OPTIMAL Energy.

Product sheet

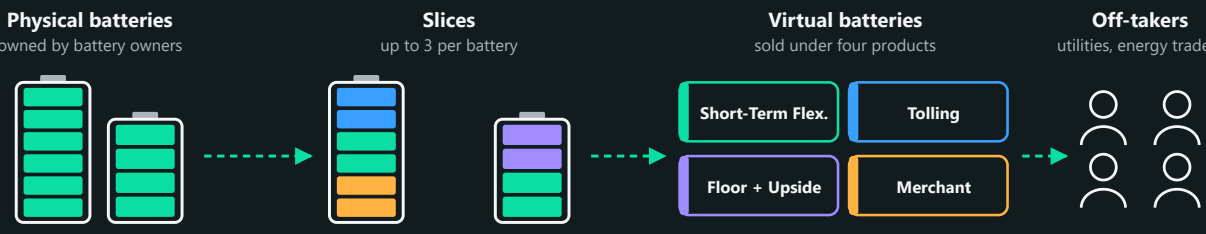
BATTERY VIRTUALISATION PLATFORM

Optimal BESS Virtualiser

Four standard products. Conditions and parameters at a glance.

Optimal BESS Virtualiser turns physical batteries into virtual capacity slices, sold to electricity utilities and energy traders as flexibility products. This sheet sets out, product by product, the commercial, contractual, technical and operational conditions, with their minimums and maximums, for **battery owners** and **off-takers**.

How it works



1 The owner slices the battery
The owner keeps the asset and splits it into up to three slices, each offered to one product family at the owner's own minimum price.

2 Off-takers reserve virtual batteries
A utility or trader requests power, energy and a delivery period, receives a quote and accepts it. Slices of several batteries can serve one virtual battery.

3 The platform runs the rest
Activation per quarter-hour, scheduling and nomination, metering, settlement and invoicing, with telemetry and control through an edge gateway at each battery.

The four products

Short-Term Flexibility

Capacity reserved for a few days, activated per quarter-hour when needed.

typically 1–9 days

OWNER
Reservation fee + activation fee

OFF-TAKER
Guaranteed capacity, pays activation when used

Tolling

Exclusive dispatch rights over a battery slice for a fixed fee.

typically 6 months – 3 years

OWNER
Fixed annual fee, no market exposure

OFF-TAKER
Full dispatch rights and all market upside

Floor + Upside

A guaranteed floor plus a share of the market upside above it.

typically 3 months – 2 years

OWNER
Guaranteed floor + upside share

OFF-TAKER
Dispatch rights, shares the upside

Merchant

The off-taker trades the slice; the market gain is shared. No fixed fee.

typically 1 month – 3 years

OWNER
Agreed share of the market gain

OFF-TAKER
No fixed fee, keeps its agreed share

Common to all products

Quarter-hour, Swiss time
15-minute granularity, Europe/Zurich

Nomination handled
Scheduling to Swissgrid's rules

Edge gateway
Telemetry and control over MQTT/TLS

Portal and API
For owners and off-takers

CHF
Prices, invoices and payouts

Automated invoicing
Payment term 30 days

Standard contracts
One framework per product

French binding
Language of the contracts

How to read this sheet. Pages 2 and 3 form one comparison table, one column per product. Values are the typical terms of the standard products; a specific offer may set its own within the platform's limits. A row marked *All products* applies to the four. Numbered notes (1) are explained at the foot of each page.

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Overview, commercial terms and contract

PARAMETER	Short-Term Flexibility typically 1–9 days	Tolling typically 6 months – 3 years	Floor + Upside typically 3 months – 2 years	Merchant typically 1 month – 3 years
OVERVIEW what it is and who it is for				
What it is	Battery capacity reserved for a short window and activated on request, quarter-hour by quarter-hour.	Exclusive right to dispatch a battery slice, for a fixed fee.	Tolling-style floor for the owner, plus a share of the market gain above it.	The off-taker trades the slice and shares the market gain. No fixed fee.
Suits off-takers who	Cover imbalance and short-term operational needs of a balance group.	Want long-term storage capacity they fully control.	Want dispatch rights at a lower fixed cost, sharing the upside.	Want capacity without a fixed commitment, paying from the gain.
Suits owners who	Have capacity free for short windows.	Want predictable revenue, no market exposure.	Want downside protection and part of the upside.	Accept market exposure for a higher potential revenue.
Typical use	Imbalance insurance, last-mile balancing, local grid flexibility.	Trading, arbitrage and portfolio optimisation; bankable capacity.	Balanced risk sharing when a fixed toll is too dear and merchant too risky.	Market testing, arbitrage, newer or smaller assets.
Recommended off-taker size balance group, metering points	**≥ 5,000**	**≥ 10,000**	Per offer	Per offer
COMMERCIAL prices, earnings and risk				
Price basis	**Reservation fee**, CHF/MWh·day + **activation fee**, CHF/MWh	**Fixed fee**, CHF per year	**Floor**, CHF per year + **gain share** above the floor	**Gain share** only; no fixed price
The owner earns (1)	Reservation fee per MWh·day reserved + activation fee per MWh charged for the client.	A fixed annual remuneration for the slice made available.	A guaranteed floor + an agreed share of the upside.	An agreed share of the declared market gain; no guaranteed minimum.
The off-taker pays	The reservation for the whole window + the energy charged when activated (2)	The fixed price for the contract period.	The floor for the contract period + the part of the upside it does not keep.	Nothing fixed: the part of its declared monthly gain it does not keep.
The off-taker keeps	The value of the flexibility, e.g. the imbalance cost it avoids.	All market revenue earned with the slice.	Its agreed share of the gain above the floor.	Its agreed share of the gain.
Gain share (3)	Not applicable	Not applicable	Agreed per contract, fixed on the quote	Agreed per contract, fixed on the quote
Market risk borne by	Limited; mainly the off-taker owner ◉ off-taker	The off-taker owner ◉ off-taker	Shared above the floor owner ◉ off-taker	Mainly the owner owner ◉ off-taker
Quote validity	**15 min**	**24 h**	**24 h**	**24 h**
Quotes	ALL PRODUCTS Up to 5 price requests per day. A quote binds no one until the off-taker accepts it; the accepted price is then fixed for the contract.			
CONTRACT duration, booking and cancellation				
Contract duration minimum – maximum	**1 – 9 days**	**6 months – 3 years** (4)	**3 months – 2 years**	**1 month – 3 years**
Booking lead time before delivery start	**31 h – 3 months**	**1 month – 1 year**	**1 week – 6 months**	**1 week – 3 months**
Delivery period	ALL PRODUCTS Whole Swiss calendar days, from midnight Swiss time on the start date. Intraday booking is not offered.			
Cancellation by the off-taker (5) fee by days before delivery start	● **free** more than 5 days ● **50 %** 3 to 5 days ● **100 %** 3 days or less	● **free** more than 60 days ● **50 %** 30 to 60 days ● **100 %** 30 days or less	● **free** more than 30 days ● **50 %** 14 to 30 days ● **100 %** 14 days or less	● **free** more than 14 days ● **50 %** 7 to 14 days ● **100 %** 7 days or less
Cancellation terms	ALL PRODUCTS Minimum fee **CHF 200** in every paying tier. Free within 24 h of acceptance when delivery is at least 5 days away. No fee for force majeure.			

Continued on the next page: **contract, technical and operational** →

(1) Each owner sets its own minimum price per slice, quoted as is: it already includes the battery's round-trip efficiency and availability.

(2) Short-Term Flexibility: activation is billed per MWh the battery charges for the contract in the confirmed quarter-hours. Discharged energy is not billed; round-trip losses are the off-taker's.

(3) The share of the declared gain the off-taker keeps is agreed per contract, fixed on the quote and confirmed before the contract binds. The off-taker declares its gain each calendar month.

(4) Longer tolling tenors can be offered as a specific product.

(5) The fee is a percentage of the contract value still to be delivered, never more than that value. A merchant contract has no fixed value: its minimum fee applies. Days are Swiss calendar days.

Contract, technical and operational

PARAMETER	Short-Term Flexibility typically 1–9 days	Tolling typically 6 months – 3 years	Floor + Upside typically 3 months – 2 years	Merchant typically 1 month – 3 years
CONTRACT continued: guarantees, invoicing and payment				
Changes to a contract	ALL PRODUCTS An increase is a new contract. A decrease follows the cancellation tiers on the part cancelled.			
Availability guarantee [6]	100 %	95 %	95 %	95 %
Non-availability penalty credited to the off-taker	**Hourly form:** CHF 20 per MW reserved and hour of unavailability	**Hourly form:** CHF 20 per MW and hour beyond the 95 % allowance	**Rate form:** 1 % of the fixed fee per point below 95 %, per contract year	**None;** performance benchmark and cure rights
Invoicing	After the reservation period: reservation + activation.	Fixed fee for the service period, as the contract sets.	Floor as the fixed fee; upside monthly, after the gain declaration.	Monthly, after the off-taker's gain declaration.
Invoicing and payment	ALL PRODUCTS From **CHF 500** invoiced at once; smaller amounts grouped into one monthly invoice per client. Payment **30 days** net, in **CHF**. Corrections by credit note.			
Contract language	ALL PRODUCTS Contracts and their product annex are in **French, the binding language**. Translations are for information.			
TECHNICAL power, energy and control				
Power per contract minimum	1 MW	0.1 MW	0.1 MW	0.1 MW
Power and energy maximum	ALL PRODUCTS Up to the free capacity offered in the product family at the time of the quote; set per offer.			
C-rate power ÷ energy, maximum	1 C at least 1 h of energy	0.5 C at least 2 h of energy	0.5 C at least 2 h of energy	0.5 C at least 2 h of energy
Round-trip efficiency product reference	ALL PRODUCTS **90 %**			
Slices	ALL PRODUCTS Up to 3 slices per battery, each in one product family; a slice keeps the battery's energy-to-power ratio.			
Granularity and time	ALL PRODUCTS Quarter-hour (15 min), Swiss time (Europe/Zurich): 96 quarter-hours a day, 92 or 100 on clock-change days.			
Activation	ALL PRODUCTS Both directions. Requests in MW per quarter-hour (+ charge, − discharge), until 5 min before it starts; then confirmed and binding.			
Cycles [7]	ALL PRODUCTS Up to **2** equivalent full cycles per day. The strictest of the product, slice and battery limits applies.			
State of charge (SoC) [8]	ALL PRODUCTS The owner's SoC window is respected at dispatch. Contracts start and end at **50 %**; the end difference is settled.			
Telemetry and control	ALL PRODUCTS One vendor-agnostic edge gateway per battery. MQTT over TLS, one login per gateway, heartbeat every 60 s, fail-safe after 180 s silence.			
Data access	ALL PRODUCTS Web portal for owners and off-takers. Off-taker REST API (OAuth 2.0) and signed webhooks. Market data as a paid service.			
OPERATIONAL scheduling, settlement and reporting				
Nomination and scheduling	ALL PRODUCTS Handled: confirmed quarter-hours are scheduled and nominated to Swissgrid's rules. The off-taker needs a Swiss balance group.			
Owner obligations	ALL PRODUCTS Planned maintenance announced 10 days ahead; outages declared at least 34 h before delivery, later ones bear their imbalance costs.			
Metering and settlement	ALL PRODUCTS Energy metered per quarter-hour, charge and discharge apart. Each contract is settled on its own; owners are paid by Optimal Energy.			
Reporting	ALL PRODUCTS Contracts, schedules, confirmations, invoices and credit notes in the portal; schedules exported as CSV.			

[6] Availability is measured per quarter-hour at settlement: a quarter-hour in which a battery behind the contract had no fresh SoC reading or was confirmed unavailable counts as unavailable. A product uses one penalty form, never both; the penalty is credited on the service invoice of the period and capped at it.

[7] One equivalent full cycle is the capacity charged once and discharged once, counted per Swiss calendar day. A request that would exceed it is reduced at confirmation.

[8] The owner sets the SoC window (minimum, maximum) per battery. At the end of a contract, energy above 50 % is credited to the off-taker and a shortfall invoiced, at the retail price.

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From quote to invoice

From request to settlement

1 **Quote**
The off-taker requests power, energy and a delivery period and receives a price, valid for the quote's validity.

2 **Contract**
On acceptance, slices are allocated and the virtual battery is created under the product's standard terms.

3 **Activation**
The off-taker requests MW per quarter-hour, by portal or API, until 5 minutes before it starts.

4 **Dispatch**
Requests are confirmed, netted, sent to the batteries as setpoints and nominated.

5 **Settlement**
Energy is metered, availability measured, and invoices and owner payouts issued in CHF.

Which product fits?

For battery owners

Earn from free capacity a few days at a time	Short-Term Flexibility
Predictable revenue, no market exposure	Tolling
A guaranteed floor and part of the upside	Floor + Upside
The highest potential revenue, with market exposure	Merchant

To join: Optimal Energy adds the battery to the platform with its technical commissioning and an edge gateway; the battery's metering point belongs to a Swiss balance group. The owner then sets slices, prices and the SoC window.

For off-takers

Capacity on call for a few days, paying activation when used	Short-Term Flexibility
Full control of the capacity for months or years	Tolling
Dispatch rights at a lower fixed cost, sharing the upside	Floor + Upside
No fixed fee: pay a share of what you gain	Merchant

To join: a Swiss balance group for scheduling and a company account on the portal, or API credentials. Quotes are then requested and accepted online, and activation runs by portal or API.

Glossary

Battery owner
Owns and operates a physical battery and offers slices of it to the product families.

Off-taker
An electricity utility or energy trader that reserves virtual batteries.

Slice
A share of a physical battery's power and energy, offered to one product family.

Virtual battery
The capacity an off-taker contracts, served by one or more slices; it behaves like a real battery.

Gain declaration
The market gain the off-taker declares each month under Floor + Upside or Merchant, the basis of the gain share.

Quarter-hour and cut-off
The 15-minute market time unit. Requests for a quarter-hour close 5 minutes before it starts (T−5).

State of charge (SoC)
The energy stored, in % of capacity. The SoC window is the range the owner allows.

Equivalent full cycle
The battery's capacity charged once and discharged once.

Availability
The share of the contract's quarter-hours in which its capacity could be delivered.

Balance group
The Swiss balancing perimeter in which energy is scheduled and settled with Swissgrid.

Disclaimer. This sheet is for information. It states indicative, typical values of the standard products; a specific offer may set other values within the platform's limits. It is not an offer. The applicable contract and its product annex prevail over this sheet. **French is the binding language of the contracts.**

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