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The value of predictability: Contracting strategies and risk management for RES and BESS in a highly volatile environment

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Power & Gas Forum - 6 April 2026



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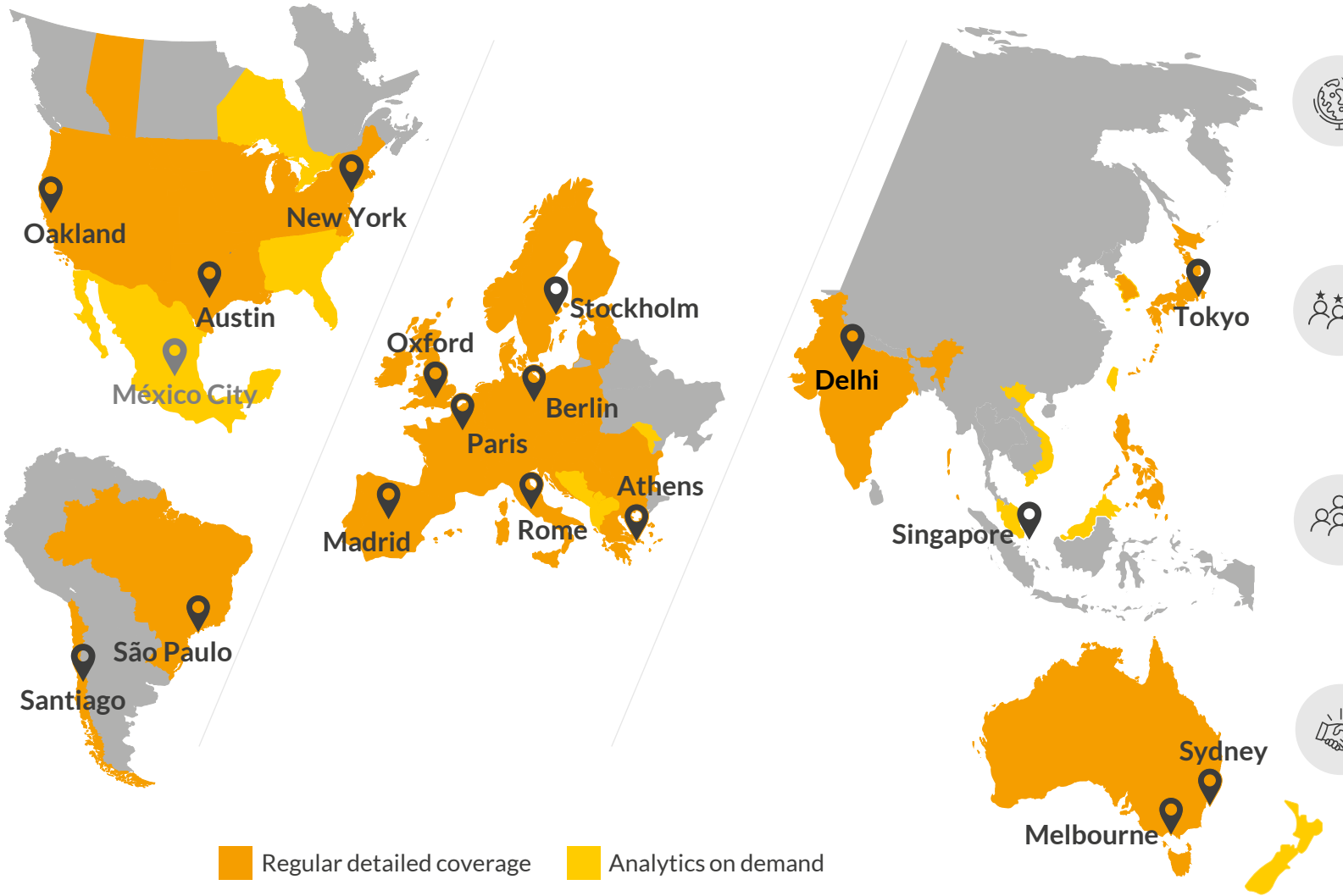

19 offices

1000+
market experts

950+
subscribing companies

170+
transactions supported in 2025

Source: Aurora Energy Research

Market volatility underscores the critical need for revenue predictability to achieve targeted RES and BESS deployment levels

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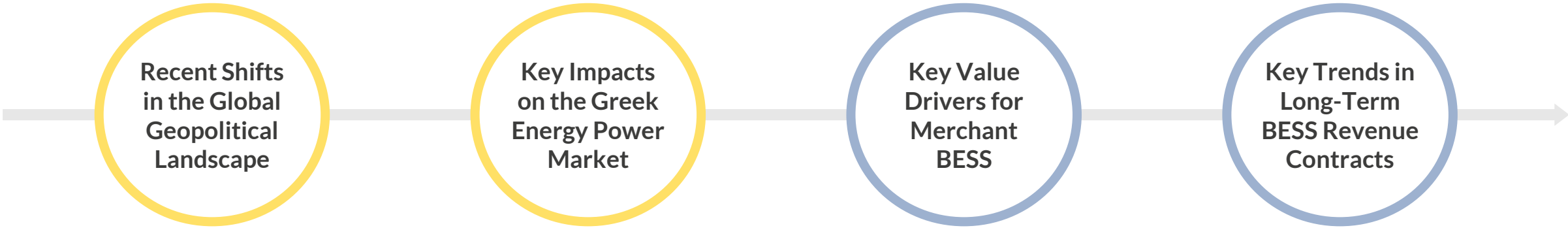

Source: Aurora Energy Research

The closure of the Strait of Hormuz removed ~20% of global LNG supply, tightening global balances and lifting prices sharply

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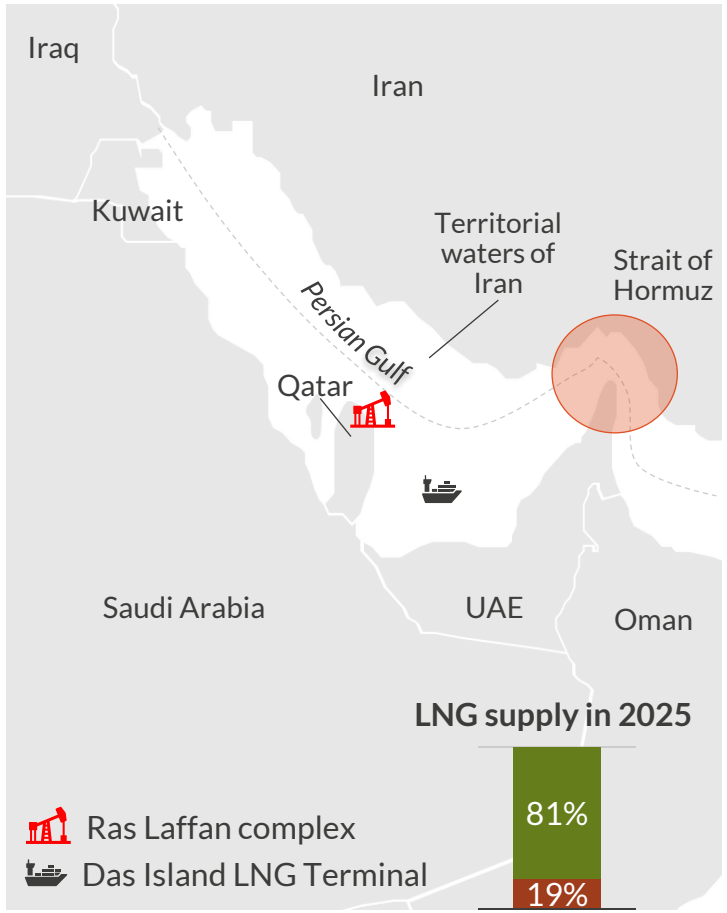
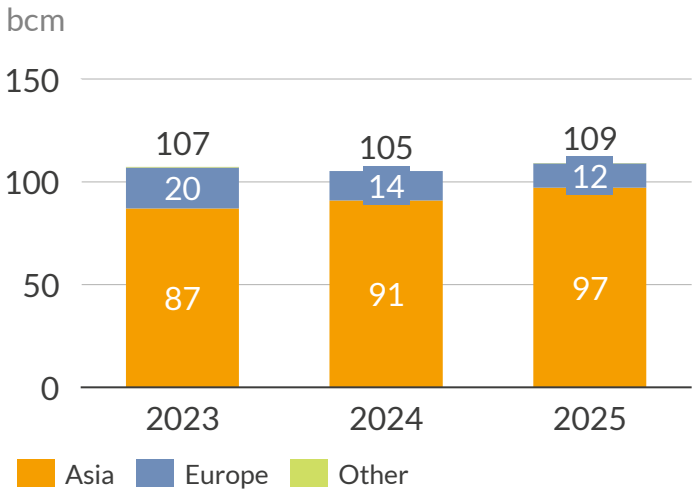
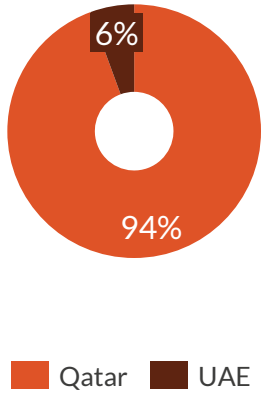
Map of the Strait of Hormuz



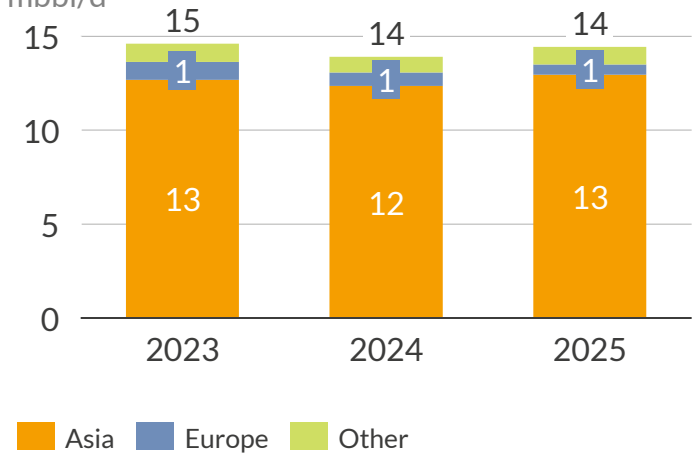
LNG destinations from the Strait of Hormuz



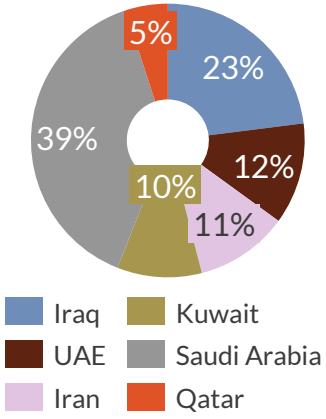
Suppliers in 2025



Crude oil destinations from the Strait of Hormuz



Suppliers in 2025



- The Strait of Hormuz is one of the world's most critical shipping bottlenecks
  - It accounts for 30% of traded crude oil traded and 19% of all LNG exports in 2025
  - The Strait is effectively closed following attacks and mines; few ships are sailing through
- Following drone strikes in the Gulf, QatarEnergy halted LNG production on March 2
- Iranian strikes on Ras Laffan facilities on March 18, took out 2 of the 14 liquefaction trains
  - The damage accounts for 17% of Qatar's liquefaction capacity
- The damage is expected to take 3–5 years to repair, delaying the 88 bcm/y North Field expansion
  - Aurora assumes a 4-year rebuild and 3-year delay to North Field expansion

Sources: Aurora Energy Research, LSEG, IEA, EIA

We assume a six-month Hormuz closure from Mar-26 to Aug-26, with extended delays to planned Qatari LNG export capacity

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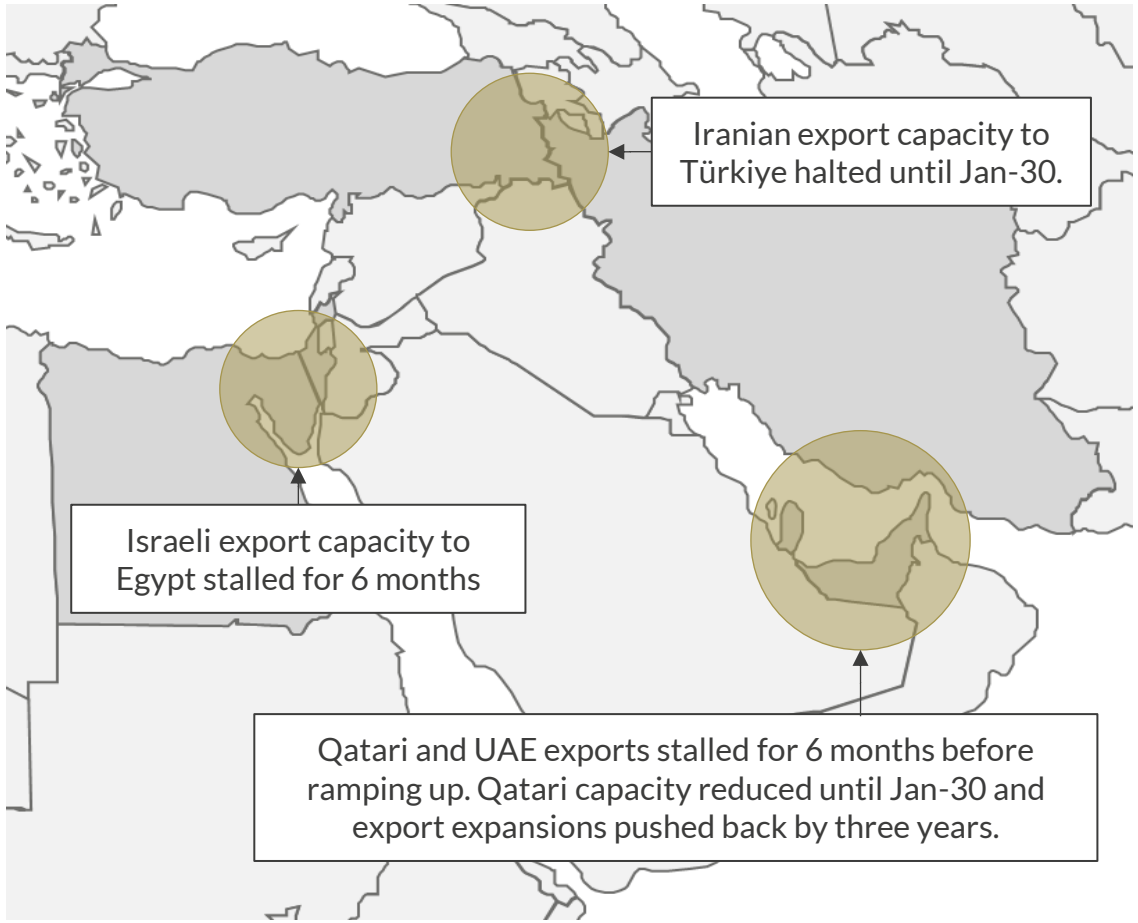
Regional gas supply cuts



Iran conflict assumptions for Central Q2 2026

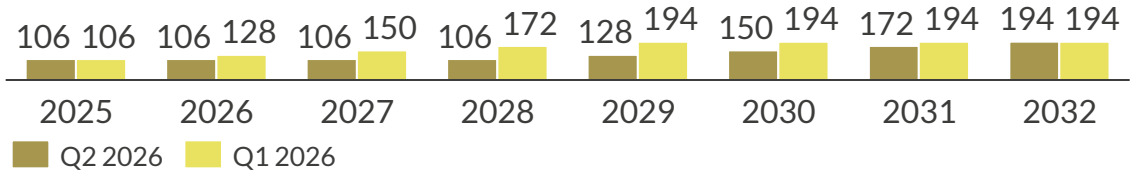
Changes in 2026

- The Strait of Hormuz is closed to all transit from March to August 2026. This means Qatari (106bcm/yr) and UAE (8bcm/yr) gas production capacity will be offline over this period
  - We assume production then ramps up in September 2026 to 40% of Qatari capacity and 50% of UAE capacity, before reaching 100% for both by Oct
- Israeli gas production and exports (7bcm/yr) are fully shut until September 2026
- EU storage targets are relaxed to 75% full (94bcm) instead of 90% by 1 December 2026, equivalent to -18.8bcm/yr at that date

Changes in short- to mid-term (2026-2032)

- Qatari production and export capacity is cut by 17% until January 2030, then fully restored
- Iranian export capacity to Türkiye (14bcm/yr) and Iraq (19bcm/yr) is cut until January 2030, then fully restored
- Qatari LNG expansions are delayed three years

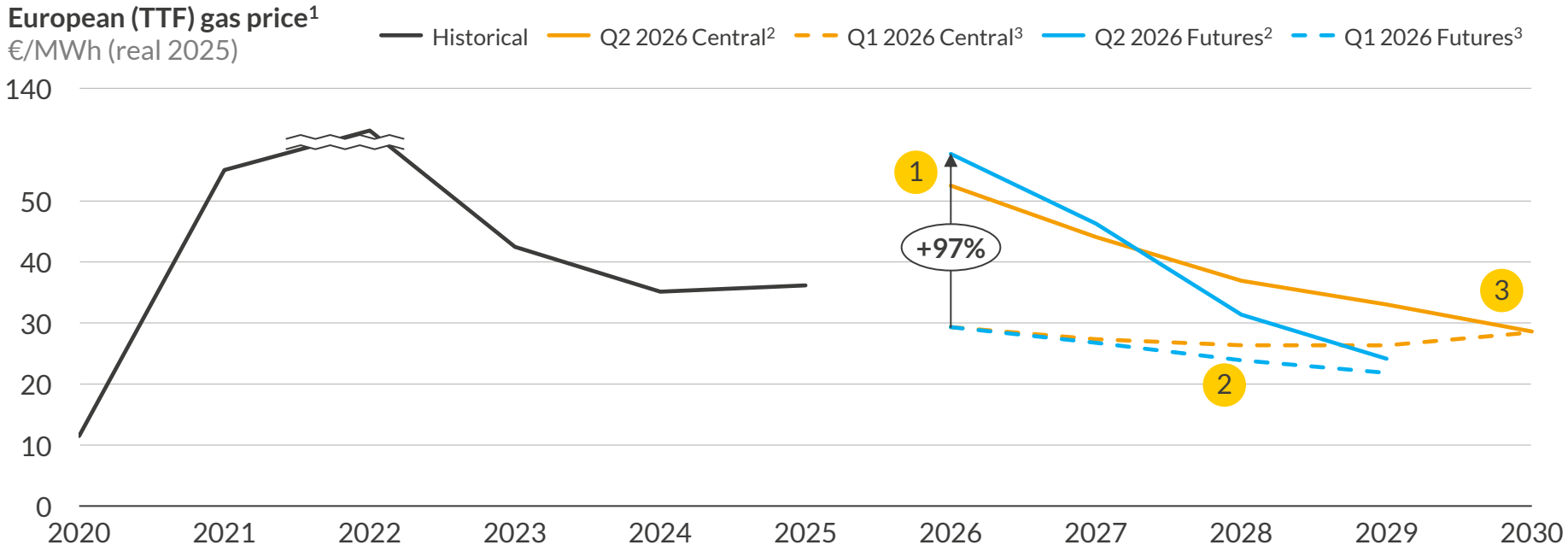
Qatari LNG capacity—bcm/yr



Source: Aurora Energy Research

European gas futures surged as the ongoing Iran conflict halted Hormuz transit and damaged LNG infrastructure

European (TTF) gas price[1]
€/MWh (real 2025)



Why did 2026 futures rise by 97% since our Q1 2026 report?

Q1 2026 expectations

Robust LNG supply in Q4 2025, weak Asian demand, and improved certainty for upcoming LNG projects, signalled softer market conditions in the near term.

European storage levels were below the five-year average, but market concern remained limited due to stable Norwegian supply and strong LNG inflows from the US.

Q2 2026 expectations

The Iran conflict has disrupted 20% of global LNG supply, constraining Qatari export capacity and delaying the North Field expansion by three years.

Limited alternatives force some demand destruction in Asia and Europe. Competition for marginal cargoes intensifies amid low European storage.

1) For years 2026-2029, the prices shown consider current futures prices for the years in question, with declining weights. The 2026 price includes historical prices up to Feb-26. 2) Futures on trading days between 19/03/2026 and 20/03/2026. 3) Futures on trading days between 03/11/2025 and 28/11/2025.
Sources: Aurora Energy Research, EEX, Reuters

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1. **2026:** The effective closure of the Strait of Hormuz has lifted our gas price forecast to €52.5/MWh. Even if transit resumes in the coming months, Ras Laffan LNG will take time to recover
2. **Late 2020s:** Qatar has lost 17% of its LNG capacity for the next few years. Its North Field East expansion, planned for Q4 2026, is assumed to be delayed by three years
   - The expected global LNG supply glut will be pushed back
3. **By 2030:** Our 2030 TTF forecast is €28.6/MWh, up just 1% from the previous outlook, as we expect market conditions to normalise by then, with most damaged and delayed liquefaction capacity online

Qatari LNG disruption and delays to expansions tighten global gas markets; higher demand in Asia drives a long-term price rise

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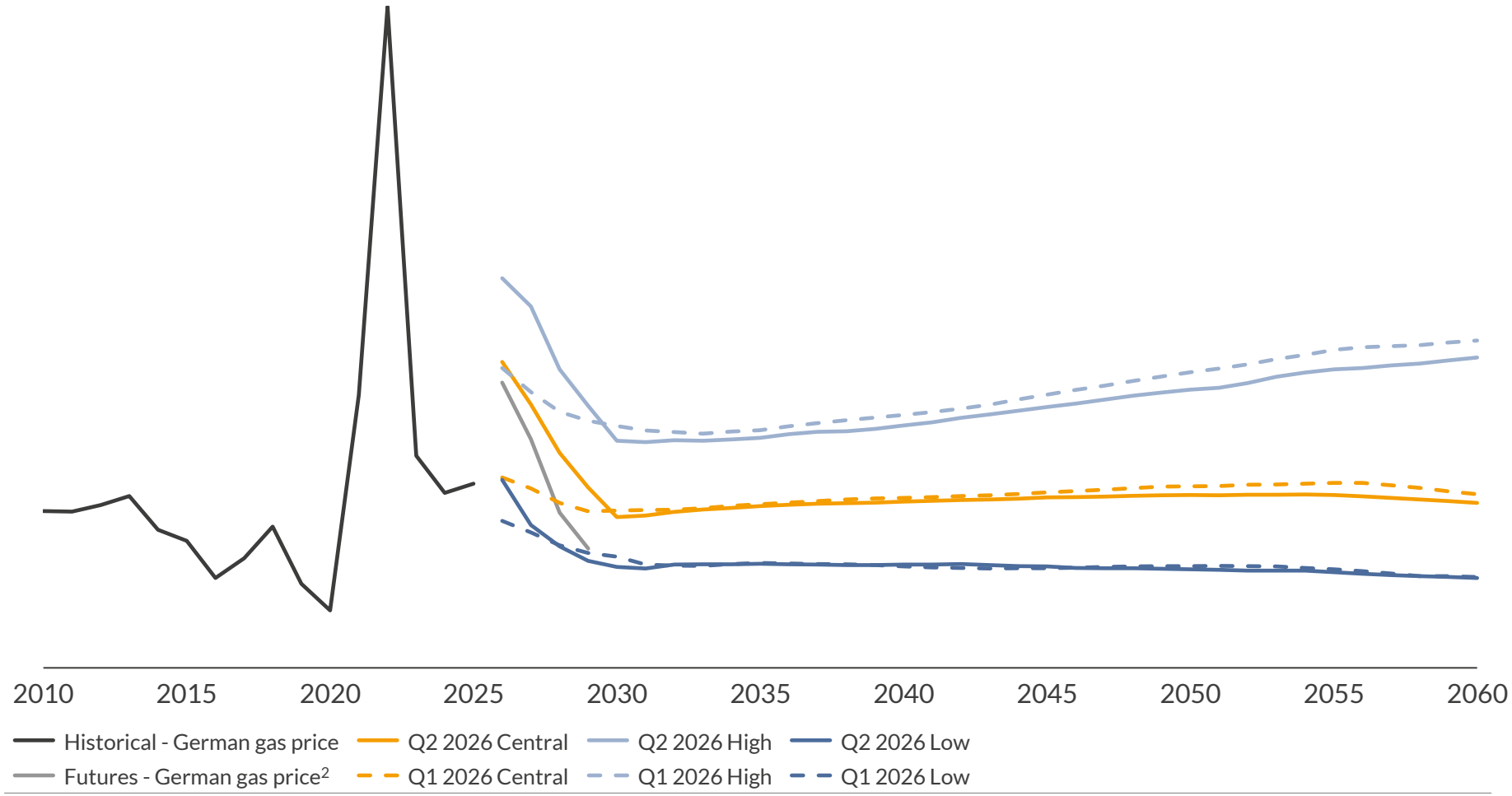
Natural gas prices
€/MWh (real 2025)[1]



1) THE historical and futures gas prices are shown. For years 2026-2029, the prices shown take into account current futures prices for the years in question, with declining weights. In 2026, forecast prices include historical prices up to Feb-26. 2) Futures on trading days between 19/03/2026 and 20/03/2026.
Source: Aurora Energy Research

2026-2029

- The gas price in the period to 2029 averages c. 49 €/MWh, 40% higher than the previous forecast
- Reduced flows through the Strait of Hormuz and disruptions to Qatari LNG availability led to a tighter global LNG supply, increasing competition with Asia
- The delayed expansion of Qatar's North Field LNG capacity—due to damage during the Iran war—further postpones new supply additions

2030-2060

- The gas price in the period to 2060 averages c. 34 €/MWh, 4% lower than the previous forecast, as European gas demand declines more quickly than previously forecast due to decarbonisation
- Prices rise by 2060, as LNG acts as the marginal supply and demand growth in emerging markets tightens the global LNG market

Central carbon prices decrease relative to our Q1 2026 forecast due to higher political risks around softening of EU ETS stringency

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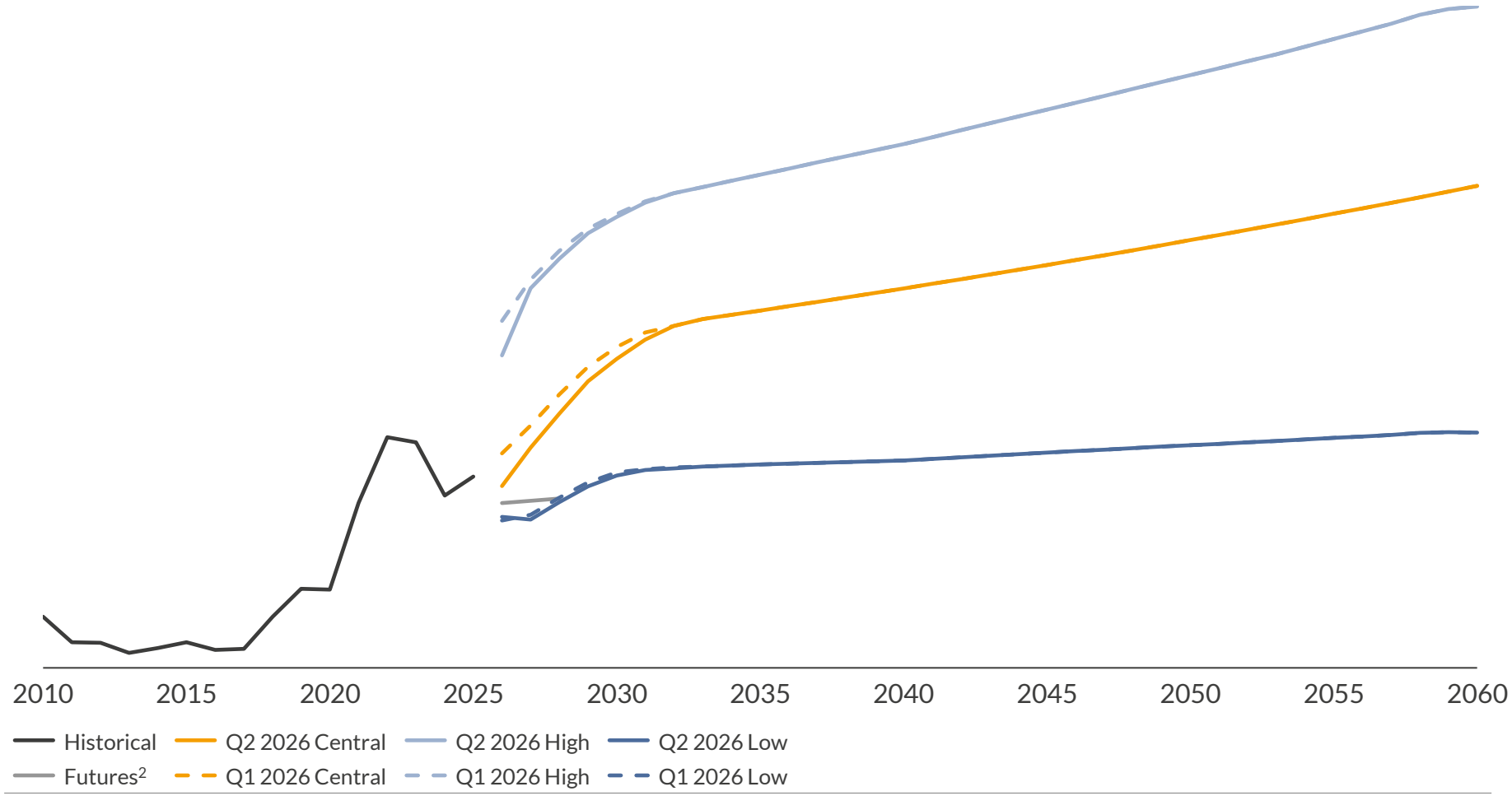
Carbon prices
€/tCO_2 (real 2025)[1]



1) For years 2026-2029, the prices shown take into account current futures prices for the years in question, with declining weights. In 2026, forecast prices include historical prices up to Feb-26. 2) Futures on trading days between 19/03/2026 and 20/03/2026.
Source: Aurora Energy Research

2026-2029

- Carbon prices average 91.1 €/tCO_2, 9% down from our previous forecast, mainly due to increased uncertainty regarding future market tightness caused by policy discussions about potential changes to EUA supply

2030-2060

- Carbon prices average 156.1 €/tCO_2 in this period, almost unchanged from our previous forecast and rise to 186.3 €/tCO_2 by 2060, reflecting our expectations of abatement costs in the industry sector and unchanged assumptions on long-term climate policy ambition

Wholesale electricity prices are expected to lie above 110 €/MWh on average through 2026-2029, driven by upward gas price trends

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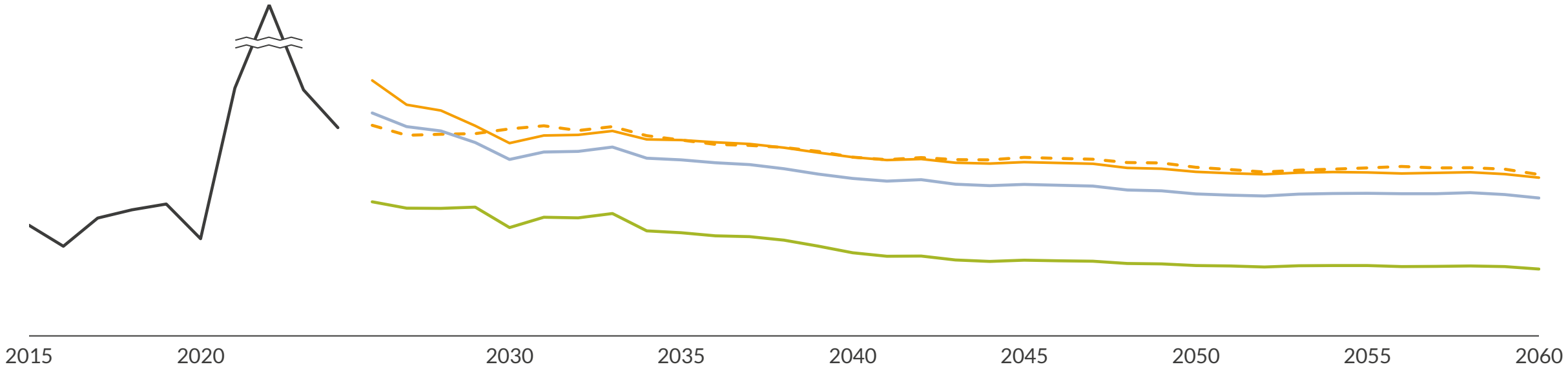
Baseload and renewables capture prices[1]
€/MWh (real 2025)



Average discount to baseload
10-year averages



Historical baseload
Baseload - Aurora Central (Q2 2026)
Solar PV - Aurora Central (Q2 2026)
Baseload - Aurora Central (Q4 2025)
Onshore wind - Aurora Central (Q2 2026)

1) Capture prices are uncurtailed generation-weighted average.

Source: Aurora Energy Research

Auctions, grid access, business incentives, and fast-track licensing can boost the BESS deployment in the country to 7 GW by 2030

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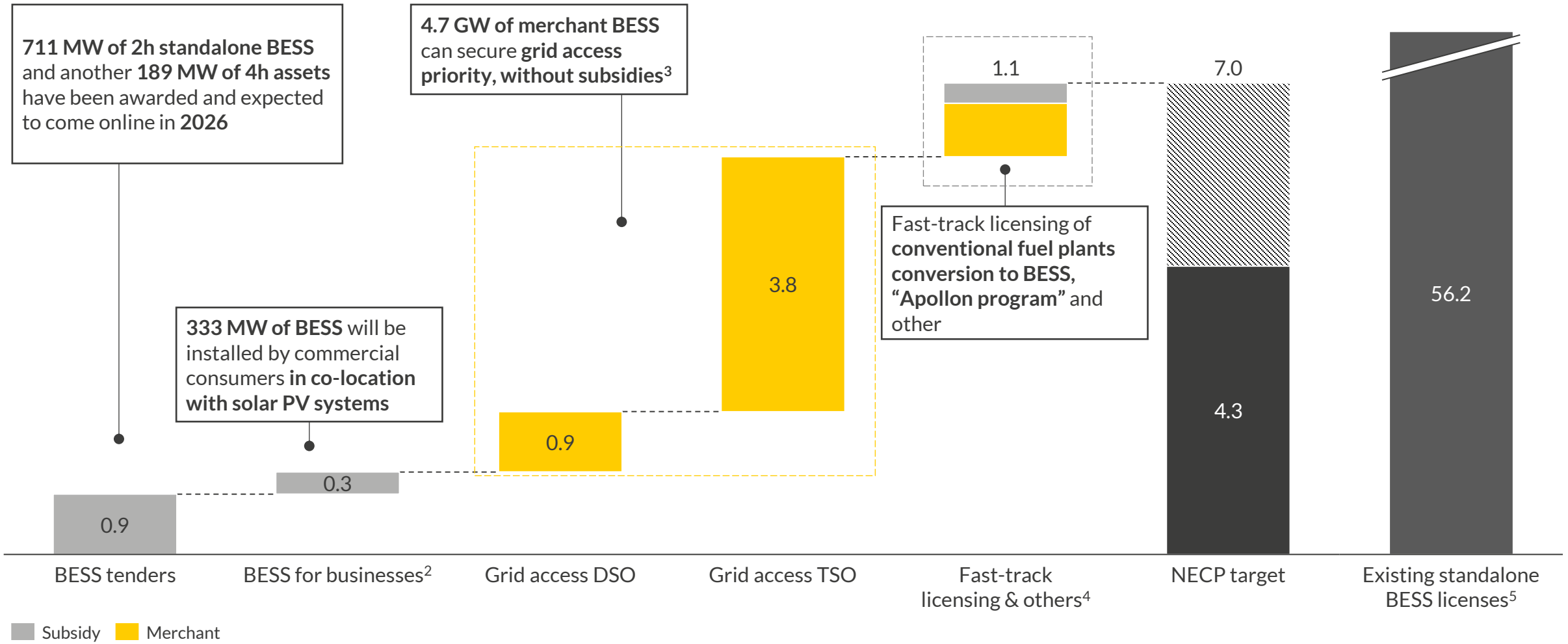
Potential breakdown of BESS capacity to achieve the 2030 NECP[1] target
GW



1) Greek 2025 final NECP, published in January 2025. 2) "Πρόγραμμα «Συστήματα Αποθήκευσης στις Επιχειρήσεις" established by a Joint Ministerial Decision ΥΠΕΝ/ΔΕΠΕΑ/140608/2339/2024. 3) Law 1248/13.03.2025. 4) Law 5151/2024 , published in Government Gazette Issue Α' 173. 5) Data until January 13, 2026, retrieved from RAEEY's Geoportal Map.

Sources: Aurora Energy Research, Ministry of the Environment and Energy, Greek 2025 NECP, Media sources

Energy arbitrage emerges as the primary revenue stream for standalone 2h BESS (COD[1]=2027) contributing 62.9% of lifetime revenue

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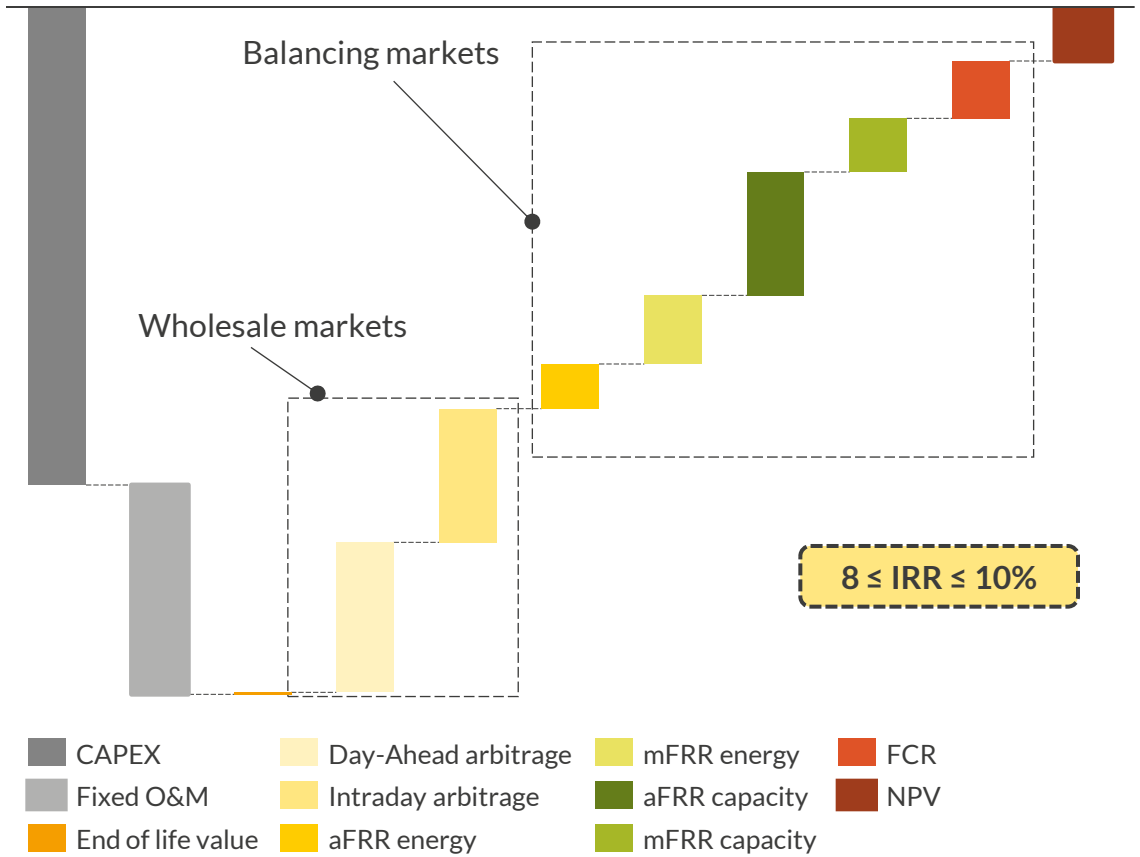
Merchant 2h standalone BESS | 1.5 cycles/day | COD[1]= 2027

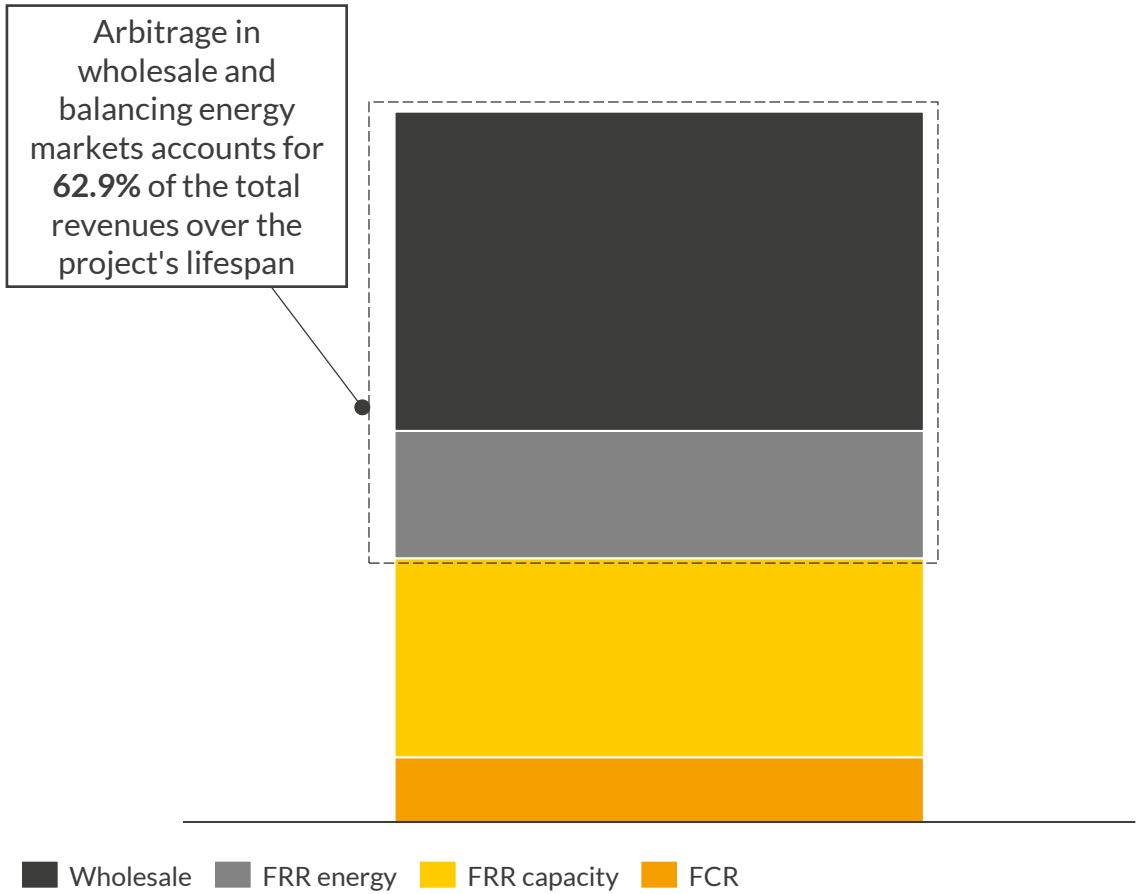
Economics of a newly built merchant standalone battery[2]

Net Present Value €/kW (real 2024, Aurora Central – Q1 2026)



Lifetime revenues breakdown[2]

Net Present Value €/kW (real 2024, Aurora Central – Q1 2026)



1) Commercial Operation Date. 2) Assumed discount rate of 11.5%. A repowering session is triggered when the battery's state of health reaches 66%. The asset's maximum lifetime is reached when the battery's state of health drops to 66%, after the previously mentioned repowering event.

Source: Aurora Energy Research

Limited trading in shallow balancing capacity markets could lead to 12% loss of revenues alongside enhanced energy arbitrage

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Lifetime revenues breakdown of a merchant standalone BESS[1]
Net Present Value €/kW (real 2024, Q1 2026 prices)

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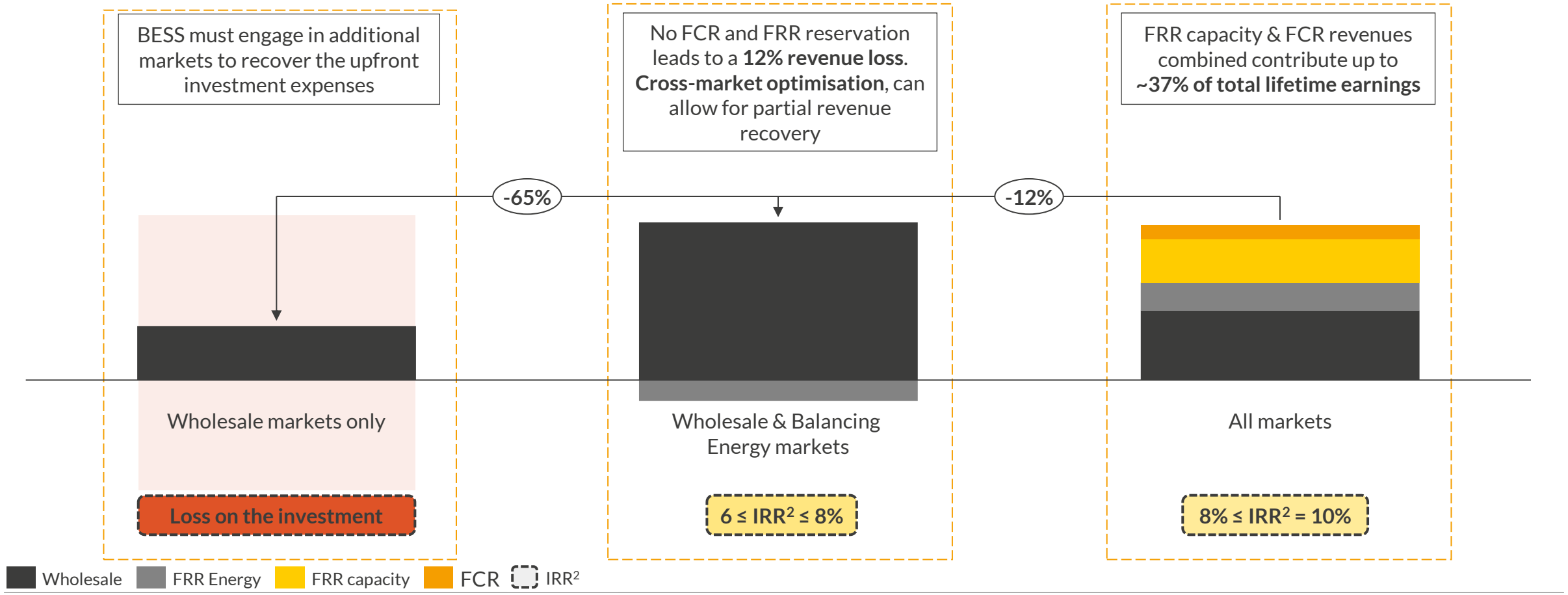
Merchant standalone 2h BESS | 1.5 cycle per day | COD 2027



1) Assumed discount rate of 11.5%. A repowering session is triggered, when the battery's state of health reaches 66%. The asset's maximum lifetime is reached when the battery's state of health drops to 66%, after the previously mentioned repowering event.
2) Pre-tax and unlevered IRR.
Source: Aurora Energy Research

Tolling agreements, DAM spreads swaps, hybrid PPAs and participation to a potential CRM[1] could mitigate market risks and enhance BESS bankability

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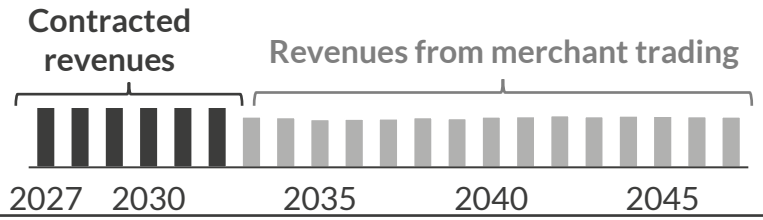
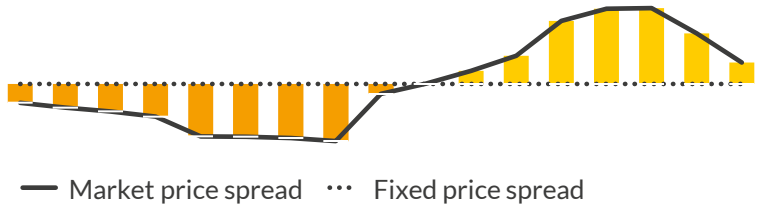
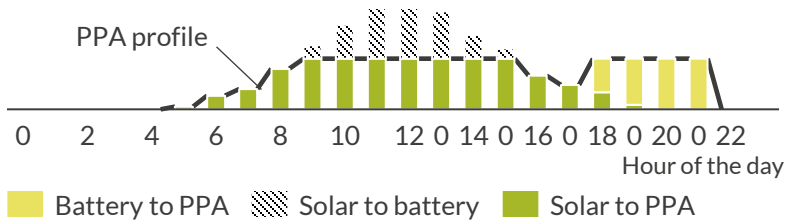
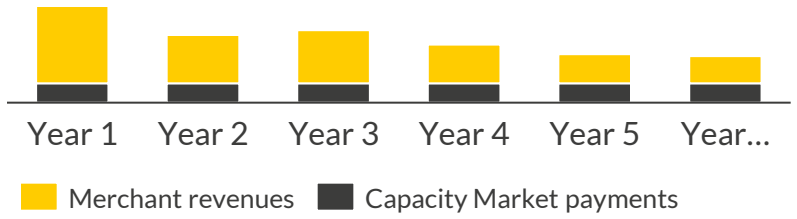
Risk mitigation measure	How does BESS bankability increase?	Revenue stacking concept	Tenure [years]	Risk allocation BESS owner — Offtaker
Tolling agreement	**Revenues generated through a BESS can be contracted** for a predetermined tenor		5 – 10	
Day-ahead spread swaps	BESS can receive a **fixed price**, which reflects **the value of arbitrage in the day-ahead market**		1 – 10	
Hybrid PPA	In case of **RES-BESS co-located projects**, cashflows can **be partially secured through a PV-BESS project PPA**		5 – 10	
Participation to a CRM[1] mechanism	**Capacity payments** can be stacked additionally to cashflows, generated through merchant trading		1 – 10	

1) Capacity Remuneration Mechanism.

Source: Aurora Energy Research

The "lower bound" tolling price allows the BESS to generate a return that enables the project to break even

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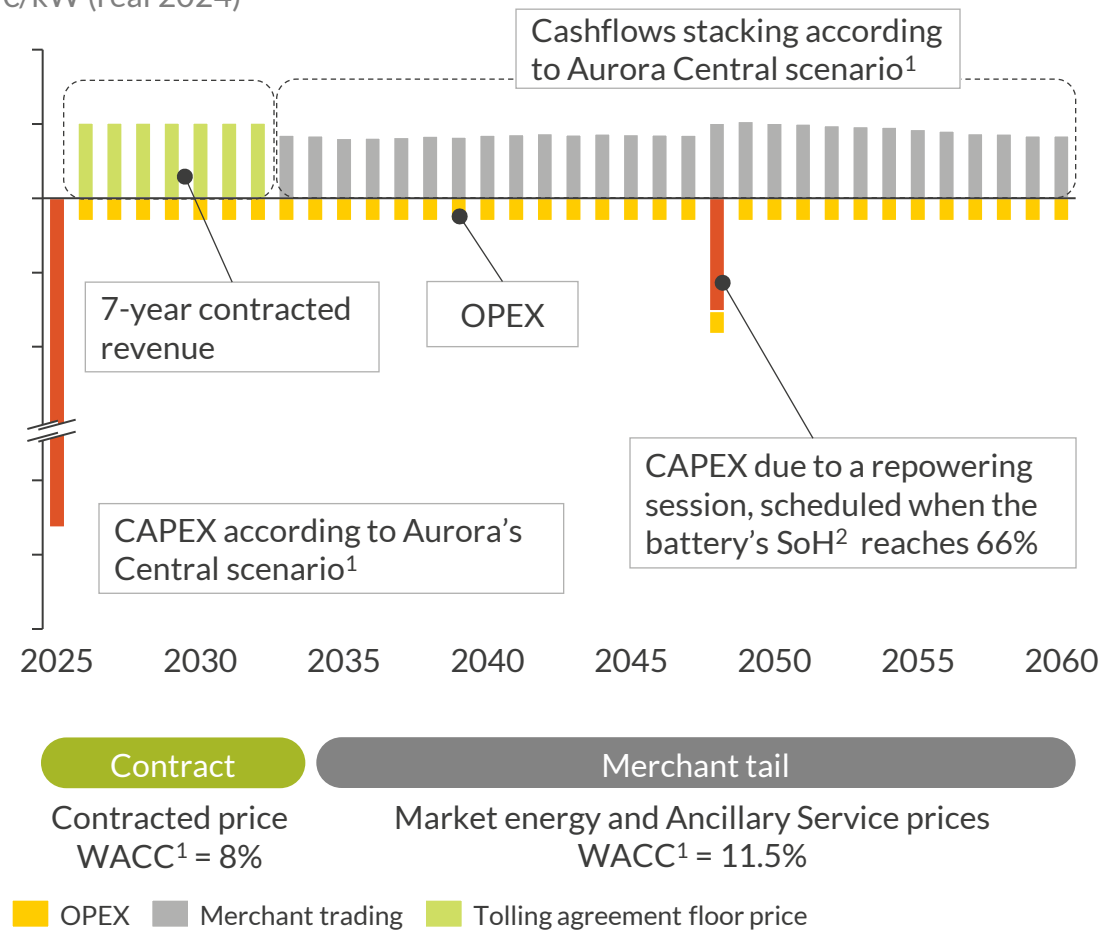
Exemplary methodology: 2h standalone BESS | 1.5 cycles/day | COD: 2027 | 7-year tolling agreement tenor | Central - Q1 2026

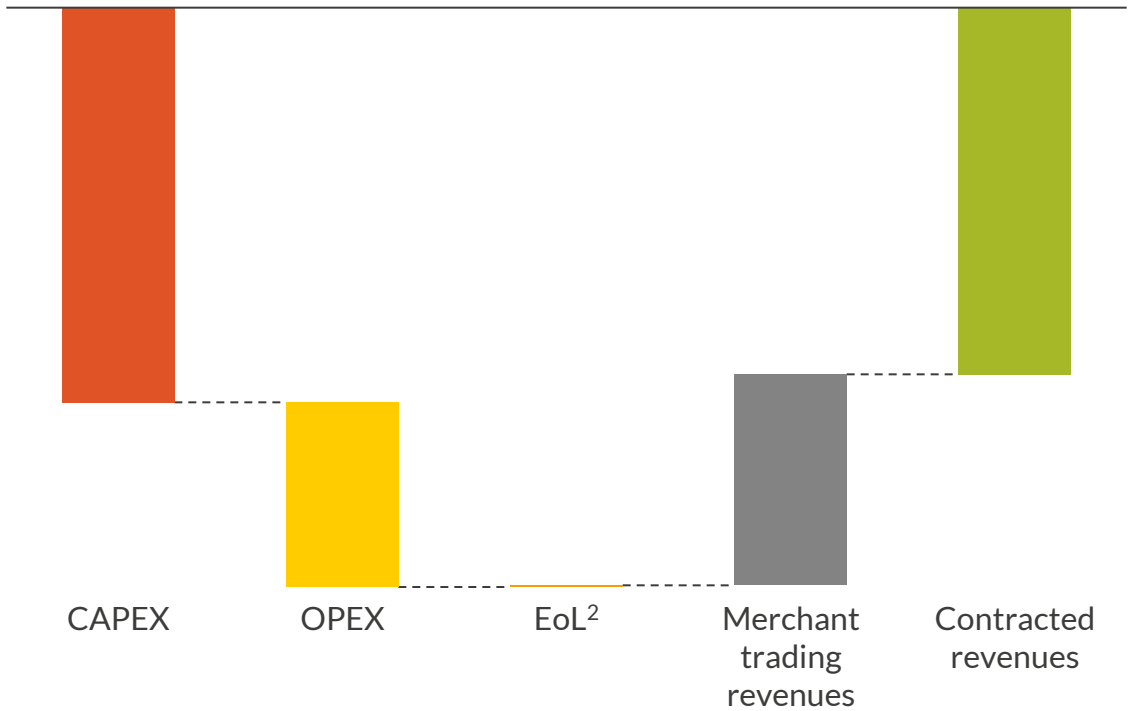
Non-discounted cashflows for a 2h standalone BESS

€/kW (real 2024)



Present value of net cashflows

€/kW (real 2024)



- Contracted revenues are sized to ensure that investors recover capital and operating costs, with a return (i.e., the NPV of the investment is zero)
- To achieve a project NPV equal to zero, a **fixed tolling agreement price** may be required

1) Weighted Average Cost of Capital. 2) End of Life value

Source: Aurora Energy Research

A day-ahead swap is a financial contract in which the BESS owner receives a fixed spread in exchange for paying or receiving the actual DAM outcome

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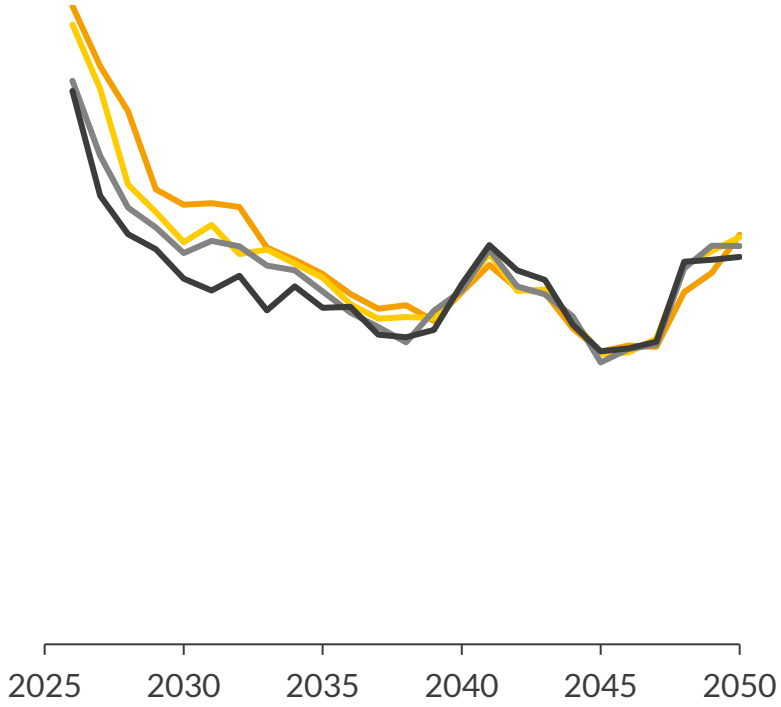
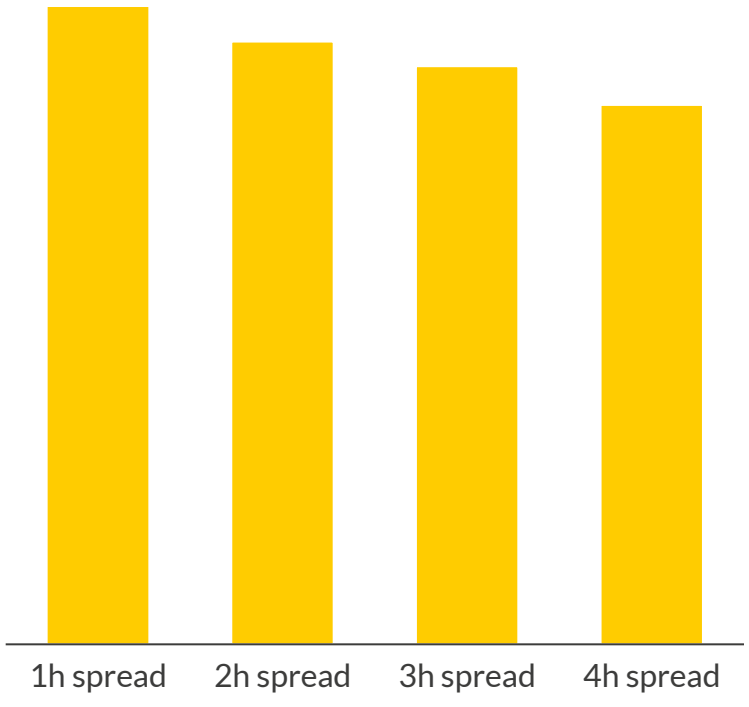
Average daily spread in the day-ahead market
€/MWh (Central – Q1 2026)



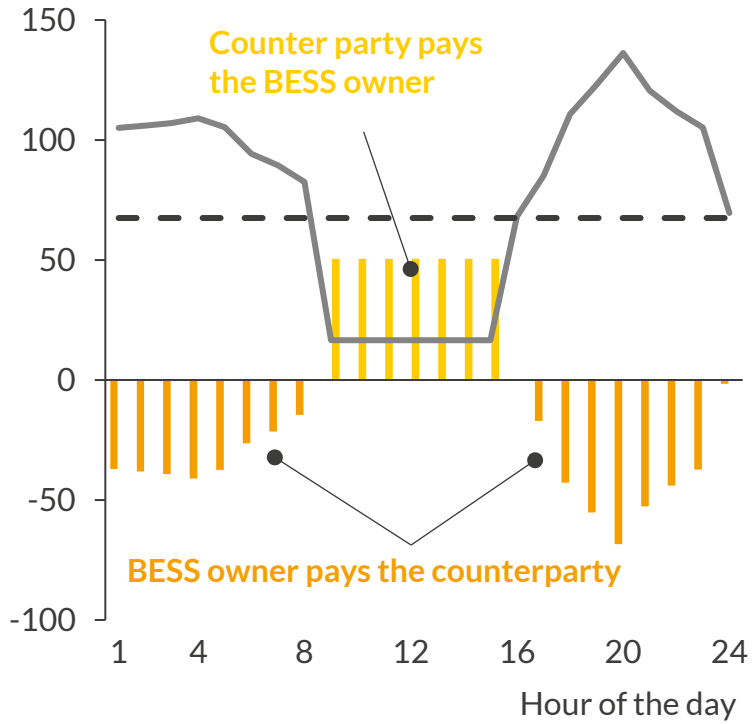
Price spreads in the day-ahead market are expected to remain at **an average of 50-60 €/MWh post 2035**, driven by high **RES and BESS penetration**

10-year (2027-2036) average arbitrage value per MWh traded daily (non-discounted - €/MWh)



We compute the **10-year average spread** in the day-ahead market, which represents the **arbitrage value per MWh traded daily**

Day-ahead swap spread settlement
€/MWh



The spread swap locks in a **fixed daily spread value**. The settlement depends on the delta between the actual DAM hourly price and the fixed daily spread value, offering **revenue certainty**

1h daily spread | 2h daily spread | 3h daily spread | 4h daily spread | DAM prices[1] | 10-year average 1h daily spread

1) Forecasted prices on July 20th 2027 according to the Aurora Central scenario (Q1 2026).

Source: Aurora Energy Research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