



Pixii, Peak Shaper and Tensio

Powering progress in rural areas by boosting energy capacity

With the electrification of society, the power capacity is being stretched to its limits by business operations during the day, holding regions back from achieving their full economic potential.

A monster challenge

In the remote forest municipality of Lierne, Norway, there's a growing threat to the region's prosperity. The power demands of the Jule Industrial area often exceed the grid capacity during working hours, leading to shortages. Frustratingly, when night falls and businesses switch off, there is an abundance of capacity in the grid. This imbalance has been a thorn in the side of progress, deterring power-intensive commercial activities.

With traditional grid expansion being prohibitively expensive and time-consuming, running into hundreds of millions of Norwegian kroner and often taking several years, Tensio, Lierne's energy provider, required a faster and smarter solution.

Recognizing the need for innovation, Peak Shaper, a subsidiary of Eidsiva Energi, Norway's largest power grid company, initiated a pilot project to solve Tensio's power capacity problem using Pixii's groundbreaking battery energy storage technology.

Applications/functions in use:



Phase balancing



Voltage support



Arbitrage

Case details

Objective: Addressing power consumption imbalances in Lierne

Project: Peak Shaper pilot in Lierne

Industry: DSO/DNSP

Country: Norway

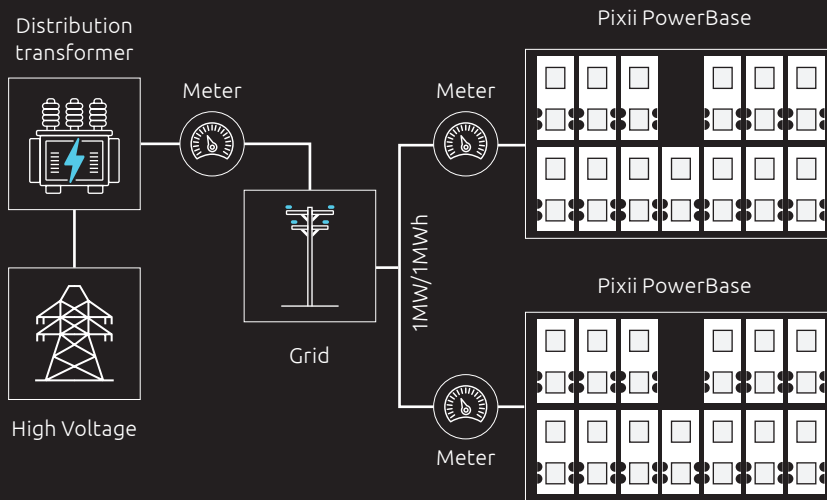
Background

The Lierne pilot project is a collaboration between Tensio, Peak Shaper (owned by Eidsiva Energi) and Pixii.

Tensio is among Norway's largest Distribution System Operators (DSO's), responsible for the power supply to the county of Trøndelag. The supply area has a population of around 500,000 inhabitants and is in terms of area the size of the whole of Denmark.

Eidsiva Energi is Norway's largest regional energy and infrastructure company, providing critical infrastructure such as electricity, telecommunications, and heating. They have developed and owns Peak Shaper; Norway's first commercial battery service company for large-scale batteries, also referred to as battery-as-a-service.

Solution and benefits



The solution

Eidsiva's subsidiary Peak Shaper rents out Pixii's large grid batteries to quickly enhance capacity.

The Pixii PowerBase solution, a robust 1MW storage system, pre-wired and pre-configured on an easy to transport steel frame with the footprint of a standard ISO 20-foot container, was the perfect fit for Tensio's demand in Lierne.

Pixii Power!

The Peak Shaper pilot project in Lierne is the first of its kind, investigating the effect of batteries on voltage regulation in the grid together with the network operator Tensio. The goal is to boost the voltage in a weak network, enabling industrial customers in the area to increase their electricity consumption without Tensio having to undertake other network-strengthening measures.

The Pixii PowerBase comes pre-wired and pre-configured, reducing installation cost and delivery time. Instead of pouring millions into traditional grid expansion, Pixii's approach allows for significant savings, paving the way for future-focused investments.

Pixii's 48-volt internal architecture offers easy maintenance, while its modularity guarantees reliable operation with no single point of failure. In the dynamic world of power, where needs are constantly evolving, the PowerBase can be quickly relocated to boost power in other areas with insufficient grids.

With strategic placement closer to the end user, the Pixii PowerBase not only boosts power but also improves the quality. What's more, the Pixii battery energy storage system even enables Tensio to participate in the energy flexibility market, allowing them to monetize the system's flexibility for additional revenue streams for a faster return on investment.

Pixii's battery energy storage system is a game-changer to the energy market. Beyond storage, its adaptability has enabled Eidsiva Energi to spawn a new business model, offering battery rentals to meet their customers rapidly evolving needs.

Technical overview

Solution: Pixii Power Base

Capacity: 1MW/1MWh

Usage: Storing excess energy during low-demand periods and discharging it during peak demand.

Unique Selling Proposition: Rapid implementation and cost-efficiency compared to traditional grid expansions.

"Batteries are the future of our grid. Even as we expand rapidly, they offer a fast-track solution to challenges like Lierne's throughout Trøndelag."

Øistein Andresen, CEO Eidsiva

Award-Winning Results

This successful collaboration between Peak Shaper, Tensio and Pixii marks a significant advancement in the energy transition journey.

Pixii's smart battery energy storage solution in Lierne is more than just an energy remedy; Businesses in the Jule Industrial area now operate unhampered, and the area stands at the cusp of new job opportunities and industrial growth.

The Lierne pilot project has exceeded expectations, reducing the cost of network loss for Tensio in the area by 22% and winning the Smartgrid Center's Innovation Award 2023!

"Our system, based on single phase units and with an extremely fast response, provides a unique solution to these grid challenges"

Morten Schøyen, CPO, Pixii AS



At work in this case: Pixii PowerBase 580 kW, 600kWh system with NMC



Project contacts

Pixii Oslo

E-mail: post@pixii.com

Visiting address: Sommerrogata 13-15,
0255 Oslo

Project manager Pixii

Morten Schøyen

CPO

Tel. +47 915 17 452

E-mail: morten.schoyen@pixii.com