Daigas Energy and JR Kyushu to Implement Demand Response Using a Regenerative Power Storage System —Another Collaborative Project Following Local Production of Environmental Value for Local Consumption and Development of Solar Power Using Idle Land—

January 12, 2023
Osaka Gas Co., Ltd.
Daigas Energy Co., Ltd.

Daigas Energy Co., Ltd. (President: Masayuki Inoue, “Daigas Energy”), a whollyowned subsidiary of Osaka Gas Co., Ltd. (President: Masataka Fujiwara, “Osaka Gas”), will sign an agreement with Kyushu Railway Company (President and CEO: Yoji Furumiya, “JR Kyushu”) on the demand response[*1] service “D-Response”[*2] . This will allow Daigas Energy to participate as an aggregator in a balancing energy bid[*3] that uses a regenerative power[*4] storage system installed in the JR Kyushu Chikuhi Line Karatsu Substation (the “System”).

The System is a charging and discharging device that stores the regenerative power generated during train deceleration and effectively utilizes the power during train acceleration. Under this agreement, in the event of tight power supply, the power stored in the System will be actively discharged for demand response to help stabilize power supply and demand.

Osaka Gas and JR Kyushu have achieved the local production and cousumption of renewable electricity with environmental value by supplying renewable electricity generated at a power plant owned by the Daigas Group to the station buildings of the JR Kyushu Chikuhi Line.*5 The two companies have also collaborated with West Holdings Corporation on a joint project for the building of new non-FIT solar power plants on idle land along railroad tracks.*6 The JR Kyushu Shimonoseki Solar Power Plant, the first plant built under this project, went into operation in October last year. As a result of discussions with JR Kyushu to further collaborate on the effective utilization of equipment and facilities owned by JR Kyushu, and to increase the value of areas along its railway lines, Osaka Gas has agreed to participate in a balancing energy bid for demand response using the System.

The Daigas Group aims to contribute to the spread of the use of renewable electricity sources worth 5 GW[*7] in and outside Japan, including in-house development and ownership, as well as procurement from other companies, by FY2030. As of the end of last November, the Daigas Group’s contribution is worth about 1.76 GW, including in-house development and ownership, as well as procurement from other companies. Osaka Gas will continue to provide solutions for our customers’ challenges and strive to achieve a carbon-neutral society as a social issue.

*1: Demand response refers to controlling electric power demand on the consumer side to stabilize the power supply and demand.

*2: D-Response refers to a service that allows customers to control the power load equipment or privately owned generation facilities and receive rewards by curbing power demand. Daigas Energy offers this service as an aggregator in a balancing energy bid by general power transmission and distribution operators. D-Response is currently used in over 300 locations.

*3: In this open bidding system, general power transmission and distribution operators recruit consumers who can cooperate in terms of frequency control and supply-demand balancing. The Daigas Group participates as an aggregator who requests demand response from customers in the category of “Power Source I: Balancing Energy for Severe Weather,” which requires a response in the event of tight power supply.

*4: Regenerative power refers to the electricity produced, when train brakes are applied, by motors that act as generators to convert kinetic energy into electrical energy, which is returned to the overhead lines. This is similar to the way a hybrid vehicle generates electricity when brakes are applied and charges its on-board battery.

*5: Announced in January 2022

https://www.osakagas.co.jp/en/whatsnew/__icsFiles/afieldfile/2022/03/08/220111.pdf

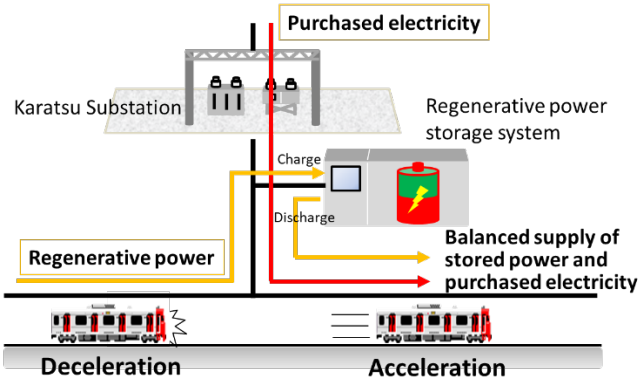
*6: Announced in July 2022

https://www.osakagas.co.jp/en/whatsnew/__icsFiles/afieldfile/2022/09/02/220729_2.pdf

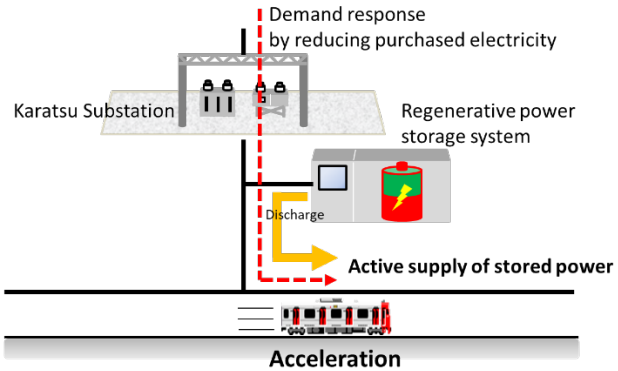
*7: The renewable energy mentioned here includes energy from power sources to which the FIT program applies, such as solar, wind, and biomass power.

1. Demand response with a regenerative power storage system

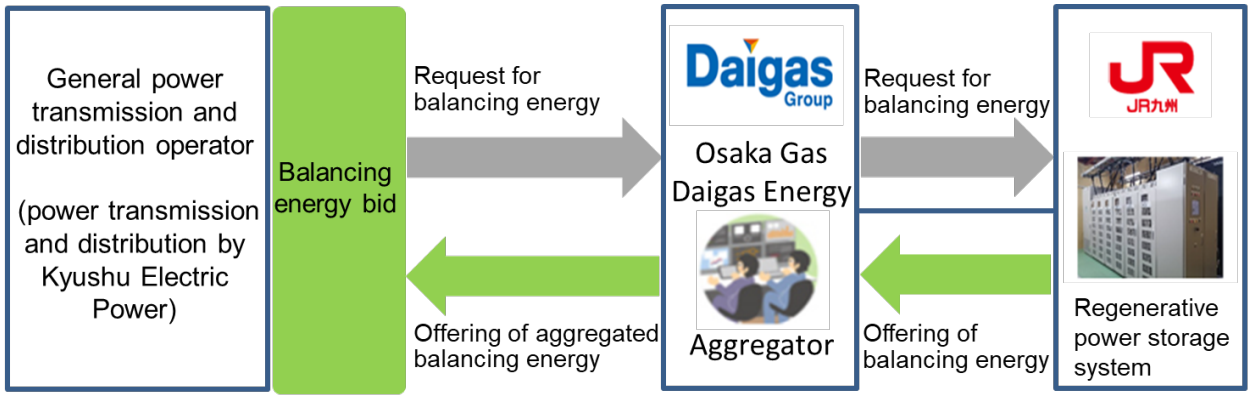
[In normal times]



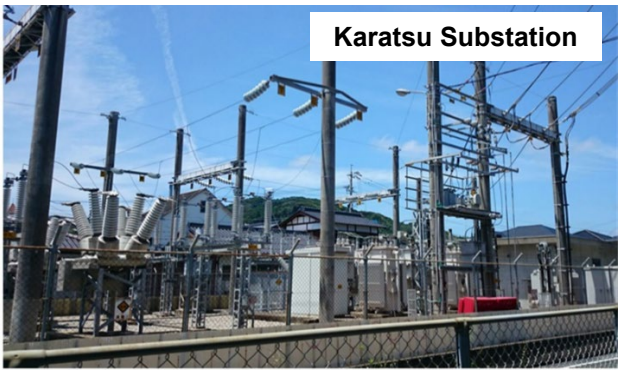
[At the time of demand response]



2. Schematic diagram of a balancing energy bid



3. Karatsu Substation and the regenerative power storage system



4. JR Kyushu Chikuhi Line as a source of regenerative power5. JR Kyushu Shimonoseki Solar Power Plant

5. Company profiles

<Osaka Gas>

Company name	Osaka Gas Co., Ltd.
Head office	4-1-2 Hiranomachi, Chuo-ku, Osaka, Japan
Representative	Masataka Fujiwara, President and Representative Director
Capital	132,166,660,000 yen
Established	April 10, 1897
Main businesses	Production and sale of gas; generation and sale of electricity, etc.

<JR Kyushu>

Company name	Kyushu Railway Company
Head office	3-25-21 Hakata-ekimae, Hakata-ku, Fukuoka, Japan
Representative	Yoji Furumiya, President and Chief Executive Officer
Capital	16 billion yen
Established	April 1, 1987
Main businesses	Passenger railway services, ferry services, bus services, travel agency services, parking lot services, advertising services, etc.

The Daigas Group’s commitment to renewable energy is introduced on the webpages below (in Japanese):
(For PC users) https://www.osakagas.co.jp/company/renewable_energy/index.html
(For smartphone users) https://www.osakagas.co.jp/sp/company/renewable_energy/index.html