



## Battery 2h

- Fast-cycling asset.
- Duration too short for long congestion events
- Must be paired with a market contract.
- Typically can't meet aFRR symmetric band requirements alone; it needs to be pooled with other assets.

Duration: 2 hrs

aFRR only via  
aggregation pool



## Battery 4h

- Longer discharge window.
- Can hold position during sustained peak congestion.
- Unlocks DSO contracts and the new Capacity Control Contract (CSC).
- Higher upfront cost.

Duration: 4 hrs

High absolute CAPEX,  
lower relative CAPEX



## Co-located BESS

*no extra capacity*

- Battery paired with solar or wind on one grid connection.
- Reduces access cost
- A co-located battery charges from on-site generation first, reducing the net load it places on the grid.
- Restricts independent dispatch and some market participation.

Grid positive

Dispatch constraints



## Co-located BESS

*with demand capacity*

- Battery paired with solar or wind on one grid connection.
- Reduces access cost
- A co-located battery charges from on-site generation first, reducing the net load it places on the grid.
- Restricts independent dispatch and some market participation.

**Grid impact similar to standalone**

**Dispatch constraints**

**Market access**



## Standalone BESS

- Dedicated grid connection.
- No dispatch constraints.
- Full eligibility for all markets and contract types.
- Higher connection cost.

**Dedicated connection**

**Highest CAPEX**



## Aggregated Home Batteries

- Pooled residential batteries, dispatched via an aggregator.
- Grid connection fees are minimal.
- Passive imbalance trading is incompatible with grid capacity constraints at this scale.

Virtual Power Plants  
(VPPs)

Grid balancing

# CONTRACT



## Price Arbitrage

*Merchant trading in the Dutch 15-minute balancing market*

- Trade on the open market in real time.
- No guaranteed income , you earn by buying cheap
- and selling high.
- Requires a trading licence (BRP) and AI forecasting to compete

**No guaranteed income**

# CONTRACT



## Capacity Reduction Contract

*CBC (Capaciteitsbeperkingscontract)*

- You agree in advance to use less power when the DSO asks. In return, you get paid.
- Simple and low-effort, but passive. You step aside rather than actively solving congestion.

**Add-on to existing connection**

# CONTRACT



## DSO Redispatch Contract

- DSO pays you to adjust your output or consumption to relieve a specific local grid constraint in near-real time.
- Can combine with intraday trading, day-ahead trading, and free aFRR energy bids. Cannot combine with capacity auctions.

Activated reactively

Cannot be contracted  
in advance

# CONTRACT



## **aFRR free energy bidding**

- You submit energy bids into TenneT's aFRR merit order list without first committing to a capacity contract.
- When TenneT needs balancing energy, bids are activated cheapest first; your free bid competes on equal footing with contracted bids, ranked by price alone.

**BSP licence required**

# CONTRACT



## Frequency Containment Reserve

*FCR*

- Your battery stays on standby 24/7 to instantly correct grid frequency fluctuations
- Steady, predictable income, but heavy usage wears battery out faster.

**Cannot combine with aFRR**

# CONTRACT



## Automatic Frequency Restoration Reserve

*aFRR*

- Your battery responds automatically when the grid goes out of balance.
- Higher earning potential than FCR, but you only get paid when called upon, and that can be unpredictable.

**Cannot combine with FCR**

# CONTRACT



## Capacity Control Contract

*CSC used together with a Time-Dependent Transmission Right TDTR*

- TenneT pays your battery to act as a national grid buffer: store excess energy when the grid is full, release when there's space.
- First live deal: 800 MWh in Oosterhout, April 2026

Requires TDTR

Priority grid access

< 4 hrs on DSO level

# CONTRACT



## Passive Imbalance Trading

*Earning from real-time price swings without bidding into a reserve market*

- You respond to live imbalance price signals as a Balance Responsible Party (BRP).
- Simple and low-effort, but passive. You step aside rather than actively solving congestion.

No contract commitment

Good revenues

Ramp rate is critical

Requires no BSP



## Congestion Reliever

*ACM Priority 1: skip the grid connection queue*

- The ACM gives queue-jumping rights to batteries that free up space for others.
- In the Netherlands, the grid waiting list can be years long.
- This card could save your project.

**Priority 1 status**

**Skips connection queue**



# Time-Dependent Transmission Right

*TDTR: a flexible grid access contract introduced in 2025*

- You get grid access only during agreed off-peak hours, in return for a tariff discount.
- Voluntary. You save on connection costs but cannot freely use the grid at peak times.

Tariff discount

Off-peak hours only



## Non-Firm Grid Access

*NFA (Non-firm ATO): most flexible, lowest-cost connection type*

- You pay almost nothing for your grid connection.
- Grid operators can cut you off whenever the grid is under stress.
- Great for flexible assets that don't need to run continuously.
- High risk for revenue reliance.

Near-zero  
connection cost

Can be cut off  
anytime



# Time-Block Based Transmission Rights

*TBTR*

- Your grid rights are split by time of day: you can use full capacity during agreed blocks, and nothing outside
- This lets TenneT plan the grid more efficiently
- Unlocks the Capacity Control Contract (CSC)

**TenneT grid only**

Unlocks CSC

Time-block grid rights



## "Use It or Lose It"

*GOTORK: rule for grid operators to reclaim unused capacity*

- If a company has reserved grid capacity but isn't actually using it, the ACM can take it back and give it to someone else.
- This card rewards active, productive users and punishes those just sitting on reservations.

**Risk: inactive capacity reclaimed**



## Participation Obligation

*New ACM rule: large energy users must offer flexibility when the grid operator asks*

- ACM enables it, operators implement the obligation is to offer flexibility.
- If your actual flexibility is less than the operator expected, there's no enforcement mechanism, and you set your own price for that flexibility.

**Applies in designated congestion areas only**

# RISK



## Full Merchant

*No contract: pure market exposure*

- No revenue floor, no contract.
- Maximum upside in a volatile market.
- Unfinanceable for most banks without an equity-only structure or a very strong track record.

Maximum upside

Difficult to finance

# RISK



## Blended Strategy

*Contracted revenue floor + merchant upside*

- A revenue floor from a Capacity Control Contract, with extra upside from imbalance or aFRR trading on remaining capacity.
- The most bankable structure in 2026.

Revenue floor +  
upside

Most bankable in  
2026

# RISK



## Contracted Only

*All revenue from fixed contracts:  
no market exposure*

- 100% of income from fixed contracts: Capacity Control Contract, or tolling.
- Lowest volatility, most bankable.
- Trade-off: lower earning ceiling and exposure to contract expiry or price compression over time.

Fixed income only

Very bankable

Lower earning ceiling



## Venture Capital Card

- You have convinced a finance expert in this room that your strategy is bankable. This card confirms: your revenue floor is credible, your technology is proven, and your operator has a track record.

**Not in starting hand**

**Earned from finance expert**

# YOUR IDEA



## Wildcard

*Write your own solution*

What's your idea?

How does it earn?

Grid impact

**Score decided by facilitators**

# YOUR IDEA



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# PENALTY



## Red card

*Issued by the ACM facilitator only*

Your table has played incompatible cards or broken a grid rule. The ACM facilitator issues this card on the spot. It cannot be appealed. Your strategy must be rebuilt before you can pitch.

**Immediate penalty**

**Must rebuild hand**

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**CONGESTION**

**SOLARPLAZA**

**KLAVERJASSEN**