THE ADVANCED MANUFACTURING TAX CREDIT IS REBUILDING U.S. MANUFACTURING

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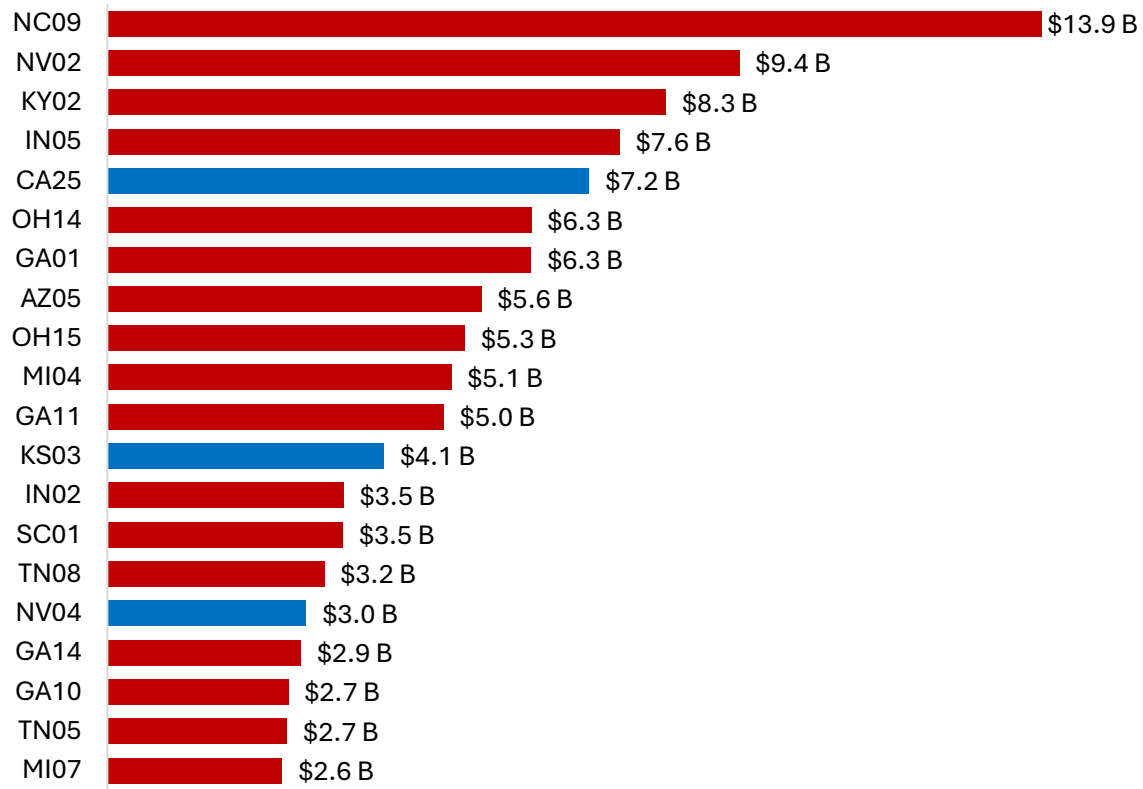
Executive Summary

The United States is in the early stages of a manufacturing renaissance. While many factors have driven this momentum, few are more important than the Advanced Manufacturing Production Tax Credit (45X). However, this credit, among others, is threatened by the U.S. House's One Big Beautiful Bill Act as part of the 2025 budget reconciliation process that may make it effectively impossible to claim. As of early June 2025, the fate of the tax credit remains unclear. This brief outlines the potential reach of the Advanced Manufacturing Production Tax Credit on the production of batteries, solar energy components, wind energy components, inverters, and critical minerals. To date, a total of $48.3 billion in announced investments and 62,700 jobs are associated with operational facilities that qualify for the tax credit. There is a further $137.2 billion and 103,100 jobs in tracked announcements at facilities that are planned or under construction that will be eligible for the tax credit. Overwhelmingly, the factories supporting this manufacturing are in Republican House Congressional districts (77 percent of all investments), per Figure ES-1.

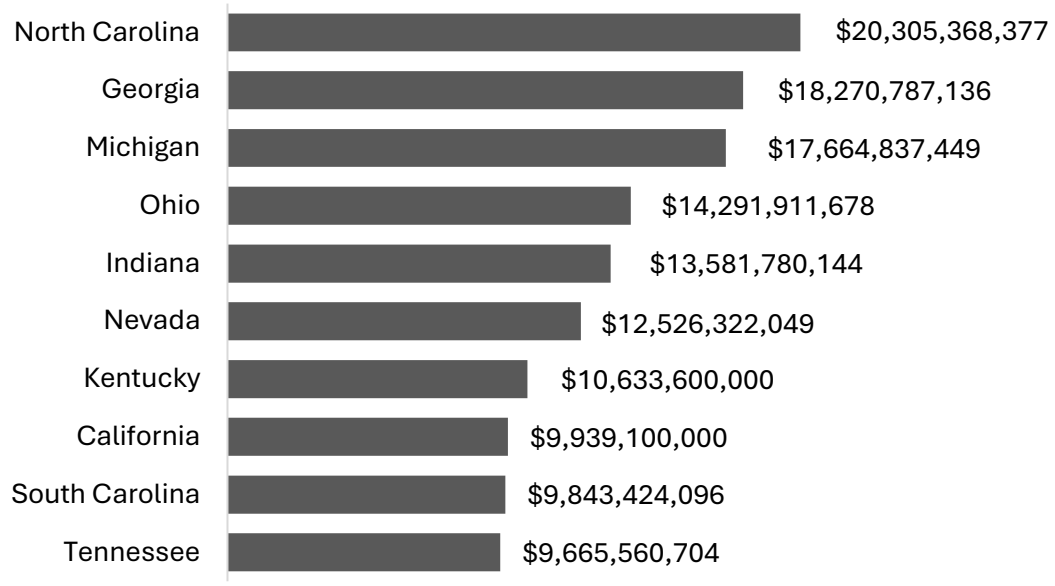
Figure ES-1: Top 20 Congressional Districts for Announced Manufacturing Investment Benefitting from the Advanced Manufacturing Production Tax Credit



Investment includes all current and future announced investment. The bar color indicates the party of the current U.S. House representative.

The amount of investment shown is certainly an undercount of the impact of the tax credit as many facilities benefit indirectly from lower production costs from eligible facilities. Repealing or reforming the tax credit to make it inaccessible could significantly affect the $185.6 billion invested at planned or operational facilities nationwide. Further, proposed changes to demand side credits that support domestic production including the Clean Vehicle Tax Credit (30D) and credits for clean energy generation projects (45Y, 48E), would significantly undermine the growing high tech manufacturing sector in the United States.

Figure 2: Highest 45X Eligible Manufacturing Investments by State



Includes announced manufacturing investments that will likely access 45X for the top 10 states including facilities that are planned, under construction and operational.

How the Advanced Manufacturing Production Tax Credit Works

The Advanced Manufacturing Production Tax Credit (45X) was established in 2022 and supports the production of various energy components included in Table 1. This credit is important to support the onshoring of domestic manufacturing, creating both jobs and investment as well as a domestic source of key materials related to energy security.

Table 1: Qualifying Components by Category

Component	Types of Eligible Outputs
Solar Energy Components	Solar module, Photovoltaic cell, Photovoltaic wafer, Solar grade polysilicon, Torque tube, Structural fastener, Polymeric backsheet
Wind Energy Components	Blades, Nacelles, Towers, Offshore wind foundations, Related offshore wind vessels
Battery Components	Electrode active materials, Battery cells, Battery modules
Inverters	Central inverter, Commercial inverter, Distributed wind inverter, Microinverter, Residential inverter, Utility inverter
Critical Minerals[1]	Cobalt, Graphite, Lithium, Manganese, Nickel as well as 45 others.

Source: Federal Register: Advanced Manufacturing Production Credit

The Advanced Manufacturing Production Tax Credit is a supply side incentive that complements demand side clean energy incentives like the New Clean Vehicle Tax Credit. Per an analysis released in June 2023, the incentive means that domestic production of solar and wind components (the paper did not cover other components) is now cheaper than imports. An April 2025 study from the International Council on Clean Transportation found that eliminating the Advanced Manufacturing Tax Credit as well as the New Clean Vehicle Tax Credit and Commercial Clean Vehicle Tax Credit, could eliminate 130,000 net manufacturing jobs by 2030 and another 310,000 jobs in indirect jobs.

The tax credit also spurs domestic investment for the production of materials beyond those that directly benefit—for example, ingots are not written into the regulation, however for a cell to be eligible, the ingot used must be produced domestically, thereby indirectly supporting a domestic supply chain for ingot production. Similarly, the tax credit only supports materials refined to a certain purity and therefore will not apply to operations that conduct extraction alone. In this way, the Advanced Manufacturing Production Tax Credit is a key mechanism to support domestic critical mineral production.[2]

Final guidance became effective on December 27, 2024, and eligible components must be sold after December 31, 2022. The phase down of the tax credit begins in 2030 and

[1] This brief only captures the impact on the five critical minerals named.

[2] Atlas has not verified the purity of facility outputs for all the facilities included here and is assuming that they qualify.

completely phases out in 2032. It is not known how many facilities have claimed the tax credit or the total investment enabled by the tax credit. This brief is an attempt to quantify the breadth of the investment supported by the credit.

Credit Benefits 166,000 Manufacturing Jobs

As of June 2025, companies have announced $48.3 billion of manufacturing investment at facilities currently supplying solar components, wind energy components, batteries, inverters, or critical minerals (Table 2). These facilities support an announced 62,700 jobs across 37 states (Figure 3). Of that investment, 87 percent is in congressional districts represented by Republicans in Congress. Companies have announced a further $137.2 billion and 103,100 jobs for facilities that are planned or under construction as of June 2025.

Table 2: Investments and Jobs at Operating and Planned Facilities Eligible for the Advanced Energy Manufacturing Credit

Manufacturing Sector	Operational Investment	Operational Jobs	Planned Investment	Planned Jobs
Batteries	$34,826,260,000	28,350	$ 94,694,483,638	69,780
Minerals	$3,599,000,000	2,707	$ 30,190,772,848	9,089
Solar Energy	$8,159,200,000	19,034	$ 9,249,927,450	18,646
Wind Energy	$1,731,000,000	10,387	$ 3,024,700,001	4,526
Inverters	$26,500,000	2,135	$ 70,000,000	1,082
Total	$48,341,960,000	62,613	$ 137,229,883,937	103,123

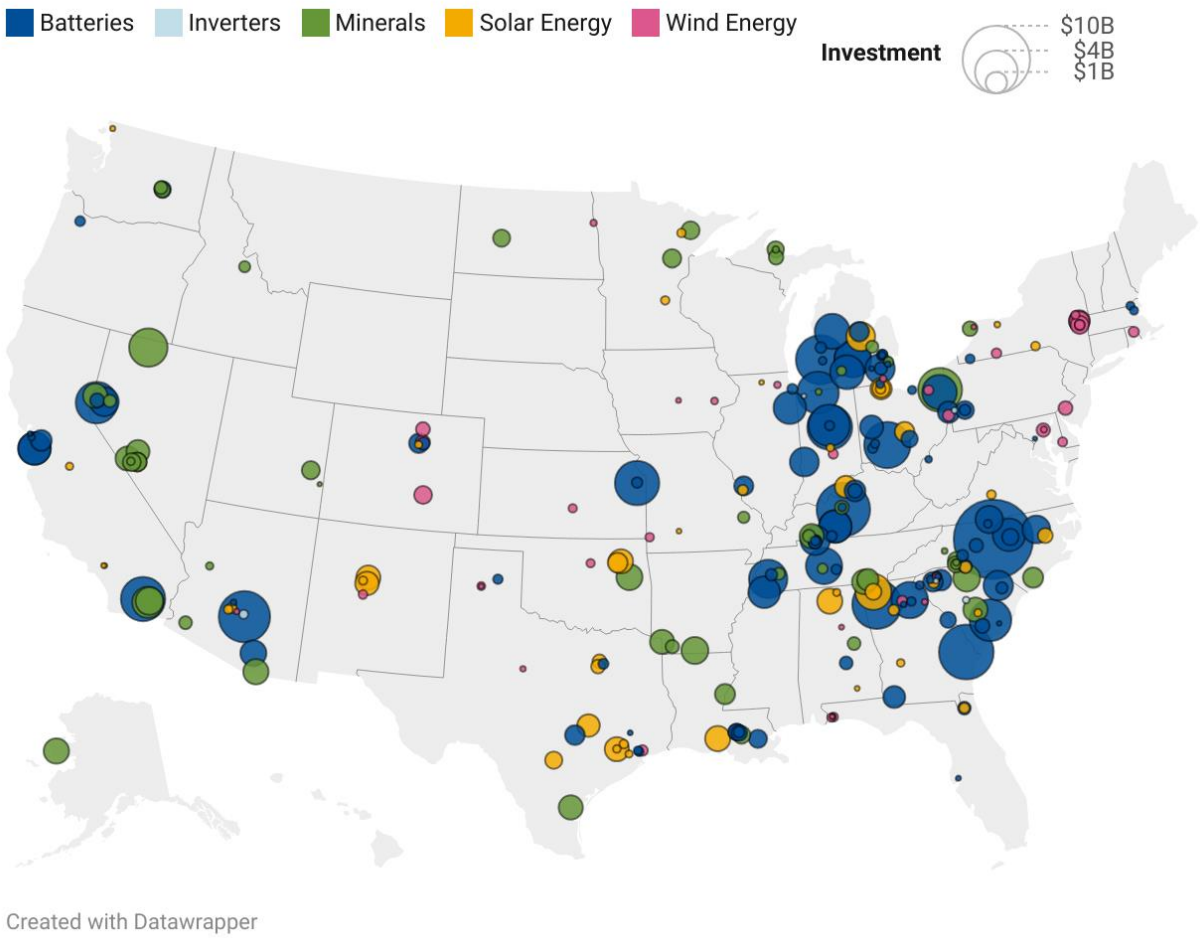
Planned includes facilities under construction. Inverters are counted under Batteries and Solar Energy on Clean Economy Tracker but are separated here to correspond with the credit eligibility categories.

Source: Clean Economy Tracker

The Congressional district with the largest announced investments (including planned, under construction and operational facilities) is North Carolina's 9th district, represented by Republican Richard Hudson. In that district, Toyota operates a battery manufacturing plant with an announced investment of $5.9 billion and 2,100 jobs. In October 2023, Toyota announced that it would expand its battery manufacturing capacity with another $8 billion

and 3,000 jobs. Next is Nevada's 2nd district represented by Mark Amodei, American Battery Technology Company, Redwood Materials, and Tesla each have battery manufacturing facilities that collectively support $5 billion and 4,300 jobs. Third is Kentucky's 2nd district, represented by Republican Brett Guthrie. In the district, Ford and SK On have pledged $6 billion and 5,000 jobs at a battery manufacturing facility; AESC has pledged $2 billion and 2,000 jobs at a battery manufacturing facility; LOTTE Group has pledged $239 million and 122 jobs at a cathode foil manufacturing facility; and Advanced Nano Products has pledged $50 million and 93 jobs at a battery nanomaterials manufacturing facility. Fourth is Georgia's 1st district, represented by Republican Buddy Carter, Hyundai and LG Energy Solution operate a battery manufacturing facility in the district with an announced investment of $6.3 billion and 3,400 jobs.

Figure 3: Current, Under Construction, and Planned Manufacturing Facilities Eligible for the Advanced Manufacturing Production Tax Credit



Source: Clean Economy Tracker

Changes to the Credit Could Hurt Manufacturing Around the Country

The Advanced Manufacturing Production Tax Credit is transforming clean energy manufacturing in the United States. The Credit is supporting the onshoring of domestic production, driving job creation, investment, and the development of a secure supply of critical energy materials. This analysis indicates that, as of June 2025, $48.3 billion has been invested in manufacturing facilities currently supplying solar and wind energy components, batteries, inverters, and critical minerals, supporting 62,700 announced jobs across 37 states. Additionally, an estimated $137.2 billion and 103,100 jobs have been announced for planned or under-construction facilities. Elimination of the tax credit or reforms that make it inaccessible could have severe consequences for American manufacturing. Further, proposed changes to demand side credits that support domestic production including the Clean Vehicle Tax Credit (30D) and credits for clean energy generation projects (45Y, 48E), would significantly undermine the growing high tech manufacturing sector in the United States. Significant changes to the current tax structure would weaken investor confidence and allow China and Europe to dominate the future of clean energy production.

Appendix A: Methodology

For this analysis, Atlas identified facilities that given reasonable assumptions, will access the Advanced Manufacturing Production Tax Credit. To determine this threshold, Atlas drew on supply chain facility data from the Clean Economy Tracker (CET) and mapped those facilities against the eligibility criteria for the tax credit, as represented in Table 3.[3]

In some instances, it is difficult to determine the outputs of a facility due to limited public information. If the company mentions any part of the output in a press release, their website or reporting, it is counted as eligible for the tax credit. This analysis assumes that companies are reliably reporting their outputs. Atlas assumes that any facility that produces eligible components will try to claim the tax credit.

Note that facilities can access both the Advanced Manufacturing Production Tax Credit (45X) and the Qualifying Advanced Energy Project Credit (48C) so long as the tax credits are used for different lines in the same facility.

Facility investments refer to announced investments, including those planned, under construction, or operational as of June 3, 2025. The total announced investment includes all clean energy outputs at that facility, even if only some outputs can access the credit. The value of the tax credit is not known. The Clean Economy Tracker tracks five critical minerals: lithium, cobalt, graphite, manganese and nickel; other critical minerals that can claim the tax credit are not included in this brief.

Total investments in this analysis are an undercount of the impact of the Advanced Manufacturing Production Tax Credit. Many facilities rely on the inputs produced by Advanced Manufacturing Production Tax Credit eligible facilities but will not receive the benefit directly. For instance, battery modules are eligible for the tax credit, but the vehicle assembly for production is not. Those facilities that assemble vehicles still benefit indirectly from a localized supply chain where the product may be more cost effective due to the tax credit. Ingots and the extraction of critical minerals, as referenced in *How the Advanced Manufacturing Production Tax Credit* Works, are also examples of the tax credit benefiting domestic production beyond the technologies for which it can be claimed.

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[3] To recreate the figures and data presented in this report, use the filter sidebar and select Batteries, Minerals, Solar Energy, and Wind Energy for the Manufacturing Sector; and for Tech Sub-categories select Anode Materials, Anodes, Bearings, Blades, Cathodes, Cathode Materials, Cells, Cobalt, Electrolytes And Electrolyte Inputs, Foundation Components, Gearboxes, Generators, Gears, Graphite, Inverters, Lithium, Lithium Carbonate, Lithium Hydroxide, Lubrication Systems, Manganese, Modules, Monopiles, Nacelles, Nickel, Panels, Separators, Trackers, Tracker Components, Towers, Transition Components, or Wafers.

Table 3: Matching Outputs for the Tax Credit with Subcategories on the Clean Economy Tracker

Component	Types of Eligible Outputs (Guidance)	Equivalent Subcategories on the Clean Economy Tracker
Solar Energy Components	Solar module, Photovoltaic cell, Photovoltaic wafer, Solar grade polysilicon, Torque tube, Structural fastener, Polymeric backsheet	Modules, Panels, Cells, Wafers, Trackers
Wind Energy Components	Blades, Nacelles, Towers, Offshore wind foundations, Related offshore wind vessels	Blades, Nacelles, Gearboxes, Generators, Gears, Bearings, Lubrication Systems, Towers, Foundation components, Transition components, Monopiles
Battery Components	Electrode active materials, Battery cells, Battery modules	Anode materials, Cathode materials, Cathodes, Anodes, Separators, Electrolytes and Electrolyte inputs, Cells, Modules
Inverters	Central inverter, Commercial inverter, Distributed wind inverter, Microinverter, Residential inverter, Utility inverter	Inverters
Critical Minerals[4]	Cobalt, Graphite, Lithium, Manganese, Nickel as well as 45 others.	Cobalt, Graphite, Lithium, Lithium carbonate, Lithium hydroxide, Manganese, Nickel

[4] This analysis only captures the impact on the five critical minerals listed.

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