

European Solar and Energy Storage Solutions

Ares advanced rail energy storage Finland



Overview

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.

How does Ares energy storage work?

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.

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-year service 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?

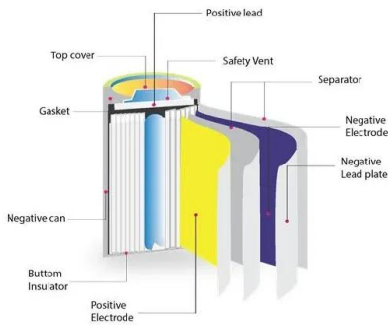
During periods where excess energy is available on the grid (Reg-Down), ARES shuttle trains draw electricity from the grid which powers their drive motors to move the trains uphill against the force of gravity—efficiently converting

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.

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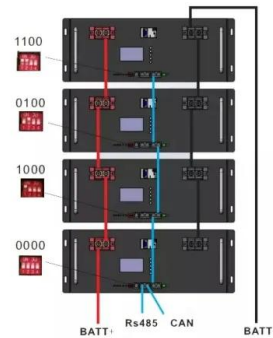


GravityLine

The GravityLine™ 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™ design boasts duration flexibility of between 15 mins and 24+ hours.

Advanced Rail Energy Storage: Green Energy Storage for

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.



Advanced Rail Energy Storage: Green Energy Storage for Green Energy

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.

ARES Advanced Rail Energy Storage

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2013????????????Advanced Rail Energy Storage(A RES)????????????????????,?? ...

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In this study, a rail gravity energy storage system model was built based on MATLAB/Simulink, and the energy loss of each component of the system in the energy storage and energy release processes were analyzed. The influence ...



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Advanced Rail Energy Storage uses heavy train cars to store

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The ARES (Advanced Rail Energy Storage) energy storage technology uses an electric traction drive shuttle-train, operating on a closed low-friction automated steel rail network to transport heavy masses between two storage yards at different elevations. When excess energy is available on the grid, ARES shuttle-trains uses the power, which drives their ...



Las Vegas Business Press: DEAL WATCH: ARES Nevada builds energy storage

ARES Nevada, an affiliate of Advanced Rail Energy Storage (ARES), has announced the groundbreaking for its first GravityLine™ merchant energy storage facility. The 50 MW facility will be able to provide 15 minutes of regulation services at full capacity -- supporting renewable energy integration across the Western U.S. ADVERTISING

Advanced Rail Energy Storage (ARES)

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 . Title: PowerPoint Presentation Author:



ARES Gravity Trains May Solve

the Energy Storage Problem

One California company has come up with another solution, the Advanced Rail Energy Storage System, or ARES for short. This technology is essentially a land-based train that takes excess electrical energy and stores it through potential energy gained in large train masses. In rudimentary terms, it's the equivalent of pushing a large rock up a



Advanced Rail Energy Storage: Green Energy Storage for

Advanced Rail Energy Storage (ARES) LLC, based in California, is a technology development firm dedicated to advancing the role of energy storage to improve the resilience, reliability, and environmental performance of the electrical grid. ARES has developed and been granted both domestic and international patents for an alternative method of



Energy Storage Wars: Trains, rocks & gravity are the future of energy ...

Nonetheless, it is a new energy storage alternative that could assist utilities when they need more energy to continually power the grid. a company named ARES (Advanced Rail Energy Storage) The engineers say the system life on these vehicles is 40 years or more and can produce 12.5 megawatt-hours of energy. ARES confirms that by 2019



Our Company

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



The train goes up, the train goes down: a simple new way to store energy

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

Advanced Rail Energy Storage: Green Energy Storage for Green Energy

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. ARES stores energy by raising the elevation of mass against the force of gravity, and recovers



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ARES Pahrump Nevada Advanced Rail Energy Storage

The Bureau of Land Management approved the Advanced Rail Energy Storage Project (ARES) in this location. It will extend far up onto this bajada. The proposed project is a 50 megawatt gravity based energy storage system that would be constructed on 72 acres (but will disturb over 150 acres for roads and transmission) of BLM managed public land.



Applications



About Us

Howard Trott is the CEO of ARES North America and an executive with more than 25 years of experience developing and operating a wide range of energy projects, real estate investments and business ventures. Mr. Trott is also the CEO of RECON Dynamics, which was created with a vision to provide advanced best-in-class IoT solutions for

US firm ARES gets BLM approval for 50-MW rail energy storage

March 29 (SeeNews) - Advanced Rail Energy Storage LLC (ARES) said Monday it received a right-of-way lease from the US Bureau of Land

Management (BLM) for its 50-MW commercial-scale gravity-based rail energy storage project in Nevada.



Advanced Rail Energy Storage

About ARES Advanced Rail Energy Storage, LLC (ARES) is a Washington State LLC and was founded in 2010. It is headquartered in Santa Barbara and has multiple offices in the Southern California area. In addition to these corporate offices, ARES has a research center in Tehachapi, California and is developing a second facility in Moorpark, California.

ARES North America

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