



GS Yuasa Delivers Regenerative Power Storage System, Featuring a Function Available for the First Time in Japan, to Tokyo Tama Intercity Monorail

-Emergency running test carried out ahead of commencement of operation-

GS Yuasa Corporation (Tokyo Stock Exchange: 6674; “GS Yuasa”) announced that it delivered the E³ Solution System, a regenerative power storage system with an output of 2,000kW, to the Hino Transformer Station of Tokyo Tama Intercity Monorail Co., Ltd. (“Tokyo Tama Intercity Monorail”). The emergency running test carried out ahead of commencement of operation confirmed that railway cars, stopped in between stations due to power outage, can be evacuated safely with the electric power of lithium-ion batteries alone.

The E³ Solution System regenerative power storage system supplied by GS Yuasa is equipped with two types of lithium-ion batteries: the LIM25H-8 regenerative absorption lithium-ion battery (high input and output type) for efficiently utilizing the regenerative electric power under normal conditions, and the LIM50EN-12 emergency running lithium-ion battery (large capacity type) (see Overview of E³ Solution System in the following page for the details of its mechanism).

The system is also equipped with a function, being deployed for the first time in Japan, to enable the railway cars to continue emergency running by switching to the regenerative absorption lithium-ion battery even after the discharge from the emergency running lithium-ion battery ends.

GS Yuasa’s lithium-ion batteries can be used in a wide range of applications including large capacity and high input and output. Besides automotive batteries, its batteries have been adopted for various industrial applications including regenerative power storage system, large-scale power storage system, hybrid cranes and AGV (automatic guided vehicles). Going forward, GS Yuasa Group will continue to contribute to disaster countermeasures and an energy-saving society through the spread of systems using storage batteries.

[Overview of the emergency running test]

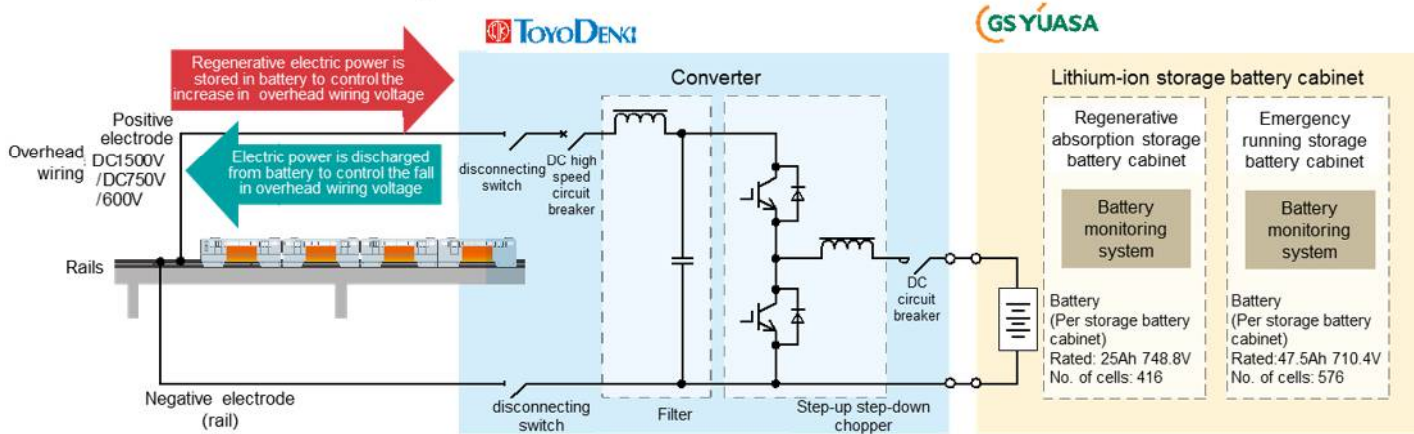
	First emergency running	Second emergency running
Storage battery	Emergency running lithium-ion battery	Regenerative absorption lithium-ion battery
Running stretch/ distance	The entire stretch of Tama Intercity Monorail Line/16km (Tama Center Sta. to Kamikitadai Sta.)	Kamikitadai Sta. to rail yard/about 4km
Running speed	15km/h or less	
Railway car composition	Four cars in one unit	
Results	<p>-Confirmed that the railway cars ran without problems in both the first and the second emergency running functions.</p> <p>-Confirmed that the storage battery has capacity sufficient for the emergency running function for an operation period of 15 years.</p>	

[Overview of E³Solution System]

1. System structure

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The regenerative power storage system is made up of high output lithium-ion battery and converter. The regenerative electric power generated when the train brakes is stored in the high output lithium-ion battery, which is discharged when the train is running, thus ensuring effective utilization of electric power.

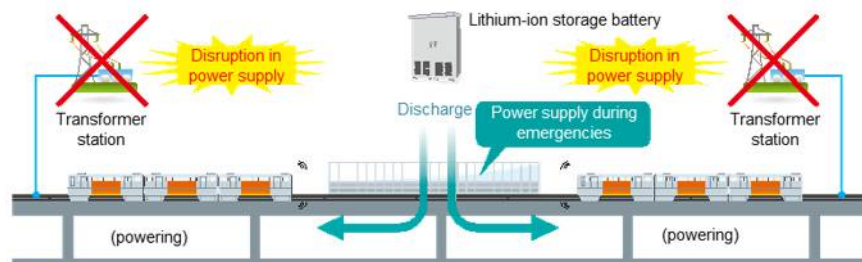


2. System functions



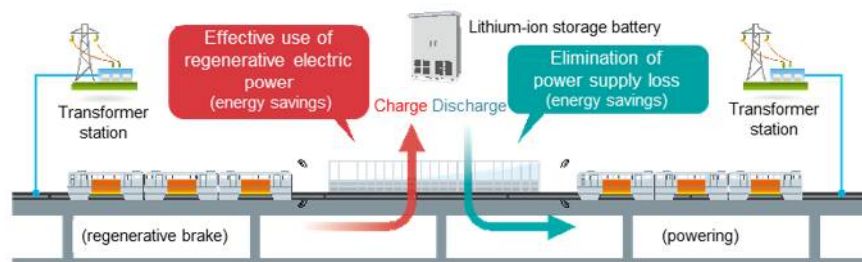
Provides power as a source of electricity for running the train

If the electricity from power companies is disrupted due to disaster, etc., this can provide power from the storage battery to run the train till the nearest station.



Regenerative power is stored to provide electricity when needed

Regenerative electric power is stored in the storage battery and is effectively utilized when there is a fall in the feeding voltage.
*Feeding denotes the provision of power for running the train.



[Images]

1. Converter and regenerative absorption storage batteries of the regenerative power storage system



2. Emergency running storage batteries of the regenerative power storage system



3. LIM25H-8 regenerative absorption lithium-ion battery



4. LIM50EN-12 emergency running lithium-ion battery

