

European Solar Energy Storage

Polar night energy Dominica



Overview

What can polar night energy do for You?

Polar Night Energy's solution can be adapted and scaled for various energy systems, utilizing cutting-edge technology to optimize energy production, storage and distribution. Decarbonize your industrial processes with our innovative Sand Battery technology.

How does polar night energy's thermal energy storage work?

Polar Night Energy's thermal energy storage powers the change from fossil fuels to renewable energy. How does it work?

The Sand Battery provides low-emission energy, supporting the expansion of solar and wind power without toxic or harmful materials. Our thermal energy storage ensures high security of supply and increases energy self-sufficiency.

Who is polar night energy?

Polar Night Energy was founded in 2018 by Tommi Eronen and Markku Ylönen who first met in 2013 while studying at Tampere University of Technology. Tommi holds an M.Sc. in Power Plant Engineering, and Markku has a Ph.D. in Applied Mechanics. "We saw the trend of declining electricity prices and increasing volatility a decade ago.

Is polar night energy a high potential carbon handprint innovation?

Polar Night Energy was awarded an honorary certificate in the High Potential Carbon Handprint Innovation category at the International Carbon Handprint Awards 2022. Junior Chamber International Finland selected the world's first commercial Sand Battery as the Finnish Innovation of 2023.

Can polar night energy save CO₂e?

According to Mission Innovation's assessment, Polar Night Energy's sand-based thermal energy storages may save over 100 Mt of CO₂e per year in

2030. Polar Night Energy was awarded an honorary certificate in the High Potential Carbon Handprint Innovation category at the International Carbon Handprint Awards 2022.

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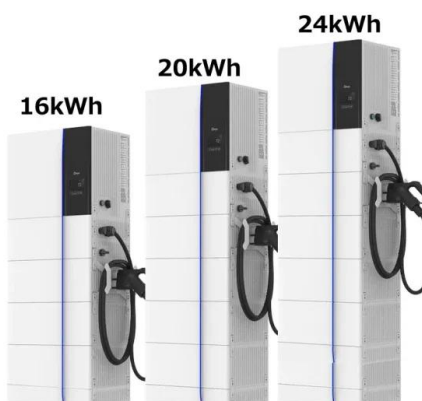


Polar Night Energy construit une batterie thermique au sable

Polar Night Energy construit une batterie thermique au sable de 1 MW Cette nouvelle batterie au sable à l'échelle industrielle sera connectée au réseau de chauffage urbain de Loviisan Lämpö, à Pornainen, en Finlande. Elle permettra à cette société de produire de la chaleur sans recourir à des combustibles fossiles et sans rejeter

The World's First Commercial Sand Battery Is Finland's Productive ...

Polar Night Energy began developing sand battery technology in the 2010s and established a pilot plant in Tampere. The commercial sand battery, capable of heating to over 500 degrees Celsius, in collaboration with Vatajankoski, represents the latest step in this innovation.

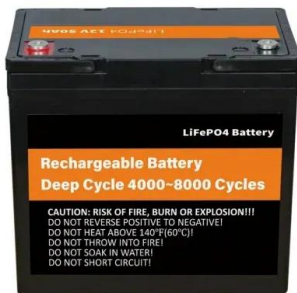


Polar Night Energy: Heißer Sand für erneuerbare Fernwärme

Der Wärmespeicher von Vatajankoski und Polar Night Energy hat eine Heizleistung von 100 Kilowatt und eine Kapazität von acht Megawattstunden. Die Anlage soll Wärme für das Fernwärmenetz des westfinnischen Energieversorgers Vatajankoski in der Stadt Kankaanpää liefern.

Vatajankoski Sand Battery Inaugurated

The world's first commercial sand-based energy storage system, or Sand Battery, has officially been inaugurated in Vatajankoski, Kankaanpää on January 20th, 2023. Developed by Polar Night Energy, the Sand Battery's test phase began in May 2022 and it was put into actual use about a month later, in June-July.



Tell Me About a "Sand Battery!". Meet the Innovator

...

Polar Night Energy takes sustainable electricity from solar and wind power (above) and converts it to heat stored in 100 tons of sand for later usage.

Finnish Polar Night Energy Successfully Closes EUR7.6m in Seed ...

Polar Night Energy has successfully secured EUR7.6m in seed funding. This significant investment will play a crucial role in realizing Polar Night Energy's vision of decarbonizing energy production and establishing itself as the leading global provider of large-scale thermal energy storage solutions.



[Case Vatajankoski](#)

Polar Night Energy has developed and operates the world's first commercial sand-based thermal energy storage system for Vatajankoski. This 200 kW Sand Battery, with an 8 MWh capacity,

provides heat for the district heating network in Kankaanpää, Finland.



Careers

Join the Polar Night Energy team and make a real impact on the fight against climate change. Drive the future of sustainable energy through meaningful work and collaboration with brilliant and friendly colleagues. Vacancies. Tampere



Case Pornainen

Polar Night Energy is constructing an industrial-scale thermal energy storage for Loviisan Lämpö. The new 1 MW Sand Battery is being built in Pornainen, integrating with Loviisan Lämpö's district heating network. The thermal energy storage medium will be crushed soapstone, a byproduct of Tulikivi's production of heat retaining

Sand Battery Filled with Soapstone

The Sand Battery, developed by Polar Night Energy, is a thermal energy storage system that flexibly uses sand-like materials as the storage medium. By-Product Replaces Virgin Material. The new Sand Battery in Pornainen will be filled with crushed soapstone, a by-product of Tulikivi's heat-retaining fireplace production. A total of

2,000 tons



Case Hiedanranta

Polar Night Energy's 3 MWh test pilot project in Hiedanranta, Tampere, represents a significant step in thermal energy storage technology. Launched in the winter of 2020-2021, this pilot is connected to the local district heating network and can provide heat for couple of buildings.

Elpriserna kan chocksänkas - revolutionerande lösning

Polar Night Energy i Tamefors utvecklar en teknik som gör det möjligt att använda sand för att lagra värme. Nu vill företaget omvandla värmen i sanden tillbaka till ...



Deye inverters and Deye batteries are more compatible.

Sustainability

According to Mission Innovation, Polar Night Energy's thermal energy storage has a strong positive impact on the United Nations Sustainable Development Goal (SDG) 7: Affordable and Clean Energy. It also enhances local energy security and contributes to SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization



News

Finnish Polar Night Energy Successfully Closes EUR7.6m in Seed Funding to Scale Up Sand Battery Technology. 03.04.2024 . Finnish Polar Night Energy Successfully Closes EUR7.6m in Seed Funding to Scale Up Sand Battery Technology. Loviisan Lämpö Invests in Polar Night Energy's Sand Battery in Pornainen - Towards Non-Combustion Heat



News

Finnish Polar Night Energy Successfully Closes EUR7.6m in Seed Funding to Scale Up Sand Battery Technology 25.01.2024 White Paper: The Sand Battery Can Power The Change From Fossil Fuels to Wind & Solar Energy

[Polar Night Energy's Sand Battery](#)

Polar Night Energy constructed and operates the world's first commercial sand-based thermal energy storage for Vatajankoski Oy, an energy utility in Western Finland. The sand battery, which has a hundred tons of sand inside, provides ...



Media

World Economic Forum: What Finland's New Sand Battery Means For The Renewable Energy Sector. Deutsche Welle: Innovations for a new era of energy storage (video) Mashable: A sand battery in Finland is transforming sustainable heating (video) pv magazine: Polar Night Energy secures EUR7.6 million to scale-up sand battery

technology



About us

Founded in 2018, Polar Night Energy is a Finnish company specializing in the design and manufacture of high-temperature thermal energy storage systems. Our mission is to reduce combustion in energy production and accelerate the ...



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Polar Night Energy

Polar Night Energy's solution can be adapted and scaled for various energy systems, utilizing cutting-edge technology to optimize energy production, storage and distribution.

100MWh 'Sand Battery' set for commissioning in 2025

This is the second major project to be revealed by Polar Night Energy, following a 100kW/8MWh project that came online at the site of a power plant operated by ...





100MWh 'Sand Battery' set for commissioning in 2025

The technology provider is Polar Night Energy, and the system's capacity is 1MW/100MWh, making it a 100-hour system. This is the second major project to be revealed by Polar Night Energy, following a 100kW/8MWh project that came online at the site of a power plant operated by utility Vatajankoski in June 2022.

Can Sand Battery Produce Electricity?

Polar Night Energy is developing a Sand Battery with Power to Heat to Power (P2H2P) capabilities, allowing stored heat to be converted back into electricity. Open menu Close menu . Industries Open sub-menu Close sub-menu. Process Industries. Decarbonize your industrial processes with our innovative thermal energy storage technology.



[Polar Night Energy](#)

Polar Night Energy's latest funding round was a Seed for \$8.22M on April 3, 2024. Date. Round. Amount. Investors. Valuation. Valuations are submitted by companies, mined from state filings or news, provided by VentureSource, or based on a comparables valuation model. Revenue. Sources. 4/3/2024.

Investors

Founded in 2018, Polar Night Energy is a pioneer in high-temperature thermal energy storage, known for our cutting-edge Sand Batteries. As the global demand for large-scale energy storage

surges, driven by the rise of intermittent renewables like wind and solar, our technology is uniquely positioned to meet this need.

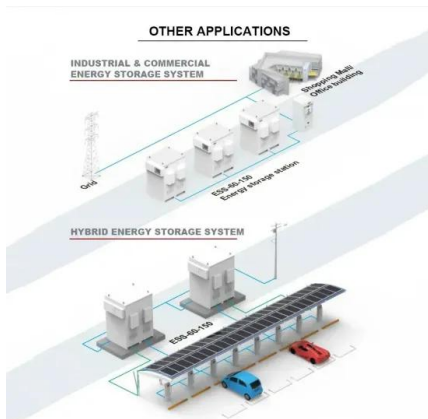


Energy Storage Capacity for Heat Supply?

In this post, we share our simulation results for Polar Night Energy's Sand Battery, powered solely by wind energy. Our findings reveal a broad range in required storage capacity--from 25 hours to several hundred hours--depending on ...

Privacy Policy

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 Polttimonkatu 4, 33210 Tampere, Finland Email: contact@pne Website: https://
 Open menu Close menu Industries Open sub-menu Close sub-menu



Does The Sand Battery Cause Sand Shortage?

Polar Night Energy's Sand Battery is a high temperature thermal energy storage that uses sand or sand-like materials as its storage medium. It stores energy in sand as heat. Using sand allows a wide temperature range with storage time from hours to months. It is also affordable, non-toxic and can be locally sourced.

Purchasing Specialist

As Polar Night Energy is a growing and evolving company, we're looking for someone who enjoys thinking outside the box, finding creative solutions, and working independently. We're focused on developing energy storage systems further, which means we'll need innovative thinking when it comes to selecting components and designing the



Visit us at The Energy Event of Finland 2024 in Tampere

"Energy storage is key to unlocking the full potential of renewable energy," says Juha Niemi, Sales Manager at Polar Night Energy. "With our Sand Battery technology, companies can achieve greater energy independence while contributing to climate change mitigation and the reduction of greenhouse gas emissions. We're excited to showcase

Feasibility Study

Bichura Energy, Mongolia "Polar Night Energy's team was very professional. We would recommend their services to other companies with similar interests." Heikki Hapuli, Production Director Keravan Energia, Finland "Polar Night Energy's solution is an excellent example of electric-thermal sector integration." Tuomas Vanhanen, Project

Product Model
 HJ-ESS-215A(100KW/215KWh)
 HJ-ESS-115A(50KW 115KWh)

Dimensions
 1600*1280*2200mm
 1600*1200*2000mm

Rated Battery Capacity
 215KWH/115KWH

Battery Cooling Method
 Air Cooled/Liquid Cooled



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What Is a Sand Battery?

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Contact Us

For catalog requests, pricing, or partnerships, please visit:
<https://bialydom.kolobrzeg.pl>