

## European Solar and Energy Storage Solutions

# Liberia vattenfall energy storage



## Overview

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Where is Vattenfall constructing a battery storage facility?

Vattenfall is constructing an unique battery storage facility in Uppsala, Sweden. A 22 MW battery is operational at one of Europe's largest onshore wind farms, Pen y Cymoedd. At the Princess Alexia wind farm in the Netherlands, 88 BMW batteries have been connected to form a mega battery for storing electricity from wind energy.

How does Vattenfall use battery storage?

Vattenfall also offers batteries as fossil-free storage solutions. With battery storage, industrial customers can manage their consumption more flexibly by capping peak loads, with the so-called peak shaving. Peak shaving is a technique that lowers power consumption in times of maximum demand and thus reduces costs.

How does Vattenfall work?

Vattenfall operates large battery storage systems in combination with wind and solar parks at several locations in Europe. These combined systems, also known as hybrid parks, balance the feed-in for greater stability of the power grid. Vattenfall's newly built Haringvliet Energy Park in the Netherlands is the largest hybrid park in Europe.

What is Vattenfall doing in the Netherlands?

With the Haringvliet hybrid energy park in the Netherlands, Vattenfall is combining the three technologies of battery, wind and solar for the first time. Vattenfall is constructing an unique battery storage facility in Uppsala, Sweden. A 22 MW battery is operational at one of Europe's largest onshore wind farms, Pen y Cymoedd.

How can Vattenfall help with voltpack mobile system project development?

Drawing on the company's experience of delivering commercial grid solutions

to market, Vattenfall has supported Voltpack Mobile System project development to tailor the product to match the need of the market, through both advising on design and functionality.

Where will Vattenfall's battery system be tested?

Final validation of the system will be undertaken at Vattenfall's test and certification center in Älvkarleby, Sweden. Vattenfall will be the first to offer the battery unit to the market and have identified the need for a sustainable solution at industries, for microgrids, construction sites as well as for event organizers.

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### Vattenfall enters large-scale battery storage business

As renewable energy sources like solar and wind continue to dominate the landscape, the need for flexibility in the power grid has never been greater. Enter Vattenfall, ready to make its mark on the energy storage scene. "We anticipate a significant increase in battery storage capacity, particularly for short-term daily flexibility requirements.

### Vattenfall in talks for biomass project in Liberia

(ADPnews) - Apr 7, 2010 - Swedish utility group Vattenfall is negotiating with Canadian tycoon John McCall MacBain over an investment in a biomass project in Liberia. McCall MacBain has approached the power group in his attempts to launch production of wood chip from Liberian rubber tree waste.

Lithium battery parameters

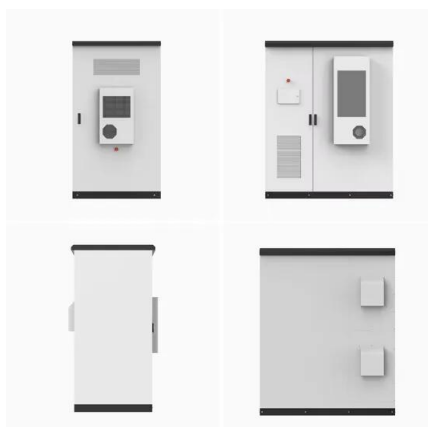
Product capacity: 100Ah

Product size: 135\*197\*35mm

Product weight: 1.82kg

Product voltage: 3.2V

internal resistance: within 0.5

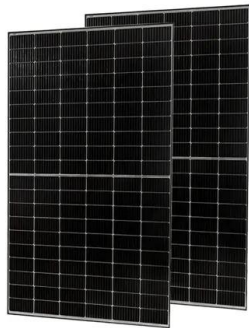


### Northvolt and Vattenfall launch battery energy ...

The battery storage solution will be offered as part of our concept "Power-as-a-service", which means that we deliver a complete package with ownership of the energy storage and manage it to the specification of the ...

### Briefing on Vattenfall in Liberia

Swedwatch criticizes Vattenfall for its former investment in a biomass project in Liberia. Vattenfall and Swedfund were minority shareholders in the project from June 2010 until May 2012. The briefing is a follow-up on the report that Swedwatch published in 2013. About Vattenfall. Vattenfall is a European energy company with approximately



## 'Fascinating challenges' overcome by

When Solar Media's UK clean energy news website Current visited the site in October 2017, the Swedish company were targeting completion on 28 February of this year. However according to Nick Entwistle, Vattenfall's battery@pyc construction project manager, the technical challenges of delivering the company's first battery project in the UK meant more ...

## SaltX, Vattenfall launch pilot project for large-scale energy storage

SaltX Technology and Vattenfall have signed off on a Letter of Intent to lead a pilot program based on SaltX's large-scale energy storage technology -- EnerStore. The pilot project will be developed in one of Vattenfall's district heating networks and will be used to verify SaltX EnerStore technology in full-scale.



## Battery storage systems

Battery storage systems have the potential to play a key role in integrating renewable energy into the power grid. Vattenfall operates large battery storage systems in combination with

wind and solar parks at several locations in Europe. These combined systems, also known as hybrid parks, balance the feed-in for greater stability of the power grid.



## Schwarze Pumpe Power Plant- BigBattery Lausitz Battery Energy Storage

The market for battery energy storage is estimated to grow to \$10.84bn in 2026. The fall in battery technology prices and the increasing need for grid stability are just two reasons GlobalData have predicted for this growth, with the integration of renewable power holding significant sway over the power market.



1075KWHH ESS

## Uppsala Battery Energy Storage System, Sweden

Contractors involved. Alfen is the technology provider for the project. Alfen is the system integrator. Additional information. Vattenfall has selected Alfen to deliver a battery energy storage system of 20 MWh in the university town Uppsala in Sweden. Alfen's scope consists of the delivery of an energy storage system of 20 MWh (5 MW) based on BMW car batteries, ...



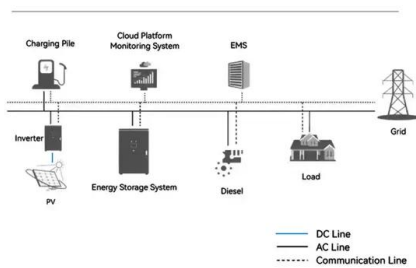
## ROUNDUP: Generac acquires Enbala, Vattenfall

A lithium-ion battery storage project in Sweden which will trial and research different

applications of energy storage for an industrial customer is now operational, power company Vattenfall has said. Energy-Storage.news reported on the Swedish Energy Agency-supported project when it was announced in March, with a 500kW / 1MWh nickel manganese



**System Topology**



**Vattenfall, Swedfund buy 30% in Liberian Buchanan Renewables**

Vattenfall, which already has a sourcing agreement with Buchanan Renewables, takes now a 20% share, with Swedfund holding the other 10%. The transaction is expected to expand the company's operations and ensure a long-term supply of biomass made from old, non-productive rubber trees, which stop producing latex after 25-30 years.

**Northvolt and Vattenfall launch battery energy storage system**

Northvolt has launched a new battery energy storage solution, Voltpack Mobile System- a rugged, highly modular lithium-ion battery solution envisioned as a zero-emission alternative to replace diesel generators. Vattenfall has supported the design of the system and will test and validate Voltpack Mobile System and its functionality prior to



**New battery storage facility increases grid capacity**



Vattenfall, Boliden and Landskrona Energi are conducting a research project and investing in a new battery storage facility in Landskrona, Sweden. Skip to content Go to main navigation. About Vattenfall. Vattenfall is a European energy company with approximately 19,000 employees. For more than 100 years we have electrified industries

## Liberian challenges defeat Buchanan Renewables , African Energy

Biomass producer Buchanan Renewables (BR) has been sold to an investor group, after a project to recycle old rubber trees and rejuvenate Liberia's once world-leading rubber industry proved more challenging than expected.



## Pen Y Cymoedd Wind Farm - Battery Energy Storage System, UK

About Vattenfall. Vattenfall AB (Vattenfall) is a state-owned energy company that generates, distributes and sells electricity and heat. The company also conducts the sale of gas and energy trading. Vattenfall generates power through various sources of energy including wind, nuclear, hydro, natural gas, solar, coal, biomass and waste.

## Northvolt and Vattenfall launch battery energy storage

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## BMW batteries integrate power from Vattenfall's

The Zeewolde wind farm energy storage system appears to mark a growing trend for batteries being used to integrate wind power. Several commentators and industry figures at this year's ees Europe / Intersolar ...



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