



February 28, 2022

Submitted electronically via email to [Industrial-Decarb-RFI@ee.doe.gov](mailto:Industrial-Decarb-RFI@ee.doe.gov)

Mr. Keith Jamison  
Technology Manager  
Advanced Manufacturing Office (AMO)  
US Department of Energy (DoE)

Re: Docket ID No. DE-FOA-0002687

Dear Mr. Jamison:

The Vinyl Institute<sup>1</sup> (VI) appreciates the opportunity to submit comments on the request for information (RFI) on Industrial Decarbonization Priorities.<sup>2</sup> The VI launched the Vinyl Sustainability Council (VSC) to serve as the collaboration platform which provides all members of the vinyl value chain an opportunity to participate in advancing sustainability efforts across the industry. The VI and VSC are continually seeking to advance sustainability, with a high priority set on the reduction of carbon intensity and direct emissions from the vinyl value chain.

Together, the VI and VSC support the AMO effort to solicit industry feedback to identify the greatest opportunities to reduce energy consumption and emissions through impactful RD&D opportunities. Our comments below are intended to illustrate how the vinyl industry is well aligned with the interests of the AMO through the development of our own deep decarbonization industry roadmap, expected to be completed in 2022.

The long useful life and durability of vinyl products, as well as the growing recovery and recycling of PVC are factors that are already contributing positively to the overall low embodied carbon (life cycle phases A1 through A3) of PVC products relative to alternatives. We have emphasized the development and expanded use of environmental product declarations, and have committed ongoing resources to industry-leading programs to advance supply chain transparency and reduction of carbon intensity, including the Embodied Carbon in Construction Calculator (EC3) tool. We have also strongly advocated the vinyl value chain to responsibly increase the use of recycled content in PVC formulations as a means of reducing the carbon intensity of PVC products, while continuing to deliver safety and performance.

Decarbonization in the production of resin will pay added dividends to federal, state and local governments in terms of expanding access to clean water and sewerage systems, while reducing the energy required to operate those systems. Today, the difference in electrical power consumption between municipal water pumped through PVC pipe and two leading alternatives could power

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<sup>1</sup> The Vinyl Institute (VI), established in 1982, represents the leading producers of vinyl resins and monomers, and ingredient and additive producers for vinyl compounds in the United States. The VI serves as the collective voice for the vinyl industry. More information can be found at [www.vinylinfo.org](http://www.vinylinfo.org).

<sup>2</sup> EERE T 540.111-02: Request for Information (RFI), DE-FOA-0002687: Request for Information on Industrial Decarbonization Priorities, Jan. 27, 2022.

thousands of homes annually if applied across the entire network of piping across the country<sup>3,4</sup>. Reducing power requirements for pumping water benefits rate payers as well as the environment.

The Vinyl Institute is undertaking the development of a deep decarbonization roadmap, which will identify existing and emerging decarbonization technologies that could have the most impact on the vinyl industry by 2030 and 2050. Some of the technologies that are already being deployed include:

- Carbon capture and storage
- Fuel switching / increased use of hydrogen to displace natural gas to operate thermal crackers
- Electrochemical and catalytic chlorination technology
- Less carbon-intensive gas feedstocks

The Vinyl Institute, Vinyl Sustainability Council, and member companies across the vinyl value chain are driving awareness of these and other new GHG emission reduction technologies. Some technologies have been proven at pilot scale, and the owners of these technologies have been invited to share their progress toward commercial demonstration with industry participants.

The roadmap we are developing will identify the key barriers and limiting factors for the industry to deploy decarbonization technologies. Unproven but promising transformative technologies would employ new methods of production, perhaps leading to the next step change in an excellent track record of continuous improvement by the vinyl industry to reduce emissions and to benefit community and worker health. By partnering with the vinyl industry to bring these technologies to life, the US Department of Energy could accelerate the benefit to the communities where we operate. In addition to the environmental health benefits, this would also create opportunities for new and safe well-paying jobs to expand the production of the lowest-carbon piping infrastructure products available.

We hope that our comments provide a sense of how the vinyl industry is aware of and committed to the goal of sector decarbonization, while also providing a sense of the tremendous benefits that the federal government can realize by collaborating with the vinyl industry through effective policy and targeted funding opportunities. VI would appreciate the opportunity to meet with DoE to discuss the deep decarbonization work we are undertaking in more detail, in addition to our participation with other influential groups working on similar projects in the chemicals sector. In the interim, please feel free to contact me with any questions.

Sincerely,

Domenic DeCaria  
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The Vinyl Institute  
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<sup>3</sup> Sustainable Solutions Corporation, "Life Cycle Assessment of PVC Water and Sewer Pipe and Comparative Sustainability Analysis of Pipe Materials," April 2017.

<sup>4</sup> "1 Introduction." National Research Council. 2006. Drinking Water Distribution Systems: Assessing and Reducing Risks. Washington, DC: The National Academies Press. doi: 10.17226/11728.