

CHRIS COONS

Seizing the Opportunity to Lead in Sustainable Chemistry

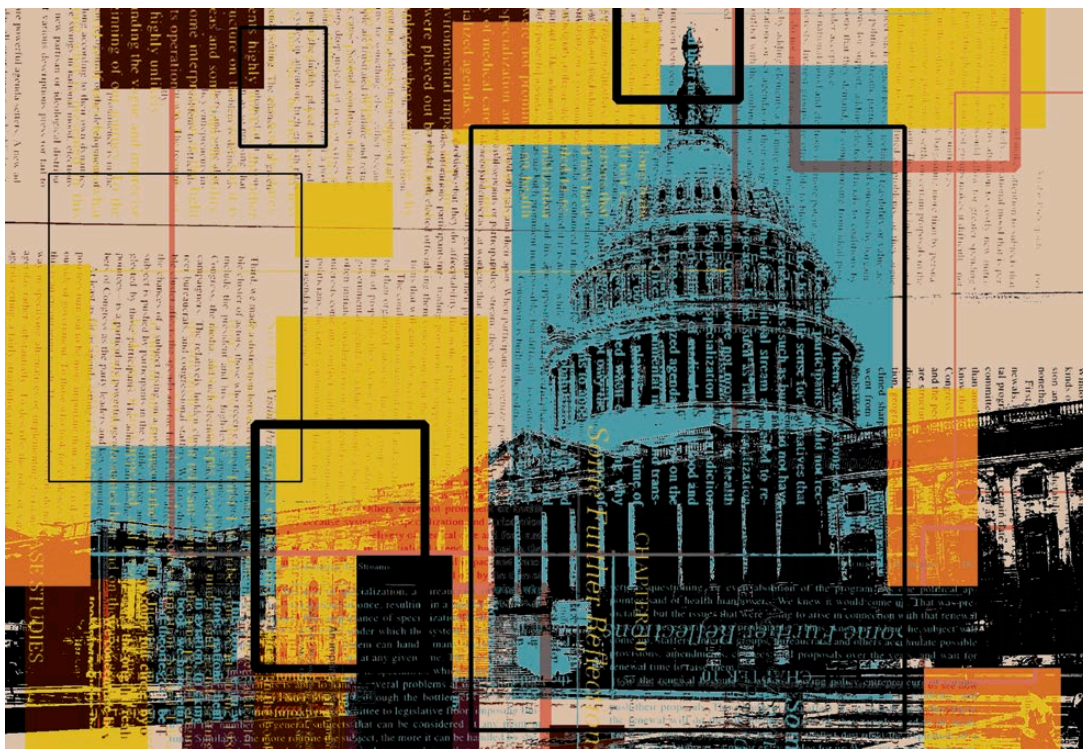


Illustration by Shonagh Rae

This year, the United States has the opportunity to become a leader in an area of science too often overlooked as a key part of the green economy: sustainable chemistry, which is essentially the design and manufacture of chemicals so that both processes and products do not negatively impact human health or the environment. This spring, the White House will release a strategic plan for sustainable chemistry, which comes on the heels of a landscape analysis released in August 2023. Sustainable chemistry will have its time in the

spotlight, but policymakers will have to make it count by using the strategic plan as a launchpad to greater awareness and action—or else risk squandering a golden opportunity that may not come again.

First, we need to understand how vital sustainable chemistry can be to our broader climate efforts, the plastics crisis, and the struggle for environmental justice. That's why I worked hard to advance the Sustainable Chemistry Research and Development Act and secured its eventual inclusion in the fiscal year 2021 National Defense Authorization Act (NDAA).

Among other things—including coordinating government-wide support for sustainable chemistry—the legislation directed the White House to create the interagency committee charged with writing the landscape analysis and strategic plan so that the federal government can assess, and take advantage of, opportunities to lead the transition to healthier, greener chemistry.

Transitioning a sector as enormous as the chemical industry, which comprises nearly half a trillion dollars annually, is like steering a slow-moving freighter. But the potential benefits are enormous. Chemical manufacturing is the industrial sector's largest source of US greenhouse gas emissions, which means any effective climate change action must go through chemistry. Increasing awareness of per- and polyfluoroalkyl substances, or PFAS, might require a targeted response to these harmful “forever chemicals” by way of a comprehensive sustainable chemistry strategy. Polluting industries frequently operate near low-income communities and people of color, so building a sustainable

American workers and manufacturers will pay the price through reduced exports and revenues.

It's important to note that a lot has changed in the years since the Sustainable Chemistry R&D Act was passed. Last Congress, we passed sweeping, landmark legislation, such as the Inflation Reduction Act and the Bipartisan Infrastructure Law, that affirmed the United States' commitment to a greener future. Many federal agencies were given new roles, which could help further coordinate a national vision for sustainable chemistry across the federal government. Currently, jurisdiction over chemistry is diffuse and spread between agencies including the Environmental Protection Agency, the US Department of Agriculture, and the Department of Energy. The forthcoming White House strategic plan should reflect the changed environment and lay out opportunities for increased coordination and a cohesive path forward. I look forward to the recommendations laid out in the plan, which should present strategic opportunities for developing new standards and metrics, commercializing

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future for chemistry would go a long way toward addressing environmental inequities.

Aside from the environmental and health benefits, there are also good economic reasons to pursue sustainable chemistry. The chemical industry directly employs more than a half-million Americans and supports a total of 4.1 million jobs across all industries. A retooling toward sustainable chemistry can bolster the economy and create even more high-wage jobs, continuing the revitalization of US manufacturing that has begun under President Biden. In addition, there is increasing consumer demand for sustainable products as the public becomes more concerned about the processes that produce the items they buy.

There's another reason why the United States must assert itself in sustainable chemistry: our global economic competitiveness depends on it. Europe has set in motion a number of policies to reduce toxicity and give its chemical industry a road map to a cleaner, greener future. Much like the European Union's planned Carbon Border Adjustment Mechanism, which penalizes foreign polluters who undercut Europe's cleaner manufacturers, if the United States continues to play catch-up—or doesn't play at all—

cleaner chemical alternatives, sharing data among various groups and agencies, and promoting education across all levels of the chemical industry.

Because government oversight and regulation of chemistry is shared by a number of agencies, sustainable chemistry has often lacked the single, critical champion needed to get it the attention it deserves—something other scientific fields, like biotechnology, have enjoyed. The White House's forthcoming strategic plan will chart a course for a healthier, safer, and more sustainable future for chemistry. Chemical processes or products are behind almost every product sold in the United States, so if we want to get serious about our environment and our health, let's take a look at the compounds beneath the surface—and do something about the way they're made.

Chris Coons (D) is the junior US senator from Delaware, cochair of the Congressional Chemistry Caucus, and cofounder and cochair of the Bipartisan Senate Climate Solutions Caucus. A leading advocate for sustainable chemistry in the Senate, he has a bachelor's degree in chemistry from Amherst College.