Spain ares advanced rail energy storage

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.

What is Ares technology & how does it work?
ARES technologies use no fossil fuel or water,produce zero emissions or hazardous waste,and have a 40+year service life with no degradation or thermal runaway. Energy can be stored in many forms such as chemical energy (batteries),thermal energy (heat),kinetic energy (flywheels) and potential mechanical energy (hydro).

How long do ARES Systems last?
ARES systems are machines and have a 40-yearservice life with no degradation and no thermal runaway. ARES uses recycled steel rails,low-carbon and reclaimable mass cars,sophisticated motors and electronics,and freely available gravity,providing a fully sustainable renewable energy storage solution for utility-scale deployment.

How do Ares shuttle trains work?
During periods where excess energy is available on the grid (Reg-Down), ARES shuttle trains draw electricity from the grid which powers their drive motors to move the trains uphill against the force of gravity--efficiently converting electrical energy into gravitational potential energy.

What rated power and energy capacity can an Ares facility provide?
An ARES facility can be constructed over a wide range of rated power and energy capacities from a small 25 MW facility with 6.25 MW h of storage capacity up to or beyond a 2000 MW facility with 240 000 MW h of storage.

Does Ares work today?
No scientific breakthroughs are requiredto make ARES work today--the durability and efficiency of railroad technology has undergone over a century of refinement and has been proven over tens of millions of safe miles.

Advanced rail energy storage (thus "ARES") can absorb that excess energy, using it to power electric trains that pull giant slabs of concrete up a gentle slope. In effect, the trains...

Over the last decade, ARES has developed, tested and patented rail -based, gravity- powered energy storage technologies. By 4. th. quarter 2024, we will have our first facility in operation with many more to follow. Manufactured in the United States . No Degradation. Low Cost . Lithium Free. Non-Flammable. Water Free. Rail-Based Gravity Storage. 3

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Advanced Rail Energy Storage (ARES) 505 Market St. Kirkland, WA 98033. 206.851.1653. russ@aresnorthamerica . ARES North America - The Power of Gravity 20 - August 11, 2021. To Thermal-Mechanical-Chemical . Energy Storage Workshop organizers

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. ARES technologies use no fossil fuel or water, produce zero emissions or hazardous ...

ARES will use surplus wind/solar or other low-cost energy from the grid to move hundreds of tons (millions of pounds) of mass uphill on railroad shuttles, effectively storing thousands of megawatt-hours of potential energy to power a medium-sized city for several hours.

The ARES Nevada Project is a 50 MW gravity-based rail energy storage system which employs a fleet of seven heavy regenerative traction drive shuttle trains, operating on a high-grade closed low-friction automated steel rail network, to shift mass between alternate elevations, converting electricity into potential energy and back into electric ...

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The GravityLine TM storage system is made up of multiple 5MW tracks and can vary in size from 5 MW to 1 GW of power and an equivalent range of energy (MWh to GWh) depending upon weight and number of mass cars, slope and distance. ARES" GravityLine TM design boasts duration flexibility of between 15 mins and 24+ hours.

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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