

23 August 2024

Fabrica Communications Co., Ltd.  
Marubeni Plax Corporation  
Toshiba Corporation

## **Launched a Verification Project to Diagnose the Condition of Used Electric Vehicle (EV) Batteries**

**~Establishing industry-first<sup>(\*)1</sup> evaluation indicators to contribute to improving the reliability of EV battery value assessment~**

Fabrica Communications Co., Ltd. (President & CEO: Masato Taniguchi, hereinafter referred to as "Fabrica Communications"), Marubeni Plax Corporation (President & CEO: Yoshihisa Sokura, hereinafter referred to as "Marubeni Plax"), and TOSHIBA CORPORATION (President & CEO, Executive Officer: Taro Shimada, hereinafter referred to as "Toshiba") have jointly launched a verification project to diagnose the condition of used electric vehicle (EV) batteries, titled the "Used EV Battery Diagnosis Project."

Using Toshiba's battery degradation diagnosis technology, the three companies, which have been working to establish evaluation indicators since April 2022, have now completed a prototype. The practicality of these indicators will be verified by posting them for six months on the used car information website "Kurumaerabi Dot Com" (<https://www.kurumaerabi.com>) operated by Fabrica Communications.

Example listings:

- <https://www.kurumaerabi.com/usedcar/detail/20781-18277/>
- <https://www.kurumaerabi.com/usedcar/detail/20781-17996/>
- <https://www.kurumaerabi.com/usedcar/detail/29192-5/>

Through this project, the three companies aim to establish the industry's first quantitative indicators for assessing the capacity and degradation status of EV batteries in the used car market, thereby enhancing consumer confidence.

### **Background and Objectives of the Demonstration Project**

EVs are expected to play a central role in achieving the 2030 greenhouse gas reduction target<sup>(\*)2</sup>, with rapid market expansion anticipated globally. The used EV market is also expected to grow in tandem with this trend. However, there is a challenge in evaluating the battery condition of used EVs. In this project, we aim to establish an indicator that not only measures the remaining battery capacity but also visualises the internal state of the battery using electrochemical-based metrics and quantitatively assesses the degradation level.

## Overview of the Verification Project

The three companies have been working to establish a method for quickly measuring and diagnosing batteries. Additionally, with technical support from Denchi.ai Co., Ltd., including equipment provision, we have developed technology to miniaturise measurement devices for accurate diagnosis in a short time. Meanwhile, we have conducted various field tests and repeatedly defined requirements and verified hypotheses for market introduction.

This time, we will conduct a PoC (proof of concept) with an eye toward practical market implementation. In this project, battery diagnostic results (refer to Figures 1–4 below for measurement methods, diagnostic reports, and evaluation criteria) from dealerships will be posted on used vehicle sales websites, thereby providing reliable information to purchasers. This initiative aims to promote transaction activation and enhance reliability in the used EV market.



Figure 1. Measurement Methods and Degradation Level (P-Value)

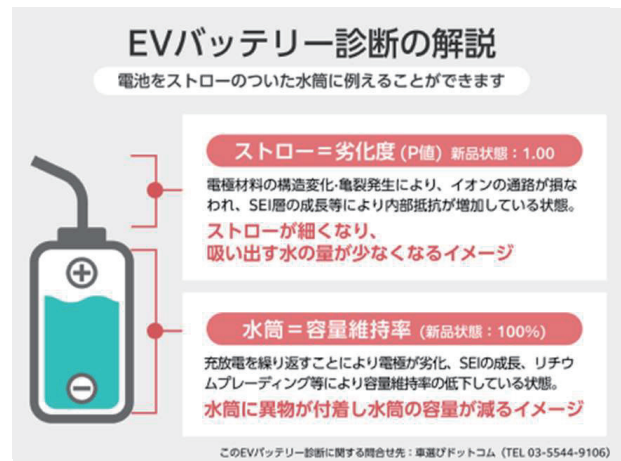


Figure 2. Explanation of EV Battery Diagnosis



Figure 3. EV Battery Diagnostic Report (Sample Image)



Figure 4. Comprehensive Evaluation Criteria for EV Battery Diagnostic Reports

## Future Developments

Over the next six months, we plan to use diagnostic equipment to measure the battery condition of used EVs and continuously post the results on the sales website.

Through this initiative, we aim to contribute to improving the transparency and reliability of the EV market as a whole and support the development of a fair and healthy market for both buyers and sellers.

\*1 Fabric Communications, Marubeni Plax, Toshiba survey

\*2 Japan's Emission Reduction Targets | Ministry of Foreign Affairs (mofa.go.jp)

## Company Overviews

### Fabrica Communications Co., Ltd.

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Business Details: Development and sales of automotive sales support systems, Internet media business, web marketing support business, automotive repair and rental car business

Equity Ratio: Fabrica Holdings Co., Ltd. (Tokyo Stock Exchange Standard Market, Securities Code: 4193) 100%

Website: <https://www.fabrica-com.co.jp/>

### Marubeni Plax Corporation

Representative: Yoshihisa Sokura

Head Office: Koraku Mori Building 9F, 1-4-14 Koraku, Bunkyo-ku, Tokyo

Established: December 1975

Business Details: Sales of various synthetic resin raw materials and products, sales of various packaging materials, sales of functional resins for automobiles and general industrial use, sales of electronic device materials

Website: <https://www.plax.co.jp/index.html>

### Toshiba Corporation

Representative: Taro Shimada

Head Office: 1-1-1 Shibaura, Minato-ku, Tokyo

Established: July 1875

Toshiba Group Business Details: Energy system solutions, infrastructure system solutions, building solutions, retail & printing solutions, device & storage solutions, digital solutions, battery business

Website: <https://www.global.toshiba/jp/top.html>

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