

Bipartisan Infrastructure Law: Notice of Intent No. DE-FOA-0003433**Notice of Intent to Issue
Bipartisan Infrastructure Law: Funding Opportunity Announcement
No. DE-FOA-0003434**

DISCLAIMER: The “Notice of Intent to Issue” is for informational purposes only; the Department of Energy is not seeking comments on the information in this notice and applications are not being accepted at this time. Any information contained in this notice is subject to change.

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Vehicle Technologies Office, a Funding Opportunity Announcement (FOA) entitled “Bipartisan Infrastructure Law (BIL) Electric Drive Vehicle Battery Improving Economics, Recovery and Reuse, and State of Health.”

The Biden Administration has laid out a bold agenda to address the climate crisis and build a clean and equitable energy economy that achieves carbon pollution free electricity by 2035, and puts the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050¹ to the benefit of all Americans.

Batteries are a critical element to decarbonizing our economy and national competitiveness – for grid storage, for the resilience of homes and businesses, and for electrification of the transportation sector. President Biden’s [Executive Order on America’s Supply Chains](#) directed the Department of Energy (DOE) to produce a report identifying the risks in the current and forecasted battery supply chain landscape and policy recommendations to address them. The [Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth 100-Day Reviews under Executive Order 14017](#) report assesses vulnerabilities and opportunities across four key products including high-capacity batteries. The [National Blueprint for Lithium Batteries](#), a report developed by the Federal Consortium for Advanced Batteries², lays out five critical goals and key actions to guide federal agency collaboration to secure the nation’s long-term economic competitiveness and create good-paying jobs for American workers, while supporting the Biden Administration’s decarbonization goals.

¹ Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad,” January 27, 2021.

² The Federal Consortium for Advanced Batteries (FCAB) provides a framework for cooperation and coordination among federal agencies having a stake in developing advanced battery technology and establishing a domestic supply of lithium batteries. The FCAB is led by the Departments of Energy, Defense, Commerce, and State and includes many organizations across the government.

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The Infrastructure Investment and Jobs Act ([Public Law 117-58](#)), also known as the Bipartisan Infrastructure Law (BIL), is a once-in-a-generation investment in infrastructure, which will grow a more sustainable, resilient, and equitable economy through enhancing U.S. competitiveness in the world, drive the creation of good-paying union jobs, ensuring stronger access to these economic and other benefits for disadvantaged communities. The BIL appropriates more than \$62 billion to DOE³ to deliver a more equitable clean energy future for the American people by:

- Investing in American manufacturing and workers.
- Expanding access to energy efficiency and clean energy for families, communities, and businesses.
- Delivering reliable, clean, and affordable power to more Americans.
- Building the technologies of tomorrow through clean energy demonstrations.

To support the goal of building a clean and equitable energy economy, the BIL-funded projects are expected to (1) support meaningful community and labor engagement⁴; (2) invest in America's workforce; (3) advance diversity, equity, inclusion, and accessibility; and (4) contribute to the President's goal that 40% of the overall benefits of certain federal climate, clean energy, affordable and sustainable housing, and other investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution (the Justice40 Initiative⁵).

The BIL provides **more than \$7 billion for investments in the batteries supply chain from 2022 to 2026**. This includes sustainable sourcing and processing of the critical minerals used in battery production without new extraction or mining all the way through end-of-life battery collection and recycling.

³ U.S. Department of Energy. November 2021. "DOE Fact Sheet: The Bipartisan Infrastructure Deal Will Deliver For American Workers, Families and Usher in the Clean Energy Future." <https://www.energy.gov/articles/doe-fact-sheet-bipartisan-infrastructure-deal-will-deliver-american-workers-families-and-0>

⁴ The Community and Labor Engagement section of Community Benefit Plans are omitted from the research and development project template: [About Community Benefits Plans | Department of Energy](#)

⁵ Established by EO 14008, "Tackling the Climate Crisis at Home and Abroad," the Justice40 Initiative sets a goal that 40% of the overall benefits of certain federal investments in climate, clean energy, and other areas flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution. Pursuant to M-21-28 and M-23-09, issued by the White House Office of Management and Budget, White House Council on Environmental Quality, and the White House Office of Domestic Climate Policy, DOE recognizes disadvantaged communities as the census tracts that are identified as disadvantaged by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST), located at <https://screeningtool.geoplatform.gov/>, as well as all Federally Recognized Tribes (whether or not they have land). See https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf. DOE's Justice40 Implementation Guidance is located at <https://www.energy.gov/sites/default/files/2022-07/Final%20DOE%20Justice40%20General%20Guidance%20072522.pdf>.

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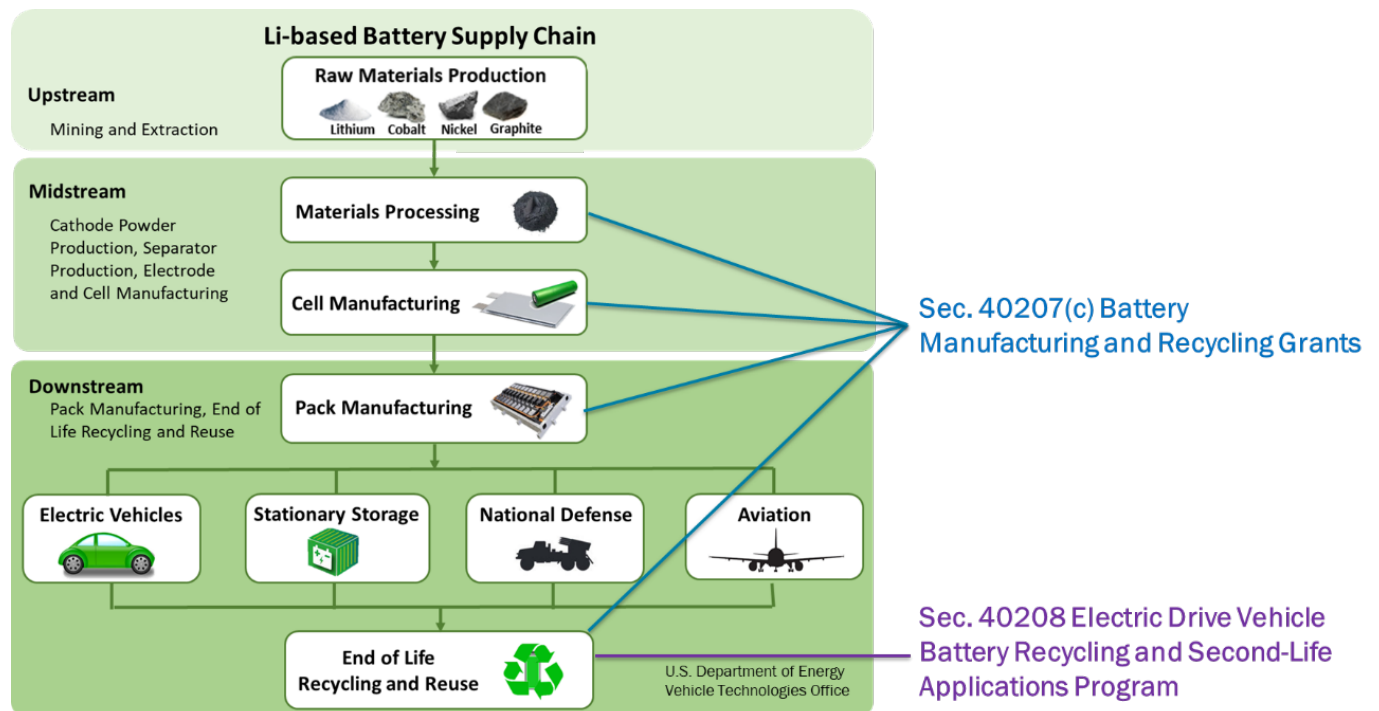
The anticipated FOA and any related activities support BIL section 40208, Electric Drive Vehicle Battery Recycling and Second-Life Applications Program aimed at “research, development, and demonstration of:

- **second-life applications** for electric drive vehicle batteries that have been used to power electric drive vehicles; and
- **technologies and processes** for final recycling and disposal of the [electric drive vehicle batteries].”

As part of this whole-of-government approach, this FOA seeks to encourage meaningful engagement with and participation of Tribes and all stakeholders, including labor unions, underserved communities, and underrepresented groups. Consistent with Executive Order 14008, the FOA will be designed to support the goal that 40% of the overall benefits of certain federal investments flow to disadvantaged communities in accordance with the Justice40 Initiative. In addition, this FOA is designed to ensure that priority is given to projects that support the development or demonstration of projects in economically distressed areas, including communities facing loss of economic activity and jobs due to the clean energy transition, and provide the greatest potential to reduce costs for consumers and promote accessibility and community implementation of demonstrated technologies.

The high-capacity battery supply chain consists of five main steps: 1) raw material production, 2) materials processing, 3) battery material manufacturing and cell fabrication, 4) battery pack and end use product manufacturing, and 5) battery end-of-life and recycling. The graphic below shows how these five steps relate to the BIL investments in the battery supply chain.

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BIL section 40208 provides \$200 million for the electric drive vehicle battery recycling and second life applications program over five years. The first Funding Opportunity Announcement (FOA), released in FY22, [awarded nearly \\$74 million](#) to 1) advance the development of recycling processes and the requalification of resultant recycled material into the battery supply chain and, 2) establish demonstration projects to understand and validate real-world performance and potential for deploying spent electric drive vehicle batteries for second-life applications outside of the automotive industry. Through the selected projects, the FY22 FOA aimed to ensure that highly efficient battery recycling processes and second life applications are in place to scale up and support the domestic battery supply chain. The second FOA, released in 2023, offering \$37 million, aimed to support projects that improved the economics of transportation, dismantling, and preprocessing of electric drive vehicle batteries, and the recycling of electric drive vehicle battery accessory components.

The third FOA from BIL section 40208 may include up to a total of \$70 million to support the following Areas of Interest:

Area of Interest 1: Improving the Economics of Recycling Lithium Iron Phosphate-Based Li-ion Batteries

Economic margins for EV battery recycling are becoming increasingly challenging due to cost reduction in front-end battery designs, driven partially by decreasing high value material content in the battery. The most prominent example is the shift from conventional nickel,

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manganese, and cobalt-based cathodes (NMC) to lithium iron phosphate (LFP) and other phosphate-based cathodes. With the growing market share of vehicles that use LFP-based packs, reducing the cost of producing recycled LFP cathode materials from recyclable feedstocks is paramount to improving overall battery recycling economics. This problem is particularly challenging given the majority of the cost of LFP cathodes comes from the production of the cathode particles themselves rather than the constituent materials, versus cathodes that contain high-value elements, such as nickel and cobalt. As a result, new and innovative approaches to increase economic viability of producing LFP and other phosphate-based cathode materials from recyclable feedstocks are needed.

The objective of this topic area is to reduce the cost of producing LFP or phosphate-based cathodes from recyclable feedstocks such as manufacturing scrap and End of Life (EOL) EV batteries and generate new cathode material or cathode precursor material. Projects in this topic area should focus on research, development, and validation of economically viable recycling methods, processes and/or technologies that enable efficient recovery and requalification of valuable materials from end-of-life LFP material for return into the cathode supply chain. The performance of the materials generated from the proposed recycling process should meet or exceed the performance of pristine materials. It is anticipated this FOA may provide up to \$22 million for this topic.

Area of Interest 2: Improving the Recovery and Re-use of Electrolyte Components from Lithium-Ion Batteries

The electrolytes in lithium-ion batteries contain solvents, salts, and additives that enable the performance needed for automotive applications. The U.S. does not currently have substantial manufacturing capacity or the materials to produce these components. Depending on the type of process used to recycle a battery (such as pyrometallurgy, hydrometallurgy, or direct recycling), the electrolyte components may or may not be recoverable. There remains residual value in these electrolyte components, particularly the electrolyte salts, and processing batteries to nondestructively remove these components while taking into account environmental considerations can be a challenge. As a result, new and innovative approaches to recover electrolyte components from recyclable feedstocks are needed.

The objective of this topic area is to improve the recovery of electrolyte components from recyclable feedstocks such as manufacturing scrap and EOL EV batteries. The performance of the electrolyte components generated from the proposed recycling process should meet or exceed the performance of pristine materials. Projects in this topic area should focus on research, development, and validation of economically viable recycling methods, processes and/or technologies that enable efficient recovery and requalification of valuable materials for return into the supply chain. It is anticipated this FOA may provide up to \$18 million for this topic.

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Area of Interest 3: Upcycling and Improving the Value of Recovered Materials from Electric Drive Vehicle Batteries

Recycled battery materials are key for a robust and sustainable domestic lithium-based battery supply; however, lower value battery chemistries and cell components are rarely recycled today due to high processing costs relative to their intrinsic value. Currently, recycling methods for end-of-life EV batteries concentrate on recovering valuable metals like nickel, cobalt, and lithium from cathodes. For anodes, recycling graphite materials for reintroduction into the lithium-ion battery (LIB) supply chain is technically challenging and not cost-advantageous. Graphite can be upcycled to produce derivatives such as battery-grade graphene, graphene oxide, nanocomposite films, or catalysts for uses in LIBs, beyond LIBs (e.g. sodium ion or lithium-sulfur batteries), supercapacitors, or other applications. New and innovative approaches for improving the value and utilization of low-intrinsic value materials, including but not limited to graphite, manganese, and polymer components, recovered from LIBs will be in high demand as raw materials scarcity and high market value drive the development of more sustainable domestic battery recycling.

The objective of this topic area is to develop and demonstrate technologies that maximize the recovery and value of critical materials, including but not limited to graphite, manganese, and polymer components, from electric drive vehicle batteries through recycling or upcycling for use in new products or applications. It is anticipated this FOA may provide up to \$18 million for this topic.

Area of Interest 4: Demonstrating Improved State of Health (SOH) Evaluation and Safety for Second-Use Applications of Electric Drive Vehicle Batteries

EV batteries are deemed no longer suitable for automotive use and generally qualify for replacement if they reach 70-80% of their nominal capacity within the warranty timeframe specified by the Original Equipment Manufacturer (OEM). Second use extracts additional service and value from retired EV batteries and can also improve the reliability and cleanliness of the grid. Testing of cell packs is required for reuse of battery cells to verify that battery characteristics are appropriate for second use. New and innovative state-of-health measurement approaches are needed to address the technical and economic challenges for post-first life screening and second-life deployment.

The objective of this topic area is to develop and demonstrate methods, technologies, or process that enable second-life applications of EV batteries. Specifically, this topic focuses on development and demonstration of technologies designed to evaluate state-of-health of spent EV batteries and facilitate safe secondary application such as grid-connected energy storage systems. It is anticipated this FOA may provide up to \$12 million for this topic.

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EERE envisions awarding multiple financial assistance awards in the form of grants. The estimated period of performance for each award will be approximately 3-4 years.

All prime recipients receiving funding under this anticipated FOA must be incorporated (or otherwise formed) under the laws of a state or territory of the United States and have a physical location for business operations in the United States. If a foreign entity applies for funding as a prime recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a state or territory of the United States to be the prime recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate. Waivers to these requirements will not be accepted.

This BIL Notice of Intent is issued so that interested parties are aware of the EERE's intention to issue this BIL FOA in the near term. All of the information contained in this Notice of Intent is subject to change.

EERE plans to issue the FOA late December 2024 to early 2025 via the EERE Exchange website <https://eere-exchange.energy.gov/>. If Applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

In anticipation of the FOA being released, Applicants are advised to complete the following steps, which are **required** for application submission:

- Register and create an account in EERE Exchange at <https://eere-exchange.energy.gov/>. This account will allow the user to register for any open EERE FOAs that are currently in EERE Exchange.

eXCHANGE has been integrated with Login.gov. All potential applicants will be required to have a Login.gov account to access EERE eXCHANGE. As part of the eXCHANGE registration process, new users will be directed to create an account in [Login.gov](https://login.gov/). Please note that the email address associated with Login.gov must match the email address associated with the eXCHANGE account. For more information, refer to the Exchange Multi-Factor Authentication (MFA) Quick Guide in the [Manuals section](#) of eXCHANGE.

It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission. Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-eXCHANGESupport@hq.doe.gov.

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Obtain a Unique Entity identification (UEI) number at www.sam.gov

- Register with the System for Award Management (SAM) at <https://www.sam.gov>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.

NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process they should utilize the HELP feature on SAM.gov. SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue. Additional entity validation resources can be found here: [GSAFSD Tier 0 Knowledge Base - Validating your Entity](#).

- Register in FedConnect at <https://www.fedconnect.net/>. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf
- Register in Grants.gov to receive automatic updates when Amendments to a FOA are posted. However, please note applications will not be accepted through Grants.gov. <http://www.grants.gov/>. All applications must be submitted through EERE Exchange.

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