



Hagal *We are the plus*

CASESTUDY

Hagal's Technology Powers Energy Efficiency at Europris Råde.

With support from Enova, Energima and Hagal launched a pilot project for energy efficiency with batteries. Europris Råde now has a battery pack that balances power consumption and reduces the load on the power grid.





With support from Enova, Energima and Hagal launched a pilot project for energy efficiency with batteries. Europris Råde now has a battery pack that balances power consumption and reduces the load on the power grid.

Europris had a strong desire to reduce its climate footprint. At the same time, they realized that energy efficiency would provide greater financial predictability and profitability in the long run.

- A climate-friendly technology is unsustainable if companies cannot afford to use it, or get an economic upside. This is the reality for most companies. **That is why the solution at Europris Råde, solar cells in combination with Hagal's battery technology for energy storage, stands out positively.** It enables both new and used batteries to be used in energy storage solutions that balance power consumption and cut power peaks, says Thomas Sjøveian, project manager at Energima.

The engineer, who is a specialist in energy efficiency in buildings, has, through Energima, collaborated with Europris for a number of years. through a common zeal for new technology that contribute to the green shift. The companies were united by a recognition that the solutions must provide an acceptable return of investment.

With monitoring of energy consumption and streamlining of technical facilities in stores, **Europris has achieved a reduction of approximately 15 percent (2.5 - 3 GWh annually) of the need for purchased energy at chain level.**

- As a nationwide chain, Europris' stores are often located as stand-alone buildings with goods delivery with diesel-powered trucks. In line with environmental ambitions, Europris was interested in testing a solution that could eventually be used for fast charging of battery-powered trucks. At the same time, we wanted knowledge about profitability if the battery was used to even out power peaks and distribute energy when prices are low. We quickly identified opportunities with Hagal's battery technology, says Sjøveian.

Energima became acquainted with Hagal through a common zeal for new technology that contribute to the green shift.

The companies were united by a recognition that the solutions must provide an acceptable return of investment.

A pilot with support from Enova

Energima had previously considered battery solutions in several projects, but sizeably large investments combined with relatively low energy and power prices on a European scale, made it a less attractive alternative.

Hagal is developing a technology that is based on optimising lifetime of battery cells of different quality with electronics that improve efficiency and have direct DC/ AC conversion. This gives a significant cost reduction and an extended battery lifetime. The market signals and expectations that energy prices in Norway would approach a European level, showed that it was time to establish a pilot on a larger scale, says Sjøveian.

Europris is forward-thinking when it comes to testing new technology, both IoT-based solutions for streamlining technical systems and solutions that enable predictive service and maintenance. They quickly introduced a pilot store in Råde.

An application was submitted and approved by Enova. **They saw that the technology could enable increased reuse of batteries and at the same time solve local power challenges.**

As a leading electric car nation preparing to receive tons of used car batteries, there is significant potential for circular business development.



Reduced load and dampened price fluctuations

A 150 kWh battery pack was installed outside Europris Råde. It gives flexibility to the store, which can now store energy and deliver electricity when consumption and electricity prices are high. The battery ensures a balanced load on the power grid, less energy loss in the power cables, and a lowest possible power draw. In addition, the need to upgrade power infrastructure is reduced.

- Batteries reduce the load on the power grid by cutting the power peaks. This increases control over the cost of electricity. When price variations between day and night increase, savings are high. Batteries in combination with solar cells help to curb price fluctuations and provide better financial predictability, says Lars Morten Myhr, Hagal's Head of Projects.

The installation at Europris Råde is primarily used for **testing and optimisation of a cloud-based Energy Management System (EMS)** that chooses when charging and discharging should take place.

- This is one of several pilots in Hagal's electronics and development process. It is a system that controls the temperature in each battery cell and load during charging and discharging. It is one of the most important parameters to ensure the longest possible life for each cell, says Myhr.