Cover Letter

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To the Editors of The Energy Journal,

We are pleased to submit our manuscript entitled **“A Sectoral European Hydrogen Demand Curve”** for consideration for publication in *The Energy Journal*.

This study addresses a critical and timely question in the energy transition: How much green hydrogen can be expected to be adopted by European industry and transport sectors under market-driven conditions? How can we accelerate adoption with support policies and at what cost? While much of the existing literature focuses on supply-side modeling or normative pathways to net-zero, our work offers a novel demand-side perspective by constructing a sectoral green hydrogen demand curve based on willingness-to-pay and technology diffusion modeling.

Using a system dynamics framework, we simulate investment behavior across hard-to-abate sectors in Europe, accounting for techno-economic competitiveness, sectoral inertia, and endogenous learning effects. Our findings show that without substantial policy support, green hydrogen adoption remains limited before 2040. We estimate that a subsidy of 2–4 €/kg produced hydrogen is required to align sectoral WTP with projected production costs and stimulate early investments. However, we also highlight the risk of inefficient resource allocation if subsidies are not carefully targeted—particularly in sectors where electrification is a more cost-effective decarbonization pathway.

We believe this article makes a significant contribution on how market conditions, technology costs, and energy policy design drive diffusion of hydrogen-based technologies in hard-to-abate industry and transport sectors. It is particularly relevant to *The Energy Journal*’s readership interested in market-based energy transitions, sectoral modeling, and the design of effective support mechanisms for emerging energy carriers.

We confirm that this manuscript is original, has not been published elsewhere, and is not under consideration by any other publication. All authors have approved the manuscript and have no conflicts of interest to declare.

We appreciate your consideration and look forward to the opportunity to contribute to *The Energy Journal*.

Sincerely,  
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On behalf of all co-authors  
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