets in both the United States and

[158] Oliver Milman, Shell's actual spending on renewables is fraction of what it claims, group alleges, The Guardian (Feb. 1, 2023) https://www.theguardian.com/business/2023/feb/01/shell-renwable-energy-spending-sec-global-witness

[159] Will Mathis, Shell Hits the Brakes on Growing Renewables Unit After Record 2022 Profit, Bloomberg (Feb. 2, 2023), https://www.bloomberg.com/news/articles/2023-02-02/shell-to-pause-renewables-unit-s-spending-growth-after-record-2022

[160] Evan Halper and Aaron Gregg, BP Dials Back Climate Pledge Amid Soaring Oil Profits, The Washington Post (February 7, 2023), https://www.washingtonpost.com/business/2023/02/07/bp-climate-emissions-oil-profits/

[161] BP, Getting to Net Zero, https://www.bp.com/en/global/corporate/sustainability/getting-to-net-zero.html (last accessed Feb. 5, 2024); BP, BP Integrated Energy Company Strategy Update (Feb. 7, 2023), https://www.bp.com/en/global/corporate/news-and-insights/press-releases/4q-2022-update-on-strategic-progress.html Shadia Nasralla and Ron Bousso, BP to cut fossil fuels output by 40% by 2030, Reuters, (August

[162] 4, 2020) https://www.reuters.com/article/us-bp-outlook/bp-to-cut-fossil-fuels-output-by-40-by-2030-idUSKCN2500NH/

[163] Stanley Reed, BP, in a Reversal, Says It Will Produce More Oil and Gas, The New York Times (Feb. 7, 2023) https://www.nytimes.com/2023/02/07/business/bp-oil-gas-profits.html

as in Canada164. ConocoPhillips also recently announced plans to move forward with the development of the Willow oil drilling project in Alaska, which will cost up to 7 billion dollars and will produce approximately 600 million barrels of oil throughout throughout his life165. In 2022, ConocoPhillips spent $150 million “to support low-carbon opportunities”166, which represented just 1.4% of its 10.2 billion dollars in capital expenditures for that year; the rest of which was dedicated to the operations of company's fossil fuels167 .

127. Defendants' greenwashing campaigns misleadingly minimize their own role in causing climate change, even suggesting that small changes in consumer choices and behavior can adequately address change climate. These campaigns misleadingly portray Defendants as part of the solution to climate change and distract from the fact that their Fossil fuels are the main driver of global warming.

128. Below are representative extracts from the campaigns of eco-laundering of Defendants, presenting a false image of Defendants as clean energy innovators taking meaningful steps to address change climate. Defendants' actions to further entrench the production and consumption of

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164 Liz Hampton and Mrinalika Roy, Conoco Forecasts Big Cash Flow Gains, Up to 5% Output Growth, Reuters (April 12, 2023), https://www.reuters.com/business/energy/conocophillips-expects-spending-average-10-bln-annually-next-decade-2023-04-12/

165 Ibid; see also ConocoPhillips, ConocoPhillips Makes Final Investment Decision to Develop the Willow Project (Dec. 22, 2023), https://www.conocophillips.com/news-media/story/conocophillips-makes-final-investment-decision-to-develop-the-willow-project/ .

166 ConocoPhillips, Scope 1 and 2 Emissions Reduction Activities, https://www.conocophillips.com/sustainability/low-carbon-technologies/scope-1-and-2-emissions-reduction-activities/#:~:text=In%202022%2C%20ConocoPhillips%20spent%20about,global%20operations%20through%20the%20MACC. 167

ConocoPhillips, ConocoPhillips Reports Fourth-Quarter, Full-Year 2022 Results, (Feb. 2, 2023), https://www.conocophillips.com/news-media/story/conocophillips-reports-fourth-quarter-full-year-2022-results-and-176-preliminary-reserve-replacement-ratio-announces-2023-guidance-and-planned-return-of-capital-of-11-billion-declares-quarterly-dividend-and-variable-return-of-cash-distribution/

fossil fuels flatly contradict their public claims of responsibility
corporate and support the reduction of global greenhouse gas emissions.
Functionally, Defendants have removed fossil fuels from their brand, but have not
of its commercial operations. On the contrary, their eco-laundering ads are misleading
for Puerto Rican consumers.

A. Exxon's deceptive greenwashing campaigns

129. Exxon currently runs a series of full-page ads in editions
print and publications in the electronic edition of The New York Times, as well as on the channel
on Exxon's YouTube pages, in which Exxon deceptively promotes its efforts to develop
energy from alternative sources such as algae and plant waste, efforts that are
extremely small relative to the investments Exxon continues to make in the
fossil fuel production.

130. For example, an online advertisement in The New York Times, accessible and
marketed to Puerto Rican consumers, promotes the development of
algae biofuels by the company. 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 “transportation carbon emissions” by more than 50 %168 .

131. Just a few years ago, in 2018, Exxon stated that it would produce 10,000 barrels of
algae biofuel by 2025 and that this fuel could reduce “carbon emissions.”
carbon from transportation” by more than fifty percent169. In 2019, Exxon continued to announce

[168] 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.
[169] Ibid.

who “was growing algae for biofuels that could one day power airplanes, ships and fuel trucks, and reduce their emissions by half”170 .

132. Exxon ultimately invested only $350 million of the $600 million dollars he had promised to develop the technology before quietly closing the project in December 2022171. But even $600 million probably won't they would have been enough; algae researchers believe it would take several *thousand billions* of dollars to truly commercialize biofuels, and that's not even takes into account the “fundamental biological limitations” associated with this technology172. Of In fact, Exxon spent almost half of its actual investment on biofuel development. algae to announce its commitment to algae biofuels173. In addition to not revealing the very small scope of these efforts, Exxon's ads fail to acknowledge that the Exxon biodiesel fuel is generally a blend that uses only between 5% and 20% biofuel, and the rest is made up of fossil fuel.174. Therefore, the Exxon’s greenwashing ads misleadingly exaggerate both the “sustainable” nature or “environmentally friendly” of its investment in biodiesel as its scope.

133. Exxon ads promoting its investments in energy sources “sustainable and environmentally friendly” do not mention that the investment of the company in alternative energy is minuscule compared to its current increase in

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170 Exxon Mobil, Algae Potential, iSpot TV (Oct. 19, 2019), https://www.ispot.tv/ad/ovGn/exxon-mobil-algae-potential

171 Amy Westervelt, Big Oil Firms Touted Algae as Climate Solution. Now All Have Pulled Funding, The Guardian (March 17, 2023), https://www.theguardian.com/environment/2023/mar/17/big-oil-algae-biofuel-funding-cut-exxonmobil

172 Ibid. see also Ben Elgin and Kevin Crowley, Exxon Retreats From Major Climate Effort to Make Biofuels From Algae, Bloomberg (Feb. 10, 2023), https://www.bloomberg.com/news/articles/2023-02-10/exxon-retreats-from-major-climate-effort-to-make-biofuels-from-algae

173 Ibid.

174 See ExxonMobil, Mobility Reimagined: On the Road to Lower GHG Emissions, at 8, https://corporate.exxonmobil.com/-/media/global/files/energy-and-innovation/road-transportation-white-paper_020623.pdf

usual activities of exploration, development and production of fossil fuels at the level world. As explained above, Exxon has consistently (and will continue to) spend spending) the overwhelming majority of its capital expenditures on maintaining and expanding production of fossil fuels.

134. To complement this deceptive campaign, Exxon has promoted dozens of multimedia ads on platforms such as Instagram, Twitter, Facebook and LinkedIn, where Exxon has millions of followers on social media and its content has received hundreds of thousands of "likes" and "views". These ads overwhelmingly emphasize his supposed leadership in research on emissions reduction, algae biofuels, solutions to climate change and clean energy research. These advertisements were intended and they reached the public and consumers of Puerto Rico. An ordinary consumer who If you look at these ads you would end up believing that Exxon has invested significantly in the development and deployment of alternative energy technologies, when in reality almost all company expenses are directed to the present and future development of oil and gas that plunging the world towards a climate catastrophe. Exxon's failure to inform the ordinary consumers that their touted investments in clean energy represent only a tiny percentage of its expenses (and that it aims to increase production and sales of fossil fuels in the future) makes these advertisements materially misleading.

B. Shell's deceptive greenwashing campaigns

135. Like Exxon, Shell has deceptively promoted itself to consumers. Puerto Rican consumers as environmentally conscious through advertisements in publications such as The New York Times. The ads are targeted and reach

consumers of Puerto Rico and aim to influence the demand for Puerto Rican products.

Shell by consumers.

136. As part of Shell's “Make the Future” campaign, the company published numerous advertisements that can currently be seen on The New York Times website[175] in which the company promotes its investment in new energy sources, including gas liquefied natural gas (“LNG”) and biofuel, which Shell refers to as “more clean.”

137. A Shell ad in the Washington Post, “The Making of Sustainable Mobility”, refers to LNG as “a critical component of an energy mix sustainable” and a “low-carbon fuel” that could “help reduce” CO2 emissions[176]. The announcement emphasizes Shell's leadership in “setting the course” towards a “low-carbon mobility future”. Similarly, another advertisement of Shell in The Washington Post, “The Mobility Quandary,” emphasizes Shell's role in the work to counteract climate change through investments in alternative energy: "Shell is a bigger player than one might expect in this nascent movement to achieve a transportation future with less pollution and more efficiency"[177] .

138. Shell's statements emphasizing its involvement in many areas of energy-related research, development and deployment are misleading; investments and activities of the company are substantially smaller than its advertisements lead people to believe. the consumers. As explained above, only 1.2% of Shell's capex

[175] 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.

[176] 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.

[177] 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 . . . .”).

between 2010 and 2018 it went to low-carbon energy sources, and that figure remains vastly outpaced by the continued expansion of Shell's fossil fuel business178 .

139. Shell's "Make the Future" ads also misled consumers.

consumers about the extent to which Shell has invested in clean energy technology. By For example, "The Mobility Quandary" promotes Shell's investments in cell technology of hydrogen fuel, by promoting hydrogen as "long-term sustainable" term" and "one of the cleanest sources" that power electric vehicles, and states that "[Hydrogen fuel cell vehicles. . . They do not emit anything from their exhaust pipes except water vapor"179. Shell's "In for the Long Haul" ad in The New York Times similarly promotes its investment in hydrogen fuel cells, as well as in biofuels, as significant attempts to mitigate climate change180 .

140. Shell's failure to inform average consumers that its Touted investments in clean energy represent only a tiny percentage of their expenses (and that aims to increase the production and sales of fossil fuels in the future) makes its advertisements materially misleading.

141. In June 2023, the UK Advertising Standards Authority banned Shell's marketing campaign depicting Shell as a supplier of renewable energy, electric vehicle charging installer and promoter of the transition energy. The Advertising Standards Authority determined that it was likely that Consumers will interpret marketing materials as a "broader statement about

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[178] Raval & Hook, Oil and Gas Spending Spree Signals Industry's Dilemma, supra note 192.
[179] Shell, The Mobility Quandary, supra note 229.
[180] 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.

that Shell as a whole provides cleaner energy." Given that the “vast majority” of its operations were not clean energy, the campaign was misleading[181] .

C. BP's deceptive greenwashing campaigns

142. BP has also misleadingly presented itself as a company that diversifies its energy portfolio and reduces its dependence on fossil fuel sales, while its Alternative energy portfolio is insignificant compared to fuel portfolio company's ever-expanding fossils. To this end, BP has employed a series of misleading eco-laundering advertisements, which aim to influence demand for their products by part of consumers, including consumers in Puerto Rico.

143. BP carried out its extensive “Beyond” advertising and rebranding campaign Petroleum” 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 on its gas stations in Puerto Rico, where consumers buy BP gasoline. The bell “Beyond Petroleum” advertising falsely presented the company as a very committed to low-carbon energy sources and was no longer investing, but was going “more beyond” oil and other fossil fuels. In fact, BP invested a small percentage of its total capital expenditure during this period on alternative energy research. The great Most of its capital spending was focused on exploration, production, refining and commercialization of fossil fuels[182] . The company finally abandoned its solar assets

[181] Ed Davey, Shell’s Clean Energy Advertising Campaign is Misleading, UK Watchdog Says, Associated Press (June 7, 2023), https://apnews.com/article/shell-climate-ad-ban-clean-energy-a1322233e3ba7e8fa7760367f13dd58c; see also Advertising Standards Authority, ASA Ruling on Shell UK Ltd t/a Shell, https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2023/20230607_21511_decision.pdf.

[182] 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.

and wind in 2011 and 2013, respectively, and even the name "Beyond Petroleum" in 2013[183].

144. In 2019, BP launched an advertising campaign called “Possibilities Everywhere.” These ads were misleading in both their depiction of BP as a very involved in non-fossil energy systems, including wind, solar and vehicles electric, as in its description of natural gas as environmentally friendly.

145. The One Possibilities Everywhere ad, titled “Better fuels for boost your busy life,” it said:

> We [] want, and need, [ ] energy to be more respectful of 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 energy solar and wind to homes from the US to India. We are increasing the supply of cleaner-burning natural gas… More energy with fewer emissions? We see possibilities everywhere to help the world continue moving forward[184].

The accompanying video showed an active home while a voiceover said: “We all want more energy, but with less carbon footprint. That's why at BP we work to generate energy less polluting and better”[185].

146. But BP's claim that non-fossil energy systems constitute a substantial part of its business was materially false and misleading. At the time of the announcement, BP owned only about 1.7 gigawatts (“GW”) of wind capacity, dwarfed by other companies such as GE, Siemens and Vestas (with approximately 39 GW, 26 GW and 23 GW of

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

[184] 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.

[185] Id.

capacity, respectively)186. Overall, installed wind capacity in the United States was of approximately 100 GW, meaning that BP's installed capacity represented barely 1% of the market187. However, “Blade Runners,” another campaign ad BP's “Possibilities Everywhere” described the company as “one of the world's leading of wind energy in the United States”188. In summary, the relatively BP's small business was substantially smaller than what was conveyed in the company's advertisements.

147. The same is true of BP's activities in the solar energy sector, which consist mainly of the purchase of the solar company Lightsource (renamed as Lightsource BP)189. The total purchase price ($454 million) represents only a tiny percentage of BP's annual capital spending ($16 billion in 2023), almost all of which is spent on the production of fossil fuels190. This is very far from the BP's claim that it was “extensively” looking for “new” ways of producing low-emission energy and that it was playing a “leading role” in “promoting a low carbon future.” These statements convey the misleading impression to ordinary consumers that BP invests substantially in the development and deployment of clean energy technology, when in reality almost all present and future expenses of the

186 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 GE, Siemens, and Vestas wind capacity, see Abby McClain, The 15 Largest Wind Power Companies in the World (July 12, 2022), https://www.zippia.com/advice/largest-wind-power- companies/.

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

188 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.

189 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; see also Ron Bousso, BP to Buy Remaining 50% In Solar JV Lightsource BP, Reuters (Nov. 30, 2023), https://www.reuters.com/business/energy/bp-buy-remaining-50-solar-jv-lightsource-bp-2023-11-30/ Fourth Full Results, BP's Quarter https://www.bp.com/en/global/corporate/investors/results-reporting-and-

190 See BP, presentations/quarterly-results-and-webcast.html . Year 2023

company are aimed at the development of oil and gas that is precipitating the world towards a climate catastrophe. BP's failure to inform ordinary consumers that its Touted investments in clean energy represent only a tiny percentage of their expenses (and that aims to increase the production and sales of fossil fuels in the future) makes these advertisements materially misleading.

148. However, in BP's “Rise and Shine” web ad, the company promotes specifically their partnership with Lightsource. "Our economic gurus believe that [the solar energy] could account for 10% of global energy by 2040," the announcement said, and "To help make that a reality, we've partnered with the largest solar company in Europe, [Lightsource BP]”191. The advertisement highlighted the floating solar power station of 6.3 MW from Lightsource BP near London and Lightsource BP's deal with Budweiser to supply renewable energy to its breweries in the UK. “Projects like these “The possibilities of solar energy are improving,” BP said, “and even rainy days are not may dampen enthusiasm for this rapidly growing energy source. This is because, Regardless of the weather, our cleaner-burning natural gas can play a supporting role to keep your kettle ready for action”192 .

149. This description of solar energy as BP's big interest, with natural gas used only as a backup, it is also false. BP's investments in natural gas exceed its investments in solar energy by a factor of about 100 or more, and only a small fraction of its natural gas products, approximately 5% or less, are used for support renewable energy. Therefore, the overall impression given by the advertisements (which

[191] BP, Rise and Shine.
[192] Ibid.

BP invests substantially in solar energy and that its natural gas is used only as a backup) is materially misleading to consumers.

D. Chevron's deceptive greenwashing campaigns

150. Chevron also engaged in eco-laundering campaigns designed to deceive consumers about Chevron products and its commitment to addressing change climate, including Puerto Rican consumers.

151. In 2001, Chevron developed and shared a sophisticated asset management system information to collect data on greenhouse gas emissions from its exploration and production to help regulate and establish reduction objectives193. Beyond of this technological advancement, Chevron promoted “cost-effective renewable energy” as part of its business plan for several years and launched an advertising campaign in 2010 using promoting the company's change towards renewable energy. Despite this rhetoric (and the renewable energy group Chevron profits of $27 million in 2013), Chevron sold its renewable energy unit in 2014194

152. Chevron’s 2007 “Will You Join Us?” and its “I Will” campaign 2008 misleadingly described the company as a leader in renewable energy. The advertisements of campaigns featured minor changes in consumer choices (e.g. changing light bulbs) as sufficient to address environmental problems such as climate change climate195 .

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193 Press Release, Chevron, Chevron Introduces New System to Manage Energy Use (25 de sept. de 2001), https://web.archive.org/web/20170207205638/https://www.chevron.com/stories/chevron-introduces-new-system-to-manage-energy-use.

194 Ben 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.

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

153. The general objective of the campaigns was to convey the perception of guilt and responsibility for global warming to consumers and make Chevron's role and that of the fossil fuel industry in general seems small. The solution misleading move that was promoted to consumers was not a move away from fossil fuels, but to implement small changes in consumer behavior and continue depending on fossil fuel products. When presenting gas emissions greenhouse effect as derived from numerous sources in addition to fossil fuels, Chevron ads obscured the fact that fossil fuels are the root cause of increasing greenhouse gas emissions and the main driver of change climate.

154. Deceptive messages were emblazoned on images of average Americans, as in the example highlighted below:

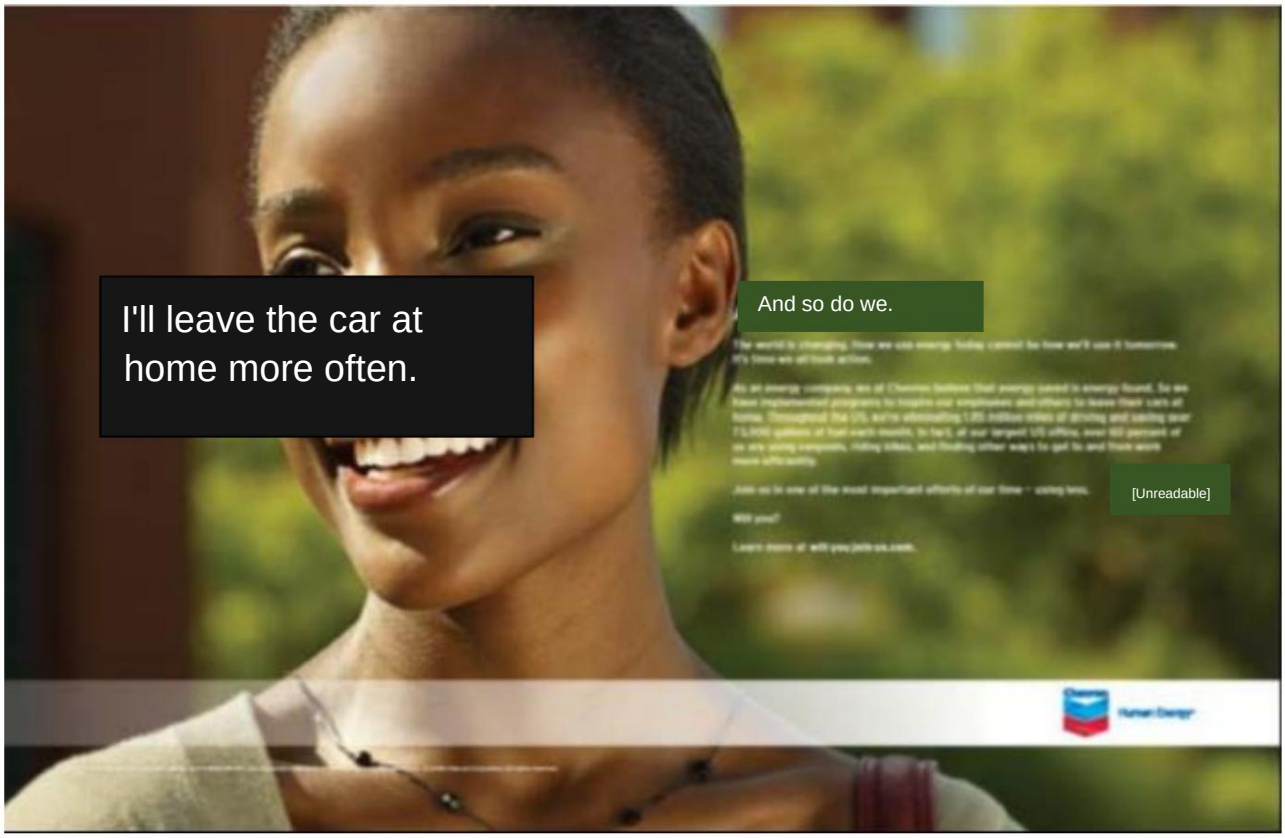

Figure 10: Chevron ad "Will You Join Us?"

155. In 2010, Chevron launched an advertising campaign titled "We Agree." The Print, Internet and television advertising campaign expanded throughout the United States and internationally. For example, the ad below highlighted the alleged commitment of Chevron with the development of renewable energy and said in large letters next to a photograph of a girl: “It is time for oil companies to support energy development renewable. We agree." The ad emphasized: “We are not just after the energies renewable. “We are facing the challenge of making them affordable and reliable on a large scale.”

Figure 11: Chevron "We Agree" Ad

156. Chevron's description of itself as a leader in renewable energy It was false and misleading. In reality, only 0.2% of Chevron's capital spending between 2010 and 2018 went to low-carbon energy sources, with 99.8% going to exploration and continued development of fossil fuels, a stark contrast to the message communicated to consumers through company advertisements.196

157. Chevron's "We Agree" campaign also included television ads misleading. In an ad focused on renewable energy, a professor says, "Okay, listen. Someone has to get serious. "We need renewable energy." To which a Chevron environmental operations employee responds: "At Chevron we are investing billion in solar and biofuel technologies to make it work." In reality, Chevron continued to focus overwhelmingly on fossil fuel extraction and development, and its investment of "millions" in renewable energy is minuscule compared to its

[196] Raval & Hook, Oil and Gas Advertising Spree Signals Industry's Dilemma, supra note 192.

investment of billions in fossil fuels. An average consumer looking at the "We Agree" ads would falsely believe that Chevron has invested significantly in the development and deployment of clean technologies, while almost all of the company's spending is aimed at oil and gas development. Chevron's failure to inform the average consumers that their touted investments in clean energy represent only a minuscule percentage of its expenses (and that it aims to increase production and sales of fossil fuels in the future) makes these advertisements materially misleading.

E. ConocoPhillips' deceptive greenwashing campaigns

158. In 2012, ConocoPhillips published a Sustainable Development Report in the which "recognised that human activity, including the burning of fossil fuels, is contributing to the increase in greenhouse gas (GHG) concentrations in the atmosphere, which can cause adverse changes in global climatic conditions"197 . The Report's objectives included "[u]nderstanding our GHG footprint," "[r]educing our GHG emissions" and "evaluate and develop technologies for renewable energy"198 .

159. This report is in stark contrast to the 2012 10-K filing of ConocoPhillips before the SEC, revealing the company's exclusive focus on producing fossil fuels for global distribution: "As an independent exploration and production, we focus solely on our core business of exploration, development and production of crude oil and natural gas worldwide." The presentation also highlighted the "growing oil sands and shale businesses in North America." . . and

[197] ConocoPhillips, Sustainable Development; http:// Climate Change Position 17 (2012), static.conocophillips.com/files/resources/2012-sd-report.pdf.
[198] Id. at 17, 20.

a global exploration program"199, thereby making it clear that he had no intention of comply with the commitments contained in its Sustainable Development Report.

160. In fact, in 2019, ConocoPhillips produced more than 700,000 barrels of oil crude oil per day and more than 2.8 million cubic feet of natural gas per day200. The fact that ConocoPhillips does not inform ordinary consumers that its touted investments in clean energy represents only a tiny percentage of its expenses (and it aims to increase production and sales of fossil fuels in the future) makes his touts sustainability goals are materially misleading.

VII. Defendants also made misleading claims about specific "green" or "cleaner" fossil fuel products.

161. Defendants have also engaged in extensive marketing efforts and highly misleading ads aimed at promoting certain of their fossil fuel products as "ecological" and beneficial for the environment.

162. Defendants' advertising and promotional materials do not reveal the extreme safety risk associated with the use of fossil fuel products, which are causing "catastrophic" climate change, as the Defendants understood it during decades. Defendants continue to omit that important information to this day, in line with its objective of maintaining consumer demand for its products of fossil fuels despite the risks they represent for the planet and its inhabitants.

163. Defendants misleadingly represent that the use of certain health care products consumption of fossil fuels actually helps customers reduce emissions. emissions and obtain greater fuel economy. However, emphasizing the benefits

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

[200] ConocoPhillips, 2019 Annual Report 168 (2019), https://static.conocophillips.com/files/resources/2019-conocophillips-annual-report-19-0895.pdf.

relative climatic and “ecological” conditions while hiding the dangerous effects of high rates continued use of fossil fuels creates a misleading overall picture that hides the terrible climate impacts resulting from normal consumer use of Defendants' fossil fuel products. Contrary to claims “ecological” nature of Defendants, the development, production, refining and use by consumer of Defendants' fossil fuel products (including products that can produce relatively more efficient engine performance) increase emissions of greenhouse gases to the detriment of public health and the well-being of consumers. No matter what chemicals are added to the fuel mixture, the burning of Gasoline always emits greenhouse gases, which contributes to climate change and its associated impacts. Defendants' Additive Marketing Disguises Their Gasoline Products with an environmentally friendly appearance and at the same time conceals misleading the dangerous climate effects of burning fossil fuels.

164. Furthermore, while Defendants were actively promoting their “less polluting” gasoline at Puerto Rico gas stations and on the websites of their companies, massively expanded fossil fuel production and increased emissions. If consumers had understood the full extent to which the products of the Defendants contributed to climate change and that Defendants had not in fact materially invested in alternative energy sources or were otherwise cautious about the environment, they would probably have acted differently, *for example,* not purchasing Defendants' products or purchasing less of them.

165. In the promotion of these and other fossil fuel products, even in their brand name gas stations in Puerto Rico, Defendants do not disclose the fact that the

Fossil fuels are one of the main causes of climate change and that levels current rates of use of fossil fuels (even the supposedly “less polluting”)” or more efficient products, represent a direct threat to Puerto Ricans and the environment atmosphere. Defendants' omissions in this regard are consistent with their objective of influence consumer demand for their fossil fuel products through eco-bleaching. Defendants also do not require their suppliers and retail outlets external data that reveal facts related to the impact of fuel consumption fossils and their "less polluting" alternatives in climate change when selling the products of the Defendants.

166. The marketing that the Defendants do of these products of fossil fuels to Puerto Rican consumers as “safe”, “non-polluting”, “emissions reducers” and implicitly beneficial for the climate (when production and the use of these products is the main cause of climate change) remembers the effort of the tobacco industry for promoting “low-tar” and “mild” cigarettes as an alternative to quit smoking after the public became aware of the health harms life-threatening diseases associated with smoking[201] .

167. Defendants' product promotions are positioned to assure consumers that the purchase and use of their products are beneficial to them address climate change, when in reality, the continued use of such fossil fuels is extremely harmful, in the same way that tobacco companies promoted deceptively “low tar” and “mild” cigarettes as a healthier and more

[201] See American Cancer Society Cancer Action Network, “23 Year History of the Racketeering Lawsuit Against the Tobacco Guilty of Deceiving the American Public” (2023), https://www.fightcancer.org/sites/default/files/history_of_doj_rico_lawsuit_fact_sheet_final_June29.23.pdf, at pp. 1, 5; see also Tobacco Control Legal Consortium, The Verdict Is In: Findings from United States v. Philip Morris, Section on Light Cigarettes pp. 1–9, https://www.publichealthlawcenter.org/sites/default/files/resources/tclc-verdict-is-in.pdf

less harmful, when tobacco companies knew that any use of cigarettes was harmful.

168. As with the misleading use of scientific and engineering terms by of tobacco companies in advertising to improve the credibility of their statements, Defendants' promotional materials for their fossil fuel products also deceptively invoke similar terminology to falsely convey to Puerto Rican consumers that the use of these products benefits the environment.

169. For example, Exxon announces that its Synergy Diesel Efficient fuel will allow vehicles to “reduce emissions and burn cleaner”202. Exxon also publishes online content under the banner "Energy Factor", in which Exxon claims that "offers a range of products, including lightweight materials and lubricants and fuels that improve performance, durability and efficiency to reduce emissions. With this “portfolio of solutions,” Exxon says, it is carrying out “the vital task of reducing greenhouse gas emissions throughout the transportation sector”203 .

170. Similarly, Shell announces that the use of its gasoline “produces less emissions”204 .

171. BP markets its Invigorate gasoline as a “proprietary detergent additive” that “helps cars become non-polluting and efficient machines,” and its bp Diesel as a fuel that “can reduce emissions with a powerful fuel,

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[202] Exxon, Synergy Diesel Efficient Fuels For Fleets, Light-Duty Trucks, and Passenger Vehicles, https://www.exxon.com/en/synergy-diesel-efficient#:~:text=Synergy%20Diesel%20Efficient%20fuel%20is,means%20less%20maintenance%20and%20downtime (last visited Feb. 5, 2024).

[203] Exxon, Transforming Transportation, https://corporate.exxonmobil.com/what-we-do/lower-emission-transportation#Transportationsectors (last visited Feb. 5, 2024).

[204] 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).

reliable and energy efficient made with low sulfur content and additives”205. He BP's website also announces that its fuel selection "includes a growing number of low-carbon and carbon-neutral products"206 .

172. 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% less polluting”207 . In a question and answer session On Chevron's website, a question says: “I care about the environment. Does Techron affect my car emissions? Chevron responds that “[gasoline with Techron” cleans the carburetors, fuel injectors and intake valves, “which reduces emissions”208 .

173. These misrepresentations, which were intended to reach and influence consumers of Puerto Rico, were misleading because they emphasized the supposedly beneficial qualities for the environment of fuels without revealing the key role that fuels play fossils in the cause of climate change.

174. As with the use of scientific terms by companies tobacco companies to promote “mild” cigarettes, Defendants' claim that their new supposedly high-tech fossil fuel products help consumers to reduce emissions makes their promotional materials misleading, because they seek to transmit, with the imprimatur of scientific credibility: a general message that is

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205 See, e.g., BP, Our Fuels, https://www.bp.com/en_us/united-states/home/products-and-services/fuels.html (last visited 14, 2022).

206 BP, Advanced Fuels and Lubricants, https://www.bp.com/en_us/united-states/home/what-we-do/advanced-fuels-and-lubricants.html (last visited, Feb. 5, 2022).

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

208 Id.

false and contradicts Defendants' own decades-old insider knowledge about the dangers of using fossil fuels.

VIII. Defendants intended to make consumers confident in their concealments and omissions regarding the dangers of their fossil fuel products.

175. Consumer use of fossil fuel products, particularly when driving cars and other gasoline-powered vehicles, contributes significantly to climate change. However, as a result of the sustained and widespread misinformation campaign by the Defendants, many Puerto Rican consumers Rico did not realize the magnitude of the threat posed by the use of fossil fuels, or the relationship between their purchasing behavior and climate change.

176. Defendants have been aware for decades that clean energy presents a viable alternative to its fossil fuel products. In 1980, Exxon predicted that, if non-fossil energy sources were sought, they could penetrate half of a competitive energy market in approximately 50 years209. This internal estimate was based in extensive modeling within the academic community, including research conducted by David Rose of MIT who concluded that an energy transition could be achieved no fossil in about 50 years. Exxon circulated an internal memo approving the Rose's conclusions and stated that they were "based on reasonable assumptions."210 But instead of seek a transition to clean energy or warn the public about the dangers of burning fossil fuels, Defendants chose to deceive consumers in order to preserve their profits and assets.

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[209] H. Shaw and P. P. McCall, Exxon Research and Engineering Company's Technological Forecast: CO2 Greenhouse Effect 5 (Dec. 18, 1980).

[210] CO2 Greenhouse Effect: A Technical Review, Coordination and Planning Division, Exxon Research and Engineering Company 18 (April 1, 1982).

177. By misleading Puerto Rican consumers about the climate impacts of use of fossil fuel products, even to the point of claiming that some of their products can benefit the environment, and by not disclosing the risks to consumers associated with the purchase and use of those products, Defendants deprived and continue to deprive consumers of information about the consequences of their purchasing decisions purchase.

178. The Defendants intended for Puerto Rican consumers to trust their omissions and concealments and will continue to purchase fossil fuel products from the Defendants without taking into account the harm that such products caused.

179. Knowledge of the risks associated with the routine use of safety products fossil fuels is fundamental to the decisions of Puerto Rican consumers buy and use those products. As with cigarettes, history shows that when consumers are aware of the harmful effects or qualities of the products they buy, they often choose to stop buying them, reduce their purchases, or take different purchasing decisions. This phenomenon is especially true when it is demonstrated that the products harm public health or the environment. For example, the increased awareness of consumers about the role of pesticides in harming human health, the health of workers and the environment has stimulated a growing market for cultivated foods organically and without the use of pesticides. By having access to information about how they are grown their foods, consumers have demanded healthier options and the market has answered.

180. Similarly, a consumer who received precise information that the use of fossil fuels was one of the main drivers of climate change and the dangers

consequences for the environment and people could buy fewer environmentally friendly products. fossil fuels or decide not to buy any. Consumers may choose to avoid ocombine car trips, carpooling, switching to more fuel-efficient vehicles fuel, hybrid vehicles or electric vehicles, use a vehicle service shared; seek transportation alternatives in whole or in part, if available (e.g. example, public transportation, bicycling or walking). or adopt any combination of these options. In addition, informed consumers help solve problems by supporting companies that are perceived to be developing products "ecological" or more respectful of the environment.

181. By concealing and affirmatively misrepresenting the catastrophic climate effects of fossil fuel consumption, Defendants deprived consumers of the facts necessary to make informed decisions about how and where to buy energy. If the consumers would have been fully and accurately aware of the public health risks of burning fossil fuels could have formed a customer base receptive to clean energy alternatives decades before such demand developed. The delay in emergence of a scalable market for non-fossil fuel energy is attributable to the industry-induced consumer ignorance of the reality and severity of the climate consequences associated with the normal use of fossil fuels. The transition to a low-carbon economy would have been much cheaper and more efficient if Defendants would have publicly acknowledged the conclusions reached by their own scientists and the scientific community in general. As a result of this delay, huge amounts of avoidable greenhouse gas emissions into the atmosphere, resulting in

has led to higher total emissions, higher peak emissions and all the effects associated climatic conditions.

IX. Defendants' deception recently came to light and their negligent conduct keep going.

182. The fact that the Defendants and their agents knowingly provided incomplete and misleading information to the public, including Puerto Rican consumers, is recently revealed, among other things, due to:

to. Defendants' campaign of deception described above, which continues to this day from today;

b. Defendants' Efforts to Discredit Climate Change Science and create the appearance that said science is uncertain;

c. Defendants' concealment and misrepresentations that their products cause catastrophic damage; and

d. the fact that the Defendants used front groups such as API, the Global Climate Coalition and National Mining Association to hide their participation in these actions, which diverted the Commonwealth from the investigation.

183. Furthermore, the negligent and unlawful conduct of the Defendants, in the form of misrepresentations, omissions and deceptions, 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 that climate change represents. TO Below are examples of the continued misrepresentations, omissions and deceptions of the Defendants.

184. In June 2018, a post on Shell's official blog said: “The scope potential of climate change could be eliminated now. In other words, the perspective of a rampant climate change could have happened”211. However, this statement is not supported by valid scientific research and was and is contradicted by studies accredited212 .

185. In March 2018, Chevron published a report titled “Resilience to Change Climate: A Framework for Decision-Making,” which misleadingly stated that “[t]he Fifth IPCC Assessment Report concludes that there is a warming of the climate system and that warming is due in part to human activity”213 . In fact, the fifth report evaluation concluded that “[i]t is extremely likely [defined as a probability of 95% to 100%] that human influence has been the dominant cause of warming observed since the middle of the 20th century”214 .

186. Despite this fact, in April 2017, the CEO and president of the Chevron Board of Directors John Watson said in a podcast: “There is no question that there has been some warming; You can look at the temperature data and see it. The question and the debate revolves around how much and to what extent it is caused by humans”215 .

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211 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.

212 See, e.g., Fiona Harvey, Carbon Emissions from Warming Soils Could Trigger Disastrous Feedback Loop, The Guardian https://www.theguardian.com/environment/2017/oct/05, (Oct. 5, 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.

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

214 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.

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

187. Similarly, ConocoPhillips' "Climate Change Position," as as appeared on the company's website until 2020, stated that human activity is "contributing to" climate change and emphasizes "uncertainties", although the science is clear: "ConocoPhillips recognizes that human activity, including the burning of fossil fuels, is contributing to higher concentrations of greenhouse gases (GHG) in the atmosphere that can cause adverse changes in the global climate... Although the uncertainty, we continue to manage greenhouse gas emissions in our operations and integrating activities and objectives related to climate change in our commercial planning"216 .

188. In 2015, then-Exxon Mobil CEO Rex Tillerson argued that climate models were not robust enough to justify a away from fossil fuels, and said: "What if everything we do turns out to be that our models are terrible and we don't get the effects we predict? The humanity has this enormous capacity to face adversity, and those solutions will be presented to as those challenges become clear"217 .

The Commonwealth has suffered, is suffering, and will suffer damages from the unlawful conduct of the Defendants.

189. By sowing doubts about the future consequences of unrestricted consumption of fossil fuels, Defendants' campaigns of deception have delayed the transition to alternative energy sources, which Defendants predicted could penetrate half of a competitive energy market in 50 years if they were allowed to develop without obstacles.

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216 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/.

217 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.

This delay caused the emission of enormous quantities of greenhouse gases that would otherwise have been avoided, thus ensuring that the damage caused by climate change to Puerto Rico will be substantially more severe than if the Defendants had acted honestly, according to your inner knowledge.

190. As a direct and immediate cause of the deceptive and illegal conduct of the Defendants, the Commonwealth of Puerto Rico, its citizens and its natural resources have suffered and will continue to suffer serious damage inflicted by climate change in the future.[218] For example:

to. Sea level around Puerto Rico is expected to continue rising during centuries. Rising sea levels threaten to flood communities located in the coastal zone (where 60% of the population lives) and cause enormous damage to essential infrastructure, including the Port of San Juan, the main airports, power plants, water and sewage infrastructure and hundreds of kilometers of roads.

b. Puerto Ricans face significant human health risks due to climate change, including more frequent and intense heat waves, storms extremes, forest fires and increased transmission of pathogens. The government of Puerto Rico will have to spend large sums of money to adapt infrastructure medical, energy and transportation of the Commonwealth to address these health risks.

c. Climate change threatens many of the world's natural and environmental resources. Puerto Rico. In particular, ocean acidification, higher temperatures

[218] See Puerto Rico Climate Change Council, Puerto Rico's State of the Climate, 2014–2021: Assessing Puerto Rico's Social-Ecological Vulnerabilities in a Changing Climate (2022), https://www.drna.pr.gov/wp-content/uploads/2022/10/PR_StateOfTheClimate_2014-2021_PRCCC-09-2022.pdf

Warm ocean temperatures and extreme storms have already caused a significant bleaching and destruction of coral reefs around Puerto Rico.

Furthermore, climate change is likely to cause changes in ecosystems freshwater, coastal and marine areas in Puerto Rico, which will affect the capacity of those ecosystems to provide habitats for the flora and fauna they support, including commercially important species and species that are rare or exclusive from Puerto Rico.

d. The tourism industry, a major component of the economy, is expected to Puerto Rico suffers significant losses as sea level rise erode beaches and flood cultural sites, extreme storms and wildfires damage tourist attractions, warmer temperatures increase the thermal stress of tourists and the coral reefs become discolored and are destroyed.

and. The agricultural industry is expected to be negatively affected by the increased intensity of precipitation, periods of drought and rising sea levels sea that introduces salt water into the aquifers on which the lands depend agricultural.

191. These consequences will disproportionately affect the communities of Puerto Rico's elderly and poor, as climate change exacerbates the environmental and public health stressors associated with disparities socioeconomic and age.219 Socially vulnerable Puerto Ricans, who already suffer high rates higher rates of adverse health effects such as asthma, cancer, and respiratory diseases,

[219] See Institute of Statistics, Puerto Rico Community Survey 2015-2019 (2021), https://censo.estadisticas.pr/EncuestaComunidad (44.1% of Puerto Rican households live below the poverty level).

They are often less prepared to adapt to a warming world because their Communities lack the infrastructure and resources necessary to resist threats posed by climate change.220, 221

192. In a 2018 study, the majority of Puerto Ricans who reported having suffered coastal flooding during storms and hurricanes were among the population with the lowest income range.222 46% of the housing units in Puerto Rico (about 408,279 units) are occupied by low- and moderate-income households in areas that could be permanently flooded by a 0.9 meter rise in sea level.223

193. The consequences of climate change will not only be felt in communities coastal areas of Puerto Rico. For example, climate change negatively impacts agriculture and food production across the Commonwealth: the 2014-2016 drought affected 64% of Puerto Rico and caused $13.8 million in agricultural losses.224 Additionally, it is expected that the Rising sea levels cause Puerto Rico's mangrove forests to migrate ashore inside, invading the dry forest habitat on which many species depend.225

[220] See Department of Natural and Environmental Resources, Climate Change Risk and Resilience Public Perception Study (2018), http://drna.pr.gov/wp-content/uploads/2019/01/Informe-final-Estudio-de-percepcion-publica-sobre-cambio-climatico.pdf

[221] See P. Méndez-Lázaro et al., Climate change, heat, and mortality in the tropical urban area of San Juan, Puerto Rico, 62 Int'l J. of Biometeorology 699 (2018)

[222] Department of Natural and Environmental Resources, Climate Change Risk and Resilience Public Perception Study

[223] Gobierno de Puerto Rico, State Consolidated Plan for Housing and Community Development Programs 2020–2024 & 2020 Annual Action Plan (2020), https://www.vivienda.pr.gov/wp-content/uploads/2021/03/STATE-CONSOLIDATED-PLAN-2020-24-2020-ANNUAL-ACTION-PLAN-PARTE-1.pdf.

[224] N.L. Álvarez-Berríos et al., Correlating drought conservation practices and drought vulnerability in a tropical agricultural system Renewable Agriculture and Food Systems, 33 Renewable Agriculture and Food Systems 279 (2018).

[225] See Puerto Rico Climate Change Council, State of the Climate.