Bipartisan Policy Center

Investing in Climate Innovation: The Environmental Case for Direct Air Capture of Carbon Dioxide

BPC Direct Air Capture Advisory Council

This white paper makes the case for federal investment in an emerging technology, known as direct air capture of carbon dioxide, that could play a critical role in reducing climate change risks this century. It was developed by the Bipartisan Policy Center's Direct Air Capture Advisory Council, which includes leaders from academia, the private sector, labor, and the NGO community.

Council members came together because we view DAC as a unique and potentially powerful complement to biological and other natural mechanisms for removing carbon dioxide from the atmosphere, and to available near-term options for reducing emissions. Further, we believe that early federal investment to ensure that U.S. companies take the lead in developing and commercializing DAC technology could deliver large dividends in the decades ahead as the world seeks cost-effective solutions to slow warming and bridge the gap to net-zero energy systems.

Fundamentally, our support for expanded efforts to develop DAC technology rests on four key observations:

- **Carbon removal capability is likely necessary to achieve climate goals.** Given current emissions trends and taking into account the quantity of greenhouse gases currently in the atmosphere, the international scientific community is increasingly of the view that CO_2 removal is necessary, along with aggressive action to reduce emissions, to limit warming this century to below 2°C.
- **Some sources of distributed greenhouse gas emissions will be difficult to eliminate.** If the goal is to drive toward near net-zero global carbon emissions by mid-century, the case for carbon removal options becomes even stronger because of the difficulty of fully decarbonizing

certain energy-use sectors (e.g., long-haul air travel) and of eliminating emissions from other, non-energy, non-point sources (e.g., agriculture). Carbon capture and storage is unlikely to be cost-effective and technologically feasible for some of these dispersed, hard-to-decarbonize sources because it is primarily suited to large point sources of emissions.

- **DAC should be viewed as part of a portfolio of carbon removal strategies.** As a complement to other carbon dioxide removal strategies (notably, tree restoration and soil carbon storage), DAC offers potentially important advantages in terms of siting flexibility and rapid scalability. In the near term, the ability to deliver CO_2 in utilizable form for other value-added applications—potential examples include concrete production, synthetic fuels, and enhanced oil recovery—can help open up pathways to the successful commercialization of DAC technology.
- **DAC can help catalyze broader support for action to limit climate change.** By changing public and policymaker perceptions about the range of technically and economically feasible options that are available to address climate change, progress on DAC and other carbon removal technologies can help shift the current political debate around climate change, catalyzing greater policy ambition and unlocking new investment to tackle the problem.

DAC merits serious attention in any renewed federal commitment to energy technology RD&D because of the specific advantages it offers and the benefits it can provide as part of a diversified, practical, and cost-effective strategy for addressing climate change—in the United States and worldwide. This issue brief explores these advantages and benefits in greater detail.