

News Release

FOR IMMEDIATE RELEASE

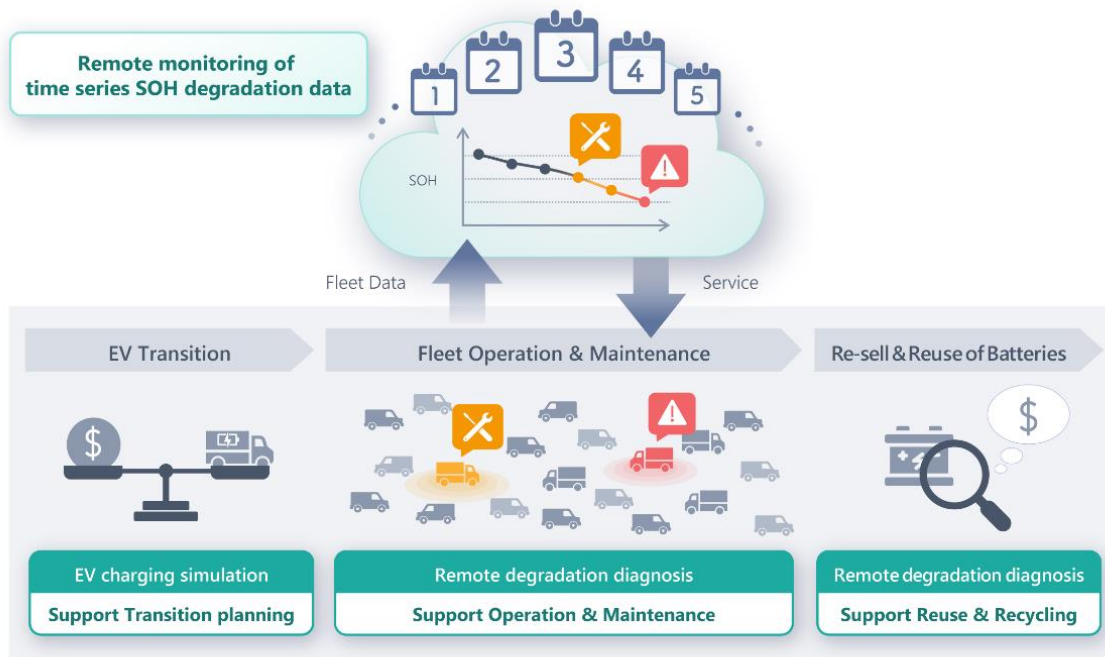
Hitachi High-Tech Develops the Service of Remote Degradation Diagnostic Systems for On-board Automotive Lithium-ion Batteries *Contribute to the realization of a carbon-neutral society*

Tokyo, July 25, 2022 – Hitachi High-Tech Corporation ("Hitachi High-Tech") today announced the development of service to diagnose the degradation status remotely for on-board automotive lithium-ion batteries. Achievement of stable and efficient operation of battery is becoming quite important for the deployment of electric vehicles ("EVs"). Hitachi High-Tech will start to propose this service to global customers through various network to contribute to a circular society by solving customer issues.

■Field Trial and Service outline

Hitachi High-Tech has analyzed thousands of lithium-ion batteries and its operational data which is remotely taken from EVs in commercial operation. This field trial contributed to develop the technology to estimate the degradation of State of Health (SOH) of lithium-ion battery packs and cells accurately. It has also been demonstrated to keep track of the time-series SOH of on-board batteries and to monitor changes from the past to the present. This will allow customers to centrally manage a large number of EVs in commercial operation efficiently.

This field trial was carried out in collaboration with ITOCHU Corporation ("ITOCHU"). ITOCHU has a capability of automotive fleet management*1 and will start proposing this service to its global network that include automotive manufacturers, fleet leasing and financial companies.



Overview of the Service

■Background of Service development

Achievement of stable and efficient automotive fleet management is becoming quite important for the deployment of EVs that grows rapidly towards the realization of a carbon-neutral society. To date, it has been necessary to remove the batteries from the vehicle to diagnose the

degradation of on-board batteries, but the introduction of this service enables to monitor the degradation remotely and provide an operational environment to make the most of battery life. The management of the on-board usage history will also lead to development of opportunities to utilize used EV batteries to energy storage system or efficient recycling for material recovery. Particularly, this service is expected to promote the transition to electric vehicles in commercial sector, where the vehicle utilization rate is higher due to long driving distance with extended operational time that will heavily impact on battery degradation.

In 2020, Hitachi High-Tech developed Rapid diagnostic method^{*2} for battery degradation that instantly assesses the performance degradation and remaining life of lithium-ion batteries.

In addition, the technology which is released this time has developed in cooperation with the Research and Development Group of Hitachi, Ltd.

Our technology also has been contributing traditionally to battery safety by utilizing X-ray foreign materials analytical system which can perform everything from foreign materials detection to elemental identification in the manufacturing process of lithium-ion batteries.

Hitachi High-Tech aims to contribute to realizing a circular society by supporting the entire battery lifecycle. Hitachi High-Tech will solve social issues with our customers using Observation, Measurement, and Analysis, and contribute to the realization of a sustainable society.

*1 Automotive fleet management: Fleet Operators Businesses based on owning or controlling a large number of vehicles for the purpose of transferring people or goods, such as logistics companies and bus, taxi and car rental/leasing companies.

*2 Rapid diagnostic method: Press release on 20th November 2020 「Development of a Rapid Diagnostics of Battery Degradation to Instantly Evaluate the Performance Degradation and Remaining Lifespan of Lithium-Ion Batteries」

<https://www.hitachi-hightech.com/global/about/news/2020/nr20201120.html>

Life cycle management solution for Lithium-ion batteries

<https://www.hitachi-hightech.com/global/products/advanced/lcm/>

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About Hitachi High-Tech

Hitachi High-Tech, headquartered in Tokyo, Japan, is engaged in activities in a broad range of fields, including manufacture and sales of clinical analyzers, biotechnology products, and analytical instruments, semiconductor manufacturing equipment and analysis equipment. and providing high value-added solutions in fields of social & industrial infrastructures and mobility, etc. The company's consolidated revenues for FY 2021 were approx. JPY 576.8 billion [USD 5.1 billion]. For further information, visit <http://www.hitachi-hightech.com/global/>

Contact:

Noriko Higashida
Front Engineering Dept. Business Development Div.
Hitachi High-Tech Corporation
noriko.higashida.zd@hitachi-hightech.com

Koichi Murata
EV-LiB Solution Development Dept. Business Development Div.
Hitachi High-Tech Corporation
koichi.murata.hz@hitachi-hightech.com