



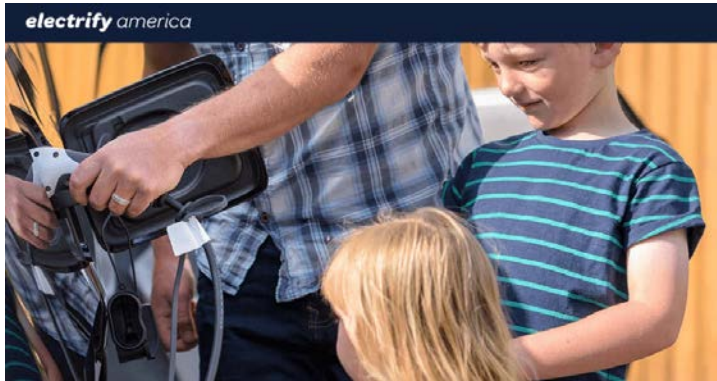
Green Auto Market

The Business of Green Cars, Fuels & Technologies

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February 2017 – Extended Edition – Part Two

VW establishes \$2 billion Electrify America subsidiary as part of emissions settlement



Volkswagen's settlement of its "dirty diesel" scandal took a step forward last week with formation of the Electrify America LLC subsidiary. The new business unit, led by longtime executive Mark McNabb, will carry out \$2 billion in investments in zero emission vehicles, infrastructure, and public outreach over the next decade. As part of the settlement, VW has been directed to make its outreach and education programs "brand neutral," and not become VW electric vehicle marketing

campaigns; and, its charging stations are to be accessible to all plug-in electrified vehicles.

The \$2 billion settlement presents a big opportunity for stakeholders in the field to find funding and support for their own contributions of PEVs, fuel cell vehicles, alternative fuel vehicles, charging and fueling infrastructure, and public education and outreach. It's all part of the automaker's settlement last fall on excess diesel emissions from nearly 600,000 U.S. vehicles; it requires that \$800 million be spent in California and \$1.2 billion be invested throughout the rest of the U.S. VW has already agreed to spend up to \$25 billion in the U.S. on diesel emissions cheating settlements to address claims from owners, regulators, U.S. states, and dealers; and has offered to buy back about 500,000 polluting vehicles. The German automaker has other settlements to reach in Europe and Asia.

It's important to follow, as many leaders in the field have indicated, and here are the latest developments.....

- **Timing:** Volkswagen Group of America will accomplish its 10-year mission over four 30-month investment cycles. The four \$500 million investment cycles must receive approval from the California Air Resources Board and the U.S. Environmental Protection Agency.
- **Feb. 22 deadline:** For those institutions submitting proposals, that process began in December. Initial ZEV Investment Plans are being shared with the U.S. Environmental Protection Agency and the California Air Resources Board by February 22. The first 30-month investment cycle received proposals through January 16. [Electrify America](#) says that "noteworthy concepts received now could be included in our plans for subsequent investment cycles."
- **Chargers:** Construction of PEV chargers will start in 2017, in about 15 metro areas with 300-plus stations at Level 2 or DC fast chargers in the 50 to 150 kW range. A cross-country network of fast chargers will be set up at 200 or more stations, and these may include multi-

unit dwellings, workplaces, retail locations, and community centers including municipal parking lots.

- **Phase 2 and beyond:** Following the first cycle, Electrify America says that other “promising ZEV initiatives, such as hydrogen fueling stations or national ZEV car-sharing or ZEV ride-sharing services, will be considered in later investment cycles.”
- **Outreach:** Public awareness and outreach will be carried out through information on charging availability, the benefits of electric mobility promoted through various methods including ride and drives, multi-channel advertising, website, social media, and education programs.
- **Future concepts:** A Green City initiative will be launched in a California municipality to pilot future concepts supporting sustainable mobility, a ZEV-based shuttle service using PEVs or fuel cell vehicles, PEV-based carsharing services, or ZEV transit vehicles.
- **VW executive:** Mark McNabb, has served as executive vice president and COO for EVP and for Volkswagen of America. He has overseen the diesel settlement program and will continue to do so in his new role as head of Electrify America.
- **California sales:** While VW is to remain brand neutral in the campaign, California wants the company to sell more PEVs in the state. In December, California said VW would be rolling out three new PEVs in the state by 2020, including an SUV. The automaker also agreed to selling at least 5,000 PEVs annually in California through 2025.
- **I.D. electric vehicles:** VW has been rolling out its I.D. family of all-electric vehicles since the Paris Motor Show last fall showcasing a compact-sized hatchback. That was followed later by an electric SUV and a microbus MPV. These EVs are said to be coming out between 2020 and 2022. Overall, VW has said it will launch 30 all-electric vehicles by 2025 through its brands.
- **Hot topic:** How this \$2 billion will be spent has become an important issue to follow at industry conferences and through information resources. It’s a topic being discussed now at Energy Independence Summit 2017 in Washington, D.C, which goes through February 15. It will also be an issue discussed during ACT Expo in May 2017 in Long Beach, Calif.
- **Charging fairness:** Charging infrastructure companies have asked regulators to take give fair competition a chance – so that VW doesn’t build and install its own chargers or favor one or more suppliers over others in the market. ChargePoint, which operates the largest U.S. network of charging stations, requested an intervention in federal court in October, stating that the settlement could have an “enormous, and if not modified, potentially disastrous” effect on the market. Chargepoint was one of 28 companies and organizations that sent a letter to the U.S. Department of Justice calling for an independent regulator to ensure VW’s spending doesn’t take away competition in the market.



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Clean Transportation Publicly Traded Companies

Company	Ticke	Share Price*	52 Week Range*	Market Cap*
AeroVironment	AVAV	\$26.40	\$22.16-\$32.44	\$606.29 million
Supplies electric vehicle charging systems for the Nissan Leaf and other EVs; parent company also produces unmanned aircraft systems and efficient energy systems.				
Ballard Power Systems	BLDP	\$1.97	\$1.23-\$2.53	\$342.21 million
Engages in the design, development, manufacture, sale, and service of fuel cell products. Has a long-standing relationship with Mercedes-Benz for its fuel cell stacks.				
Car Charging Group	CCGI	\$0.21	\$0.10-\$0.89	\$16.9 million
Aided by US government tax incentives and grants, the company would like to be at the forefront of the electric car revolution.				
Clean Energy Fuels	CLNE	\$2.57	\$2.25-\$4.80	\$351.68 million
A natural gas vehicle fueling station infrastructure builder installing stations with airports, municipalities, and fleets across the country.				
Plug Power	PLUG	\$1.18	\$0.83-\$2.28	\$225.18 million
Engages in the design, development, manufacture, and commercialization of fuel cell systems for the industrial off-road markets worldwide, including forklifts.				
Renewable Energy Group	REGI	\$9.05	\$6.42-\$10.60	\$348.91 million
Produces and sells biomass-based diesel in the U.S.; its Services segment provides facility management and operational services to biofuel and cleantech facilities.				
Tesla Motors	TSLA	\$269.23	\$154.11-\$271.18	\$43.31 billion
The company that brought the high-priced Roadster electric sports car to market before creating joint ventures with Toyota and other OEMs to produce EV technologies, and the Model S.				
Vivint Solar	VSLR	\$3.05	\$2.16-\$8.30	\$335.87 million
Provides distributed solar energy to residential customers in Arizona, California, Connecticut, Hawaii, Maryland, Massachusetts, New Jersey, New Mexico, Nevada, New York, and Utah.				
Westport Fuel Systems Inc.	WPRT	\$1.19	\$1.12-\$3.09	\$127.36 million
Provides low-emission engine and fuel system technologies that enable light, medium, heavy-duty, and high-horsepower petroleum-based fuel engines to use natural gas and alternative fuels.				

*As of close of business day Friday, February 10, 2017