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Why are giant flywheels being installed around the UK?
Giant flywheels are to be installed around the UK to minimise the risk of blackoutsas the power system goes carbon-free. Flywheels are energy storage systems that use surplus electricity to accelerate a massive metal "wheel",thereby turning it into mechanical energy. To avoid energy losses,the wheels are kept in a frictionless vacuum.

What is a flywheel energy storage system?
Fig. 1 has been produced to illustrate the flywheel energy storage system, including its sub-components and the related technologies. A FESS consists of several key components: (1) A rotor/flywheel for storing the kinetic energy. (2) A bearing system to support the ro-tor/flywheel.

How can flywheels be more competitive to batteries?
The use of new materials and compact designswill increase the specific energy and energy density to make flywheels more competitive to batteries. Other opportunities are new applications in energy harvest,hybrid energy systems,and flywheel's secondary functionality apart from energy storage.

What is a flywheel used for?
Flywheels are among the oldest and most extensively utilized energy storage devices,having been employed for centuries to store usable energy for various purposes [,,]. Their origins can be traced back to the potter's wheel,underscoring their longstanding role in human technological development .

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Flywheels can store rotational energy efficiently and respond rapidly when needed, making it the perfect short-term energy storage solution.

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