

**Comments of the American Council for an Energy-Efficient Economy (ACEEE), the League of Conservation Voters (LCV), and the Alliance to Save Energy (Alliance) on “The Department of Treasury and the Internal Revenue Service’s Request for Comments on Energy Security Tax Credits for Manufacturing Under Sections 48C and 45X. Re: Notice 2022-47.”**

**Alexander Maxwell Ratner, Esq.; ACEEE  
November 2022**

The American Council for an Energy-Efficient Economy (ACEEE), a nonprofit research organization, develops transformative policies to reduce energy waste and combat climate change. With our independent analysis, we aim to build a vibrant and equitable economy – one that uses energy more productively, reduces costs, protects the environment, and promotes the health, safety, and well-being of everyone.

The League of Conservation Voters (LCV) builds political power for people and the planet, influencing policy, holding politicians accountable, and winning elections. This is how we fight to build a better world with clean air, clean water, public lands, and a safe climate, protected by a just and equitable democracy. Over the last 50 years, LCV has grown into a potent national political force with more than a million members, 30 state affiliates, and grassroots and community organizing programs across the country.

The Alliance to Save Energy (Alliance) is a bipartisan nonprofit coalition of business, government, environmental, and consumer leaders advocating to advance energy efficiency adoption, and is a leading voice in informing federal and state energy efficiency policies and standards.

We offer the comments below on the Request for Comment (RFC) on “Energy Security Tax Credits for Manufacturing Under Sections 48C and 45X” issued by the Department of the Treasury (Treasury) and the Internal Revenue Service (IRS). Topics covered here include allocation of the Qualifying Advanced Energy Project Credit (48C) to maximize greenhouse gas (GHG) reduction and how to define certain key terms related to energy efficiency and GHG reduction. If the Treasury Department or the IRS have any questions about these comments, please do not hesitate to contact Alexander Ratner at [aratner@aceee.org](mailto:aratner@aceee.org).

## **I. Allocation of Qualifying Advanced Energy Project Credit**

To avoid a climate change catastrophe, President Biden has called for net zero GHG emissions economy-wide by no later than 2050. Energy efficiency policies and programs can cut U.S. energy and GHG emissions in half by 2050, moving the nation halfway towards

achieving its climate goals.<sup>1</sup> Industry accounts for more than a quarter of the nation’s energy use and energy-related carbon dioxide emissions – which must be reduced to achieve national and international goals.<sup>2</sup>

## MAXIMIZE LONG-TERM GREENHOUSE GAS REDUCTIONS

### Question .02(5)(a) and Question .02(7)

The Inflation Reduction Act (IRA) made changes and additions to “qualifying advanced energy project” under §48C(c)(1)(a) that create several pathways to incentivize decarbonization of industry. Since 48C is an allocated tax credit, Treasury and IRS will have to make decisions about what projects will receive the credit, and what project factors should be prioritized in order to make these determinations. ACEEE recommends that Treasury and IRS make maximizing long-term GHG reductions the guiding principle in determining which projects should receive the 48C credit, with further considerations below and in the next section.

Treasury and IRS should pursue projects that drive long-term carbon abatement by incentivizing development of diverse decarbonization technologies. They can achieve this by giving priority to applications with the following characteristics: (1) hard-to-abate sectors, (2) investments that target approaches with large potential long-term carbon reductions including investments that provide immediate reduction but offer an evolutionary path for future reductions (e.g., direct reduction iron that provides immediate carbon reductions and could achieve further emission reductions after transitioning to clean hydrogen), and (3) investments that build production capacity, infrastructure, and market demand for key emerging technologies, thus enabling reductions in price and widespread use. Providing credits to applications that feature one or more of those characteristics will assist in taking technologies with high potential impacts from early implementation to standard practice, an approach that ACEEE refers to as “market transformation.” Market transformation seeks to aid market development so that in the long term these low carbon approaches can prosper in the market without federal aid. This approach is preferable to one that rewards direct GHG reductions from projects with mature technologies.

When President Biden signed the IRA into law, the White House stated that building American clean energy supply chains was a key component of the law’s provisions to

---

<sup>1</sup> Nadel, Steven, and Lowell Ungar. 2019. “Halfway There: Energy Efficiency Can Cut Energy Use and Greenhouse Gas Emissions in Half by 2050.” Washington, DC: American Council for an Energy-Efficient Economy. <https://www.aceee.org/research-report/u1907>

<sup>2</sup> U.S. Environmental Protection Agency (EPA). Sources of Greenhouse Gas Emissions, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> (last visited November 3, 2022).

revitalize American manufacturing.<sup>3</sup> In order to achieve this goal, Treasury and IRS should use allocation of the 48C credit to incentivize market transformation and drive the adoption of GHG reducing technologies beyond merely the entities that receive tax credits. Doing so requires a judgment not just of claimed direct GHG emissions reductions but of a technology's potential and market readiness. Fortunately, the Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy has the requisite expertise and should be fully included in allocation decisions.

For example, Industrial Heat Pumps (IHPs) are currently capable of providing heat around 160°C or 320°F (covering roughly 44% of industrial process heat needs).<sup>4</sup> Ongoing ACEEE research shows that deployment of IHPs in industrial groups with high demand for process heat in the range of IHP applicability (i.e., pulp and paper, chemicals, and food manufacturing) could avoid emissions of 30 to 43 million metric tons of CO<sub>2</sub> per year. As the electricity supply decarbonizes, the reductions in CO<sub>2</sub> emissions resulting from IHPs could double.

However, despite their limited use in some U.S. industrial processes for more than half a century, wide adoption of IHPs has been slow due to cost barriers.<sup>5</sup> As a result, even though IHPs can help decarbonize the economy, there currently is no domestic supply chain for them, and U.S. manufacturing plants find it hard to obtain suitable equipment. If an industrial facility were brought online to manufacture IHPs with the help of the 48C tax credit, it would benefit not only the plant that manufactures them, but other facilities that gained access to them regardless of whether they received a credit.

The Biden administration recognized the critical role that heat pumps play in bolstering the U.S.'s clean energy economy by including them as one of five key technologies in its authorization to utilize the Defense Production Act.<sup>6</sup> Building domestic capacity is a strategic good, and for IHPs that is particularly important because they are large, and current conflict-driven market instability in Europe may exacerbate difficulties in sourcing IHPs.

## CLIMATE AND ECONOMIC JUSTICE CONSIDERATIONS

---

<sup>3</sup> The White House. FACT SHEET: The Inflation Reduction Act Supports Workers and Families (August 19, 2022). <https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/19/fact-sheet-the-inflation-reduction-act-supports-workers-and-families/>.

<sup>4</sup> Rightor, Ed, Paul Scheihing, Andrew Hoffmeister, and Riyaz Pappar. 2022. "Industrial Heat Pumps: Electrifying Industry's Process Heat Supply." Washington, DC: American Council for an Energy-Efficient Economy. <https://www.aceee.org/sites/default/files/pdfs/ie2201.pdf>

<sup>5</sup> *Id.*

<sup>6</sup> U.S. Department of Energy (DOE). President Biden Invokes Defense Production Act to Accelerate Domestic Manufacturing of Clean Energy (June 6, 2022). <https://www.energy.gov/articles/president-biden-invokes-defense-production-act-accelerate-domestic-manufacturing-clean>.

**Question .02(5)(a)**

Treasury and IRS ask what they should consider in determining the selection criteria for awarding the 48C credit. In keeping with the objectives of the Biden Administration’s Justice40 Initiative, Treasury and IRS should prioritize projects located in overburdened and/or underserved communities.<sup>7</sup> The Council on Environmental Quality’s Climate and Economic Justice Screening Tool can be used to identify these communities.<sup>8</sup> Any project sited in such a community should only receive consideration when conducted in consultation with community representatives and when that project would reduce negative environmental and health impacts of an existing industrial facility.

## II. Definitions of a “Qualifying Advanced Energy Project”

**Question .02(2)**

The IRA’s changes and additions to “qualifying advanced energy project” under §48C(c)(1)(a) add new terms which Treasury and IRS will have to define in order to administer the 48C tax credit effectively with regard to decarbonizing industrial facilities through the use of advanced energy projects.

For the purposes of the 48C credit, there are two provisions that provide pathways for energy efficiency and GHG reducing technologies at industrial facilities to qualify. First, §48C(c)(1)(a)(i) states that a project “which re-equips, expands, or establishes an industrial or manufacturing facility for the production or recycling of – “[...] “(VI) property designed to produce energy conservation technologies (including residential, commercial, and industrial applications)” is eligible for a credit. ACEEE reads this section as allowing facilities that produce energy-saving products to be eligible for a credit under 48C. We suggest that energy conservation technologies should be considered broadly, along the lines of our definition of energy efficiency as:

- Using less energy to provide the same or better products, services, or amenities, while providing multiple benefits for households and businesses.<sup>9</sup>

---

<sup>7</sup> The White House. Justice40 A Whole-of-Government Initiative. <https://www.whitehouse.gov/environmentaljustice/justice40/> (last visited November 3, 2022).

<sup>8</sup> Council on Environmental Quality. Climate and Economic Justice Screening Tool. <https://screeningtool.geoplatform.gov/en/#3.41/22.85/-96.03> (last visited November 3, 2022).

<sup>9</sup> Molina, Maggie, Patrick Kiker, & Seth Nowak, The Greatest Energy Story You Haven’t Heard: How Investing in Energy Efficiency Changed the US Power Sector and Gave Us a Tool to Tackle Climate Change (October 2016). available at <https://www.aceee.org/sites/default/files/publications/researchreports/u1604.pdf>.

Industrial heat pumps and smart thermostats are examples of energy conservation technologies for which U.S. production could be increased.

Second, §48C(c)(1)(a)(ii) states that a project “which re-equips an industrial or manufacturing facility with equipment designed to reduce greenhouse gas emissions by at least 20 percent through the installation of – (I) low- or zero-carbon process heat systems, (II) carbon capture, transport, utilization and storage systems, (III) energy efficiency and reduction in waste from industrial processes” is eligible for a credit. ACEEE understands this section as allowing individual industrial facilities that undertake energy efficiency and GHG reduction projects to be eligible for the 48C credit. The recently published DOE Industrial Decarbonization Roadmap identified EE as one of four key technological pillars to significantly reduce emissions in the industrial sector.<sup>10</sup>

## DEFINE ENERGY EFFICIENCY

### Question .02(2)(a)

In the Request for Comment, Treasury and IRS ask if guidance is needed to define “energy efficiency” under §48C(c)(1)(A)(ii). While the general value of energy efficiency is often well understood, the scope may not be, and both firms applying for the 48C credit and the agencies allocating it may consider only selected energy efficiency opportunities or may mistake some renewable energy or other “green” measures for efficiency measures. Setting a definition of efficiency should help bring clarity to all parties.

Along the lines of the above definition, we can define industrial energy efficiency as using less energy to make the same or improved products. Some examples of energy efficiency pursuant to this definition are switching from a boiler or furnace to an industrial heat pump, implementing smart manufacturing and strategic energy management,<sup>11</sup> or transitioning to direct reduction of iron ore in steel manufacture. ENERGY STAR®<sup>12</sup> and the DOE<sup>13</sup> also note that energy efficiency is vital to achieving net-zero emissions of carbon dioxide through decarbonization.

---

<sup>10</sup> DOE. Industrial Decarbonization Roadmap (2022). <https://www.energy.gov/sites/default/files/2022-09/Industrial%20Decarbonization%20Roadmap.pdf>.

<sup>11</sup> Smart manufacturing is enabled by computing and uses automated controls, monitoring, and optimization of plants and supply chains to improve efficiency and reduce waste. Strategic energy management is a data driven approach for continuous improvements to energy performance to achieve persistent energy and cost savings.

<sup>12</sup> ENERGY STAR, About Energy Efficiency, [https://www.energystar.gov/about/about\\_energy\\_efficiency](https://www.energystar.gov/about/about_energy_efficiency) (last visited November 4, 2022).

<sup>13</sup> DOE Office of Energy Efficiency and Renewable Energy, Energy Efficiency, <https://www.energy.gov/eere/energy-efficiency> (last visited November 4, 2022).

## DEFINE REDUCTION OF GREENHOUSE GAS EMISSIONS BY AT LEAST 20 PERCENT

### **Question .02(2)(c)**

In the Request for Comment, Treasury and IRS ask whether “guidance is needed to define baseline criteria, boundary conditions, and/or timeframe to determine achievement of the 20 percent threshold.” The total amount of GHG reduction that can be achieved by a project is heavily dependent on the baseline criteria of the 20 percent threshold set forth in §48C(c)(1)(a)(ii).

The reduction in emissions should be taken as a percentage of the total emissions due to the industrial process being modified (not necessarily of the whole plant or facility, as that could include multiple production lines and could set an impossibly high bar). In order to fairly account for shifts in energy sources, emissions considered should include emissions from providing the electricity used (scope 2) as well as direct emissions from the process (scope 1).

Treasury and IRS should seek to ensure real GHG reductions by basing the 20 percent threshold on “standard business practice” (defined as the prevailing process technology in place across a large number of plants for a particular industrial sector). Treasury and IRS should determine current “standard business practice” in consultation with experts in industrial process technologies and equipment at DOE’s office of Energy Efficiency and Renewable Energy. This would allow application of the 48C credit to industrial decarbonization technologies that are well tailored to the diverse needs of various industrial process technologies and permit Treasury, IRS, and DOE to adjust “standard business practice” as appropriate throughout the life of the credit.

The standard business practice model is preferable to one where the 20 percent threshold is based on the current installation at a given industrial facility. Such a system would allow aging facilities to be eligible to apply for the credit with fairly common upgrades that have been the industry standard for years. Because the 48C credit is designed as an incentive for *advanced* energy projects that reduce GHG emissions, such a use would seem inappropriate – rewarding a firm for pursuing replacements that it was likely to make anyway.

## INDUSTRY GUIDELINES AND REGULATORY PRACTICE

### **Question .02(4)(a) and Question .02(4)(b)**

In the Request for Comment, Treasury and IRS ask whether there are industry guidelines that can be used to demonstrate that a project reduces greenhouse gas or other pollutant emissions.

Treasury and IRS should require procedures as determined by and consistent with generally accepted accounting principles as set forth in current Sustainability Accounting Standards Board (SASB) guidance,<sup>14</sup> based on the GHG Protocol for Project Accounting.<sup>15</sup>

Thank you for the opportunity to comment on this critical opportunity to invest in advanced energy projects that reduce greenhouse gas emissions.

Sincerely,

American Council for an Energy-Efficient Economy

League of Conservation Voters

Alliance to Save Energy

---

<sup>14</sup> See Current SASB Guidance. <https://www.sasb.org/standards/download/?lang=en-us> (last visited November 4, 2022). Note: SASB Guidance is updated periodically and any time it is used for reference the most recent version should be consulted.

<sup>15</sup> See Current Greenhouse Gas Protocol for Project Accounting. <https://ghgprotocol.org/standards/project-protocol> (last visited November 4, 2022). Note: The GHG Protocol for Project Accounting is updated periodically and any time it is used for reference the most recent version should be consulted.