Overview
The recently passed Infrastructure Investment and Jobs Act of 2021 (Infrastructure Bill) will provide spending of more than $1.2 trillion, which includes $550 billion in new federal spending for the next 5 years. Several major areas of the economy that will be touched by new funding, including transportation, energy, utilities, climate and the environment. The most common method for appropriating funds is to allow spending by federal departments (such as the through the Department of Energy), who are then authorized to distribute funds in the form of grants and research studies.

<table>
<thead>
<tr>
<th>Spending and tax cuts</th>
<th>Families</th>
<th>Health care</th>
<th>Housing</th>
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<tr>
<td></td>
<td>$811 bn</td>
<td>$401 bn</td>
<td>$166 bn</td>
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<tr>
<td></td>
<td>$495 bn</td>
<td>$133 bn</td>
<td>$96 bn</td>
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Source: New York Times
Review of Sections Relevant to Microgrids

Based on section-by-section review of the legislation, roughly $41.49 billion of available funding is appropriated to the creation of grant programs, research studies, and working groups that are relevant to the microgrid market in varying degrees. Provisions of interest are defined as sections that broadly cover the following areas:

- Resilience
- Grid modernization and flexibility, smart grid
- Capital upgrades
- Transportation electrification
- Emergency response and mitigation
- Cybersecurity and security
The term “microgrid” was mentioned a total of 5 times in the entirety of the bill, appearing in three separate sections. These sections encompass $13.5 billion of the $41.49 billion determined to be broadly related to the microgrid market. Details on funding available as well as a description of said programs are listed below.

| Section | Title                                                                 | Funding       | Description                                                                 |
|---------|                                                                      |               |                                                                            |
| 40101   | Preventing outages and enhancing the resilience of the grid          | 5,000,000,000 | Grant program for states and Indian tribes for hardening efforts, reducing risk of power lines causing wildfires, or reduce likelihood and consequences of disruptive events |
| 40103   | Electric grid reliability and resilience research, development, and demonstration | 6,000,000,000 | Establishes program for demonstration of innovative approaches to transmission, storage, microgrids and distribution infrastructure for resilience |
| 40106   | Transmission facilitation program                                   | 2,500,000,000 | Establishes a $2.5 billion revolving Transmission Facilitation loan fund for transmission facilities, including microgrids |

Table 1: Priority provisions directly relevant to microgrid stakeholders
Sections 40101 and 40106 are grant and loan programs that are funded by appropriations to the Department of Energy. Stakeholders can access these funds through an application process with the DOE that is specified in the sections’ paragraphs in the text of the bill. Section 40103 is a research, development and demonstration program, the funding for which is also appropriated to DOE but is designated for states, tribal territories, local governments, and public utility commissions. To access funding in this section, market stakeholders will likely need to engage with state and local governments and PUCs. Section 4101 and 40103 list an array of entities that are eligible to receive funding, while 40106 instead lists the requirements for eligible projects.

<table>
<thead>
<tr>
<th>Section</th>
<th>Section Title</th>
<th>Entities/Projects Eligible for Funds</th>
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</thead>
<tbody>
<tr>
<td>40101</td>
<td>Preventing outages and enhancing the resilience of the grid</td>
<td>• Electric grid operators&lt;br&gt;• Electricity storage operators&lt;br&gt;• Electricity generators&lt;br&gt;• Transmission owner or operator&lt;br&gt;• Distribution provider&lt;br&gt;• Fuel supplier&lt;br&gt;• Any other relevant entity, as determined by the Secretary.</td>
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<tr>
<td>40103</td>
<td>Electric grid reliability and resilience research, development, and demonstration</td>
<td>• States&lt;br&gt;• Combinations of 2 or more states&lt;br&gt;• Indian tribes&lt;br&gt;• Units of local governments&lt;br&gt;• Public utility commission</td>
</tr>
<tr>
<td>40106</td>
<td>Transmission facilitation program</td>
<td>Projects involving:&lt;br&gt;• Constructing new or replacing an existing transmission line&lt;br&gt;• Increasing the capacity of an existing transmission line&lt;br&gt;• Connecting an isolated microgrid to an existing transmission or telecommunications infrastructure corridor</td>
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Table 2: Eligible entities and projects for funding

Aside from new funding programs, the IIJA includes the creation of new working groups and studies that offer opportunities for engagement at the federal level.

Section 25006 (pg. 417) establishes an EV working group led by the secretary of energy. Non-federal stakeholders should include a representative of "a public utility regulator or association of public utility regulators," as well as a representative of "an organization representing state departments of energy or state energy planners."
Section 40111 directs the Department of Energy to conduct a study to identify barriers, codes that need revision in order to facilitate the adoption of energy storage systems across sectors. This study should involve the use of emerging storage technologies, use cases such as V2G integration and more. The DOE will receive formal input from stakeholders, the details of which are specified further on page 518 of the bill’s text.

Expansion of Smart Grid Investment Matching Grant Program
An additional $600 million is allocated to the Smart Grid Investment Matching Grant Program per year from 2022 through 2026, for a total of $3 billion. Qualifying investments include specialized electric-using equipment, devices, transmission and distribution equipment fitted with monitoring and communications devices, metering devices, sensors, and software that allows smart grid functions, as well as devices that allow for EVs to engage in smart grid functions.¹

### All relevant sections

IIJA Full Text - [https://www.congress.gov/117/bills/hr3684/BILLS-117hr3684enr.pdf](https://www.congress.gov/117/bills/hr3684/BILLS-117hr3684enr.pdf)

Note: The “Engagement” column lists entities that will ultimately be allocating funding or receiving appropriations, and therefore are the entities that stakeholder should engage with in order to receive funds.

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Funding</th>
<th>Description</th>
<th>Notes</th>
<th>Engagement*</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>11109 - Surface transportation block grant program</td>
<td></td>
<td>Funding for expanding eligibility to include installation of EV charging infrastructure, installation and deployment of current and emerging intelligent transport technologies, including ability of vehicles to communicate with infrastructure, buildings, and other road users.</td>
<td>Use of funds - Amounts under this clause may be expended directly by the state, through contracts with state agencies, private entities or nonprofit entities. Appropriations for this program are not directly specified but are a lumped together as a part of the $273.15 billion allocated to Federal-Aid Highways.</td>
<td>States</td>
</tr>
<tr>
<td>52</td>
<td>11115 - Congestion mitigation and air quality improvement program</td>
<td>13,200,000,000</td>
<td>Funding to reduce congestion and improve air quality, including EV infrastructure, priority to minority and low-income communities and port-related emissions</td>
<td>Includes micro mobility, car sharing, replacements or retrofits, verified technologies as defined in section 791 of energy policy act of 2005.</td>
<td>States</td>
</tr>
<tr>
<td>118</td>
<td>11401 - Grants for Charging and Fueling Infrastructure</td>
<td></td>
<td>Establishes a grant program to deploy publicly accessible EV charging and alternative fuel infrastructure, to achieve reduction in GHG and improve mobility with an emphasis on equitable access</td>
<td>Includes V2G. Individual grants shall not exceed $15,000,000. Eligible entities: state or political subdivisions, metropolitan planning org, local government, special purpose district or public authority, or groups of the above.</td>
<td>States, local gov</td>
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<tr>
<td>125</td>
<td>11402 - Reduction of truck emissions at port facilities</td>
<td>150,000,000</td>
<td>Includes port electrification projects</td>
<td>The secretary shall coordinate and provide funding to test, evaluate, and deploy projects that reduce port-related emissions from idling trucks, including through the advancement of port electrification and improvements in efficiency, focusing on port operations, including heavy-duty commercial vehicles, and other related projects.</td>
<td>Secretary of Transportation</td>
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<td>Page</td>
<td>Code</td>
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<td>127</td>
<td>11403 - Carbon Reduction Program</td>
<td>Funds allocated equal 2.56% of what is left over after allocating to national highway freight program, congestion mitigation and air quality improvement program, and metropolitan state planning program</td>
<td>Incentives including for V2I communication, port electrification, projects or strategies designed to support congestion pricing, shifting transportation demand to non-peak hours. Includes the acquisition, installation, or operation of publicly accessible EV or alternative fuel infrastructure. Refer to page 127 for details on eligible projects, page 28 for details on appropriations for this section.</td>
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<tr>
<td>133</td>
<td>11405 - Promoting resilient operations for transformative, efficient, and cost-saving transportation (PROTECT)</td>
<td>Funds allocated equal 2.9% of what is left over after allocating to national highway freight program, congestion mitigation and air quality improvement program, and metropolitan state planning program</td>
<td>Competitive planning grants for community resilience, surface transportation critical load, focus on extreme weather and climate related events. Refer to page 28 for details on appropriations for this section.</td>
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<td>408</td>
<td>25002 - Smart community research center</td>
<td></td>
<td>Research center to promote intelligent transportation system or smart community transportation programs. Focuses more on community transportation, still may be relevant</td>
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<td>412</td>
<td>25005 - Strengthening mobility and revolutionizing transportation grant program</td>
<td>$500,000,000</td>
<td>Establishes a program that provides grants for entities to conduct demonstration projects focused on advanced smart city or community technologies and systems in a variety of communities. Projects must include one of the following: (iii) intelligent sensor-based infrastructure (vii) Smart grid. Funding from the secretary.</td>
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<td>417</td>
<td>25006 - Electric vehicle working group</td>
<td></td>
<td>Establishes an EV working group led by secretary of energy. Non-federal stakeholders should include a representative of &quot;a public utility regulator or association of public utility regulators,&quot; as well as a representative of &quot;an organization representing state departments of energy or state energy planners.&quot;</td>
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<tr>
<td>489</td>
<td>30018 - Grants for buses and bus facilities</td>
<td></td>
<td>Funding for bus procurement and upgrades to bus facilities, fleets.</td>
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Think Microgrid

www.thinkmicrogrid.org
<p>| 495 | 40101 - Preventing outages and enhancing the resilience of the grid | 5,000,000,000 | Grant program for states and Indian tribes for hardening efforts, reducing risk of power lines causing wildfires, or reduce likelihood and consequences of disruptive events | 50% of funding is for tribes, 50% for eligible entities. Used for weatherization technologies and equipment; fire-resistant technologies and fire prevention systems; monitoring and control technologies; the use or construction of distributed energy resources for enhancing system adaptive capacity during disruptive events, including—(I) microgrids; (II) battery-storage subcomponents; (III) adaptive protection technologies; (IV) advanced modeling technologies. Eligible entities: grid operator, storage operator, generator, transmission operator, distribution provider, fuel supplier, any other relevant entity as determined by the secretary | Secretary of Energy |
| 500 | 40102 - Preventing outages and enhancing the resilience of the grid | Amends Stafford Disaster Relief is amended to include wildfires |  |  | |
| 500 | 40103 - Electric grid reliability and resilience research, development, and demonstration | 6,000,000,000 | Establishes program for demonstration of innovative approaches to transmission, storage, microgrids and distribution infrastructure for resilience | Eligible entities: a state, a combination of 2 or more states, an Indian tribe, a unit of local government, a public utility commission | States, local gov, PUC |
| 502 | 40104 - Utility demand response | Amends PURPA 111 to include demand response |  |  | |
| 505 | 40105 - Siting of interstate electric transmission facilities | Amends designation of national interest transmission corridors, federal power act | Includes Indian tribes, includes capacity constraints with congestion, the secretary shall conduct a study every 3 years, including energy security, addition of “if it would enhance the ability of facilities that generate or transmit firm or intermittent energy to connect to the grid,” good faith efforts to engage with landowners for rights of way |  |</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Project Title</th>
<th>Budget (in millions)</th>
<th>Description</th>
<th>Responsible Party</th>
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</thead>
<tbody>
<tr>
<td>506</td>
<td>Transmission facilitation program</td>
<td>2,500,000,000</td>
<td>Establishes a $2.5 billion revolving Transmission Facilitation loan fund for transmission facilities, including microgrids. Eligible projects: constructing new or replacing a transmission line, increasing capacity of a transmission line, connecting an isolated microgrid to an existing transmission, transmission, or telecommunications infrastructure corridor. Eligible entities are anyone with an eligible project.</td>
<td>Secretary of Energy</td>
</tr>
<tr>
<td>512</td>
<td>Deployment of technologies to enhance grid flexibility</td>
<td>3,000,000,000</td>
<td>Expands SGIG to Include grid flexibility, DER integration and aggregation, energy storage, smart grid, ability to redirect or shut off power in case of extreme weather, V2G tech. Eligible entities not clear.</td>
<td>Secretary of Energy</td>
</tr>
<tr>
<td>513</td>
<td>State energy security plans</td>
<td>None specified</td>
<td>Provides financial assistance to state energy security plans. Financial assistance and creation of a state energy plan, that propose methods to secure the energy infrastructure of the state against physical and cybersecurity attacks, mitigate supply disruptions, enhance response to and recovery from disruptions, ensure the state has reliable, secure, and resilient energy infrastructure.</td>
<td>States - State governors submit an energy security plan to get funds</td>
</tr>
<tr>
<td>516</td>
<td>State energy program</td>
<td>500,000,000</td>
<td>Funding to support state energy plans, including to reduce carbon emissions in transportation sector and accelerate electrification of all vehicle types. Amendment to Collaborative Transmission Siting section of Energy Policy Act. Not subject to matching requirement.</td>
<td>States</td>
</tr>
<tr>
<td>518</td>
<td>Study of codes and standards for use of energy storage systems across sectors</td>
<td></td>
<td>DOE to conduct a study to identify barriers, identify codes that need revision; report within 18 months. Use of emerging energy storage tech, use cases such as V2G integration, receive formal input from stakeholders.</td>
<td>Secretary of Energy</td>
</tr>
<tr>
<td>518</td>
<td>Demonstration of electric vehicle battery second-life applications for grid services</td>
<td></td>
<td>The secretary shall carry out a project to demonstrate second life applications of EV batteries as aggregated storage installations. To demonstrate power safety and reliability of the applications demonstrated under the program, demonstrate ability to provide ancillary services, reduce peak loads, increase acceptance of use of second life batteries. Prioritize pairing with multifamily affordable housing, senior care, community health center.</td>
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<tr>
<td>521</td>
<td>Enhancing grid security through public-private partnerships</td>
<td></td>
<td>DOE to conduct a program to develop utility cybersecurity capabilities, and create a report on cybersecurity of distribution systems within a year. Prioritizes utilities with fewer available resources.</td>
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<tr>
<td>Code</td>
<td>Description</td>
<td>Funding</td>
<td>Details</td>
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<td>522</td>
<td>40122 - Energy cyber sense program</td>
<td>DOE to create an energy cybersecurity product test bed</td>
<td></td>
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<tr>
<td>523</td>
<td>40123 - Incentives for advanced cybersecurity technology</td>
<td>FERC, DOE, NERC, NARUC to conduct a study on incentive based rate treatments to incentivize investment by utilities in cybersecurity tech and participation in threat sharing programs.</td>
<td>No later than 1 year after completion of the study, said rate treatments should be implemented</td>
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<tr>
<td>525</td>
<td>40124 - Rural and municipal utility advanced cybersecurity grant and technical assistance program</td>
<td>Grant program to protect against, detect, respond to, and recover from cybersecurity threats.</td>
<td>Eligible entities: rural coops, munis, utility owned by any subdivision of a state, IOU &lt;4000 GWh per year. Prioritize critical infrastructure, limited access to resources</td>
<td></td>
</tr>
<tr>
<td>526</td>
<td>40125 - Enhanced grid security</td>
<td>DOE and other stakeholders to conduct a program to develop advanced cybersecurity applications and tech, a program to enhance and periodically test the emergency response capabilities of the department, and a program to secure energy networks</td>
<td>Secretary of Energy</td>
<td></td>
</tr>
<tr>
<td>528</td>
<td>40126 - Cybersecurity plan</td>
<td>DOE provisions on cybersecurity for awards and funding</td>
<td>Secretary of Energy</td>
<td></td>
</tr>
<tr>
<td>535</td>
<td>40207 - Battery processing and manufacturing</td>
<td>Establishes a battery material processing grant program to support US battery manufacture</td>
<td>Secretary of Energy</td>
<td></td>
</tr>
<tr>
<td>543</td>
<td>40208 - Electric drive vehicle battery recycling and second-life</td>
<td>DOE to conduct a RD&amp;D program of second life batteries, study of viable market opportunities within 1 year</td>
<td>Secretary of Energy</td>
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<tr>
<td>Id</td>
<td>Description</td>
<td>Cost</td>
<td>Description</td>
<td>Responsible entity</td>
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<tr>
<td>547</td>
<td>Advanced energy manufacturing and recycling grant program</td>
<td>$750,000,000</td>
<td>Projects that re-equip an industrial or manufacturing facility with equipment designed to reduce the greenhouse gas emissions of that facility substantially below the greenhouse gas emissions under current best practices, as determined by the Secretary, through the installation of— (I) low- or zero-carbon process heat systems; (II) carbon capture, transport, utilization, and storage systems; (III) technology relating to energy efficiency and reduction in waste from industrial processes; or (IV) any other industrial technology that significantly reduces greenhouse gas emissions, as determined by the Secretary.</td>
<td>Secretary of Energy</td>
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<tr>
<td>555</td>
<td>21st century workforce advisory board</td>
<td></td>
<td>Establishes a workforce advisory board.</td>
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<tr>
<td>605</td>
<td>Department of Energy Loan Programs</td>
<td></td>
<td>Expands DOE Loan Programs.</td>
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<tr>
<td>623</td>
<td>Energy efficiency revolving loan fund capitalization grant program</td>
<td>$250,000,000</td>
<td>Primarily energy efficiency.</td>
<td>States</td>
</tr>
<tr>
<td>699</td>
<td>Energy storage demonstration projects</td>
<td>$505,000,000</td>
<td>DOE to conduct energy storage demonstration pilot grant program and long duration demonstration initiative and joint program.</td>
<td>Secretary of Energy</td>
</tr>
<tr>
<td>699</td>
<td>Advanced reactor demonstration program</td>
<td>$3,211,000,000</td>
<td>Funding for advanced reactor demonstrations.</td>
<td>Secretary of Energy</td>
</tr>
<tr>
<td>824</td>
<td>Establishment of commission</td>
<td></td>
<td>Establishes a commission to study wildfire prevention and rehabilitation.</td>
<td></td>
</tr>
<tr>
<td>844</td>
<td>State and local cybersecurity grant program</td>
<td>$1,000,000,000</td>
<td>Eligible entities: state or tribal government.</td>
<td>Secretary of Energy</td>
</tr>
<tr>
<td>893</td>
<td>Clean school bus program</td>
<td>$1,000,000,000</td>
<td>Eligible recipients: Local state government entities responsible for providing school bus service, eligible contractors, nonprofit school transportation association, Indian.</td>
<td>EPA</td>
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<td><strong>897</strong></td>
<td>71102 - Electric or low-emitting ferry pilot program</td>
<td><strong>50,000,000</strong></td>
<td>DOT to carry out pilot program for electric or low-emitting ferries</td>
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<td>Secretary of Transportation</td>
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