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December 26, 2019

Re: Carbon Neutrality: The Role of Carbon Capture, Sequestration, and Options for Utilization

Dear Chair Nichols and Honorable California Air Resources Board,

Southern California Edison (SCE) appreciates the opportunity to provide comments on the California Air Resources Board's (CARB's) December 11, 2019, workshop, *Carbon Neutrality: The Role of Carbon Capture, Sequestration, and Options for Utilization.*

SCE strongly supports a robust evaluation and analysis of the key questions outlined in CARB's workshop materials:

1. What are the biggest barriers to near-term deployment of capture technology, and what actions can industry and policy-makers undertake to overcome these barriers?
2. How can existing infrastructure be transitioned to process, transport, store and monitor CO2?
3. What are the tradeoffs between reducing fossil fuel combustion versus relying on carbon capture and sequestration for achieving our deep decarbonization goals?

SCE's *Pathway 2045*[1] maps out a feasible and low-cost path to meeting California's long-term decarbonization and carbon neutrality goals. In this path, economy-wide decarbonization is achieved through deep decarbonization of the electric sector, significant electrification of transportation and buildings coupled with advanced energy efficiency, and the use of low-carbon fuels for hard-to-electrify applications. To achieve carbon neutrality, the remaining carbon must be removed from the atmosphere and sequestered, either biologically or physically. Affordable and mass deployment of carbon sequestration is a significant challenge requiring development and commercialization of emerging sequestration technologies and processes. While it is important for California to begin exploring sequestration mechanisms, this exploration and development should be done simultaneously with continuing to advance the investments in, and implementation of, decarbonization strategies across all sectors.

To understand, assess, and develop opportunities for affordable carbon sequestration, additional research that directly compares the differing carbon capture and sequestration technologies is key. SCE recommends that the research, at a minimum, should analyze the following for each technology:

- Carbon abatement potential;
- Estimated deployment schedules (many of the technologies as nascent solutions);
- Barriers to deployment (e.g. cost, potential heavy-water usage, energy-intensity, carbon storage/sequestration capacity needs, etc.); and

[1] SCE's *Pathway 2045: Update to the Clean Power and Electrification Pathway* (2019) can be found at https://www.edison.com/home/our-perspective/pathway-2045.html.

- Policy changes needed to accelerate deployment.

Understanding the technology features above will help CARB and other policy-makers understand the trade-offs between each technology and which suites of technologies are viable for meeting California's 2045 carbon neutrality goals. This analysis will also be critical in informing how carbon sequestration technology, carbon capture technology, and natural and working lands will impact the GHG accounting in the next Scoping Plan.

Very truly yours,

/s/

Jered Lindsay