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Energy and Global Warming in a Nutshell

- To avoid "dangerous levels of climate change" the world must reduce its greenhouse gas emissions 50 percent by 2050. Rich countries like the U.S. must reduce theirs by 80 percent.¹
- The traditional environmental approach — pollution limits — depends on making dirty energy expensive so that clean energy becomes relatively cheaper.²
- Voters consistently vote against higher energy prices.³ This is why Europe hasn't succeed in reducing its emissions under Kyoto (European emissions grew twice as fast as America's between 2000 and 2005.)⁴
- China changes everything. Even if the U.S. and Europe significantly reduce their emissions, China won't as long as doing so raises energy prices and slows the economy.⁵
- The wrong model is past pollution control efforts. Acid rain was relatively cheap to fix because it didn't stop the use of fossil fuels, only how they were burned. Alternatives to ozone-depleting chemicals were invented before they were phased out. ⁶ Regulation is useful but will accomplish little without major public funding.
- The key is make clean energy cheap. This can only be done through large public investments to buy down the price of clean energy, and large investments in a new infrastructure, from new transmission lines to energy storage. There is a consensus among energy policy experts on the need for large public investments.⁷ Leading energy experts and Nobel laureates sent a letter to presidential candidates calling for \$30 billion annual investment.⁸
- The right model is past U.S. efforts at technology innovation, and past global economic development efforts, such as the rebuilding of Europe after World War II. Manufacturing and installing clean energy technologies, like solar panels, could be a win-win-win for the U.S., China, and Europe. Regulation can play a role, but the heavy lifting will be done through investment.
- There are other massive challenges we must confront. We have to prepare for a warmer world. We have to recognize that for 3 billion people the climate is already unsafe. We have to save the world's rainforests, which are threatened by agriculture, which is driven by the need for economic development.
- To achieve this we have to focus on our strengths: we are inventive, aspiring, and powerful beings. We have what it takes to overcome the challenge if we embrace our powers, aspirations, and ingenuity.

¹United Nations Intergovernmental Panel on Climate Change, "Summary for Policymakers," October 2007. Nicholas Stern, "The Stern Review on the Economics of Climate Change," October 2006.

² Ted Nordhaus and Michael Shellenberger, *Break Through* (Boston: Houghton Mifflin), 2007. Shellenberger *et al.*, "Fast Clean Cheap," *Harvard Law and Policy Review*, January 2008.

³ Jeff Navin, "Energy Attitudes," Breakthrough Institute, July 2007.

⁴ Shellenberger, *Ibid.*

⁵ Nordhaus, *Ibid.* Shellenberger, *Ibid.*

⁶ Shellenberger, *Ibid.*

⁷ Breakthrough Institute and the Nathan Cummings Foundation, "The Investment Consensus," October 2007. Scientists

⁸ "Letter to Presidential Candidates," December 2, 2007,

http://thebreakthrough.org/blog/2007/12/top_energy_scientists_call_for.shtml