



## ***Infrastructure Investment and Jobs Act Boosts U.S. Supply-Side Investments in Energy Storage***

**December 2021**

### **Infrastructure Investment and Jobs Act Signed by President Biden on November 15, 2021**

The Infrastructure Investment and Jobs Act (IIJA) significantly increases direct federal funding over 5 years for energy storage demonstration projects, investments in the domestic battery supply chain, and deployments of energy storage in programs to promote grid resilience and flexibility. These include:

- \$505 million for stationary energy storage demonstration projects, in addition to a new DOE Office of Clean Energy Demonstrations to oversee such projects;
- \$6.15 billion for bolstering the U.S. battery supply chain;
- \$14.7 billion for programs that invest in the grid and that include energy storage as a qualified technology; and
- Several storage-focused reports and improvements in electricity analyses and data reporting that elevate the role of storage in the economy.

These investments are focused on infrastructure projects that will improve the grid and create good-paying domestic jobs. Hence, the projects are subject to the requirement for contractors to pay locally prevailing wages and to favor the use of materials made or manufactured in the US.

### ***Legislative Summary***

#### **Provisions Focused on Energy Storage RD&D - \$505 Million**

**Sec. 41001 “Energy Storage Demonstration Projects”** provides \$505 million for the Department of Energy (DOE) undertake both the energy storage demonstration grant program (\$355 million) and long-duration storage demonstration joint initiative with Department of Defense (\$150 million) that were authorized and described in the [2020 Energy Act](#). These funds are appropriated over 4 years (FY 2022 – FY 2025) and are overseen by a new DOE Office of Clean Energy Demonstrations established under Sec. 41201 (described later in this summary).

*Sec. 41001(a) “Energy Storage Demonstration Projects; Pilot Grant Program”* funds activities under section 3201(c) of the Energy Act of 2020 ([see ESA’s policy summary here for further info](#)). Section 3201(c) of the Energy Act of 2020 authorizes grants to entities including State energy



offices; Tribes or Tribal organizations; colleges and universities; cooperative, municipal and investor-owned utilities; and private energy storage companies. The grants are available for:

- Energy storage systems that include mechanical, electrochemical, thermal, power-to-gas, and other processes to convert and store energy;
- Energy storage with a range of durations (sub-hourly & hourly, 6-10 hours, 10-100 hours, and “seasonal”);
- Energy storage with a variety of applications, including building-grid integration and vehicle-grid integration;
- Systems and methods for recycling and reuse of storage materials;
- Advanced controls for storage systems;
- Pumped hydroelectric energy storage;
- Modeling of storage across a variety of applications; and
- Testing and validation of storage technology performance.

*Sec. 41001(b) “Long-Duration Demonstration Initiative and Joint Program”* funds activities under section 3201(d) of the Energy Act of 2020. Section 3201(d) authorized a joint program between the Department of Defense (DOD) and DOE to demonstrate longer-duration energy storage technologies:

- across technology types;
- in diverse geographic regions;
- consider both bulk and distribution power levels; and
- include behind-the-meter, microgrid (grid-connected or islanded mode), and off-grid applications.

### **Provisions Focused on Battery Supply Chain - \$6.15 Billion**

**Sec. 40207 “Battery Processing and Manufacturing”** provides \$6 billion over 5 years for domestic supply chain investments for advanced batteries “that consists of a battery cell that can be integrated into a module, pack, or system to be used in energy storage applications, including electric vehicles and the electric grid.” Entities eligible to receive grants are listed at 42 U.S.C. 16353(b), namely:

- Institutions of higher education;
- National Laboratories;
- Nonprofit and for-profit private entities;
- State and local governments; or
- Consortia of entities listed above.

*40207(b) Battery Material Processing Grants* provides \$3 billion to the DOE Office of Fossil Energy to establish a Battery Material Processing Grant Program for demonstration project investments in US-sited facilities to process minerals into battery inputs, including:

- to carry out 1 or more demonstration projects in the United States for the processing of battery materials;

- to construct 1 or more new commercial-scale battery material processing facilities in the United States; and
- to retool, retrofit, or expand 1 or more existing battery material processing facilities located in the United States

The Secretary of Energy shall give preference to an applicant that:

- is located and operates in the United States;
- is owned by a United States entity;
- deploys North American-owned intellectual property and content;
- represents consortia or industry partnerships; and
- will not use battery material supplied by or originating from a foreign entity of concern.

The Secretary of Energy shall take into consideration whether a project:

- provides workforce opportunities in low and moderate-income communities;
- encourages partnership with universities and laboratories to spur innovation and drive down costs;
- partners with Indian Tribes; and
- takes into account—
  - greenhouse gas emissions reductions and energy efficient battery material processing opportunities throughout the manufacturing process; and
  - supply chain logistics.

*40207(c) Battery Manufacturing and Recycling Grants* provides \$3 billion to the DOE Office of Energy Efficiency and Renewable Energy to establish a Battery Manufacturing and Recycling Grant Program for investments in US-sited facilities to manufacture or recycle advanced batteries including:

- to carry out 1 or more demonstration projects for advanced battery component manufacturing, advanced battery manufacturing, and recycling;
- to construct 1 or more new commercial-scale advanced battery component manufacturing, advanced battery manufacturing, or recycling facilities in the United States; and
- to retool, retrofit, or expand 1 or more existing facilities located in the United States and determined qualified by the Secretary for advanced battery component manufacturing, advanced battery manufacturing, and recycling.

The preferences and considerations of the Secretary of Energy in selecting grantees is identical to those listed under Section 40207(b), except for an expanded preference regarding material sourcing or disposition:

- if the eligible entity will use the grant for advanced battery component manufacturing, will not use battery material supplied by or originating from a foreign entity of concern;
- or if the eligible entity will use the grant for battery recycling, will not export recovered critical materials to a foreign entity of concern.



And additional considerations:

- That the project provides workforce opportunities in communities that have lost jobs due to the displacements of fossil energy jobs; and
- That the project utilizes feedstock produced in the United States.

*Sec. 40207(e) “Lithium-Ion Battery Recycling Prize Competition”* appropriates \$10 million in FY 2022 to continue and expand Phase III of the Lithium-Ion Battery Recycling Prize Competition.

*Sec. 40207(f) Battery and Critical Mineral Recycling* provides a new set of authorizations and appropriations totaling \$125 million over 5 years while directing DOE to issue:

- *Sec. 40207(f)(2) Battery Recycling Research, Development, and Demonstration Grants:* \$60 million to create innovative and practical approaches to increase the reuse and recycling of batteries. An expansive range of eligible entities include battery producers & manufacturers, private battery-collection entities, battery recyclers, and battery retailers.
- *Sec. 40207(f)(3) State and Local Programs:* \$50 million for competitive grants to State and local governments to establish or enhance of battery collection, recycling, and reprocessing programs. Projects receiving grants under this section must be carried out under a 50 percent non-Federal cost share.
- *Sec. 40207(f)(4) Retailers as Collection Points:* \$15 million to assist battery retailers to establish and implement battery acceptance or collection systems (at no cost to consumers) for reuse, recycling, or proper disposal.

**Sec. 40334 “Pumped Storage Hydropower Wind and Solar Integration and System Reliability Initiative”** provides \$10 million over 5 years to support the pre-construction development cost of a large (>1,000 MW) pumped storage hydroelectric project that would facilitate the long-duration storage of intermittent renewable electricity. The specific requirements suggest that this funding is intended for a Missouri River Energy Services [project](#).

### Programs for Grid Improvements that Include Storage - \$14.7 Billion

**Sec. 40101 “Preventing Outages and Enhancing the Resilience of the Electric Grid”** directs DOE to make available grants totaling \$5 billion over 5 years to states, utilities, and power system companies, and energy storage operators, for activities to enhance power system resilience. The Secretary of Energy gives priority to projects that reduce the likelihood and consequences of disruptive events and sets aside at least 30 percent of funding for eligible entities that sell less than 4 million megawatt-hours of electricity. State and Indian Tribe recipients must provide a 15 percent cost share. Both battery-storage subcomponents and microgrids are listed as eligible distributed energy resources for enhancing system adaptive capacity during disruptive events; however, any “large-scale battery-storage facility that is not used for enhancing system adaptive capacity during disruptive events” is not eligible for funding under this program.

**Sec. 40103 “Electric Grid Reliability and Resilience Research, Development, and Demonstration”** contains two relevant sections:



*Sec. 40103(b) Energy Infrastructure Federal Financial Assistance Program* directs DOE, within 180 days of enactment (5/14/2022), to establish a program that makes grants available to state and local governments to undertake RD&D projects to “demonstrate innovative approaches to transmission, **storage**, and distribution infrastructure to harden and enhance resilience and reliability; and to demonstrate new approaches to enhance regional grid resilience implemented through States by public and rural electric cooperative entities on a cost-shared basis.” Grants under this program are subject to at least a 20 percent non-Federal cost share, as outlined in 42 U.S.C. 16352. This program is funded with \$5 billion over 5 years and is overseen by a new DOE Office of Clean Energy Demonstrations established under Sec. 41201.

*Sec. 40103(c) Energy Improvement in Rural or Remote Areas* provides \$1 billion over 5 years for power system resilience improvements in rural or remote areas. Energy storage, while not explicitly mentioned, would likely qualify under this program as technology that improves “overall cost-effectiveness of energy generation, transmission, or distribution systems” or in a qualifying microgrid application. This program is overseen by a new DOE Office of Clean Energy Demonstrations established under Sec. 41201.

**Sec. 40107 “Deployment of Technologies to Enhance Grid Flexibility”** directs DOE to make available grants totaling \$3 billion in FY 2022 (to remain available through September 30, 2026) for the deployment of technologies, including energy storage and vehicle-to-grid applications, to enhance grid flexibility.

**Sec. 40112 “Demonstration of Electric Vehicle Battery Second-Life Applications for Grid Services”** directs DOE to undertake one demonstration project that demonstrates second life applications of electric vehicle batteries as aggregated energy storage installations to provide services to the electric grid. No funding is appropriated for this provision.

**Sec. 40208 “Electric Drive Vehicle Battery Recycling and Second-Life Applications Program”** directs DOE to make grants available for improved EV battery recycling and “second-use of electric drive vehicle batteries, including in applications outside of the automotive industry” with an emphasis on improving the recyclability and reintroduction of materials in the domestic supply chain, providing \$200 million over 5 years.

**Sec. 40342 “Clean Energy Demonstration Program on Current and Former Mine Land”** directs DOE to make available grants totaling \$500 million over 5 years for clean energy project demonstrations on current and formerly mined lands, with energy storage (including pumped storage hydropower and compressed air storage) as eligible for funding. This program is overseen by a new DOE Office of Clean Energy Demonstrations established under Sec. 41201.

### **Wage Rate and Buy American Requirements**

**Sec. 41101 “Wage Rate Requirements”** invokes the [Davis-Bacon Act](#) requirements to pay locally prevailing wages: “All laborers and mechanics employed by contractors or subcontractors in the performance of construction, alteration, or repair work on a project assisted in whole or in part by funding made available under this division or an amendment made by this division shall be paid wages at rates not less than those prevailing on similar projects in the locality, as determined by the Secretary of Labor...”



**Section 70901 “Build America, Buy America Act”** is the beginning of the domestic content procurement preference policy (“Buy American Act”) in IJJA.

*Sec. 70914 “Application of Buy America Preference”* describe the Buy American Act domestic content requirements to ensure “all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States” unless various waiver conditions relating to cost, quality or availability of such materials are met.

*Sec. 70921 “Regulations Relating to Buy American Act”* requires the Office of Management and Budget to promulgate rules and guidance on applying domestic content requirements and obtaining waivers under the Buy American Act.

### **New DOE Oversight Office and Funding Structure**

**Sec. 41201 “Office of Clean Energy Demonstrations”** authorizes a new DOE Office of Clean Energy Demonstrations to evaluate, recommend, and oversee energy technology demonstration projects in concert with various DOE program offices. The Secretary of Energy has 90 days from enactment (2/13/2022) to produce a spending plan for FY 2022, and shall use up to 3% of funding for program direction.

Office of Clean Energy Demonstrations oversees funding of \$21.456 billion over 5 years, of which \$7.005 billion has either direct (\$505 million) energy storage funding or potential (\$6.5 billion) energy storage funding:

- Sec. 41001 energy storage grant program (\$355 million) and Long Duration storage demonstrations with DoD (\$150 million) authorized under 2020 Energy Act (total \$505 million over 4 years) directly involve energy storage.
- Sec. 40103(b) \$5 billion grants to state & local government for RD&D projects for resilience; Sec. 40103(c) \$1 billion for resilience improvements in rural and remote areas; and Sec. 40342 \$500 million for clean energy projects on current & abandoned mine lands are programs that may fund energy storage among other items.

All other funding for the energy storage programs described above flow through the existing channel “Department of Energy, Energy Programs, Energy Efficiency and Renewable Energy” including the Battery Material Processing Grant Program under Sec. 40207(b) which is housed in the Office of Fossil Energy.

### **New Studies, Advisory Groups, Analysis and Data**

**Sec. 40111 “Study of Codes & Standards for Use of Energy Storage Systems Across Sectors”** directs DOE to review existing codes & standards and produce a report within 18 months recommending updates associated with stationary energy storage, mobile energy storage, and energy storage systems that move between stationary and mobile applications (e.g., second-life EV batteries used for stationary storage and vehicle-to-grid integration).

**Sec. 40412 “Data Collection in the Electricity Sector”** requires the Energy Information Administration (EIA) “to improve the temporal and spatial resolution of data relating to how grid operations are changing, such as through.... utility-scale storage...”

**Sec. 40417 “Plan for the National Energy Modeling System”** requires substantial improvement in how the National Energy Modeling System (NEMS) treats energy storage. NEMS is the long run planning and forecasting tool that produces the Annual Energy Outlook among other reports.

**Sec. 40553 “Survey, Analysis, And Report on Employment And Demographics in the Energy, Energy Efficiency, And Motor Vehicle Sectors of the United States”** requires an interagency team to produce the annual “U.S. Energy and Employment Report” and include energy storage as a distinct sector for employment figures.

**Sec. 25006 “Electric Vehicle Working Group”** establishes a stakeholder advisory body to produce reports on the EV sector, which touches on many topics relevant to stationary battery energy storage technologies and markets.

### ***Additional Information***

The bill text can be accessed [here](#).

For more information contact ESA at [info@energystorage.org](mailto:info@energystorage.org).