

How much risk does battery storage take out of a wind project?

Green storage lowers the risk where curtailment is high. Grey storage lowers it in every scenario.

IRR gain compared to the wind park alone

Sorted by curtailment at negative prices, wind park without storage.
Avg. day-ahead price 2027–2056.

Green BESS Grey BESS

MORE CURTAILMENT ↓

Market price scenario 5
4% curtailed
avg. 65 €/MWh



Market price scenario 3
10% curtailed
avg. 69 €/MWh



Market price scenario 2
12% curtailed
avg. 83 €/MWh



Market price scenario 4
19% curtailed
avg. 53 €/MWh



Market price scenario 1
19% curtailed
avg. 96 €/MWh



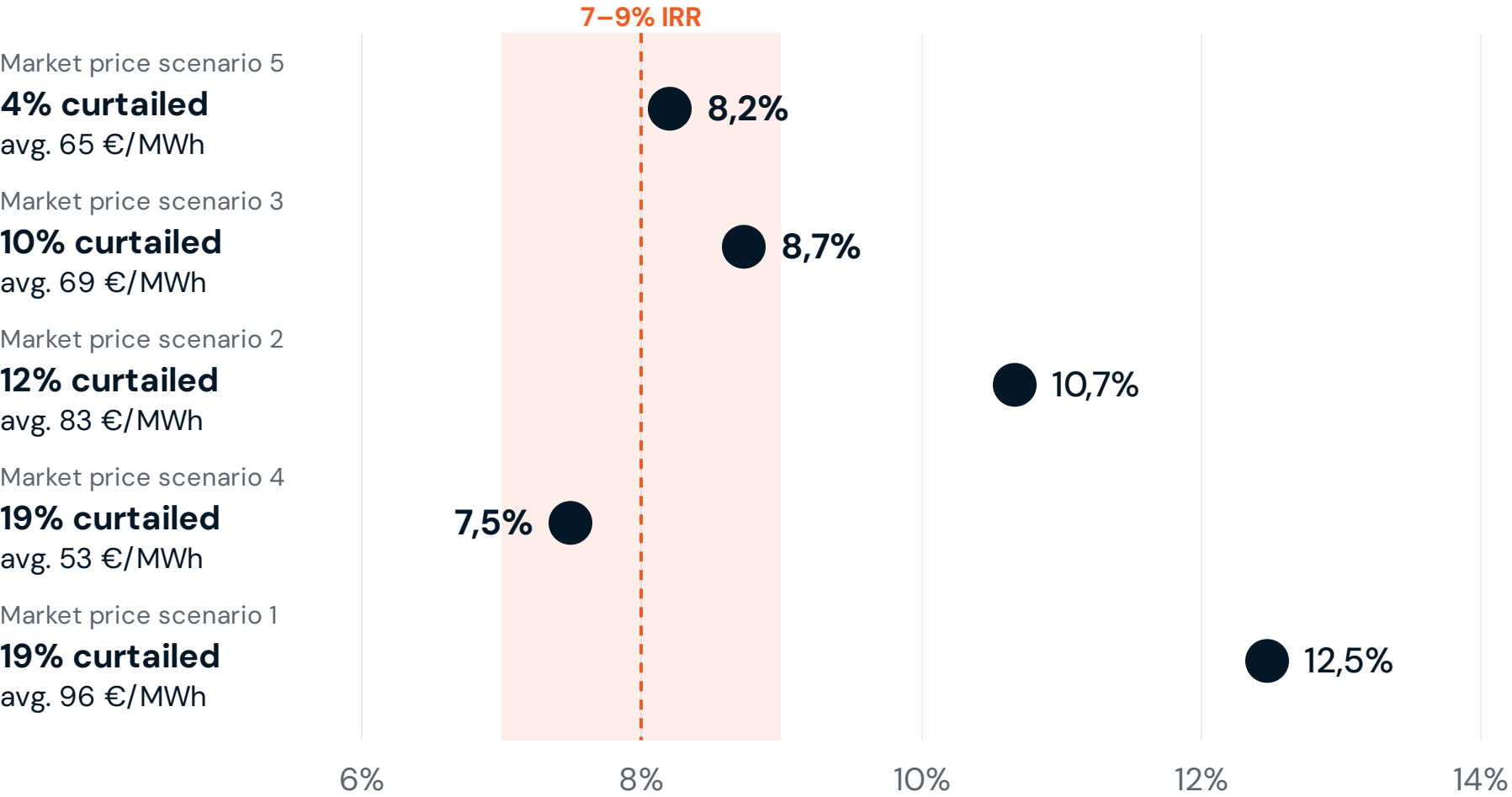
+0 +1 +2 +3 +4 +5 +6
IRR gain in % points, optimally sized BESS

How much risk does battery storage take out of a wind project?

Without storage, three of five scenarios fall **within one point of the 8% hurdle**.

Wind park only, IRR by market price scenario

Shaded area marks an IRR between 7% and 9%, within one point of the 8% hurdle rate



Why one point of margin counts as risk

Wind park only, market price scenario 3. Slightly lower revenue is enough to reach the hurdle rate.

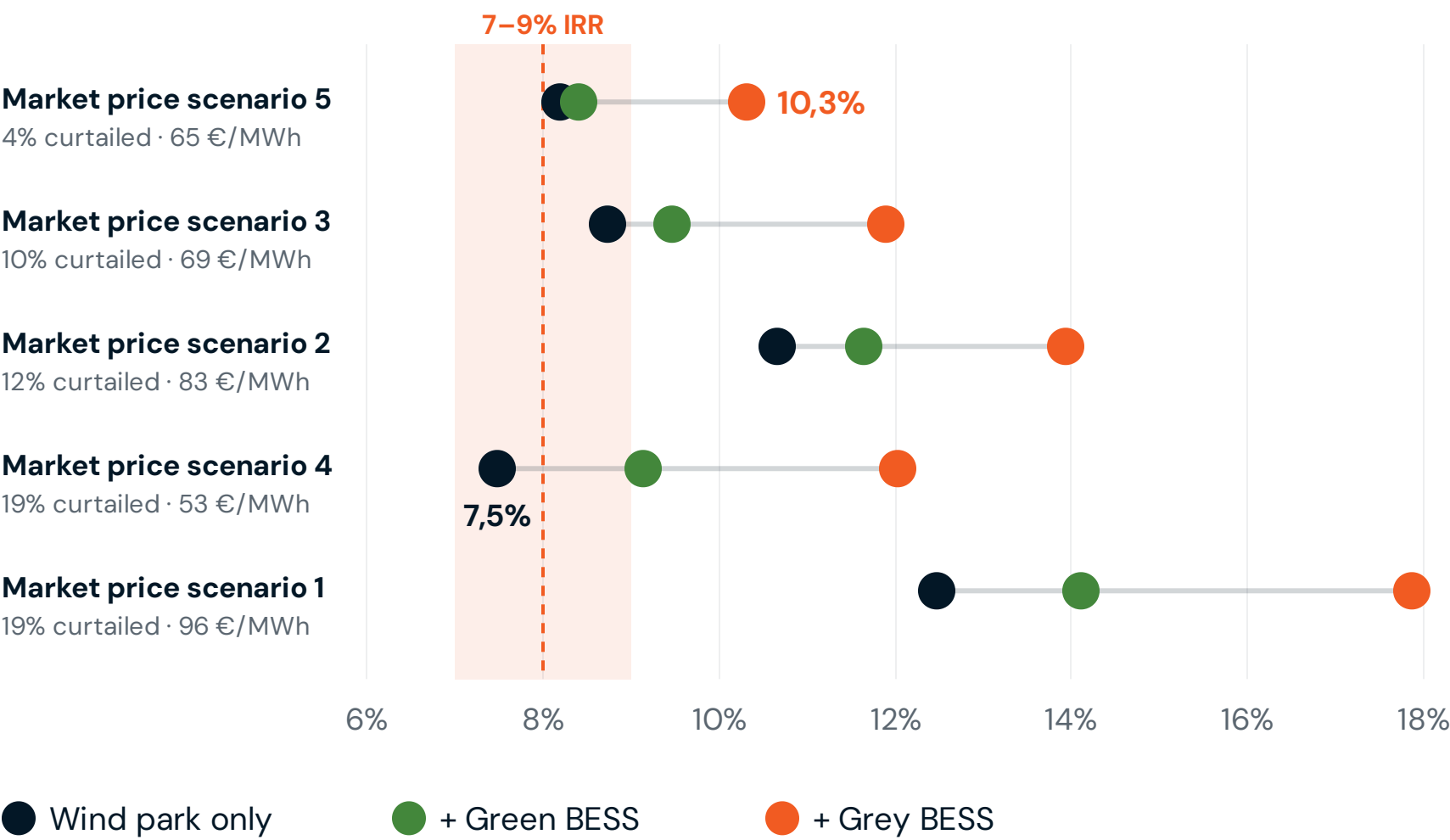


How much risk does battery storage take out of a wind project?

With grey storage, the worst case rises from 7,5% to 10,3% IRR.

IRR by market price scenario, with optimally sized BESS

Shaded area marks an IRR between 7% and 9%, within one point of the 8% hurdle rate



Wind park only

7,5%

lowest IRR across five scenarios

+ Green BESS

8,4%

lowest IRR across five scenarios

+ Grey BESS

10,3%

lowest IRR across five scenarios