



Penske: Continuing the Legacy of Sustainable Goods Movement Project

Penske Truck Leasing
Contract # MS21007
Final Report Submitted on April 14, 2023

Prepared for the Mobile Source Air Pollution Review Committee (MSRC) under the AB 2766 Discretionary
Fund Work Program



Acknowledgements

Penske Truck Leasing Co. L.P. (Penske) would like to thank the Mobile Source Air Pollution Reduction Review Committee (MSRC) for their support of this project, which has allowed Penske to continue our commitment to providing solutions to our customers to reduce emissions and support California's clean air goals. Penske would also like to thank the staff that have played a crucial role in deploying this project. Penske also extends a special thanks to the staff at Gladstein, Neandross & Associates (GNA) for providing additional project support. Finally, Penske would like to thank the host fleet for their continued support of transitioning to zero-emissions vehicles (ZEV). Full project partners and individuals are listed below.

| Individual | Title | Organization |
|---------------------|--|---------------------|
| Patrick Watt | VP, Alternative Vehicles & Emerging Technologies | Penske |
| Elizabeth Albertson | Vehicle Supply Special Projects Manager | Penske |
| Dean Stapleton | Senior Manager, Alternative Fuels | Penske |
| Alen Beljin | Public Relations Manager | Penske |
| JoAnne Golden | Senior Vice President, Programs & GNA Partner | GNA |
| Eleni Petrow | Senior Program Manager | GNA |
| James Javelosa | Program Manager | GNA |
| Flora Naylor | Associate | GNA |
| Matt Cordy | Director Fleet Operations | Host Fleet |

This report was submitted in fulfillment of Contract #MS21007 and Penske: Continuing the Legacy of Sustainable Goods Movement Project by Penske under the partial sponsorship of the MSRC. Work was completed as of March 24, 2023.

Disclaimer

The statement and conclusions in this report are those of the contractor and not necessarily those of the MSRC or the South Coast Air Quality Management District (South Coast AQMD). The mention of commercial products, their sources or their uses in connection with material reported is not to be construed as either an actual or implied endorsement of such products.

Project Description & Work Performed

Project Description

Penske partnered with the MSRC in order to deploy zero-emission technologies at a partnering facility located at 11600 Riverside Dr. Mira Loma, California. This funding allows Penske to deploy ZEV and will serve as a critical step for Penske to provide alternative fuel transportation services to its varied and well-known customer base. As part of its agreement, Penske developed and implemented a Public Outreach Plan to promote this partnership and the support it has received. With the \$1,000,000 in grant support from the MSRC, Penske is now able to run and operate ZEV vehicles at the site.

For five years, Penske will deploy and operate five (5) electric terminal tractors in partnership with a “Host Fleet” at their Mira Loma warehouse operation. The pilot project hopes to assess the viability of replacing all terminal tractors with electric alternatives at the project site and other warehouses throughout the South Coast Air Basin. The project facility is located near some of the region’s most heavily traveled goods movement corridors. Through replacing diesel vehicles with battery electric vehicles, Penske continues to work on reducing NOx, GHG, ROG, and fine particulate matter emissions throughout the region.

Location: 11600 Riverside Dr. Mira Loma, CA 91752

Project Partners:

- Penske (Recipient)
- Host Fleet
- Mobile Source Air Pollution Reduction Review Committee (Funding Agency)

Work Performed

Penske replaced five (5) diesel powered off-road terminal tractors with five (5) electric off-road terminal tractors to support goods movement at a logistics distribution center in Mira Loma, CA. Penske has deployed all five (5) Orange EV e-Trievers at the host fleet’s distribution facility. Work involving the Public Outreach may be found in the *Photographs & Outreach* section of this report.

Full delivery schedule is found below:

| Unit | Vehicle Identification Number (VIN) | Delivery Date |
|-------------|--|----------------------|
| ECWY001 | 1Z9TA8EA4PR530001 | December 27, 2022 |
| ECWY002 | 1Z9TA8EA6PR530002 | December 27, 2022 |
| ECWY003 | 1Z9TA8EA7PR530025 | January 17, 2023 |
| ECWY004 | 1Z9TA8EA9PR530026 | January 17, 2023 |
| ECWY005 | 1Z9TA8EA0PR530027 | January 20, 2023 |

In addition to ZEV deployment, associated charging infrastructure will be installed on site. At the time of this report, one charger has been installed and project vehicles will be operating rotationally with one charger. Shift scheduling and overnight charging will be implemented to ensure all trucks are adequately powered. Due to limited charging infrastructure assets, ZEV usage is anticipated to be minimized until all chargers are deployed. Full charging infrastructure is expected to be completed in Fall 2023 by the Host Fleet.

Significant Milestones, Deliverables, or Meetings Accomplished:

*Reporting period refers to Q1-2023

Task 1-Contract Execution

- Percent Complete this Reporting Period: 0%
- Percent Complete: 100%

Task 1.1-Contract Amendment

- Percent Complete this Reporting Period: 0%
- Percent Complete: 100%

Task 2- Vehicle Procurement

- Percent Complete this Reporting Period: 20%

Percent Complete: 100%

Task 3-Infrastructure Deployment (To be completed by Host Fleet)

Percent Complete this Reporting Period: 10%

Percent Complete: 20%

Task 4- Media Announcement/ Press Release Issued

Percent Complete this Reporting Period: 100%

Percent Complete: 100%

Task 5- Data Collection

Percent Complete this Reporting Period: 0%

Percent Complete: 0%

Penske continues to work with the California Air Resource Board (CARB) to finalize the co-funding received from the Clean Off-Road Equipment (CORE) Voucher Incentive Project for the five terminal tractors.

Problems Encountered

During the implementation of this project, Penske changed the ZEV manufacturer from Kalmar (T2E) to Orange EV (e-Triever) due to Kalmar being unable to fulfill Penske's order. Kalmar discontinued the T2E product and was therefore unable to fulfill their commitment in the timeframe expected. Penske coordinated with the MSRC to request a contract amendment to change the manufacturer from Kalmar to Orange EV. On December 8, 2022, the MSRC-Technical Advisory Committee Scope Changes Subcommittee recommended approval of the scope change. This was approved by the full MSRC on December 15, 2022. The MSRC delivered the contract amendment on January 26, 2023, to Penske for final execution.

Emissions Benefits

The previous Penske fleet at the at the Mira Loma site averaged between 2,080 to 2,340 hours per tractor per year, with an average tractor fuel economy of 0.95gal/hr. The fleet typically operated five days a week and fifty-two weeks per year, which meant that each truck was operating up to 45 hours per week or 2,340 hours annually. This is equivalent to 55,575 gallons of diesel fuel annually. The new ZEV deployment phased out tractors that still had life remaining, taking their diesel emissions off the road before they would naturally be put out of commission. Penske estimates 9,880-11,115 gallons of diesel will be displaced annually with the five project vehicles.

This will yield significant NOx emissions reductions, in addition to the co-benefits of fine particulate matter (PM2.5), Reactive Organic Gases (ROG), and greenhouse gas (GHG) emissions reductions. This project will reduce 1.95 tons of NOx, 0.7 tons of PM2.5, 0.37 tons of ROG and 1,138 metric tons of GHGs annually.

Table 1: Annual and Project Lifetime Emissions Reductions

| Emissions | Annual Reductions | Reductions over Project Lifetime (5 years) |
|------------------|--------------------------|---|
| NOx | 1.95 tons | 9.75 tons |
| PM2.5 | 0.7 tons | 3.5 tons |
| ROG | 0.37 tons | 1.85 tons |
| GHGs | 1,138 metric tons | 5,690 metric tons |

Photographs & Outreach

Penske published a story on their corporate blog for each of the ZEV deployments that provides an overview of the project and strategic partners. These stories were then shared across the company's social media channels, including: LinkedIn, Twitter, Facebook, and Google+. The following schedule outlined the tasks for the Public Outreach Plan:

| Action | Status | Completion Date |
|---|----------|-----------------|
| Submit Public Outreach Plan | Complete | 8/1/2022 |
| Implement Public Outreach Plan | Complete | 3/24/2023 |
| Publish stories on blog | Complete | 3/24/2023 |
| Share stories on all social media platforms | Complete | 3/24/2023 |

Penske's corporate blog can be found by clicking on the following link: <http://blog.gopenske.com>. The full blog post can be found here (<https://www.gopenske.com/blog/penske-truck-leasing-recipient-of-msrc-grant-to-operate-electric-trucks>). Screenshot found below.

The screenshot shows the Penske corporate blog homepage. At the top, there is a navigation bar with links for 'GoPenske', 'Rental', 'Leasing', 'Logistics', 'Why Penske', 'Careers', and 'United States', along with social media icons for Facebook, Twitter, LinkedIn, YouTube, and Instagram, and a search icon. Below the navigation bar is the Penske logo and a menu with 'Our Company', 'Locations', and 'Blog'. The main content area features a large yellow banner with the text 'MOVE AHEAD' and 'The Official Blog of Penske Transportation Solutions'. Below the banner is a breadcrumb trail: 'GoPenske Home > Blog > Penske Truck Leasing Recipient of MSRC Grant to Operate Electric Trucks'. The featured article is titled 'Penske Truck Leasing Recipient of MSRC Grant to Operate Electric Trucks' and is dated 'March 24, 2023'. The article image shows a blue sign with a white electric vehicle charging station icon and the letters 'E V'. To the right of the article is a 'Recent Posts' section with five entries, each with a small thumbnail image and a brief description of the post.

Penske's shared social media platform can be accessed through the following link: http://www.gopenske.com/newsroom/social_media.html

Unit Number: ECWY001 A



Unit Number: ECWY001 B



Unit Number: ECWY002 A



Unit Number: ECWY002 B



Unit Number: ECWY003 A



Unit Number: ECWY003 B



Unit Number: ECWY004 A



Unit Number: ECWY004 B



Unit Number: ECWY005 A



Unit Number: ECWY005 B



Summary and Conclusions

Penske has deployed 5 out of the 5 Orange EV e-Triever at the host fleet's distribution facility, replacing the previous fleet of diesel terminal tractors. By replacing the diesel terminal tractors with electric terminal tractors, an estimated 9,880-11,115 gallons of diesel will be displaced annually with the five project vehicles. This project will reduce 1.95 tons of NOx, 0.7 tons of PM2.5, 0.37 tons of ROG and 1,138 metric tons of GHGs annually and will reduce 9.75 tons of NOx, 3.5 tons of PM2.5, 1.85 tons of ROG and 5,690 metric tons of GHGs over the project lifetime.

A key aspect to the successful deployment of this project was the flexibility provided by the MSRC. In this project, Penske had to replace the proposed OEM with a new OEM after an unanticipated market development. The MSRC's understanding and flexibility to allow for this change enabled Penske to swiftly overcome this roadblock. As the electric vehicle marketplace continues to mature and new technologies emerge, unexpected market conditions could impact future projects. Penske continues to advocate for understanding and flexibility when implementing projects utilizing emerging technologies.