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DENSO Comments to Clean Hydrogen Program

DENSO is in agreement with the goals and objectives of the Clean Hydrogen Program and would like to request the CEC to reconsider the requirements pertaining to the "Onsite Hydrogen Production and Use" Category.

See slide 20 of the December 1, 2022 CEC presentation.

Specifically, we are requesting:

- 1) The Scale of 1-5 metric tons per day be lowered from 1-5 metric tons per day to 0.1 - 0.5 metric tons per day
- 2) Technology Readiness Level (TRL) be reduced from 6 to 3

Rationale for Request #1: Lower Production Scale

1. Risk Aversion – Begin activity with lower CAPEX to establish a framework for larger deployment. Project can be scaled up when appropriate/needed (while infrastructure and storage is permitted and deployed). Larger production requirement = larger CAPEX investment.
2. Electrolysis efficiency can be improved +10% if coupled with waste heat process.
3. Smaller scale units can be co-located with Offshore Wind on platform
4. Flexible & strategic deployment / demonstration paths (non-industrial scale product)
5. Decentralized production of H₂, Modular design, Transportable

Rationale for Request #2: Lower TRL

1. TRL can be accelerated with potential additional funding from DoE
2. Potential joint project with Toyota for fuel cell based generator
3. Solid Oxide Electrolyzer technology is not yet widely available compared to PEM and provides considerable efficiency advantages