



Bosch battery services cut costs for electric vehicle fleets

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Bosch and Mitsubishi Corporation team up with Blue Park Smart Energy to develop business models for battery swapping

- ▶ The partners want to reduce the cost of operating electric vehicle fleets by harnessing innovative battery services.
- ▶ Bosch's Battery in the Cloud service continuously analyzes battery status and improves battery performance and service life.
- ▶ By swapping the battery, vehicle idle time is kept to a minimum.

Stuttgart, Germany, and Beijing, China – When it comes to electric vehicles, even high-speed charging is not always speedy enough: idle time during charging and the costs this entails are deterring companies such as taxi services and ride-hailing operators from electrifying their fleets. Added to this is the uncertainty surrounding the performance of batteries in continuous use: how long do they last and how reliable are they? Given the vital role electric mobility plays in enabling climate action in downtown urban areas, additional solutions have to be found. This is where the alliance between Bosch and the Mitsubishi Corporation with Blue Park Smart Energy (BPSE) comes in. The partners are joining forces to create Battery as a Service (BaaS) innovations. The main idea here is that fleet operators will no longer have to purchase the batteries; they will simply pay to use them. This reduces not only the initial investment outlay but also operating costs, as electric vehicles can be operated more economically. A pilot project in China is now working on business models for efficient battery swaps.

Battery in the Cloud ensures optimum battery use

Battery in the Cloud, a system of cloud-based services from Bosch, will serve as the technical foundation for the cooperation. Smart software functions in the cloud continuously analyze a vehicle's battery status and take appropriate action to prevent or slow cell aging. This, in turn, improves battery performance and

service life. “With our deep experience in connected mobility, we will work closely with the partners to explore new service models for batteries,” says Zheng Xinhang, general manager of Bosch Connected Mobility Solutions Ltd.

Project develops solutions for third-party providers

In the pilot project in China, Mitsubishi Corporation as commercialization partner and Bosch are working with BPSE. Blue Park Smart Energy is part of the BAIC Group and a leading company for battery swap systems. “In this cooperation, Mitsubishi Corporation’s broad commercial experience and resources together with Bosch’s Battery in the Cloud service will link the battery swapping business to the financial service,” says Seiji Hamanaka, General Manager of Battery Business Department at Mitsubishi Corporation. Besides developing technical solutions, plans are in place to create a financial leasing ecosystem that will then be marketed to mobility service providers and financing companies. “The cooperation can build a profitable business for commercial fleet operators, while contributing to the reduction of greenhouse gases and creating a more favorable environment for the adaptation of new energy vehicles,” Hamanaka adds.

Partners have their sights set on additional markets

Demand is huge. Around 15 million fleet vehicles are going to be electrified in China alone. Bosch and Mitsubishi Corporation not only want to support the electrification of fleets, they also want to encourage the utilization of used batteries in the second life market on the basis of Battery in the Cloud in a further step to improve sustainability. With this in mind, the companies are planning to expand their Battery as a Service innovation activities to other markets.

Bosch cloud services also improve maintenance

Rapid battery charging, high numbers of charge cycles, an overly sporty driving style, and extremely high or low ambient temperatures all tend to be sources of stress for batteries, which makes them age faster. Bosch’s cloud-based services are designed to recognize and proactively counter these kinds of stress triggers. All battery-relevant data, e.g. current ambient temperature and charging habits, is first transmitted in real time to the cloud. The insights gained into a battery’s current status enable Bosch to protect it against aging. To give an example: fully-charged batteries age more quickly at particularly high or low ambient temperatures. Bosch’s cloud services thus ensure that batteries are not charged to 100 percent when conditions are too hot or too cold. Cloud data will also help improve battery maintenance and repair. As soon as a battery fault or defect is identified, for example, drivers or fleet operators can be notified. This increases the chances that a battery can be repaired before it becomes irrevocably damaged or stops working altogether.

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