Rhombus 125kW Charger Installed at Navistar eMobility Headquarters

Earlier this month, Rhombus installed our latest charger and dispenser at Navistar’s NEXT eMobility headquarters in Rochester Hills, MI. The installation included the Rhombus RES-DCVC125-480 125kW AC-DC Power Conditioning Systems (PCS), along with our RES-DC-CS20 dispenser. Like all of our chargers, the PCS and dispenser are built for use in fleet vehicle yards, with the capability to install the dispenser up to 600 feet away from the PCS.

This charger also incorporates intelligence that allows it to collect power usage and maintenance data from the vehicles that it is connected to, and maintenance data from the charger. This data can be shared with external systems such as fleet management and maintenance systems, which are co-located with the charger, or which are located “in the cloud”. The units can be configured to work with a variety of network interfaces and topologies, simplifying installation.

NREL and CharIN Launch Megawatt Charging Initiative

Electrification of over-the-road trucks requires extremely fast, high-power charging solutions. Like fueling internal-combustion engine (ICE) powered heavy vehicles, this charging needs to happen during the driver’s break, which is 30 minutes long. If the vehicle has a 350kWh battery (expected to be the average for heavy over-the-road trucks), this would require a charger with a 700kW capacity. To address this need, the National Renewable Energy Laboratory (NREL) and the Charger Interface Initiative (CharIN) industry group have started an effort with leading vehicle and charger manufacturers to develop megawatt-capable chargers for over-the-road truck charging.

The Megawatt Charging Initiative has over 100 participants from the industry and other related organizations (Rhombus Energy Solutions is a member). Some of the issues that the group plans
to tackle include standardizing the interface between the vehicle and the charger, the ergonomics required to ensure that the connectors are both easy to connect/disconnect and have a long service life, cable retention, and reduced cable weight and cooling requirements. The vehicle charging connector is expected to handle up to 1,500 volts DC and 3,000 amps of power, so these won’t necessarily be simple tasks. The group is also looking at the advantages of liquid cooling and air cooling for the cables. The first “plug-fest” for the Megawatt Charging Initiative connectors and cables was held on September 23-24 of this year at NREL’s Electric Vehicle Research Infrastructure lab (the picture above was from the plug-fest).

**Consumer Reports Shows EVs Are Cheaper to Own Than Internal Combustion Vehicles**

One of the greatest challenges to purchasing electric vehicles (EVs) has been the higher up-front cost for these vehicles, even when tax credits were included. However, owners of electric vehicles can enjoy a lifetime savings of nearly $18,000 over similar vehicles according to a white paper recently released by Consumer Reports. The organization compared nine popular electric vehicles against gas-powered vehicles of similar size and capabilities (both best-selling vehicles and top-rated vehicles in the same class) For EVs with a purchase price of under $50,000 such as the Nissan Leaf, Chevy Bolt, Prius Prime, and Honda Clarity PHEV, the saving varied from $6,000 to $12,000 over the life of the vehicle, which was set at five (5) years. Consumer Report found that the biggest drivers of cost savings were a reduction in fuel costs of an average of 60%, and a reduction in maintenance costs of nearly 50%. Similar government studies for medium/heavy duty (M/HD) commercial EVs have reported similar results. With the holidays approaching, maybe there will be more EVs with bows on them!
Rhombus Energy Solutions Nominated for Best Cleantech Company

The Centrepolis Accelerator, a part of Lawrence Technical University, has nominated Rhombus Energy Solutions as a “Best Cleantech Company in Michigan for 2020 (Rhombus operates its Manufacturing and High-Power Test Lab in a facility in Dearborn Michigan). You can vote for Rhombus Energy Solutions here. Votes will be tabulated through December 1, 2020, and announced on December 16, 2020. Thanks!

Blue Bird Now Deploying Vehicle-to-Grid Capable Electric School Buses

When most people think of school buses, they think of the yellow school buses built by Blue Bird. The company introduced its first electric school bus in 2018, and demand has only continued to increase since then. The reason is simple – fewer moving parts means less things to break. Add in regenerative braking, and you have a significant reduction in maintenance costs. Then figure in the reduced cost of electricity and higher efficiency of electric motors, and you end up with lifecycle costs that are significantly less than the costs for internal-combustion engine based buses.

Want to reduce costs even more? Add vehicle to grid (V2G) charging to the mix. Blue Bird buses are now equipped with V2G capabilities. "We believe bringing new cutting-edge technology to the school transportation market is essential so that children can travel in the cleanest, quietest, and safest vehicles on the road," said Phil Horlock, president and CEO of Blue Bird Corporation. V2G utilizes the power left in a bus’s batteries to put power back onto the grid during peak demand hours; this also allows these buses to provide power to buildings in emergencies. Many jurisdictions are now requiring that electric school buses be V2G capable.

If You Missed the Rhombus Energy Solutions/IoTecha Webinar on Unlocking Revenue with Smart Chargers, View the Recording!

On Thursday November 12th, Rhombus Energy Solutions and IoTecha hosted a webinar on using a smart charging infrastructure to increase the savings from electric vehicles. The webinar panel included Rick Sander (CEO of Rhombus), Oleg Logvinov (CEO of IoTecha), Michael Macaluso (EVP of Engineering for IoTecha), and Joseph Gottlieb (CTO of Rhombus). If you missed the live webinar, you can view it on the Rhombus YouTube channel here, along with our other webinars and video content.
Quick Notes from the Electric Vehicle (EV) / Energy Storage Ecosystem

- Task force to develop Megawatt Charging System for heavy-duty EVs
- Australia Picks Massive Tesla-Supplied Battery to Ease Transmission Constraint
- New York faces a long road on electric vehicle commitments
- Truck leasing firm orders 150 Tesla Semi electric trucks
- Fiat Chrysler CEO talks about electric pickup
- Electrify America introduces B2B charging solutions with launch of Electrify Commercial
- NREL: EV Charging Stations Display Strong Growth in Q1
- California Targets Nearly $400M to Fill Gaps in EV Charging Infrastructure
- SAE publishes Wireless Charging standard
- Musk promises to reinvent batteries as Tesla reports record Q3 solar and storage deployments
- Lordstown finalizes SPAC deal, starts trading on NASDAQ

About Rhombus Energy Solutions

Rhombus develops and manufactures next-generation bi-directional electric vehicle charging infrastructure, high-efficiency power conversion systems and energy management system (EMS) software for vehicle-to-grid (V2G) capable electric vehicle fleet charging, energy storage and microgrid applications. The high reliability of our solutions is the result of decades of experience developing high-power systems for a variety of applications and deployment scenarios, including UL-1741-SA system-to-grid solutions. For more information, please visit www.rhombusenergy.com.