

Gravity energy storage tunis city

The gravity tech uses massive weights that are hoisted up the mineshaft during times of surplus energy, and then released back down again during times of peak demand -- driving a turbine and sending power to the grid. The system can release large bursts of electricity quickly or release it more slowly depending on what's required.

Gravitricity recently inked a deal to install its technology at a 1,444-metre-deep mine in Pyhäjärvi, a small town 450 kilometres north of Helsinki, Finland. The installation is part of a local community initiative to transform the old mine into a state-of-the-art industrial park, hosting tech startups, solar farms, an underground 5G network, and a pumped hydro plant.

Founded in 2011, Gravitricity has spent much of the last decade on R&D, fuelled by crowdfunding and a handful of small research grants. The Finnish mine project will be the company's first full-scale, grid-connected prototype. If successful, it could provide a springboard for larger projects capable of powering tens of thousands of homes.

"This full-scale project will provide a pathway to other commercial projects and allow our solution to be embedded into mine decommissioning activities, offering a potential future for mines approaching the end of their original service life," explained Martin Wright, Gravitricity's executive chairman.

Gravitricity isn't the only one harnessing gravity for energy storage. Swiss startup Energy Vault has secured a healthy \$280mn in VC funding to develop its system, which comprises a huge building full of elevators that lift and lower massive concrete blocks.

However, while Energy Vault's system relies on massive infrastructure above ground, and has been heavily criticised for its potential carbon footprint as a result, Gravitricity takes advantage of the numerous old mine shafts already in existence. While there are obviously a limited number of these tunnels, they still represent an exciting opportunity to supplement larger-scale energy storage systems like pumped-hydro and lithium-ion batteries.

And it's not the only way to give dirty old mine shafts a new, cleaner lease on life. In Gateshead, UK, thousands of homes are being heated using geothermal warm water pumped up from abandoned mine tunnels. There have even been proposals to turn former mines into underground food farms.

While we're clearly still figuring out the best ways to utilise the thousands of kilometres of tunnels laying beneath our feet, Gravitricity could be a winning idea. The success of the startup's Finnish pilot project will surely be essential if it is to attract the investment it needs to scale.

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Web: <https://www.hollanddutchtours.nl/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

