

Development of an AI for Optimizing EV Vehicle Dispatch and Recharge Timing and the Start of Collaboration with SmartDrive

Marubeni Corporation (hereinafter, "Marubeni") has developed an AI to optimize the timing of vehicle dispatch and the recharging of electric passenger vehicles (hereinafter, "EV") owned by offices, factories, service stations and other business sites, and has conducted a technical verification (hereinafter, "The Verification") of the AI. With the results of The Verification, Marubeni has also launched a partnership (hereinafter, "The Partnership") with SmartDrive (Headquarters: Chiyoda-ku, Tokyo; CEO: Retsu Kitagawa, hereinafter, "SmartDrive") in order to construct an efficient vehicle management service (hereinafter, "The Service").

From January to March 2020, Marubeni, together with Marubeni Power Retail Corporation (hereinafter, "Marubeni Power Retail") and Marubeni Ina Mirai Denki Corporation (hereinafter, "Marubeni Ina Mirai Denki"), in cooperation with Ina City government in Nagano Prefecture, Japan, conducted The Verification at Ina City using gasoline-powered vehicles and EVs owned by Ina-City Hase General Branch Office. The Verification proved that by optimizing the allocation of vehicles (usage scheduling), including gasoline vehicles, and the timing of EV recharging, it is possible to reduce the total cost of both gasoline and EV recharging by approximately 70% while maintaining the remaining EV recharging capacity to a certain standard by using the EVs more efficiently. We have also confirmed that the system can help improve the profitability of electricity retail companies by recharging EVs when electricity market prices are low.

Summary of Verification

Period of Verification	January-March 2020								
Location	Hase General Branch Office, Ina City, Nagano Prefecture, Japan								
Vehicles	1 EV, 1 gasoline vehicle, and 1 plug-in hybrid vehicle								
Scope of Verification	Determine the optimal timing of EV recharging while maintaining convenience of vehicle use, reducing fuel costs, and improving profits for electricity retail companies. Also to study behavioral changes after notifying vehicle users of the verification.								
Role of partners	<table><tr><td>Marubeni</td><td>Optimization of the timing of EV recharging and notifying vehicle users, etc.</td></tr><tr><td>Ina City</td><td>Use of gasoline vehicles and EVs, response to notifications, etc.</td></tr><tr><td>Marubeni Power Retail</td><td>Providing data for the Verification, etc.</td></tr><tr><td>Marubeni Ina Mirai Denki</td><td>Electricity supply to Hase General Branch Office, etc.</td></tr></table>	Marubeni	Optimization of the timing of EV recharging and notifying vehicle users, etc.	Ina City	Use of gasoline vehicles and EVs, response to notifications, etc.	Marubeni Power Retail	Providing data for the Verification, etc.	Marubeni Ina Mirai Denki	Electricity supply to Hase General Branch Office, etc.
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Marubeni has launched The Partnership with the goal of commercializing The Service based on the results of The Verification. SmartDrive will also conduct several pilot studies with their own technology named Mobility Data Platform which enables the collection and analysis of driving data. Through The Partnership, Marubeni and SmartDrive will conduct a trial installment of The Service during the second half of fiscal 2020, with the aim of commercializing this service thereafter.

Summary of The Service

<p>Service Description</p>	<p>(1) Optimization of vehicle dispatch and recharge timing, including EVs, with consideration to the following:</p> <ul style="list-style-type: none"> - Reduction of fuel costs and CO2 emissions from gasoline-powered vehicles through the active use of EVs. - Ensuring convenience in vehicle use by maintaining the remaining charge level of EVs to a certain standard. - Avoiding increases in electricity charges by peak shift of electricity demand. - Effective use of surplus electricity generated by solar power (in cases where solar power is installed). <p>(2) The following consulting services will be afforded to companies considering the installment of EVs:</p> <ul style="list-style-type: none"> - Proposition of the optimal number of EVs and EV chargers based on past usage of vehicles. - Quantification of the cost burden and cost reduction effects of EV installment. <p>(3) Other related services including installment of solar power generation systems and proposals for electricity retail plans.</p>						
<p>Schedule</p>	<p>Trial installment of The Service in the second half of fiscal 2020. Commercialization of the service will be considered thereafter.</p>						
<p>Role of partners</p>	<table border="0"> <tr> <td style="padding-right: 20px;">Marubeni</td> <td>Development and provision of AI system</td> </tr> <tr> <td></td> <td>Provision of electricity related systems and services</td> </tr> <tr> <td>SmartDrive</td> <td>Provision of mobility data services</td> </tr> </table>	Marubeni	Development and provision of AI system		Provision of electricity related systems and services	SmartDrive	Provision of mobility data services
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In the future, and through The Service, Marubeni and SmartDrive will promote the efficient use of EVs, and contribute to the realization of a low carbon society with the installation of renewable energy sources at clients' facilities.

【SmartDrive Profile】

Company Name : SmartDrive

Business Description : Providing services related to new mobility by utilizing the big data collected and analyzed through various sensor devices.

Incorporated : October 1st 2013

CEO : Retsu Kitagawa

Location : NTT Hibiya Building 5F, 1-1-6 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011, Japan

WEB site : <https://smartdrive.co.jp/>

【Contact for Release Inquiries】

Domestic Power Business Dept.

TEL : 03-3282-3771

MAIL : KONISHI-R@marubeni.com