

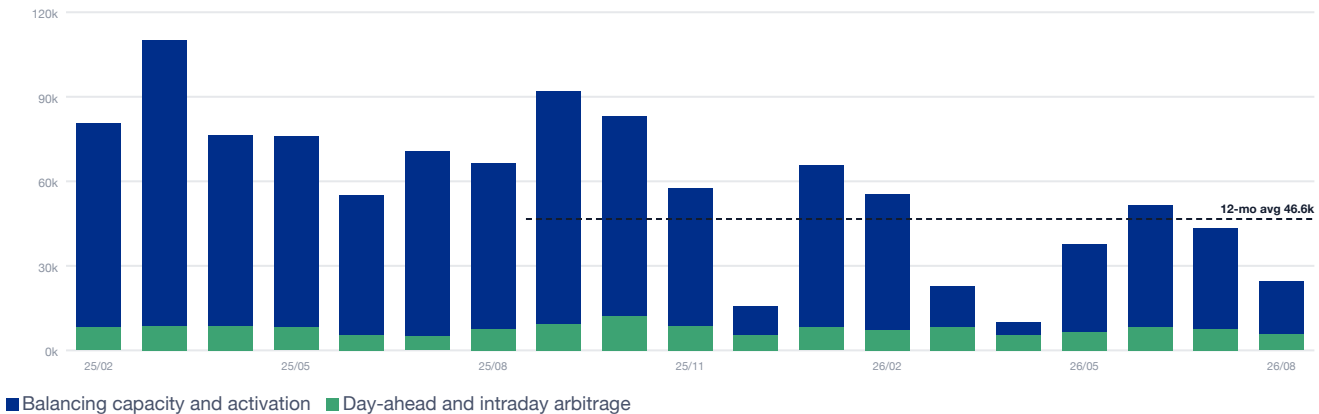
How much battery storage is enough for the Baltics?

Commissioned storage is rising steadily and balancing revenue is falling just as steadily. This note puts nineteen months of actual Baltic clearing prices against installed megawatts to find where those two lines meet, using a **10 MW project on a Latvian distribution connection** — with a 12 MW battery behind it — as the worked example.

LATEST MONTH	12-MONTH AVERAGE	CERTIFIED STORAGE	ARBITRAGE FLOOR
EUR 24.4k per MW, 2026-08 (23 of 31 days)	EUR 46.6k per MW per month	823 MW from 228 MW in Feb 2025	EUR 8.1k median month, all 19 months

Gross revenue per MW per month, split by source

Baltic market, February 2025 to August 2026. Gross revenue = income after paying for the bought electricity, before grid tariffs, operating costs and fees. The same term is used with the same meaning throughout this note.



THE QUESTION EVERYONE IS ACTUALLY ASKING

A Baltic megawatt of storage earned EUR 110.0k in 2025-03, in the scarcity that followed desynchronisation when almost nothing was certified. The latest month is EUR 24.4k. Over the same period certified battery capacity rose from 228 to 823 MW.

Both of those are healthy signs, not a crisis: capacity is being built and a young market is finding its price. The question that follows is the one every developer, lender and system operator in the region is really asking — **how much storage is enough for the Baltics, and what does each new megawatt do to the price?**

That is a correlation question, and nineteen months is now just enough data to answer it. This note does that, uses a 10 MW two-hour project on a Latvian distribution connection to make it concrete, and is explicit about where the public data runs out.

NOBODY PUBLISHES WHAT YOU WOULD NEED TO ANSWER IT

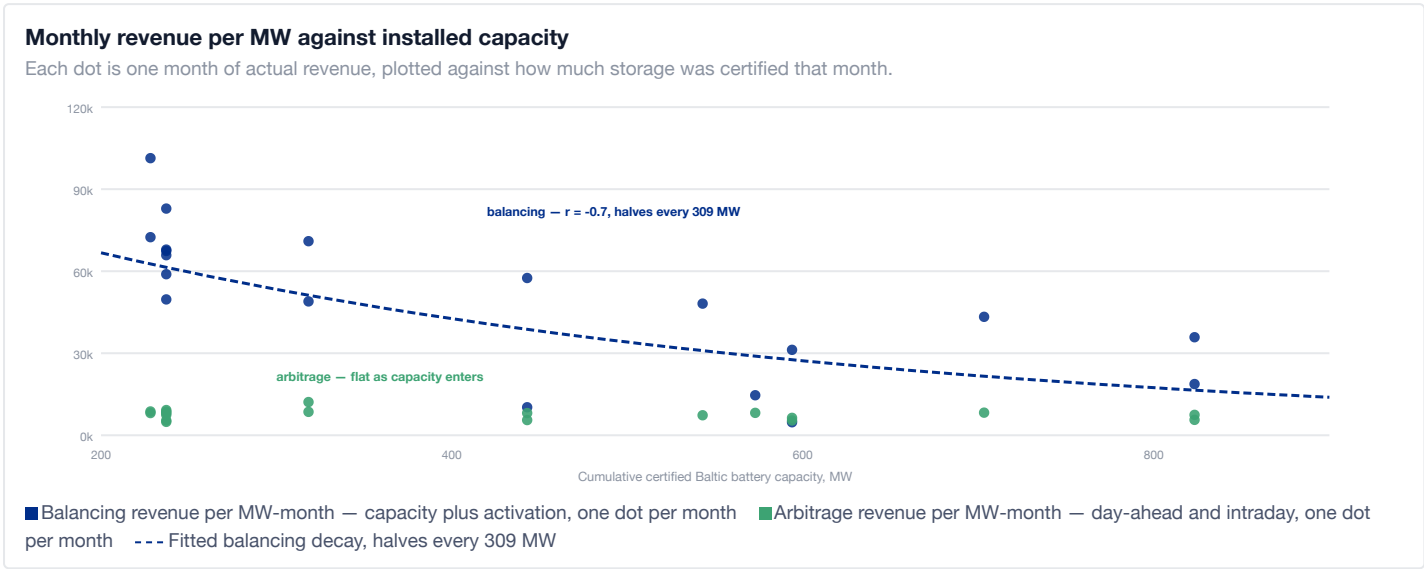
Across 19 months our series carries only **9 distinct readings** of certified Baltic battery capacity. **10 of 18 month-on-month steps show no change at all**, not because nothing connected but because the figure is not published on a monthly cycle. Continuous-intraday prices are worse: the free public window is only about **a week**, so intraday history cannot be reconstructed after the fact at all. It has to be captured as it happens, or it is gone.

So the single most important driver of this market's economics — how much storage is connected, and how much is coming — is assembled by hand from attachments, registry notes and one-off documents, differently in each of the three countries.

This is a solvable problem and it belongs to the institutions that run the market. A monthly certified-MW figure per country and a published connection queue would cost a system operator very little and would let investors, lenders and the public price this market properly. Until then, everyone is guessing at the one variable that matters most.

NEW CAPACITY DOES NOT ERODE ALL REVENUE. IT ERODES ONE HALF OF IT.

Correlating each revenue stream against cumulative certified capacity, over 19 monthly observations, separates the market cleanly into a part that competes away and a part that does not.



CORRELATION WITH INSTALLED MW	R	MONTHS
Balancing energy price	-0.81	19
Total revenue per MW	-0.71	19
FCR capacity price	-0.7	19
mFRR-up capacity price	-0.27	19
Arbitrage revenue	-0.27	19
Day-ahead spread	-0.06	19

The balancing side is strongly negative. Capacity and balancing-energy prices fall as storage enters, at $r = -0.7$ and -0.81 . Fitted, balancing revenue **halves for every 309 MW** that connects. The mechanism is not subtle: the reserve volume the system operators procure is fixed by their own dimensioning, so every new megawatt bids into the same pool.

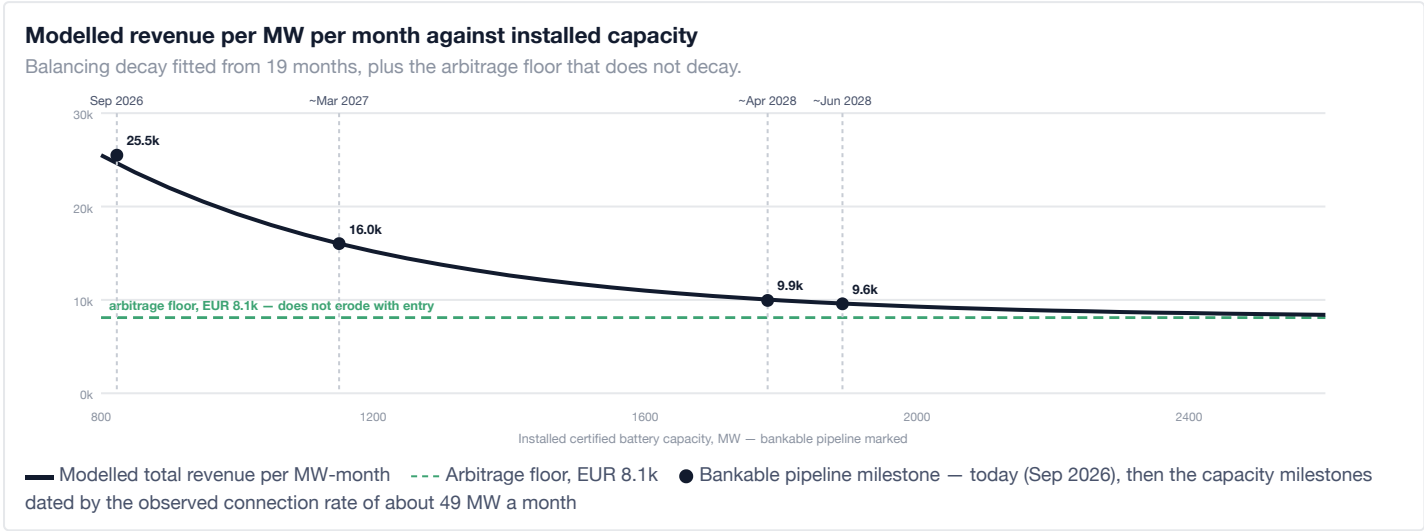
The day-ahead spread is not. At $r = -0.06$ over the same months, the spread a battery arbitrages shows **no relationship at all** with how much storage has connected. Arbitrage revenue held between EUR 4.9k and EUR 12.1k every single month of the series.

The reason is structural. Capacity payments are capped by a procurement volume. The spread is set by the daily shape of renewable generation, and that shape is getting steeper, not flatter, as Baltic wind and solar build out. Storage would have to reach a scale comparable with the daily ramp before it flattened its own spread, and the Baltics are nowhere near that point.

Honest limits. 19 monthly observations, R^2 0.526 on the balancing fit. Correlation is not causation, and other things moved in this window. Treat the direction and rough magnitude as sound, and the precise coefficient as indicative.

WHERE THE ARITHMETIC SAYS THE MARKET SETTLES

If balancing decays with entry and arbitrage does not, then total revenue per MW does not fall towards zero. It falls **towards the arbitrage floor**. Modelling the two layers separately, and reading the bankable pipeline off the connection queues, puts a number on when.



INSTALLED CAPACITY	BALANCING	ARBITRAGE	TOTAL
823 MW today	EUR 17.4k	EUR 8.1k	EUR 25.5k
1150 MW ~Mar 2027	EUR 7.9k	EUR 8.1k	EUR 16.0k
1780 MW ~Apr 2028	EUR 1.8k	EUR 8.1k	EUR 9.9k
1890 MW ~Jun 2028	EUR 1.5k	EUR 8.1k	EUR 9.6k
2500 MW beyond	EUR 0.4k	EUR 8.1k	EUR 8.5k

EUR per MW per month, gross. Milestone MW from published connection and prequalification data; **dates from the observed connection rate** — about 49 MW a month over the last twelve months, starting from 823 MW in September 2026. The published pipeline labels run ahead of that pace (they place 1,150 MW inside 2026), so the observed rate is the honest clock.

The balancing bonus is largely gone by about 1,800 MW. On this fit it is worth EUR 1.8k per MW-month at 1,780 MW — around April 2028 at the observed connection rate — against EUR 17.4k today. Total revenue crosses EUR 15k at roughly 1212 MW and EUR 10k at roughly 1788 MW.

It does not go to zero, and the reason is the renewables build-out. The curve flattens onto an arbitrage floor of about EUR 8.1k per MW-month. That floor is not a hope; it has a mechanism. The daily price spread exists because wind and solar output swings within the day, and Baltic wind and solar are growing about 53 per cent by 2030. More renewables mean a steeper daily ramp, which holds the spread up — and can widen it — even as batteries multiply. Storage would have to reach a scale comparable with that ramp before it flattened its own spread, and the Baltics are far from it. So while the balancing pool is fixed and competed away, the arbitrage floor is underwritten by the very build-out that causes the volatility.

So: when is it enough? On this evidence the Baltic balancing market is close to saturated at somewhere between 1,500 and 2,000 MW of storage, which the market reaches during 2027 and 2028 at the observed connection rate. Projects that connect before then earn a bonus that later entrants will not. Projects that connect after must work on the floor alone.

Why arbitrage can still run below EUR 8.1k. The floor is a *median*, not a guarantee: arbitrage ranged EUR 4.9k to 12.1k over the nineteen months, five of them below EUR 6k, and the worst three consecutive months averaged EUR 5.9k — financing has to survive those calm-weather quarters. The no-erosion evidence covers 228 to 823 MW only; beyond roughly 2 GW storage begins flattening its own spread, once its energy rivals the daily ramp (1.6 GWh installed today, 10.6 GWh implied by the Latvian queue alone). Spreads can also be compressed from outside the battery registry — new interconnection imports flexibility, and demand response, EVs and electrolyzers flatten the same curve unseen. And crowding attacks the *captured share* before the spread: many batteries chasing the same trough and peak lower realised capture while the gross spread still reads healthy.

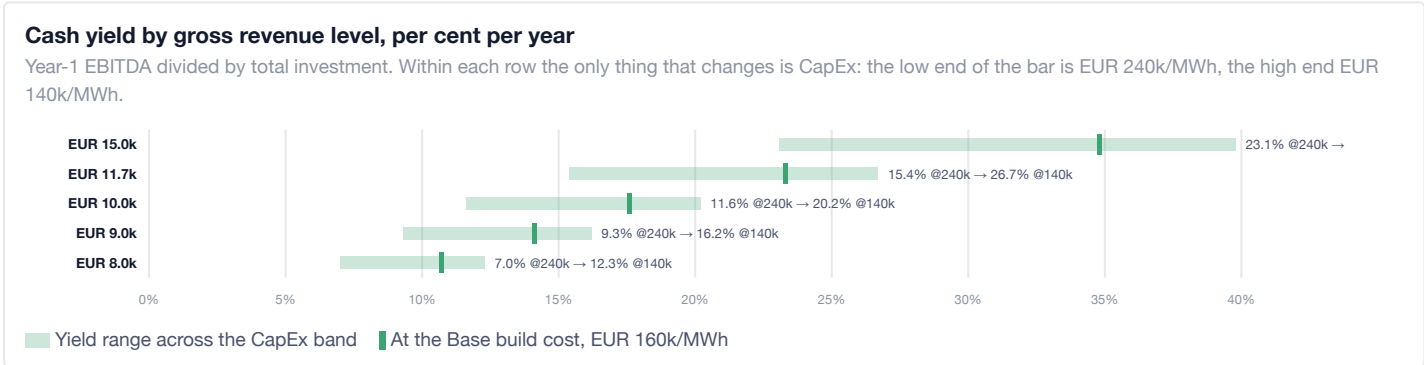
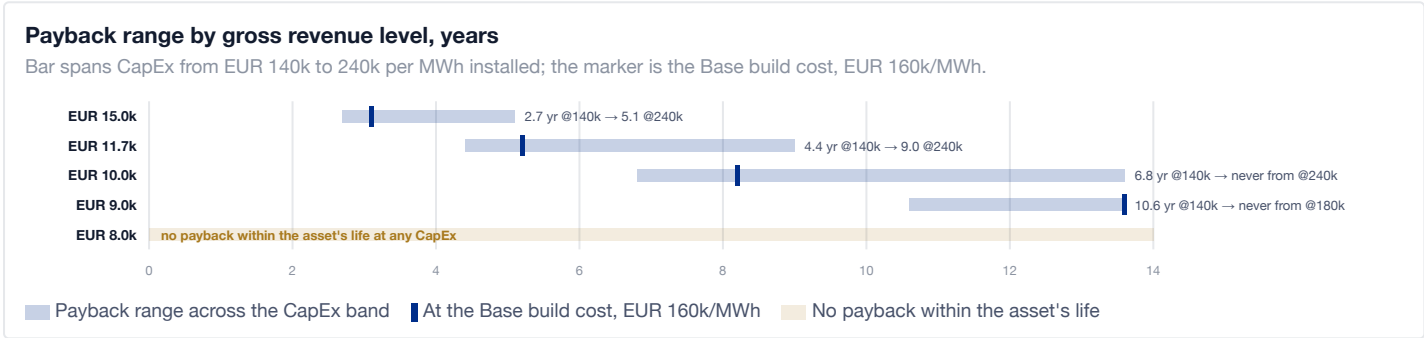
The short version. Storage keeps arriving and balancing revenue keeps falling, for the same reason: capacity entering a procurement pool that barely grows. Enough, *for the balancing market*, looks like 1,500 to 2,000 MW. But enough *for a project* is a different and tighter test. A 12 MW two-hour battery on a distribution connection can absorb a 26 per cent fall in revenue at CapEx of EUR 140k per MWh and only 12 per cent at EUR 240k. At the arbitrage floor itself — balancing gone, spread intact, full cycling — the project still returns its capital in 6.3 years at EUR 140k per MWh, and no longer does so comfortably at the top of the band. Build cheap, connect early, treat the balancing bonus as the thing that is leaving — and ask the institutions that run this market to publish the monthly capacity and queue data, because right now the most important number in Baltic storage is one that nobody publishes.

WHAT HAPPENS TO THE PROJECT AS GROSS REVENUE FALLS

The correlation says the balancing half of revenue halves for every 309 MW that connects. This is the same project run at five levels of its own gross revenue, across CapEx from EUR 140k to 240k per MWh, so the effect of that decay on an actual investment is visible rather than implied.

PROJECT GROSS REVENUE /MW-MO	PAYBACK AT 140K€/MWH	PAYBACK AT 160K€/MWH	PAYBACK AT 180K€/MWH	PAYBACK AT 200K€/MWH	PAYBACK AT 220K€/MWH	PAYBACK AT 240K€/MWH
EUR 15.0k	2.7 yr	3.1 yr	3.6 yr	4.1 yr	4.6 yr	5.1 yr
EUR 11.7k today	4.4 yr	5.2 yr	6.1 yr	7.0 yr	8.0 yr	9.0 yr
EUR 10.0k	6.8 yr	8.2 yr	9.9 yr	11.7 yr	13.6 yr	never
EUR 9.0k	10.6 yr	13.6 yr	never	never	never	never
EUR 8.0k	never	never	never	never	never	never

Year-1 project gross revenue per MW-month, the second rung of the ladder on page four. Everything else as the Base case: 12 MW / 24 MWh battery on 10 MW connections, 2-hour, 1.5 cycles a day, Sadales tikls connection, 75 per cent gearing.



Read the two charts together. Between today's EUR 11.7k and EUR 10k, payback at the Base build cost goes from 5.2 to 8.2 years and the top of the band stops paying back. The table is a uniform price shock: every revenue stream falling together.

THE FLOOR CASE IS BETTER THAN THE SHOCK CASE

The floor world is not a uniform shock: the balancing pool is competed away but the spread holds — exactly what the correlation on page two shows — and the battery stops reserving capacity and cycles fully for energy. Modelled that way — balancing revenue at zero, today's spread held, full throughput — the 12 MW battery on this connection **pays back in 6.3 years at CapEx of EUR 140k per MWh** (12.0 per cent IRR), 7.4 years at EUR 160k, stretching to 12.3 at EUR 240k. Debt wants restructuring in that world — coverage falls below bank covenants at 75 per cent gearing — but the capital comes back. The floor is survivable at a disciplined build cost — and at EUR 140k per MWh with a 14 MW battery and 50 per cent gearing it becomes genuinely investable: 6.0 years payback, 13.1 per cent IRR, coverage of 1.72. Two provisos: the financing must survive the floor's own bad quarters (arbitrage spent five of nineteen months below EUR 6k), and everything above the floor is upside.

METHOD AND SOURCES

All market data is our own, from the Baltic Transparency Dashboard, ENTSO-E and Nord Pool, cross-checked and updated daily at www.odagrid.com. Revenue per MW-month is gross for one fully available megawatt at prices that actually cleared: the balancing layer is the capacity clearing price times every hour, the arbitrage layer is the day-ahead spread a 2-hour battery could have captured. Series 2025-02 to 2026-08; first and last months partial. Correlations are Pearson r over 19 observations; the balancing decay is a log-linear fit, R² 0.526. Full workings available on request.