



August 3, 2023

Ms. Lily Batchelder
Assistant Secretary (Tax Policy)
U.S. Department of the Treasury
1500 Pennsylvania Ave., NW
Room 3058
Washington, DC 20220

Re: Follow-up Comments of the National Hydropower Association on the Domestic Content Bonus Credit Guidance under Sections 45, 45Y, 48, and 48E (Notice 2023-38)

Dear Ms. Batchelder:

The National Hydropower Association (“NHA”) is a non-profit national association dedicated to securing hydropower as a clean, carbon-free, renewable, and reliable energy source that provides power to an estimated 30 million Americans. Its membership consists of more than 300 organizations, including public and investor-owned utilities, independent power producers, equipment manufacturers, and professional organizations that provide legal, environmental, and engineering services to the hydropower industry.

NHA promotes innovation and investment in all waterpower technologies, including conventional hydropower, marine and hydrokinetic power systems, and pumped storage hydropower to integrate other clean power sources, such as wind and solar.

NHA appreciates the opportunity to submit the following comments. NHA encourages the Treasury Department to incorporate NHA’s comments expeditiously as developers are already considering how to best utilize the guidance in their investment decisions.

The current guidance has not incorporated the unique issues of the hydropower industry. There are approximately 50,000 megawatts (“MW”) of proposed projects going through the licensing process at the Federal Energy Regulatory Commission (“FERC”). There is great uncertainty for these developers as how to incorporate the guidance as currently written. NHA encourages Treasury Department to incorporate NHA’s recommendations expeditiously in a new or revised guidance document prior to a formal rulemaking process.

Background on Hydropower

NHA’s members own and operate roughly 85% of the U.S. hydropower generating capacity, which includes over 100 Gigawatts (“GW”) of hydropower and pumped storage capacity.

The nation’s existing hydropower infrastructure, combined with new project deployment opportunities, are critical resources for achieving the Administration’s climate policy goals that



underly the Inflation Reduction Act's¹ ("IRA") clean energy tax package. Hydropower is a clean, flexible, and reliable energy source that supports an estimated 72,000 well-paying jobs in the United States.² The sector also generates more than 6 percent of the country's utility-scale electricity and nearly one third of all utility-scale renewable power. In addition, pumped storage, which is a long duration energy storage asset, provides the majority of energy storage on the grid.

Approximately one-third (281) of FERC hydropower operating licenses are scheduled to expire by 2030 and almost half by 2035 (459).³ These 459 licenses include over 9,000 megawatts of conventional hydropower capacity and nearly 8,400 megawatts of pumped storage capacity, which accounts for 38 percent of the nation's total energy storage capacity.⁴

It is important for the Treasury Department to note that hydropower and pumped storage projects are unique among renewable technologies because they are necessarily co-located with certain geographic features, and as such, may require different considerations under any guidance or rules to realize the full growth potential. Hydropower and pumped storage projects involve highly customized, engineering-intensive manufacturing. Each hydropower project is unique in how it is sited, constructed, and operated, which is different from other technologies that utilize more "off-the shelf" equipment.

NHA submits the following comments on the Domestic Content Bonus Credit Guidance under Sections 45, 45Y, 48, and 48E ("Notice").⁵

1. Concerns Regarding Manufacturer's Direct Costs

The Notice requires the taxpayer to utilize only the direct materials and labor costs as defined by 26 §1.263A-1(3)(2)(i) incurred by a third-party, the manufacturer (both foreign and domestic), for the purposes of calculating the Domestic Costs for an Applicable Project.⁶ This provision would require the taxpayer to delineate certain direct costs (materials and labor costs) from other costs that are capitalized under §263A that are incurred by the manufacturer.

This provision creates administrative barriers to implementation, plus potentially undue recapture risk to the taxpayer. First, this provision would require the taxpayer and others performing due diligence on their behalf to attempt to obtain sensitive company business pricing information from manufacturers - information that the manufacturer may be reluctant to disclose. Even if the manufacturer were able to provide this information, its accounting methods and software may not allow for this information to be discerned because those systems cannot separate direct labor and materials costs from other capitalized costs on an as-sold basis under § 263A. Finally, since the taxpayer benefits from the credit but takes on the recapture risk, this

¹ Public Law 117-169, 136 Stat. 1818 (August 16, 2022).

² U.S. Department of Energy, U.S. Hydropower Workforce: Challenges and Opportunities (October 2022).

<https://www.energy.gov/eere/water/articles/new-report-highlights-hydropower-industrys-demand-new-diverse-talent>

³ National Hydropower Association, *17 GWs of Hydropower at Risk* Fact Sheet.

⁴ *Id.*

⁵ Internal Revenue Service. (2023). Domestic Content Bonus Credit Guidance Sections 45, 45Y, 48, and 48E (Notice 2023-38).

⁶ Notice at p. 9-10.

provision could create large administrative burdens on both counterparties (i.e., requiring indemnification).

Lastly, a significant portion of hydropower and pumped storage owners in the United States are tax-exempt entities (e.g., Tennessee Valley Authority, public power, etc.). With the advent of Elective Pay in the IRA, these entities are expressly allowed to benefit from the incentives in the IRA – under certain conditions. For these entities, compliance with domestic content rules is not an elective exercise performed for the purposes of obtaining a bonus credit, but rather a requirement for the purposes of Elective Pay. Failure to demonstrate compliance with domestic content rules will result in these entities losing a portion of their incentives until January 1, 2026, when such a failure would result in losing 100% of the amount. Creating excessive administrative burdens on these entities would frustrate Congress’ clear intent by limiting the applicability of the IRA to a significant portion of electricity generators and their ratepayers in the United States.

1.1 NHA Recommends Treasury Department Utilize the Cost Incurred by the Taxpayer

The term “cost” is utilized frequently throughout the Internal Revenue Code. It almost always refers to the cost incurred by the taxpayer. NHA recommends that the Treasury Department modify the Notice to reference the cost incurred by the taxpayer that is inclusive of the manufacturer’s costs and profit. It is also important in the context of the size and weight of hydropower and pumped storage property that these costs should also include the cost of transportation, which is an important element of the taxpayer’s cost paid to the manufacturer. Such a modification would be consistent with the IRS’ traditional use of the term “cost” and solve the issues of due diligence and compliance for the purposes of audit and verification. These costs would then be in alignment with other aspects of costs incurred by the taxpayer for the energy property or qualified facility.

2. Certain Onsite Activities are Part of the Manufacturing Process⁷

The Notice does not provide guidance to the taxpayer on what activities that occur onsite are considered part of the Manufacturing Process. Onsite manufacturing activities are separate and distinct from construction, assembly, and installation. Buy America Requirements, which the IRA references,⁸ allow for onsite manufacturing to occur.⁹ Components at hydropower and pumped storage facilities are customized not only to the needs to the asset owner but to the geography of the facility. Hydropower and pumped storage equipment is not mass produced like other renewable, carbon-free technologies. In many instances, this equipment can be manufactured at the factory and shipped to the site to be installed without further OEM manufacturing activity (e.g., transformers or breakers). In these situations, none of the costs that occur onsite would be included in the calculation for the domestic content bonus credit. However, in certain circumstances (i.e., size, scope of component, difficulty in transportation to

⁷ The Notice at p. 7 and 49 § 661.3 define the Manufacturing Process as the “means the application of processes to alter the form or function of materials or of elements of the product in a manner adding value and transforming those materials or elements so that they represent a new end product functionally different from that which would result from mere assembly of the elements or materials.”

⁸ Public Law 117-169, 136 Stat. 1911 (August 16, 2022).

⁹ A component may be manufactured at the final assembly location if the manufacturing process to produce the component is an activity separate and distinct from the final assembly of the end product. See 49 § 661.11(d).

the site, etc.) activities must be performed onsite to alter subcomponents into components and such activities should be considered part of the Manufacturing Process.¹⁰

2.1 The Vast Majority of Onsite Manufacturing occurs on the Hydroelectric Power Unit

As discussed in NHA’s recommendations for inclusion in Table 2, one of the Applicable Project Components (“APC”)¹¹ is the hydroelectric power unit. This component consists of the turbine, generator, governor, and exciter subcomponents. The hydroelectric power unit and its subcomponents consist of thousands of parts.

Water is released from the upper side of the dam (or upper reservoir for pumped storage) through a pipe (i.e., penstock) or a concrete lined tunnel. The water flows through the pipe or tunnel into the unit across the turbine blades to spin the machine. The water then exits into the lower side of the dam or into the lower reservoir for pumped storage.

The turbine is connected to the generator via a vertical or horizontal shaft. The shaft spins due to the force of the water turning the turbine blades. The speed of the turbine is regulated by the governor. Connected to the shaft is the rotor. The rotor spins within a stationary subcomponent called a stator. The interaction of the rotor and the stator creates the electromagnetic field that results in the creation of electricity that is sent to the grid. The initial magnetic field created in the windings of the stator is produced by the exciter. The exciter also helps to regulate voltage during operation.

Once fully manufactured, the hydroelectric power unit can weigh hundreds of tons and can take months or years to fully manufacture. The Manufacturing Process does not end until the Original Equipment Manufacturer (“OEM”) issues the warranty for the component. The process for manufacturing the hydroelectric power unit is an incredibly technical process that cannot be performed by a general contractor but only by specialists employed or contracted by an OEM.

2.2 NHA Recommends Treasury Department Adopt Buy America Requirements for Onsite Manufacturing

As stated above, certain activities performed onsite that alter subcomponents into components should be eligible for inclusion in the domestic content calculation. A few examples of onsite hydropower manufacturing are provided below:

The subcomponents of the hydroelectric power unit are the generator, turbine, governor, and exciter. The generator subcomponent generally consists of a stator, rotor, upper brackets and bearings, slipring, and an exciter. For brevity, some examples of stator and rotor manufacturing are below.

¹⁰ The processes of alteration may include forming, extruding, material removal, welding, soldering, etching, plating, material deposition, pressing, permanent adhesive joining, shot blasting, brushing, grinding, lapping, finishing, vacuum impregnating, and, in electrical and electronic pneumatic, or mechanical products, the collection, interconnection, and testing of various elements. Final Rule, Buy America Requirements, 56 Fed. Reg. 926, 929 (Jan. 9, 1991).

¹¹ Means any article, material, or supply, whether manufactured or unmanufactured, that is directly incorporated into an Applicable Project. An Applicable Project Component may qualify as steel, iron, or a Manufactured Product. Notice at P. 6.

The stator generally consists of the stator frame, the core, and the windings. Some examples of onsite manufacturing are:

- Once the stator frame is completed, the stator core is then manufactured. It can weigh hundreds of tons and could be a few dozen feet in diameter. The stator core is stacked with tens of thousands of laminations. As each lamination is laid, it is inspected visually, and quality control is visually checking each layer as it is placed, in addition to padding in the laminations as they are stacked to ensure alignment of the layers and to produce the slots for the windings with adequate clearance. Throughout the process of stacking the core, stator core presses occur to compress the laminations and to check the height and the tilt of the stator core as it is built. After the completion of stacking and the final press, the core is torqued as directed by OEM engineering and confirmed to meet tolerance and other requirements.
- After the stator core is deemed to be accepted, the winding may begin. Stator core winding is a specialty craft. Each winding, either coil or bar is placed gently into the slot in the correct configuration and packed with OEM specific insulation technology. The individual windings are then connected, and each connection jumper is then hand insulated and electrical tested. Support blocks are lashed into place to provide rigidity and support against vibration. Once testing is complete, the stator core is treated on the front and back core faces with insulating materials.

The rotor generally consists of a spider, rim, and poles. Some examples of onsite manufacturing are:

- Onsite final machining and welding of the rotor spider, generally hub and arms, with precision alignment of the placement of the arms to machined surfaces on the hub to ensure that the arms are placed within thousandths of an inch in radius, chord, elevation, verticality and twist. This may include the process of strategic welding and heating to pull the arms in certain directions while maintaining a high full penetration weld quality requiring nondestructive examination to ensure integrity.
- The rotor rim is stacked with thousands of laminations, with each lamination requiring alignment within each of the slots and keyways. The rotor rim is compressed once fully built and signed off by OEM engineering, then heated with precision by wrapping large electrical cables around the rim and insulating. The rim is heated to allow thermal growth so that a larger key may be inserted between the rotor spider arms and the rim to create an interference fit. The rotor rim is checked before and after heating to ensure that the rim meets tolerance for radius, verticality, and elevation within thousandths of an inch using precision equipment.

NHA recommends that Treasury Department modify the Notice to include costs incurred onsite that are clearly part of the Manufacturing Process in the domestic cost calculation (i.e., adopt the provisions found in 49 § 661.11(d)). The Buy America requirements provide a well-known, easily includable reference Treasury Department can utilize. Factors that Treasury can consider in determining whether on-site activity is manufacturing, or mere assembly include the nature of the activities being performed, who is performing the work (e.g., the OEM or a general contractor), and whether manufacturing is complete such that the warranty has been issued.

3. Definition of Applicable Project Component and Manufactured Product Component

The Notice creates two categories of components, an APC and a Manufactured Product Component (“MPC”).¹² This dichotomy departs from the precedent in the Buy America requirements (referenced in the IRA) regarding its definition of Component.¹³ Buy America requirements require the domestic content analysis to occur at the Component level, not the subcomponent level.¹⁴

3.1 *The APC is Equivalent to the Component*

The Treasury Department deviated from the Buy America Requirements when it omitted the phrase “...at the final assembly location” when defining the APC as compared to the Component. The definition in the Notice also does not incorporate unmanufactured materials. The APC is where the steel and iron and manufactured products requirements occur. To better define the scope of APCs that fall within the Applicable Project,¹⁵ NHA respectfully requests that the Treasury Department modify the definition of APC to now state:

“Applicable Project Component” means any article, material, or supply, whether manufactured or unmanufactured, that is directly incorporated into an Applicable Project at the final assembly location. An Applicable Project Component may qualify as (i) steel or iron, (ii) a Manufactured Product, (iii) or unmanufactured materials.

The MPC is directly incorporated into an Applicable Project Component. Therefore, it is not a component but a subcomponent under 49 § 661.5(d). Subcomponents are not considered in the domestic content calculation. Therefore, NHA recommends that the Treasury Department modify the MPC definition in the guidance to say:

“Manufactured Product Component” means any Applicable Project Component that is a Manufactured Product.

Reforming the definition of MPC to the above language would keep the MPC category but remove the analysis at the subcomponent level that is currently part of the Notice.

¹² Means any article, material, or supply, whether manufactured or unmanufactured, that is directly incorporated into an Applicable Project Component that is a Manufactured Product.

¹³ Means any article, material, or supply, whether manufactured or unmanufactured, that is directly incorporated into the end product *at the final assembly location* [emphasis added]. 49 § 661.3.

¹⁴ 49 § 661.5(c)-(d)

¹⁵ Refers to: (i) a qualified facility under §§ 45 or 45Y; (ii) an energy project under § 48, which may include qualified property for which a valid irrevocable election under § 48(a)(5) has been made to treat such qualified property as energy property under § 48; or (iii) a qualified investment with respect to a qualified facility or energy storage technology under § 48E. Notice at p. 2.



3.2 NHA Input for Table 2 – Categorization of Applicable Project Components

The Notice provides guidance to the taxpayer on a non-exhaustive list of APCs that are subject to either the Steel or Iron Requirement or Manufactured Product Requirement. These are based on the Buy America regulations found in 49 § 661. As hydropower and pumped storage components are not captured in Table 2 of the Notice, investors are not certain on which components are captured under which requirement. Also, due to the inclusion of the MPC, there is real ambiguity regarding which components are considered subcomponents. Without both the modification of the APC definition and an inclusion of hydropower and pumped storage property examples in Table 2, the existing uncertainty for investors and developers will keep capital on the sidelines and suppress investment in this sector. Attached in the Appendix is NHA’s proposed insert for a revised Table 2 including hydropower and pumped storage.

NHA’s input is subject to change as the Treasury Department modifies the guidance in the future.

Thank you very much for considering these comments. NHA welcomes the opportunity to discuss these issues further with the Treasury Department.

Sincerely,

/s/ Michael Purdie

Michael Purdie
Director of Regulatory Affairs and Markets
National Hydropower Association
200 Massachusetts Ave NW, Suite 320
Washington, DC 20001
michael@hydro.org

CC:

Jennifer Garson, Department of Energy
Steve Capanna, Department of Energy
Matthew Aks, Department of Treasury
Seth Hanlon, Department of Treasury
Scott Arceneaux, Department of Treasury
Emily Caputo, Department of Treasury
Malcolm Woolf, National Hydropower Association

Table 2 – Categorization of Applicable Project Components¹⁶

Applicable Project	Applicable Project Component	Categorization
Hydropower Facility or Pumped Storage Facility	Structural steel or iron for the powerhouse, facility, dam, switchyard structures and towers, and surge chamber.	Steel/Iron
	Switchyard and Power Transmission Equipment	Manufactured Product
	Hydroelectric Power Unit (which include the following Manufactured Product Components, if applicable: turbine, generator, governor, exciter)	Manufactured Product
	All electrical and mechanical balance of plant systems	Manufactured Product
	Water Conveyance (which include the following Manufactured Product Components, if applicable: inlet valve, isolation valves, gates, debris removal system)	Manufactured Product
	Manufactured Products associated with the Reservoirs (which include the following Manufactured Product Components, if applicable: Spillway Gates, Cranes, Hoists, and Operating Equipment)	Manufactured Product

¹⁶ NHA notes that hydropower project development is more complex than that for other eligible industries, which makes the analysis and development of a safe harbor table more challenging. There are many different project types that make up the growth of the industry – new conventional hydropower projects, new pumped storage projects, adding generation to non-powered dams, as well as rehabs and upgrades to existing facilities (e.g., efficiency improvements and capacity additions) and repowering projects – all of which also involve significantly more individual customization than for other industries. NHA continues to receive feedback from industry members on the domestic content guidance and seeks an ongoing dialogue with the Treasury Department to ensure any updated guidance or future rulemaking recognizes and accounts for the unique characteristics of the hydropower industry.