

**U.S. Department of Commerce**  
**Renewable Energy and Energy Efficiency Advisory Committee**  
Charter 7, 2022-2024 ● Recommendation Fact Sheet

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**Recommendation #4 (Approved January 25, 2024) to review the impact of the Advanced Manufacturing Production Credit (Section 45X of the Inflation Reduction Act of 2022) on the growth and export potential of U.S. companies.**

We recommend the Secretary direct the Department of Commerce to produce a comprehensive report assessing the effectiveness of Section 45X for currently covered technologies, including an assessment of the gaps in manufacturing and renewable energy technologies that are insufficiently addressed or otherwise not included within the 45X framework, and assess which of those could be strategic to the United States such that inclusion in the 45X framework could attract further development of those areas to improve export competitiveness.

The Inflation Reduction Act of 2022 (IRA) is historic legislation that creates an opportunity to transform the renewable energy sector in the United States. Tracking the progress of reshoring or expanding domestic renewable energy manufacturing, together with clear communication of the full resulting economic impacts, will further enhance bipartisan support for future clean energy initiatives. The Section 45X Advanced Manufacturing Production Credit is available to manufacturers of certain eligible components produced in the United States, however certain eligible components may not be covered sufficiently to meet the needs and goals of the United States while other renewable energy technologies are not included at present.

An assessment of Section 45X as described above would contribute towards addressing supply chain gaps in the U.S. renewable energy sector, for industries both included and not included in the IRA.

Such a report would include:

- 1) An analysis of the development of the United States Renewable Energy Equipment Manufacturing (REEM) Supply Chain since the passage of the IRA, specifically those decisions motivated by and resulting directly from the IRA passage;
- 2) An analysis on the REEM sectors included in 45X(c) (i.e., solar energy, wind energy, inverters, qualified battery components, and critical minerals), and the specific tax credit values included in 45X(b) for each sector, including:
  - a. all announcements, by corresponding sector, of new or expanded manufacturing capacity, resulting from passage of the IRA.
  - b. known progress related to such announcements with respect to deployment/commencement of capacity expansions, with projected deployment date, jobs created, and ranking by sector comparing announcement and deployment progress.
  - c. An analysis of the reason for those areas specifically identified in the 45X tax credit but that do not have corresponding announcements or progress as

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compared to the U.S. goals for renewable energy manufacturing deployment, including those issued by the Department of Energy.

- 3) An analysis on all REEM sectors, including those that are not included in 45X, including but not limited to: hydropower marine and hydrokinetic generation, hydro pumped storage, geothermal, fuel cells, carbon capture and sequestration technologies and others such as electrolyzers for green Hydrogen production, that includes:
  - a. assessment by each REEM sector of the current and future status, and any shortcomings that restrict US domestic use or ability to effectively export US made goods.
  - b. an impact assessment evaluating REEM sectors not covered by 45X as compared to those that have been and corresponding growth/announcements in the United States.
  - c. an analysis to determine if inclusion in 45X for underlying transformers and grid connected equipment manufacturing would alleviate the systemic domestic shortage of these critical equipment.

**Sub-Committee(s):**

Clean Energy Supply Chains

**Background Information:**

In August 2022, President Biden signed into law the Inflation Act of 2022 (IRA). Included in the IRA were the introduction of multiple new and expanded incentives intended to boost onshore manufacturing of certain types of Renewable Energy Equipment Manufacturing sectors. The incentives include tax credits available to manufacturers as specified under Section 45x.

The Section 45x Advanced Manufacturing Tax Credit is available to manufacturers of certain components produced in the United States, and then sold to third parties.

Covered components include manufactured products used in solar, battery storage, wind and other projects. For example, the list includes, but is not limited to: batteries and battery cells, solar modules, solar cells, silicon wafers used in solar cell manufacturing, photovoltaic trackers, wind turbines, towers and blades, and power inverters.

Credit rates vary per component. These tax credits are earned on a “per watt” basis, at the time of sale. The Credits are payable annually and are available through 2032.

Components for hydropower, marine and hydrokinetic generation, hydro pumped storage and geothermal are not included in the Section 45x Advanced Manufacturing Tax Credit. However, these technologies are zero carbon or very low carbon emitting and thus inclusion of these technologies should be considered if there ever is any amendment to the IRA in the future.

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The intended effect of the credits is to drive the creation and/or expansion of domestic manufacturing capacity throughout the full supply chain. The consequence of an improved domestic supply chain is to provide renewable energy in America independent of foreign interference, that can then form the basis of a robust export potential and of course that provides more jobs for Americans. In the period between the credits going into effect and the publishing of this Recommendation, there has been significant anecdotal evidence of announcements of new or expanded capacity of the targeted manufacturing segments. That said, the announcements appear uneven, with regards to balance across the full manufacturing supply chains. The REEEAC recommends the Department of Commerce to perform a comprehensive study of the resulting market development activity to-date, for the purpose of objectively quantifying the relationship between the specific credit levels offered between the covered segments/sectors and the resulting announced and demonstrated intentions to deploy new capacity. Additionally, the REEEAC believes it would be instructive to similarly analyze and track announced and demonstrated deployment intentions of other segments/sectors that are popularly considered within the REEM space, but were not specifically enumerated in the Section 45x language.

**Expected Effect on U.S. Export Competitiveness:**

The export of American renewable energy equipment and services is hindered by a disproportionate participation of foreign technology, equipment and associated fabrication and installation services in the domestic market. As the country transitions to a greater dependence on Renewable Energy, it is vital that the United States develops a robust, diverse and competitive supply chain, to mitigate its dependence on foreign producers. A robust and diverse supply chain will have the ability to serve the country's domestic needs, and should also be capable of providing export to interested trading partners. A rich export business was a previous hallmark of the U.S. industry, and a return to sufficient capacity that yields exports will be a meaningful indicator or the effectiveness of the IRA, Section 45x Advanced Manufacturing Tax Credit in achieving its stated goals.

**Specific Agencies Responsible for Implementation:**

Department of Commerce (DOC) with inputs from Department of Energy, the Office of Management and Budget (OMB), and Department of Treasury, Study by DOC should include inputs from U.S. industry representatives across the equipment supply, fabrication services, material supply and service for installation, operations, and maintenance of such equipment.

**Measures of Success:**

The goals of this study should be to identify and communicate:

- (i) Publication of report and analysis deliverables on or before September 30, 2024, and annually on such date thereafter.

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- (ii) The quantifiable amount of actual new capacity built with support from IRA passage annually from 2023 onwards. (Especially the ones with most positive impact on export market opportunities)
- (iii) The quantifiable amount of capacity deployed or under construction from IRA passage thru current.
- (iv) A ranking of announcements and deployments (based on planned deployable capacity), by sector.
- (v) The creation of a publicly available online “dashboard” that provides transparency into the metrics discussed in i-iii, above.
- (vi) An analysis of the factors identified by deploying agents as reasons that they chose to deploy in a sector, or in the case of multi-sector deployment, why they chose the order in which to deploy.
- (vii) Recommendations for remedial actions to boost the deployment in sectors that fall in the bottom half of the rankings established in iv.