

RECHARGE

Brian Publicover

Asia Correspondent

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Kyushu halts grid-access requests



Kyocera's 70MW solar plant — seen against the backdrop of the active Sakurajima volcano — is situated on the southern end of Kyushu, where the regional utility has

temporarily suspended grid-access applications as it determines how to integrate more renewable electricity into its strained network.

By Brian Publicover in Tokyo Thursday, September 25 2014

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Kyushu Electric Power, the utility on the southwestern Japanese island of Kyushu, says it will temporarily stop reviewing grid-access applications from renewables developers until it can determine how much more capacity it can accept.

Developers of newly planned utility-scale solar and wind projects will not be able to apply for grid access on Kyushu until further notice, but Kyushu Electric will continue to accept grid-access applications for residential PV systems below 10kW in size, the utility said in an online statement.

The move dashes perceptions among some renewables developers that the island's grid is less congested than in other parts of Japan, particularly on the northern island of **Hokkaido** — where the government is funding the expansion of the regional grid and the development of storage batteries. However, some industry observers said the utility's decision is “not surprising.”

“The more renewable energy it allows into the grid, the more its proprietary generation capacity may be underutilised. This is the challenge that all of the (electric power companies) face,” says Tom O’Sullivan, founder of Tokyo-based energy consultancy **Mathyos**. “(Kyushu Electric) also needs to balance power supply with power demand.”

The suspension will remain in place until the utility can determine how much more solar, wind, geothermal, hydroelectric and biomass capacity it can integrate into its strained grid without sacrificing the stability of electricity supplies.

Financial Constraints

“Kyushu is facing numerous challenges, including restarting its nuclear plant at **Sendai** in Kagoshima and some financial constraints,” says O’Sullivan, who advises global clients on energy strategy, particularly in Japan and elsewhere in Northeast Asia.

Japan shut down all of its nuclear reactors for evaluation after an earthquake and tsunami crippled a plant in Fukushima prefecture in 2011. The nation's utilities have struggled financially since then, as they have been forced to import more fossil fuels to compensate for the loss of nuclear-generating capacity in the wake of the disaster.

Earlier this year, Kyushu Electric asked the state-backed Development Bank

of Japan to purchase ¥100bn yen (\$916m) of its preferred stock, as it attempts to cope with this financial burden.

Such pressures have been exacerbated since the Japanese government introduced a feed-in tariff (FIT) system in July 2012 to promote the development of renewable energy. The country currently offers a FIT rate of ¥32/kWh for commercial projects and ¥37/kWh for residential PV installations, or projects below 10kW in size. It also offers a FIT rate of ¥22/kWh for onshore wind farms and ¥36/kWh for offshore projects.

The FIT programme has been extremely effective, particularly for solar, with government statistics showing that the nation's cumulative solar capacity had reached approximately 13.5GW by the end of February. And London-based research firm GlobalData said earlier this week that it expects Japan to add 8GW of PV capacity this year, with approximately 5.1GW expected to come on line in the second half of 2014 alone.

Explosive Development

On Kyushu, PV development has exploded over the past year, as developers have flocked to the island due to its abundant solar resources, further constraining access to the regional grid.

Earlier this year, two of Japan's largest solar plants — Kyocera's 70MW project in Kagoshima prefecture and Marubeni's 82MW (DC) installation in Oita prefecture — started feeding electricity into the Kyushu grid.

And in June, Kyocera and German PV developer Photovolt Development Partners — in cooperation with engineering services provider Kyudenko, Orix and Mizuho Bank — tentatively agreed to build 430MW of solar on Ukujima, a remote island in Nagasaki prefecture.

Kyushu — which is dotted with volcanoes, including Sakurajima in Kagoshima prefecture and one of the world's biggest active volcanoes, Mount Aso in Kumamoto prefecture — also hosts abundant geothermal resources. Kyushu Electric says its geothermal capacity accounts for roughly 39% of the country's total.

But the structure of the national grid — which is monopolised by 10 utilities — is one of the most serious constraints in bringing greater amounts of renewables into Japan's energy mix.

"This is particularly relevant in Kyushu, which is endowed with significant amounts of geothermal, solar and wind resources," O'Sullivan tells *Recharge*. "Furthermore, the grid link between the Japanese islands of Kyushu and Honshu is also relatively weak."

Blessed with such resources, the utility is struggling to integrate new capacity

into its grid. And Kyushu is not the only major Japanese island grappling with such issues.

Last October, the Ministry of Economy, Trade and Industry (METI) chose four companies — including SB Energy, SoftBank's renewables-development unit — to help expand the **grid** on the northern island of Hokkaido, in cooperation with regional utility Hokkaido Electric Power.

The plan is part of a ¥50bn (\$509.1m) national test project to bring more wind-generating capacity into the grid. The participating companies will jointly match METI's ¥25bn investment to facilitate the grid extensions.

METI is also trying to develop ways to stabilise the variability of renewables-generated electricity. Last summer, it asked Sumitomo Electric Industries to build a large-scale battery with 60MWh of **storage** capacity, to expand and regulate the transmission of solar and wind energy on Hokkaido.

Attachments area

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