Sustainable Freight Pilot Project Idea

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2. Project Title: Zero-Emission Linen Delivery

3. **Location of project:** Initially, at three linen facilities housing vehicles:
    - 1050 W Whitesbridge Ave, Fresno, CA 93706
    - 7620 Wilbur Way, Sacramento, CA 95828
    - 5950 Alcoa Ave, Vernon, CA 90058.

Vehicle operations within approximately a 40-mile radius of those facilities.

4. Summary

Motiv proposes a program to field all-electric linen delivery trucks. Linen facilities are almost always located in Disadvantaged Communities, and the local air pollution reduction would be substantial considering the amount of truck use that occurs around the facilities during normal operations. These trucks are ideal for electrification for four reasons: (1) their operations are very predictable – even more than parcel delivery, (2) the nature of the work limits the distance most trucks cover in a day eliminating range anxiety, (3) the trucks have high fuel usage, and (4) the businesses served by these facilities also use trucks and would thus be natural growth paths after being exposed to the emerging technology.

Motiv further proposes that the mechanism to achieve sustainable freight is a mechanism that CARB and the Air Districts have already put considerable resources into developing – the Hybrid and Electric Voucher Incentive Program (HVIP) – with some small additions to improve its effectiveness, detailed below.

5. Description of Advanced Technology

AmeriPride Services recently put its first all-electric linen delivery truck into service in the disadvantaged community of Vernon, CA. After only 2 weeks of operations, it has been so successful that AmeriPride has removed the back-up diesel truck they were holding just in case the electric truck had problems[1]. Linen delivery is inherently a sustainability-minded business, reducing waste and encouraging efficient re-use of linen products through commercial laundering. For this reason, sustainability is already a company goal and fleets are aware of the needs for better technologies. Pairing this freight segment with zero-emission vehicles is a win-win.

Zero-emission linen delivery is an ideal target for a sustainable freight pilot. Unlike long haul trucks, these trucks will be used for their entire life within the state, and directly benefit the air districts in which they are deployed. The trucks will all be state-of-the-art battery electric. Trucks will include features like hill hold and adjustable regenerative braking. The trucks will also include an advanced remote telematics system, capable of the following secure remote features: data capture, vehicle calibration and vehicle firmware updating.

[1] From discussion with Banny Alison, Fleet Manager at AmeriPride Services.

The linen facilities in disadvantaged communities will receive important infrastructure upgrades to handle charging. This infrastructure upgrades plus the worker training provided with the new all-electric trucks will be critical local economic development, and allow the state to support both economic and environmental development with the same project.

This project is an improvement over past all-electric truck pilots for the following reasons:

1. The pilot truck being used by AmeriPride is a commercial, OEM product, built by Morgan Olson, the leader in walk-in van production, with key suppliers Ford for the chassis and Motiv Power Systems for the all-electric powertrain. The scalability offered by these partners is unmatched.
2. AmeriPride has run the unit economics on an electric truck and have found that they can pay $**[redacted]**[2] per truck out of pocket, which is considerably more than what fleets have contributed in many past pilots.

6. Estimated Cost for Implementation and Existing Funding Commitments

Motiv proposes that this pilot is funded by Hybrid and Electric Voucher Incentive Program (HVIP), with the CA Air Resources Board (and/or local air districts) adding two additional "plus-ups" to the HVIP program as follows:

Extra Battery "plus-up": As HVIP is currently structured, the linen delivery companies (and other potential electric truck fleets) can only afford electric trucks equipped with the fewest possible batteries. Adding an Extra Battery plus-up would open the applicability of HVIP funding to electric trucks that are designed with more range. Extra range is critical to the linen delivery market and other markets in order to bring electric beyond the lowest-range vehicles and into applicability for vehicles that do more mileage (and use more fuel) each day.

Infrastructure "plus-up": Currently, HVIP for all-electric vehicles is more attractive for vehicles which will be housed in new facilities. New facilities typically have more available power, which reduces the cost of charge station installation. This has been a major reason that linen delivery hasn't moved to electric – most of their facilities are in disadvantaged communities and have lower installed power, increasing the cost of installing charge stations. Note that not all facilities in disadvantages communities are older and/or have less installed electrical power, but poorer/disadvantaged areas tend to have older building stock.

Motiv proposes that the amount for both of the above "plus-ups" be market driven. This would mean the dollar amounts would be set and adjusted over time to meet the truck deployment targets, provided the basic performance metric of dollar per ton CO2 or dollar per ton criteria air pollutant does not fall unacceptably low. Plus-up funding may also be contingent on truck operation and charge installation in a disadvantaged community, respectively

Motiv proposes a starting value of:

- $850/kWhr for the Extra Battery "plus-up"

[2] The dollar figure per truck that AmeriPride can pay out of packet may be disclosed confidentially to the CA Air Resources Board and/or the CA Energy Commission, but cannot be disclosed publically for competitive reasons.

- 80% of an electrician's quote (2 competitive quotes required) for Infrastructure "plus-up".

These amounts would change asymmetrically after 3-6 months depending on the number of vehicles ordered. If many vehicles are ordered, the amounts should go down. If no/few vehicles are ordered, the funders should solicit input from target fleets.

Finally, Motiv proposes that a small marketing budget be allocated for reaching out to linen fleets in particular, possibly through linen fleet trade associations and events. A non-profit industry consortium could run such a program.

7. Timeline

Motiv proposes implementation of the two above "plus-ups" as soon as practical, contingent on funding availability among the agencies. If possible, the market outreach to linen companies could begin even before announcement of the "plus-ups". There should be a vehicle deployment target set which includes the number of total vehicles ordered under this program within the first 3 to 6 months of the commencement of the "plus-ups".

There should be a time limit between order and delivery of vehicles, such as 9 months, after which the incentive amount per vehicle and station may be reduced to any more contemporary amount based on changes in incentive amount due to market demand (see section (6) above).

Based on conversations with fleets, Motiv makes a rough prediction of a deployment schedule:

Months From "Plus-ups" Announcement	**Number of Linen Fleets**	**Number of Linen Vehicles Ordered**	**Number of Linen Vehicles Deployed[3]**
6	2	20	10
12	3	40	20
18	3	70	40
24	4	120	65

Note, in addition to these orders, Motiv anticipates other, non-linen fleets will place orders after the new proposed "plus-ups" are announced. This would enable other similar delivery operations such as parcel and beverage delivery within local freight roles to benefit from the same program.

8. Progress Measurement

The proposal would rely on the existing infrastructure used by HVIP for tracking progress, but with a carve-out for tracking numbers for vehicle segment separately (in addition to including them in the total). This would allow the end use applications to be measured enabling the success of linen delivery, and other delivery vehicles to be differentiated from transit and other work vehicles eligible for incentives. Both vehicle order metrics and vehicle use metrics from HVIP would continue to be tracked.

Motiv proposes one additional element of tracking – public recognition and awards from CARB, the Governor's office or other appropriate agency for the fleets that offset the most greenhouse gasses and criteria air pollution using all-electric miles within each segment. By recognizing the fleets doing good

[3] Includes the deployment of 10 all-electric linen vehicles whose manufacture is already underway

work, there's a further incentive to increase commitment for fleets who already have low volumes of vehicles.

9. Partner Roles

The program would leverage the partnerships already established with HVIP – an industry non-profit for administration and progress tracking and partnership among the air districts and CARB for funding.