

DOE Vehicle Technologies Office Annual Merit Review

Drive Clean Colorado

Bonnie Trowbridge, Executive Director

Delivering Clean Air in Denver: Propane Truck and Infrastructure
in Mail Delivery Application

June 22, 2022

Project ID: ti134



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Overview

- **Timeline**

- Start: Oct 1, 2020
- End: Dec 31, 2023
- 45% complete

- **Barriers**

- Limited understanding of propane transportation solutions and benefits
- Lack of data documenting performance and operations of propane vehicles in delivery application, including emissions reductions
- Lack of comprehensive cost analysis for propane delivery trucks

	DOE Share	Cost Share
Total Project Cost	\$ 1,000,010.00	
Total Shares (Prime + FFRDCs + Subcontractors)	\$ 500,005.00	\$ 500,005.00

	DOE Share	Cost Share	Total
Budget Period 1	\$404,499	\$402,500	\$806,999
Budget Period 1 Expended	\$391,794	\$389,500	\$781,294
Budget Period 2	\$49,892	\$56,000	\$105,892
Budget Period 2 Expended as of Q1	\$40,299	\$10,153	\$50,452



Project Objectives

Overall Concept

- Proof-of-concept demonstration of alternative fuel vehicles (AFVs) in a selected vehicle fleet
- Share data, best practices, and lessons learned to catalyze other fleets nationwide to adopt propane trucks for mail delivery (and other applications)

Market Transformation

- Improve understanding of the costs, operational issues, and performance attributes of propane trucks
- Inform technology adoption decisions for market transformation

Environmental Benefits

- Air quality improvement
- Reduce greenhouse gas emissions
- Catalyze nationwide fleets to adopt low-carbon operations for our USPS mail delivery system nationwide



Approach

Fleet Support

Support the purchase, installation, and operability of the propane fueled trucks and fueling infrastructure.

Data Collection

Data collection and analysis will be prioritized throughout all periods of the project

Education & Outreach

Education, outreach, and marketing activities will be prioritized through both virtual and in-person events.



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Any proposed future work is subject to change based on funding levels.

Project Milestones

Budget Period 1

Oct 01, 2020 - Dec 31, 2021

- Truck Delivery (Go/No-Go)
- Refueling Infrastructure & Installation
- Project Webinar #1

Budget Period 2

Jan 01, 2022 - Dec 31, 2022

- Trucks Operating on Routes (Go/No-Go)
- Data Collection
 - Winter and Summer collection
- Project Webinar #2
- Trade Show Participation
 - Work Truck Show
- Outreach
 - Postal Contractor Association Meeting Attendance

Budget Period 3

Jan 01, 2023 - Dec 31, 2023

- Data Analysis (Go/No-Go)
 - Total Cost of Ownership
- Outreach
 - Postal Contractor Association Meeting Attendance
 - Video overview of project
- Project Webina



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Project Accomplishments & Progress



TRUCK DELIVERY

- Trucks ordered March 2021
- Cost increased \$7,500 per truck
- Original expected delivery Oct 2021
- Current Expected delivery **June 2022**

FUELING INFRASTRUCTURE

- Permitting delays due to administrative backlog
- Permitting currently approved
- Infrastructure set to be ready by truck delivery

OUTREACH

- Public announcement via PERC and DCC press releases and newsletters in April 2022
- Webinar and Ribbon Cutting expected after truck delivery (June/July 2022)

DATA COLLECTION

- Data collection ahead of schedule (BY2 milestone)
- NREL installed data loggers and collected winter data Feb 2021



Collaboration and Coordination Among Project Team



- All project partners met bi-weekly for first few months of project
- Currently meeting bi-monthly with email communications for updates
- All project partners remain engaged and committed to the project
- Looking forward to celebrating together in June upon truck delivery!
- Quarterly Progress Reports to VTO
- Continuation Application to VTO



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Market Impact and Sustainability

- Market impact is currently unknown, as trucks have not yet been operable
- We expect maintenance, fueling, and repair savings from propane truck operation
 - End of project TCO analysis will prove our expectations



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Contribution to Energy Equity and Environmental Justice Progress



- Trucks will reduce poor air quality in Denver, which is facing a demotion to “severe” status under the National Ambient Air Quality Standards (NAAQS).
- Trucks will operate in high emissions zones in Denver, including in disproportionately impacted communities.
- Trucks operate out of the zip code 80216, **home to the dirtiest air quality in the country**. Any reduction of diesel in this area is significant and beneficial to the surrounding communities.

Summary

Major Setbacks

The pandemic and resulting supply chain and manufacturing delays severely impacted our project.

We're back on track!

Trucks are expected to arrive in June 30, 2022.

Fueling infrastructure will be installed upon delivery.

We'll celebrate together.

Drive Clean Colorado will co-host a ribbon cutting ceremony with Hi Pro, Inc. to celebrate the trucks arrival.

We can't wait to share what these trucks can do!

We look forward to returning next year to share our initial results with you.



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Thank you

Thanks to our project partners' commitment and DOE's support, we know next year will be even better than the last!



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