

Industry First: Joint Development of a Portable Charger with an EV Battery Degradation Diagnostics Function

— Quickly Detecting Signs of Rapid Battery Capacity Fade (Secondary Degradation) Anywhere —

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Osaka Gas Co., Ltd.
Origin Co., Ltd.

Osaka Gas Co., Ltd. (head office: Osaka City, Osaka Prefecture; Representative Director, President, and CEO: Masataka Fujiwara; hereinafter, "Osaka Gas") and Origin Co., Ltd. (head office: Saitama City, Saitama Prefecture; Representative Director, President, and CEO: Hideki Inaba; hereinafter, "Origin") have signed an agreement to jointly develop the industry's first^{*1} portable charger (hereinafter, "the charger") for electric vehicles (hereinafter, "EVs") equipped with a diagnostics and related function that detects signs of rapid battery capacity fade (hereinafter, "secondary degradation") in EVs.

Battery degradation diagnostics technologies^{*2} (hereinafter, "the technologies") were exclusively developed by Osaka Gas and KRI, Inc. (hereinafter, "KRI"), a wholly owned subsidiary of Osaka Gas. Through the widespread use of the charger, Osaka Gas and KRI aim to contribute to proper valuation and broader availability of used EVs.

In Japan, the EV market is expected to expand,^{*3} and the availability of used EVs and batteries is expected to increase toward the achievement of carbon neutrality by 2050. However, whose battery usage history cannot be fully verified in many cases, making it difficult to properly assess their degradation state. Such limited traceability is likely to give rise to concerns about performance degradation and reduced capacity, posing an obstacle to proper valuation and broader availability of used EVs.

In 2025, Osaka Gas and KRI developed the industry's first battery degradation diagnostics technologies that detect signs of secondary degradation on the spot, based on data obtained from short-duration charging even for EV batteries whose usage history is not fully traceable.

Efforts are underway to incorporate diagnostics technologies into chargers in order to put the technologies to practical application. Integration of the charging function and the diagnostics function will enable battery degradation diagnostics using EV charging data.

There are two types of chargers: stationary and portable. They are used in different diagnostic applications. Stationary chargers with a diagnostics function are intended to be installed in repair shops and other facilities for diagnostics during periodic inspections. Meanwhile, portable chargers with a diagnostics function can be brought to the vehicle's location for charging and diagnostics even at sites where space and cost are constrained or installation is difficult, such as used car lots and auction venues.

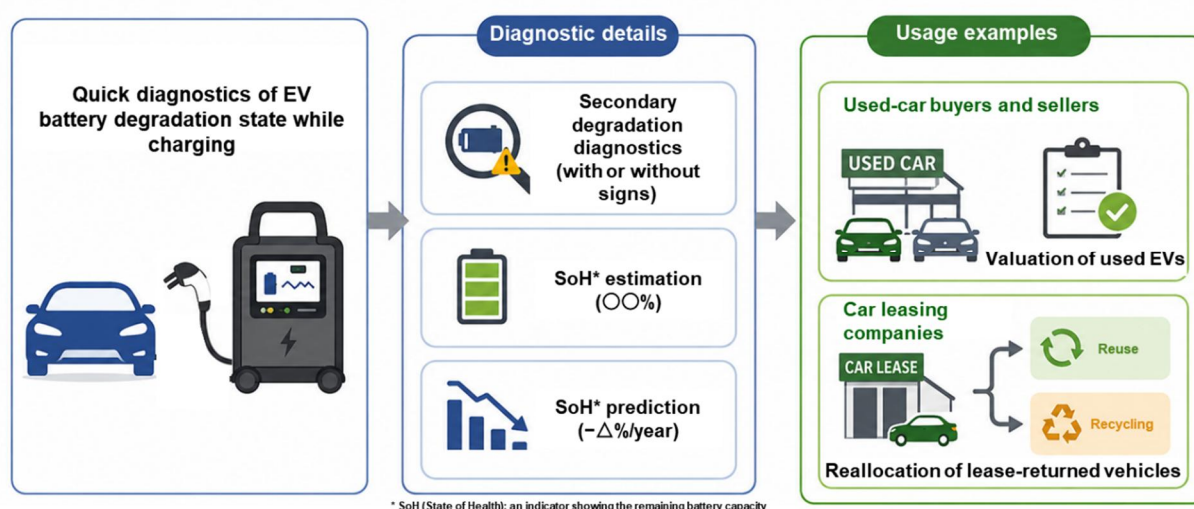
Thus, the joint development aims to develop portable chargers capable of quick secondary degradation diagnostics of EV batteries while charging and create new services by combining the Daigas Group's battery degradation diagnostics technologies and Origin's portable EV charger technologies.

Origin, the partner in putting the charger to practical application, provides products that underpin electrification of mobility by harnessing its engineering capabilities developed in the field of power supplies. Origin is the only company in Japan that develops and sells the

POCHA V2V series,^{*4} which represents portable bidirectional EV chargers.^{*5} By supporting both charging and discharging, the series can be used for various applications, including mobile emergency charging and BCP (Business Continuity Plan) to supply power in the event of a disaster or power outage.

Regarding specific services to be created through the joint development, the two companies expect to sell the charger to used-car buyers and sellers, leasing companies, and repair facilities and provide services to perform battery diagnostics, thereby enabling proper valuation, reallocation of lease-returned vehicles to optimal uses, and decision making to reuse or recycle batteries. On-site operation will be verified using the field-test version of the charger to be developed by the end of FY2027.3 to build knowledge toward commercialization and determine specific use cases. From FY2028.3 onward, the two companies aim to commercialize the charger and deploy services based on the results.

The two companies will continue to foster a partnership and contribute to further expanding EV-related businesses and maximizing the value of EVs.



[EV battery degradation diagnostics technologies using short-duration charging data and their usage examples]

- *1 According to our research. This is the first EV portable charger in the industry (in the world) capable of detecting signs of secondary degradation on the spot, based on limited data obtained from short-duration charging.
- *2 See [details](#) of battery degradation diagnostics technologies.
- *3 The Japanese government set a goal to achieve 100% electric vehicles in new vehicle sales by 2035 for passenger cars in Japan. See [details](#).
- *4 In addition to the POCHA V2V series, which are the base models used for the field test, Origin will release the POCHA+ mobile bidirectional charger, which can operate high-output equipment (as a power source) with a three-phase 200 VAC discharging function by harnessing its proprietary technologies (scheduled to be released in summer 2026). See [details](#).
- *5 The chargers can receive power from EVs (discharging) in addition to charging EVs. Thus, they are referred to as “bidirectional chargers” to distinguish them from ordinary EV chargers.