Battery storage slovakia

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In the Bansk? Bystrica industrial park, we have successfully launched the largest smart battery storage brAIn by FUERGY in Slovakia. With an output of 2.7 megawatts and a capacity of 2.916 megawatt hours, its role is to provide certified ancillary services for the transmission system operator at the primary regulation level, working in combination with non-certified ancillary services in a form of energy flexibility.

It is the first installation of its kind that is technologically even more complex, and at the same time both emission-free and financially attractive. This makes our smart battery energy storage system (BESS) commercially viable, even without public funding. Such battery systems will also find applications in local distribution systems (LDS) and with large electricity consumers.

From the design phase to its official launch, we managed to complete this battery storage project in a record 6 months. From the moment it came online, the storage substitutes traditional fossil fuel burning sources typically providing ancillary services. In this way, the new project effectively eliminates the annual production of approximately 361 tonnes of CO2e emissions. This reduction takes place right at the heart of the emissions chain - at the level of electricity generation and distribution. For this reason, the technology can pay off its carbon debt in about a year.

According to our conservative estimates, the investment in the storage facility in Bansk? Bystrica should be repaid in approximately 3.5 years. This is because it is a brAIn storage with new functionalities, which we must carefully fine-tune first. Though according to our previous experience, the payback period could be considerably shorter. However, this will also be largely influenced by the prices of ancillary services and the price of system deviation.

Another feature that shortens the payback period is the multifunctional use of battery storage to provide both types of ancillary services. With our battery degradation at only 2.5 percent per year, the lifetime of the technology alone is easily capable of reaching 15 years. This means that the upfront investment in brAIn smart storage will pay for itself several times over during its lifetime.

We are currently witnessing a transition to a new energy economy. Trends in geopolitical changes and related adjustments in the supply of raw materials, the decarbonisation of the energy sector, the increasing share of RES (also thanks to technologies such as solar panels) that goes hand in hand with the expansion of flexibility and the overall increase in electricity consumption, are changing the energy market. These shifts also force us to look for new ways to ensure a more reliable and greener operation of the transmission system.

Battery storage devices, and especially their smart versions such as our brAIn storage device, are a reasonable choice in this respect. Installation is quick and easy, they can be installed almost anywhere, and their economic and ecological dimensions are indisputable.

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Within the scope of the project, we covered the complete design, supply and installation of the technology, including our own Energy Management System (EMS). In addition, we also included our own FUERGY Control units, which are fully compatible with our software. It is thanks to these units, we can manage batteries as efficiently and sparingly as possible.

For this installation, we also used non-flammable LiFePO4 batteries suitable for indoor installation from Pylontech. We monitor the battery room as well as the battery cells themselves 24/7. To eliminate any risks associated with fire, we have also equipped the room with a professional aerosol extinguisher system. Regular service and maintenance of the system are a matter of course.

The new battery storage in Bansk? Bystrica was installed in a part of the electrical substation of the Energetika building managed by the company EnergyTech, s.r.o. It is located in an industrial area, where you can already find a variety of operations such as recycling lines, construction sites or other industrial enterprises, and where further industrial construction is also planned. The electricity supply for the whole industrial area is managed by a local distribution system, which is also owned and operated by EnergyTech.

Battery storage systems providing certified ancillary services can be installed in locations with the necessary energy infrastructure, such as sufficient substation capacity to connect the storage. Those interested in this type of storage must also obtain connection approval from the regional distribution system.

Sufficiently large power consumption is required in order for the storage to provide both types of ancillary services. For a 2.7 megawatt storage, this means an electricity consumption of minimum of 35 gigawatt-hours per year and a minimum of 2.7 megawatts per hour, ideally even 24/7. However, the diagram of electricity consumption of the installation site is also important and must provide sufficient potential for load control.

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