

## Congressional Climate Crisis Action Plan Would Decarbonize U.S., Add \$8 Trillion In Benefits By 2050

[Energy Innovation: Policy and Technology](#)  
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We are a nonpartisan climate policy think tank helping policymakers make informed energy policy choices and accelerate clean energy by supporting the policies that most effectively reduce greenhouse gas emissions.

Net zero emissions pledges are proliferating among states, cities, corporations, and utilities across the United States, and many are pointing to clean energy as a road to economic recovery in the face of [COVID-19](#).

But despite economic and job opportunities generated by clean energy, and scientific warnings that [net zero emissions](#) are needed by 2050 to [prevent the worst impacts of climate change](#), the federal government's decarbonization policies have not aligned with this need. A new set of recommendations for Congress is trying to change that.

The U.S. House Select Committee on the Climate Crisis, created in January 2019, was tasked with delivering [comprehensive climate policy recommendations](#) for Congress to act upon. The Select Committee majority staff released these recommendations today in a report titled [Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient and Just America](#) (The Climate Crisis Action Plan).

Energy Innovation [modeled a subset](#) of the Select Committee's recommendations using our [Energy Policy Simulator](#), and found it will hit net zero carbon dioxide (CO<sub>2</sub>) emissions before 2050 and slash net

greenhouse gas (GHG) emissions 88% from 2010 levels by 2050, laying the groundwork for net zero U.S. GHG emissions.

This decarbonization pathway would generate significant benefits across the U.S., avoiding 62,000 premature deaths annually from fine particulate matter pollution, while generating nearly \$8 trillion in cumulative monetized health and climate benefits, both by 2050.

### **Modeling Climate Crisis Action Plan policies to hit net zero emissions**

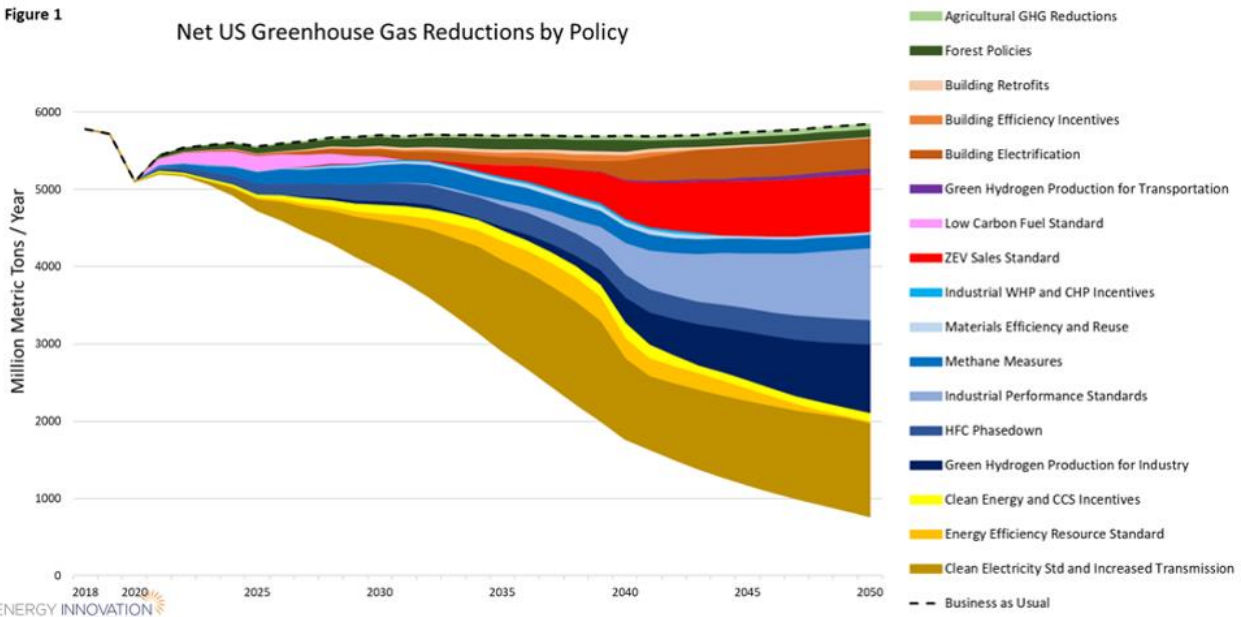
Energy Innovation used the [Energy Policy Simulator](#) (EPS) to model Climate Crisis Action Plan recommendations. This non-partisan, open-source, and peer-reviewed model evaluates the impacts of climate and energy policies on emissions, costs and savings, and fuel consumption.

Because several of the Select Committee's recommendations were more qualitative in nature, we were not able to model the entire plan. Instead, we modeled a subset of recommendations for which quantitative benchmarks existed or for which we were able to make reasonable assumptions about technology penetrations or energy savings based on existing literature.

The analysis spans the majority of the Select Committee's recommendations, which together would transform the U.S. energy system and drive an 88% reduction in net GHG emissions compared to 2010 levels by 2050, with CO<sub>2</sub> emissions reaching net zero in 2048.

Figure 1

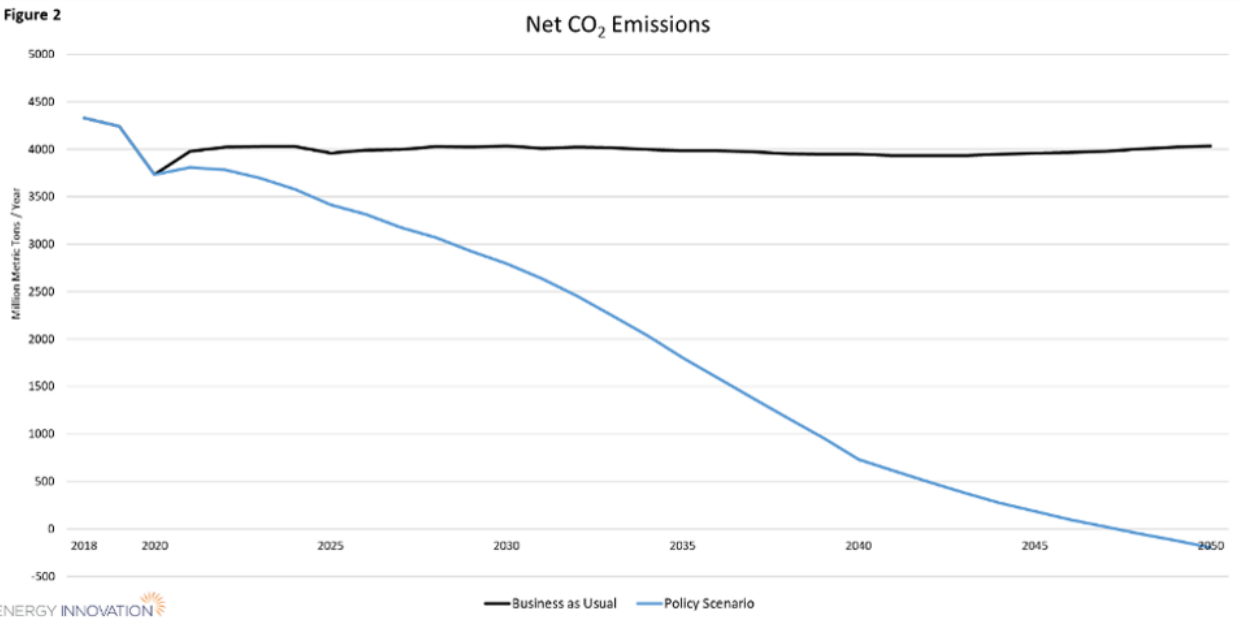
Net US Greenhouse Gas Reductions by Policy



Net U.S. greenhouse gas reductions by policy under Select Committee on the Climate Crisis Action ... [+] Energy Innovation

Figure 2

Net CO<sub>2</sub> Emissions



Net carbon dioxide emissions from House Select Committee on the Climate Crisis Action Plan Energy Innovation

The relative emissions contributions of each modeled policy are shown above and are color coded by sector, but must be considered with the important caveat that the size of any given policy's contribution would change if it were enacted in isolation or without these other policies.

### Clean electricity by 2040

In this [analysis](#), the electricity sector sees the largest emissions reductions, driven by a clean electricity standard that reaches 100% by 2040. Our modeling assumes the power sector reaches roughly 90% clean electricity by 2035, aligning with another [detailed power sector analysis](#) released earlier this month by

# Forbes

the [University of California-Berkeley's Goldman School of Public Policy](#), which showed a 90% by 2035 clean electricity standard would create 530,000 jobs annually through 2035.

Pairing this clean electricity buildout with policies promoting transmission and battery storage helps maintain grid reliability and flexibility. Modeled power sector policies also include an energy efficiency resource standard and extended tax credits for renewables and carbon capture and storage through 2050.

## **Industrial sector decarbonization is key to net zero U.S. emissions**

[Industrial sector decarbonization policies](#) are particularly important to reaching net zero, as industry is directly responsible for 29% of U.S. The Climate Crisis Action Plan recommends tradable performance standard setting emissions intensity benchmarks in line with net zero emissions by 2050.

To achieve this, we model full fuel switching from fossil fuels to electrification and hydrogen in industry by 2050, although our analysis notes that the particular technological pathway to meet these targets at least cost is as-yet unclear given today's technologies and economics. The Select Committee's recommended policy would set a clear market signal to figure this out, jump-starting learning curves for new technologies and business models to help.

While some [industrial activities can be electrified](#), other processes requiring high heat will likely require thermal fuels such as hydrogen. The figure above includes a wedge specifically for [Green Hydrogen Production](#) for Industry because we assume industries will use green hydrogen to comply with the performance standards.

About 95% of hydrogen is currently produced through steam reforming of natural gas, which is heavily polluting, so our scenario assumes a shift to green hydrogen production by electrolysis and accounts for the needed increase in electricity generation.

The industrial performance standards wedge also includes the recommended federal [Buy Clean](#) targets, as well as emissions reductions from [cleaner cement manufacturing](#). Other important industrial policies include [phasing down hydrofluorocarbon emissions](#) in line with the Kigali Amendment to the Montreal

Protocol, reducing methane leaks from the oil and gas sector, increased product recyclability and materials efficiency, and credits for combined heat and power and waste heat-to-power technologies.

## **Electrification drives down transportation and building sector emissions**

Transportation and buildings suffer from a slow [capital stock turnover challenge](#), but [electrifying vehicles and buildings](#) and powering them with clean energy can deliver the emissions reductions we need from these sectors.



*A customer plugs in a Tesla Inc. Model X electric vehicle to charge beneath a solar panel canopy at ... [+] © 2019 Bloomberg Finance LP*

In the Select Committee's recommendations, emissions reductions in the transportation sector are driven by [zero emission vehicle targets](#) and the recommendation to set [emissions standards](#) in line with net zero by 2050 targets. To meet these benchmarks, the modeling assumes 100% zero emission vehicle sales for light-duty vehicles by 2035 and for heavy-duty vehicles by 2040. The modeling assumes a portion of the freight heavy-duty vehicles will be powered by hydrogen, given that the exact [path to decarbonizing freight](#) is still uncertain.

The Climate Crisis Action Plan calls for rebates for electric components in line with [shifting building component sales](#) to 100% electric by 2035, delivering the largest share of building sector abatement. Efficiency incentives and rebates for residential home retrofits drive additional emissions reductions.

Finally, the Select Committee's recommendations also address U.S. land use and forestry.

## Climate Crisis Action Plan moves America toward a cleaner, safer future

Together, the modeled set of [Climate Crisis Action Plan](#) recommendations achieves an impressive 88% reduction in GHGs relative to 2010 levels by 2050, and also generates significant health and climate benefits.

The package of policies would avoid an estimated 62,000 premature deaths annually by 2050 and deliver more than \$1 trillion (real 2018 U.S. dollars) in monetized annual health and climate benefits by 2050. Cumulatively, the benefits would amount to nearly \$8 trillion by 2050 at a 3% discount rate.



WASHINGTON, DC - APRIL 04: Representative Kathy Castor (D-FL) greets student and activist Chris J. ... [+] Getty Images

While the modeled recommendations propel the U.S. most of the way to [net zero GHG emissions by 2050](#), some emissions remain in industry, transportation, and agriculture, where certain segments are particularly challenging to decarbonize.

However, the Climate Crisis Action Plan does include additional policies outside the scope of this quantitative analysis that could address these residual emissions. For example, the Select Committee

recommends carbon pricing, robust [research and development](#) (R&D), and additional incentives for farmers to sequester carbon in soils through smart agricultural practices.

The [policies included in this modeling](#) would represent a dramatic increase in U.S. clean energy ambition. The modeling results demonstrate that a broad suite of sector-specific policies addressing all aspects of the economy is necessary to reach a net zero by 2050 target. But it also highlights the inherent challenges and demonstrates where additional policy and R&D support may be required now to promote the [future technologies needed to meet mid-century goals](#).

## Widespread public support toward climate action

Avoiding the worst impacts of climate change is an urgent task and a challenge all levels of government will have to tackle, but [new polling](#) shows more than 70% of voters support legislation targeting a 100% clean economy.

Fast-falling clean energy prices mean a safe climate future is also the cheaper option, and the way we can create a stronger economy – and the Climate Crisis Action Plan is an unprecedented first step toward realizing these goals.



## [Energy Innovation: Policy and Technology](#)

We are a nonpartisan climate policy think tank delivering high-quality research and original analysis to help policymakers make informed energy policy choices.



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