

## Solar Energy South Africa

# Stora enso battery Belize

Modular design,  
unlimited combinations in parallel  
**BUILT-IN DUAL FIRE PROTECTION MODULE**



## Overview

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Is Stora Enso a sustainable battery?

Stora Enso and Northvolt have entered into a Joint Development Agreement to create a sustainable battery featuring anode produced using lignin-based hard carbon produced from Nordic forest wood.

What is Stora Enso & Northvolt?

Stora Enso and Northvolt are joining forces to create sustainable batteries using lignin-based hard carbon produced with renewable wood from the Nordic forests. The aim is to develop the world's first industrialised battery featuring anode sourced entirely from European raw materials, lowering both the carbon footprint and the cost.

What is Stora Enso?

Stora Enso uses dry lignin to manufacture Lignode® and aims to create a European supply chain for the lithium-ion battery industry. Our target is to offer the most sustainable and lowest-impact anode material available, to meet the eco-friendly mindset of future consumers.

How much lignin does Stora Enso produce a year?

The annual lignin production capacity is 50,000 tonnes and the Group is also evaluating its first industrial production of Lignode at the Sunila site through a feasibility study. Stora Enso and Northvolt are joining forces to create sustainable batteries using lignin-based hard carbon produced with Nordic wood.

What is lignin-based hard carbon (lignode® by Stora Enso)?

Our lignin-based hard carbon, Lignode® by Stora Enso, will secure the strategic European supply of anode raw material, serving the sustainable battery needs for applications from mobility to stationary energy storage," says Johanna Hagelberg, Executive Vice President for Biomaterials at Stora

Enso.

How many employees does Stora Enso have?

Stora Enso has approximately 22,000 employees and our sales in 2021 were EUR 10.2 billion. Stora Enso shares are listed on Nasdaq Helsinki Oy (STEAV, STERV) and Nasdaq Stockholm AB (STE A, STE R). In addition, the shares are traded in the USA as ADRs (SEOAY). [storaenso.com](http://storaenso.com)

## Stora Enso battery Belize

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### Developing sustainable biographite with CarbonScape

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This fits perfectly with Stora Enso's aim to secure Europe's battery supply chain with fossil-free battery materials. Together with the wood-based hard carbon anode material, Lignode® by Stora Enso, biographite ...

### Northvolt turns to trees with wood-based batteries

Volkswagen-backed battery developer Northvolt and Stora Enso are joining forces to create sustainable batteries using lignin-based hard carbon produced with wood from Nordic forests. The aim of the partnership is to ...



### Wood boldly goes where no other material can: some ...

Stora Enso Wood Products recently held a competition to find examples of our partner's building projects that could only be built with prefabricated wood products. MVB AB, loads the elements onto battery ...

## Stora Enso

advance Stora Enso's strategic direction and build market share in renewable packaging in Europe. The product portfolio complements Stora

Enso's offering, especially in fresh produce, e-commerce and industrial packaging. To generate revenue from a novel, innovative and fossil-free material, Stora Enso and Northvolt have joined forces to



**FLEXIBLE SETTING OF  
 MULTIPLE WORKING MODES**



**Batteries From Wood: A  
 Renewable Energy Storage ...**

One of the largest private forest owners in the world, Stora Enso, recently built a production facility worth EUR10 million to create bio-based carbon by turning trees into batteries. Producing these wood batteries is ...

**Stora Enso's Lignode Batteries:  
 Revolutionizing Energy ...**

Stora Enso has developed Lignode at its pilot plant in Kotka, Finland. This development showcases the potential for using bio-based materials in battery production. The global demand for energy storage solutions is rising ...



**Lignode Making batteries out  
 of trees investor**

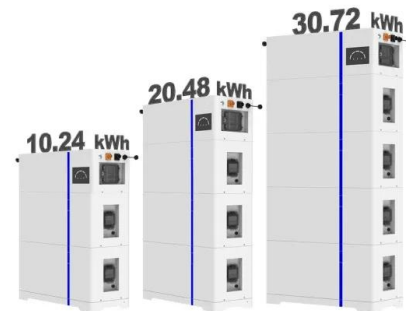
Stora Enso External 7/9/2021 3 (13) In the production of cellulose fibers, lignin is separated and usually just burned for energy. But why not put it to use instead since millions of tonnes of lignin is produced every year. By refining this material, we can turn it into hard carbon and replace graphite in the anode part of the battery.

## AvantForte

Stand out visually. The formation and smoothness of AvantForte allow for outstanding print quality. The patent pending Tri-Ply™ technology guarantees excellent bending stiffness, which reduces printing defects such as washboarding. The extremely smooth surface also results in less ink consumption for exceptional visual appearance.



## ESS



## [Q2 Earnings Presentation 2023 , GCS](#)

Stora Enso Oyj - Q2 Earnings Presentation 2023 , GCS , July 21, 2023 Lastly, the EU battery . Page 2 of 15 regulation supports our development of Lignode, with the introduction of the battery passport requiring battery producers to specify the amounts of renewable content in a battery.

## [Product or service inquiry](#)

I would also like to receive news and updates, e.g. email newsletters and industry insights from Stora Enso. I consent to Stora Enso using my personal data for providing me more information. Your consent is voluntary. You may withdraw your consent at any time by unsubscribing using the unsubscribe link in every email or contacting Stora Enso as



## What if car batteries could be made from renewable materials?

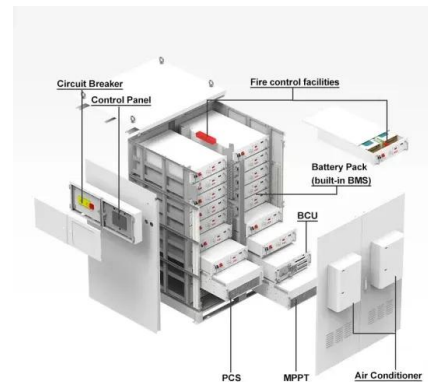
Download our in-depth white paper on how Stora Enso is harnessing the power of trees to make a new kind of battery anode for electric vehicles.

What if car batteries could be made from renewable materials? The future of electric cars is powered by trees



## Altris and Stora Enso Team Up

Altris, a Swedish Sodium-ion Battery developer, and Stora Enso, a Finnish pulp and paper maker, have teamed up. They aim to adapt Stora Enso's hard carbon material, Lignode, as an anode material in Altris' Sodium-ion Battery cells.. Using Lignin to Innovate Battery Technology. The partnership, announced today, unites Altris' Sodium-ion Battery technology ...



## **Lignode by Stora Enso for the automotive industry**

Lignode® by Stora Enso. Lignode® by Stora Enso is a hard carbon that is a bio-based alternative to graphite made from lignin intended for the battery market. Lignin is an existing side stream in the production of cellulose fiber, therefore its production doesn't require any additional harvesting.

## **Trees can become batteries for electric cars**

The pilot plant aims to respond to the growing demand in the global battery market. Stora Enso uses dry lignin to manufacture a graphite replacement material for the needs of consumer electronics and the automotive industry, among

others. Stora Enso is constantly developing solutions to replace fossil-based materials with renewable materials



## Lignode® by Stora Enso - Biobaserade material

Historien om Nordens skogsindustri består av utveckling och anpassning, och Lignode® av Stora Enso är en produkt sprungen ur detta innovativa DNA. Vår biobaserade anod revolutionerar batteriindustrin och är tillverkad av en ...

## Stora Enso progresses with restructuring actions to improve long ...

Stora Enso has progressed with its restructuring actions, announced on 15 June 2023, aimed at strengthening the Group's long-term competitiveness and creating a decentralised and more customer centric operating model. The pilot plant for bio-based battery material will, as previously communicated, continue its operations at the Sunila



## [Bio-based innovations](#)

The opportunities for bio-based materials today and in the future are endless. That's why Stora Enso is developing new materials and new production methods - for a more sustainable future. There is a great demand among



consumers to live more eco-friendly, climate positive lifestyles, lowering their environmental footprint.

## **Lignode®: The powerful potential of trees , Stora Enso**

Revolutionising the battery industry, our bio-based anode is made from an existing pulp industry by-product already being produced in millions of tonnes across Europe. Lignode ® is the result ...



## **Securing Europe's EV battery supply chain with a fossil**

A significant part of this is acquiring battery materials to power clean vehicles. One of these essential materials is graphite, used for the negative end of a lithium-ion battery known as the anode. Lignode® by Stora Enso - a European alternative for graphite. However, there are good news ahead. In the future, car batteries can be from

## **Developing sustainable biographite with CarbonScape to**

This fits perfectly with Stora Enso's aim to secure Europe's battery supply chain with fossil-free battery materials. Together with the wood-based hard carbon anode material, Lignode® by Stora

Enso, biographite would form a product platform of local sustainable alternatives for current battery materials to meet the rapidly growing demand.



## Securing Europe's EV battery supply chain with a fossil ...

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## Purpose and Values

Stora Enso works with people and in communities all over the world through our operations, sales and supply chains. In each and every step we take, we consider our actions and their impact on others. Our purpose "Do good for people and the planet. Replace non-renewable materials with renewable products" underpins our belief that everything



## Northvolt and Stora Enso partner to produce wood ...

Swedish battery manufacturer Northvolt has signed a joint development agreement with Stora Enso to develop wood-based batteries. According to a company statement, the batteries will feature an anode created ...

## Katajanokan Laituri , Stora Enso Head Office

This is Finland's largest mass timber building and home to Stora Enso's new head office and Solo Soko's Pier 4 Hotel. A scheme of this scale and ambition requires bold collaborative vision. Katajanokan Laituri was spearheaded by the investors, Varma in partnership with Anttinen Oiva Architects and Stora Enso. Architectural vision



## Stora Enso and Altris Collaborate to Develop World's Most

Stora Enso and Altris Collaborate to Develop World's Most Sustainable Battery. June 6, 2024 - Stora Enso has partnered with Altris, a Swedish developer of sodium-ion batteries. The two companies aim to further advance the development and commercialization of a sustainable battery value chain in Europe. Together, the two companies will drive the

## CarbonScape plans to build biographite plant in Finland

CarbonScape and biomass developer Stora Enso have announced plans to build a biographite demonstration plant in Kotka, southern Finland. Graphite makes up to 42% of the volume of a Li-ion battery, with the International Energy Agency (IEA) projecting a graphite supply deficit of 770,000 tonnes per year by 2030.



## Stora Enso startar upp pilotanläggning för

## **ligninbaserat kol till batterier**

STORA ENSO OYJ NYHETER FÖR INVESTERARE  
2021-07-21 kl. 8.30 EEST. Kontakt International  
Sök Om Stora Enso Stora Enso Lignode battery.  
Vi är The renewable materials company. Vi är  
den ledande leverantören av förnybara produkter  
inom förpackningar, biomaterial och  
träkonstruktion, och en av de största privata  
skogsägarna i världen.



### **Lignode makes it possible to make batteries from trees**

- Right now, global EV battery manufacturing is a crucial part of the EV value chain. Up to 95% of anode materials are produced in China, but the growing demand requires us to find a European solution, Kivi states. The ...



## **Contact Us**

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<https://ian-solar.co.za>