

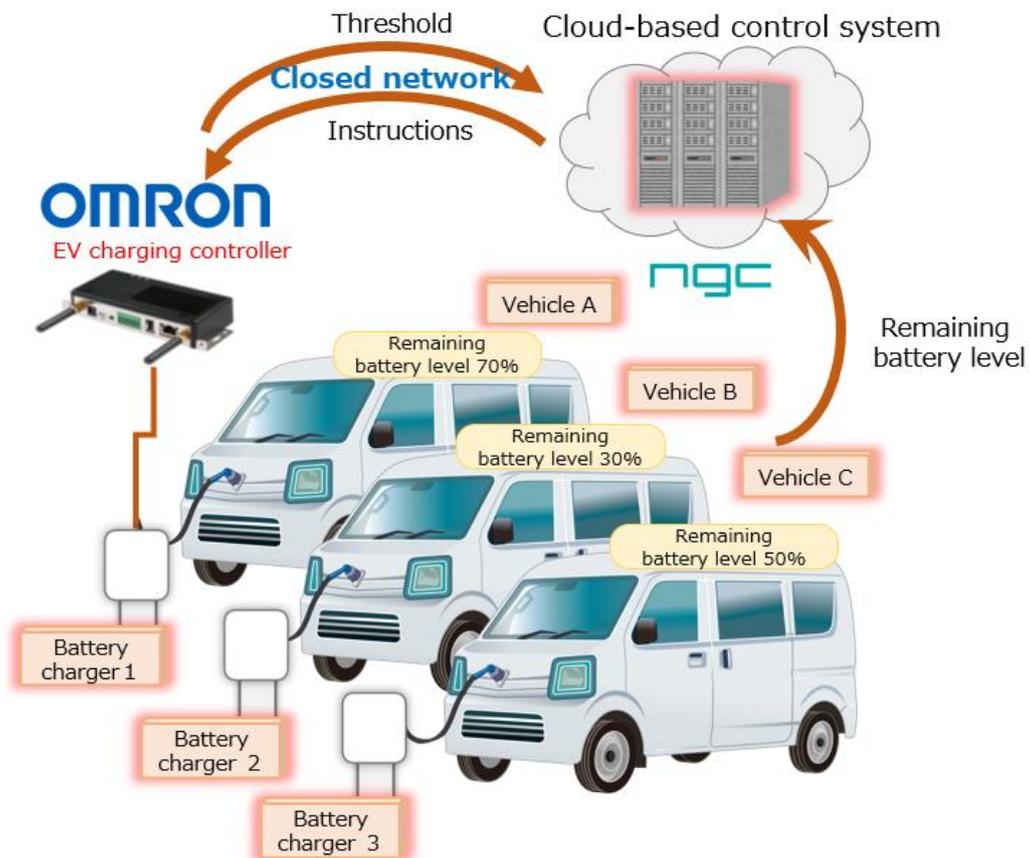
November 9, 2022

Sojitz Corporation
NGC Corporation
OMRON SOCIAL SOLUTIONS CO.,LTD.

Sojitz, NGC, and OMRON Launch a Cloud-based Battery Charging Control Service for Commercial EVs/PHEVs

Sojitz Corporation (Head Office: Chiyoda-ku, Tokyo; Representative Director: Masayoshi Fujimoto; "Sojitz"), NGC Corporation (Head Office: Koto-ku, Tokyo; Representative Director: Masatsugu Hashimoto; "NGC") and OMRON SOCIAL SOLUTIONS CO.,LTD. (Head Office: Minato-ku, Tokyo; Representative Director: Toshio Hosoi; "OSS") have developed a cloud-based charging control system to optimize charging for commercial electric vehicles (EVs/PHEVs*1). The cloud-based charging control service will help users to avoid unnecessary capacity charge and simultaneously ensure optimized EV fleet charging operations. The service will be launched from November 10, 2022.

[Concept of the Cloud-based Charging Control System]



Japan's Ministry of the Environment has framed a policy for achieving carbon neutrality in Japan by 2050*² which accelerates the transition to 100% electric car sales by 2035.² The EV market is expected to demonstrate rapid growth in the coming years.

In recent years, the transition to EVs has accelerated, particularly for transportation vehicles, official vehicles, and commercial vehicles. EVs operated during the day need to be fully recharged by the next morning. If all vehicles are simultaneously charged when returned to the base, there is a risk of power peaks (demand peaks) occurring that drive up capacity charge.

Sojitz, NGC, and OSS will provide a solution to achieve efficient charging for commercial EV and PHEV users. The new cloud-based charging control service developed by the three companies makes it possible to distribute energy as needed to optimize charging and help the facility to avoid unnecessary capacity charge.

This service enables multiple vehicles to be equally charged before use the next day through the NGC cloud-based charging system (patent pending: application 2022-107789) and the "EV charger controller" developed by OSS. The charging control system ensures the smooth operation of EV fleet for next-day use utilizing digital transformation technology. Sojitz promotes green EV infrastructure businesses (to offer EVs designed to be recharged from renewable energy as part of a package with the necessary infrastructure) leveraging its experience with the development and the operation of renewable power plants. .

NGC, OSS, and Sojitz will take on this new initiative together to demonstrate strong leadership in the growing EV/PHEV market by leveraging their respective strengths, which include NGC's planning and agile software development capabilities, OSS's many years of experience in the energy business with energy storage system controls and power grid interconnection technology,^{*3} and Sojitz Group's extensive networks.

Sojitz, NGC, and OSS provide new value through technology-related innovation, and this business alliance offers energy efficient solutions such as V2H and storage battery control services.

[Role of Each Company]

- Sojitz: Sales, implementation, operation, and maintenance of charging control services towards EVs/PHEVs
- NGC: Development and technical support for cloud-based EV charging system
- OSS: Development, manufacture, and technical support for EV charger controller

[Characteristics of the Service]

A cloud-based control system enables to identify individual vehicles and distribute power for multiple vehicles that;

- Enables all vehicles to be equally charged while avoiding unnecessary capacity charge
- Allows to collect and analyze data on remaining charge and charging capacity in real time
- Prevents electricity theft by unknown vehicles

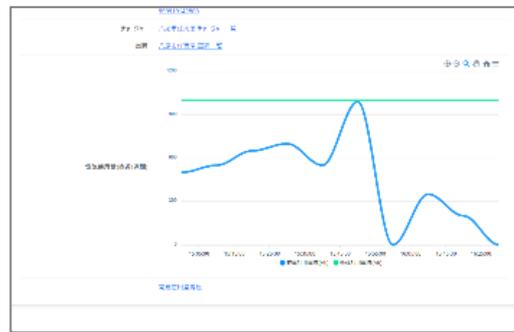
The system contributes for smooth operation of EV and PHEV fleet without major changes.

[Main Specifications*4]

■ Charging control system

[Image of screen]

施設ID	施設名	施設種別	施設内車庫/充電台数	施設稼働状況
NK01001	丸の内線千代田	06-3774-7070	50	5/1/2021
NK01002	有明線有明	06-3774-7070	20	稼働中
NK01003	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01004	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01005	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01006	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01007	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01008	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01009	丸の内線大塚	06-3774-7070	50	5/1/2021
NK01010	丸の内線大塚	06-3774-7070	50	5/1/2021



[Charging controls for multiple vehicles]

[Hourly charge]

Number of manageable facilities	3,000 facilities*5 per company
Number of manageable vehicles	30,000 units*5 per company
Cloud charging control functions	Power peak control, charging schedule control, automated allocation of charge control, vehicle identification, vehicle/charger linking system
Monitoring functions	Facility monitoring, EV charger controller monitoring/oversight, vehicle monitoring, charging history monitoring, charge alert, export of charging history, connecting to API, charging status, anti-electricity-theft function

■ EV Charger Controller

[Product exterior]



Applicable EV chargers controls*6	Maximum 60 units of ECHONET Lite*7 AC chargers for EV/PHEV compatible with EV charger class (ReleaseH)
Smart meter measure*6	Low voltage use: Toshiba Toko Meter Systems Co., Ltd. SmaMe-TypeM Series*8 High voltage use: ECHONET Lite*7 High voltage smart power meter class compatible products #Select either low voltage or high voltage use
Communication I/F	LTE×1 (※9) Ethernet port ×1, USB port×1, RS485 port×1
Ambient temperature /Humidity	-10~+50℃, 15~85%RH (No frost or condensation)
Dimensions	140mm×31mm×59.9mm (excludes protruding piece)
Mass	Within 500g
Power source /energy consumption	AC adapter for attached use. Commercial power supply 100V. Power consumption below 6W (excludes input surge current)

URL: https://socialsolution.omron.com/jp/ja/products_service/energy/product/pm/kp-ec11-con.html

- *1: EV: Electric vehicles are powered by an electric motor capable of being charged.
PHEV: Plug-in hybrid electric vehicles are equipped with both a gasoline engine and electric motor and can be charged at home with a dedicated outlet.
- *2: Japan's Ministry of the Environment policies for achieving carbon neutrality by 2050: The Japanese government's concrete policies for realizing a carbon neutral country by 2050
https://www.env.go.jp/earth/2050carbon_neutral.html
Policies apply to electric vehicles (EV), hybrid vehicles (HV), Plug-in hybrid electric vehicles (PHEV), and fuel cell vehicles (FCV).
- *3: Grid connection of output from power generation facilities (distributed generation).
- *4: Current plans. Specifications and design subject to change.
- *5: Standard configuration. Enhancement possible upon request.
- *6: EV charger. Please inquire for further information on the smart meter.
- *7: ECHONET Lite is a registered trademark of incorporated association, ECHONET Consortium.
- *8: SmaME is a registered trademark of Toshiba Toko Meter Systems Co., Ltd.
- *9: Used to connect to the server. Please inquire for further information on the server.

Sojitz Corporation

Sojitz Group is engaged in a wide range of businesses globally, including manufacturing, selling, importing, and exporting a variety of products, in addition to providing services and investing in diversified businesses, both in Japan and overseas. Sojitz operates with a 7-division structure comprising the Automotive Division; the Aerospace & Transportation Project Division; the Infrastructure & Healthcare Division; the Metals, Mineral Resources & Recycling Division; the Chemicals Division; the Consumer Industry & Agriculture Business Division; and the Retail & Consumer Service Division.

NGC Corporation

NGC Corporation is a Sojitz Group company that provides video-related solutions including digital signage and other large screen equipment and develops applications and provides solutions geared towards the latest technology and customer needs.

OMRON SOCIAL SOLUTIONS CO.,LTD.

OMRON SOCIAL SOLUTIONS CO.,LTD. utilizes original automation technology for automated ticket gates and other train station automation systems. OSS has developed public systems that have served as the first of their kind in Japan and overseas. Moving forward, OSS will continue to quickly grasp labor shortages, energy, resilience, and other social issues to build solutions using cutting-edge IoT, AI, and robotics technologies as well as software as part of a comprehensive solution that includes operation and maintenance services in order to realize a society that is safe, secure, and hospitable.

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