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The Truth About the Two-Degree Target  
Why It Hasn't Helped Mitigate Climate Change  
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Upon reading Greenpeace International Executive Director Jennifer Morgan's response ("[Don't Abandon the Paris Temperature Target](#) <sup>[1]</sup>," February 28) to my recent *Foreign Affairs* article ("[The Two-Degree Delusion](#) <sup>[2]</sup>," February 8), one might think the world had made great headway in its efforts, dating back to the early 1990s, to stabilize global emissions. "It would be wrong," she writes, "to become indecisive or to consider no longer pursuing the goals that to date have driven climate action."

In reality, global emissions [have risen](#) <sup>[3]</sup> faster in the 20 years since the world ratified the two-degree target at Kyoto in 1997 than they did over the 20 years before. Global clean energy as a share of total primary energy consumption has seen no increase. The long-term carbon intensity of the global economy, the amount of carbon emitted for every unit of economic production, also fell faster before Kyoto than after. Most nations, in fact, are not even on track to meet the commitments they made at Paris barely two years ago, targets that would have allowed temperatures to rise well past three degrees Celsius over the course of this century.

In the face of two decades of evidence that these sorts of goals have not produced any measurable progress toward mitigating climate change, Morgan nevertheless insists upon upping the ante on the two-degree target, asserting that the even more preposterous mark of 1.5 degrees remains within reach. This is possible, she argues, because the world is on the cusp of a disruptive energy technology revolution. Falling costs of solar, wind, and electric vehicles mean the targets are achievable.

The argument itself is innumerate. Solar and wind combined [account for](#) <sup>[4]</sup> four percent of global electricity generation, and the electrical sector in total accounts for only about a fifth of global emissions. Electric vehicles [represented](#) <sup>[5]</sup> 1.5 percent of global vehicle sales in 2017, and light-duty vehicles [accounted](#) <sup>[6]</sup> for nine percent of global emissions in 2014. Morgan has nothing to say about heavy-duty transportation, steel, agriculture, chemical manufacturing and refining, or cement production, which together [account for](#) <sup>[7]</sup> over 40 percent of global emissions. The technologies that Greenpeace and most other climate warriors worship offer no plausible pathway to decarbonize those sectors of the global economy on any time frame consistent with limiting warming to two degrees, much less the more radical target of 1.5 degrees.

But Morgan, like so many environmental generals, continues to fight the last war, despite having already lost it decisively. Back in the early 1990s, when the basic framework that has guided international efforts to address climate change was established, it was possible to imagine that determined and coordinated action might limit warming to two degrees. Perhaps China, India, and other developing nations might take a fundamentally different development path from that of Western nations. Even then, environmental nongovernmental organizations imagined that a world powered primarily by wind and solar energy was close at hand.

But almost 30 years later, we are long overdue to reconsider the path that we are on and how we are going to manage the quite considerable risks that climate change is going to present to human societies. China and, increasingly, India are industrial behemoths, each boasting middle classes that are larger than the entire U.S. population while still hosting, together, a billion more people living in deep subsistence poverty. Solar and wind have made great progress but represent <sup>[4]</sup> 0.5 percent and 1.6 percent of global primary energy production, respectively. Morgan insists that climate resilience can be achieved for poor populations without further fossil energy development but offers no suggestion as to how poor nations are going to build modern housing and infrastructure—the key ingredients that make rich nations more resilient to climate change than poor nations—without steel or cement.

In a world in which, Morgan asserts, we are already facing serious climate disruption, she takes most of the tools that we have to manage that disruption, including carbon removal and geoengineering, off the table. China, India, and other developing nations, despite laudable efforts to deploy renewable and nuclear energy, are also planning to build hundreds of new coal plants over the next decade, yet Morgan rejects out of hand carbon capture and storage. And she avoids mentioning nuclear energy altogether, even though nuclear closures around the world are the primary reason that total global clean energy has stagnated despite hundreds of billions invested in renewable energy over the last decade.

Wise and pragmatic action to address the issue still holds much promise. Redoubled efforts to reduce emissions by deploying renewables, nuclear, and promising new carbon capture technologies can significantly reduce climate risk, even if we are unable to limit temperature increase to two degrees. Greater clarity about what adaptation really entails can help ensure that poor populations are better able to weather natural disasters. With foresight and research, carbon removal and geoengineering may buy us time to avoid worst-case scenarios. But Morgan's unwillingness to even acknowledge the difficult tradeoffs that the climate issue inevitably will require demonstrates, rather than rebuts, my contention that continuing to insist that the two-degree threshold is both sacrosanct and achievable creates greater moral hazard than it avoids.

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[3] <http://thebreakthrough.org/issues/Climate-Policy/does-climate-policy-matter>

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