

DRAFT SB 671 Information Needed

The following information is needed to develop background information and identify barriers and recommended solutions for the Senate Bill 671 assessment.

A. Fact Sheets

The SB 671 assessment will include a series of fact sheets covering topics relevant to freight and zero-emission infrastructure. The purpose of the fact sheets is to provide the audience of the report with a base level of knowledge so that they can understand the barriers and recommendations discussed later in the report. The audience for the report is legislators and policymakers. The goal is to keep the fact sheets relatively short, no more than three pages, but preferably one or two pages if possible, and to include visualizations whenever possible.

Please provide fact sheet information for the following topics.

1. Freight Business Plan Economics
2. Drayage Sector Business Model
 - a. Fleet Operations
 - b. Independent Owner/Operators
3. Long-Haul Business Model
4. Truck Use Cases
5. Understanding Port Operations (include drayage truck registry)
6. Sources of Alternative Energy
7. Energy Distribution - type of transmission lines are required for heavy-duty charging?
8. Battery Storage and Micro-Grids – what are they, what is needed, how can they improve operations?
9. Liquid Hydrogen Distribution
10. Installation Process for Electric Charging and Hydrogen Re-Fueling Stations
11. Energy Demand - What is the Estimate of California Energy Demand for the Freight Sector?
12. Regulatory Framework and Timing
13. Engine Manufacturers
14. Understanding Rail Operations
15. Freight Forwarders
16. Warehousing/Logistics Sector

DRAFT SB 671 Information Needed

B. Questions Applicable to both Electric and Hydrogen Re-Fueling Heavy-Duty Vehicle Charging Infrastructure

Your responses to these questions will serve as the basis for the barriers and recommended solutions that are included in the report. When you respond to the questions below, please make it clear whether you are referring to electric charging infrastructure, hydrogen re-fueling infrastructure or both.

1. Where are existing heavy-duty vehicle charging/re-fueling stations (if you have not already provided this information)?
2. Where are planned heavy-duty vehicle charging/re-fueling stations (if you have not already provided this information)?
3. Where is there usable space for heavy-duty vehicle charging/re-fueling infrastructure?
Please keep in mind the clean freight corridors that have been recommended by workgroup members when responding to this question, and where possible, identify locations relevant to the recommended clean freight corridors.
4. What is the total number of heavy-duty vehicle charging and refueling stations needed along the clean freight corridors identified by the workgroup?
5. Considering the California Air Resources Board's proposed Advanced Clean Fleets regulation, what is the total number of the heavy-duty vehicle charging and re-fueling stations needed to support this rule?
6. Related specifically to zero-emission infrastructure on or near the border of Arizona and Mexico, are you aware of any projects that would create infrastructure on the non-California side of the border that is near our border? Do you have any ideas or contacts you suggest we reach out to if we want to gather ideas for projects like this?
7. What is the approximate cost of constructing an electric charging and hydrogen re-fueling station?
 - For electric charging, this includes the cost of back-up power, micro-grids, and any other related infrastructure.
 - For hydrogen re-fueling, this includes the cost to distribute the hydrogen to the station and the cost of storing liquid hydrogen at the station.
8. Do you have any ideas about how to finance the construction of heavy-duty vehicle charging/re-fueling infrastructure?
9. What, if any, public subsidies do you think are needed to enable the construction of the heavy-duty vehicle charging and re-fueling infrastructure?

DRAFT SB 671 Information Needed

10. Do you have any ideas for how to keep the costs of buying electricity or liquid hydrogen down?
11. What do you think of the idea of establishing a consortia of industry sector partners who are responsible to buy their own sources of energy?
12. In the past, gas station owners took on the cost of operating and maintaining gas and diesel stations. For zero-emission infrastructure, this responsibility is shifting. Who is or will be responsible to operate and maintain heavy-duty vehicle zero-emission charging/re-fueling infrastructure for your organization or the organizations you represent?
13. What are the actual or estimated ongoing costs of operating and maintaining a heavy-duty vehicle charging and/or re-fueling station? How is your organization currently funding or planning to fund these costs?
14. Do you have any ideas about how to finance the ongoing operation and maintenance of heavy-duty vehicle charging/re-fueling infrastructure?
15. Do you have any ideas for a good business model that would make the operation and maintenance of a heavy-duty vehicle electric/hydrogen re-fueling station more manageable? Are there different business models needed for different use cases?
16. In the short-term, will your organization, or the organizations you represent, be able to make a profit if the organization is responsible for the cost of buying and maintaining the percent of zero-emission freight vehicles required in the California Air Resources Board's proposed Advanced Clean Fleets regulation and for the cost of constructing, operating, and maintaining the infrastructure needed to support those vehicles? If you know, please include what those total costs will be.
17. In the long-term, will your organization, or the organizations you represent, be able to make a profit if the organization is responsible for the cost of buying and maintaining the percent of zero-emission freight vehicles required in the California Air Resources Board's proposed Advanced Clean Fleets regulation and for the cost of constructing, operating, and maintaining the infrastructure needed to support those vehicles?
18. Do you have any ideas about how your organization can remain profitable in light of the shift to zero-emission freight?
19. How many heavy-duty vehicle charging/re-fueling stations will your organization need to have completed by 2023 (for drayage trucks), 2025, 2027, and 2030 to comply with the California Air Resources Board's proposed Advanced Clean Fleets regulation? How many stations does your organization currently have completed? What is your estimated timeline for completion of the necessary charging/re-fueling stations?
20. What zoning needs and challenges do organizations face when trying to install heavy-duty vehicle charging/re-fueling infrastructure?

DRAFT SB 671 Information Needed

21. When are general plan amendments needed?
22. What is the typical timeframe to get through CEQA?
23. What other permits are required and what are those timeframes?
24. Is there any collaboration with utility companies needed, and if yes, what does that look like and what timeframes are associated with that?
25. What is the estimated timeframe of constructing heavy-duty vehicle charging/re-fueling infrastructure?
26. In general, what are the largest the challenges involved in the process of constructing heavy-duty vehicle charging/re-fueling infrastructure?
27. Are there any policy changes, including proposed legislation, that could be made to help address any of the challenges identified above?
28. Do you have any other recommended solutions or ideas for how to make the construction and ongoing operations and maintenance of heavy-duty vehicle charging/re-fueling infrastructure better or easier?
29. Do you have any recommendation about how to quantify the benefits associated with constructing new charging/re-fueling infrastructure?

C. Battery Electric Heavy-Duty Vehicle Charging Infrastructure Questions

1. Where is there sufficient grid capacity right now for heavy-duty vehicle charging projects? In other words, where are there sufficient power sources that have been identified, and either existing electric transmission lines that can carry the energy needed to the planned project site or an established path forward for creating those additional lines?
2. For existing and planned heavy-duty vehicle electric charging infrastructure affiliated with your organization, how much energy is needed or will be needed in the future to support charging?
3. Do you have any ideas for sources of alternative energy that could be used, and how those options could be developed?
4. What kind of back-up power is needed to support the heavy-duty vehicle electric charging infrastructure in your existing or planned projects?

D. Hydrogen Fuel Cell Heavy-Duty Vehicle Re-Fueling Infrastructure Questions

1. What is the minimum amount of space needed for heavy-duty vehicle hydrogen refueling stations?

DRAFT SB 671 Information Needed

2. What amount, on an annual basis, of liquid hydrogen is needed to support heavy-duty hydrogen vehicles in California?
3. What is the estimated timeframe in which refineries will be able to produce the hydrogen needed to support heavy-duty re-fueling infrastructure needs?
4. How much time is needed to get to a place where the clean hydrogen required by the California Air Resources Board can be made available on the scale needed to support heavy-duty charging in California?
5. Do you have any ideas for how to keep the costs of buying liquid hydrogen down?
6. Are there any other logistical needs we should take into consideration when determining what is a good location for heavy-duty vehicle hydrogen re-fueling stations?

E. Other Questions

1. **Freight throughput projects.** Senate Bill 671 requires us to include any recommended throughput improvements. This is a good opportunity to highlight the benefit of projects that will increase freight throughput. Please include a description of any existing or planned project you would like to include in the assessment that increases freight throughput.
2. **Safety projects.** Senate Bill 671 requires us to include recommended safety improvements. Please include a description of any existing or planned safety improvement project you would like to include in the assessment.
3. **Battery Weight.** Senate Bill 671 requires us to include the impact of the increased weight of battery electric trucks on roads and bridges. If you have completed existing research on this topic, please send it to Hannah Walter at Hannah.Walter@catc.ca.gov.