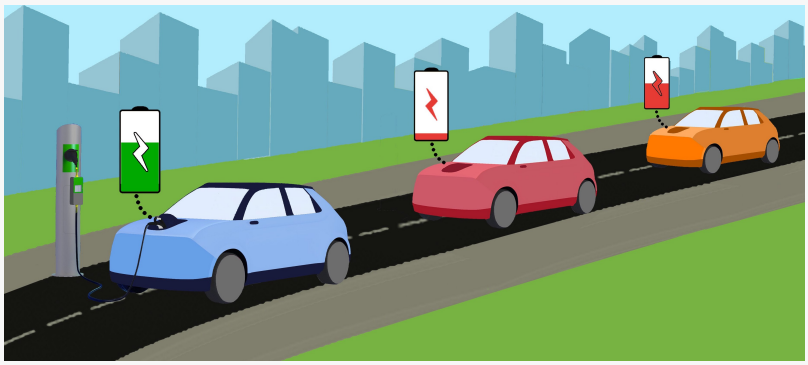
Terbine To Solve Charging Pain For EV Drivers And Fleet Operators

First-of-its-kind system is designed to synchronize electric vehicles, charging stations & power utilities via artificial intelligence to form an "EV Ecosystem"



Improving the EV charging experience via TerbineLink

Terbine Logo

LAS VEGAS, NV, UNITED STATES, September 13, 2022 / EINPresswire.com/ -- Terbine today announced a sweeping initiative designed to eliminate the many problems that have been increasingly plaguing the electric vehicle charging landscape by intelligently synchronizing vehicles, charging stations and electrical utilities. The system is based on the company's cloud-based platform called TerbineLink, which is at the heart of a secure and highly adaptable computing and communications environment designed for EV charging enablement.

> Through this technology, drivers of virtually any electric vehicle will be able to go anywhere with confidence, which will enable the industry to scale."
>
> *Michael Sherwood, Chief Innovation Officer, City of Las Vegas*

An Increasingly Common EV Driving Scenario

Typically, EV drivers start to experience "range anxiety" as their batteries get closer to empty, and their vehicles' onboard systems or third-party mobile apps only depict the locations of to a limited selection of chargers – and often guide drivers to charging stations that are not working or won't validate their session. Hearing about these frustrations, many potential buyers are shying away from purchasing electric vehicles.

"There are well over 200 new EV models coming to the U.S. and Europe between now and 2025, so the need to make

the charging experience as pain-free as possible is becoming critical" said David Knight, CEO of Terbine. "With TerbineLink drivers of EV cars, vans and trucks of all brands and sizes will be able to forget about charging frustration and range anxiety once and for all."

TerbineLink 3D EV Charger Cityscape

The Solution For Drivers Of All EVs

In practice, vehicles share their location and state of charge via the cellular network to that automaker or fleet operator's cloud system, which feeds the data securely to TerbineLink. In parallel, chargers share their status either directly or via the cloud systems of charging network operators. Inside the cloud, TerbineLink utilizes adaptive machine learning technology to correlate vehicle movements and battery levels with data about charging station availability and electricity rates. The resulting portfolio of known operational chargers currently available to a driver is then sent through the automaker's or fleet operator's cloud system to appear on the vehicle's infotainment system. The resultant increase in charging options that can be accessed, including many previously uncharted chargers owned by public and private providers, is designed to alleviate range anxiety and improve the EV experience.

Applying Advanced Technology To Improve Infrastructure and Meet Sustainability Goals

The TerbineLink system is being tested via a Proof-Of-Concept (POC) in Las Vegas, Nevada. "Here in Las Vegas we are pioneering solutions to the obstacles that are holding back electric and automated mobility, which we believe are key to achieving our sustainability goals as a city," said Michael Sherwood, Chief Innovation Officer, City of Las Vegas. "Through this technology, drivers of virtually any electric vehicle will be able to go anywhere with confidence, which will enable the industry to scale."

Synchronizing Electric Vehicles & Charging Stations With The Grid To Avoid Blackouts

More and more EV charging stations are being installed, with most yet to be fully utilized, but with thousands of EVs being purchased they're starting to get used more often. Newer DC fast chargers use vastly more electricity than older units, leading to large, unpredictable loading and potentially resulting in localized or systemwide problems such as brownouts or blackouts. To solve this, TerbineLink monitors the progress and charge-state of consumer and commercial vehicles, including long-haul trucks which have very large batteries. Predictions about which

vehicles are likely to charge soon and at which charging stations is calculated by the TerbineLink system, which sends the resulting imminent charging load information to the utility serving the region where the chargers are located. This predictive data can be applied by the utility to load-balance the grid and thus avoid brownouts or blackouts. This will give system operators confidence that the sudden loads caused by groups of DC fast chargers are accounted for in load-balancing the network. In addition, TerbineLink can inform EV drivers as to which charging stations are powered with electricity generated by renewable sources, and enable vehicle-to-grid and edge storage management.

Binding Together NEVI Implementations Within & Between States

The National Electric Vehicle Infrastructure (NEVI) plan, funded under the federal Bipartisan Infrastructure Law, will begin rolling out in the coming months. Under this plan, individual states and the District of Columbia are funding and/or building their own EV fast charging networks. The TerbineLink system is intended to enable management of these in a consistent manner that meets the NEVI requirements, including monitoring charger uptime, routing drivers to charging stations powered by renewable sources where possible and practical, and digital reporting to the U.S. Department of Transportation and the U.S. Department of Energy as needed.

Open To All Participants In The “EV Ecosystem”

Manufacturers of cars and trucks, fleet operators, producers of charging units, charging networks, electric utilities, state and local government agencies plus NEVI contracting firms, are invited to participate in the TerbineLink system. A wide variety of interfaces are available supporting open-source protocols and standards. The underlying TerbineLink software platform is also available under Platform-as-a-Service licenses for use by charging network operators to manage their systems.

“The available charging options for drivers continue to grow rapidly but are highly fragmented, resulting in friction and frustrating charging experiences,” said Jamie Allison, former Director at Ford Motor Company and Terbine Board Member. “I see Terbine addressing this situation with its intelligent platform that is designed to achieve a frictionless charging environment that cuts across all customer-types and stakeholders including OEMs, charging providers, municipalities and utilities, while adding to the resiliency of the electrical grid.”

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