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Vision Motor Corp

Class 8 hydrogen fuel cell truck developer is stepping into the big time with a letter of intent for 100 and possibly 400 of its Tyrano vehicles. Vision offers fuel cell yard hostlers, too, and is working to help establish a hydrogen fueling infrastructure.

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Azure for F-550 Plug-In

New Hybrid Electric Drive Variant for Largest Ford Truck Model To Be Applied to Other Vehicles Too, Battery Choice Remains Open
Azure Dynamics (Toronto:AZD) is developing a plug-in hybrid electric design for Ford's popular F-Series Super Duty cab and chassis, starting with the F-550, "expected in early 2013."

An agreement with Ford also provides for Azure to apply its emerging plug-in-hybrid technology to trucks including the F-350 and F-450.

The new F-Series program "furthers [the] existing business relationship between Azure and Ford that previously brought the innovative Transit Connect Electric and the E-450 Balance Hybrid Electric Step Van and Shuttle Bus to market," Azure said.



2011 Ford F-550 Super Duty

and configurations," and includes a ship-thru provision permitting Azure to place vehicles in the Ford transportation system, and Ford dealerships to sell and service the product.

Azure is targeting both bus and truck markets, says business development VP Jim Trask. Design work continues and a battery supplier has yet to be chosen, he told *F&F*. Azure is using lithium ion batteries from the Johnson Controls-Saft joint venture for its Balance hybrid and the pure

Batteries TBD

The F-550 pact with "spans all engine, frame length and regular production options

more on page 2

Biomethane for UK Coke

Coca-Cola UK's methane-fueled Iveco Stralis is to be joined by 13 more trucks, to be run on landfill-derived biofuel for deliveries to Olympics venues next summer.

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Future Fed Mileage Strategy Praised

Automakers backed President Obama Friday as he unveiled the next phase in his fuel efficiency and greenhouse gas program, covering new cars and trucks for model years 2017-2025 - and scaling to 54.5 mpg.

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BAE Parallel for Crane

BAE and Crane Carrier will test a parallel version of HybriDrive heavy duty hybrid electric drive in Crane's LET2 refuse truck, aiming to bring the fuel-efficient powertrain to the U.S. market in late 2012. Trials with Dennis Eagle in the UK too.

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Electric Vehicles

Azure for Ford Plug-Ins *(continued)*

battery electric Transit Connect (Johnson Controls has moved to dissolve its joint venture with Saft).

Ford enjoys market share of better than 50% with its F-Series Super Duty line, Azure says, terming it “the most established cab and chassis brand” in North America. “Interest in fuel efficient cab and chassis alternatives has never been greater due to rising and unpredictable fuel costs,” Azure says.

“It is expected that the cab and chassis market could grow by as much as 50% over the next five years as fleet operators, who have delayed purchase decisions, return to market to replace aging inventory.”

Ford for Vehicle, Azure for Drive

“The F-Series program aligns perfectly with our product development strategy,” Azure CEO Scott Harrison said in the F-550 announcement.

“We’re able to focus on development and integration of our powertrain solutions and at the same time benefit from Ford’s expertise in building ground-up vehicle platforms keeping Azure’s capital costs in check.”

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More Electric & Hybrid Vehicles News on Pages 6-10

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Natural Gas Vehicles

CNG for BRT in El Paso

Sun Metro Calls It RTS, Has Tested a NABI And Is Looking to Build Three CNG Stations

El Paso’s Sun Metro is evaluating large compressed natural gas-fueled vehicles for its new Rapid Transit System – elsewhere referred to as BRT, for Bus Rapid Transit – and is taking bids on three new CNG fueling stations to support the BRT vehicles and others in its fleet.

The three sites are Sun Metro’s future operations and maintenance facility, a “LIFT” paratransit station, and a municipal services center for the city’s Environmental Services Department. El Paso ESD is switching a portion of the city’s garbage trucks to CNG. The current plan is to replace seven existing trucks per year for three years for a total of 21 trucks.

The bidding deadline for the three CNG stations is **September 7**.

NABI’s in the Running

Sun Metro has 231 vehicles in its operational fleet, including 166 on fixed routes and the remainder for paratransit. Of the 231 vehicles, 193 are CNG-fueled and 13 run on liquefied natural gas. The remaining 25 are low-emission unleaded gasoline vehicles, which will eventually be replaced with CNG too.

Four RTS/BRT corridors are being designed with a goal of deploying vehicles in 2013. Late in March Sun Metro tested a 60-foot articulated vehicle from North American Bus Industries.

NABI built the CNG-fueled vehicle in Alabama for Big Blue Bus in Santa Monica. Sun Metro tested it in El Paso on its way West.

In addition to alt fuels, Sun Metro has equipped its fixed-route buses with front bicycle racks, has built three green buildings over the last two years, and recently fitted nearly 200 bus shelters with lighting fixtures that run on solar-generated electricity.

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El Paso Sun Metro CNG Bus



This NABI big blue bus was tested for Sun Metro’s Rapid Transit System in El Paso on its way to Big Blue Bus in Santa Monica



Fleets Tweets

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Natural Gas Vehicles

Volvo VMN Daycab

Truckmaker Launches a Natural Gas Tractor With the ISL G Engine by Cummins Westport
Volvo Trucks has introduced a Cummins Westport ISL G-powered daycab tractor, with Talon Logistics-Giant Eagle the lead customer. Volvo's VMN daycab is available with either compressed natural gas or liquefied natural gas fuel systems.

"Localized or closed-loop operations present a great opportunity" for the domestic fuel, Volvo senior sales and marketing VP Ron Huibers said in a release.

"We're offering an alternative fuel option to move our nation's goods while emitting less CO₂."

"The natural gas option is ideal for port drayage, pickup and delivery applications, grocery and beverage haulers, or any private fleet concerned about CO₂ emissions," Volvo says. Giant Eagle logistics VP Bill Parry called the new Volvo daycab trucks "the first of their kind." Previously, he said, no available vehicle could handle his delivery area's "hilly and mountainous terrain" (*F&E*, July 18).

Talon-Giant Eagle is taking ten trucks with frame-

Honda Taps GNA for Its CNG

American Honda has enlisted the aid of the environmental consultancy Gladstein, Neandross & Associates to help develop fleet markets for the dedicated-CNG Honda Natural Gas – well known as the Civic GX, redesigned and renamed the Civic Natural Gas for 2012.

GNA will collaborate with Honda to market the Civic Natural Gas sedan in 19 states spanning the Midwest to Northeast and Mid-Atlantic regions, including the District of Columbia. The project will be managed by GNA's East Coast office in New York City. Fleets, both public and private, are the target, affirms Barbara Brentano of GNA New York.

The Civic Natural Gas is billed as the world's cleanest internal combustion engine vehicle, and the only OEM-built, compressed natural gas-powered passenger car assembled in the U.S. It is built on the same assembly line as gasoline-powered Civic four-door models in Greensburg, Ind.

The car is available in 33 states and will be available to consumers in five additional states by the end of 2011. Pricing will be determined and the model year 2012 order book opened at the end of the summer, says Eric Rosenberg, assistant alt fuels manager at American Honda in Torrance, Calif. The first build month for the 2012 car is October.

The pending NAT GAS Act "would create an even more favorable scenario for the purchase of NGVs with tax credits for vehicle and fuel purchases as well as fleet or home refueling stations," GNA says.

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mounted CNG fuel system assemblies from Agility Fuel Systems on each side of the vehicle.

Each of the conventional diesel-looking assemblies uses a Type IV all-composite CNG cylinder from Quantum Technologies holding approximately 40 diesel gallon equivalents for a per-truck total of 80 to 82 DGE. Back-of-cab configurations, also from Agility, are available too.

Giant Eagle is a multi-format food and fuel retailer with outlets in Pennsylvania, Ohio and neighboring states. Its Talon unit was the customer for Volvo's first delivery of EPA 2010 trucks in November 2009.

Giant Eagle is opening two CNG fueling stations in the Pittsburgh area, and said last month that it "will likely introduce CNG to consumers between \$1.90 and \$2.00 per GGE," or gasoline gallon equivalent.

In Europe, a Hybrid Model and DME, Too

The new trucks, with 8.9-liter, 320 horsepower, 1,000 lb.-ft. torque ISL G engine, require only a three-way catalyst to meet EPA 2010 emissions standards.

Volvo is talking up clean trucks in Europe too, recently introducing the dual fuel FM MethaneDiesel, with 12.8-liter sparkless engine, for limited initial sales in The Netherlands, UK and Sweden. (*F&E*, June 13).

In addition, Volvo's new FE Hybrid is going on sale in 13 European countries. Third is the FH DME, its diesel-cycle engine modified for dimethyl ether. DME can be made with paper industry by-products, Volvo says, thus slashing well-to-wheels carbon dioxide emissions. Ten FH DME trucks are in trials.

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Note diesel-look alike CNG fuel assembly by Agility Fuel Systems

Natural Gas Vehicles

Coke UK Orders Biomethane Iveco Trucks

Britain's Coca-Cola Enterprises is investing £1.75m (some \$2.87 million U.S.) in a fleet of 14 dedicated biomethane heavy goods trucks and associated fueling infrastructure.

Following trials of an initial Iveco Stralis vehicle commencing in May of last year, Coke UK is buying 13 more, with 7.8-liter, 270-horsepower Cursor 8 engines, to be operational by year-end or early 2012.

They will be used for delivery into venues for the Summer Olympics, which will take place in London just one year from now, commencing July 27, 2012.

The trucks will run on compressed natural gas, although fuel will be sourced as liquefied natural gas from Gasrec, derived from a landfill in Surrey, southwest of London. It will be delivered as CNG at a new facility at Coke UK's Enfield site in North London, to be set up by Gas Container Services-RoadGas.

Coke Seen as an Influencer

"We put about 200,000 loads per year onto the roads of GB and so we believe we can make a real difference," Coke UK customer logistics director Wendy Manning said in a release. "All of our hopes on the environmental benefits of biomethane were easily achieved during the trial. We hope our leadership in this area and our decision to invest in a fleet of biomethane trucks inspires others to follow."

"Coca-Cola Enterprises' backing for biomethane vehicles is hugely welcome," Anaerobic Digestion and Biogas Association chair Lord Redesdale said in Coke UK's announcement.

"I hope that Coca-Cola Enterprises' decision will inspire others to choose biomethane for their vehicle fleets, and that the UK will see significantly more biomethane

Coke U.S. Plans for NGVs

Coca-Cola "has the largest hybrid delivery fleet in North America," the U.S. Department of Energy said as Coke joined the new Clean Cities National Clean Fleets Partnership (*F&F*, July 18).

Coke is going with natural gas for its trucks too. "We have seven that will be in service by the end of the year," says fleet operations asset manager Tony Eiermann – two LNG- and five CNG-fueled tandem axle tractors. Coke will likely add more U.S. NGVs in 2012, he says.

Coca-Cola Refreshments operates more than 25,000 vehicles, plus more than 10,000 trailers (including 925 for special events). The fleet includes 691 hybrid electric vehicles, plus two battery electrics, with six more battery trucks being added this year.

"Goals are not final but we are shooting for adding 100 alternate fuel vehicles next year," Eiermann told *F&F*.

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lorries on the roads in the coming years," Lord Redesdale said. The ADBA chairman termed biomethane "a great alternative to fossil diesel."

The CNG Stralis trials were conducted in league with Hardstaff, Loughborough University and Cenex, with most of the biomethane testing completed at the Millbrook Proving Ground in central England.

Gasrec has experience with other household-name companies in Britain. An order for 795 light commercial vehicles for the Tesco.com branch of the discount retailer Tesco last year included 25 natural gas-powered EcoDaily trucks, to be fueled with product derived from landfill gas by Gasrec (*F&F*, July 12, 2010).

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UK Biomethane Meetings

Cenex has signed more than 60 exhibitors and expects upwards of 3,000 people at LCV 2011, next month's 4th annual Low Carbon Vehicle Ride-and-Drive, Conference and Exhibition.

LCV 2011 is being held **September 7-8** at the Rockingham Motor Speedway in Corby, Northamptonshire, England.

ABDA held its annual meeting last month and has slated UK AD & Biogas 2012 for **July 4-5, 2012** at NEC, the National Exhibition Centre in Birmingham, UK.

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Coke UK will deploy 14 Iveco Stralis trucks

Natural Gas Vehicles

Natural Gas Macks for Grand Junction

Grand Junction, Colo., which has big plans for natural gas vehicles, including production of compressed natural gas from the Persigo Wastewater Treatment Plant, recently took delivery of four natural gas-powered Mack TerraPro Low Entry refuse trucks – “the first natural gas refuse trucks to operate in Western Colorado,” Mack says. They have 8.9-liter ISL G engines from Cummins Westport.

“Grand Junction is committed to clean air technology and we’ve long relied on Mack trucks to handle our refuse collection,” Grand Junction assistant financial operations manager Jay Valentine says in a Mack release.

“The natural gas-powered TerraPro delivers the performance we’ve come to expect from Mack and allows us to utilize Western Colorado’s abundant supply of natural gas.”

Grand Junction has an all-Mack fleet of 12 refuse trucks, including the four new CNG TerraPro models – three automated side-loaders for residential refuse collection and a front loading unit for commercial collection.



CNG Macks for Grand Junction

“Mack’s natural gas-powered TerraPro combines an industry-leading truck with alternative fuel technology to give fleets the durability they need while at the

same time reducing CO2 emissions,” said Mack regional VP John Thomas. “It’s an ideal solution for refuse applications, where the vehicles return to a central location every day for refueling. We’re beginning to see a migration toward natural gas and some of our refuse customers envision all-gas fleets in the not too distant future.”

While Grand Junction initially plans to tap Western Colorado’s natural gas resources, they’re also investigating the possibility of a sustainable energy source – converting methane gas from the city’s Persigo Wastewater Treatment to compressed natural gas. A biogas operation of this type would be the first of its kind in the U.S., the city says.

“Right now it’s just being flared off,” Valentine told *F&F*. Grand Junction is working with the Xcel Energy utility to devise a way to purify the gas to meet Xcel’s pipeline requirements. Once the specs are set, the city can move to buy equipment to clean the gas.

Grand Junction has two CNG transit buses, a street sweeper and a dump truck on order, Valentine notes.

In addition to the Low Entry, Mack offers the TerraPro Cabover model, also used in refuse and recycling applications. The gas versions of these trucks have been specifically engineered and built to operate on this alternative fuel, and are built on the production line at the Mack Macungie Assembly Operations – an important advantage over after-market conversions, Mack says.

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Biomethane, Faster, via Eurisko-Argonne

Eurisko Scientific and the Argonne National Laboratory are scaling up a mineral-treatment process for making biomethane more quickly and economically, enjoying \$1.8 million worth of support from the California Energy Commission.

According to Eurisko, the process increases biogenic methane production rates five-fold and while decreasing carbon dioxide contamination in the product three-fold, with excess CO2 sequestered. The result is “a gas that is close to pipeline quality – greater than 90% methane.”

The technology is being demonstrated on sewage gas at a Sacramento Regional County Sanitation District (SRCSD) plant in Elk Grove, Calif. It can be applied to agricultural, landfill and other biomethane sources as well.

“The technology can help cities and counties turn waste into a new source of revenue,” CEC vice chair Jim Boyd said in a release. “If all of California’s wastewater treatment plants adopted this system, the biomethane produced could displace 29% of all diesel fuel consumed in the state, eliminating more than 7.3 million tons of CO2 yearly.”

The patent-pending Eurisko-Argonne Enhanced Renewable Methane Production System yields byproducts of carbonates that can also be sold. It has just won an **R&D 100 Award** from the magazine *R&D*.

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CEC Reporting Burden May Ease

Money for clean transportation could flow faster if a pending bill becomes law in California. Legislation floated by Democratic Assemblyman Bob Wieckowski would allow the California Energy Commission to update its annual investment plan rather than redraft the report in its entirety.

The vaunted AB 118 provides hundreds of millions of dollars for clean vehicles and fuels, but it requires CEC to come up with an annual plan. “Staff shortages at the CEC make this process extraordinarily time-consuming and takes staff time away from soliciting and approving projects; projects that, once approved, create jobs,” says a Wieckowski fact sheet.

CEC’s plan due in July won’t be finished until **August 24**, possibly slowing awards for the next fiscal year.

The assemblyman’s AB 1314 would allow for updates rather than re-writes. It would also allow companies applying for awards to invest their own money in the projects prior to the award’s being made, and would indemnify CEC from covering expenditures made prior to approval of the application.

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Natural Gas Vehicles

LNG Mercedes for Holland's Simon Loos

Daimler has an order for 30 natural gas-fueled Mercedes-Benz Econic 1828 NGT trucks by Holland's Simon Loos Logistic for relay delivery use. The first of 23 semitrailer tractor vehicles and seven chassis has been delivered at the Mercedes-Benz plant in Wörth, Germany.

"These trucks are being delivered as CNG trucks, then converted to LNG," says Wim Roks of Simon Loos.

The Econic is driven by an EEV-certified, in-line, six-cylinder, 6.9-liter M906 LAG 900-series engine producing 279 horsepower, or 205 kilowatts. The quiet methane engine coupled with an Allison transmission and additional "optimized soundproofing," Daimler says, allows for 24/7 refrigerated food deliveries in line with Dutch PIEK regulations, important to such key Simon Loos customers as the Dutch supermarket chain Albert Heijn.

LNGEurope for Simon Loos Fueling

The Loos fleet includes 425 towing and 645 towed vehicles, about three-quarters from Daimler. When new trucks were needed, "The Econic NGT ultimately emerged as the natural choice," proprietor Simon Loos says in the Mercedes announcement. "The natural gas engine complies with EEV and is powerful enough to cope with the expected transport demands to be placed on it."

The firm will get its liquefied natural gas at a facility at Zaanstad, near Amsterdam, being established by LNGEurope. LNGEurope, which is also investigating LNG fuel for ships, has a facility in Oss, in The Netherlands's south, with customers including Vos Logistics (*F&F*, Sept. 20, 2010).

LNG fuel is imported by truck from Spain.

Simon Loos and its customers are investigating bio-methane for the new vehicles, Daimler says.

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Econic NGT for Simon Loos

Propane

Roush Propane for ARS/Rescue Rooter

ARS/Rescue Rooter, a nationwide provider of air conditioning, heating, plumbing and attic insulation services operating some 3,200 Ford vehicles at about 80 locations nationwide, is deploying its first alt fuel trucks, opting for dedicated-LPG/propane systems from Roush CleanTech for 21 vehicles in Houston and Los Angeles.

The initial vehicles are 19 F-450 cutaways with 14-foot box bodies in Houston, and a pair of E-350 vans with Knapheide service bodies in Los Angeles.

ARS plans to buy 22 more propane vehicles by year-end, Roush says, "with an additional 100 or more vehicles planned for 2012, spanning multiple markets."

California is first in line for more propane vehicles, says ARS purchasing and fleet director Mike Baessler, with additional cities in Texas on the short list too.

Cargo Space Was Deciding Factor

Space, range and weight were the factors leading ARS to choose propane over compressed natural gas, he says.

Cost was a factor, but "the bigger issue was the placement of cylinders in our vehicles and the potential loss of storage space," Baessler says. With propane, "We didn't lose any space in the vehicle and we didn't lose any range, either."

"We did a lot of research," he told *F&F*.

"CNG just did not work."

FerrellGas is ARS's propane fueling partner.

Roush CleanTech offers its dedicated liquid propane autogas fuel systems for Ford vehicles including the F-150, F-250 and F-350 pickup truck series; the F-450 and F-550 chassis cab truck series; the E-150, E-250 and E-350 van and wagon series; the E-350 and E-450 cutaway van series; and the Blue Bird Propane-Powered Vision.

They are sold through authorized Ford dealerships with a 5-year/60,000-mile limited warranty.

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ARS/Rescue Rooter is starting with two Ford E-350 cargo vans like this one in Los Angeles, and 19 E-450 cutaways with 14-foot box bodies in Houston, all powered solely by propane using Roush Cleantech fuel and engine systems.

ARS/Rescue Rooter operates 3,200 Ford vehicles at about 80 locations.

Government

'We Applaud the Obama Administration'

Executives of Ford, General Motors, Chrysler, BMW, Honda, Hyundai, Jaguar/Land Rover, Kia, Mazda, Nissan, Mitsubishi, Toyota and Volvo joined President Obama Friday as he and the U.S. EPA announced the next phase of the administration's program to increase fuel efficiency and reduce greenhouse gas pollution for new cars and trucks.

"These new standards will cover cars and light trucks for model years 2017-2025," the White House said, "requiring performance equivalent to 54.5 mpg in 2025



GM promises a diesel Chevy Cruze in U.S. in 2013

while reducing greenhouse gas emissions to 163 grams per mile."

"This agreement on fuel standards represents the single most important step we've ever taken as a nation to reduce our dependence on foreign oil," the President said.

"We've set an aggressive target and the companies are stepping up to the plate," Obama said. "By 2025, the average fuel economy of their vehicles will nearly double to almost 55 miles per gallon."

The mileage target for 2016 is 35.5 mpg.

The overall program, from 2011-2025, "will save American families \$1.7 trillion dollars in fuel costs," EPA said.

"We share the administration's goal," Toyota USA president Jim Lentz said in a typical release.

"This proposed rule presents a path forward that greatly improves fuel economy while preserving customer choice and future industry growth," said GM.

"These standards will give our cars and trucks a technology makeover," said Michelle Robinson, director of the Union of Concerned Scientists' Clean Vehicles program.

"We will still see the same types of vehicles on the road, but they will be dramatically more fuel efficient, cost less to operate, and produce less pollution.

"For the second time," Robinson said, "President Obama has brought together the auto industry, the states, and other stakeholders," she said.

"We applaud the Obama administration."



'These new standards will cover cars and light trucks for model years 2017-2025,' the White House said, 'requiring performance equivalent to 54.5 mpg in 2025 while reducing greenhouse gas emissions to 163 grams per mile.'

Hydrogen

'Unique' in Torrance

"It is a unique station," says Ed Kiczek, global business director for hydrogen energy systems at Air Products, "and at least to our knowledge the first that can fuel multiple vehicles at the same time."

"Just like gasoline retailing," Kiczek says – although there is no gasoline on offer at the new Shell station.

The unique facility opened this past May on Toyota property in Torrance, Calif. (*F&F*, April 25). Besides the two dispensers, each with 5,000- and 10,000-psi hydrogen fueling hoses, it is the first in the U.S. to be fed from a refinery-serving hydrogen pipeline (*F&F*, April 6, 2009).

The Shell station in Torrance will show the ultimate cost-competitiveness of the elemental fuel, Air Products says.

"This fueling station will be a tremendous model to show how effortless a pipeline supply of hydrogen can be to an automobile fueling station and other hydrogen fuel cell applications," Air Products energy businesses VP David Taylor said in a release. "It will add another mode of supply, on potentially a very large scale, to Air Products' portfolio of distribution technologies in meeting the emerging fueling applications of today."

"Pipeline distribution of hydrogen offers the lowest delivered and dispensed price for hydrogen supply on a mass scale, and this site will be a model to be able to learn and expand these types of stations as opportunities arise."

Air Products is also providing hydrogen to Total Transportation Services, Inc. for its new Tyrano Class 8 fuel cell truck (page 10).

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Air Products California, Dan Rabun, 949-640-5799;

rabundj@airproducts.com; www.airproducts.com

Shell Hydrogen, Matias Sanchez Cane, 713-241-9879;

matias.sanchezcane@shell.com; www.shell.com

Electric Vehicles

Coulomb Expands Charger Line, Taps Cloud

Coulomb Technologies has expanded its ChargePoint line of networked electric vehicle charging stations to include dual-port Level II outdoor equipment, "broadening the installation density and cable management options for station owners" as municipalities, corporations, fleets and utilities can charge two SAE J1772-connected vehicles outdoors simultaneously.

"We are responding to the sharp rise in demand," Coulomb CEO Pat Romano said in a release. Both the CT2021 (shown) and CT2025 provide two 7.2 kilowatt charging ports. The CT2025 features self-retracting cords. Coulomb is also promoting "a new family of cloud-based solutions" for managing EV charging.

Coulomb, VP Mike DiNucci, 408-370-3802, ext 120; mike.dinucci@coulombtech.com; www.coulombtech.com



Electric Vehicles

Level 3 to Go

AAA has shown the first of a fleet of roadside assistance trucks designed to bring partial battery charges – enough to get to a charging station – to stranded electric vehicle drivers. Some trucks will carry large lithium ion batteries – charged by the truck's own gasoline powertrain– and others a CNG-fueled generator rig as AAA evaluates various technologies for various regions.

“As the electric vehicle market continues to emerge, AAA is ready to help alleviate some ‘range anxiety,’” AAA automotive VP Marshall Doney said in a release at Plug-In 2011 in Raleigh.

Brooklyn, N.Y.-based Green Charge Networks is AAA's development partner.

AAA will provide both Level 2 and Level 3 – up to 500 volts DC – roadside charging starting in the pilot Seattle, Portland (Ore.), Knoxville (Tenn.), Tampa, San Francisco, and Los Angeles and metropolitan areas.

Local Clubs Want the EV Service

A phased deployment will begin later this summer and continue into early autumn.

The AAA Roadside Assistance truck unveiled at Plug-In 2011 – a Ford F-250 with Knapheide body – features a removable lithium-ion battery pack, charged via an “upsized” alternator and otherwise enhanced electrical system, according to AAA program manager Dwayne Shumate. It's destined for Portland, with similar vehicles going to Northern California/San Francisco and Tampa. Trucks with pallet-mounted compressed natural gas-fueled generators will be deployed in Knoxville and Southern California. (Propane was considered, but AAA decided that fast-dispersing CNG would be safer for the hard-service trucks, Shumate says.)

A larger truck with a hydraulic PTO/power takeoff-driven generator will be tested in Seattle.

Other AAA clubs “are waiting with varying degrees of patience,” Shumate told *F&F*. He anticipates, however, at

least a full year of testing and data collection to determine how the EV charge service affects AAA's regular roadside assistance dispatching, and to determine how many charging trucks are warranted in different locations as EV populations develop.

The organization notes that the first Nissan Leaf and Chevrolet Volt cars were delivered to customers in at the end of 2010, and that “manufacturers estimate production by year-end to be a combined 40,000 vehicles with an additional 145,000 planned for 2012.

“Current manufacturer projections have 1.2 million electric vehicles on the road by 2015,” AAA says.

As EVs take hold, the national auto club wants to maintain service similar to what it's provided fuel car drivers for nearly a century, AAA auto repair, buying services and consumer information director John Nielsen said at the Plug-In meeting in Raleigh. “When your vehicle runs out of fuel – whether it is traditional gasoline or electric ‘fuel’ – AAA can provide you with a limited amount to help you safely reach a location where you can fill up your tank or your battery,” he said in a release there.

AAA says it expects to provide 10 to 15 minutes of charge time to members with discharged electric vehicles, which will allow them to drive three to 15 miles to a station where they can further charge.

For cars equipped with a Level 3 Chademo charge port, “In ten minutes we can provide the motorist with 15 miles of driving,” Shumate says. It will then take the truck about two hours to recharge its lithium ion battery pack.

Depending on the system on Level 2-equipped EVs, 15 minutes of charging will yield three to six miles of range.

AAA notes that it's North America's largest motoring and leisure travel organization, with more than 52 million members.

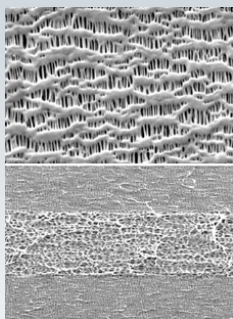
AAA, Dwayne Shumate, 407-444-7016;

dshumate@national.aaa.com; www.aaanewsroom.net

Green Charge Networks, VP Ryan Prosser, 917-562-9458; ryan.prosser@greenchargenet.com; greenchargenet.com



Ten minutes for 15 miles – if you have a Level 3 port



Scanning electron microscope images of Celgard monolayer polypropylene (top) and trilayer PP/PE/PP (polypropylene/polyethylene/PP) separator films for lithium ion batteries

Polypore Plans Celgard Films Expansion

Polypore International has outlined plans to invest approximately \$105 million to expand capacity for lithium ion battery separator products for electric drive vehicles in Concord, N.C. – “the fifth phase of EDV-targeted expansion announced since August 2009.”

Pending final approval of proposed local incentives by the City of Concord and Cabarrus County expected early this month, the firm says, output would begin ramping up in late 2013 and be fully operational in 2014.

“We are experiencing an accelerating demand curve associated with the growth of electric drive vehicles, and the size and scale of our investments are in response to that acceleration,” Polypore president and CEO Robert Toth said in a release. “We have been working closely with key customers to evaluate this, as well as the growth rate in consumer electronics applications, and the related impact on our capacity. This latest investment is consistent with our commitment to make the necessary investments to capitalize on this growing demand.”

Polypore's wide range of membrane and separator products includes the Celgard line of separator films for lithium ion batteries, including monolayer polypropylene and trilayer PP/PE/PP (polypropylene/polyethylene/polypropylene) products.

Celgard, Charlie Odom, 704-587-8666; charlieodom@celgard.com; www.celgard.com; www.polypore.net

Hybrid & Electric Vehicles

Thinks Gets Another Reprieve

Norway's Think Global has a new white knight in the person of Boris Zingarevich, an investor with operations based in St. Petersburg, Russia, who has emerged as the winning bidder following a bankruptcy proceeding initiated by the Norwegian carmaker in June.

"The Think brand is a valuable asset that deserves to continue its key role in the global shift to electrification," Zingarevich said in a July 25 release. "The name of the new company that will market Think brand products is Electric Mobility Solutions AS, registered in Norway," the announcement said.



EMS noted that the Think City "has accumulated more than 48 million kilometers of road experience in the several countries where it has been marketed.

"The current model has a range of 160 kilometers on a single charge and provides one of the most engaging and spirited drives of any car in its class," EMS said.

Zingarevich has signed MoUs with Indiana's Ener1 for EnerDel lithium ion batteries, and with the Finnish automobile engineering and manufacturing concern Valmet "to cooperate in relaunching Think." Valmet production in Finland ceased earlier this year and Ener1 wrote off its 31% ownership of Think.

"Ener1 and Valmet are negotiating stakes in the new company on the basis of a debt restructuring," EMS said.

EMS said to that a new sales and service structure for Think will be announced soon. "The production restart, with a refined version of the Think City, is scheduled to begin in the first quarter of 2012."

for EMS (Germany), Nick von Miltitz, +49-89-2006-2025; nicolaus.vonmiltitz@firstmove-ag.com; www.thinkev.com

BAE for Crane Carrier

Parallel Version of HybriDrive for Trials, Potential Fuel Economy Gain of Up to 35%
BAE Systems and Crane Carrier will test BAE's HybriDrive parallel heavy duty hybrid electric propulsion system in Crane's LET2 refuse truck in anticipation of bringing the more fuel-efficient powertrain to the U.S. market in late 2012.

BAE said last year that it would devise a parallel version for trucks of its successful (3,000-plus in service) series hybrid electric drive for buses. In March, BAE said it would employ an Caterpillar transmission.

Fuel savings for the stop-and-go garbage collection duty cycle are expected to amount to 25% or even 35%, says Mike Mekhiche, BAE program director. "Refuse is right at the heart of the duty cycle that the equipment is designed to perform for," he told *F&F*. Payback? "We're looking at three to five years, max," for the RCV – refuse collection vehicle – market, he says.

"Both companies are leaders in our respective

No word of a rescue for the UK's Modex, which pioneered a battery electric truck adapted by Navistar International as the eStar. Navistar has recently placed eStar battery trucks with fleets including FedEx Express and New York City.



markets; our alliance will maximize our respective synergies, bringing a high performance product and all the associated environmental and economic benefits to the RCV market," Mekhiche said in a release.

Parallel HybriDrive RCV trials are expected to start this year, with both existing customers and potential new ones as possible participants, says Crane VP Glenn Pochocki.

The BAE drive is to be available in Crane's COE (cab over engine) models as well as the LET2 vehicles. He notes that the parallel architecture with conventional Caterpillar transmission also allows its use in Crane LDT 2 drop-chassis vehicles.

Eaton HLA Hydraulic in Crane Trials Too

Crane is using a Wayne Curbtender ASL brand automated side-loader for the BAE trials. It is testing Eaton's HLA (for Hydraulic Launch Assist; *F&F*, October 4, 2010) in similar LET2 vehicles.

The Caterpillar CX series transmission is key to the economics of the parallel HybriDrive, Mekhiche says. It's a straight off-the-shelf product, he says, with BAE software "to shift it and control it."

BAE's drives employ lithium ion batteries. A123 supplies the batteries for the series HybriDrive powertrains for buses. BAE has thus far not identified its lithium ion supplier for the parallel drives for trucks.

The parallel HybriDrive powertrain for the RCV market is being evaluated in the UK by Dennis Eagle, also with an eye to sales late in 2012.

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Crane LET2 with parallel BAE drive, Eaton HLA hydraulic is in trials too

Strategies

Vision Motor Corp

Hydrogen Tyrano for Ports Said to Mark New Era, TTSI Looking to Buy Hundreds of Fuel Cell Trucks

"Today we celebrate the birthplace of the hydrogen economy and zero-emission transportation," Martin Schuermann, CEO of Vision Industries said in a release as the first of 100 or even 400 Class 8 fuel cell tractors was delivered to Rancho Dominguez, Calif.-based Total Transportation Services, Inc. on July 22.

"This single truck was built for \$270,000," TTSI president Vic La Rosa told *F&F* Friday.

A vehicle design with lithium batteries and a smaller fuel cell makes it possible, they say. "It's a big difference in system architecture," says Schuermann. "We get by with a much smaller fuel cell," he says – 33 kilowatts as compared to 120 to 150 kilowatts in a fuel cell transit bus.

100 for \$27 Million – and 300 More?

Vision and its Vision Motor Corp affiliate have publicized a letter of intent from TTSI for 100 Tyrano trucks for approximately \$27 million. And, says Vision, the agreement "opens the door for TTSI to purchase an additional three hundred Vision trucks, bringing the total value of a TTSI sales contract to approximately \$108 million."

According to La Rosa, the fuel cell accounts for about \$50,000 of the current \$270,000 tab. Mark Kammerer, business development director at fuel cell supplier Hydrogenics, says volumes will bring the price down.

"When we get to the hundreds it's another picture," he says. Kammerer also told *F&F*, "Vision is doing everything possible to keep the costs down. They've been extremely aggressive."

"We're trying to get these vehicles down to \$200,000," Schuermann says.

The Tyrano is built on a Freightliner Cascadian chassis with the 33-kilowatt Hydrogenics fuel cell, and Siemens motors and associated driveline electronics governed by Vision software making for the equivalent of a 536-peak-



Vision's Tyrano truck uses 6,250-psi Worthington Type III fuel cylinders

horsepower (3,300 foot pounds peak torque) engine.

Hydrogen fuel tanks are provided by Worthington Cylinders/SCI. Three 17.3- by 80-inch tanks are pressurized to an unusual 6,250 psi. The trucks have lithium ion batteries with integrated battery management system.

The initial Tyrano vehicle is to perform typical drayage operations, Vision says, hauling freight containers from port terminals in the Ports of Los Angeles and Long Beach to rail yards and other distribution facilities. Air Products will



provide hydrogen fuel. When TTSI is satisfied with the truck's performance, the

letter of intent will be converted into purchase orders.

TTSI's La Rosa is optimistic. "For a short-haul operation and a queue operation, it's a perfect scenario," he says.

Vision states single-fill range as 200 miles.

Longer Range Trucks and Hydrogen Fueling

Vision also has a \$1.4 million contract with the Port of Los Angeles to retrofit 15 Balqon electric yard hostlers for improved range, replacing their batteries with a 16.5-kilowatt



Vision expects to deliver its first 'Zett' hydrogen fuel cell yard hostler to Cal Cartage in mid-September

fuel cell rig while retaining the original drive motors. The Port will initially issue a purchase order for six.

Vision hopes to expand beyond port vehicles to over-the-road fuel cell trucks and hydrogen fueling.

The firm is in discussions with Semptra-Southern California Gas to establish a network of natural gas reformer-fed stations, says business development director Rudy Tapia.

Vision's hydrogen fuel cell Cheetah "supercar?" A prototype has been built, but it's back-burnered.

"We have our hands full," Tapia says.

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Vision Industries

Headquarters: El Segundo, California

Employees: Approximately 15

Products: Zero-emission hydrogen fuel cell port vehicles, including Class 8 Tyrano tractors and Zett yard hostlers.

Key Suppliers: Hydrogenics, Siemens, Worthington-SCI, Freightliner, Capacity of Texas.

Key Customers: Total Transportation Services, Inc. (TTSI), Port of Los Angeles, Cal Cartage.

Sales & Earnings: Revenues of \$206,307 for the first quarter of 2011 were the first for product sales at Vision (OTC:BB:VIIC).

Events

Global Autogas in Qatar in September

September 26-29, World LP Gas Forum. Sheraton Resort & Convention Hotel in Doha, Qatar. Includes for the first time the Global Autogas Summit on transportation applications, on September 29, which may be booked separately.

Discounts available online for Qatar Airways.

World LP Gas Forum, Rita Pecilunas,
630-988-8910; fax 630-325-2287;
rpecilunas@worldlpgas.com; www.wlpgas2011.com

eCarTec in Germany and France

October 18-20, eCarTec 2011, Third International Fair for Electric Mobility at the New Munich Trade Fair Centre (Neue Messe Munchen) in Munich, Germany.

April 3-5, eCarTec Paris 2012, International Trade Fair for Electric Mobility. Paris Expo Porte de Versailles.

eCarTec events are organized by MunichExpo GmbH.
MunichExpo, Nadine Paraton, +49-89-3229-9133;
nadine.paraton@munichexpo.de; www.ecartec.eu

2012 Commercial Vehicles In England

April 24-26, 2012, Commercial Vehicle Show at NEC Birmingham, the National Exhibition Centre in Birmingham, England. Sponsored by organizations including RHA, the Road Haulage Association, and SMMT, the Society of Motor Manufacturers and Traders. Coordinated by Crystal Communications (Rainham, Kent).

Crystal, Susan Kitchener or Eve Walledge,
+44-1634-261262; fax +44-1634-360514;
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NTEA In September in Dearborn

The National Truck Equipment Association has slated its Business and Market Planning Summit for September 19, at the Hyatt Regency in Dearborn, Mich., to be followed by the NTEA New Model Truck Product Conference September 20-22.

Eaton economist James Meil and NTEA's Steve Latin-Kasper are among the speakers at the September 19 Summit, "where experts from some of the world's most respected companies... present industry projections, sales trend insights and economic forecasts on national and regional growth."

NTEA's New Model Truck Product Conference will include information on specifications and design and critical industry issues, with direct access to OEM people, and proprietary information and schematics for upfitters.

Scheduled OEM participants include Ford, Freightliner, General Motors Hino, International, Isuzu, Kenworth, Mitsubishi Fuso, Peterbilt, Ram and Western Star.

Registration for both Dearborn events is discounted until September 2.

Separately, NTEA gave notice that the 2013 Work Truck Show will again be held at the Indiana Convention Center in Indianapolis – where last year's show and previous ones set attendance records. The dates are the same as 2012's: March 5-8, 2013, including the 49th Annual NTEA Convention.

The 48th Annual NTEA Convention will be held in Indianapolis March 5-8, 2012, to be preceded by Calstart's Green Truck Summit March 5-6, 2012.

NTEA, Rob Gutierrez, 248-489-7090, ext 136; rob@ntea.com or Kathy Swartzentover, 248-489-7090, ext 108; kathy@ntea.com; toll-free 800-441-6832; fax 248-489-8590; www.ntea.com

Calstart-GreenTruck Summit, Susan Romeo, 626-744-5686; sromeo@calstart.org; www.calstart.org

BusCon in September, and September

September 13-14, BusCon 2011, Festival Hall A at Navy Pier, Chicago. Next year: September 11-12, 2012.

Organized by Bobit Business Media.

Bobit, Courtney Silbiger, 310-533-2445;
courtney.silbiger@bobit.com; www.busconexpo.com

APEC 2011 in San Francisco in September

The U.S. State Department is including a "High-level Meeting on Energy Efficiency and Sustainable Transportation" as part of the Asia Pacific Economic Cooperation's senior officials and related meetings (SOM 3) in San Francisco September 12-26. An APEC USA 2011 day dedicated to clean transportation is expected to show off local technologies and applications ranging from biodiesel ferries to hydrogen fuel cell buses. Stay Tuned!

Meetings!!
Click here for instant access to a complete listing of upcoming meetings and conferences courtesy *Fleets & Fuels*