

February 12, 2024

Jeffrey Marootian
Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

RE: Request for Information on Progression to Net-Zero Emission Propulsion Technologies for the Rail Sector DE-FOA-0003186

Mr. Marootian,

On behalf of the Transportation Trades Department, AFL-CIO (TTD), I am pleased to respond to the Department of Energy's (DOE) request for information (RFI) on the progression to net-zero emission propulsion technologies for the rail sector. TTD consists of 37 affiliated unions representing the totality of rail labor, including both passenger and freight rail workers.¹ We therefore have a vested interest in this RFI and encourage the DOE to take our input into consideration.

Our affiliate unions represent the vast majority of railroad industry workers engaged in train operations, train dispatching, signal, maintenance of way and mechanical maintenance, inspection, testing, and repair on passenger and freight railroads throughout the United States. Each of these crafts will be impacted in some way by the transition to net-zero rail propulsion technology. Workers in the mechanical crafts, who are responsible for the maintenance, inspection, testing, and repair of locomotives and rail cars, will likely experience the most significant changes to their day-to-day jobs as the rail sector begins to transition to net-zero technology and the technology used in locomotives changes from the current diesel based setup.

We therefore urge the DOE to ensure labor unions are valued as stakeholders throughout the transition to net-zero rail propulsion technologies, as well as partners in implementing programs to assist with the deployment of these new technologies. Moreover, any federal investment, including federal funding awarded by other entities such as States, used to upgrade existing locomotives or to purchase new locomotives must be carried out by workers covered under the

¹ Attached is a list of TTD's affiliated unions

Railway Labor Act (RLA), the Railroad Retirement Act, and the Railroad Unemployment Insurance Act. As a condition of any grant or funding, recipients should also be required to be subject to protective arrangements that are modeled on, and not less protective than the protective arrangements established under Section 516 of the Railroad Revitalization and Regulatory Reform Act of 1976 (“4R” Act) (PL 94-210)² and cover employees affected by actions taken in connection with the locomotive upgrade, acquisition or project. These important rail labor statutes are the almost 100-year-old foundation for the entire rail labor system. It is therefore vital that workers doing traditional rail work are covered by these statutes so that the whole system is upheld. The robust wages and benefits in the rail industry must not be undercut by contractors or non-RLA workers that don’t benefit from the same labor protections in these statutes.

As the DOE evaluates the feasibility of various net-zero rail propulsion technologies, TTD and our affiliates offer our broad support for electric, battery, and hydrogen technologies. These three technologies each have the potential to significantly reduce carbon emissions from the rail sector while ensuring the current rail workforce can continue work in the industry during and after the transition to zero-emission technologies. To that end, we urge the DOE to collaborate with the Department of Labor (DOL) and rail labor unions to develop workforce development and retraining programs aimed at maintaining the existing rail workforce and ensuring that these workers are able to adapt to whichever technologies ultimately become prevalent in the rail industry. Furthermore, we strongly encourage the DOE to consider domestic supply chains when evaluating the most feasible net-zero solution for rail technology and to take steps to encourage the development of new domestic supply chains around these technologies, which will create well-paying union jobs here in the United States. The DOE should prioritize utilizing existing or developing domestically available technologies and materials in order to ensure any future program is compliant with Buy America policies.

Our affiliate, the International Brotherhood of Electrical Workers (IBEW), notes in its response to this RFI, electrified rail technology, like overhead catenary systems, has been in use for nearly 150 years and has been thoroughly tested around the globe, including in the United States. Electrified rail technology is extremely efficient and when used in conjunction with battery technology can overcome many infrastructure-related challenges. While hydrogen rail propulsion technology is much newer than electric rail technologies, North America is beginning to experience an uptick in hydrogen powered trains.³ Several European countries have also begun to adopt this technology, which appears to be another viable, sustainable alternative to diesel-powered locomotives.

Data compiled by the California Air Resources Board (CARB) for its 2021 Line-Haul Locomotive Emission Inventory indicates that railroads have extended the use of older and less efficient units

² Now codified as [section 22404 of Title 49, United States Code](#).

³ <https://www.smithsonianmag.com/smart-news/north-america-first-hydrogen-powered-train-180981800/>

rather than adopting relatively newer and more efficient units.⁴ For example, even though the U.S. EPA finalized the Tier 4 locomotive emissions standard in 2015, only 4.8% of the locomotives in California had met that standard in 2020. Similarly, the Tier 3 locomotive emissions standard went into effect in 2009, yet only 15.5% of locomotives in California had met that standard in 2020. CARB’s inventory forecast reflects that the older units may be used to maintain the railroads’ total workload for the next few decades. This is concerning given that California tends to have newer locomotives deployed than other areas in the United States as a result of their stricter air quality regulations.

The industry’s lack of progress in upgrading their locomotives to reduce emissions is reflective of the cost-cutting measures that the railroads have taken in the last several years as a result of the “Precision Scheduled Railroading” operating model. Rather than upgrading existing locomotives, railroads run older locomotives until they are no longer operational as a cost-saving measure. Rail workers and communities, particularly at-risk communities, suffer health consequences as a result. We believe that the railroads should be regularly upgrading their existing locomotives to reduce emissions, as they once did, while zero emission locomotive technologies continue to mature.

Achieving the DOE’s goal of net-zero carbon emissions in the rail sector by 2050 will require several interim steps in reducing emissions and retrofitting locomotives is a fundamental part. The purposeful lack of progress by the railroads in retrofitting locomotives over the past decade is a huge barrier to the DOE’s goal and the pace of retrofits is going to have to dramatically accelerate from the rate of retrofits the last few years. Therefore, we strongly encourage the DOE to prioritize and/or require retrofits to existing locomotives as an interim measure while the full transition to zero-emission rail propulsion technology continues to progress.

Retrofits to existing locomotives, along with eventual technological upgrades, should utilize the existing rail workforce and not contractors, to the extent practicable to carry out this work. In recent years, Class I railroads have increasingly contracted out this and similar work, in many cases to non-RLA covered workers, while cutting their existing in-house mechanical workforces by upwards of 40% since 2015. These actions have undermined the existing rail workforce and reduced the railroads’ capacity to retrofit existing locomotives. As it stands, the railroads simply do not have the internal workforce levels and capacity to take the steps necessary to meet the DOE's goal of net-zero carbon emissions in the rail sector by 2050. The DOE should take strong steps to ensure the workforce necessary to do this work exists otherwise future emissions and climate goals will not be achievable.

⁴ CARB, 2021 Class I Line Haul Locomotive Emission Inventory, February, 2021 (weblink: <https://ww2.arb.ca.gov/sites/default/files/2022-07/2021%20LineHaul%20Locomotive%20Emission%20Inventory%20%28Final%29%202022%20July%20Update.pdf>).

In addition, recipients of federal funding, including federal funding awarded by other entities such as States, used to upgrade existing locomotives or purchase new locomotives who seek to eliminate jobs through adoption of zero-emission technology must be subject to employee protective conditions modeled on, and not less protective than those required by Section 516 of the 4R Act or requirements equivalent to those protections. These requirements include publishing a plan to fulfill their promises to their existing workforce and transitioning current workers into changing or newly-created jobs. In addition, as required by Section 516, rail labor unions must be given advanced notification of procurements and workforce impact assessments including potential job displacements or significant changes in responsibilities due to the introduction of new technologies to employee representatives. The right of first refusal must also be provided for existing employees to newly-created jobs and the terms of implementing zero-emission and other new technology must also be mandatory subjects of collective bargaining. These steps are necessary to ensure that the existing rail workforce is not harmed by the transition to zero emission propulsion technology.

The labor movement stands united in our support for good, middle-class jobs; policies that address climate change; and safe transportation that brings equitable benefits to communities across the country. To meet our climate goals while ensuring good union jobs, the rail workforce must be front of mind as the federal government works to transition to net-zero emission propulsion technologies. We believe the recommendations in this response are necessary in order to comply with and achieve the goals in President Biden's November 2021 Executive Order Establishing Priorities and Task Force for Implementation of the Bipartisan Infrastructure Law⁵ and December 2021 Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability.⁶ Therefore, we urge the DOE to utilize the information collected through this RFI to ensure that rail workers are front and center as DOE develops a roadmap to achieve its stated goal of net-zero carbon emissions in the rail sector by 2050.

We appreciate the opportunity to respond to this request for information and look forward to working with the DOE in the future.

Sincerely,



Greg Regan
President

⁵<https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/15/fact-sheet-president-bidens-executive-order-establishing-priorities-and-task-force-for-implementation-of-the-bipartisan-infrastructure-law/>

⁶<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/12/08/executive-order-on-catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability/>