STATEMENT OF

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REGARDING

ELECTRIC VEHICLE SUPPLY CHAINS

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Introduction

Chairman Manchin, Ranking Member Barrasso, and distinguished Members of the Committee, thank you for the opportunity to be with you today to discuss the efforts of the Department of Energy (DOE) to strengthen the reliability and resilience of our country's supply chain for electric vehicles.

My DOE colleagues and I thank Congress and, in particular, this Committee for passing landmark infrastructure and energy legislation in the Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA). With the tools you have provided DOE – and under the leadership of President Biden and in full coordination with the Treasury Department and other agencies – we are already making substantial progress in reducing costs for consumers, improving our economic and national security, improving energy equity while advancing environmental justice, bolstering domestic manufacturing, and improving the availability and access of reliable charging infrastructure across our country.

I am pleased to share that since the beginning of the Biden Administration and with the passage of these historic laws, our shared efforts have so far helped lead to $157 billion in announced private domestic investments for electric vehicles (EVs) and batteries.[1] And that number continues to grow every month. This level of investment means 130,000 estimated new jobs and enough batteries to power approximately 10 million new EVs per year by 2030.[2]

DOE's work to ensure critical minerals and materials supply chains, including those that support the manufacturing and production of electric vehicles, involves multiple offices across our Department, and spans the full continuum of Research, Development, Demonstration, and Deployment (RDD&D), including:

[1] https://www.whitehouse.gov/invest/

[2] Light Duty Electric Drive Vehicles Monthly Sales Updates | Argonne National Laboratory (anl.gov)

- developing new materials and chemistries through fundamental research in our Office of Science;
- improving the environmental footprint and efficacy of critical mineral extraction through the Office of Fossil Energy and Carbon Management (FECM);
- accelerating cutting-edge technologies, including high density batteries with lower or no dependence on critical materials and innovative battery recycling, within the Office of Energy Efficiency and Renewable Energy (EERE);
- demonstrating and assisting the commercialization of new and improved manufacturing facilities through the Office of Manufacturing and Energy Supply Chains (MESC); and
- helping companies to cross the bridge to full market acceptance through the Loan Programs Office (LPO).

The Department also works with a variety of interagency partners. For example, DOE supports, including through our analysis and technical expertise, the development of tax policy by the Treasury Department and Internal Revenue Service. DOE also works closely with the State Department, United States Agency for International Development (USAID), the Development Finance Corporation, the Export-Import Bank of the United States (Ex-Im) and others to strengthen efforts with key partner countries around the world to further diversify supply chains.

Throughout, we must ensure that all these activities that benefit American companies, workers and communities do so in a way that also protects against harmful foreign influence. Accordingly, the Department has developed a comprehensive and rigorous approach to research, technology, and economic security (RTES) policy and procedures for our awards and loans. DOE has developed, and continues to improve upon, a number of RTES measures to mitigate risk that malign foreign governments pose to our scientific and technological development ecosystem, supply chains, and intellectual property.

Through the targeted and strategic use of all these tools, the United States is making historic progress toward reshoring and revitalizing domestic manufacturing, strengthening, and diversifying our critical mineral and energy supply chains, and continuing the drive for more innovative technologies that will lead the global market.

Critical Material and Mineral Supply Chains

The Biden-Harris Administration is keenly aware of the importance of a strong domestic supply chain, including for electric vehicles.

President Biden signed Executive Order 14017, *America's Supply Chains*, on February 24, 2021, directing each department in the administration to assess potential supply-chain risks within their jurisdiction and to develop strategies to mitigate and overcome any deficiencies.[3] This Executive Order expanded work previously directed in EO 13953, *Addressing the Threat to the Domestic*

[3] Executive Order on America's Supply Chain. February 24, 2021. Available at https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/

Supply Chain from Reliance on Critical Minerals from Foreign Adversaries and Supporting the Domestic Mining and Processing Industries from September 30, 2020.[4]

In February of 2022, DOE released a report titled *America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition*, followed by a Critical Materials Assessment in July of 2023.[5] DOE's Critical Materials List includes key elements and components for the electric vehicle battery supply chain, including lithium, graphite, nickel, and cobalt.

To meet the projected demand for critical minerals and materials, the U.S. must develop multiple sources (upstream) for critical materials. However, that alone will not be sufficient to establish resilient supply chains. A lack of processing and refining capabilities (midstream), as well as manufacturing (downstream), often poses a greater risk to supply chain robustness than the sources themselves. For example, the U.S. mines the largest amount of rare earth elements of any country other than the People's Republic of China (PRC), but we currently ship much of this raw material to the PRC for future processing and refining.[6] For most critical materials, midstream processing represents the greatest U.S. challenge, as was recently demonstrated by China's formalization of a ban on technology exports used to extract and separate critical materials.

The PRC maintains a dominant position in the midstream processing capabilities for several different critical materials, including graphite and cobalt. By intervening in each stage of the supply chain for over three decades, PRC non-market policies and practices have resulted in market distortions that have made it very difficult for midstream processing capabilities to be built in the U.S. or other countries. Dependence on a single source for these materials leaves the U.S. and our allies vulnerable. Therefore, we must ensure sufficient worldwide supplies of critical materials from responsible sources to protect U.S. national security and enable a clean energy and industrial economy.

Fortunately, thanks again to the leadership of this committee and others, we have a variety of new tools and resources that leverage decades of research and development conducted by DOE and our National Labs to build domestic manufacturing and to strengthen our energy supply chains.

Deploying New Programs to Strengthen Energy Supply Chains and Domestic Manufacturing

It is urgent to get new commercial midstream technology in place in the U.S. to establish domestic supply chains. With funding from the BIL and IRA, the DOE's Manufacturing and Energy Supply Chains and Loan Programs Offices are leading these efforts.

MESC works to strengthen and secure energy supply chains and manufacturing to modernize U.S. energy infrastructure and to support the clean energy transition. To this end, MESC is

[4] https://www.govinfo.gov/content/pkg/FR-2020-10-05/pdf/2020-22064.pdf
[5] https://www.energy.gov/policy/articles/americas-strategy-secure-supply-chain-robust-clean-energy-transition; https://www.energy.gov/sites/default/files/2023-05/2023-critical-materials-assessment.pdf
[6] https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf; https://mpmaterials.com/articles/mp-materials-reports-second-quarter-2023-results/

implementing provisions in the BIL, the Defense Production Act, and the IRA, including targeting over $6 billion in BIL funding to support battery materials processing, manufacturing, and recycling, as well a $2 billion in IRA funding to convert the automotive facilities and jobs to support the electric vehicle transition. Additionally, LPO has issued or committed more than $16 billion for several critical materials production and recycling and battery supply chain projects. A summary of those programs and progress to date is outlined below.

Manufacturing and Energy Supply Chains

The Bipartisan Infrastructure Law authorized and appropriated approximately $6 billion for DOE to support the sourcing of battery critical materials and accelerate battery production in America. With the global electric vehicle and grid storage battery market expected to grow rapidly over the next decade, DOE is working with industry to prepare the United States for this increased demand.

Through 2022 and 2023, MESC has stewarded two rounds of funding for activities that support **BIL Section 40207(b) Battery Materials Processing Grants** and **BIL Section 40207(c) Battery Manufacturing and Recycling Grants** with the aim to reach across both the midstream and downstream segments of the battery supply chain, supporting both midstream battery materials and component manufacturing, as well as subsequent cell manufacturing and end-of-life recycling.

DOE issued the first "Battery Materials Processing and Battery Manufacturing" funding opportunity in May 2022. Applicants responded to 12 distinct areas of interest from material precursor production to cell fabrication. DOE has closed the negotiations of the first-round selections, catalyzing over $4 billion in private sector investment, the creation of over 10,000 jobs, significant investment in energy communities, training of over 700 students, and the ability to produce an additional 1.3 million electric vehicles each year. These investments will create opportunities and economic development in 11 states across the country, and include awards in Nevada, Missouri, Washington State, Louisiana, North Dakota.

In November 2023, DOE issued the second round of funding for "Battery Materials Processing and Battery Manufacturing," for which full applications are due March 2024, and selection announcements are anticipated in July 2024.

The **Qualifying Advanced Energy Project Credit (48C)** program was established by the American Recovery and Reinvestment Act of 2009 and expanded with an additional $10 billion in tax credits to be allocated under the Inflation Reduction Act. The Qualifying Advanced Energy Project Credit of § 48C of the Internal Revenue Code, provides allocated tax credits for investments in qualifying advanced energy projects. The Department of the Treasury and the Internal Revenue Service, in partnership with DOE, have preliminarily allocated up to $4 billion in a first-round allocation of tax credits for projects, which includes electric vehicles as a priority area. The § 48C program, as a uniquely competitive and broad investment tax credit, is strategically positioned to help facilitate the acceleration of the EV industry regarding component manufacturing and materials critical for the EV industry. DOE's MESC is currently undertaking the competitive review process for this program.

Key battery components are eligible for tax credits under the **Advanced Manufacturing Production Tax Credit** of § 45X of the Internal Revenue Code. The § 45X tax credit is a powerful incentive that strengthens clean energy manufacturing and boosts manufacturers investments in the United States and will help drive down the cost of EVs. Since the passing of IRA, manufacturers have invested over $157 billion to expand production capacity for batteries and EVs, already showing the power of these tools to help build a resilient U.S. EV industry.

Finally, on August 31, 2023, MESC announced the **Domestic Manufacturing Conversion Grants program.**[7] This program, funded by the Inflation Reduction Act Section 50143, provides $2 billion in competitive grant funding, available through September 30, 2031.[8] This program targets manufacturers who are converting an existing domestic internal combustion engine vehicle or internal combustion engine vehicle component manufacturing facility into an electric vehicle or hybrid vehicle component facility. Full submissions are due on January 23, 2024, and selection announcements will be made in Spring 2024, with negotiations and awards scheduled to occur between June 2024 and October 2024.

Loan Programs Office

The Department's Loan Programs Office (LPO) provides financing to support the commercialization and deployment of innovative energy infrastructure and advanced vehicle technology manufacturing projects in the United States. LPO is authorized to support a range of innovative battery technologies, including those outside of conventional lithium-ion batteries, through both its Advanced Technology Vehicles Manufacturing (ATVM) and Title 17 Clean Energy Financing (Title 17) programs.

Under the ATVM program, LPO has authority to finance commercial-scale manufacturing facilities for advanced technology vehicles and eligible components, including facilities to manufacture electric vehicle chargers or to process critical minerals for advanced technology vehicles. Through the Bipartisan Infrastructure Law, the program was expanded to include medium- and heavy-duty vehicles as well as other modes of transportation, including aircraft, maritime, and locomotives.

Under Title 17, LPO also has authority to provide loans and loan guarantees for commercial-scale energy projects, including for those projects that increase the domestically produced supply of critical minerals. The Title 17 program may also finance the deployment of electric vehicles and charging stations as part of an energy project.

Since 2021, through LPO's ATVM program, the Department has issued or committed more than $16 billion for projects across the electric vehicle and component supply chains in Arizona, Kentucky, Louisiana, Michigan, New York, Nevada, Ohio, Tennessee, and Texas. Furthermore, as of November 2023, the ATVM program has received additional applications totaling over $23

[7] Domestic Manufacturing Conversion Grants | Department of Energy
[8] IRA Section 50143 - Hybrid and Electric Vehicle Grants - Inflation Reduction Act Tracker (iratracker.org)

billion from companies across the United States – a testament to the trust LPO has fostered with the private sector, and the continued interest from industry in DOE financing.

RDD&D Continuum

These BIL and IRA programs build on longstanding and ongoing work from DOE's applied energy office. For example, EERE's Advanced Materials and Manufacturing Technologies Office manages an applied RDD&D portfolio that addresses high-impact innovation opportunities and challenges across the life cycle of critical minerals and materials for clean energy. This includes the Critical Materials Innovation (CMI) Hub, a public-private consortium of national laboratories, universities, and industry focused on technologies that make better use of materials and eliminate the need for materials that are subject to supply disruptions.

Since its inception in 2013, CMI research has been awarded forty-seven U.S. patents, licensed twenty technologies, and received five Federal Laboratory Consortium awards, twelve R&D 100 Awards, and over $80 million in follow-on funding. Funding from BIL has accelerated the commercialization of CMI-developed technology to recycle critical materials from lithium-ion batteries.

Research, Technology, and Economic Security (RTES)

With the enactment of BIL and IRA, the Department developed a comprehensive and rigorous approach to research, technology, and economic security (RTES) policy and procedures for its awards and loans, including those for electric vehicles and battery supply chains. To ensure a robust RTES approach, DOE took three major actions to address the many forms of RTES risks.

First, DOE enhanced its existing vetting processes to ensure that risks of undue foreign influence are considered early in the competitive process and throughout the life of a DOE supported project or loan. DOE also included strict RTES requirements for its financial assistance and loan programs. Second, DOE established a department-wide RTES working group to review, develop, and assist in the implementation of RTES policies. Third, the Department established a new RTES Office to implement DOE's enhanced vetting process for financial assistance and loan projects, build awareness internally within DOE on RTES issues, engage with external stakeholders, and review DOE national lab agreements involving foreign entities.

Battery and Critical Mineral Recycling

Critical mineral and material recycling is a key step to address materials scarcity, enhance environmental sustainability, and support a U.S.-based battery recycling ecosystem while reducing reliance on China for critical materials.

DOE's review of large-capacity batteries indicated that 20 percent to 40 percent of nickel and cobalt needs for new batteries could be met with cobalt recovered from recycling batteries as soon as 2030.[9] Recycling can dramatically decrease the cost, energy and water use compared to

[9] https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf

conventional mining. One ton of battery-grade cobalt, for example, can be recovered from 5 to 15 tons of spent lithium-ion batteries, which requires the equivalent of 300 tons of ore.[10] RDD&D can enable competitive recycling technology in the future. In the near term, sourcing 10 percent of material needs from recycling can support stressed supply chains and reduce the threat of supply shocks.

EERE's Vehicle Technologies Office is also spurring innovative solutions to collect, sort, store, and transport spent and discarded lithium-ion batteries for eventual recycling and materials recovery.

To move to demonstration, DOE's MESC office has made available $50 million from the **Bipartisan Infrastructure Law's Consumer Electronics Battery Recycling, Reprocessing, and Battery Collection** program to promote domestic battery manufacturing and recycling, to address a need to provide for the general collection, recycling, and reprocessing of batteries. DOE anticipates that selections and awards will be announced in 2024.

Furthermore, LPO can finance projects that deploy innovative critical minerals recycling processes, or that recycle critical materials for eventual end use in eligible advanced technology vehicles or their components. In 2023, the Department announced two conditional commitments under the ATVM program for battery resource recovery and components recycling projects.

Building a National Charging and Fueling Network

The Joint Office of Energy and Transportation was created through the BIL to facilitate collaboration between the U.S. Department of Energy and the U.S. Department of Transportation. The Joint Office has been working to support the Federal Highway Administration with implementation of the $5 billion National Electric Vehicle Infrastructure (NEVI) Formula Program and $2.5 billion Charging and Fueling Infrastructure (CFI) Discretionary Grant Program. To date, the Federal Highway Administration has made over $2.4 billion available to states through NEVI to electrify over 84,000 miles of the National Highway System. Additional awards are expected in early 2024.

We are pleased to share that last month, Ohio and New York marked the first states in our nation to open EV charging stations funded through the NEVI Program. These new charging stations will fill gaps in charging, add capacity, and boost the reliability of our nation's fast charging network. Other new charging station launches will follow soon, with stations already under construction in Maine, Pennsylvania, and Vermont. The private sector is currently adding nearly 1,000 publicly-available chargers per week—bringing us to a grand total of more than 167,000 chargers across the country.

The development and maintenance of a robust charging network will create jobs and stimulate economic growth in local communities, while public and private investments in EV charging infrastructure will catalyze technological innovation across multiple economic sectors. Forty-

[10] https://www.energy.gov/sites/default/files/2021-06/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621_0.pdf

three new domestic EV charging manufacturing facilities have been announced to be built or expanded in 17 states since January 2021. Collectively these facilities account for well over $500 million in private sector investment resulting in the potential for over 3,500 new American jobs.

Underpinning all of these programs is the technical assistance that the Joint Office is providing to states, Tribal nations, and communities. To date, the Joint Office has fielded over 5,200 technical assistance requests through DriveElectric.gov and has regular discussions with states implementing NEVI.

The Joint Office is also working closely with the private sector to provide impactful solutions that help enhance the charging experience for all, including the National Charging Experience Consortium, an effort launched in May 2023 and led by DOE's National Laboratories that is working to rapidly develop solutions that ensure a reliable and frictionless charging experience for all Americans. To date, the Consortium has over 70 private sector partners contributing to the effort.

Enhancing Domestic Resources

In addition to the development and deployment of manufacturing, recycling, and processing capacity, DOE is working to identify new feedstocks for critical minerals and materials, including from secondary sources such as wastes from coal and hard rock mining and industrial processes, as well as expanding traditional sources from existing mining and international partners.

Secondary and unconventional feedstocks encompass many potential sources, including coal and coal byproducts, coal wastes, produced water from oil and gas production, ionic clays, hard rock mine tailings, acid mine drainage, bauxite residue, and phosphate sludge. Together, these sources have the theoretical potential to provide enough rare earth elements to meet the nation's needs for decades, as well as significant quantities of other critical minerals and materials resources.[11] For most secondary and unconventional resources, there is an opportunity for remediating the environmental impacts and reducing the waste from mining and other extraction activities. RDD&D in this area is geared toward commercial scale development, with a BIL funded DOE REE demonstration facility being built this decade.

FECM's Carbon Ore, Rare Earth, and Critical Minerals (CORE-CM) initiative supports regional coalitions of academia, industry, States, NGOs, and Tribal entities, that assess the potential for developing domestic supply chains using secondary and unconventional feedstocks. Billions of tons of coal waste and coal ash have been generated over the past two centuries and remain in waste piles or impoundments.[12] These and similar feedstocks represent a significant opportunity

[11] Report to Congress on Recovery of Rare Earth Elements and Critical Minerals from Coal and Coal By-Products. Available at https://www.energy.gov/sites/default/files/2022-05/Report%20to%20Congress%20on%20Recovery%20of%20Rare%20Earth%20Elements%20and%20Critical%20Minerals%20from%20Coal%20and%20Coal%20By-Products.pdf

[12] "Domestic Wastes and Byproducts: A Resource for Critical Material Supply Chains." Evan J. Granite, Grant Bromhal, Jennifer Wilcox, and Mary Anne Alvin, National Academy of Engineering, The Bridge, 53(3), 59-66, Fall 2023.

to diversify the supply of critical minerals and materials resources while remediating longstanding environmental degradation and creating good jobs in mining and energy communities. Ultimately, new and innovative approaches would help extract resources in a responsible and sustainable manner.

To that end, DOE is evaluating the potential for additional RDD&D investments to advance technological solutions and revolutionize mining into a more targeted enterprise that uses "surgical" approaches to extract minerals from ever deeper sources, minimize surface and environmental impacts, and improve public confidence in responsible mining techniques. Technology development areas for future mining research would likely include advanced drilling technologies, digital subsurface applications (autonomous operations, robotics, real-time extraction), *in situ* mineral extraction, novel processing, and tailings management. Data collection and management capabilities will also be critical in such an effort, as well as the building of a traceability capability with verification for all major critical materials.

FECM is also advancing an RDD&D portfolio geared toward increasing the domestic production of critical materials in the United States. Research is focused on extracting, separating, and recovering rare earth elements and critical materials from unconventional and secondary sources. We have had success in this area, including the design, construction, and operation of five first-of-a-kind bench and small pilot-scale facilities that are producing high-purity mixed rare earth oxides/salts from coal-based resources using conventional beneficiation and separation processes. FECM has released several BIL-related FOAs this year to help accelerate these efforts.[13,14,15] We are also developing more energy efficient synthetic graphite, graphene, and carbon anode materials from coal, coal waste, and coal byproducts.

Additionally, through prize competitions, EERE's Geothermal Technologies Office is incentivizing innovators to de-risk and increase market viability for direct lithium extraction from geothermal brines.

Finally, in addition to this fundamental R&D, we are deploying additional resources in demonstration, including through the MESC Rare Earth Element Demonstration Facilities that will extract rare earth elements from unconventional feedstock materials, such as lignite coal and acid mine drainage.

For example, in August 2023, DOE's FECM and MESC awarded West Virginia University and the University of North Dakota under the Rare Earth Element Demonstration Facility Funding Opportunity Announcement (DE-FE-0002618). The funding opportunity will be completed in two phases and will invest up to $156 million for the design, construction, and operation of a facility that demonstrates the extraction, separations, and refining from unconventional feedstock materials to high purity rare earth elements and/or critical materials. The activities will be

[13] September 6, 2023 Funding Opportunity Announcement: https://www.energy.gov/fecm/funding-notice-critical-materials-innovation-efficiency-and-alternatives
[14] August 21, 2023 Funding Opportunity Announcement: https://www.energy.gov/fecm/funding-notice-bipartisan-infrastructure-law-advanced-processing-critical-minerals-and
[15] July 13, 2023 Funding Opportunity Announcement: https://www.energy.gov/fecm/funding-notice-bipartisan-infrastructure-law-front-end-engineering-and-design-feed-studies

significant as MESC seeks to commercialize the technology to add commercial quantities of mixed rare earth oxides into our supply chain.

Additional Collaborations

Building new supply chains, charging infrastructure, and a revived domestic manufacturing sector in the United States requires deep inter-governmental coordination. To better collaborate across both DOE offices and the interagency to establish diverse, secure, and sustainable supply chains, the Biden Administration launched the American Battery Materials Initiative (ABMI) in October 2022. The ABMI is a DOE-coordinated interagency effort to secure the minerals and materials needed for everything from batteries to defense systems. It works to coordinate federal investment across the interagency to meet the Administration's short- and long-term critical minerals goals; support policies and solutions to solve the biggest critical mineral supply chain chokepoint—minerals processing; and align responsible mining and processing standards.

Since naming an Executive Chair, ABMI is taking steps to ensure effective internal coordination and external engagement across the critical minerals and battery sector, including streamlining information sharing and ensuring investments are optimized to meet economic and national security goals. The initiative will further ensure that American jobs and taxpayer dollars are protected from unfair behavior by leveraging existing tools and identifying new ones to safeguard against anticompetitive practices, such as undue export controls and market manipulation. As a part of this effort, ABMI is working with industry to identify remaining hurdles and new ways the U.S. government can partner to fortify nascent parts of the domestic supply chain, including minerals processing and battery component production.

As an additional coordination mechanism, DOE has also created the Critical Materials Collaborative (CMC).[16] The CMC was established in September 2023, from direction in the Energy Act of 2020 and the Bipartisan Infrastructure Law. The mission of the CMC is to accelerate DOE's critical materials applied RDD&D to achieve domestic clean energy manufacturing, climate, and national security goals by building a robust innovation ecosystem; training the critical materials workforce across multiple sectors; enabling industry adoption of novel, cutting-edge technology; and laying the scientific and technological groundwork needed to address emerging challenges.

The CMC serves to help better plan critical minerals and materials RDD&D efforts and ensure DOE's larger interagency coordination through the National Science and Technology Council Critical Minerals Subcommittee. FECM's Office of Resource Sustainability and EERE's Advanced Materials & Manufacturing Technologies Office are co-leading the CMC, while all DOE offices involved in critical minerals and materials RDD&D form a CMC Executive Committee. The aim of the CMC is to integrate critical minerals and materials applied RDD&D across DOE and improve coordination with the rest of the federal government to accelerate the development of transformational technologies that will be foundational to securing critical material supply chains. The CMC will work closely with the interagency to expand project performers' access to the Department's world-class expertise, capabilities, and facilities.

[16] https://www.energy.gov/cmm/critical-materials-collaborative

International Partnerships

The Department is proactively engaging with our international partners on clean energy supply chains. This includes the G7 and the International Energy Agency, where we are working with allies to promote secure and diversified supplies, market transparency, and responsible practices across the supply chain. The Department is also working closely with Australia through the recently signed Australia-United States Climate, Critical Minerals, and Clean Energy Transformation Compact. Canada, Japan, the UK, and the European Union are also key partners in advancing resilient critical material supply chains.

DOE is also leading international efforts to develop sustainability standards for critical minerals in the International Organization for Standardization (ISO). This will help to ensure a level playing field for U.S. manufacturers and to avoid a global race to the bottom as countries increase their reliance on critical minerals to meet their energy transition and net zero goals.

It is important to develop a diverse critical materials supply network to maintain supplies needed by our allies and to keep market prices for critical materials affordable in international and domestic markets. As part of this process, it is important to build capabilities for tracing and verifying the mineral origin for advanced batteries, magnets, and other manufactured products.

Conclusion

Through the President's Invest in America efforts, and with the leadership and partnership of Congress in passing the Inflation Reduction Act and Bipartisan Infrastructure Law, our country is making great strides in reversing decades of underinvestment in U.S. manufacturing and resilient supply chains.

DOE is utilizing the full range of tools the President and the Congress have provided us, including historically large tools such as the nearly $10 billion to boost domestic production of advanced batteries, battery materials, and electrified vehicles, as well as over $16 billion in Loan Program Office conditional commitments.

And we are seeing results. We have leveraged over $157 billion so far in announced private sector investments in new and expanded domestic facilities, translating into 130,000 estimated new jobs with benefits for communities across our country.[17]

But we also know that we have more work to do. DOE greatly appreciates the Senate Energy and Natural Resources Committee for its bipartisan leadership and support of critical materials research, development, and demonstration over many years. And we thank you for your ongoing partnership as we continue our vital work. Thank you.

[17] https://www.energy.gov/invest