



Forward Momentum

As we head into an ambitious 2023, we want to celebrate CALSTART's 2022 accomplishments with you.

CALSTART has had many auspicious moments in our 30-year history, but few years rival 2022 for successes across our programs and initiatives in impact, awards, and policy. Our team worked hard to produce wins on multiple fronts, including issuing a landmark [Zeroing in on Zero-Emission Trucks](#) (ZET) report; staging ZET Expos; organizing Electric School Bus Network Working Groups; securing successful project proposals and awards from regional, federal, and global agencies; and, capping it all off, seeing the Biden Administration sign the [Global Memorandum of Understanding \(Global MOU\) on Zero-Emission Medium- and Heavy-Duty Vehicles](#).

In 2022, CALSTART expanded as an organization on several fronts to support this explosion of work around the transition to zero-emission transportation: we added 92 new member organizations and more than 50 new team members (FY22); increased our administration of funding in California for zero-emission vehicles; grew federal funding for low-carbon transportation; and accelerated the international effort to deploy zero-emission commercial vehicles with 12 new signatories to the Global MOU, co-led by CALSTART and the government of the Netherlands.

2022 in Review

In January, CALSTART launched the industry-leading ZET report, which provided insight on ZET market trends as the industry prepared for an injection of federal funding for charging infrastructure; multiple states implemented clean truck regulations; and California prepared to release an additional \$873 million in purchase incentives for commercial vehicles and infrastructure.

In February, CALSTART held its Driving California Forward policy summit, with key policymakers, CALSTART members, and industry leaders participating in discussions regarding forward-thinking policy solutions to achieve California's ambitious climate goals and zero-emission vehicle targets. The event focused on effectively leveraging newly available funding and solving next-level challenges to attain goals set by Governor Newsom's Executive Order and the California Air Resources Board's (CARB's) Advanced Clean Trucks regulation.

The Department of Energy awarded \$4 million in April to promote partnerships and programs to increase workplace charging, and as a result, CALSTART's Charge@Work is collaborating with FORTH and Columbia-Willamette Clean Cities to lead a workplace charging program over three years. Charge@Work is a national education and outreach campaign to increase awareness of and installation of electric vehicle (EV) charging stations at workplaces.

May brought the ACT Expo to the Long Beach Convention Center, with more than 75 advanced vehicles and hundreds of suppliers providing a look into current and future technology trends. CALSTART and our members were well represented, especially in the popular Ride & Drive that gave attendees a chance to try clean energy transportation from the driver's seat.

In June, a convoy of medium- and heavy-duty ZETs kicked off the Zero-Emission Truck Showcase + Ride and Drive sponsored by CARB and CALSTART on the grounds of the Auto Club Speedway in Fontana. Nearly 500 fleet owners and operators, policymakers, and industry professionals came out to test drive a wide range of ZETs available for purchase and deployment.

“California is a first-mover in establishing the market for zero-emission medium- and heavy-duty vehicles,” said Jessie Lund, Program Manager of CALSTART’s Truck initiative. “The state is making a historic investment in clean air and emissions reductions through accessible incentives and rebates that help fleets make the transition. It’s a model that has not only been successful here but is paving the way for the deployment of zero-emission technology across the nation.”



*Zero-Emission Truck Ride & Drive, Fontana, CA, 2022
Credit: Brandon Bashir*

It was an incredibly busy and gratifying year for many of CALSTART’s programs that are designed to administer some of California’s zero-emission vehicle incentive projects. In 2022, the California Energy Commission (CEC) awarded CALSTART \$30 million to design and implement Level 2 charging equipment for light-duty EVs. Communities in Charge is California’s market-accelerating, light-duty EV charging incentive project funded by the CEC’s Clean Transportation Program, implemented by CALSTART, and supported in partnership with GRID Alternatives and Tetra Tech. Communities in Charge is designed to transform EV accessibility, rapidly catalyze new markets, and swiftly deploy Level 2 EV charging stations.

Demonstrating the high demand for charging infrastructure among EV fleet owners, in June, the Energy Infrastructure Incentives for Zero-Emission (EnergIIZE) Commercial Vehicles EV Fast Track funding allocation of \$16.24 million was fully subscribed within seconds of opening. The EnergIIZE Commercial Vehicles Project is funded by the CEC and implemented by CALSTART. EnergIIZE, with a total authorized allocation of \$276 million through 2026, provides incentives to purchase infrastructure equipment for medium- and heavy-duty zero-emission vehicles operated and domiciled in California.

In July, CARB opened the second round of its Clean Off-Road Equipment Voucher Incentive Project (CORE), providing point-of-sale discounts on off-road zero-emission equipment. The project is administered by CALSTART and has \$125 million in funding available, more than double the amount allocated to the project when it first launched in January 2020.

In August, CARB identified \$25 million for the Innovative Small E-Fleet (ISEF) set-aside within the state’s Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). ISEF is administered by CALSTART and allows small fleets and owner-operators to utilize flexible financing, lease, rental, and truck-as-a-service options, as well as offset infrastructure/charger costs, insurance, and fuel costs. “ISEF’s goal is to make it easier for smaller fleets to get past the barriers that they frequently face when transitioning from diesel-fueled engines to electric vehicle options,” says Niki Okuk, Deputy Director of CALSTART’s Trucks and Off-Road team.

August also saw the Inflation Reduction Act (IRA) signed into law; it is considered by many to be the most significant climate legislation in U.S. history with \$369 billion in incentives and investments in clean energy, including a new tax credit for zero-emission commercial vehicles and significant incentives for battery manufacturing. The IRA's provisions will finance green power, lower costs through tax credits, reduce emissions, and advance environmental justice.

In September, CARB announced the opening of a new funding category offered through its CORE project, which makes point-of-sale discount vouchers available for zero-emission professional landscape service equipment. This new funding category, administered by CALSTART, has an allocation of over \$27 million of voucher funds for professional landscape services operated by small businesses or sole proprietors.



CALSTART CEO John Boesel and Deputy Energy Secretary David Turk at Zero-Emission Truck EXPO, Pittsburgh, PA, 2022

CALSTART had the flags flying and ZETs on display in September for the Global Clean Energy Forum and Clean Energy Ministerial (CEM) in Pittsburgh, PA. CALSTART and its Drive to Zero™ team held a ZET Global Expo, presenting trucks currently available for regional freight, last-mile delivery, and refuse operations.

Clean energy leaders from across the United States and around the world visited the ZET Global Expo to examine the vehicles, learn more about zero-emission technology, and converse with the manufacturers and fleets in attendance. The majority of vehicles on display were provided by truck builders and dealers, including International Trucks, Lightning eMotors, Lion, Mack, Nikola, Peterbilt, Workhorse, and Xos.

The Forum, CEM, and ZET Expo focused attention on the advanced state of zero-emission vehicles just as it was needed, with the pace of much-needed investment and a pivot toward clean energy transportation picking up speed in the final months of the year.

In October, the Environmental Protection Agency (EPA) announced the recipients of its first round of rebates for school districts that applied for the 2022 Clean School Bus Rebates. Synchronized with the announcement from the EPA, CALSTART launched its [Electric School Bus Network](#) website as a critical resource for all those working to advance the electrification of school buses.

According to Rachel Chard, National Program Manager for CALSTART's Bus initiative, "We designed these working groups to be a neutral space for school districts to get access to the tools, resources, and data they need to make educated and informed decisions as they transition their fleets. The EPA's announcement has created a whole new group of school districts across the country that may not know where to start with their electrification journey."

By November, CALSTART was hitting its stride with new reports, high-profile events, and significant awards. The [Electric Highways](#) report, written in partnership with National Grid, CALSTART, RMI, Stable Auto, and Geotab, presented an ambitious but attainable electric highway future in which all vehicles electrify to meet proactive policy goals for zero-emission vehicle sales in New York and Massachusetts. The report sparked much-needed discussion of infrastructure planning, as well as media coverage of the study, including articles in Bloomberg Green and [Canary Media](#).



CALSTART's then Northeast region Senior Director Ben Mandel among the electric truck and bus NYSERDA awardees, New York, 2022. Photo courtesy of NYSERDA

In mid-November, CALSTART was selected as one of three Grand Prize winners in the Electric Truck & Bus Challenge as part of the New York Clean Transportation Prizes program, sponsored by NYSERDA, for its Freight Electrification-as-a-Service for Transformation (FEaST) proposal.

Adam Ruder, Assistant Director of Clean Transportation, said, "NYSERDA is proud to support the FEaST project led by CALSTART to lower the costs of vehicle electrification and develop essential workforce training for technicians that can service all electric trucks and larger vehicles. Together with the team's partners we will build a strong model that shows how the marketplace can use clean vehicles to deliver goods and services, lowering air pollution and reliance on fossil fuels to create healthier communities."

CALSTART was also a major partner on another Grand Prize awarded to New York City School Bus Umbrella Services, Inc. for its Electrifying School Buses in the Bronx and Beyond (ESB3) project.

On November 17, CARB approved the **FY22-23 Funding Plan for Clean Transportation Incentives**, which includes policy changes and an allocation of over \$1.7 billion to be administered by HVIP.

The allocations include:

- Zero-Emission Public Transit Buses: \$70 million
- Zero-Emission Public School Buses
(through the existing Public School Bus set-aside): \$135 million
- Zero-Emission Drayage Trucks: \$157 million
- Innovative Small E-Fleets: \$35 million

At COP27 in Sharm El-Sheik, Egypt, the CALSTART delegation truly outdid itself. The Drive to Zero team presented a data-packed report, authored by Cristiano Façanha, Ph.D., and Owen MacDonnell, Technical Project Manager 2, Drive to Zero, covering progress achieved by the countries that signed the Global MOU. **The Multi-Country Action Plan for the Global Memorandum of Understanding on Zero-Emission Medium- and Heavy-Duty Vehicles** provides the policy framework for national governments to adopt by showcasing current policies in place and offering guidance on next steps to both establish their own strong plans and build on existing progress.

Co-led by CALSTART’s Drive to Zero program and the Netherlands, the Global MOU initially was signed by 16 countries; at COP27 those numbers increased significantly as the Biden Administration announced that the United States had signed, supporting a path to 100% new zero-emission medium- and heavy-duty vehicle (ZE-MHDV) sales by 2040, with a targeted floor of 30% new ZE-MHDV sales by 2030.

In addition to the United States, nine other countries signed the Global MOU, including several European nations (Ukraine among them), as well as three Caribbean nations. Ukraine’s Minister for Infrastructure, Oleksandr Kubrakov, noted, “Currently, Ukraine is going through rough times: we are defending ourselves against Russian military aggression and fighting for the lives of our people. But we are sure that we will win. And we understand the importance of our victory for the entire civilized world. That is why we are ready to sign agreements related to the future of Ukraine and the future of the whole world already now. Our country fully understands and supports important decisions on preserving the ecology of the planet.”



Minister of Traffic Transportation and Urban Planning in the Government of Curaçao Charles Cooper signs the Global MOU, November 2022. Credit: Embassy of the Netherlands, Dominican Republic.

With three calendar days left in the year, on December 29, the CEC awarded CALSTART the \$25 million Zero-Emission Vehicle Battery Manufacturing Block Grant. This grant will design and implement funds for projects that will promote in-state battery manufacturing for zero-emission vehicles and related infrastructure.

For us, this is just the beginning as we rapidly accelerate zero-emission transportation innovations and market expansion. “We have to work together across oceans and borders to meet our clean energy goals,” said U.S. Secretary of Energy Jennifer M. Granholm. “This global partnership will leverage the billions of dollars in clean transportation investments provided by President Biden’s Agenda to drive technological innovation, lower vehicle costs, and reduce transportation emissions.”

CALSTART is perfectly positioned to make the most of this moment. We have the research and data to inform decisions on technology and infrastructure as well as the strategy and know-how to implement a U.S. and global transition for a wide range of fleets to zero-emission vehicles. We continue to be recognized nationally and internationally for our achievements and inventive programming to accomplish clean transport goals.

We look forward to working with our members and partners in 2023 to continue to build on the extraordinary momentum we have achieved as we work toward a zero-emission future.



Delegation from the Netherlands to COP27, U.S. Energy Secretary Jennifer M. Granholm, CALSTART CEO John Boesel and CALSTART team, Sharm el-Sheikh, Egypt, 2022.