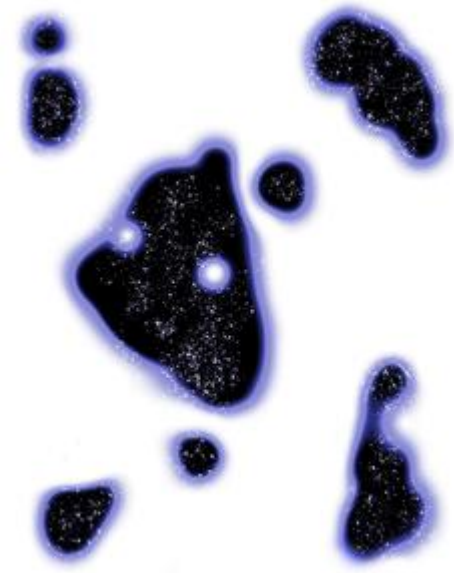
The World Solved the Ozone Problem. It Can Solve Climate Change.

The same tools that fixed the ozone hole — science, innovation and international action — can address it.
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Picture Credit:
Nicholas Konrad

The discovery made big news and rattled the public. Aerosol sales dropped dramatically, and, despite pushback from the chemical companies that made CFCs, Congress in 1977 added protecting the ozone layer to the Environmental Protection Agency's duties under the Clean Air Act. Not long afterward, the agency determined that the compounds, then widely used in refrigerators, air-conditioners and some industrial processes, posed an even graver threat to the atmosphere than first thought. Soon after, pressure began to build for a phaseout of CFCs in the United States as well as for an international treaty to find alternatives.

The case for global action became ever more urgent in 1985 when a British team discovered a hole in the ozone layer above Antarctica, followed by confirmation by

NASA scientists of a connection between the hole and CFCs. With the rest of the world and even industry on board, the result was the 1987 Montreal Protocol, a landmark agreement banning chlorofluorocarbons and other ozone-depleting chemicals. End of story? Not quite. As it happened, the ozone-friendly replacements for the CFCs, known as hydrofluorocarbons, turned out to be distinctly unfriendly to the climate. So in 2016, the Montreal signatories reconvened in Kigali, Rwanda, and agreed to amend the original protocol to phase out HFCs and find substitutes more friendly to the atmosphere.

The bottom line is that the world, confronted with two dire threats to the earth's fragile atmosphere, found two planetary responses with positive outcomes. The ozone layer is healing. That's worth remembering as we struggle, often despairingly, to find common ground in the battle against climate change. Compared with the manifold complexities of global warming, dealing with ozone depletion was, in fact, relatively simple. But the key point is that it happened, and it's worth asking why the world has not responded with similar resolve in dealing with the main global warming gases like carbon dioxide, about which we have known a lot for a long time.

In 1965, following a report from his Science Advisory Committee, President Lyndon Johnson asked Congress to pass a law curbing carbon dioxide emissions. Four years later, in a memo to John Ehrlichman, President Nixon's domestic affairs chief, Daniel Patrick Moynihan, then a presidential assistant, warned that "man has begun to introduce instability" in the atmosphere "through the burning of fossil fuels." Atmospheric warming, Mr. Moynihan said, "very clearly is a problem, and perhaps most particularly, is one that can seize the imagination of persons normally indifferent to projects of apocalyptic change." Indeed, he offered, it was not out of the question to imagine "mammoth man-made efforts to countervail the CO2 rise (e.g., stop burning fossil fuels)."

Later came the dramatic congressional testimony of James Hansen, a NASA scientist, before Congress in June 1988, linking global warming to human activities with 99 percent certainty, an assertion that landed the issue on the front page of The New York Times; also the strenuous efforts of advocates like Al Gore to demonstrate the link between warming and the increase in manufacturing and the use of fossil fuels since the beginning of the Industrial Revolution.

Yet scientific knowledge has not produced action equal to the challenge. One reason has been the absence, until fairly recently, of obvious environmental damage threatening individual well-being and the sense of urgency that inspires the public to

demand regulatory responses. The prospect of thousands and even millions of cancer deaths led to the Montreal Protocol. The Cuyahoga River catching on fire, giant algae blooms in lakes and rivers, and widespread contamination of municipal water supplies led to the Clean Water Act of 1972. Oppressive inner-city smog — so bad you could nearly taste it — as well as mounting respiratory illnesses, and dead and dying trees, streams and lakes, helped overcome political and industry foot-dragging and created the landmark 1990 amendments to the Clean Air Act and its innovative cap-and-trade system for controlling ground-level pollutants.

Climate change, by contrast, has for a long time been seen as remote, something for future generations to worry about, and in polls has appeared far down on the list of voters' concerns.

In addition, there were no relatively expeditious technological fixes for carbon emissions, as there were for fluorocarbons, and as there were for the pollutants addressed in the 1990 Clean Air Act Amendments, like scrubbers for power plants, and catalytic converters and cleaner fuels for cars and light trucks. The global warming problem requires a whole suite of fixes, some of them mammoth, as Mr. Moynihan intuited a half-century ago — carbon-free alternatives to produce electricity; an all-electric vehicle fleet; an end to deforestation; climate-friendly agricultural practices; large-scale dietary changes; and, quite possibly, advanced technologies to draw carbon dioxide out of the atmosphere. Reimagining the world economy means turning around a very big ship. Not to mention global buy-in.

Finally, despite predictable industry warnings of economic ruin, the efforts to protect the ozone layer and clean up the nation's waters and air faced nowhere near the campaign of denial and disinformation mounted by Exxon Mobil and other big fossil fuel companies — companies that knew perfectly well what their products were doing to the atmosphere — to confuse the public about climate change and to derail serious attempts to address them. This cascade of phony science was not the only reason legislation aimed at reducing carbon pollution foundered in Congress. As Bill Clinton and Mr. Gore discovered after signing the Kyoto Protocol in 1997, there was little enthusiasm in either party for a treaty that essentially required America and other industrial nations to do most of the heavy lifting while giving other big emitters, among them China and India, a far easier path. Still, industry's relentless obfuscation played a big role, especially among Tea Party Republicans.

Are there reasons now to hope for serious action? Yes: a trifecta of frightening reports in the last year from the Intergovernmental Panel on Climate Change on the

need to act before things spin out of control, on deforestation and other damaging land-use practices, on dying reefs and rising sea levels. Plus: a cascade of natural disasters, including catastrophic wildfires and hurricanes. Plus: the dramatic drop in the cost of producing carbon-free energy like wind and solar power. Plus: well-publicized concerns on the part of every contender for the Democratic presidential nomination, and equally well-publicized efforts by state and local officials, to fill the global leadership vacuum left by President Trump.

What David Doniger, a climate expert at the Natural Resources Defense Council, calls a “one-two punch of irrefutable science and irrefutable experience” has clearly raised public awareness and, perforce, the political temperature. To all this should be added the experience of Montreal and Kigali, and the catastrophe that did not happen.

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