



# ACT NEWS LIVE

May 1, 2018 - ACT EXPO

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A solar-powered cooling system developed by eNow.

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### New Drive System by Phoenix Motorcars

E110 has increased range, torque and fuel efficiency.

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## Penske Hosts a Connected Vehicle Technology Workshop



ACT Expo kicked off the week with Connected Vehicle Technology workshop, hosted by Penske Truck Leasing. More than 100 attendees convened to learn how connected technologies can help fleet operators reduce cost, improve performance, and achieve emissions reduction by optimizing performance parameters.

With the introduction of the Connected Vehicle Technology Showcase, ACT Expo has become the can't-miss event for fleet managers looking to turn data into valuable insights," said Andrew Cullen, SVP of Fuels and Facility Services, Penske Truck Leasing.

■ Continued on page 4

## Major Announcements Today in the Expo Hall

- 1:00 – 1:20pm Major Unveiling from ROUSH CleanTech, [Booth 1019](#)
- 1:20 – 1:40pm eNow to Unveil the First All-Electric Reefer Trailer Powered by Solar, [Booth 1461](#)
- 1:40 – 2:00pm Tropos Motors will Unveil "ABLE" Line of Electric Compact Utility Vehicles, [Booth 1327](#)
- 2:00 – 2:20pm Unveiling from DANA Incorporated in Partnership with Workhorse Trucks, [Booth 1847](#)
- 2:20 – 2:40pm AVM will Unveil an All-Electric Transit Bus with an Extended Range, [Booth 1803](#)
- 2:40 – 3:00pm Kenworth to Deliver a NZE Natural Gas Class 8 Truck to AJR Trucking in Partnership with the California Natural Gas Vehicle Partnership, [Booth 939](#)
- 5:20 – 5:40pm Trillium will make a Major Announcement, [Booth 1010](#)
- 5:40 – 6:00pm North American Council for Freight Efficiency to Release First-Ever Guidance Report on Commercial Electric Vehicles, [Booth 1760](#)
- 6:00 – 6:20pm BSR Future of Fuels to Release New Resource Library to Support Large Scale Adoption of Sustainable Fuels, [Expo Hall](#)
- 6:20 – 6:40pm Renewable Energy Group to Announce New Product REG Ultra Clean™ Diesel in Partnership with the National Biodiesel Board, [Booth 531](#)



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# Welcome to ACT Expo 2018

The largest advanced transportation technology & clean fleet event

On behalf of Gladstein, Neandross & Associates (Booth 1219), producers of the 2018 Advanced Clean Transportation (ACT) Expo, I'd like to extend to you all a very warm welcome to the great seaside city of Long Beach. A leader in alternative fuels, the city has adopted the use of RNG fueled refuse trucks equipped with the Cummins Westport ISLG "NZ" (near zero) natural gas engine, CNG and battery-electric buses, street sweepers powered by bio-based LNG, and work vehicles fueled with renewable diesel.

It is with excitement, enthusiasm and pride that we kick-off the 8th annual ACT Expo. We're pleased to have formed a strategic partnership with Fleet Owner, part of the Informa Commercial Vehicle Intelligence group, the transportation industry's leading business intelligence provider, to further expand the scope of the conference to encompass all aspects of technology advancements for the commercial vehicle market.

We look forward to highlighting achievements and shining a spotlight on clean fleet efforts and deployments that demonstrate how innovation and leadership are key to achieving a new transportation paradigm.

This year's show is packed full of the latest advancements in innovative transportation technologies and clean fuels. The conference tracks focus on Medium & Heavy Duty Commercial Vehicles and Urban Fleet Mobility. All weight classes and alternative fuel types are represented - natural gas, electric, hybrid, and propane autogas, as well as emergent renewable fuels and hydrogen fuel cell technologies. All of these will be discussed and are on display under one roof in the Expo Hall.

Beyond clean fuels and drivelines, this year's ACT Expo will see an even greater emphasis on the vehicle management and efficiency technologies that can reduce fuel use and pollution. Telematics, autonomous, and connected technol-



ogies are the future of intelligent transportation, and in exploring the show, you'll learn about the latest advancements.

Day one of the Expo was a resounding success with a plethora of workshops across all weight class and fuel types. The North American Council for Freight Efficiency's workshop, the California Hydrogen Business Council's session, the NGV Global Technical Forum and General Assembly, Business for Social Responsibility's Future of Fuels Forum and others took place yesterday, bringing in stakeholders from across North America. These technical workshops will continue into Friday with the CEC "Bringing Zero-Emission Infrastructure Technology Manufacturing to California" kicking off at 9:00am.

Today is the official conference welcome, with opening remarks and the keynote address, where we'll hear about transportation's next big step. Fleet Owner will present the Green Fleet of the Year Award, and we'll kick things off in the Expo Hall with a networking lunch.

Wednesday will bring educational breakout sessions at the forefront of the mega trends driv-

ing the future of the industry—connected technologies, efficiency, electrification, alternative fuels, sustainability and more. Be sure to join us for the Fleet Awards cocktail reception at 5:30pm!

On Thursday, the Ultra Clean Heavy-Duty Vehicle Summit will illustrate the excitement surrounding this sector, characterized by an array of zero emission technology, from full battery electric trucks, buses and other equipment to ultra-low emission heavy duty natural gas and propane autogas engines. A first at ACT Expo, PMSA will be conducting their ultra-clean cargo handling equipment summit. Get outside for the Ride and Drive, get behind the wheel and test drive dozens of advanced clean vehicles spanning all alternative fuels and vehicle applications.

As we've done in prior years, we're looking to deliver the tools and information fleets need to make responsible investment decisions in advanced clean transportation technologies. As we see every year, business gets done here at ACT Expo. New truck orders are placed and fueling agreements signed. These deals are why we do what we do.

ACT News, recently launched, provides a year-round destination for industry stakeholders to stay up-to-date on the latest trends in the transportation industry. A special thanks to ACT News for the many exciting announcements, product details, photos and company news here at ACT Expo. This daily digest of happenings at the show is your guide to the sessions and show floor. We look forward to hearing stories and feedback from your own ACT Expo experience, in what promises to be an action-packed week.

Welcome to the 2018 ACT Expo.

**Erik Neandross, CEO**  
Gladstein, Neandross & Associates

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# Penske Hosts a Connected Vehicle Technology Workshop

Continued from page 1

The opening session provided an introduction and overview on some of the basic concepts and technologies that make up the work of connected vehicle technology. Panelists from Daimler Trucks North America, Navistar, and Peterbilt reviewed the connected technologies that come standard with many of today's commercial fleet vehicles—including GPS navigation, remote diagnostics, and asset tracking—explained upgrades, after-market hardware and telematics options for fleets, and reviewed best practices for buying and using connected vehicle technologies.

The workshop continued with a look at today's latest gear and gadgetry, with presentations from Fleet Complete, Zonar Systems, Samsara, Peoplenet, and Lytx. Attendees gained insight into how predictive analytics can diagnose fleet outages before they happen, how to leverage data to improve driver productivity and efficiency, how fleet emis-



Andrew Cullen, SVP of Fuels and Facility Services, Penske Truck Leasing

sions can be improved via connected technology, and heard a preview of exciting future technologies that lie ahead in this dynamic environment.

For attendees interested in learning more about this topic, visit [www.actexpo.com/agenda](http://www.actexpo.com/agenda) to view the sessions in the Connected Vehicle track.

## Connected Technology On-Floor Theatre

### Join Penske in Booth 1247



Stop by the Connected Technology On-Floor Theater, sponsored by Penske Truck Leasing, to learn about some of the most innovative connected vehicle technologies available to fleet operators today, and how they can be leveraged to reduce costs, maximize uptime and performance, and improve safety and compliance.

#### SCHEDULE

##### TUESDAY, MAY 1, 2018

- 1:30 pm FleetComplete
- 2:00 pm Penske Truck Leasing
- 2:30 pm Zonar Systems
- 3:00 pm Peloton
- 3:30 pm ARI
- 4:00 pm FleetComplete
- 4:30 pm Geotab
- 5:00 pm Penske Truck Leasing
- 5:30 pm Dana

##### WEDNESDAY, MAY 2, 2018

- 10:30 am Zonar Systems
- 11:30 am FleetComplete
- 12:30 pm Dana
- 1:00 pm Penske Truck Leasing
- 1:20 pm Zonar Systems
- 1:40 pm Geotab
- 2:40 pm ARI
- 3:10 pm Penske Truck Leasing
- 3:40 pm Geotab
- 4:10 pm Dana
- 4:30 pm Peloton
- 4:50 pm FleetComplete



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# Agility Receives EPA Approval for Propane Engine

Agility's 488LPITM engine, an 8.0L V-8 propane engine using Agility's patented liquid propane injection (LPI®) technology, has been granted EPA certification for 2018. The 488LPI is built on a General Motors long-block V-8 engine block, with proprietary Agility dress parts, propane injection system and controls. The 488LPI engine is well suited to school bus, propane bobtail and medium-duty trucking applications.

"We launched Agility's Powertrain Systems business unit one year ago," said Brad Garner, Agility's President of Powertrain Systems business unit. "We are very proud of the work our team has done since then to bring this first engine to market and we look forward to launching the additional propane and natural gas engines in our pipeline to serve the needs of our customers."



## Agility Introduces High-Performance CNG Walk-In Vans

Agility developed an OEM-quality purpose-built CNG powertrain system, certified to meet regulatory requirements of the EPA. Morgan Olson and Freightliner Custom Chassis provided the body/chassis integrated design with Agility's fuel management module and fuel storage system for clean end-to-end vehicle integration.

The vehicle uses an Agility 366NGTM natural gas engine, which is EPA certified and has CARB HD-OBID certification pending. The fully-integrated fuel system uses the Freightliner OEM fuel gauge, is engineered to OEM standards, and is purpose-built for the demands of the medium-duty industry.

All fuel fill, filtration, pressure control, and defuel functions are integrated into a single module for ease of use and serviceability. Fuel storage options are available with a capacity of 30 or 33.4 gasoline gallon equivalents.

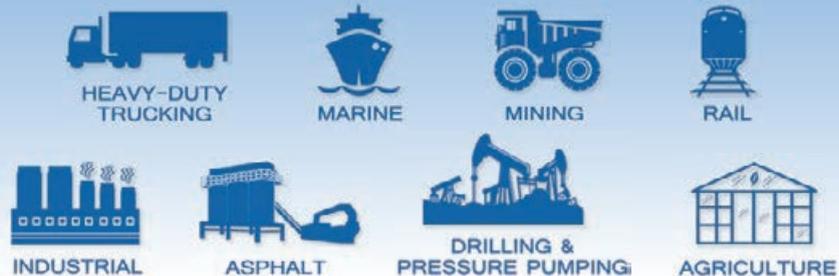
"We're very excited to work with Morgan Olson to bring these walk-in vans to market. OEM-grade installation and integrated logistics will ensure seamless delivery of quality CNG vehicles to the customer", said Brad Garner, President of Agility's Powertrain Systems business unit.

Rich Tremmel, Morgan Olson's Vice President of Sales and Marketing, adds, "These CNG vehicles are an ideal solution for last-mile delivery and service fleets looking for a cost-effective and low-emissions alternative fuel."

## APPLIED LNG

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# LightningSystems Turns Ford Vans into Plug-in Hybrids and Hydrogen Fuel Cell Vehicles

The LightningElectric Ford Transit is a plug-in electric that can travel 100 miles per charge.

Ford Motor Co. sells about 130,000 Transit vans annually, all with gasoline or diesel engines. Now there is a green option.

Lightning Systems (Booth 1229) of Loveland, Colo., has launched a conversion business, building the LightningElectric Ford Transit—a plug-in electric that can travel 100 miles per charge. It went on sale in March. A hydrogen fuel cell version with twice the range will be available in August.

“From a driving standpoint, they’re identical with the motors, batteries, transmission, the whole integration with the vehicle,” said Tim Reeser, chief executive of Lightning Systems.

But going green will cost some green. The Lightning Systems modified Transit costs about \$25,000 more than a gas or diesel Ford Transit even after subsidies from environmental agencies. And that’s after a \$300,000 grant from California for each hydrogen fuel cell Ford Transit. There is a \$50,000 voucher available in California for the Lightning Electric Ford Transit. A gasoline-powered Ford Transit costs about \$40,000.

“Some of this is the nature of early stage, low-volume production products,” Reeser said. “It’s very expensive at first, and then as



volume increases, the costs come down fast. Initially you have to be able to stimulate the market.”

Customers for the LightningElectric Ford Transit so far include XPO Sales, which provides busing services for parking at Los Angeles International Airport and San Diego Airport and a delivery group that FedEx contracts. Order numbers are usually in the tens, not the thousands, Reeser said.

The first customer for the hydrogen fuel cell version is California hydrogen fuel station provider Stratus Fuel, which has ordered 100.

The numbers are small, but Reeser expects to ramp up quickly.

“We’re at a critical milestone now where the supply chain works. We have developed a compelling product. It’s smooth, quiet and has lots of benefits in terms of noise, vibration and harshness of the vehicle. It’s clean, so now it’s all about getting to volume so the price comes down,” Reeser said.

Next year at this time, he expects to have sold 1,500 Ford Transit Lightning and hydrogen fuel cell vehicles. In two years, 5,000.

— Susan Carpenter | Trucks.com

## DOE Celebrates the 25th Anniversary of its Clean Cities Program



In 1993, Whitney Houston topped the Billboard chart and “Jurassic Park” ruled the box office, and the U.S. Department of Energy launched its Clean Cities (Booth 828) program to form local coalitions that could help cut petroleum use in transportation.

Comprised of business leaders and fuel providers, government agencies and community groups, the coalitions often made for strange bedfellows.

But in 2018, as the program celebrates its 25th anniversary, more than 100 Clean Cities coalitions have collectively saved more than 8.5 billion gallons of petroleum nationally, according to the DOE. It helped bring together our key stakeholders, said Don Francis, coordinator for what was then Clean Cities Atlanta, now Clean Cities Georgia.

Atlanta is the headquarters for UPS and Coca-Cola and one of the major hubs for telecommunications giant AT&T. Back in 1993, those corporations joined with Georgia’s electric utility and gas company with the goal of learning about and developing alternative fuels.

“Atlanta has continuously, almost with-

out exception, been out of compliance with national air quality standards because of our transportation issues,” Francis said. “We don’t have heavy industry. What we do have is 1 million vehicles going downtown every day. We’ve seen UPS go from ‘we’re interested’ to basically leading the charge with this program,” said Francis. “If there’s an alternative fuel out there, they’re using it somewhere.”

UPS now operates more than 3,150 alternative fuel and advanced technology vehicles, including all-electric, hybrid electric, hydraulic hybrid, compressed natural gas, liquefied natural gas, liquid propane gas, biomethane, and light-weight composite body vehicles. High-profile companies have helped attract new members. “People always say, if Coke and UPS are doing it, maybe we should pay attention,” Francis said. — Susan Carpenter | Trucks.com

# Attendees Gain a Behind-the-Scenes Look at Two Advanced Transportation Projects

Southern California is home to many of the largest and most successful alternative fuel vehicle (AFV) and infrastructure projects in the world. AFVs have a prominent role on the region's roadways, from light-duty fleets, delivery trucks, clean-fuel buses, refuse trucks, tractor-trailers and more—a diverse range of clean vehicles have proliferated throughout the Southland. To kick off the week at ACT Expo, attendees had an opportunity to participate in one of two off-site tours to

advanced transportation projects right here in Long Beach, California.

**Long Beach Container Terminal:** LBCT is the world's first zero-emission marine container terminal. It uses fully automated battery-electric cargo-handling equipment to move containers through its terminal. While there is a lot of talk of heavy-duty vehicle automation, LBCT has more than 60 battery electric units running in every day service. A group of 40 attendees visited this incredible project and saw firsthand how these units autonomously change their own battery packs!

**City of Long Beach Fleet:** Long Beach has one of the most diverse and innovative municipal fleets in the nation, offering an ar-

ray of fuel and vehicle types with renewable diesel, renewable natural gas (and vehicles with the new near-zero-emission natural gas engine), and plug-in hybrid. Attendees saw an assortment of city vehicles, as well as its renewable fueling infrastructure, extensive maintenance shop, and fleet charging infrastructure.



A group of attendees seeing firsthand how the automated battery electric cargo handling equipment changes its own batteries.



A group of attendees learning about the city of Long Beach's onsite CNG & Lng fueling for its refuse fleet.

## Innovating Transport

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## Tropos Names Dealers for Its Low-Speed Electric Utility Vehicle

Electric utility vehicle developer and distributor Tropos Motors (Booth 1327) has established a dealer network to sell and service the low-speed, all-electric ABLE chassis and the specialty work bodies it is developing for its emissions-free utility vehicle.

It will use First Priority Green Fleet, which specializes in ambulance, fire and other specialty vehicle sales and service. First Priority has locations in California, New Jersey and North Carolina. Tropos also has signed Turf & Industrial Equipment Co., based in Santa Clara, Calif., to serve Silicon Valley and the San Francisco Bay Area.

Morgan Hill, Calif.-based Tropos recently expanded from importing and assembling a low-speed electric utility vehicle from China to developing and manufacturing its own low-speed utility vehicle and specialty bodies for it and the Chinese-made utility vehicle, Tropos Chief Executive John Bautista told Trucks.com.

"We are always looking for new, high-



quality vehicles to deliver to our customers," said Alex Cherepakhov, First Priority's chief executive. Tropos' ABLE chassis and work packages are "an ideal match" for many of those customers, he said.

Tropos unveiled its latest packages, a closed ambulance-like medical response body and a street sweeper body, in April, adding to a line that includes a medical emergency response package and a fire response body.

Zero-emission compact electric utility vehicles are designed for operation in warehouses and other large buildings or outdoors on closed-campus sites such as schools, parks or industrial and commercial complexes.

The Tropos ABLE has a range of up to 120 miles, depending on speed, terrain and cargo load. Payload capacity is 1,200 pounds, and

the tow rating is 2,000 pounds.

The compact ABLE chassis has a closed cabin for the driver, a 12.5-foot turning radius for maneuverability and can operate on sidewalks and other narrow paths, including warehouse aisles, Bautista said. It can operate inside large buildings because its electric drive system is emissions free.

The new sweeper package can hold up to 2 cubic yards of sweepings and includes a clean air blower to permit the operator to remove debris from curbs and gutters.

Tropos is developing a proprietary electric work vehicle chassis and continues to import and assemble the Metro chassis imported from China by New Jersey-based Centro Automotive Corp.

— John O'Dell | Trucks.com

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## Motiv Introducing Weight-Shaving, Cost-Cutting Battery Controller for Its EV Chassis

Electric truck developer Motiv Power Systems (Booth 1527) has developed a new unified battery controller that can cut costs, increase cargo capacity and speed up the build process for trucks based on its medium-duty EPIC chassis.

The new Adaptive Battery Controller will replace the multiple battery controllers now needed for the EV chassis, greatly reducing the control hardware's size and weight, said Jim Castelaz, Motiv's founder and chief executive.

By freeing space outside the battery-electric chassis' frame rails, the new controller also will streamline the body fitting process by providing more space and flexibility for truck body builders, he said.

The Class 4-7 EPIC chassis, which recently earned California Air Resources Board certification as a zero-emission chassis, can be outfitted with up to six battery packs, each requiring its own controller.



The roughly 60-pound controller boxes are mounted on the outside of the frame rails and can add 360 pounds to the truck's weight—reducing cargo capacity and, because of their weight, cutting down on a truck's overall range. Replacing them with a single controller can slash vehicle weight by up to 300 pounds.

The batteries and their controllers also are the biggest cost in electric vehicle builds, he said.

By using batteries mass produced for electric passenger cars, the EPIC chassis reduc-

es weight and costs. Utilizing a single battery controller in place of multiple controllers provides further reductions, said Castelaz.

Use of a single battery controller also provides more room and flexibility for truck body builders.

"Motiv's goal with the EPIC was to create a simple, reliable and cost-effective all-electric chassis capable of meeting the varying needs of medium-duty fleet operators while streamlining the build process," Castelaz said.

— John O'Dell | Trucks.com

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## U.S. Hybrid Will Supply Battery and Fuel Cell Electric Powertrains for Dongfeng Trucks

U.S. Hybrid Corp. (Booth 1827), a Torrance, Calif.-based developer of electrified commercial vehicle powertrains, has begun co-developing hydrogen fuel cell and battery-electric trucks with China's Dongfeng Motor Corp.

The trucks, in multiple weight classes, are designed for global markets with the initial model, a Class 6 delivery truck, to be marketed initially in the U.S., Abas Goodarzi, U.S. Hybrid's chief executive, told Trucks.com at the ACT Expo conference in Long Beach, Calif.

Dongfeng is one of China's major passenger and commercial vehicle companies. Its Special Vehicles division is one of the world's largest builders of battery and fuel cell trucks, with more than 64,000 of its battery-electric trucks operating in China today, Goodarzi said.

U.S. Hybrid sees ties with companies such

as Dongfeng as the fastest way to broaden its presence in China and globally.

The company was started and now has a fuel cell production plant in Connecticut, and a servo motor, automation, robotics and semiconductor products facility in Massachusetts.

— John O'Dell | Trucks.com



U.S. Hybrid Corp. co-developing Class 6 hydrogen fuel cell and battery-electric trucks with China's Dongfeng Motor Corp., to be marketed initially in the U.S.

U.S. Hybrid sees ties with companies such as Dongfeng as the fastest way to broaden its presence in China and globally.

The U.S. truck will be launched later this year. Buyers will be able to specify the type of powertrain—battery or fuel cell. Pricing and other details have not yet been announced.

The Dongfeng-branded Class 6 truck will have up to 300 miles of range with U.S. Hybrid's FCe80 hydrogen fuel cell system, Goodarzi said.

The battery-electric version will deliver more than 150 miles of range and will use a U.S. Hybrid electric drive system with a rechargeable battery pack rated at more than 100 kilowatt-hours, he said.

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# Gain Clean Fuel Announces Expansion of Its Renewable Natural Gas Offering

U.S. Gain (Booth 832) President Mike Koel is no stranger to taking risks. He's the force behind the business division's formation in 2009 when he identified the demand in providing fleet operators with environmentally-friendly, cost-effective alternative fuel options. Since then, GAIN® Clean Fuel has worked cooperatively with transportation companies across the country to supply compressed natural gas (CNG) as an alternative to diesel, which has become the fuel of choice for many based on significant financial and environmental benefits.

Over the last year, Koel and his team have embraced a new challenge – to become a leading renewable natural gas (RNG) supplier by procuring processed methane generated from landfills, livestock manure and wastewater treatment facilities in an effort to improve local air quality and provide fleets access to an even cleaner fuel.

Through vertical integration, flexible business management and strategic risk-taking, GAIN Clean Fuel has recently expanded availability of its RNG offering through the now operational Woodland Meadows Recy-

cling and Disposal Facility (RDF) in Wayne, Michigan. RDF is a regional facility that provides safe and convenient disposal services for communities, businesses and industries serving the Detroit Metro and surrounding areas.

"RNG is one of the few alternative fuels that creates air quality improvements during the fuel production process and also when used in actual transportation," says Bryan Nudelbacher, director of business development for GAIN Clean Fuel. "This truly positions companies using RNG for sustainability success."

GAIN Clean Fuel, in partnership with Ameresco, Inc., a leading independent provider of comprehensive energy efficiency and renewable energy solutions, and Waste Management, Inc., the largest environmental solutions provider in North America, is bringing to the market renewable natural gas (generated from the landfill) for use within the transportation sector.

The Woodland Meadows Recycling and Disposal Facility is projected to reduce



Woodland Meadows Recycling and Disposal Facility

carbon emissions emitted directly from the landfill by 33,349 tons CH<sub>4</sub> per year, which is equivalent to the carbon sequestered by 713,550 acres of U.S. forests in one year.

With several other landfill, dairy farm, and wastewater treatment facility projects in the works, GAIN Clean Fuel is dedicated to expanding availability of RNG.

"We are committed to working closely with various producers throughout the process by obtaining gas rights, ensuring compliance, investing in clean-up equipment and project financing to dispense the highest quality RNG to the most forward-thinking organizations," says Koel. "Furthermore, we're focused on expanding our station network to maximize accessibility to RNG, and are excited about the partnerships to come."

## Innovating Transport From electric accessories to zero-emission propulsion

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# Bringing Zero-Emission Infrastructure Technology Manufacturing to California

Join the California Energy Commission for a Roundtable Discussion:



**Friday, May 3 | 9:00am - 3:30pm:**  
**Hyatt Regency Long Beach Seaview Ballroom**

The California Energy Commission (CEC) and the National Renewable Energy Laboratory invite you to join us as we explore opportunities for the state to bring zero-emission infrastructure technology manufacturing to California.

With California's ambitious target of deploying 5 million zero-emission vehicles (ZEVs) by 2030, the state faces the challenge of building—and often, financing—the infrastructure to support the increased demand. As California transitions to clean transportation to help achieve its climate goals, the state remains focused on fostering economic growth and the development of in-state jobs.

Join Janea A. Scott, lead Commissioner on transportation at the CEC, for roundtable discussions with ZEV OEMs, EVSE suppliers, utilities, public agencies, workforce development organizations, and more.

**9:15am - 10:45am: Roundtable #1: Assessing the Full Potential**

This panel will quantify opportunities for California ZEV infrastructure manufacturing growth, including potential facility locations, job creation estimates, and implementation timelines. Participants include CalETC, Los Angeles Department of Water and Power, LA Metro, Port of Long Beach, ABB, eMotorWerks, ChargePoint, TransPower, CleanTechnica, EV Connect, KiaUSA, and the UCLA Luskin Center for Innovation.

**10:50am - 12:30pm: Roundtable #2: Identifying Barriers and Challenges**

This panel will capture expert insight on where roadblocks might exist, as well as key lessons learned from companies with experience manufacturing ZEV technology in California. Participants include EVgo, FirstElement Fuel, Paired Power, Envision Solar, Pacific Gas & Electric, Proterra, AeroVironment, Cyber Switching Solutions, Los Angeles County, Long Beach Community College District, Volta, and MOEV.

**12:30pm - 2:00pm: Lunch Presentation: Access & Opportunity for ZEV Growth**

A presentation will be provided by Michael Backstrom, Managing Direc-

tor, Energy & Environmental Policy, at Southern California Edison.

**2:00pm - 3:15pm: Roundtable #3: Setting Goals & Action Plans**

This panel will identify tangible actions to accelerate ZEV technology development, including strategies to attract private investment, ideal infrastructure locations (residential and commercial) and incentive funding pathways. Participants include Gladstein, Nean-

dross & Associates, Southern California Public Power Authority, SunLine Transit Agency, Ballard Power Systems, Greenlots, EVOCharge, American Honda, Clean Fuel Connection, Adopt A Charger, Port of Los Angeles, and LiquidSky Technologies

**Registration is complimentary, but seating is limited. If you are interested in participating, visit the ACT Expo registration desk to learn more.**



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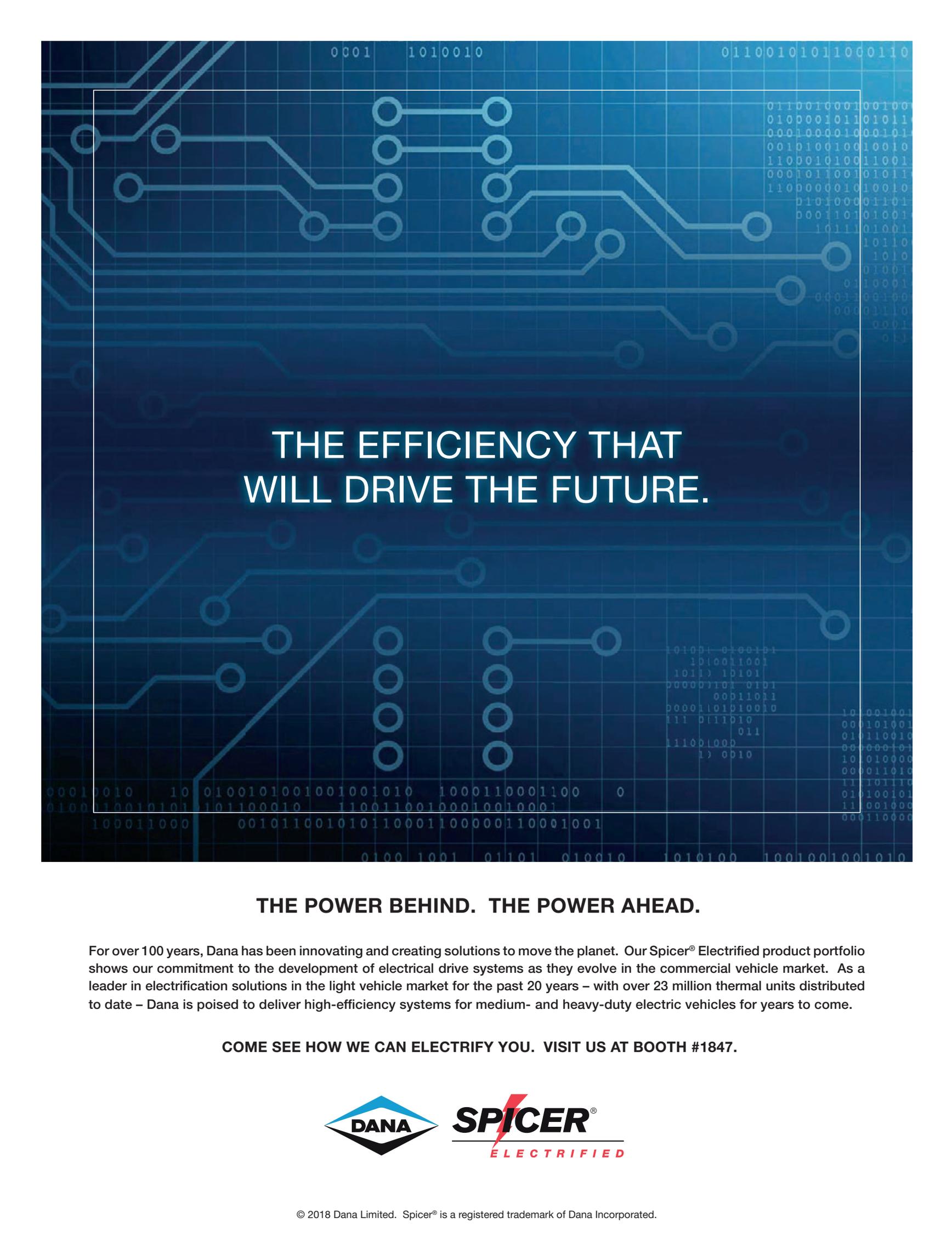
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Engineered for on-vehicle applications, Parflex now offers a Higher Temperature (+250°F), Regulated pressure (500psi) hose, CNGRP. The CNGRP hose is CSA listed and may be the only low pressure hose that meets ALL CSA requirements. CNGRP is designed for low pressure delivery of CNG fuel downstream of the pressure regulator in high ambient environments or along the frame rail for under body applications.

On display at ACTEXPO 2018  
Parker Hannifin booth #637  
parker.com/CNGRP



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## Sun-Powered Refrigerated Truck Trailer Slashes Diesel Emissions

Keeping fresh goods refrigerated during transport is important for food safety, but it requires a lot of energy and creates pollution.

A solar-powered cooling system developed by eNow, a Warwick, R.I., builder of solar panels could address that problem. In one test, it cut harmful diesel emissions on a refrigerated truck trailer by almost 100 percent.

eNow put its system, dubbed “Rayfrigeration,” through real-world paces in the most severe conditions to ensure it works as effectively as its pollutant emitting counterpart.

Refrigerated, or reefer trucks, have two engines. One is part of the drivetrain, and the other keeps the trailer cold.

“The trailers have their own separate diesel engines on them, so they have their own fuel supply,” said Jeff Flath, eNow’s president and chief executive.

Replacing the diesel engine with a battery provides an opportunity to cut fuel and maintenance costs, Flath said.

eNow’s system integrates its panels into a battery pack that has enough energy to operate the complete trailer system, he said. A typical reefer truck is in service between eight and 12 hours per day.

The company also eliminated most greenhouse gases from a trailer’s on-board diesel-powered compressor.

Diesel and other fossil-fuel burning systems typically used to cool reefer trailers emit pollutants into the air such as hydrocarbons, carbon monoxide, nitrogen oxide, or NOx, and

particulate matter.

The emissions from the trailer unit often go unmonitored and in many cases the engines are more polluting than the big engines powering the trucks.

This technology could help slash diesel emissions in a growing market.

“The reefer transportation industry is going to grow 12 to 17 percent per year because more and more goods are being transported,” Flath said.

David Cooke, senior analyst at the Union of Concerned Scientists, said the California Air Resources Board identified lowering greenhouse gases emitted from reefer

trailers as part of its overall clean air strategy.

“The board highlighted real concerns for refrigerated warehouse distribution centers where trailers sit idle when they’re being loaded,” Cooke said. “In a lot of cases they are just sitting there for long stretches of time.”

To construct the power source, eNow used a lightweight solar system with advanced photovoltaic, or PV, panels and married it to a hybrid cooling system and an insulated truck box. The result is a nearly zero-emissions transport refrigeration unit.

In a nearly \$1-million demonstration in the San Joaquin Valley, eNow installed its unit on a Class 7 Challenge Dairy delivery truck that distributes products to customers in Fresno, Calif., a city notorious for extreme heat in summer months.

The air pollution control district in the region

footed half the bill.

“Some days temperatures reached around 112 degrees,” Flath said. “This was the rugged environment we wanted to make sure it could perform equal to a diesel system.”

The vehicle was used on average about eight hours per day. At night it returned to the distribution hub where the unit’s battery pack was recharged via “shore” power, which means electricity from the grid.

Between April and August — the five hottest months of the year — the team found that the Rayfrigeration system reduced NOx emissions by 98 percent compared with the original truck. Carbon monoxide was reduced by 86 percent, and particulate matter pollutants fell by 97 percent.

“We were more surprised at how much pollutants are produced by a diesel engine,” Flath said.

Average emissions of carbon monoxide over a four-day work week with an average delivery day of 7.7 hours plunged to 159 pounds from 2,252 pounds, according to eNow. NOx emissions dropped from 7,162 grams to just 1.

And by eliminating operations and maintenance costs associated with running a diesel engine, eNow was able to attain the initially projected savings of 90 percent.

“Electrifying refrigerated freight trucks is an environmental and economic win-win,” said Luke Tonachel, director of the clean vehicles and fuel project for the Natural Resources Defense Council.

Powering reefer systems with sun and electricity lessens “health-threatening” pollution and is cheaper than burning diesel, Tonachel said.

— Carly Schaffner | Trucks.com



# InsightFuel Develops Unique Process to Expand CNG Infrastructure in the U.S.

Thousands of medium- and heavy-duty natural gas trucks are slated to be added to our nation's commercial fleet sector in 2018, as near-zero-emission engine technology becomes readily available and crude oil prices continue to climb. With the growing demand anticipated for both public and private fueling stations, it's vital to ensure that existing natural gas stations are optimized for performance, and that fleet operators and station developers can add or expand infrastructure quickly and cost-effectively.

InsightFuel (**Booth 647**), with the motto "Build Better," is focused on addressing this very specific market need. The company was formed by combining the leadership teams from four established natural gas station design, construction and maintenance businesses—"O" Ring, R. Anthony, CNG Plus, and AFV Natural Gas Vehicle Fuel Systems—who have tapped their industry expertise to develop new construction methods and materials that speed up onsite installation by an average of 4 weeks and reduce project costs approximately 25 percent over traditional installation materials and methods.

Their team has successfully supported the

development of more than 150 CNG stations across the U.S. using their unique engineering practices: 1) they use a pattern building approach; 2) they pre-fabricate and assemble materials in their shop; and 3) they have specialized tools and materials designed for CNG infrastructure development.

In addition to supporting new CNG station construction, InsightFuel can help existing CNG station owners protect their capital investments for the long-term. Their team has a station optimization practice that quickly and cost-effectively improves performance while bringing older stations (typically 10 to 15 years old) into compliance with current federal, state, and local codes and ordinances. Some of their typical services include upgrading onsite gas storage, optimizing compression, improving gas flow, recalibrating dispensers, and replacing damaged tubing and filtration elements.

"While we are dedicated to making a big impact, we are not looking to make a big



splash," said Jeff King, Owner of InsightFuel. "You won't see our name on the canopy or in the headlines. We want to be the guys behind the scenes helping make the project or product successful and profitable for the station owner or operator."

During ACT Expo, InsightFuel will be showcasing various services for developers, engineering firms, and fleet operators that are interested in building, optimizing or expanding their CNG infrastructure. Learn more by visiting their brand new website at [www.insight-fuel.com](http://www.insight-fuel.com) or stopping by to meet their team at ACT Expo.



## Join Us Tomorrow Evening for the Fleet Awards Cocktail Reception

Join us on Wednesday, May 2 from 5:30 p.m. to 7:30 p.m. to celebrate the 2018 ACT Expo Fleet Award Nominees and Winners while enjoying delicious cocktails, hors d'oeuvres, fun networking activities, and more! Attend this wonderful networking opportunity, presented by Propane Education & Research Council, as we recognize fleet operators who show true leadership in sustainable transportation.

Pre-registration is required. If you are not yet registered, but would like to attend, please visit the registration desk to secure your ticket.

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# WHERE INNOVATION BEGINS



*BUILD YOUR DREAMS™*

Stop by booth 1935 to see the first battery-electric truck in Goodwill San Francisco's new all-electric fleet, as well as BYD's zero-emission electric buses and forklifts.



# Mass Transit Delivering Promise of Zero-Emission Buses for Cities

Black & Veatch's high-power electric vehicle charging infrastructure powers 14 electric buses in D.C.

Growing interest in high efficiency, pollution-reducing transit options is propelling investment in new electrified mass transit projects across the U.S. Reflecting this trend, Black & Veatch announced it has completed the charging station infrastructure that powers Washington, D.C.'s new electrified mass transit project—the latest move by U.S. cities to reimagine how to sustainably move people across urban landscapes with the benefits of clean transportation, both on and off the bus.

The Washington D.C. Circulator System project combines 14 Proterra Catalyst E2 buses, each having a Proterra-provided 50kw charger installed by Black & Veatch along with the related charging infrastructure. Powered entirely by high-capacity batteries, the buses benefit riders and non-riders alike by eliminating a projected 244,000 pounds of

carbon dioxide emission each year. For taxpayers, there's a bonus: the 14 EV buses will cut the fleet's fuel and maintenance bills by more than \$6 million over the transit vehicles' typical 12-year life cycle, while displacing nearly 90,000 gallons of diesel fuel annually.

U.S. cities purchase an estimated 5,000 public transit buses each year, and due to the benefits, city officials increasingly are prioritizing electrification of their mass transit offerings. Some 850 municipal electric buses are on order, and there are active proposals for hundreds more. Seattle will roll out 120 new electric buses by 2020, while Los Angeles is buying 95 electric buses for \$138 million—a tenet of that city's quest to replace its 2,300-bus fleet with EVs by 2030. Keeping many such buses rolling is Black & Veatch's market-leading design and

deployment of more than 1,000 charging sites nationwide, including the large-scale, heavy-duty charging infrastructure EV require.

"With the arrival of electrified transit, public transit agencies and utilities must work in concert to develop infrastructure roadmaps that guide them beyond early pilots toward mass deployment. Each system is different and will seek to optimize the best combinations of on-route and depot charging technologies," said Paul Stith, Director of Strategy & Innovation for Black & Veatch's Transformative Technologies business and an expert in sustainable transportation and energy storage solutions. "Partnering with an organization with deep EV infrastructure and utility experience like Black & Veatch will ensure infrastructure won't hold back aggressive EV adoption."



## CHBC Hydrogen and Fuel Cell On-Road Freight Workshop

On Monday, the California Hydrogen Business Council (CHBC) (Booth 1519) hosted a half-day workshop to continue to build awareness on the ability of hydrogen and fuel cell technologies to enable commercial customers to meet sustainability and regulatory compliance objectives, address technical and non-technical challenges with transitioning hydrogen and fuel cells in to fleets, and to understand the key drivers of substantive economic and operational benefits. ACT Expo attendees heard from fleet operators, regulatory agencies, OEMs, technology providers, and fuel providers on the status of freight demonstrations and future visions for heavy duty hydrogen fuel cell projects.

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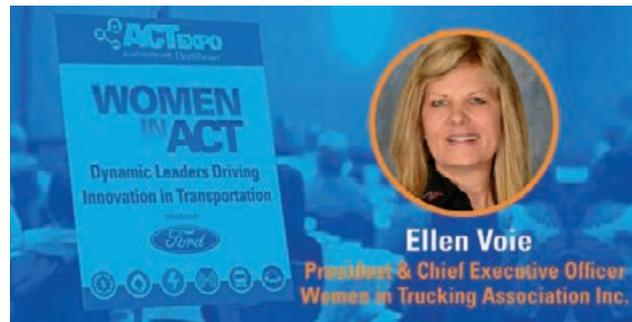
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# Women in ACT: Dynamic Leaders Driving Innovation in Transportation

The fourth annual Women in ACT Summit, sponsored by Ford, kicked off this morning's sessions at ACT Expo. The Summit brought together an impressive lineup of female transportation executives to share their perspective on why it is critical for companies in the advanced clean transportation industry to have gender diversity within their leadership teams.

Moderator Ellen Voie, the president and chief executive officer of the Women in Trucking Association, introduced results from recent research studies that have shown that organizational diversity—from entry level to c-suite, to boards of directors—leads to improved performance, increased profits, and higher employee satisfaction.

"In an era of rapidly shifting technology, demographics, and policy trends, it is critical that the transportation sector continues to innovate and consider a diverse set of perspectives when developing new products and solutions," said Ginger Kasanic, Fleet Sustainability and Advanced Technology



Manager, Ford Motor Company. "Ford has continued to sponsor the Women in ACT Summit as it fosters an important conversation about how the industry can attract the necessary talent to effectively navigate the rapidly shifting landscape.

Attendees heard from several women who have helped meaningfully transform the transportation market, including Lauren Skiver, Chief Executive Officer & General Manager, SunLine Transit; Lisa Alexander, Vice President, Customer Solutions and Communications, SoCalGas; Heather Tomley, Director of Environmental Planning, Port of Long Beach; and Stella Li, President & Chief Executive Officer, BYD Motors.

## CNG Cylinders International Announces Name Change to Winkelmann Flowform Technology - Fuel Systems

CNG cylinders international (CNG-ci) – a leading manufacturer of Type 3 CNG cylinders and fuel systems used in the transportation Industry – recently announced that it is changing its name



to Winkelmann Flowform Technology - Fuel Systems (WFT-FS) (Booth 1022). The name change reflects the company's broader commitment to high-pressure gas storage applications relying on large diameter Type 3 cylinders beyond on-board CNG fuel storage applications which had been the core business for CNGci.

WFT-FS is part of the Winkelmann Group; a German company with global manufacturing facilities and provider of flow formed products catering to a wide variety of automotive, industrial, defense and aerospace applications.



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# Bergstrom Releases NITE Hawk

The new NITE Hawk-S features Bergstrom's industry-leading NITE® no-idle solution, its innovative solar energy panels, as well as a high efficiency fuel-based heater (Booth 1753). Together the components provide work truck operators with an innovative solution to maintain a comfortable and productive cab climate without needing to run the engine. This reduces overall operating costs by decreasing fuel consumption and reducing routine engine maintenance while at the same time eliminating exhaust emissions.

"With the new NITE Hawk-S, we've taken our expertise in the Class 8 truck market and applied it to sports utility vehicles used in the work truck industry," said Mike Aldred, Bergstrom Manager, Business Development. "We recently installed this system in a Chevy Tahoe that is being used for security patrolling, and our customer has seen huge cost savings as a result of reduced engine idling."

The system runs on four auxiliary AGM/deep cycle batteries that result in a system run time of roughly eight to ten hours. The addition of the solar panels further extends this run time and provides ongoing conditioning of the batteries, which improves battery life. These features make the NITE



**"With the new NITE Hawk-S, we've taken our expertise in the Class 8 truck market and applied it to sports utility vehicles used in the work truck industry,"**

— Mike Aldred, Bergstrom Manager, Business Development

Hawk-S an appealing product for drivers who spend long periods of time in their vehicles and need cooling or heating capabilities to maintain a quiet and comfortable work environment.

This system can be adapted to a variety

of vehicle configurations where operator comfort, reduced fuel consumption, reduced engine maintenance and a more environmentally friendly solution than ongoing engine idling are important considerations for your business.

## Phoenix Motorcars Introduces Next Generation High Power Drive System



Phoenix Motorcars announced the launch of its next generation high power drive system—the E110. According to Phoenix Motorcars, the E110 will be available on the Ford E-Series Cutaway Chassis starting in Q4, 2018 and will provide end-users with a 10 percent increased range and 60 percent increased torque over current drive system. The company also noted that the new E110 has improved acceleration and towing capacity and comes in modular packs with 105 or 125 kWh options.

"We are very excited to be introducing the E110 to the market", JP Aguirre, VP of Engineering at Phoenix stated. "The E110 continues in Phoenix's tradition to bring to market cutting edge technology for commercial vehicles. Phoenix is also planning on performing the Altoona test program with the E110 drive system this fall. Our goal is to manufacture the first All-Electric Cutaway to be Altoona certified."

Phoenix anticipates improved operational savings with better fuel efficiency and reduced maintenance costs.

## NGVAmerica Launches Redesigned Website with New Look, Improved Features

NGVAmerica launched a new website on Monday that features a dynamic new look and expanded features and content. The [ngvamerica.org](http://ngvamerica.org) website has been redesigned to further advance NGVAmerica's role as the national voice of the natural gas vehicle (NGV) industry by providing the most in-depth and up-to-date information about NGVs and their environmental, economic and other benefits.

"The new NGVAmerica website provides our members, as well as the general public, access



to the critical information and resources needed to transition to and to operate NGVs," said NGVAmerica President Dan Gage. "Our website is an important way in which we communicate the many benefits of NGVs and advance the use of clean-burning natural gas fuel across the US."

The new website highlights traditional on-road natural gas transportation applications in freight hauling and delivery, transit and refuse as well as emerging off-road high horsepower applications in marine, rail, and mining/construction. NGVAmerica.org features an extensive resources page, NGV member directory, VW action center, and station locator map. In addition, the new website is now home to NGVAmerica News, the industry's source for daily NGV news and insights into NGVAmerica's legislative, regulatory and educational efforts. A free sign-up form to receive the NGVAmerica News weekly newsletter is also available on the news page.

NGVAmerica members continue to enjoy exclusive online benefits, including access to the NGV Policy Portal and station and infrastructure analysis. NGVAmerica members are also featured in the online Business Directory, the only comprehensive company directory for the NGV industry.

Visit the new NGVAmerica website at [www.ngvamerica.org](http://www.ngvamerica.org).

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# National Biodiesel Board Promotes Findings of Fleet Survey That Highlights Biodiesel as a Top Alt Fuel

According to a new 2018 Fleet Purchasing Outlook study conducted by NTEA, biodiesel is the most popular alternative fuel option on the market, followed by E85, CNG and Electric Hybrid.

Survey data shows 18 percent of fleet participants use biodiesel now – up from 15 percent in 2017. And in terms of future alternative fuel interest, biodiesel also takes top honors, with more fleets planning to acquire or continue using biodiesel than any other alternative fuel option.

Each year, NTEA conducts a comprehensive Fleet Purchasing Outlook Survey to better understand the commercial vehicle landscape, including interest levels for advanced truck technologies and alternative fuels.

Don Scott, director of sustainability for the National Biodiesel Board (Booth 531), commented, “The findings of this survey validate what we have been hearing from fleets... when fleets learn that they can immediately reduce their greenhouse gas emissions by using biodiesel blends in their existing diesel equipment, it is truly a win-win.”

Steve Latin-Kasper, NTEA director of market data and research, commented, “Nearly 40 percent of respondents indicated they currently operate alternative-fueled trucks in their fleets, up 4 percent from 2017, and interest is at the highest recorded level since 2014. While interest in alternative fuels may wax and wane a bit due to the inherent volatility of oil prices, it will likely rise steadily across time. Most fleets are well aware of the need to keep exploring clean energy solutions.”



According to the National Biodiesel Board, forward-looking fleets are using biodiesel blends as an easy and cost-effective way to reduce their carbon footprint in their existing diesel vehicle fleet. Compared to fossil fuels like petrodiesel, B20 reduces carbon by 16 percent on average, with B100 reducing carbon by 80 percent.

New this year, NTEA added renewable diesel options to its Fleet Purchasing Outlook Survey in order to gauge directional movement for this fuel type in coming years. Among survey participants, renewable die-

sel came in at 3 percent of future alternative fuels interest.

To help address this interest, especially in California as part of the California Low Carbon Fuel Standard, NBB member company Renewable Energy Group (REG) is now offering California customers a patent-pending blend of biodiesel and renewable hydrocarbon diesel. Visit the National Biodiesel Board Booth #531 in the ACT Expo Hall on May 1st at 6:15 PM for a press conference to learn more about this exciting industry development from REG.

# Trillium CNG to Upgrade CNG Fueling Station for Top Refuse Company

Trillium CNG (Booth 1010), one of the nation’s leading providers of compressed natural gas (CNG) vehicle fueling facilities, was recently selected by American Disposal Services to provide upgrades to its CNG fueling station. The recycling and waste collection provider based in Manassas, Virginia, first added CNG trucks to its fleet in 2014. The upgrades allow American Disposal Services to double the size of its CNG fleet by allowing more vehicles to fuel concurrently.

“CNG has been a popular choice among refuse fleet managers for years,” said Bill Cashmareck, managing director of Trillium

CNG. “American Disposal Services is following a clear trend in the waste services industry to expand natural gas fleet operations for a variety of reasons, including cost stability. We’re happy they’ve had a positive experience and we’re pleased to help them grow their alternative fuels operations.”

In 2014, American Disposal Services implemented a long-term plan to convert its fleet to CNG. The upgrades to the fueling system, located at 10370 Central Park Drive, will accommodate approximately 60 vehicles. Trillium will add 31 new time-fill hoses and update system controls programming to

**Trillium CNG to Double Fueling Capacity for American Disposal Services’ Manassas, Virginia, Station**



ensure all equipment runs at peak efficiency. American Disposal Services also executed a four-year operations and maintenance contract extension with Trillium to provide additional support.

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