



Time for Congress to launch America’s clean industrial revolution

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Right now, I’m heading to the international climate conference in Glasgow, known as COP26, where delegates will talk about how to cut greenhouse gas emissions from roughly 51 billion tons per year to zero by 2050. On my way out the door, I’m hearing news that makes me even more optimistic that the world can accomplish this extraordinarily difficult task: The U.S. is on the verge of making a historic investment in clean technologies through the Build Back Better Act and the Infrastructure Investment and Jobs Act. This package of legislation has many important provisions, from health to education, that we need to make progress on. But because I’m on my way to COP26, I want to write about the climate provisions.

Technological innovation is the only way the world can get to zero. So many of the processes of daily life currently emit carbon—flying on airplanes, building houses, eating hamburgers—so we need to invent new ways of doing them that are green. Then, after we invent them in the

lab, we need to “commercialize” them—that is, make them effective, reliable, and cheap enough that people want to and can afford to buy them.

If the Congress passes these bills, the United States will be at the vanguard of powering a clean industrial revolution. To realize this version of the future, we need to do things like update the electric grid so it can carry more clean energy to more places, rethink how we create things like liquid fuels, and accelerate the time from lab to market for early-stage climate technologies. When I say accelerate, I mean by a lot. In the past, energy transitions have taken as long as a century. For the sake of a livable future, we need to do it in a decade or two.

That’s what these bills will do. Earlier this summer, the Department of Energy and Breakthrough Energy Catalyst, a brand-new program led by the network of climate initiatives I support, announced a collaboration to accelerate the adoption of next generation clean technologies. These two bills will supercharge our partnership allowing us to invest billions of dollars in projects across the country, but our partnership is just one piece of the puzzle. The public sector investment in these bills will mobilize not just the resources Breakthrough Energy has committed, but billions of dollars in private capital into U.S. clean energy projects. That translates to jobs across the country while ensuring that the U.S. stays competitive as the global economy decarbonizes.

As I point out in this piece I wrote in the run up to COP26, these types of investments will create three kinds of jobs for communities. First, they mean immediate construction jobs and research jobs. Second, they mean jobs in the long term – when you build a sustainable aviation fuel refinery, or a steel plant powered by clean hydrogen you are building an industrial base in a community for decades. Finally, they create economic opportunities and jobs because the first communities to build these things will end up teaching the rest of the world how to do it.

Combined, the bills Congress is considering would invest **more than \$650 billion into clean energy solutions. This would represent the largest effort to combat the climate crisis in American history, and it’s our best shot to avoid a climate disaster.**

While the legislation is not final, here’s what I’ve seen in both bills that will speed up innovation to reach net-zero emissions before 2050:

- **\$320 billion in tax credits for clean technologies**, especially clean hydrogen, clean jet fuel, long duration energy storage, carbon capture/direct air capture, transmission, and clean manufacturing. Ten years of tax credits, with “direct pay,” will unlock the capital to build commercial demonstration projects.
- **\$40 billion in expanded financing authority for the Loan Programs Office and \$3.6 billion in funding to reduce costs to applicants**, which will help more clean energy projects and transmission get built at scale.
- **\$43 billion for research, development, and demonstration (RD&D) programs**, including \$9.5 billion to build Hydrogen Hubs, \$1 billion to lower the cost of electrolytic hydrogen production, \$505 million to energy storage demonstration projects (including long-

duration energy technologies), \$3.2 billion for the Advanced Reactor Demonstration Program, and \$500 million to industrial decarbonization demonstrations.

- **\$7.5 billion for clean manufacturing grants** for clean industrial technology or retrofits to current facilities and domestic production of low carbon vehicles.
- **\$9.7 billion for the procurement of low carbon materials**, including a significant increase in the Environmental Product Declaration program that quantifies carbon emissions for products like steel and cement. This includes new funding to some federal agencies for low carbon goods procurement, as well as authority to ensure funding for the purchase of low carbon materials in the wake of a national disaster.
- **\$14 billion for electric transmission** including Department of Energy grant and loan capacity for new transmission construction and upgrades, support for transmission siting and planning processes, and research and development for advanced transmission and electricity storage and distribution technologies.

Although the Build Back Better Act will be passed in a partisan way through budget reconciliation, it includes many policies that have received bipartisan support in the past, like clean energy tax credits, that will benefit red and blue states alike. I am encouraged that several Republicans voted with their Democratic colleagues to pass the Infrastructure Investment and Jobs Act through the Senate, and I hope to see some House Republicans join Democrats as well when the House takes a vote on the infrastructure bill. Building the foundation for America's industrial leadership isn't a partisan thing.

I hope Congress passes these bills fast. We can't wait another moment.

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