CASE STUDY

Bergstrom Automotive

NEENAH, WISCONSIN

CHALLENGE:

Upgrade the facility for the launch of all electric vehicles and ensure power will always be available for EV charging stations.

SOLUTION:

Two Xcape™ systems were installed as standalone microgrids, which is supported by a Generac 35 kW propane fueled generator and battery storage system.

RESULT:

A scalable, flexible solution that ensures power is always available, without any interruptions that could arise because of utility outages.

"For these microgrid applications, having a generator to ensure resilience of the solution is key."

Microgrid Provides a Sustainable Solution Independent from the Power Grid

OPPORTUNITY

Bergstrom Automotive, headquartered in Neenah, Wisconsin, is one of the top 50 automotive retailers in the United States. With Ford boosting electrical vehicle (EV) production, the dealership in Neenah needed to prepare the facility for the launch of Ford EV models, particularly the Ford Mustang Mach-E and all-electric F-150. To accommodate the new product offerings, Bergstrom needed to add new EV charging stations. They wanted a solution that would provide sustainable power without the significant and costly electrical service upgrades to support the system.

"The facility wanted a solution that would not place additional load on their electrical distribution," said Steve Nieland, vice president of innovation, EnTech Solutions. "The dealer needed to ensure power was available for EV charging as demand increased, and they wanted a quickly installed, ready-to-use solution."

EnTech Solutions was asked to propose a clean energy solution to support Bergstrom's EV charging infrastructure challenges. The solution also needed to be independent from the power grid.

"EnTech and Faith Technologies Incorporated (FTI) have worked with Bergstrom for a number of years," said Nieland. "No challenge is too big for us to tackle and after listening to Bergstrom, we felt the Xcape™, a hybrid solar-based microgrid solution with generator backup, was the best solution for this project to provide the necessary power while avoiding costly utility system upgrades."

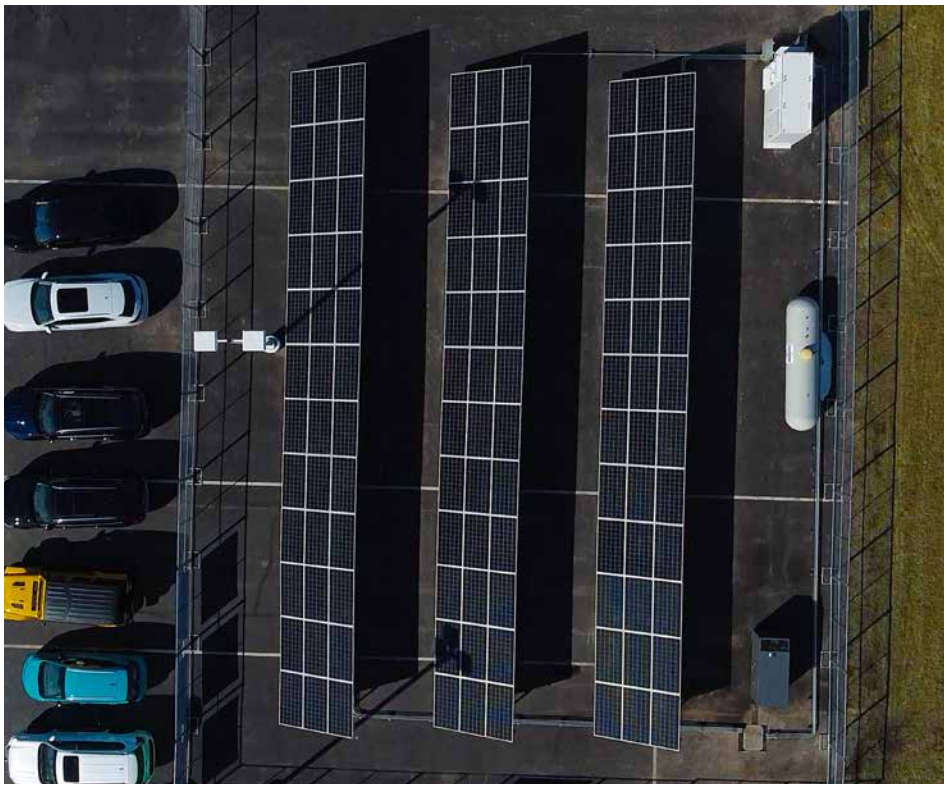
SOLUTION

Several considerations were made in the design of the solution, including the ability to site the microgrids in an urban setting. The entire system was designed to be easily scalable to other sites, including the ability to integrate roof or carport solar where space is a premium.

"Two Xcape™ microgrid systems were installed for Bergstrom as standalone microgrids to supply power for EV charging for their customers and guests," said Nieland. "One unit provides power to an EV charger in the indoor service bay, while the other unit provides power to an outdoor EV charger on the lot."

The microgrid units are off grid, which made the installation quick and easy. This system is always on and always available, without any interruptions that could arise because of utility outages. Both units are powered by one solar field, with support from an onsite Generac 35 kW propane-fueled generator and battery storage system. The generator is configured to supply both microgrids with resilient power, as well as provide a secondary generation source after solar.

"Solar provides the majority of power for the system either directly to the chargers or via the solar battery system, while the generator provides additional resiliency for days when there is not adequate sun to provide the power required," said Nieland. "The generator is a key component of the system to ensure power is available when needed, while maintaining grid independence."



APPLICATION:
Energy Management

MODELS:
35 kW propane generator

As a backup generator is critical for an off-grid microgrid, EnTech immediately turned to Generac for help in specifying a generator for the project.

"For these microgrid applications, having a generator to help ensure resilience is key," said Nieland. "Generac produces well-designed, dependable, generators in natural gas, propane and diesel in the 25 kW size range that pair perfectly with Xcape. The ability to fully integrate Generac's standard generator control package with the EnTech control system provides the capability to remotely monitor the entire microgrid package via EnTech's cloud-based operations platform."

An important decision when specifying a generator is selecting the fuel. In this case, propane was selected.

"Propane is readily available, easily transported and is an ideal low-carbon fuel choice compared to diesel," said Tony Mente, industrial solutions manager, Generac Power Systems. "The propane fuel system provides flexibility for future, less carbon intensive fuels such as RNG or biopropane. The microgrid could then be powered 100% by renewables."

OUTCOME

The entire system is scalable as Bergstrom's EV charging needs continue to grow. The solution is also flexible. The same configuration could also be grid-tied to support the existing site electrical infrastructure and load if desired.

In the end, the solution is the first fully grid-independent charging solution for a car dealer in Wisconsin. It demonstrates the ability to provide power in conjunction with or independent from the grid for EV charging solutions. This solution provides sustainability without the need to draw power from the grid.

"Generac is pleased that we were able to work with EnTech to provide a solution that aligns well with Bergstrom's corporate sustainability goals," said Mente. "Start to finish, the project wrapped up in less than three weeks."

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