

CFTI Zero Carbon Fuels Workgroup Phase 3 Policy Proposals

Proposed 118th Congress Priorities

High Priority

Implementation of Inflation Reduction Act Tax Credits

Direct the proper implementation of the Inflation Reduction Act (IRA) tax credits will support early-market, clean energy technologies.

- **Authorization:** N/A
- **Appropriations:** N/A
- **Treasury Guidance:** Provide feedback to the Treasury to ensure recently enacted IRA tax credits are impactful and effective. This would include feedback on the clean hydrogen production tax credit and other aspects of the tax credit bill (e.g., direct pay, energy communities, etc.).
- **Rationale:** Proper implementation of the Inflation Reduction Act (IRA) tax credits can support early-market, clean energy technologies.
- **Specific Recommendations:**
 - Clean Hydrogen Production Standard
 - With regard to the Clean Hydrogen Production Standard and when determining lifecycle emissions, ensure that all hydrogen production techniques are treated consistently with the same boundaries (e.g., well-to-gate) and emission scopes.
 - Clean Hydrogen Production Tax Credit 45V
 - Virtual power purchase agreements (PPAs)
 - Overall, to inform standards development and program execution, Treasury and DOE should work closely with the National Laboratories to model various aspects of potential clean hydrogen development, including the feasibility of various grid regions with lower renewable capacity generation and the impacts of potential policies on the cost and level of hydrogen deployment across different matching requirements (e.g., monthly, annually, etc.).
 - **Additionality:** Be flexible on the issue of “additionality,” particularly in the early years of hydrogen production project development. Strict additionality requirements (i.e., only new renewable electricity for a hydrogen project) would likely limit development and load factors for projects;

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- **Regionality:** Virtually tied facilities should still be within the same geographic boundaries as the boundaries of the balancing authority with jurisdiction over electricity production (or, in the case where a single utility acts as the balancing authority, any adjacent or connected balancing authority)
 - Clarify that the definition of a “facility” for purposes of Section 45V(d)(2) is limited to process trains necessary for the production of qualified clean hydrogen and includes all required components to produce clean hydrogen in a qualified clean hydrogen production facility. For facilities with multiple unrelated process trains, this would allow qualification under section 45V for the hydrogen processes and under 45Q for unrelated processes.
 - Finally, tax credit implementation must be consistent across all hydrogen production pathways. This includes, to the greatest extent possible, consistency in the scope and methodology of related data collection to enable ease of use of the information.
- Clean Hydrogen Investment Tax Credit Section 48 (through 45V)
- In addition to the credit for a qualified clean hydrogen production facility, ensure that the property that prepares hydrogen for storage, stores the hydrogen, and converts the hydrogen back to electricity are eligible for the energy storage ITC

Implementation of Hydrogen Hubs

Direct the proper implementation of the Regional Clean Hydrogen Hub program.

- **Authorization:** N/A
- **Appropriations:** N/A
- **DOE engagement:** Engage with OCED and other DOE offices.
- **Congressional engagement:** Encourage Congressional oversight activities as necessary to ensure timely implementation of the Hydrogen Hubs program.
- **Rationale:** Implementation of the Hydrogen Hubs program will affect not only the impact that the demonstration projects will have on hydrogen deployment but also the ability to carry those demonstration projects into a hydrogen economy (which would enable leveraging of the existing infrastructure and investments).
- **Specific Recommendations:**
 - In addition to receiving grant funding, hub awardees should be able to access zero carbon fuel deployment incentives.
 - DOE should consider the growth potential of the hub when choosing a location.
 - DOE should have transparency practices regarding project data and information that could provide important information for subsequent hubs and that also conform with data sharing practices that include information security and confidentiality protections.

Interstate Hydrogen Pipeline Regulation

Codify federal interstate regulations for siting authority and conditions of service.

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- **Authorization:** Enact legislation that clarifies the federal agency with siting authority and economic regulation for interstate hydrogen pipelines. The federal siting authority for dedicated interstate hydrogen pipelines should be given eminent domain authority. The federal agency with authority over the rates and terms and conditions of service for dedicated interstate hydrogen pipelines can investigate rates and terms and conditions of service to ensure they are just and reasonable.
- **Appropriations:** N/A
- **Rationale:** Currently, there is no federal body for interstate hydrogen pipelines siting, and this ambiguity can make interstate hydrogen investment difficult. Currently, the private entity must gain permission from each state that hosts a portion of the pipeline before commencing project construction. Having clarity over siting authority will reduce the amount of regulatory risk involved in project development. Currently, hydrogen is not an energy commodity, and there is no rate-setting authority for hydrogen transportation services. If hydrogen is to become an energy commodity, there must be rules in place for rates and terms and conditions of service for these pipelines. Establishing a regulatory scheme for interstate hydrogen pipelines can be housed within the same authorization.

Medium Priority

Low-Cost Financing for Hydrogen Midstream Infrastructure

Reduce the cost of midstream hydrogen infrastructure to promote commercial-scale deployment.

- **Authorization:** Support enactment of the Hydrogen Infrastructure Finance and Innovation Act (S. 3118).
- **Appropriations:** N/A
- **Rationale:** While a financing mechanism was established in the Inflation Reduction Act, it does not cover new pipelines necessary for commercial-scale hydrogen midstream infrastructure. An alternative financing mechanism for clean hydrogen and clean hydrogen carrier molecules would be needed in addition to what exists in the statute today. Additionally, better financing for midstream infrastructure will help increase the effectiveness of the grant funding issued for the Regional Clean Hydrogen Hub program.

Demand Support for Zero Carbon Fuels

Strengthen demand signals and bankability of ZCF projects by leveraging demand mechanisms and tools.

- **Authorization:** Authorize the federal government to provide demand support for ZCFs.
- **Appropriations:** N/A
- **Rationale:** A secure demand signal will increase the bankability of new ZCF projects.

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End-use Incentives

Encourage private companies to provide secure offtake agreements for ZCFs.

- **Authorization:** Authorize a tax incentive for using clean heat, including for ZCFs. There may be other non-tax programs that would also contribute to end-use incentives.
- **Appropriations:** N/A
- **Rationale:** A secure demand signal will increase the bankability of new ZCF projects.

Hydrogen Transportation Incentives

Encourage private companies to provide secure offtake agreements for ZCFs.

- **Authorization:** Support enactment of the Hydrogen for Trucks Act (S. 3806)
- **Appropriations:** N/A
- **Rationale:** A secure demand signal will increase the bankability of new ZCF production projects.

Turbine End-use R&D

- **Authorization:** N/A
- **Appropriations:** (Energy and Water, FECM, Hydrogen with Carbon Management) The agreement provides not less than [\$35,000,000] for Advanced Turbines to carry out research, development, and demonstration to develop near-zero-emission advanced turbine technologies.
 - FY22 – \$30M
 - FY23 – \$30M
- **Rationale:** Hydrogen gas turbines are most likely to be used for peaking power, as the “discharge” cycle of an energy storage scheme (in which the electrolysis represents the “charge” cycle). Compared to large-frame GT, which are baseload on natural gas and often have combined cycles, hydrogen GT will need to be smaller (to better manage energy storage), simple cycle (for rapid startup), and more efficient (to utilize a premium-priced fuel). Innovative combustion designs to minimize pollutant emissions will be an important focus for RD&D efforts.

Low Priority

Federal Cost Shares

Permit the DOE to exceed the traditional cost share amount for early-stage and demonstration project awards.

- **Authorization:** For early-stage project development, an 80/20 (DOE/private sector) cost-share grant program is available to lead project development entities to cover development expenses (e.g., FEED studies) similar to the recent DOE Funding Opportunity Announcements (FOAs) for carbon capture would be appropriate. To cover demonstration project capital costs, a cost-share grant program with 50/50 or higher

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federal government cost-share open to lead project development entities would be appropriate (such a program could be modeled after the Clean Coal Power Initiative or other similar efforts).

- **Appropriations:** N/A
- **Rationale:** There are several examples where a higher federal cost share than typical would help reduce the financial risk to the private sector. For early-stage, high-impact project development that may not have a high likelihood of commercial success, a greater than 80:20 federal cost share would help de-risk the exploratory process. For extensive demonstration projects, such as the Regional Clean Hydrogen Hub program, a federal cost-share of greater than 50:50 may inspire more creative and impactful projects because the applicant can increase the ambition of the project concept.

Enabling Use of Existing Infrastructure

- **Authorization:** N/A
- **Appropriations:** (Energy and Water, EERE, HFTO) The agreement provides not less than \$20,000,000 for Safety, Codes, and Standards to maintain a robust program and engage with state and local agencies to support their technical needs relative to hydrogen infrastructure and safety.
 - FY22 – \$10M
 - FY23 – \$15M
- **Rationale:** Safety, codes, and standards are essential to scale hydrogen technologies safely and efficiently. Midstream applications, such as blending hydrogen into existing pipelines, are in need of funding to accelerate this research to support hydrogen hub applications and reduce the cost to customers for individual utility RD&D projects. Having strong codes and standards early in project development is important to minimize NOx emissions and hydrogen leakage.

Support for Existing DOE Hydrogen Programs

- **Authorization:** N/A
- **Appropriations:** Provide an appropriate increase to all of the DOE offices that contribute to the hydrogen program. Language from FY23 report. (Energy and Water, Crosscutting Initiatives, Hydrogen) “The Department is directed to coordinate its efforts in hydrogen energy and fuel cell technologies across EERE, FECM, NE, OE, the Office of Science, the Office of Clean Energy Demonstrations, the Advanced Research Projects Agency-Energy, and any other relevant program offices to maximize the effectiveness of investments in hydrogen-related activities. The agreement provides not less than \$316,000,000 for the Hydrogen crosscut, including not less than \$163,000,000 from EERE, not less than \$113,000,000 from FECM, not less than \$23,000,000 from NE, and not less than \$17,000,000 from the Office of Science.”

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- **Rationale:** Maintain steady growth for crosscutting, DOE hydrogen programs, so they continue to be adequate after the sunset of off-year funding.