



# Rail energy storage Burundi

What is advanced rail energy storage?

Advanced Rail Energy Storage (ARES) uses proven rail technology to harness the power of gravity, providing a utility-scale storage solution at a cost that beats batteries. ARES' highly efficient electric motors drive mass cars uphill, converting electric power to mechanical potential energy.

Can rail-based energy storage improve grid reliability?

"We found that the U.S. rail network has the capacity to bring energy where it's needed when these events happen, and that it can cost less than building new infrastructure." The paper, "Leveraging rail-based mobile energy storage to increase grid reliability in the face of climate uncertainty," was published recently in the journal Nature Energy.

What types of energy can be stored in a rail-based gravity storage system?

Energy can be stored in many forms such as chemical energy (batteries), thermal energy (heat), kinetic energy (flywheels) and potential mechanical energy (hydro). Similar to hydro, ARES uses the potential mechanical energy available due to gravity. The figures below demonstrate how rail-based gravity storage works, at a basic level.

Can onboard energy storage systems be integrated in trains?

As a result, a high tendency for integrating onboard energy storage systems in trains is being observed worldwide. This article provides a detailed review of onboard railway systems with energy storage devices. In-service trains as well as relevant prototypes are presented, and their characteristics are analyzed.

Can rail-based energy storage save power when trouble strikes?

New research points to a flexible, cost-effective option for backup power when trouble strikes: batteries aboard trains. A study from the U.S. Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Lab) finds that rail-based mobile energy storage is a feasible way to ensure reliability during exceptional events.

Should we add rail-based energy storage?

"As we look toward a future with more electrification, more fluctuating renewable energy, and more frequent extreme events, the case for adding rail-based energy storage to the mix may become even stronger." This research was funded by the William and Flora Hewlett Foundation.

Founded in 2010, Advanced Rail Energy Storage (ARES) has developed, tested and patented rail-based, gravity-powered energy storage technologies that are more environmentally responsible, durable, and cost-effective than other utility-scale storage alternatives.

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Rail gravity energy storage belongs to physical energy storage, which has the advantages of large scale, low cost, high efficiency, eco-friendly, and no self-discharge, resulting in broad application prospects.

Burundi energy storage project signed Largest electricity substation in Burundi to up energy access by 7% The largest electricity substation in Burundi, a 160MV facility in Rubirizi will increase the country's electricity-connected population by 7% when completed.

ARES energy storage technology employs a fleet of electric traction drive shuttle-trains, operating on a closed low-friction automated steel rail network to transport a field of heavy masses between two storage yards at different elevations.

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Advanced Rail Energy Storage (ARES) has developed a breakthrough gravity-based technology that will permit the global electric grid to move effectively, reliably, and cleanly assimilate renewable energy and provide significant stability to the grid.



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