

# NISKANEN C E N T E R

## TRANSFORMING AMERICA'S ENERGY INFRASTRUCTURE: Lessons from the American Recovery and Reinvestment Act of 2009

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Modern infrastructure spending programs must offer clear federal spending guidance, provide inter-agency coordination, streamline program requirements, and support underserved populations and those lacking capacity in low-carbon energy developments.

### Key Takeaways

- Green investments from the Recovery Act of 2009 were delayed by lack of guidance on how to satisfy the “Buy America” and prevailing wage requirements, reporting burdens on local governments, and the need for significant administrative capacity for managing projects.
- Infrastructure stimulus in 2021 needs clear federal spending guidance, interagency coordination, streamlined program requirements, and a longer time horizon than three years to effectively allocate funds
- Equity and environmental justice must be foci, for example through workforce programs for communities transitioning away from fossil fuel employment, and assistance for solar panel installation, home weatherization, and EV infrastructure for low-income, rural, and underrepresented groups.
- The next green stimulus should provide support and resources to locations with less experience and administrative capacity, and to sectors that may not have readily available American-made products.

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**S**upporting and expanding the nation’s infrastructure is of the utmost importance. Investments in roads and bridges, water systems, broadband, and transmission and distribution lines help improve well-being and personal lifestyles. Such investments also generate new jobs and economic growth, and can lead to long-term reductions in climate emissions if designed well. These objectives are the impetus for current infrastructure planning in Congress and the several trillion-dollar American Jobs Plan released by the Biden administration.

The American Recovery and Reinvestment Act of 2009 (the “Recovery Act”), adopted a month into President Obama’s first term and during the worst economic recession in modern history, shares similarities with recent infrastructure planning. As Congress contemplates the contents of such a bill, and as agencies construct an implementation plan, there are valuable insights to glean from the rollout of the Recovery Act. There are also important market and political differences between 2009 and 2021 that beget new opportunities and challenges for current infrastructure spending.

In this report, I provide an overview of Recovery Act implementation challenges, which should inform current infrastructure spending.<sup>1</sup> I then discuss some differences between 2009 and 2021 in the markets and conditions surrounding infrastructure spending, and the implications for the current environment.

## The Recovery Act of 2009

The Recovery Act was a \$840 billion stimulus package passed in February 2009. The Act was intended to provide both short-term economic relief and stimulus and long-term growth in inno-

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1. For a more complete discussion of these various challenges, refer to: Sanya Carley, “Energy Programs of the American Recovery and Reinvestment Act of 2009,” *Review of Policy Research* 33, no. 2 (March 2016): 201-223.

vation, infrastructure, and other economic development that could expand U.S. global economic competitiveness.<sup>2</sup> All funding was to be “timely, temporary, and targeted,” where time and impact were clearly of the essence.<sup>3</sup> About \$90 billion went toward energy spending, which was administered through a range of tax benefits, entitlements, and contracts, grants, and loans.<sup>4</sup> Many of the types of projects that will be featured in an infrastructure package correspond with these Recovery Act energy programs, such as investments in mass transit, home weatherization, renewable energy, grid modernization, and road construction. A total of about \$168 billion of the stimulus went toward “green investments,” a classification that included investments in brownfield redevelopment and other environmental efforts that may also be featured in an infrastructure bill.<sup>5</sup>

## Recovery Act implementation challenges

While the Recovery Act generated new jobs,<sup>6</sup> leveraged private sector spending,<sup>7</sup> and provided economic stimulus across many sectors, it was also marked by implementation and administrative complications that delayed and, in some cases, redirected spending, especially funding channeled through the states. Delays were severe enough for some programs that states had to return \$700 million in energy stimulus because the funds were not spent by the deadline; in other cases, actors conducted projects a year or more after they were intended.<sup>8</sup> Such implementation challenges likely also had implications for Recovery Act impacts, including types of projects funded and new jobs created.

### *Lack of interagency coordination*

The first significant set of complications was attributable to a lack of interagency coordination. One example were the reporting requirements issued by the Department of Energy (DOE) and the Office of Management and Budget (OMB). When stimulus funds were first released, administrators for some Recovery Act programs were required to submit regular updates to both agencies, but each had separate reporting and data requirements. As a result, program administrators spent roughly double the amount of time on tracking and reporting than would have been required if agency reporting requirements were in sync. Eventually the agencies coordinated efforts and settled on a single set of reporting requirements. Another interagency tango that led to delays in program administration was between the DOE and the Department of Housing and Urban Development in their guidance for the Weatherization Assistance Program (WAP).

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2. Jeremy Hall and Edward Jennings, “The American Recovery and Reinvestment Act (ARRA),” *Public Performance & Management Review* 35, no. 1, (2011): 202–226.

3. Joseph Aldy, “A Preliminary Assessment of the American Recovery and Reinvestment Act’s Clean Energy Package,” *Review of Environmental Economics and Policy* 7, (2013): 136–155.

4. Sanya Carley, “Energy Programs of the American Recovery and Reinvestment Act of 2009.”

5. Ziqiao Chen et al., “Green Stimulus in a Post-pandemic Recovery: the Role of Skills for a Resilient Recovery,” *Environmental and Resource Economics* 76 (2020): 901–911.

6. Timothy Conley and Bill Dupor, “The American Recovery and Reinvestment Act: Solely a government jobs program?” *Journal of Monetary Economics* 60, no. 5, (2013): 535–549.

7. Environmental and Energy Study Institute, “Economic impacts of Recovery Act funding for the state energy program,” July 7, 2010.

8. Sanya Carley, “Energy Programs of the American Recovery and Reinvestment Act of 2009.”

### *Prevailing-wage and Buy American requirements*

The second major complication came from compliance stipulations imposed by the federal government, and two in particular: the prevailing-wage and the Buy American requirements. The former was a requirement that contractors get paid at the prevailing wage for their specific occupation in their specific region. When no prevailing wage was already established, the Department of Labor (DOL) would need to determine one, which introduced significant delays — in some cases over a year — before a contractor could begin a project. The latter was a requirement that all manufactured goods, steel, and iron used for public works or public buildings must be made in America. Specific details from the DOE on how to comply with the Buy American requirement were not forthcoming or fully legible for quite some time; one state official overseeing a Recovery Act program claimed that it was not until 2011 that they had clarity on the issue. The additional difficulties of ascertaining where the components of finished products had originated introduced significant burdens on state governments and the contractors that implemented the projects on the ground. Those who ran the WAP in various parts of the country, for example, found it exceedingly difficult to locate American-made HVAC units or compact-fluorescent light bulbs.

### *Administrative capacity for managing infrastructure regulations*

Preexisting federal, state, and local regulations presented a third set of implementation challenges. Despite the objective of timely intervention, in order to spend any Recovery Act funds, it was necessary for a project to comply with preexisting regulations, such as National Environmental Policy Act siting procedures and local building codes.

These various compliance and administrative complications were easier for some states, local governments, and contractors to navigate than others. Those who had recently laid off or furloughed staff in the economic downturn fared much worse than those who were able to retain their staff. And those who had acquired more experience and built greater administrative capacity, especially with clean energy initiatives, were also better able to spend stimulus funds efficiently and to identify “shovel-ready” projects that were already in the works.<sup>9</sup>

The combination of administrative-capacity needs and the prevailing-wage requirements likely explains, at least in part, why there were greater labor impacts from the Recovery Act in regions that already had clean energy industry activity, as found in a recent study.<sup>10</sup> These regions were able to leverage their preexisting expertise and capacity and were not plagued by the same administrative delays as regions with no prior experience with such developments or labor categories.

## **Lessons learned for 2021 infrastructure bill**

While all of these lessons are directly transferable to an infrastructure investment program, it is important to note that there are several differences between the present day and the era in which the Recovery Act was constructed and implemented. First, the year 2009 was the eve of the modern energy transition: Coal was still the dominant energy source and technologies like solar and

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9. Sanya Carley et al., “Capacity, Guidance, and the Implementation of the American Recovery and Reinvestment Act,” *Public Administration Review* 75, no. 1, (November 2014): 113–125.

10. David Popp et al., *The Employment Impact of Green Fiscal Push: Evidence from the American Recovery Act*, NBER Working Paper 27321 (National Bureau of Economic Research, June 2020).

battery storage were nascent and prohibitively expensive. The energy transition is now, in 2021, fully underway and a broad range of energy technologies that were still early-stage innovations in 2009 are now more mainstream, such as smart meters, solar panels, and electric vehicles.

Second, with the introduction of the Green New Deal in 2019 and several subsequent presidential candidates running on energy and climate platforms that incorporate dimensions of equity and justice, these foci will now be crucial provisions within any such spending bill. Important equity and justice dimensions of an infrastructure plan may include workforce programs for communities transitioning away from fossil fuel employment (e.g., coal mining regions); targeted grants that extend access to low-carbon technologies such as solar panels to low-income and underrepresented groups; energy efficiency housing programs for rural Americans; and weatherization assistance for low-income households facing energy insecurity. Such efforts may require additional resources where a dearth existed before, but they are essential elements of a clean energy strategy, for which it is no longer acceptable to leave anyone behind.

## How to build back better for energy infrastructure

The experiences from 2009 and changes in both technology and discourse in the intervening years lend several lessons for a present-day infrastructure bill. They suggest the need for clear and immediate federal guidance, strong interagency coordination, streamlined and coordinated reporting requirements, and likely a longer time horizon than three years to effectively and completely allocate funds across a range of programs.

They also suggest the need to provide additional support and resources to those locations with less experience and capacity, including those locations that are not already making large investments in low-carbon infrastructure or those sectors that may not have readily available American-made products.

Whereas road repair was the most “shovel-ready” project in 2009, this category now includes many other low-carbon projects, such as the installation of electric-vehicle charging stations across the country. These new opportunities will likely help expand the climate benefits of the modern infrastructure package.

## About the author

[Dr. Sanya Carley](#) is a Paul H. O’Neill Professor and Director of the Master of Public Affairs programs at the O’Neill School of Public and Environmental Affairs at Indiana University. Her research focuses on electricity and transportation policy, energy justice and a just transition, energy-based economic development, and public perceptions of energy infrastructure and technologies. She is a coeditor of the *Journal of Policy Analysis and Management*. Dr. Carley has extensive consulting experience with the World Bank, RTI International, and the Environmental Protection Agency, among others. She received her Ph.D. in public policy from the University of North Carolina at Chapel Hill and bachelor’s degrees in economics and sustainable development from Swarthmore College.