

What Can Be Done

In 2004, one could turn on three of the most viewed network news programs in the world, on NBC, ABC, or CBS, and find “balanced” coverage of climate science that offered credence to climate deniers and spread misinformation about the scientific consensus to viewers.¹ It is no longer controversial to say the composition of Earth’s climate is changing due to man-made carbon emissions. Decades of climate science built to the 2018 Special Report 1.5 from the Intergovernmental Panel on Climate Change, making headlines across the world and bringing millions of people to the streets with a simple estimate – we have twelve years to avoid a slow-moving environmental catastrophe with apocalyptic potential. There is a very basic aspect to the problem of climate change, in that you can summarize what ultimately must be done in a sentence: a full, holistic transition of the global economy away from the emission of carbon, paired with the active conservation and expansion of natural carbon sinks.

In this necessity, however, is a nearly inconceivable task. The modern global economy is predicated on the extraction and combustion of carbon for energy - the economic transition from carbon we have no choice but to undertake involves innumerable transitions quite literally everywhere you look. This represents the first inherent problem in communicating the science and implications of climate change: the sheer scale of the crisis. Another is the influence of interest groups in how that science has been portrayed to the public. The fossil fuel industry has spent millions of dollars to make the entire concept of global warming seem nonsensical, or at least not understandable. A 1998 memo from the Exxon Mobil-funded Global Climate Science Team spelled out this strategy: “Victory will be achieved when average citizens ‘understand’ (recognize) uncertainties in climate science.”² Exxon Mobil did have a great deal of climate science on their hands, and they used it to foster public confusion regarding the issue. In 1978, Exxon Mobil senior scientist James Black informed the company’s board that “man has a time window of five to 10 years before the need for hard decisions regarding changes in energy strategies might become critical.”³

Ten years after that report, Exxon Mobil recognized the time for action was indeed quickly approaching. As international powers prepared to meet to establish a framework for regulating carbon emissions, the company founded the Global Climate Coalition, a group funded by the fossil fuel industry that aggressively and publicly challenged the scientific consensus on climate change. In 1997, the year leaders met to form the Kyoto Protocol, the organization had a budget of \$1.6 million to prevent a treaty from happening.⁴ Two years after GCC scientists filed an internal report stating the science behind climate change “could not be denied,” their campaign of confusion managed to sway the United States into abandoning the agreement, leading to its demise.⁵

¹ Boykoff, Maxwell T. 2008. “Lost in Translation? United States Television News Coverage of Anthropogenic Climate Change, 1995–2004.” *Climatic Change* 86 (1): 1–11. <https://doi.org/10.1007/s10584-007-9299-3>.

² Hasemyer, David, and John H. Cushman Jr. 2015. “Exxon Sowed Doubt About Climate Science for Decades by Stressing Uncertainty.” InsideClimate News. October 22, 2015. <http://insideclimatenews.org/news/22102015/exxon-sowed-doubt-about-climate-science-for-decades-by-stressing-uncertainty>.

³ Hall, Shannon. n.d. “Exxon Knew about Climate Change Almost 40 Years Ago.” Scientific American. Accessed January 20, 2020. <https://www.scientificamerican.com/article/exxon-knew-about-climate-change-almost-40-years-ago/>.

⁴ Revkin, Andrew C. 2009. “Industry Ignored Its Scientists on Climate.” *The New York Times*, April 23, 2009, sec. Science. <https://www.nytimes.com/2009/04/24/science/earth/24deny.html>.

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Scientists for Exxon Mobil knew what failing to curb carbon emissions would do two decades before any current University College student was born, and they were aware the clock was ticking. The legacy of the decisions they made will be felt by my generation, our children, and our children's children. And it has already been felt in winds that leveled the Abaco Islands, fires that burned Paradise, California alive, and floodwaters that nearly sank Houston.

What we do have to our advantage in this rising sea of hopelessness is awareness, and direct access to the science that spells out the challenges of our future. These challenges have certainly not all been discovered, and we by no means can assume that even worst-case predictions of the globe's reaction to a two, three, or four-degree change in temperature tell us of every threat to come. The Earth and its climate are unpredictable systems, far too vast to understand every piece of calculus they contain. Imagine the next century's changes in global temperature as an input, and the Earth as a mathematical function – we know the output will contain a set of very scary changes, but much of the equation is missing. There is no telling what other changes will accompany the ones we can predict. Our best reference for the potential extremity of global change in temperature is Earth's history, which tells us a mile-high ice sheet covered Chicago when temperatures were two degrees below the 19th century's average.⁶ Our best-case scenario for global warming is now two degrees above the 19th century's average.⁷

We have no choice but to ask ourselves: how can we individually contribute to forming the global response our lives depend on? And more importantly, what must that response accomplish? Though insufficient, successful regulations have shown us governments are capable of enforcing global solutions to environmental problems. The Montreal Protocol prevented a hole in the Ozone layer that would have increased UV radiation on the Earth's surface.⁸ Had the international community failed to take action in 1987, we would be experiencing skyrocketing rates of skin cancer, crop failures, and a full degree Celsius more global warming.⁹

Citizens of democratic countries have a responsibility to use their vote, and opportunities to influence their peers' votes, to exclusively elect leaders who are unequivocally committed to making this crisis their absolute first priority. There are billions of people who have no say in their government. Their lives are on the line too. The change we need will not require one political movement, but hundreds, to run and win in every city, county, state, province, and legislature up for an election. I cannot claim to know who the leaders we must elect will be, what they must do for their people and this Earth, or much other detail of the road towards mitigation and adaptation. I can confidently say those of us with the power to vote have no choice but to use

⁶ Munroe, Randall. n.d. "Earth Temperature Timeline." Xkcd.Com. Accessed September 9, 2019. <https://xkcd.com/1732/>.

⁷ IPCC, 2018: Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. *World Meteorological Organization, Geneva, Switzerland, 32 pp.*

⁸ McKenzie, Richard, Germar Bernhard, Ben Liley, Patrick Disterhoft, Steve Rhodes, Alkiviadis Bais, Olaf Morgenstern, et al. 2019. "Success of Montreal Protocol Demonstrated by Comparing High-Quality UV Measurements with 'World Avoided' Calculations from Two Chemistry-Climate Models." *Scientific Reports* 9 (1): 1–13. <https://doi.org/10.1038/s41598-019-48625-z>.

⁹ Molina, Mario, and Durwood Zaelke. 2017. "The Montreal Protocol: Triumph by Treaty." UN Environment. November 20, 2017. <http://www.unenvironment.org/news-and-stories/story/montreal-protocol-triumph-treaty>.

that privilege to elect the right people, to keep those people accountable, and to commit to exercising every bit of agency we have as individuals, acting together, towards those goals.