

Dropping
American
EnergySector
CO2
Emissions

Policy Brief: Problem, Background, and Possible Solutions

How can the United States drop energy sector CO2 emissions quickly enough to help avoid the worst effects of climate change?

1.5°

The Problem

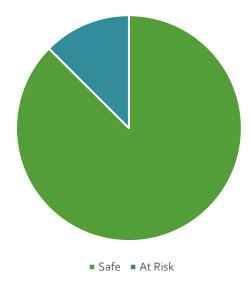
Anthropogenic climate change, also known as global warming, presents a host of catastrophic risks to the United States. These risks will be extremely difficult to predict and will vary by region. They will affect every sphere of American life – from national security, to the economy, to basic food security. Steep energy sector emissions cuts would help the ship around. But we have to act now.

The Background

The United States cannot afford to ignore climate change any longer – scientists predict that catastrophic effects

will begin within twenty years (Tollefson 2018). The Intergovernmental Panel on Climate Change (IPCC) recommends that the industrialized world limit worldwide temperature increase to 1.5 degrees Celsius above the preindustrial average by the year 2020, which would limit

US Population Flood Risk



12.5% of the population, or 41 million people, are at risk for extreme flooding (Wing et al 2018)

the worst effects of global warming (Bindi et al. 2008). Emissions cuts to the energy sector – which currently account for 28 to 34 percent of America's total carbon emissions (*Inventory of US Greenhouse Gas Emissions* 2019) – will help the United States reach this goal.

What Happens If We Do Nothing?

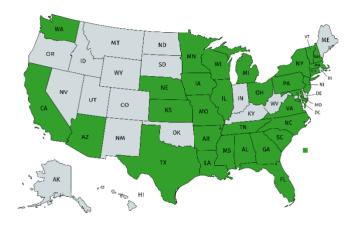
- Our Eastern seaboard will be lost to the Atlantic Ocean. Scientists predict that the sea level will rise between eight inches and six feet within the next hundred years, flooding most of the Atlantic and the Gulf Coasts and submerging the state of Florida (Parris 2017).
- Our national security will be compromised.
 Climate change threatens two-thirds of all
 American military bases (United States
 Department of Defense 2019).
- Our food security will begin to erode. Droughts and floods may cause recurrent failed harvests throughout the Midwest. Longer, more intense, and more frequent heat waves may kill livestock en masse (Reidmiller 2018).
- Our forests will burn. Rising temperatures contribute to longer fire seasons, which only exacerbates Western forest fires (Westerling 2006).

Solutions

In order to stay below the 1.5 degree limit, the United States must reform its private sector energy grid. As shown above, above a quarter of the country's emissions come from electricity creation, and private consumers may not be able to change their consumption habits quickly enough to avoid detrimental effects. We must change how electricity itself is produced.

Cap and Trade

Under cap and trade programs, power plants are required to "cap" certain types of emissions and allowed to buy and sell "pollution permits," or permissions to emit a certain amount of CO2 per year. California and the European Union both instituted cap and trade programs in 2012 and 2005 with mixed results (Schmalensse et al 2017). Often, weak emissions caps and broad pollution allowances handicap cap-and-trade policies (Schmalensse et al 2017). The United States may not be able to spare the time it takes to iron out these programs.



The 30 states in green generate most or part of their power from nuclear energy. Put together, nuclear plants generate 20% of the country's electricity (US Energy Information Administration 2018).

Reforestation

Reforestation may pull enough carbon out of the atmosphere to offset America's energy sector carbon emissions. Ecologists suggest that conservation and restoration of America's forests may reduce the country's carbon emissions by as much as 21 percent. (Fargione et al 2018). The cost of reforesting unused or logged land may be cheaper than the cost of existing subsidies that encourage clean energy (Fargione et al 2018). However, reforestation cannot be the whole solution. To work properly, it must be implemented alongside stringent energy sector reform.

Transition to Nuclear, Reforest the Country - Recommended Energy Policy

The United States should phase out the rest of its coal-fired plants and phase in nuclear plants. This has excellent precedent – France generates three-fourths of its electricity through nuclear power (IEA 2018). Coal-fired power plants are on their way out. Their total energy production fell from 39 percent of America's total electricity production in 2014 to just over 27 percent in 2018 (USEIA 2018). Because nuclear power creates steam through radioactive fuel rods and not through combustion, it emits negligible amounts of carbon dioxide (IEA 2018). The emissions cuts associated with a nuclear transition, coupled with a 21 percent reduction in the country's carbon emissions from reforestation programs, would set the United States well on its way to meeting the 1.5 degree target by the year 2020.

Citations

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