

# FUTURE DEFINING

## AeroVironment – ahead of the curve, helping to pave the way for the modern EV

By Alyce Moncourtois, Content Marketing

*Always dreaming...always wondering...always pioneering.* AeroVironment has always been powered by great thinkers and doers, constantly experimenting with new ideas that help customers do more and offering innovative firsts and never-seen-before solutions. These innovators have learned over time that being at the forefront of technology can be both daunting and rewarding, and the adoption of transformative solutions can take time, but in the end, they come to life.

And so is the case with electric vehicle (EV) technology. As a true pioneer in the field of EV technology, AeroVironment had a presence in the EV market in the U.S. long before it was embraced and pursued by...just about everyone.

In 1987, AeroVironment was well out in front of the pack building and driving GM's Sunraycer to the winner's circle in the world's first solar-powered car race and co-developing the first modern EV, the GM Impact.

*"What we helped start with the world's first solar-powered racecar (GM Sunraycer) and continued to develop with the first modern electric vehicle (GM Impact), we knew would one day become an electric powered solution for all people and our planet," said Ken Karklin, AeroVironment sr. vice president and chief operations officer.*

The Impact was the prototype for the EV1, GM's first electric production car. AeroVironment used the knowledge gained from the Sunraycer and Impact projects to launch into other technologies, including electric vehicle charging systems and power processing systems used to test and develop electric vehicles, hybrid vehicles, and batteries.

*"Starting in the 1990s, AeroVironment led the way in developing battery test and charging technologies – grouped into three distinct product lines – that helped lay the foundation and enable the future growth of the electric vehicle market," said Jonah Teeter-Balin, AeroVironment's director of corporate development.*

AeroVironment created three product lines during the 1990s and 2000s that substantially influenced the development of energy solution technology. These product lines brought practical, comprehensive EV charging solutions like charging infrastructure, electric vehicle accessories and test equipment to drivers and corporations across America.

The product lines included Power Processing Products (P3), Industrial PosiCharge (IPC) Products, and EV Solutions (EVS).

The Power Processing Products, developed in the 1990s, became the global standard for



Power processing test equipment

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battery module and pack development in the automotive industry. They are used for a wide range of testing, charging and development activities with advanced batteries, fuel cells, ultra-capacitors, hybrid energy systems, motors, generators and powertrain components. These products feature sophisticated, high-power battery test equipment and are used by large industrial automotive manufacturers and national battery test labs in research and development. Product names include the AV-900, ABC-150/170, and the MT-30. These products were adopted by numerous companies such as GM, Boeing, General Dynamics, Bosch, Nissan, Ford, Honda, and Caterpillar, to name a few.



*PosiCharge, industrial smart charging*

The Industrial PosiCharge Products, developed in the late '90s and mid-2000s, revolutionized industrial smart charging systems for electric forklifts and airport ground support fleets. These charging solutions increased efficiency and productivity while reducing energy costs, paving the way for a cleaner, more sustainable environment. Products developed by AeroVironment included the SVS, DVS, and ProCore series of intelligent chargers. Their success is demonstrated by the vast number of users, including Ford Motor Company, Del Monte, Frito-Lay, Oscar Mayer, Delta, United, Sysco, Coca Cola, and many others.

EV Solutions, developed in the late 2000s, offered complete charging solutions that enabled the safe, easy, and fast charging of passenger vehicles. AeroVironment pioneered comprehensive home charging solutions with Nissan and public charging infrastructure as a founding partner in the West Coast Electric Highway, a stretch of electric charging stations that now extends from the Canadian to the Mexican border. These products offered customers wise choices for environmentally friendly mobility. Products developed by AeroVironment included the EV-50, TurboCord and TurboDock, which became the preferred solutions for numerous automakers, including BMW, Ford, Nissan, Volvo, Kia, Fiat, Mitsubishi, and many more.

As with its EV technology solutions, AeroVironment pioneered work in other energy efficient products – some have evolved and

others have yet to advance. Here is a brief list of bold undertakings from AeroVironment engineers:

- Wind farm siting services
- Architectural Wind rooftop turbine systems
- The “Gossamer Wind” high-efficiency ceiling fan with aerodynamic fan blade design
- Charger electric bicycle
- Solar powered water pump controllers and inverters
- Distributed power generation – natural gas engines that generate on-site electricity
- Ocean power underwater energy generation technology



*TurboCord*



*TurboDock*

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**WEST COAST  
 ELECTRIC  
 HIGHWAY**

AeroVironment has always been a trailblazer – imagining a better tomorrow – and thinking about simpler, cleaner and more practical ways to produce energy efficient products. Being at the forefront of technology is what the company does best, and that holds true for its impressive legacy of electric vehicle solutions, as well as its portfolio of electric unmanned aircraft systems (UAS). While we are no longer in the electric vehicle solutions business, electric vehicle technology is still part of our DNA. We have transitioned that knowledge over to our UAS product line by developing a suite of zero-emission, energy efficient, battery-powered unmanned vehicles that deliver valuable new capabilities to their users while reducing their footprint and environmental impact.

*In 2018, AeroVironment made the decision to divest its EES business segment and focus solely on its unmanned systems product line.*



*West Coast Electric Highway*