

BMW Group

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BMW Group and PG&E Plug-In to Leverage Renewable Energy and Sustainably Power Electric Vehicles.

- **Third Phase of Innovative Pilot Further Optimizes Electric Vehicles as a Flexible Grid Resource.**
- **New Incentives for participating BMW EV Drivers who are PG&E Customers in Northern and Central California.**

Mountain View, Calif. - March 22, 2021... The BMW Group and Pacific Gas and Electric Company (PG&E) today announced an expanded partnership that further leverages renewable energy to sustainably power electric vehicles (EVs). ChargeForward is the first smart charging program to offer customers incentives for maximizing the integration of renewable energy while optimizing their EV charging. This advanced smart charging initiative is available to all BMW's battery electric (BEV) and plug-in hybrid vehicles (PHEV) drivers in Northern and Central California who are also PG&E residential, electric customers. Enrollment in the 24-month pilot kicks off today, with the program officially launching in mid-April and running through March 2023. The pilot is designed to further explore how to optimize EV charging with renewables on the electric grid and enable more customers to power their EVs with cleaner energy. Based on past research, the use of optimized charging can enable electric vehicles to accept an additional 1,200 kilowatt-hours of renewable energy per vehicle per year, which is the equivalent of four months of clean energy charging for a typical battery EV.

What is Smart Charging?

Through smart charging, EVs act as a flexible grid resource to support the overall reliability of the electric grid. Smart charging focuses on moving EV charging away from times when electricity is in high demand and toward times when there is less demand

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and also more renewable energy on the grid such as mid-day. By responding to requests to move their EV charging times, drivers will support the electric grid and take advantage of clean, renewable energy. Additionally, utilizing EVs as a flexible grid resource could ultimately lead to cost savings associated with operating and maintaining the grid as well as for customers owning an EV.

In the future, PG&E and the BMW Group believe that vehicles can play a larger role in supporting the grid as new vehicle technologies are developed. Future EVs may have the ability to discharge the vehicle battery to support the grid, expanding the capabilities beyond smart charging and supporting customers and the grid during emergencies. To support this, PG&E and the BMW Group will collaborate in a lab setting to explore this potential by testing vehicle-to-grid functionalities that could support bill savings for customers driving EVs as well as test using EV batteries for backup generation and other grid services.

“Our sustainability vision at the BMW Group aims to bring sustainability principles to all aspects of the customer experience – including the energy our electric vehicles use. ChargeForward demonstrates how our company’s digital technology can help customers use more renewable energy and reduce their energy costs,” said Adam Langton, Energy Services Manager, Connected eMobility, BMW of North America. “ChargeForward is part of the BMW Group’s commitment to provide our customers with charging solutions that are convenient, reliable and sustainable.”

“The more than 315,000 electric vehicles plugging into PG&E’s electric grid offer a unique resource that contributes to building our clean energy future in California. As EV adoption continues to grow, the potential for these clean vehicles as a flexible grid resource becomes more significant. Our ongoing collaboration with BMW has allowed us to explore and demonstrate future possibilities of scaling the smart charging capabilities of this growing resource to support the electric grid,” said Quinn Nakayama, Director of Integrated Grid Planning and Innovation at PG&E.

BMW ChargeForward Phase Three Program Participation

Designed for a larger group of BMW EV drivers – about 3,000 EV drivers compared to 100 and 400 in phase one and two – phase three of the pilot will further explore how

incentivizing drivers to shift their EV charging times can help meet the needs of the electric grid and use excess renewable energy available during the day. Interested consumers can complete an application at www.bmwchargeforward.com starting today. The 24-month pilot begins in mid-April and runs through March 2023. BMW hopes to expand the availability of the program to MINI electrified customers in the near future.

Through BMW ConnectedDrive, which enables connectivity between cars, drivers and their surroundings, and a customized BMW ChargeForward smartphone app, participating BMW drivers will be able to opt-out of any smart charging request, based on their driving and personal preferences. When a customer allows their vehicle to be smart charged, the vehicle charging will be shifted to meet the needs of the electric grid.

Participating BMW EV drivers earn incentives for smart charging including \$150 at sign-up and up to an additional \$250/year by following ChargeForward recommendations. The total amount earned over the two years depends upon individual participation in charging events. These incentives can offset the extra cost for some drivers, depending on their electricity rate. For example, during the Spring and Fall months, program participants could earn incentives that offset the entire cost of charging their vehicle, charging 750 miles per month with clean electricity at no cost due to the ChargeForward incentives and plugging into the grid when renewable energy is highly available.

BMW and PG&E ChargeForward Partnership

Now in its third phase, ChargeForward originally launched in 2015 to test the ability of EVs to support the electric grid and provide benefits to customers through vehicle-grid-integration applications that enable smart charging and demand response. Optimizing charging against renewable energy was the primary focus of the second phase. Initial tests of renewable optimizations showed participants averaged more than 55% of renewable energy charging, more than double the national average at the time.

Highlights from the ChargeForward Phase 2 pilot include:

- Over 1 million miles were powered by 100% renewable energy charging during a one-year period.
- Smart charging EVs can reduce greenhouse gas emissions by an additional 32% on average in Northern California, according to research from the University of California Berkeley.
- Smart charging, when combined with broad access to workplace charging infrastructure, enables plug-in electric vehicles to more than double their renewable energy usage.
- A 'smart-charging' plugin hybrid can integrate more renewable energy than a normal-charging all-battery electric vehicle, despite the smaller battery size.

Additional results from the previous phases of the pilots can be found here: [Phase one](#) and [Phase two](#).

The goal of the phase three pilot is to continue to make smart charging more beneficial to the grid and more rewarding for BMW EV drivers. The program is expected to help improve grid stability and support the integration of renewable energy – forwarding the BMW Group's commitment to sustainability from design to engineering, production and the vehicle's overall lifecycle. By sharing the benefits of this optimization with drivers through incentives, smart charging also helps reduce the total cost of EV ownership, thus encouraging EV adoption.

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BMW Group In America

BMW of North America, LLC has been present in the United States since 1975. Rolls-Royce Motor Cars NA, LLC began distributing vehicles in 2003. The BMW Group in the United States has grown to include marketing, sales, and financial service organizations for the BMW brand of motor vehicles, including motorcycles, the MINI brand, and Rolls-Royce Motor Cars; Designworks, a strategic design consultancy based in California; technology offices in Silicon Valley and Chicago, and various other operations throughout the country. BMW Manufacturing Co., LLC in South Carolina is the BMW Group global center of competence for BMW X models and manufactures the X3, X4, X5, X6 and X7 Sports Activity Vehicles. The BMW Group sales organization is represented in the U.S. through networks of 348 BMW passenger car and BMW Sports Activity Vehicle centers, 144 BMW motorcycle retailers, 116 MINI passenger car dealers, and 38 Rolls-Royce Motor Car dealers. BMW (US) Holding Corp., the BMW Group's sales headquarters for North America, is located in Woodcliff Lake, New Jersey.

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