

Forget Build Back Better - US Infrastructure bill is a green energy windfall

Blog post by Adviser Stephanie Grumet, 21 February 2022

US Democrats have been wringing their hands for weeks about the apparent collapse late last year of President Biden's proposed Build Back Better social spending package, with swing vote Sen. Joe Manchin (D-WV) now-infamously pulling his support for the multi-trillion-dollar bill just before the holidays. The plan's failure has obscured for now the fact that a separate bill, already on the books, will direct over \$72 bn into electric vehicle (EV) charging stations across the US, as well as a myriad of other grid improvement, clean energy, and energy efficiency programs - and fast.

Start with EV charging stations. The Investment, Infrastructure Jobs Act (IIJA), which was passed with bipartisan support in Congress and signed into law by President Biden in November, allocates \$615m for EV charging stations this year, providing a material boost to EV charging station infrastructure service companies and creates tailwinds for EV car and truck sales in the US. On February 10th, the US Departments of Transportation (DOT) and Energy (DOE) jointly released guidance on how the funds will be distributed. The IIJA allocated \$5 bn for states to build out an interstate EV charging network over five years. An additional \$500m will be available for EV infrastructure in rural and underserved areas, and \$1.25 bn will be targeted toward the advancement of EV charger development. Prior federal investments in EV charging stations took the form of tax credits for residential and commercial installations. For commercial installs, the 30C tax credit could be claimed for 30% of costs or up to \$30,000. Multiple states have additive EV charging incentives in place.

An interstate EV charging network

The goal of the EV charging station funding as outlined in the IIJA is to create a network of 500,000 charging stations across the interstate system by 2030. There are currently about 46,000 EV charging stations in the US (between 113,000 and 120,000 charging ports). These are a combination of Level 1 (110-V, basically a home outlet, takes about 8 hours to charge), Level 2 (240-V, a clothes dryer capacity, takes about 5 or 6 hours to charge), and DC Fast Chargers (480-V direct current, about an hour to charge). Based on our research, most public charging stations are Level 2, many of which are in California - they are not equally distributed across the US.

The DOE/DOT guidance intends for these stations to be no more than a mile from an interstate and ideally consisting of stations accommodating at least four vehicles at a time (four-port) with direct current (DC) fast charging stations every 50 miles. This investment is targeted to reduce fears associated with EVs' challenges in driving long distances - known as 'range anxiety'.

The guidance requires states to submit applications describing their implementation plans by August 1st, with approvals from DOT by September 30th, with funds flowing by the end of this year.

The guidance points out that if the state submits an implementation plan that is not approvable, DOT has the authority to reroute funds to municipalities.

You ain't seen nothing yet

While the \$5 bn to build an EV charging station network is a significant sum, it is just the tip of the IIJA funding iceberg. DOE was granted over \$72 bn in clean energy funding exclusively for climate, energy and electric grid resiliency by the IIJA. This is an extraordinary sum of money - totalling roughly the annual GDP of the state of New Hampshire - and is to be spent between now and 2026. A detailed list of programs at DOE from the IIJA is reproduced in Appendix 1 below, organised by funding areas. Some of the funds will flow first to states, tribes and municipalities; while other funding will be open to industries, universities, and non profits. Much of this massive public investment will ultimately flow into private sector enterprises and be augmented in some cases with private capital through public-private partnerships.

DOE Funding for Clean Energy Authorised in the IIJA

IIJA Funding Level	DOE Energy and Climate Programs
\$25.5 billion	Grid Improvements
\$ 9.5 billion	Hydrogen
\$ 8.5 billion	Nuclear
\$ 6.3 billion	Energy Efficiency
\$ 6.3 billion	Battery Storage
\$ 3.5 billion	Direct Air Capture
\$ 8.8 billion	Carbon Capture and Storage
\$ 1.0 billion	Energy Programs
\$ 1.1 billion	Industrial Programs

\$ 1.6 billion	Materials and Minerals
\$ 658 million	Hydroelectric
\$ 72 billion	Total DOE IIJA Programs

Source: Global Counsel and White House IIJA Briefing Paper, February 2022

In terms of government timeframes, the pace of this EV charging station network guidance approaches the speed of light. The Biden Administration is highly motivated to swiftly disperse these funds (in part because it was hoping the now-stalled Build Back Better bill would inject additional stimulus into the US economy), which will stimulate the US green energy industry. Examples of DOE’s quick progress include its issuance of multiple notices of intent (NOI) and requests for information (RFI) enabling the department to quickly gather public input:

- On February 15th DOE issued two RFIs for its hydrogen grants (see link to GC’s recent commentary on hydrogen): one for an \$8 billion hydrogen hub program and another for a \$1 bn spend for hydrogen electrolysis. These solicitations are expected mid-May, 2022. Interest is fomenting around hosting hydrogen hubs. Namely Senators Manchin and Shelley Capito (R-WV) announced creation of a Hydrogen Hub Working Group to start planning a compelling proposal. We believe DOE will look favourably upon public-private partnerships and proposals with significant industry participation.
- On February 11th, DOE put the wheels in motion for a \$6 bn Civil Nuclear Credit Program to prevent premature closure of nuclear power plants. Many existing nuclear plants, particularly in those participating in the US wholesale energy markets, have retired before the end of their projected useful life. Policymakers believe these plants are mission critical for climate goals and should be retained for their zero-carbon generation contribution. The program under development will enable plants to compete for credits to remain economically viable.
- Also on February 11th, DOE started the process to provide \$2.9 bn for production of advanced batteries, including funding for strengthening the supply chain, specifically, “materials refining and production plants, battery cell and pack manufacturing facilities, and recycling facilities”. A total of \$7 bn was authorised for battery technologies.

BBB not yet bust

As for the fate of Build Back Better, it will not pass in its original form, but we continue to believe pieces of the clean energy tax credit proposals could still be funded this year. The highest best chance of passage, in our view, are clean energy tax credits for technologies that were not part of the December 22nd 2020 tax credit extender package. We believe hydrogen, stand-alone battery storage, and possibly direct air capture technology remain in play. That said, there is plenty of

clean energy funding available now at DOE that can bring about transformative results towards a lower carbon economy.

Appendix 1. Energy and Climate Programs Funded by IIJA at DOE

Funding Area	Subtotal	IIJA DOE Program Name	IIJA Funding Level
Grid	\$25,500,000,000	Power Marketing Administration Transmission Borrowing Authority	\$10,000,000,000
		Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency	\$5,000,000,000
		Preventing Outages and Enhancing the Resilience of the Electric Grid Grants	\$5,000,000,000
		Deployment of Technologies to Enhance Grid Flexibility	\$3,000,000,000
		Transmission Facilitation Program	\$2,500,000,000
Hydrogen	\$9,500,000,000	Regional Clean Hydrogen Hubs	\$8,000,000,000
		Clean Hydrogen Electrolysis Program	\$1,000,000,000
		Clean Hydrogen Manufacturing Recycling	\$500,000,000
Nuclear	\$8,477,000,000	Civil Nuclear Credit Program	\$6,000,000,000
		Advanced Reactor Demonstration Program	\$2,477,000,000

Energy Efficiency	\$6,275,000,000	Weatherization Assistance Program	\$3,500,000,000
		Energy Improvement in Rural and Remote Areas	\$1,000,000,000
		Energy Efficiency and Conservation Block Grant Program	\$550,000,000
		Grants for Energy Efficiency and Renewable Energy Improvements at Public School Facilities	\$500,000,000
		Energy Efficiency Revolving Loan Fund Capitalization Grant Program	\$250,000,000
		Building Codes Implementation for Efficiency and Resilience	\$225,000,000
		Assisting Federal Facilities with Conservation Technologies	\$250,000,000
Battery Storage	\$6,275,000,000	Battery Manufacturing and Recycling Grants	\$3,000,000,000
		Battery Materials Processing Grants	\$3,000,000,000
		Battery and Critical Mineral Recycling	\$125,000,000
		Long-Duration Energy Storage Demonstration Initiative and Joint Program	\$150,000,000

Direct Air Capture	\$3,500,000,000	Four Regional Clean Direct Air Capture Hubs	\$3,500,000,000
Carbon Capture	\$8,839,140,781	Carbon Capture Demonstration Projects Program	\$2,537,000,000
		Carbon Storage Validation and Testing	\$2,500,000,000
		Carbon Dioxide Transportation Infrastructure Finance and Innovation Program	\$2,100,000,000
		Carbon Capture Large-Scale Pilot Programs	\$937,000,000
		Energy Storage Demonstration Pilot Grant Program	\$355,000,000
		Carbon Utilization Program	\$310,140,781
		Front-End Engineering and Design Program Out Activities Under Carbon Capture Tech Program 962 Of EPA (Sec 40303)	\$100,000,000
Hydroelectric	\$678,600,000	Hydroelectric Incentives	\$553,600,000
		Hydroelectric Production Incentives	\$125,000,000
Energy Programs	\$1,000,000,000	State Energy Program	\$500,000,000
		Purchase of Power and Transmission Services	\$500,000,000

Industrial	\$1,050,000,000	Industrial Emission Demonstration Projects	\$500,000,000
		Industrial Research and Assessment Center Implementation Grants	\$400,000,000
		Industrial Research and Assessment Centers	\$150,000,000
Minerals and Materials	\$1,617,000,000	Advanced Energy Manufacturing and Recycling Grants	\$750,000,000
		Critical Material Innovation, Efficiency, And Alternatives	\$600,000,000
		Rare Earth Elements Demonstration Facility	\$140,000,000
		Rare Earth Security Activities	\$127,000,000
Total			\$72,711,740,781

Source: White House IIJA Briefing [Paper](#), February 2022