

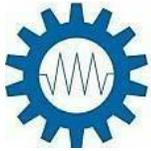
**DOCKETED**

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*Comment Received From: Vince Wiraatmadja*  
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**IHI Comments on Draft 2021 SB 100 Report**

*Additional submitted attachment is included below.*



## **IHI POWER SERVICES CORP.**

IHI Power Services Corp.  
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December 18, 2020

California Energy Commission  
California Air Resources Board  
California Public Utilities Commission

**Re: Docket No. 19-SB-100- SB 100 Joint Agency Report: Charting a path to a 100%  
Clean Energy Future**

Thank you for the opportunity to comment on the Draft 2021 SB 100 Joint Agency Report. We appreciate the effort of all who contributed to it and the thorough, deliberative and transparent process that supported the development of this initial report.

IHI Power Services is the largest biomass power provider in the state and has been contributing to the state's renewable energy and environmental goals for decades. We own and operate three plants in California, including Chinese Station and the Rio Bravo plants. These plants, along with other remaining biomass plants in California, provide firm, zero-carbon power – which the Draft Report highlights as essential to avoiding a vast overbuild and inefficient use of variable renewable resources and short-duration storage.

Our previous comments in this docket describe the wide range of additional benefits offered by biomass power plants, including benefits to local and rural economies, forest health and wildfire prevention, watersheds and water availability, short-lived climate pollutant reductions, and public health. We encourage the joint agencies to more completely account for these economic and social benefits in your ongoing analyses.

We appreciate the limited scope of the modeling conducted for this analysis, and that accordingly, the Draft Report doesn't fully explore practical issues like reliability, resiliency, and land use. This has the effect of diminishing the apparent value of resources like biomass, while artificially inflating the role of a limited set of resources based solely on assumed levelized costs. Certainly, resources like solar and batteries will play a key role in our evolution to a cleaner grid, and IHI is investing in those projects. But a practical, reliable and resilient clean energy grid will

require a diversity of resources – including biomass – and we encourage you not to dismiss this critical resource for California. We are heartened by the Draft Report’s recognition that resource diversity reduces costs, as well as commitment to additional analyses – which we expect will help highlight the value of biomass power and a more diverse resource portfolio than presented in the initial scenarios.

As part of the additional analysis, we also encourage the joint agencies to more directly tie SB 100 implementation to California’s carbon neutrality goals. The scenarios presented don’t appear to prioritize greenhouse gas emission reductions, let alone achieve net-zero emissions as soon as possible and then maintain negative emissions thereafter, as required by the carbon neutrality Executive Order. And this is despite widespread recognition that the electricity sector is likely to be the easiest and quickest to decarbonize.

The state should rely on the electricity sector to pace its achievement of carbon neutrality and net-negative emissions. In future analyses, we encourage you to explore scenarios that achieve maximum greenhouse gas reductions in the electricity sector, including achieving negative emissions to support economy-wide carbon neutrality. Doing so requires replacing the ongoing role of natural gas plants with firm, zero carbon resources like biomass and exploring opportunities around carbon capture and sequestration (CCS).

Indeed, the potential here is significant. In “[Getting to Neutral](#),” 25 scientists from Lawrence Livermore National Laboratory and other institutions explore the potential for biomass power with CCS and other technologies to achieve negative emissions in California. Remarkably, they find that biomass power plants with CCS could contribute 75 million metric tonnes CO<sub>2</sub> per year (MMTCO<sub>2</sub>/yr) of negative emissions, *by 2025* (see Table 43). When including the avoided emissions from the power sector, as well, total emissions benefit in 2025 from biomass power plants with CCS could be as much as 119 MMTCO<sub>2</sub>/yr (see Table 44). The report estimates that this could be achieved at a weighted-average cost of \$30/MTCO<sub>2</sub>, which is well below the social cost of carbon at a 2.5% or 3% discount rate, as identified in the Draft Report, as well as the estimated cost of most of the State’s climate programs as estimated in the most recent [Scoping Plan](#) (see Table 10).

The promise here is undeniable. Including biomass with CCS in the State’s SB 100 implementation plan could quickly take the electricity sector not just to carbon neutrality, but well below it. For context, according to [CARB’s greenhouse gas inventory](#), emissions in the electricity sector were 63 MMTCO<sub>2</sub> in 2018. (Coincidentally, emissions from all passenger vehicles in the state were also 119 MMTCO<sub>2</sub> in 2018, suggesting the potential around biomass power plants is equivalent to taking every car in California off the road – all 25+ million of them – within five years.)

Capturing this promise will require a new approach to biomass and prioritizing utilization of waste resources. Just as the Draft Report highlights “The Evolving Role of Geothermal,” we

encourage you to similarly highlight an evolving role for biomass in the final report, and to take further steps at your agencies to quickly enable these outcomes. We are eager to partner with you on a plan to capture this tremendous opportunity, and we are ready to invest in our existing plants to evolve their role in-line with the promise of SB 100 and a carbon neutral future for California.

Sincerely,

Steve Gross  
President and CEO  
IHI Power Services Corp.