Pillar IV: Climate Resilience

“We need an industrial base that is resilient to the increasing reality of a climate-affected world. That requires a fundamental shift in how we produce and how we power the economy.”

—Brian Deese, Director of National Economic Council
June 23, 2021
Section Overview

Nowhere are market failures more stark or urgent than in the climate innovation ecosystem. The tried-and-true playbooks—lean teams, rapid prototyping, agile development—of direct-to-consumer companies or software startups are poorly suited to climate-tech startups, which to succeed must often integrate into existing value chains dominated by incumbents rather than trying to disrupt those value chains. Moreover, successful development and launch of climate tech requires significant up-front capital and risk. These obstacles discourage investors from pursuing climate innovation. The resulting dearth of success stories creates a vicious cycle that drives investors even further away from the climate space, despite significant potential to generate both profit and societal benefit.

However, in the last several months, the Administration has taken a series of actions that deserve celebration. We’d like to recognize and build on three key efforts to support the climate innovation ecosystem:

- The President’s plan to drive American leadership forward on clean cars and trucks will support domestic manufacturers and elevate American innovation and ingenuity worldwide. To further support the President’s related goal of tackling the climate crisis, we propose creating a nationwide network of zero-emission fueling stations to help transition the commercial truck and bus industries to cleaner fuels.

- The Administration’s new plan to promote the use of clean and sustainable fuels in the American aviation industry will go a long way toward mitigating harmful emissions — but why stop there? The United States could launch a comprehensive electrification of the entire aviation ecosystem to eliminate emissions and create jobs.

- The President’s pledge to expand and modernize the nation’s electrical grid demonstrates his ongoing commitment to supporting clean energy generation projects. We can further enhance his plan by coordinating federal and state entities to reduce electric grid regulatory barriers and creating a joint DOE-DoD Grid Resilience Innovation Demonstration (GRID) Network to rapidly deploy innovative and secure grid technologies.

Still, due to the expected pace of technological progress, some have recently suggested that the administration will fail to meet its grid-decarbonization and other goals within established timeframes. To ensure our nation overcomes the most monumental challenge of our time, the administration must act to remedy these market failures with financing and regulatory solutions that accelerate the deployment of key energy technologies.
Financing Solutions

A jolt to the clean grid initiative—and the broader climate effort—would be to finance clean energy innovation through a National Climate Bank. Consistent with pending legislation, the National Climate Bank would create 5.4 million jobs with $500 billion of private and public investment in clean energy and climate-related technologies prioritized to frontline and environmental-justice communities. A less widely-covered approach would be for the administration to support a legislative update to the Federal Thrift Savings Plan (TSP) to allow federal workers to redirect retirement funds away from fossil-fuel investments and towards the clean energy sector. Operationally, this would create a Climate Choice Index Fund in the TSP, potentially allocating billions of dollars to help address the climate crisis over generations. The administration could build momentum by requesting the Government Accountability Office (GAO) to examine the risk to federal workers’ retirement assets from extensive fossil fuel stock investments in the TSP. Alternatively, the administration could encourage the Federal Retirement Thrift Investment Board to act without Congress to provide federal workers an option to invest in individual "green" stocks by creating an option via mutual fund window.

Regulatory Solutions

A new policy regime is needed to bolster our nation’s capacity to rapidly and equitably generate and deploy climate technologies. However, one existing effort includes the Carbon Dioxide Removal (CDR) task force. With authority under the Energy Act of 2020, the CDR task force has a mandate to investigate the full extent of CO₂ removal and policy vehicles needed for net zero emissions by 2050. The administration should bolster the aims of the CDR task force by recommending an investigation into three more items:

- **Net-negative carbon removal targets:** The task force should estimate the amount of CO₂ the United States must remove to limit average global warming to 1.5℃ (a target that will require net negative emissions) and estimate what year this goal could feasibly be achieved.

- **A public carbon removal service:** Just as waste disposal and sewage infrastructure are public services paid for by those that generate waste, industries should pay for the service of having their past and current CO₂ emissions removed and stored securely. The CDR task force should explore the build of a public carbon removal service. In parallel and in tandem with the Energy Act’s research, development, and demonstration program and prize competitions, the CDR task force should assess the CDR technology landscape to determine which are the best options to include in the service. Revenue generated from this service could fund additional reinvestments into CDR technology, carbon storage facilities, maintenance of CDR infrastructure, environmental justice initiatives, and job creation.
Tethering CDR efforts to equity: The CDR task force should identify carbon removal strategies that will mitigate social inequities. Specific recommendations for the task force might include a tax credit for investing CDR on private land, with proceeds directed towards supporting environmental justice communities, on-the-ground interviews with relevant communities, and incentivizing CDR technology design with co-benefits to the host community, like shae, habitat, and urban heat-island effects.

This new climate policy regime should be cognizant of barriers to scaling nascent energy sources. One example is next-generation geothermal technologies, which could provide enough clean energy to power the planet for over a billion years. But the market has not developed, largely due to government regulations that restrict geothermal well construction or production on federal lands—which the shallowest, most essential resources exist. As a result, entrepreneurs must endure long timelines of intensive environmental assessments and approval processes before making progress on a venture. The same risks are ostensibly true for fossil fuel wells, however, regulatory hurdles were categorically excluded from environmental review by Section 390 of the Energy Policy Act of 2005. The administration should therefore ask Congress to catalyze the geothermal transition by making the geothermal drilling approval process on Federal lands as simple as the oil and gas approval process.

Regardless of the technology—CDR methods, geothermal energy, and another nascent solution—policy should direct climate innovation with a regional deployment mindset. As proposed by former Secretary of Energy Ernest Moniz in 2016, a DOE-Led Regional Clean Energy Innovation Initiative would establish clean energy ecosystems that fuse local- and state-level economic development goals with climate development goals. This would not only accelerate the adoption of clean energy technologies but also speed the pace of innovation. The initiative would draw on each region’s resource strengths—existing workforce, research capabilities through national labs or universities, energy resources, and manufacturing facilities—while creating “State Energy Ambassadors” to disseminate the best policy ideas in and out of the state.

In just several months, the administration has made important strides for tackling the climate crisis. But addressing the systemic market failure in the climate innovation ecosystem will require even bolder public policy and investments moves. The CDR task force represents an important existing vehicle to scope ideas that will guide the direction of policy and law towards systems-level procurement of climate innovation technologies—perhaps, if unlocked, even geothermal energy solutions. But sufficient policy and financing vehicles will be required to ensure that climate innovations cross the valley from lab discovery to commercialization and with a regional consciousness that unlocks our nation’s full potential.