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20 November 2025
11:00 am – 12:00 pm CET, Berlin

pv magazine
webinars

Battery optimization for a secure revenue structure



Sergio Matalucci
Editor
pv magazine



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EnBW

Welcome!

Do you have any questions? ? 🙋

Send them in via the Q&A tab. 🙌 We aim to answer as many as we can today!

You can also let us know of any tech problems there.

We are recording this webinar today. 🎥

We'll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience. 👁💡

BESS in the Italian spot markets

Webinar - Battery optimization for a secure revenue structure

Salvatore Alessandro Casa
salvatorealessandro.casa@elemens.it

November 20, 2025



- Strategic **CONSULTING** based on in-depth knowledge of the energy market
- Over 10 years of **EXPERIENCE** in supporting Utilities, RES players, funds, traders and banks
- Advanced familiarity with the Italian **BUSINESS & INSTITUTIONAL ENVIRONMENT**
- Constant focus on «what's next» by leveraging **INSIGHTS** and **EMERGING TRENDS**

1 Reports

To craft your strategies:
indispensable monitoring and assessments of power markets, development, investments, regulation and policy for RES, BESS and green gases

4 Models and tools

To get your revenues:
bankable price forecast (long and short term) and revenue stacking for BESS, tools to optimize your bids in regulated procedures (FER-X, MACSE, Capacity M.)

2 Dashboards & Data

To select your targets:
granular and up to date information, represented through dashboards and maps on RES / BESS projects and assets and on the status of the grid

5 Bespoke

To answer any of your needs:
analysis and studies on any segment of the energy market, from generation to retail, with a focus on regulation, growth, investments and power markets

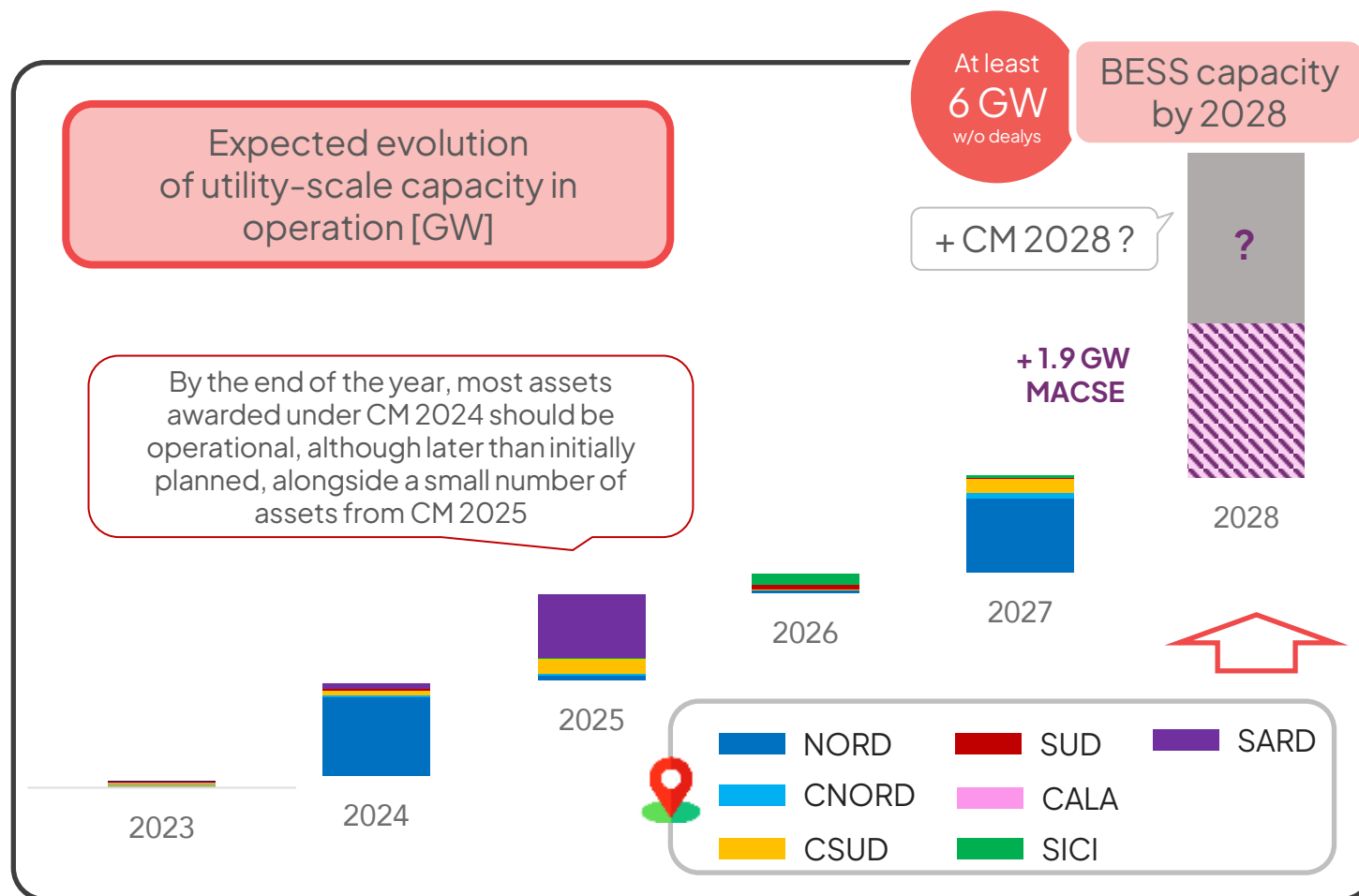
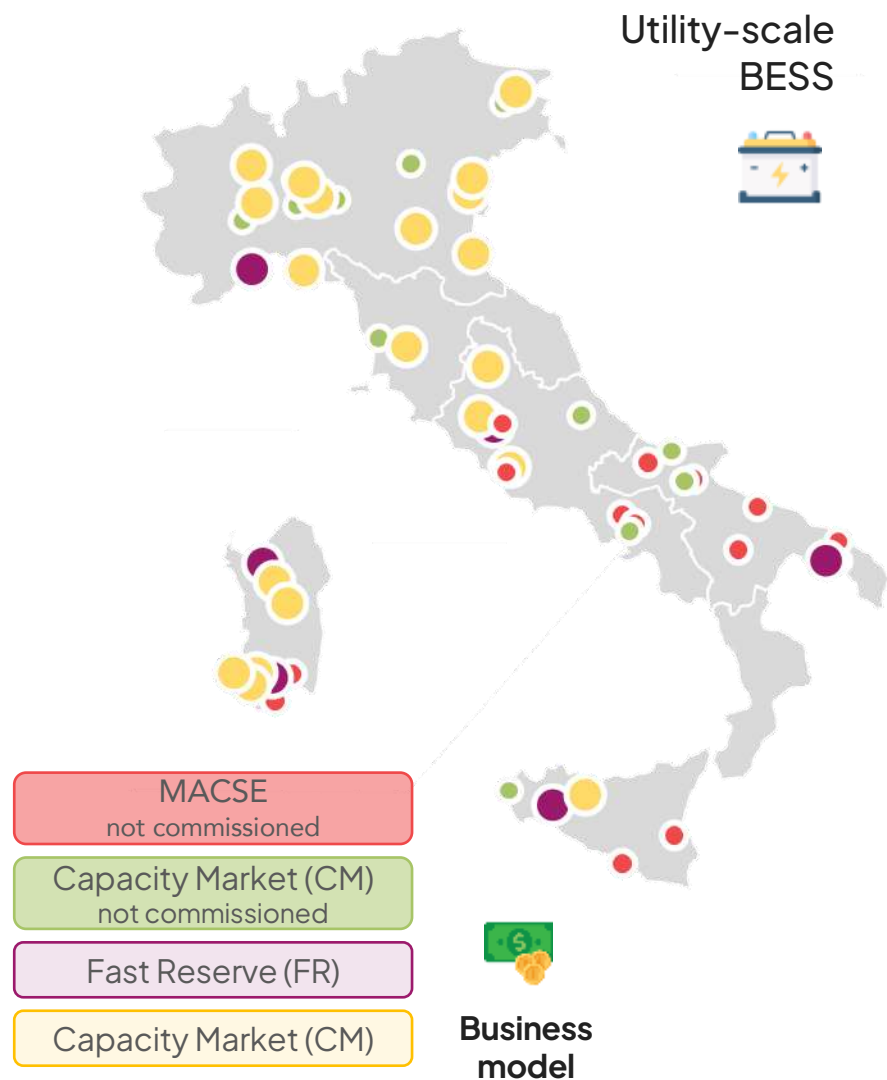
3 Deals

To make your deals done:
market advisory and commercial DD, Business Plan sanity check, creation of base cases, support to negotiation and for the process for M&A and PPA

6 Advocacy & Multiclient

To influence the debate:
studies on the main dynamics of the sector or on specific critical aspects addressed to decision makers, with management of key communication aspects

The map



Considering only utility-scale BESS participating as stand-alone in the spot markets



Merchant spot revenues | The Elemens BESS index



Find out more on
bess.elemens.it

[Elemens Index](#) [MGP Index](#) [Asset leaderboard](#) [Hourly profiles](#) [Daily Best asset](#) [ReadMe](#) [Login](#)

From:

2025/03/01

To:

2025/07/11

Granularity:

Daily





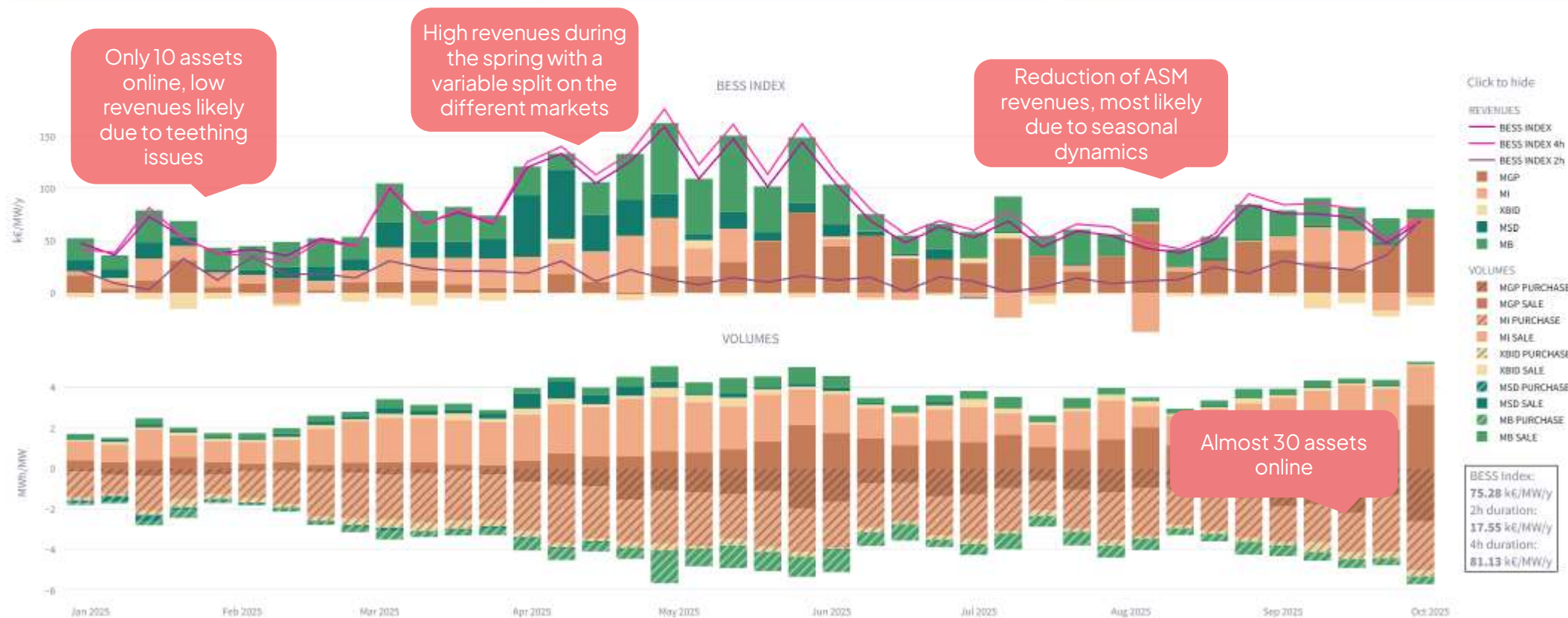
Merchant spot revenues | The Elemens BESS index



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From: 2025/01/01 To: 2025/09/30 Granularity: Weekly



Merchant spot revenues | DAM volatility



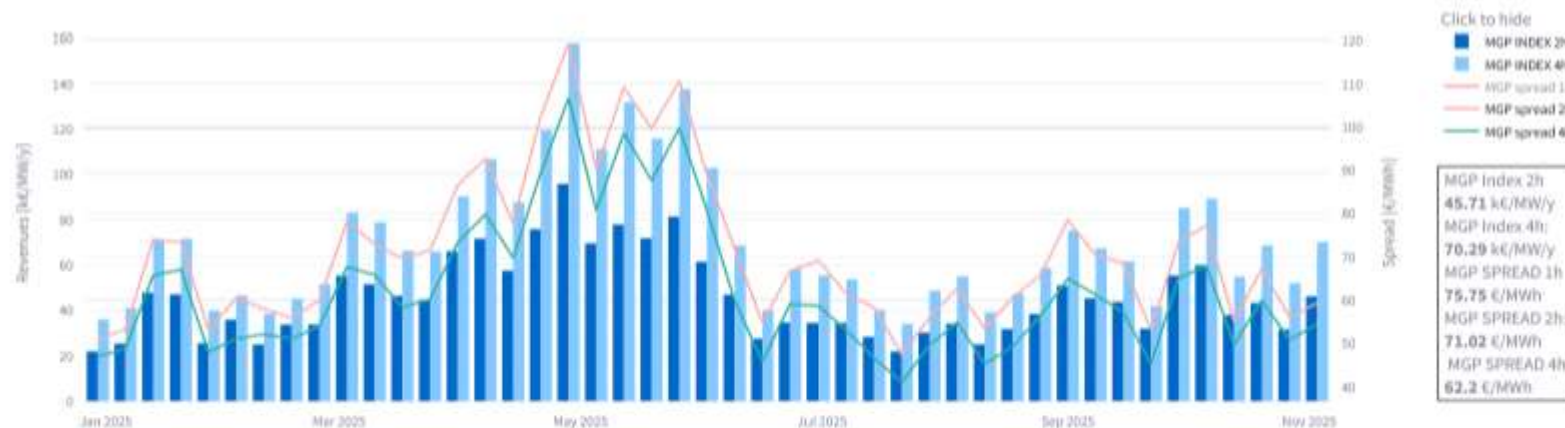
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From: 2025/01/01 To: 2025/11/19 Granularity: Weekly

Zone: PUN

MGP INDEX



Merchant spot revenues | DAM volatility

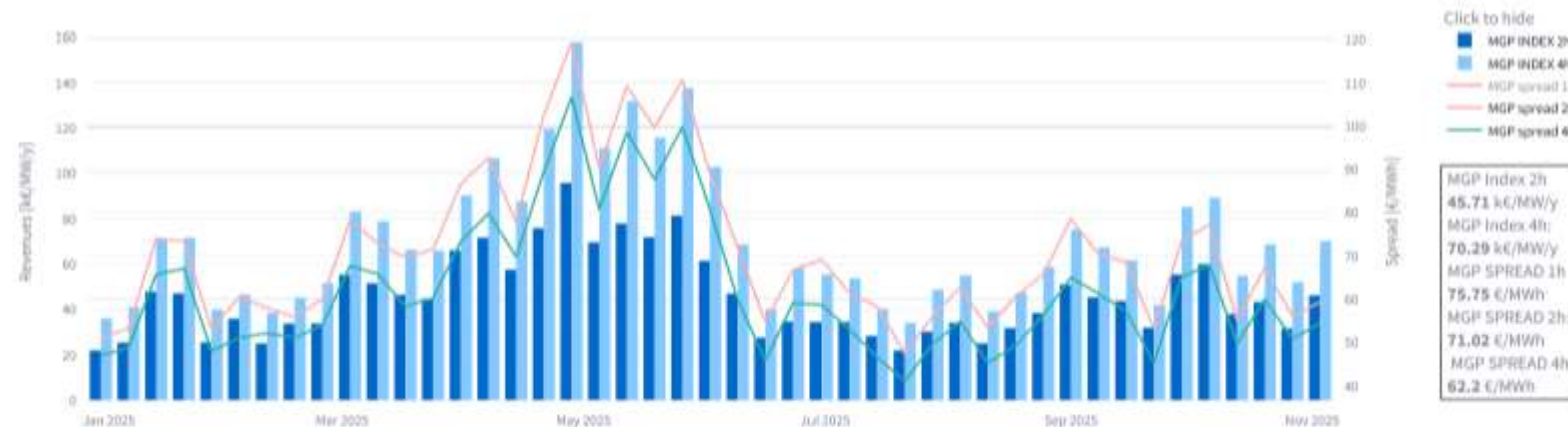


Elemens Index **MGP Index** Asset leaderboard Hourly profiles Daily Best asset ReadMe Login

From: 2025/01/01 To: 2025/11/19 Granularity: Weekly

Zone: PUN

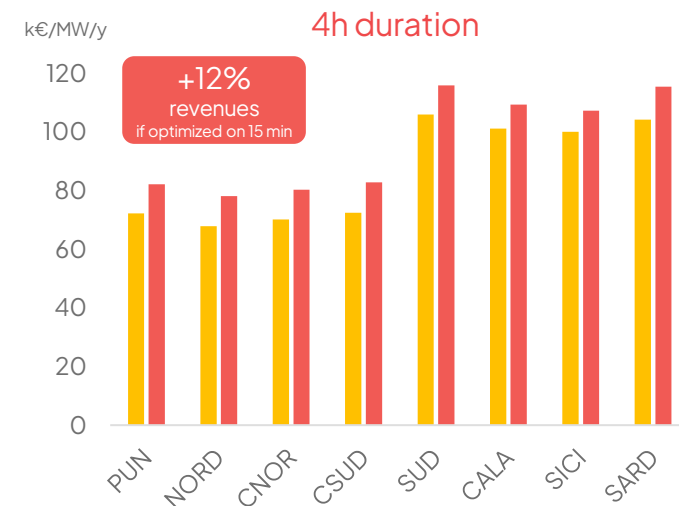
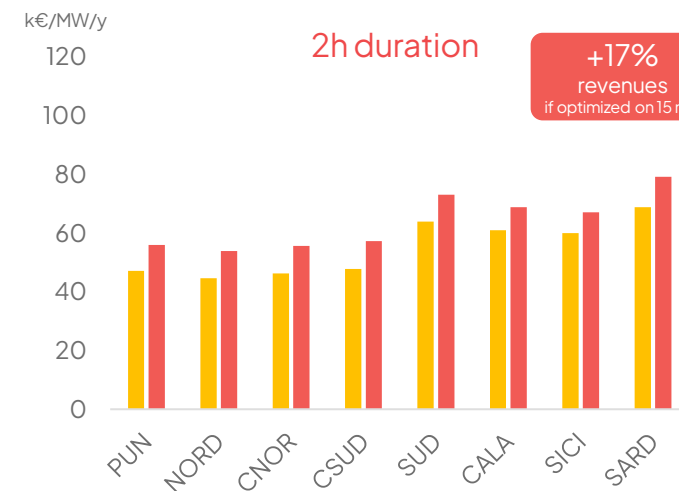
MGP INDEX



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15 minutes MTU
(DAM backtest - October)



Monthly ranking
of the top 10
assets by
margins



- DAM
- ID
- XBID
- ASM
- BM
- aFRR



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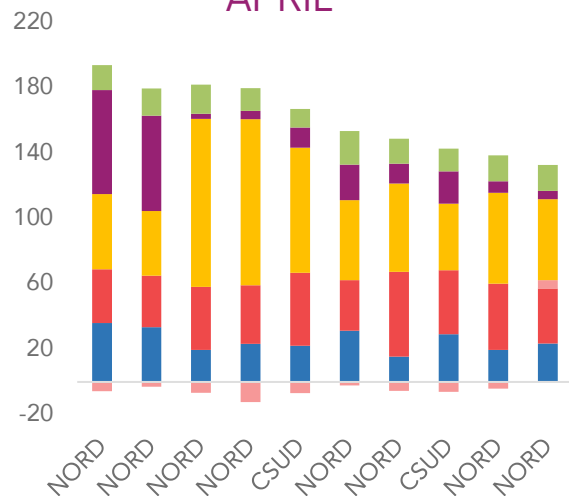
Elemens Index MGP Index **Asset leaderboard** Hourly profiles Daily Best asset ReadMe Login

Year: 2025 Month: May

Ranking	Asset	Zone	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	Net revenues (k€/MW/y)						
								Total revenues	MGP	MI	XBID	MSD	MB	RS
1 st	Asset 1	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	205.79	73.99	-6.51	3.73	-5.87	82.13	34.47
2 nd	Asset 2	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	188.94	19.44	-4.51	-1.52	-5.66	91.96	17.83
3 rd	Asset 3	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	185.10	84.30	5.54	-4.88	10.77	28.49	51.28
4 th	Asset 4	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	178.72	79.58	7.21	-1.38	11.95	16.18	106.78
5 th	Asset 5	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	176.81	81.06	8.46	-0.51	13.80	18.83	57.88
6 th	Asset 6	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	170.58	71.34	18.51	-0.39	18.53	11.94	54.75
7 th	Asset 7	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	167.99	80.04	-3.09	2.93	8.13	38.73	39.25
8 th	Asset 8	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	167.24	69.38	6.40	-0.76	19.97	11.81	57.33
9 th	Asset 9	NORD	Regulated revenues	Owner	Trader	Power (MW)	Duration (h)	166.81	75.28	12.34	-0.14	17.57	23.98	43.57

k€/MW/y

APRIL



Monthly ranking
of the top 10
assets by
margins



■ DAM
■ ID
■ XBID
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■ aFRR

Elements Index MGP Index **Asset leaderboard** Hourly profiles Daily Best asset ReadMe Login

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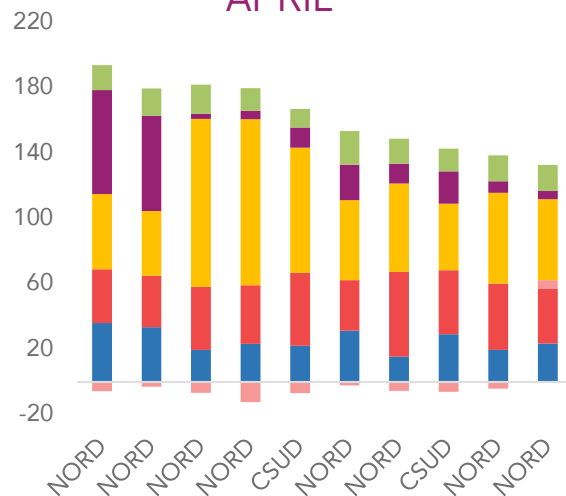
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9 th	Asset 9	NORD	1000000	Owner 9	Trader 9	100	1000	166.81	75.10	12.34	-0.14	17.57	23.98	41.57



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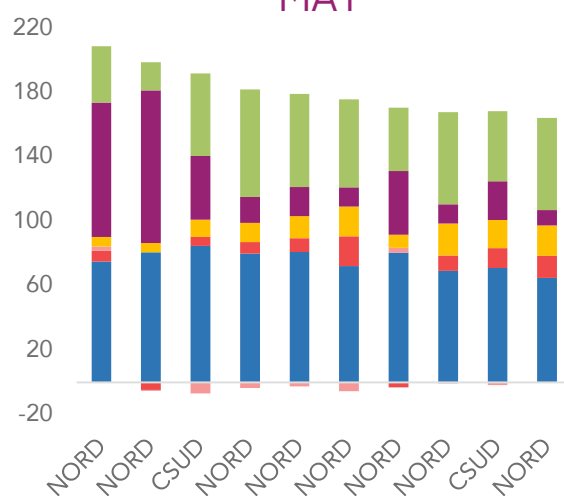
k€/MW/y

APRIL



k€/MW/y

MAY



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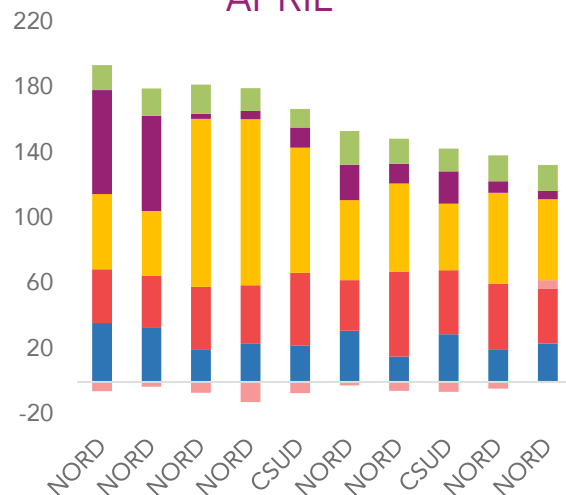
Elemens Index MGP Index **Asset leaderboard** Hourly profiles Daily Best asset ReadMe Login

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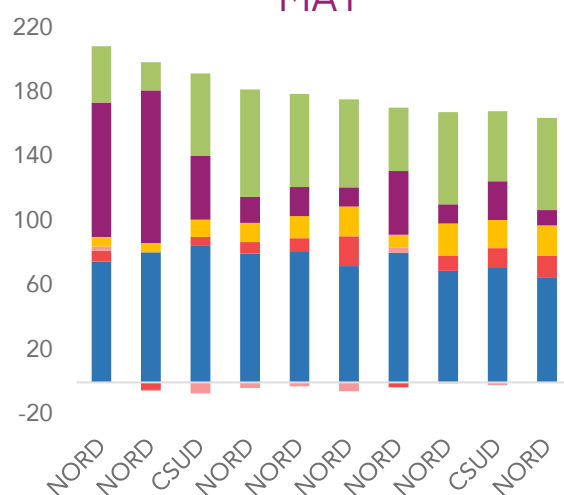
k€/MW/y

APRIL



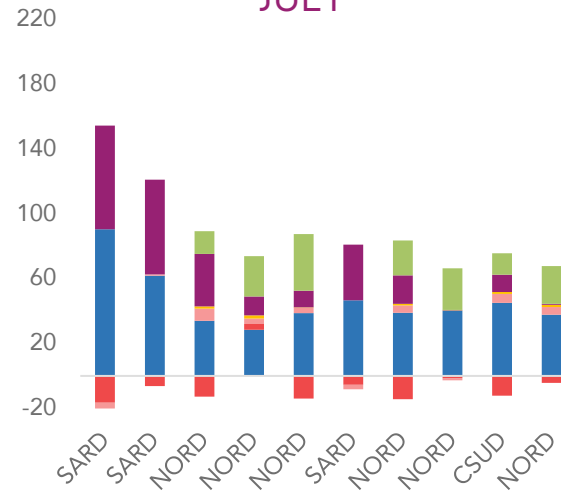
k€/MW/y

MAY



k€/MW/y

JULY



Monthly ranking
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Year:
2025

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May

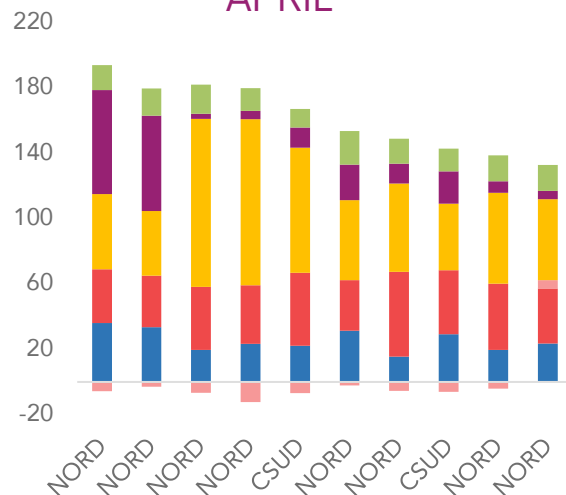
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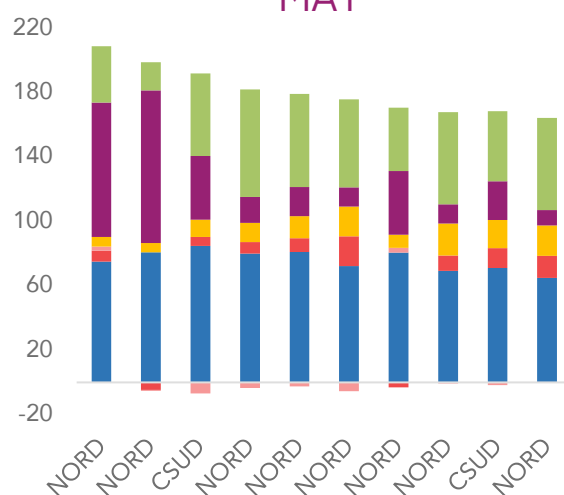
k€/MW/y

APRIL



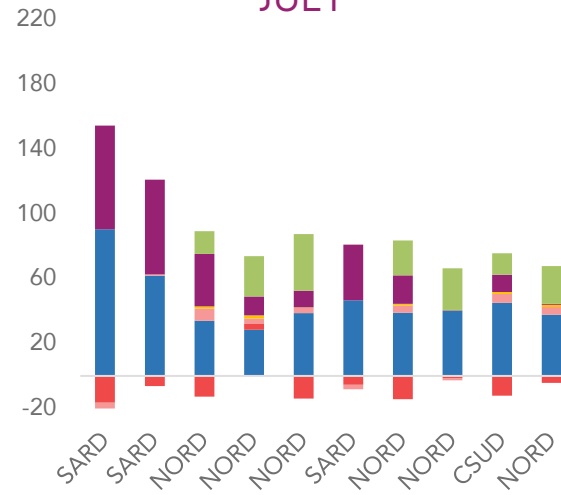
k€/MW/y

MAY



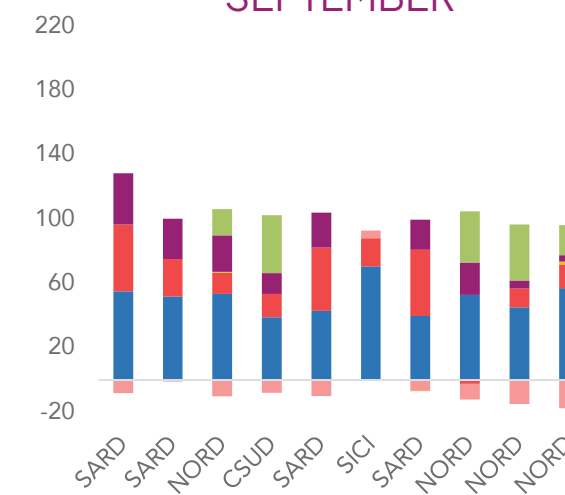
k€/MW/y

JULY



k€/MW/y

SEPTEMBER





Expected evolutions of the market



REGULATION

Starting January 2025, TIDE has entered into force. The new regulation will preserve the overall market structure while reforming the Ancillary Services Market to align Italian regulation with the European framework.



Market for balancing and re-dispatching (MBR)

Integrated Scheduling Process

MSD

MB

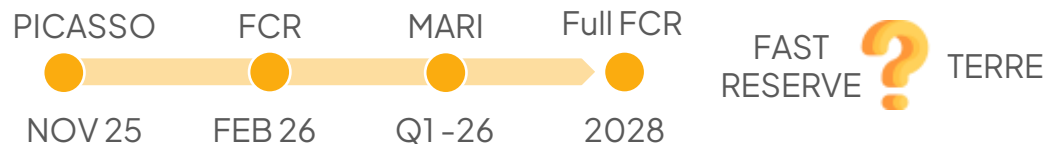
Balancing Platforms

aFRR
PICASSO

mFRR
MARI

RR
TERRE (?)

The full implementation of the TIDE should be completed within 2028 but the definitive timeline is still subject to adjustments. As of now:





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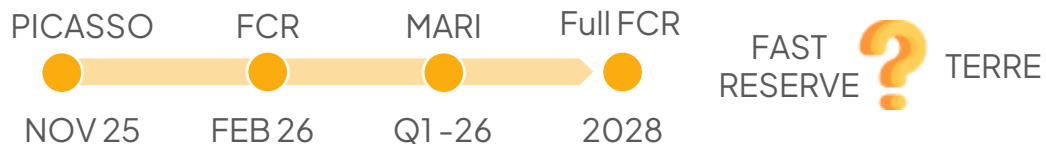
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NEW PLAYERS

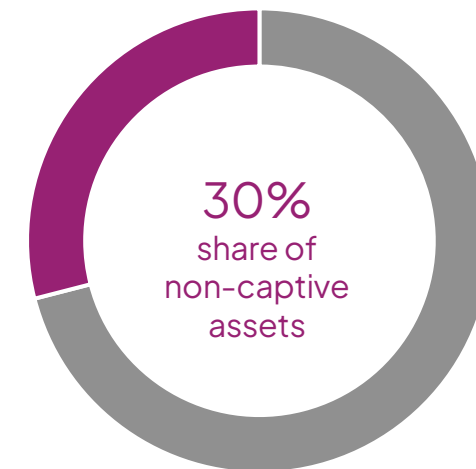
2025



As of today, most of the installed capacity is held by Enel and other operators with in-house capabilities to independently dispatch their assets, which are also managed through portfolio-based strategies.

2030

In the coming years, although the installed capacity owned by utilities and operators with internal trading desks is expected to grow, the share of capacity owned by operators who will need to rely on a third party to dispatch their assets will increase significantly. (2028 CM assets are not part of the pie)



How many tollings are around the corner?



- Especially in light of the results of the last MACSE auction, although not exactly overlapping, **the tolling (+Capacity Market) model is beginning to be perceived by many operators as a valid alternative**
- To date, there are many ongoing negotiations between off-takers and operators, but those in a **more advanced stage are few and mainly related to plants in non-MACSE areas or plants awarded by Capacity Market**: other tollings will be announced in the coming months, but **it will be very difficult for the volume to approach the quotas envisaged by the second MACSE auction**



Duration

5 – 15
years

Tolling varies from annual off-taking up to durations of more than 10 years: the contract duration is freely negotiable by the parties



Structure

Fixed

Only fixed part (€/MW) without upside

Floor + Profit sharing

Fixed part (€/MW) plus percentage on market margins

HIGH

Revenue stability

LOW

Market

Full

DAM + ID + ASM

Energy Only

DAM + ID

DAM

DAM



Bankability and risks

The financial strength of the off-taker could be a requirement for the bank to finance the project, as is already the case in PPA contracts for RES plants. These contracts might also require complex negotiations.



Hedging

As the underlying of the contract is not a commodity, hedging strategies are complex: off-takers are significantly exposed to price risk. There is no way for the offtaker to lock in revenues in the intraday/ancillary services markets in the long run.



The Italian way

The Italian market significantly differs from other EU markets. No negative prices, central dispatch, mixed portfolio/unit bidding are only few of the factors that must be discussed and regulated in the termsheet.

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Beyond Trading: Full-service optimisation for your battery

November 2025

ENCAVIS



Entrix's offer at a glance



AI-powered trading

- Market access services as BRP and BSP
- Asset-specific trading solution
- Market-leading performance



End-to-end support

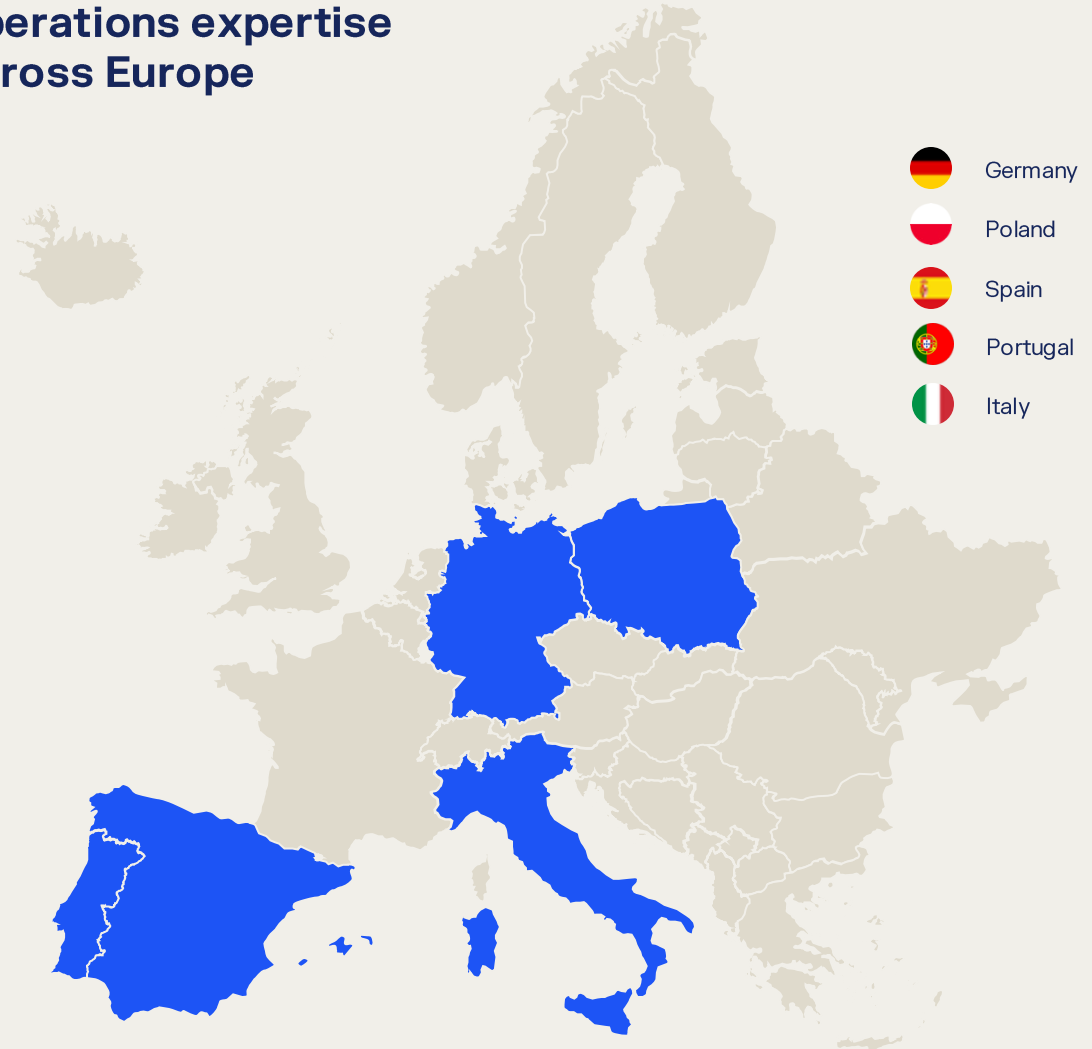
- Tailored commercial structures for your risk profile
- Asset registration & market operations
- 24/7 monitoring & service hotline



Network & support

- Access to banks and data providers
- Shaping regulation and energy transition
- Supporting in M&A processes

Entrix trading and operations expertise across Europe



2.5 GW

BESS assets contracted

>100

Employees

Offices in

Madrid, Milan, Munich, Warsaw

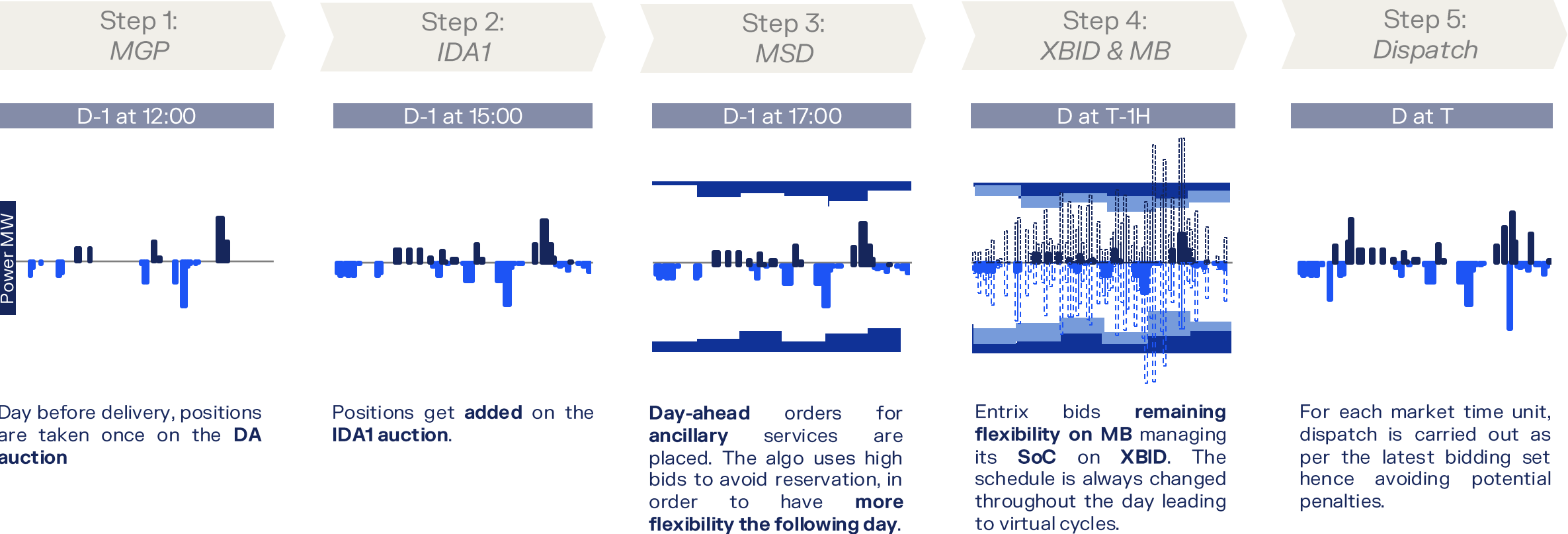


➤ Key aspects of the Italian Market



- Wholesale and part of ancillary markets are managed in **7 different market zones**.
- **Wholesale transactions** happen via the **GME** platform under a **pay-as-clear** zonal mechanism.
- **Ancillary services** are also managed through the GME platform, but remunerated by the **TSO (Terna)** at the **individual bid price**.
- In 2025, duration of product delivery and related settlement period has shifted **from 1 hour to 15 min**.
- European markets and TIDE reform:
 - **PICASSO** (aFRR) will be live from **EoY 2025**
 - **FCR**, currently mandatory, will become a remunerated service starting from **Q1-2026**
 - **MARI** (mFRR) should go operational in **2026**.

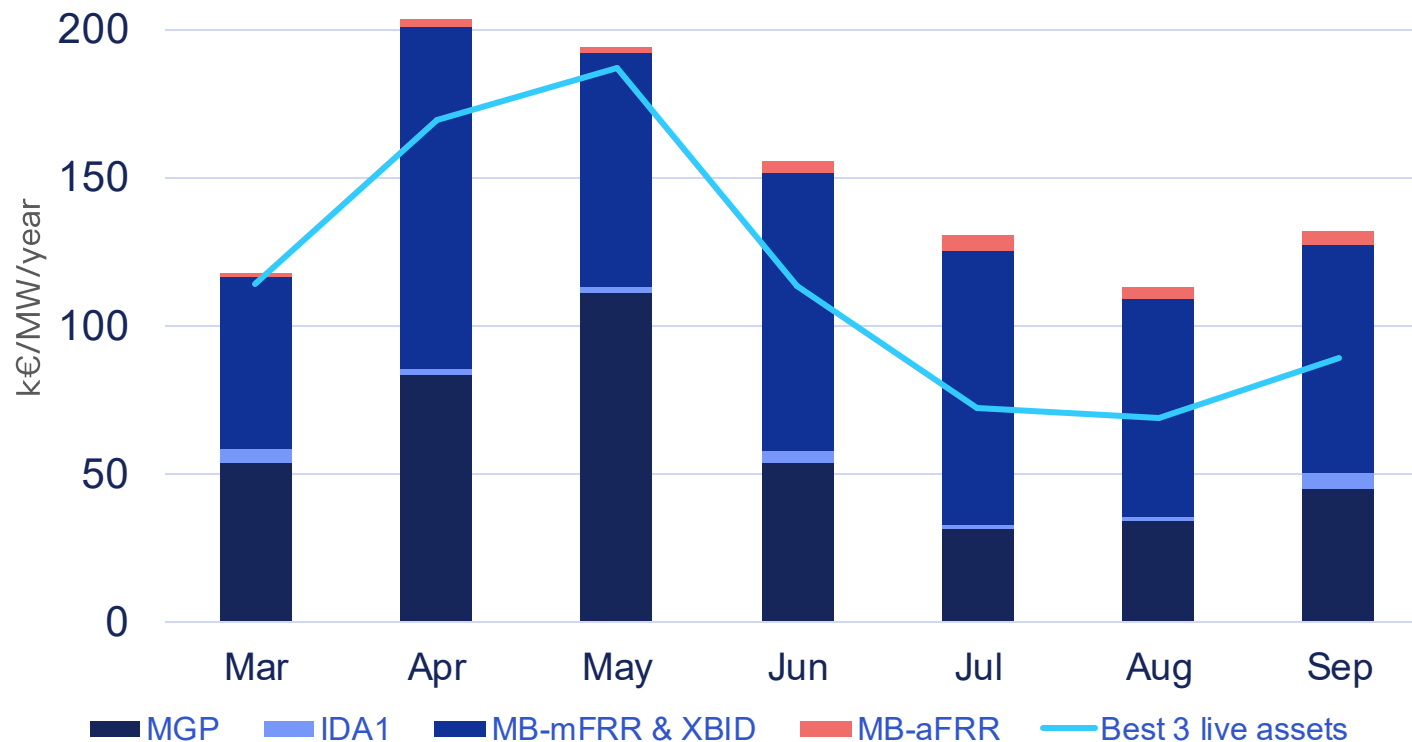
Entrix utilizes an advanced AI algorithm to continuously improve bidding positions on all markets in real time, while maintaining SoC in bounds



■ Power bought with delivery ■ Power sold with physical delivery ■ Power reserved for MSD ex-ante ■ Power activated in MB ■ Power bought without delivery ■ Power sold without delivery

Entrix's advanced algorithm beats the market, ensuring high margins even with low DA spreads

Entrix Algorithm vs 3 best-performing assets, North, 4h
Annualized cumulative monthly revenues at optimal cycling



- In North, Entrix's advanced algorithm achieved **+30% revenues** with respect to the 3 top-performing assets in the period considered at **150 k€/MW/y**.
- In North, optimal physical cycling for a **2h BESS** was around **1.5 cycle/day**, while for a **4h BESS** **~1 cycle/day**.
- **Intraday flexibility (MB, XBID)** was the **biggest component** of Entrix's revenue stack, registering 60% of the total.
- **Day-ahead spreads** are a very **volatile** component across the year: max monthly DA revenues were **>3x** the minimum ones.
- **Entrix acts as a hedge** against DA revenue drops, extracting high value on intraday markets even when DA spreads are limited.

Wrapping up and looking ahead



- The Italian BESS market is already showing **promising numbers** with the best assets averaging 115 k€/MW/y in the spring-summer period.
- Entrix can already **outperform the market** thanks to its advanced algo-trading technology and reach much higher values.
- **Intraday flexibility** is key to achieve this result even when DA spreads are low.



- The next months should show an upside due to the shift of the **DA market to 15 minutes**.
- Further potential will be offered by the opening of **new ancillary services markets**: FCR, PICASSO, MARI.
- Entrix already has experience in these markets, placing it in an **ideal position** to extract the most value there.



We look forward to hearing from you



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Business Development Manager Italy

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webinars

Battery optimization for a secure revenue structure

Q&A



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Editor
pV magazine



Francesco Benetti
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Entrix



Salvatore Alessandro Casa
Partner
Elemens



Erik Landström
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Ireland surpasses 2 GW of installed solar capacity

by Blathnaid O'Dea



**Most-read
online!**

'It's not a matter of sodium versus lithium, we need both'

by Emiliano Bellini



Coming up next...

Friday, 21 November 2025

3:00 pm – 4:00 pm CET, Berlin

9:00 am – 10:00 am EST, New York City

Monday, 24 November 2025

9:00 am – 10:00 am GMT, London

10:00 am – 11:00 am CET, Berlin

Many more to come!

**Optimized for
LCOSuccess: 750+ Ah
cells in 10-foot
containers, the next
generation of scalable
storage**

**The future of
intelligent energy
management with
SolaX XHub**

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Registration, downloads
& recordings are also be
found there.



Week Europe

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pv magazine
WEEK EUROPE

REGISTER FOR FREE

VIRTUAL EVENT

December 1 - 4
2025

The banner features a background image of a solar farm with rows of solar panels stretching into the distance, bordered by green trees. The text "pv magazine WEEK EUROPE" is prominently displayed in the upper center. Below this, on the right, is a QR code with the text "REGISTER FOR FREE" underneath it. On the left, there is an icon representing a virtual event (a group of people in a video call window next to a calendar icon with a checkmark) and the text "VIRTUAL EVENT". The dates "December 1 - 4 2025" are positioned in the lower right area of the banner.

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Sergio Matalucci
Editor
pV magazine

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