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Additional submitted attachment is included below.

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California Energy Commission
MS Dockets Office, MS-4
Re: Docket No. 17-IEPR-01
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Request for Public Comments on the Scoping Order for the 2018 Integrated Energy Policy Report Update

The National Fuel Cell Research Center (NFCRC) submits these comments on the Scoping Order for the 2018 Integrated Energy Policy Report Update, as established by the California Energy Commission's 2018 Integrated Energy Policy Report Lead Commissioner, David Hochschild.

I. Introduction

The NFCRC facilitates and accelerates the development and deployment of fuel cell technology and fuel cell systems; promotes strategic alliances to address the market challenges associated with the installation and integration of fuel cell systems; and educates and develops resources for the various stakeholders in the fuel cell community. A primary mission of the NFCRC is to enable the improvement of air quality and reduction of greenhouse gas emissions through increased use of distributed generation and clean energy sources.

II. Comments

The NFCRC affirms the recognition that the grid requires additional support to increase the penetration of renewable generation sources, while maintaining resiliency and reliability. Key

technologies that are required, for example, include electric batteries, hydrogen, and clean 24/7 load-following power generation, capable of eventually operating on renewable hydrogen.

This being said, the NFCRC is concerned that the Scoping Order does not balance an emphasis on the reduction of greenhouse gas emissions with equal attention to local and community health impacts associated with degraded air quality, and recommends that the IEPR go beyond decarbonization and more profoundly address eliminating combustion generation sources (de-combustion) on the grid and locally.

A. First Section

The first section of the Scoping Order proposes to review the implementation of energy policies under the Brown administration and the role of these policies in establishing California's leadership in clean energy. Topics in the first section appear to focus solely on greenhouse gas emission reduction, and should explicitly include a review of AB 617 as well. AB 617 has been groundbreaking in its focus on tracking the local emissions of criteria air pollutants and toxic air contaminants, and facilitating the replacement of emitting resources in the locations where the population experiences the most direct negative consequences of these emissions. The NFCRC recommends that the Energy Commission include the removal of combustion generation, beyond decarbonization, to recognize the importance of AB 617 objectives and to support the substantial undertaking of the California Air Resources Board and the air districts in the short-term. The IEPR should recommend long-term policy that would prevent future proliferation of pollutant and GHG-emitting combustion transportation and stationary sources and directly improve air quality.

B. Second Section

The second section of the IEPR Update proposes addressing the issue of:

"Working to ensure that low-income and disadvantaged communities have an opportunity to participate in and benefit from advancements and investments in

energy efficiency, renewable energy, and clean transportation."

Again, ensuring that low-income and disadvantaged communities have access to benefits requires inclusion, beyond GHG emission reduction, of (1) criteria air pollutants, and (2) toxic air contaminants. AB 617 was a major cornerstone of legislation in 2017, and its statewide implementation is complex. Addressing this California energy priority, and the direct positive impact it will have on air quality and local communities, must be addressed in a truly integrated energy policy. In particular, by focusing only on decarbonization, rather than more broadly on the elimination of combustion sources, the Energy Commission misses the opportunity to address (1) the most harmful health issue, and (2) the greatest positive short-term impact for air quality and long-term impact for public health.

The NFCRC fully supports the consideration of grid reliability in the second section as the primary need for integrating renewable resources and sees this as the primary enabler to decarbonization and "de-combustion":

"Maintaining the reliability of the electricity system while integrating increasing amounts of renewable energy."

The IEPR should refer specifically to resiliency, in addition to reliability. While the grid must operate consistently and reliably, key energy sources are required to complement a high penetration of solar and wind, and assure resiliency as well as reliability. This topic is the critical enabler of additional renewable generation and should be included in the review of *"Increases in renewable energy, both large-scale and distributed renewable energy resources"* that is listed as a topic in the first section. Specifically, to address the dynamics associated with the diurnal variation, intermittency, and limited capacity factor of high penetrations of renewable resources, widespread introduction of complementary energy storage and 24/7 clean, load-following power generating technologies are required[1] and the Energy Commission inclusion of these technologies is both appropriate and necessary.

[1] J. D. Eichman, F. Mueller, B. Tarroja, L. S. Schell, and S. Samuelsen, "Exploration of the integration of renewable resources into California's electric system using the Holistic Grid Resource Integration and Deployment (HiGRID) tool," Energy, vol. 50, pp. 353–363, 2013.

III. Conclusion

The NFRC appreciates the opportunity to review and comment on the Scoping Order for the 2018 IEPR and recommends that any discussion on decarbonization should also more generally include the removal of combustion, to additionally ensure direct community impact by including the local reduction of air pollutants and air toxics and improving air quality. The IEPR Update rightly proposes to include a review in the first section of how to better enable the largest penetration of renewables while maintaining a reliable and resilient grid, and should ensure synergy between this review and the proposal of how to address this issue in the second section.

Respectfully submitted,

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