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Comment Received From: Deepika Nagabhushan
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Pathway risk, cross-sector synergies, include T&D losses

Please see the attached letter.

Thanks,
Deepika Nagabhushan

Additional submitted attachment is included below.

CLEAN AIR TASK FORCE

March 2, 2020

California Energy Commission,
California Public Utilities Commission,
California Air Resources Board

Re: Comments on the Senate Bill 100 Modeling Inputs and Assumptions Workshop held in Sacramento on February 24, 2020

Dear Chair Hochschild, Chair Nichols and Commissioner Randolph:

Thank you for hosting this joint agency workshop to accept stakeholder inputs. We would like to make two points:

First, pathway risk should be considered, and if possible modeled.

- For example, much modeling assumes a world in which anything can be built anywhere, including a copper plate transmission assumption. Most analysis to date in California and elsewhere suggests that the size of decarbonized energy system serving an electrified economy will need to be at least two times larger in Gigawatts than today's system, and, in land area, orders of magnitude larger for high renewable penetration scenarios than in diverse scenarios with higher density power sources. The TNC study is a good start in framing this issue. But we would suggest the CEC consider scenarios with significantly restricted land use specific to California beyond TNC's current four tiers, compared to a California theoretical buildout.
- A second area of quantifiable concern is climate-related risk. Some work has been done to suggest that a warming climate may reduce wind speeds and hydro reservoir volumes. Fire risk to electric transmission is another probability, which may need to be compensated for with undergrounding or simply less transmission build. In any case, relying on past weather years may not be a good guide to the future. We would urge that you consider stress testing the core scenarios against major climate-related risks.

Second, the study should take into account cross-sector synergies and joint costs. For example, CCS and hydrogen production may well be needed for industry and for zero carbon transportation fuel. This offers the opportunity for shared infrastructure costs and higher utilization rates and may this lower the costs of hydrogen and CCS appropriate to put into the models.

Finally, we restate our written comments that we submitted in Fall 2019, that modeling should include all generation necessary to serve California load, including T and D losses. To do otherwise would be to potentially stop well short of SB 100 to create a zero-carbon grid and defeating the emissions shuffling provisions of the law.

Thank you again for hosting this workshop and I look forward to continued conversation and engagement on this topic.

Sincerely,
Deepika Nagabhushan
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