ELECTRIC VEHICLE <> ELECTRIC UTILITY INTEGRATION
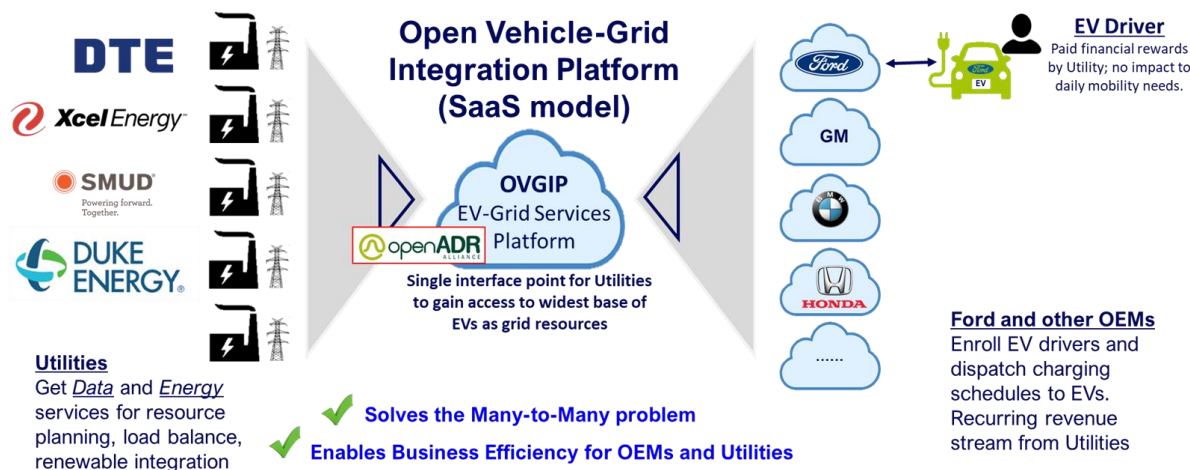## STANDARDS FOR DEPLOYMENT AT SCALE

The rapid growth of the electric vehicle market has spurred cooperation between automotive OEMs and the electric utility industry. EV's represent a once-in-a-generation transformation on both the automotive and the utility side. Both sides concluded that a standards-based IT architecture would be needed to scale the interaction of hundreds of electric utilities with millions of EV drivers.

The Electric Power Research Institute initially collaborated with six OEMs - Ford, BMW, General Motors, Honda, Mercedes Benz, and Toyota – in order to conceptualize a common set of interfaces, as depicted below. OpenADR is a key element of this architecture.

Ford Motor Company has recently joined the Board of Directors of the OpenADR Alliance, so as to better guide the deployment of this nationwide ecosystem.
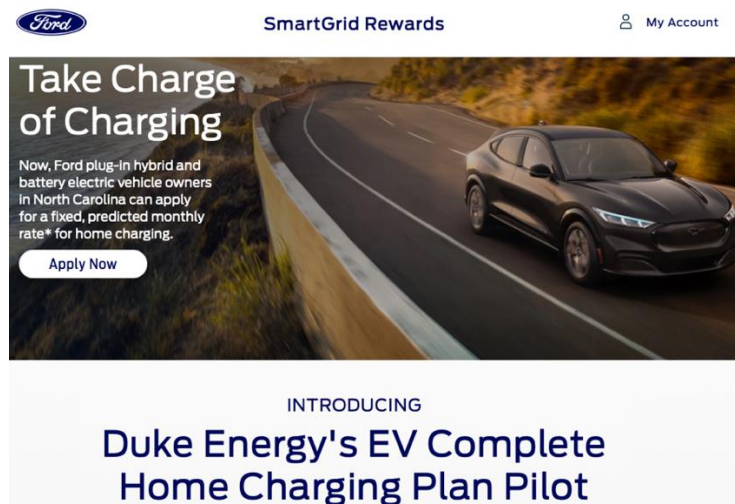
According to Sunil Goyal, Advance Project Leader – Energy Service, Ford Motor Company, "Ford supports open standards as a way to overcome interoperability challenges in young but maturing markets – like what we have today for Vehicle Grid Integration. This aligns well with OpenADR's mission. Ford is looking forward to the opportunity to lend our voice to this effort. "

OVGIP(ChargeScape) – Automaker Gateway to Utilities

CURRENT PARTNERSHIP PROGRAMS

Ford Motor Company rapidly moved from strategy to deployment of partnerships with multiple electric utilities. Programs are now live in utilities ranging from National Grid in New England, Detroit Edison in the Midwest, Xcel Energy in Colorado, and PG&E on the West Coast. These programs include time-of-use pricing for EVs, participation in peak load shaving programs, and bidirectional charging where vehicle batteries can feed power back into the grid.

OPENADR TECHNICAL INTEGRATION – HOW IT WORKS

Vendors to utilities of Distributed Energy Resource Management Systems (DERMS) typically integrate the OpenADR protocols on behalf of their utility customers. Those providers usually test and certify their integration with the OpenADR Alliance, to ensure interoperability with the systems managed by the utility's program partners (e.g., managed EV charging platforms). There are close to 200 certified products available.

ABOUT THE OPENADR ALLIANCE

The OpenADR Alliance brings together system operators, utilities, aggregators, controls vendors and solution providers to facilitate and accelerate the use and adoption of this international standard (IEC 61850.) The key operational role of the Alliance is to operate a testing and certification program

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