DOCKETED	
Docket Number:	24-EVI-01
Project Title:	U.S. Department of Transportation’s Charging and Fueling Infrastructure Grant Program
TN #:	257529
Document Title:	Nikola Motor Comments - Nikola Motor Comments on 24-EVI-01
Description:	N/A
Filer:	System
Organization:	Nikola Motor
Submitter Role:	Applicant
Submission Date:	6/28/2024 4:18:27 PM
Docketed Date:	6/28/2024

Comment Received From: Nikola Motor
Submitted On: 6/28/2024
Docket Number: 24-EVI-01

Nikola Motor Comments on 24-EVI-01

Nikola appreciates the opportunity to submit this information, and looks forward to working with the CEC to deploy hydrogen refueling infrastructure that will enable FCEV deployment. Please feel free to contact me with any questions.

Regards,

Ryan Thomson
Grants and Credits Manager
Nikola Motor

Additional submitted attachment is included below.

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Nikola Responses to the CEC's Zero-Emission Medium- and Heavy-Duty Drayage Infrastructure Application for USDOT's Charging and Fueling Infrastructure Discretionary Grant Program

Docket #24-EVI-01

1. *Please disclose your business type and vehicle class, if applicable. Are you a driver, fleet operator, truck stop operator, charging and/or hydrogen fueling provider, installer, manufacturer, utility, public agency, or other? Are you part of a small, veteran-owned, woman-owned, or minority-owned business?*

Nikola Motor is a publicly owned manufacturer of class 8 battery electric and fuel cell electric vehicles (BEVs and FCEVs). Nikola also installs and operates hydrogen refueling and electric charging infrastructure and manages the supply of hydrogen fuel sold at its facilities.

2. *The purpose of this RFI is to help inform the CEC's application to the Federal Highway Administration (FHWA) for federal funding. If awarded, the CEC will release a competitive grant funding solicitation to provide funding to end recipients who would develop and construct the zero-emission MDHD infrastructure. Would you consider applying for CFI grant funding for site development if the CEC is awarded funding?*

Yes, Nikola would be interested in applying for grant funding toward the deployment of ZEV fueling infrastructure that is either located in or serves the ports identified in the RFI.

3. *Do you already operate or plan to use zero-emission MDHD vehicles in the next five years? Please use a 1-5 rating scale where 1= least likely and 5= most likely. Please add additional information regarding your (planned) use of zero-emission MDHD vehicles as desired.*

N/A, though Nikola produces and sells both FCEVs and BEVs to the public; both are already in operation by customers on public roads.

4. *For drayage fleet operators and drivers:*
    a. *For 2024-2027, what would you like to see as the priority for zero-emission infrastructure? Hydrogen or electric? Or a mix of both?*

N/A

    b. *To meet Advanced Clean Fleet (ACF) requirements, are you considering battery electric or hydrogen trucks?*

N/A

    c. *When/where would you prefer to recharge/refuel? E.g.: Depot charging vs. on-route, during loading/unloading, overnight or as needed.*

N/A

d. *Do you have a preference for the power level or speed of charging infrastructure? E.g. 150kW, 250kW, 350kW or 1MW. What would meet your needs and why?*

N/A; for context, refueling times for Nikola FCEVs range from 15-30 minutes, depending primarily on starting fill percentage and capabilities of a given fueling asset. 'Typical' refueling (40 kg of 70 kg usable volume, performed at a permanent station) should remain under 20 minutes per truck.

e. *Are you willing to provide a non-binding letter of commitment for the CEC's application stating that your organization would utilize EV charging and/or hydrogen fueling infrastructure located within five miles of the AFCs found in the "Corridor Segment" below? If so, please see the attached letter of commitment template. Letters of commitment may be sent to Sarah Sweet, Federal Liaison at sarah.sweet@energy.ca.gov.*

Yes; letter to follow shortly.

5. *For EV charging and hydrogen fueling providers, describe:*
   a. *Your organization's business model for public charging and/or hydrogen fueling offerings.*

Nikola owns and operates its own charging and refueling assets; these take the form of modular and permanent hydrogen refueling locations available to the public. Nikola-owned charging assets are limited to a small fleet of mobile charging trailers to enable early deployments of customer BEVs, and Nikola does not intend to construct permanent EV charging infrastructure. Nikola hydrogen stations are typically open to the public, with hours of availability determined by demand. Nikola also markets fueling and charging assets to fleets for 'behind-the-fence' deployments. Nikola manages the supply of hydrogen for all of these assets.

b. *Mechanisms your organization might leverage to provide affordable charging and fueling services to drayage fleet operators.*

Nikola can utilize grant funding that either directly funds the deployment of fueling and charging infrastructure that serves drayage fleet operators or that funds the deployment of trucks and matching fueling infrastructure together (typically the direct recipient of such funding would be a fleet operator).

c. *The scope of services, facilities and amenities provided at your recharging/refueling locations.*

Currently operating Nikolla fueling locations comprise modular fuelers deployed to parcels of land with appropriate safety barriers, markers, and operational staff. Permanent stations will include canopies, full-time staff, and parking as available, depending on parcel size and layout.

d. *The anticipated site size, parking configuration (e.g., pull-through), total number of charging stalls capable of simultaneous charging, and total number of truck parking spaces that are not dedicated to charging or refueling.*

While specific locations, and thus infrastructure specifications, have not been identified, the typical permanent hydrogen refueling station requires 2.5-3 acres for a pull-through configuration

that can dispense 4,000 – 8,000 kg of hydrogen per day (or about 100 – 200 trucks, at 40 kg/fill). Depending on equipment configuration and location, these capacities can be deployed in a phased fashion. Nikola's range of modular fueling assets are capable of fueling between 15-35 trucks per day, based on similar assumptions.

Nikola is happy to consider hydrogen infrastructure deployments at locations that otherwise might be difficult to outfit for BEV charging due to existing rights-of-way, though several obstacles to infrastructure deployment are shared across EV charging and H2 refueling infrastructures.

   e. *How your organization approaches right-sizing infrastructure for near-term market demand and future-proofs infrastructure to be responsive to evolving needs.*

Nikola's current strategy for hydrogen refueling infrastructure deployment is to use its suite of modular fueling assets to aggregate demand for class 8 FCEVs in a target area. In parallel, Nikola will begin to develop a planned permanent station for that geography. Once a sufficient concentration of demand is achieved (conceptually ~70% of station demand, ballpark 3 fully subscribed modular fueling assets), Nikola will begin construction of the corresponding planned permanent station. With the permanent station complete, those modular assets will then be free to either continue aggregating additional demand in the same locale or relocated to perform the same function in a new market.

6. *What distance should separate stations to support zero-emission drayage truck activities around California ports? Provide a description of a typical route or use case considered when making this recommendation. Describe the vehicle class and vocation if it differs from the information provided in question 1.*

Our most recent operational data confirms a 500 mile range for Nikola's TRE FCEV and a 330 mile range for its TRE BEV.

7. *If possible, provide any general cost estimates for MDHD charging and/or hydrogen fueling stations you have designed, built, or have experience with, including charger power levels and number of stations installed. Please provide a range of public cost-share as a percentage of the total project cost necessary to support more public charging stations to serve zero-emission trucks along drayage corridors. For example, should the publicly funded cost share be 50% CEC/federal and 50% private/other?*

The approximate cost to deploy a permanent hydrogen refueling station as described above is $20 million, not including the purchase of real estate. Nikola's modular hydrogen fueling assets vary in cost, but a typical deployment costs $5.5 – 6.5 million per site, depending on location and fueling requirements.

8. *Use the maps in the "Corridor Segments" section to identify areas where you expect to need zero-emission truck infrastructure in the next three years (2024-2027). These Corridors have been selected to align with the National Zero-Emission Freight Corridor Strategy, the California Transportation Commission's SB 671 Clean Freight Assessment and to complement California, Washington and Oregon's Tri-state application.*
   a. *You can pinpoint sites where you plan to build stations, or where you would like to see a station as a driver.*

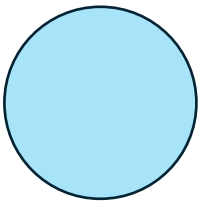
b. *If possible, please provide specific details for each location, including the preferred location, the number of stations, the type of fuel (hydrogen or electric), power levels (if applicable), and vehicle class.*
c. *Identify any corridor segments you think should be considered that have not been included and how they align with the National Zero-Emission Freight Corridor Strategy.*

For the below maps, Nikola has plotted its operating modular sites (2 in the Los Angeles area, represented by a green dot), its planned permanent refueling stations (1 in the Los Angeles area and one in San Diego, represented by a yellow dot), and the markets it is most interested in developing permanent infrastructure in as they overlap with the identified ports (larger blue circle, primarily focused on the ports of Oakland, Stockton, Long Beach, and Los Angeles.

Specific sites have not been selected and thus specifications cannot be determined, but Nikola stations will be publicly accessible and capable of fueling Nikola and competitor trucks with hydrogen at 700 bar.

9. *If you represent a utility:*
   a. *Please use the maps in the "Corridor Segments" section to identify locations that have or will have a capacity for 5 MW or more in the next five years. These will not be considered utility recommendations or guarantees of available capacity. This information may be considered for future funding opportunities.*
   b. *Please share your policy regarding capacity build-out for future-proofing. E.g., if conduit is installed for the future installation of megawatt charging, would you offer transformer capacity to support the anticipated future load to include megawatt charging?*

Legend for maps:



Market of interest for permanent infrastructure deployment

Planned permanent hydrogen refueling station

Operating modular refueling station

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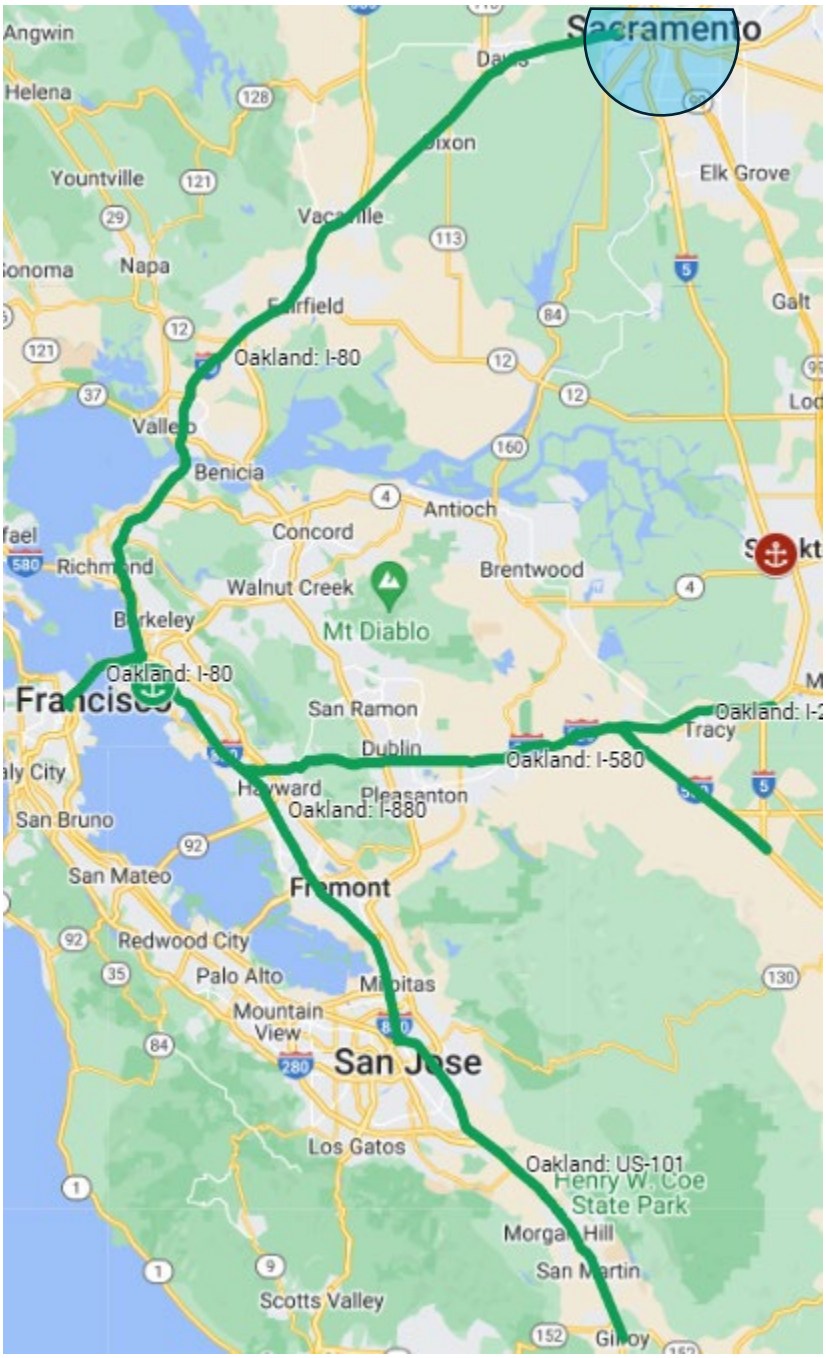
Ports of Oakland Corridor Segment Group



Port of Oakland Corridor Segments:

- **I-80**: From the US-101 interchange in San Francisco to the I-80BL/US 50 interchange in West Sacramento
- **I-880**: From the I-80 interchange in Oakland to the US 101 interchange in San Jose
- **US 101**: From the I-880 interchange in San Jose to the SR 152 interchange in Gilroy
- **I-238**: From the I-880 interchange in San Leandro to the I-580 interchange in Ashland
- **I-580**: From the I-238 interchange in Ashland to the I-5 Interchange in Tracy
- **I-205**: From the I-580 interchange in Tracy to the I-5 Interchange

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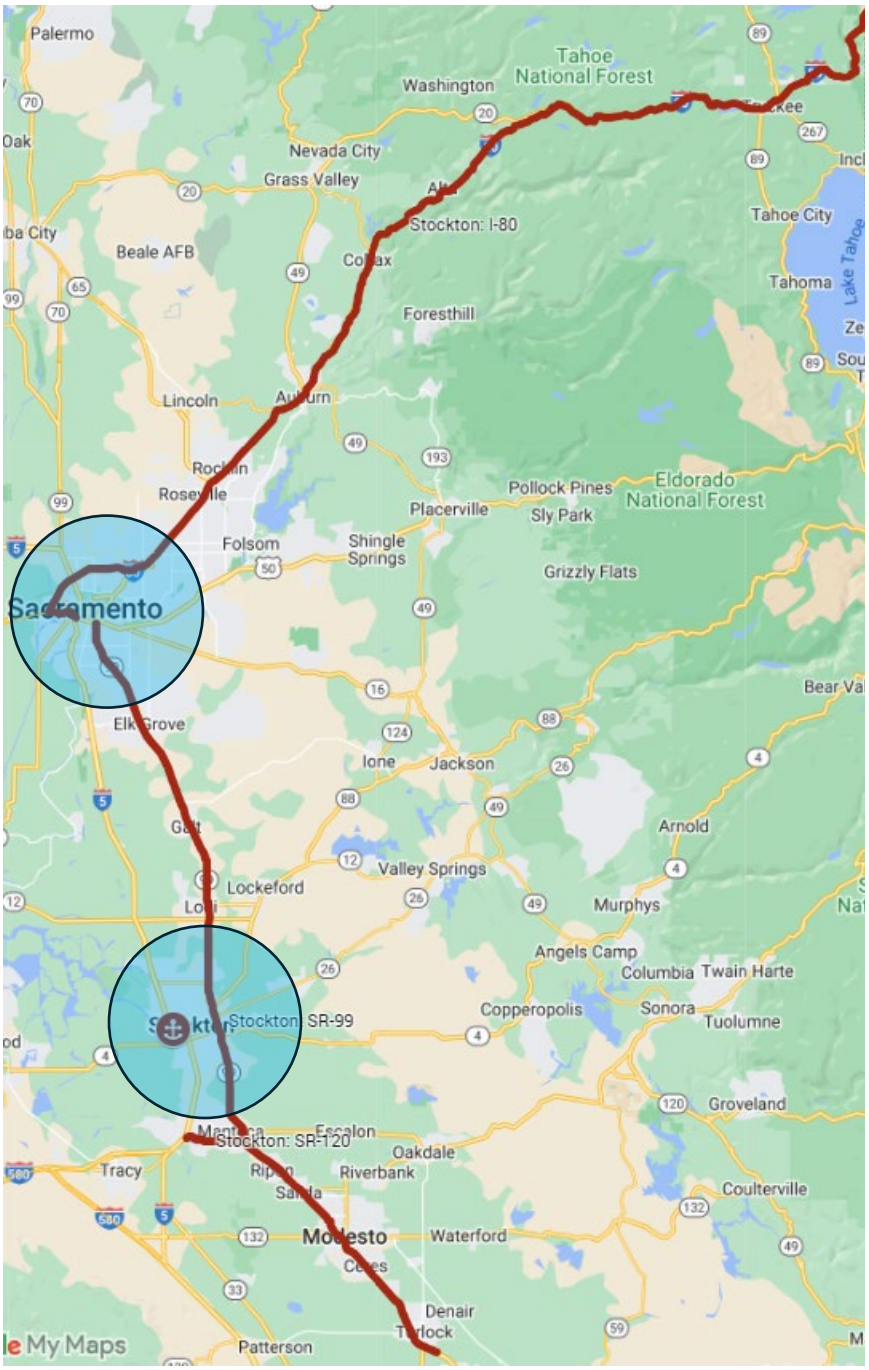
Stockton Corridor Segment Group



Port of Stockton Corridor Segments:

- **I-80**: From the US 50 interchange in West Sacramento to the Nevada Border
- **US 50/I-80BL**: From the I-80 interchange in West Sacramento to I-5 interchange in Sacramento
- **SR-99**: From the US 50 interchange in Sacramento to the Enoch Christoffersen Southbound Rest Area in Turlock
- **SR 120**: From the I-5 interchange in Lathrop to SR 99 interchange in Manteca

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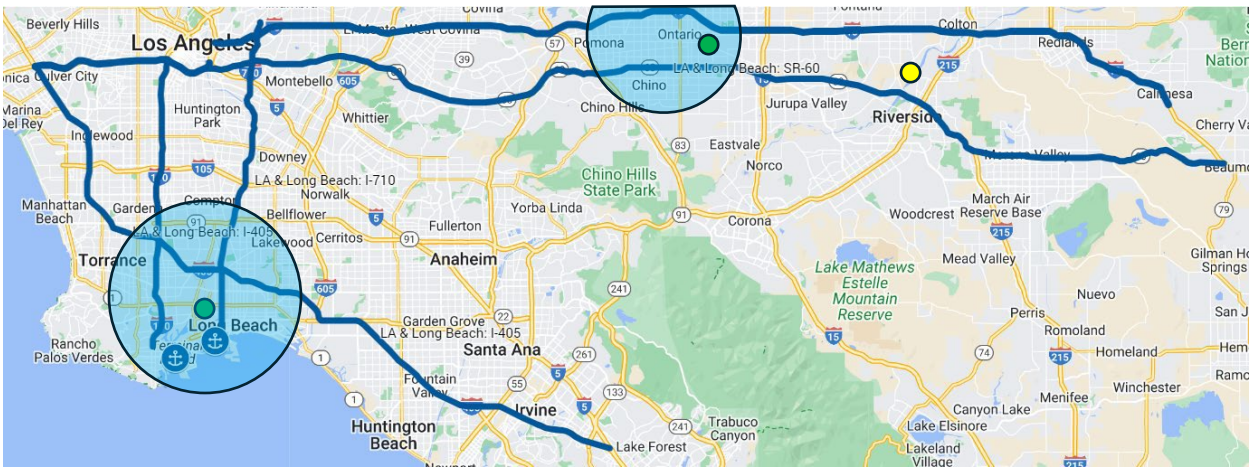
Ports of Los Angeles and Long Beach Corridor Segment Group



Corridor Segments:

- **I-405**: The I-10 interchange in Los Angeles to the I-5 interchange in Irvine
- **I-10**: The I-405 interchange in Los Angeles to Exit 88 in Calimesa
- **I-110**: From the I-10 interchange in Los Angeles to the SR-47 interchange in San Pedro
- **SR 60**: From the I-10/I-5/US 101 interchange in Los Angeles to the I-10 interchange in Beaumont
- **I-710**: From Valley Blvd in Alhambra to W Ocean Blvd in Long Beach

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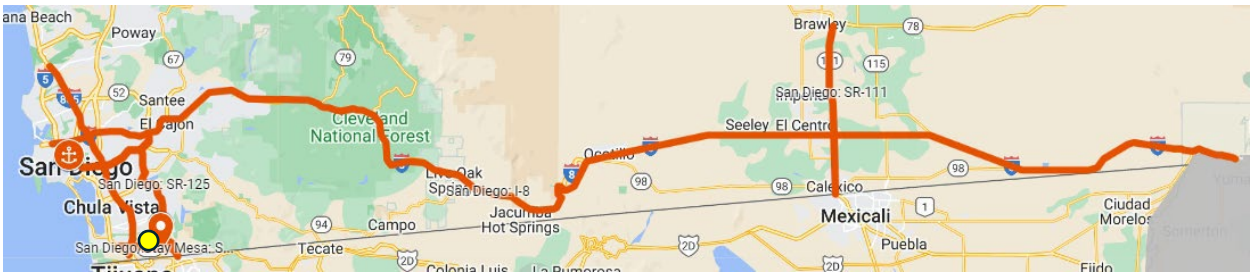
Port of San Diego Corridor Segment Group



Corridor Segments:

- **I-805**: From exit 33A in San Diego to Exit 1A
- **I-8**: From Mission Bay Dr/Sports Arena Blvd in San Diego to the Arizona border
- **SR 94:** From the I-5 interchange in San Diego to SR 125 interchange in Lemon Grove
- **SR 905**: From the I-5 interchange at Exit 1A/1B in San Diego to the Otay Mesa Fwy at Exit 9 in Otay Mesa
- **SR 125**: From I-8 interchange in La Mesa to SR 11 interchange in San Diego
- **SR 111**: From the SR 78 interchange in Brawley to the SR 98 interchange in Calexico