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U.S. Department of Energy
Office of Clean Energy Demonstrations
1000 Independence Ave., SW
Washington, DC 20585

Submitted via email to keith.boyey@hq.doe.gov

RE: OCED-RFI-23-1; Request for Information on the Department of Energy's Use of Demand-side Support for Clean Energy Technologies

BP America Inc. ("bp"),¹ is pleased to submit a response to the request for information ("RFI") issued by the Department of Energy ("DOE") Office of Clean Energy Demonstrations ("OCED") regarding development of demand-side support measures for clean energy technologies at DOE.

At bp, we aim to help the world's energy system become more secure, affordable, and lower carbon. Our ambition is to be a net-zero company by 2050 or sooner, and to help the world get there, too. To reach this ambition, we are investing in bioenergy, renewables and hydrogen, as well as EV charging and convenience. We plan to allocate over 40% of our capital expenditures to these transition growth engines by 2025 and around 50% by 2030. bp supports the Biden Administration's goal of reaching net zero by 2050. Accelerating meaningful action on climate requires close cooperation among governments, companies, and consumers – and this is the critical decade.

Much of U.S. policy making has been oriented toward lowering the cost of production for clean energy technologies. This strategy has great potential to be effective for Nth-of-a-kind production, after technologies have had greater opportunity to mature and reach scale and lower costs. Many of the clean energy technologies we are currently exploring represent first-of-a-kind production, which may include costs that are not completely mitigated by production support policies. In these early stages, demand-side support is essential to accelerating development and reaching Nth-of-a-kind stages.

¹ BP America Inc. is a subsidiary of BP plc. "bp" is used interchangeably herein to refer to BP America Inc., BP plc, another subsidiary, or the group of companies collectively.



Our comments below seek to address the questions raised in the DOE's request for information. These responses are provided for informational purposes only.

Category A: Most effective demand-side support measure for given technologies:

- 1. What are the potential benefits and drawbacks of DOE implementing demand-side support measures in a given industry (e.g., carbon dioxide removal, hydrogen, low-carbon cement and concrete, low-carbon steel, sustainable aviation fuels)? (Please specify the technology or technologies in question.) In this question, DOE is not seeking input on the implementation approach.**

The implementation of demand-side support measures by DOE for clean hydrogen has the potential to advance development by bridging the cost gap between the market for clean hydrogen and both the supply-side policies that exist. Currently, clean hydrogen development stands to benefit from two forms of supply-side policies. The DOE's HydrogenShot² goal of reaching a production cost of \$1 for 1 kilogram of hydrogen in a decade is the first supply-side policy that has been established to advance clean hydrogen in this decade. Through partnerships, grants, and other funding opportunities, DOE has supported the advancement of clean hydrogen production in its most nascent stages. The recently enacted clean hydrogen production tax credit (45V)³ is intended to advance the next stage of clean hydrogen development. Having built on earlier experience and support of DOE through the HydrogenShot program, producers are now more willing to move into commercial-scale production. The 45V credit is intended to enable that product to move into the market by lowering the cost of production and bringing clean hydrogen closer to parity with traditional hydrogen production.

While these programs are helpful in lowering the overall cost of producing clean hydrogen, it is very likely that they will not be sufficient to enable the displacement of traditional hydrogen in all use cases or to enable the displacement of other higher carbon fuels, even where hydrogen carries all of the necessary attributes to meet the needs of the end-user. Recent work by the Energy Futures Initiative found "there will be a cost gap between the supply-side incentives of the IRA and the conditions needed to kickstart demand for most commercial use cases."⁴

- 2. What would be the most effective demand-side support measure DOE could use to support commercial scale-up of a given technology (e.g., reverse auctions, advanced market commitments, contracts-for-difference, direct procurement, pooled offtake vehicles)? (Please specify the technology or**

² USDOE, Hydrogen and Fuel Cell Technologies Office, "Hydrogen Shot," launched June 7, 2021.

<https://www.energy.gov/articles/secretary-granholm-launches-hydrogen-energy-earthshot-accelerate-breakthroughs-toward-net>

³ White House, "Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action, Version 2" p 74. January 2023. <https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf>

⁴ Energy Futures Initiative, "The U.S. Hydrogen Demand Action Plan." February 2023. <https://energyfuturesinitiative.org/reports/the-u-s-hydrogen-demand-action-plan-2/>



technologies in question.) In this question, DOE is not seeking input on the implementation approach.

As discussed above, existing supply-side policies alone are likely insufficient to scale-up clean hydrogen deployment and will benefit from demand side support as well. For example, demand-side policies can target specific sectors and applications where hydrogen is most applicable such as the industrial sector or heavy-duty transport. Support will help potential hydrogen users to switch by offsetting retrofit costs and related infrastructure costs such as distribution and storage. In the UK a Contract for Difference (CfD) approach is being used to help subsidize hydrogen production, whereas in the EU, a Carbon-Contract for Difference (CCfD) approach is being used. These approaches can help support acceleration of technology learning curves and also reduce volume and price risks. If such mechanisms are considered by the DOE, bp recommends that CfDs/CCfDs be allocated via a competitive process and that the contract duration is of sufficient duration to ensure cost-efficient financing and price stability (e.g., project lifespan).

In addition to CfDs/CCfDs, other demand-side actions that can help include support related to transport infrastructure (e.g., hydrogen pipelines, storage, terminals) along with market “pull” incentives to help enable faster deployment and use of low carbon products (e.g., green steel, green cement) and standards.

Conclusion

bp applauds DOE’s continued efforts to enable a transition to clean energy technologies in a cost-effective manner. We believe that a fundamental aspect of the energy transition will be our ability to supply the energy that consumers need and want in a way that maintains the security of its supply and its affordability. We appreciate the opportunity to submit these responses and welcome the opportunity to meet with DOE to discuss these issues as OCED further considers demand-side support measures for clean energy technologies. Please contact Marcus Koblitz at marcus.koblitz@bp.com or Poh Boon Ung at PohBoon.Ung@bp.com if you have additional questions.

Respectfully submitted,

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