

## Kongres Container

# Annual BESS price for energy storage in Finland



## Overview

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The market for battery energy storage systems (BESS) is ripe for two main reasons: providing grid flexibility and stability in a rapidly evolving energy landscape, and for value capture as electricity markets become more volatile as well. Coal, for example, will be banned from energy production.

For example, Finnish investment company Exilion achieved 40,700€/MW/month in the second half of 2023. In 2024, 113 MW BESS projects are expected to become operational, and 359 MW industrial-scale BESS projects have already been announced for the next five years (Elinkeinoelämän Keskusliitto, 2024).

We have released the latest update to our price forecast for Finland – one of the most dynamic and rapidly evolving energy markets in Europe. With multiple accessible revenue streams and a robust pipeline of projects, Finland is experiencing a notable acceleration in development. Hundreds of

Last winter saw prices spike to €245/MWh - that's 400% higher than the 2019 average. But wait, no. actually, regional differences matter. Lapland's off-grid communities paid even more during polar nights when solar generation dropped to zero. What's causing this volatility, and how can energy.

Over the past three years, Finland's energy storage market has grown faster than a Helsinki startup – jumping from €180 million in 2021 to an estimated €320 million in 2024. But here's the kicker: module prices dropped 12% during the same period. How's that possible?

Let's unpack this paradox.

This thesis aims to quantify the economic effects of battery degradation and develop an optimization model that maximizes BESS profit while managing degradation over time based on cycle depth. Three operation strategies were evaluated, exclusive participation in Frequency Containment Reserve for.

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