THIRD WAY

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Organizational Contacts:

Dr. Rudra V. Kapila
Deputy Director of Carbon Management & Hydrogen
rkapila@thirdway.org

Alan Ahn
Deputy Director for Nuclear
aahn@thirdway.org

Third Way appreciates the opportunity to respond to this Internal Revenue Service **Notice of Proposed Rulemaking on Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property (REG-117631-23).**

About Third Way

Founded in 2005, Third Way is a national public policy think tank that champions modern center-left ideas grounded in the mainstream American values of opportunity, freedom, and security. Third Way's Climate & Energy Program designs and advocates for policies that will drive innovation and deployment of clean energy technologies to deliver the emissions cuts we need to place the U.S. on the fastest, fairest path to net-zero emissions by mid-century.

Background and Synopsis

Low-carbon hydrogen has the potential to decarbonize hard-to-abate sectors of the US economy, create good quality jobs for hundreds of thousands of Americans, and achieve our mid-century climate goals.[1] Congress and the Biden Administration have taken steps to help realize this potential with the enactment of the Bipartisan Infrastructure Law (BIL) in 2021 which allocated $9.5 billion to drive clean hydrogen initiatives,[2] and the Inflation Reduction Act (IRA) in 2022 which established the 45V Clean Hydrogen Product Tax Credit as a major financial tool to boost clean hydrogen project development in the US.[3] The guidance for implementing the 45V tax credit being developed by the

[1] Please see: U.S. National Clean Hydrogen Strategy and Roadmap

[2] Please see: Infrastructure Investment and Jobs Act

[3] Please see: Inflation Reduction Act of 2022

Department of the Treasury will have a major impact on America's ability to realize a domestic clean hydrogen economy and lead in this global market in the future.
The desire to ensure 45V results in net emissions reduction is laudable and important. Treasury has chosen to accomplish this using three pillars of Temporal Matching, Deliverability, and Incrementality/Additionality.[4] This approach poses a number of complications that will need to be addressed, should Treasury decide to stick with the three pillars approach. One such complication is the potential for guidance to prevent nuclear energy from contributing toward clean hydrogen goals. Given its importance and complexity, Third Way has chosen to focus our response on this specific issue. Our comments cover three main aspects of this pathway:

I. General comments on the nuclear-based production pathway.
II. The impact of 45V on the implementation of regional hydrogen hubs.
III. Specific recommendations to allow for flexibility on incrementality.

Third Way believes the specific recommendations on incrementality that we propose—nuclear license renewals as incremental, uprate eligibility, and enhanced flexibilities on the retirement deferment exemption—both embody a more strategic and inclusive vision on net emissions impacts and maintain the spirit of the incrementality pillar.

I. General comments on the nuclear-based production pathway.

Third Way understands that the primary purpose of the 45V tax credit is to jumpstart the US clean hydrogen industry by creating a supply-side incentive for early clean hydrogen project developers. However, the requirements for electrolytic hydrogen producers to receive the 45V tax credit outlined in Treasury's guidance, while aimed at ensuring maximum net emissions reductions in the immediate term, may insufficiently consider the broader strategic benefits from the development of a more robust low-carbon hydrogen economy toward our long-term decarbonization objectives by midcentury.

More to the point, we believe Treasury's guidance presents daunting barriers for nuclear-powered electrolytic hydrogen to access the 45V tax credit, ultimately to the possible detriment of our longer-term clean energy goals. Third Way's Decarb America research initiative[5] has conducted energy systems modeling of various decarbonization pathways to net-zero by 2050. Some of these scenarios, factoring in potential delays or barriers to electrification, project a heavy reliance on clean hydrogen and other zero-carbon fuels to meet our 2050 targets; in these cases, nuclear is estimated to increase significantly for the production of hydrogen and clean fuels.

[4] Please see: Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property

[5] Please see: Decarb America Research Initiative

Our modeling not just shows that we will need more nuclear, but that we must absolutely adopt a long-term view of these issues beyond the immediate emissions impacts—that we must establish the foundations to support a future clean hydrogen economy. Once hydrogen storage and transportation infrastructure is adequately built-out, we anticipate that the hydrogen market will take off in the 2030s, at which time Third Way expects to see the advent of advanced reactors[6]—which we view as particularly promising platforms for clean hydrogen production due to their enhanced passive safety characteristics (enabling co-location) and higher temperature outputs, potentially unleashing transformative production methods such as high-temperature electrolysis or thermolysis.

The 2033 sunset date of 45V would likely preclude the credit from directly facilitating some of these anticipated developments. Third Way acknowledges that the sunset date is congressionally mandated and not part of the guidance, though it is another constriction on the ability to utilize nuclear in growing a clean hydrogen economy, making it even more important that we take steps to fix other aspects of the proposed guidance to allow nuclear to contribute. Specifically, refinements to guidance can ensure we are getting as much from our existing nuclear plants as possible to deliver sufficient carbon-free electricity for hydrogen production.

Our existing nuclear plants can be a potent contributor to the successful development of a low-carbon hydrogen economy, and we can leverage them to the fullest extent while also adhering to the spirit of additionality. The carbon-free, firm, and reliable characteristics of nuclear generation not only make for an excellent clean hydrogen production medium, but can also—combined with enhanced access to 45V—further incentivize investment into first-of-a-kind (FOAK) electrolyzer projects and drive electrolyzer technology towards cost competitiveness. However, guidance as currently structured places restrictions on the ability of the existing nuclear fleet to access the 45V credit, compromising one of the most promising avenues to overcoming FOAK challenges for electrolyzer projects (and a potential lifeline for continued operation of US nuclear plants[7]). If final guidance undermines the viability of early projects, this could have negative and reverberating implications for nuclear-produced hydrogen and clean hydrogen projects more generally at a pivotal, embryonic stage of development.

While Third Way does not agree with every aspect of the three pillars approach as reflected in proposed guidance, we appreciate the goal of minimizing emissions from clean hydrogen and the role that basic concepts of incrementality, temporal matching, and regionality can play in achieving that. However, there is an urgent need to strike the right balance within the broader three pillars framework, and to introduce flexibilities in guidance that reflect a more holistic, strategic, and longer-term perspective on net emissions impacts. Decisions made today on guidance will affect our technology options

[6] Please see: Advanced Reactor Demonstration Program

[7] Please see: Importance of Preserving Existing Nuclear

in the future, and if we are not careful, potentially cut off pathways with arguably the greatest promise and potential.

We have chosen to focus our comments on one issue that we believe requires special attention: the incrementality section, which we believe inadequately considers the potential contributions that existing nuclear facilities can make toward establishing a low-carbon hydrogen economy.

II. 45V impact on implementation of Regional Hydrogen Hubs.

In several circumstances, existing nuclear plants can support clean hydrogen production without leading to significant increases in grid emissions. Congress has recognized the importance of nuclear in scaling-up clean hydrogen production and realizing a domestic clean hydrogen economy, stating in its requirements for the Regional Clean Hydrogen Hubs (H2Hubs) program that "at least one regional clean hydrogen hub shall demonstrate the production of clean hydrogen from nuclear energy."[8] However, the 45V guidance, as it currently stands, would jeopardize the viability of the H2Hubs program mandated by BIL before these hubs even begin construction.

Four of the seven hydrogen hubs include nuclear in their hub plans, with the Midwest Hydrogen Hub (MachH2) poised to be the flagship nuclear-based hydrogen hub.[9] Many H2Hub applicants formulated their hub plans in anticipation of 45V supporting their hub's nuclear projects, and without this support, there is concern that these plans will not be fulfilled. For example, Constellation Energy, a major participant in the MachH2 hub, has made it clear that their plans to build the world's largest nuclear-powered hydrogen facility in LaSalle, Illinois were contingent on support from 45V and cannot move forward under the current guidance.[10] As a first mover for large-scale nuclear-based electrolytic hydrogen, Constellation's LaSalle project bears the responsibility of demonstrating to other hub developers that this production pathway is possible and worthy of long-term investment.

III. Specific recommendations to allow for flexibility on Incrementality.

If Treasury has made the determination that it must observe and uphold incrementality requirements, the following are considerations that Third Way recommends Treasury take into account. We believe these considerations reflect a longer-term, more strategic view of net emissions

[8] Please see: Infrastructure Investment and Jobs Act

[9] The four hubs who have publicly stated they are using nuclear power are the Heartland Hydrogen Hub (HH2H), Mid-Atlantic Clean Hydrogen Hub (MACH2), Midwest Alliance for Clean Hydrogen (MachH2), and HyVelocity H2Hub.

[10] Please see: Hydrogen production tax credits may exclude legacy nuclear

impacts and the potential contribution of nuclear-produced hydrogen, while allowing Treasury to maintain the spirit and integrity of the incrementality principle.

Third Way would like to present three recommendations to make the guidance more inclusive to nuclear while also preserving adherence to Treasury's incrementality requirement. All three of our recommendations on incrementality would assume full adherence to the remaining two pillars on temporal matching and deliverability/regionality.

1. **Nuclear Plant License Renewals as Incremental**

   a) Counting re-licensed nuclear plants as incremental is consistent with the incrementality principle because not extending the license of a nuclear facility would mean that the energy output of that facility would no longer be on the grid. Thus, relicensing essentially adds "new" (or what would otherwise be absent) clean energy capacity to the grid.

   b) The license renewal application process requires a significant financial commitment from the owner-operator, and there must be reasonable expectation of return on investment to incentivize the plant owner to move forward with this process. If a taxpayer applies to the US Nuclear Regulatory Commission (NRC) for a license extension or subsequent license renewal for a specific facility, that facility should be considered as meeting the incrementality requirement for the extended license period.

   c) For the purposes of guidance implementation, a nuclear plant license extension should be treated similarly as an uprate.

2. **Uprates as Incremental**

   a) Third Way fully agrees with Treasury's proposal that electricity generating facilities, such as a nuclear plant, that undergo uprates are considered incremental.[11]

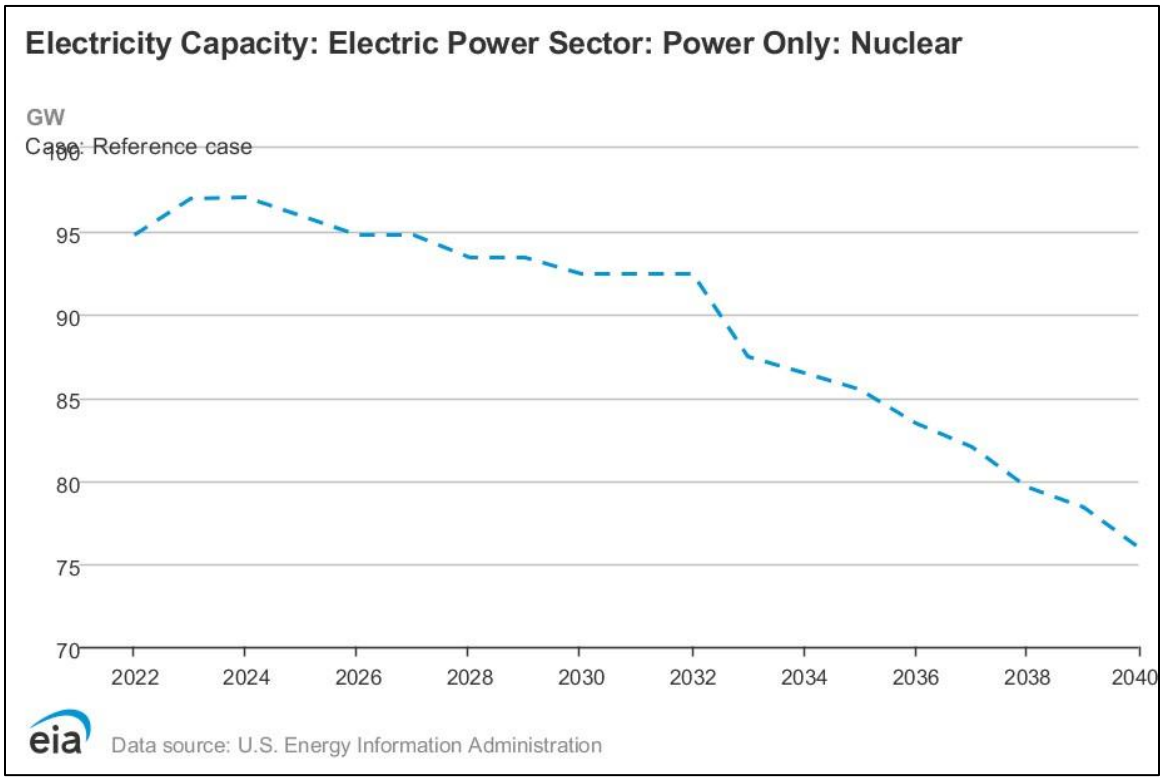
3. **Enhanced Flexibilities on Retirement Deferment Exemption**

   a) There is an expected "retirement cliff" of existing nuclear plants that will grow increasingly acute during the 2030s. While there are options that could potentially help these financially at-risk nuclear plants continue operating, such as the 45U tax credit and the Civil Nuclear Credit Program (CNCP) established by BIL, both of these programs will end in the early 2030s, just as the pace of retirements in the nuclear fleet accelerates. Flexibility in the retirement deferment exemption of the 45V guidance could enable the production of carbon-

[11] Please see: Proposed § 1.45V–4(d)(3)(i)(B)

free nuclear power that likely would not be generated otherwise, while allowing for a greater expansion of clean hydrogen production.

b) Treasury has offered the suggestion of a 5% allowance limit/exemption rate for existing nuclear facilities based on a current snapshot of the expected retirements in the nuclear fleet in 2032. However, the rate of US nuclear plant retirements will accelerate during the later stages of the 45V credit period. For example, as seen in the EIA projections below, the percentage of expected retirements of the nuclear fleet increases from 5% in 2032 to 10% in 2033.[12]



c) Because of the need for long-term certainty, it is necessary to consider more than just the risk of retirement at a particular point in time, but to also account for the growing risk of retirements over the entire period that 45V can be claimed (i.e., up until Jan 1, 2042). Thus, Treasury should set an exemption rate using a formula that weighs fleet retirement risk over this period for a qualifying nuclear power plant, which would certainly put the rate above 5%.

d) In order to enter into a contract with a nuclear power plant, a hydrogen producer will need certainty that the nuclear facility will remain online and generate sufficient Energy Attribute Certificates (EACs) for the full 10-year period that the hydrogen producer intends to claim 45V, including any period after the

[12] Please see: Annual Energy Outlook 2023

expiration of nuclear financial supports like 45U. One proposed test of retirement deferment that keeps this need for certainty in mind: if a nuclear plant qualifies for 45U for 2 out of the 3 previous tax years (thus demonstrating financial distress) at the time of contract with a hydrogen producer, then the nuclear plant will qualify for the 45V for the entirety of the tax credit period. The alternative, basing such an eligibility test on year-to-year qualification for 45U, would create significant uncertainty that would likely discourage a hydrogen project developer from contracting with a nuclear facility–leading to less hydrogen produced and a missed opportunity to preserve carbon-free power on the grid.

Final Comments

Third Way believes a tech-inclusive approach is the most effective pathway to achieving our mid-century climate goals while also promoting economic growth and protecting national security. The 45V proposed guidance does not necessarily align with Third Way's tech-inclusive ethos as it offers limited qualifying pathways for our current nuclear fleet. We believe that, without flexibility that allows existing nuclear power plants to meet incrementality requirements under certain conditions, the result will be 1) lower volumes of domestic clean hydrogen production in the near-term and 2) more grid emissions starting in the 2030's as nuclear plants that could otherwise continue operations retire. The first result runs counter to the original intent of BIL and IRA and the second result is exactly the opposite of the grid decarbonization that proponents of the Three Pillars are seeking.

We look forward to working with Treasury and the Department of Energy to carve out a place for nuclear energy in the proposed guidance and achieve the commercial liftoff of the clean hydrogen economy in the US.