



**Energy  
Storage**  
NEWS

# WEBINAR

## How flexibility is the key to powering sustainable returns from battery storage in the UK and Ireland

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Sponsored by **enel x**



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# Flexibility: Key to powering returns from storage in GB & Ireland

*Presented by*

**Wayne Davies**

Programme Manager, Energy Markets  
Enel X UK

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**Energy Storage News Webinar**

October 12, 2022



# Enel X is guiding our clients through global macro trends reshaping the world...



## DECARBONIZATION & RESILIENCY

**GHG** emissions need to be contained in order to limit global warming to **1.5°C** (SDGs)

### ? HOW TO

- Lower carbon footprint?
- Increase business resiliency?
- Grant long term financial stability?

Source: [WEF the Global risk report](#)

## ELECTRIFICATION

By 2040 there will be a **60%** increase in global **electricity demand**

### ? HOW TO

- Reduce energy costs?
- Increase flexibility?
- Optimize industrial and energy consuming processes?

Source: IRENA, BNEF, IEA, and Bernstein estimates and analysis

## DIGITAL DISRUPTION

The **demand** for **digital technologies** is estimated to grow by **55%** by 2025

### ? HOW TO

- Optimize energy purchase?
- Get insights from integrated visibility?
- Reduce administrative burden?
- Improve customers experience?

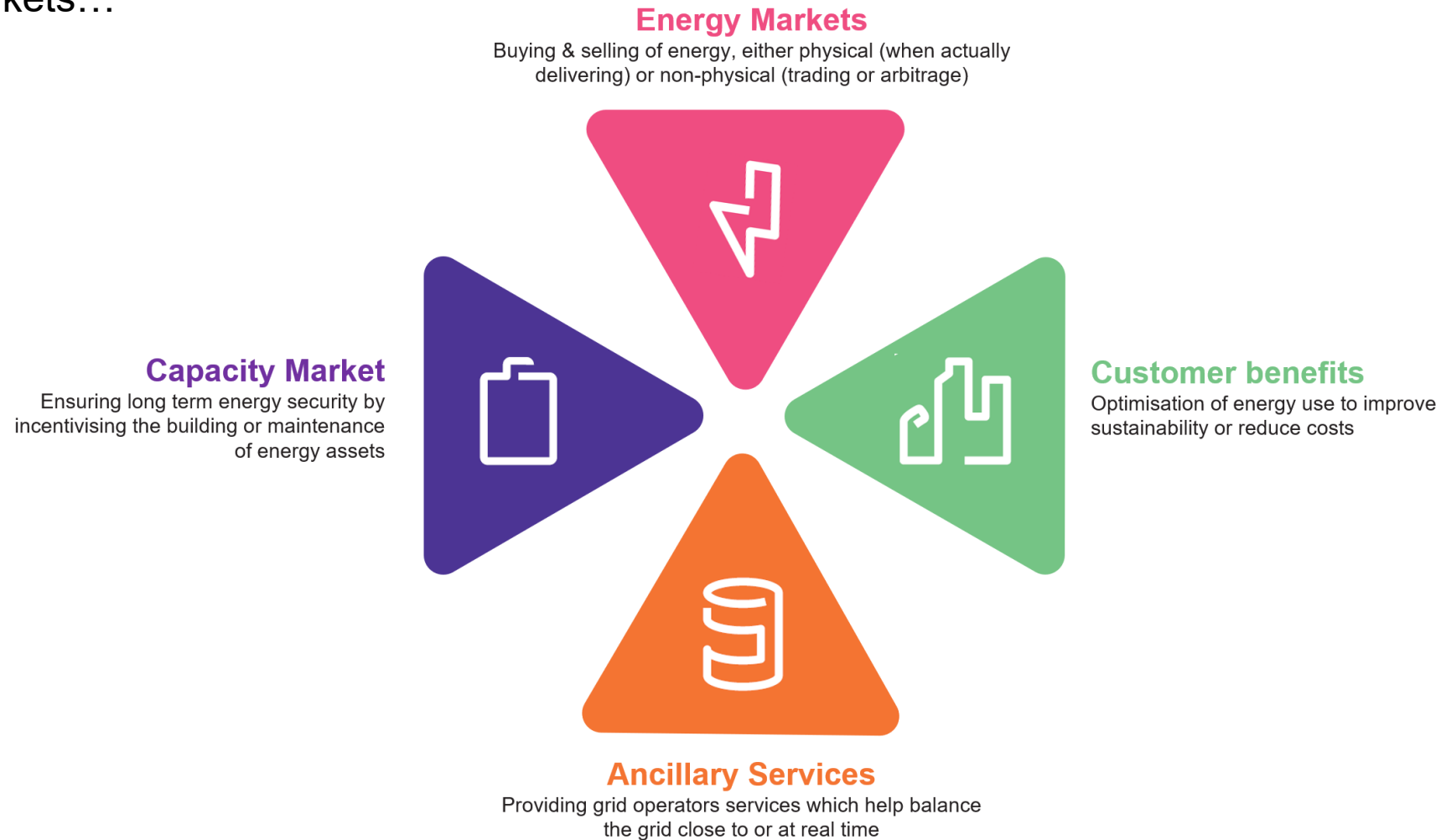
Source: [Accenture, disruption must not to be an enigma](#)

# GB Flexibility markets

A complex & constantly changing landscape...



Four main markets...

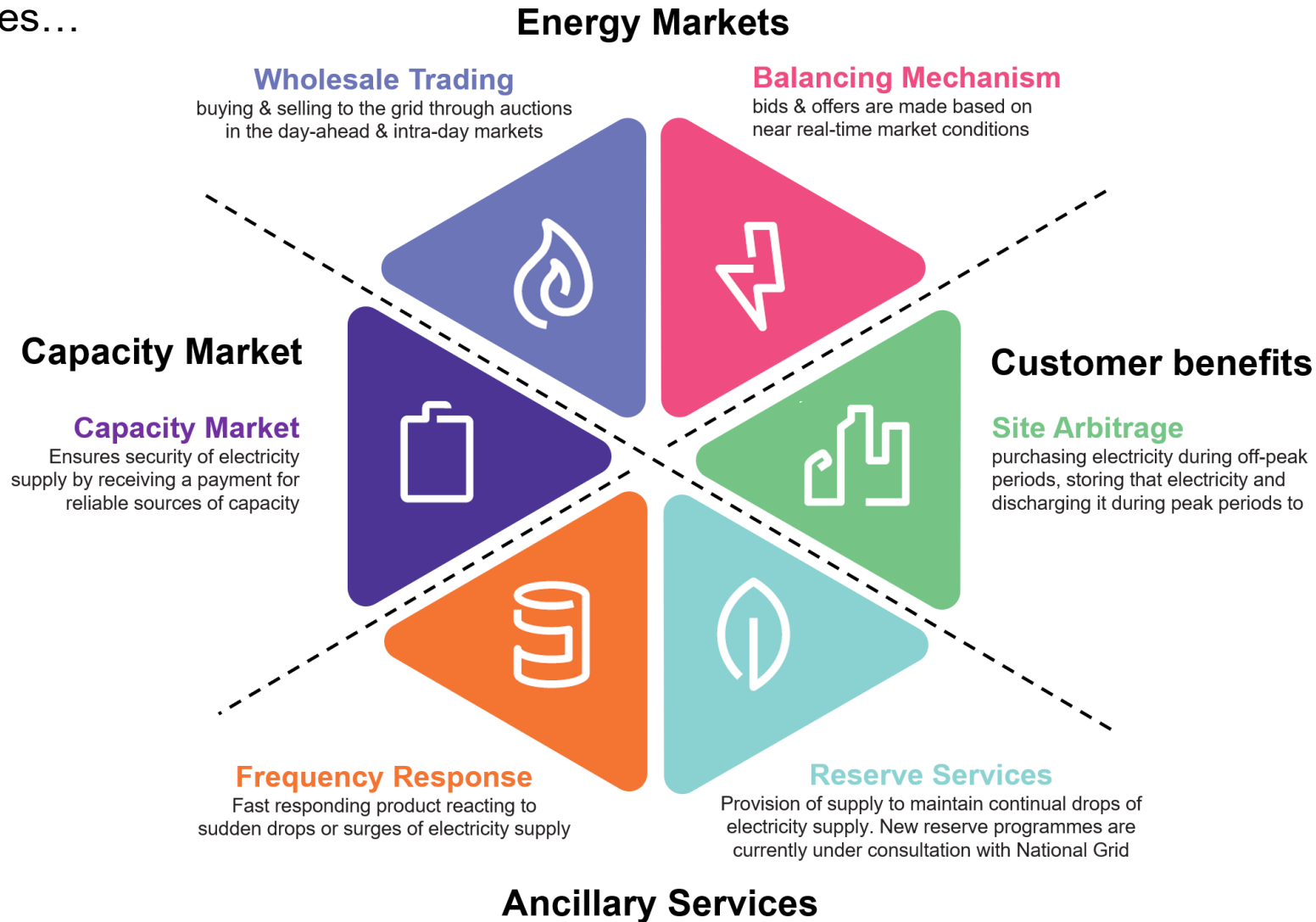


# GB Flexibility markets

A complex & constantly changing landscape...



Many sub-programmes...





# ... with many options for maximizing returns

Asset location & operating parameters adds further complexity



Behind or in front of the customer meter?



Demand  
curtailment



Generation assets



Energy storage



Renewable energy  
generation



Infrastructure

Answer to managing market & asset complexity?



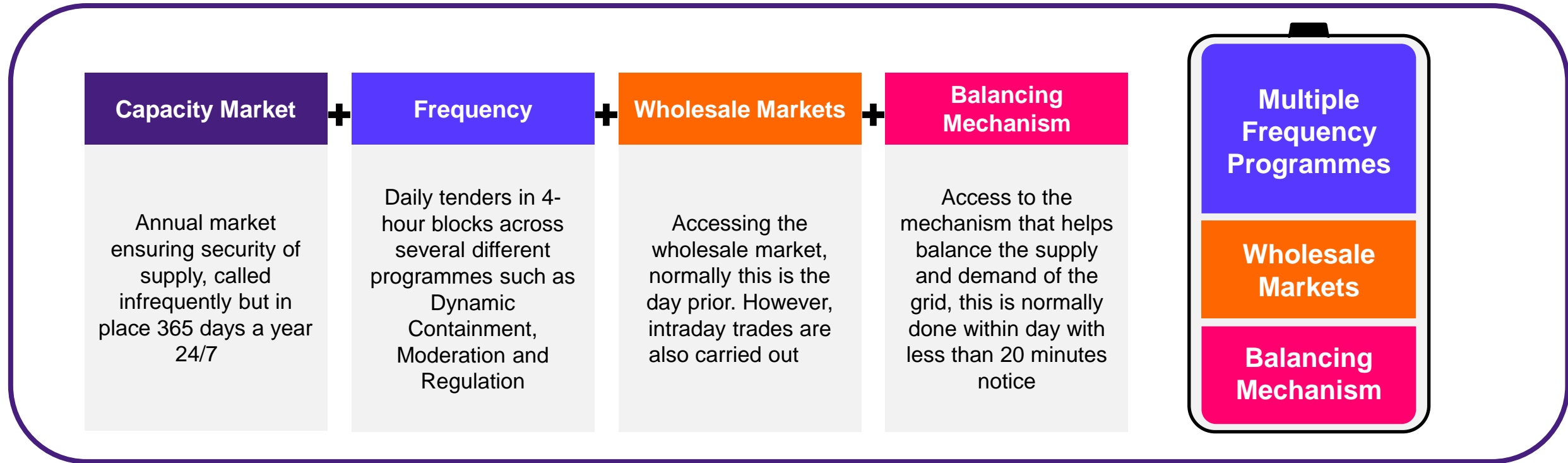
# Optimiser with the experience to get you in the right market at the right time to maximise revenues

# The Answer: Layered Optimisation

Storage derives its value by layering several value streams



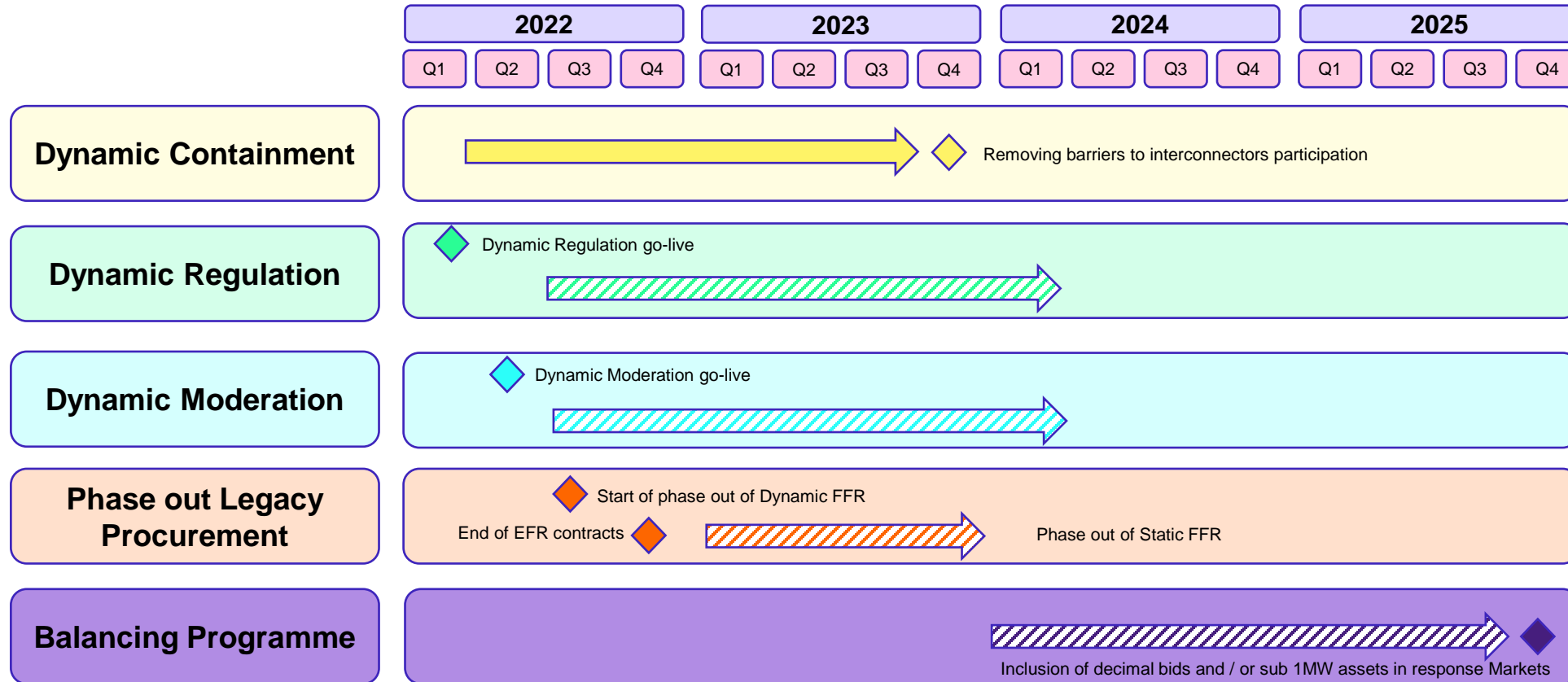
To access them typically requires an experienced partner that knows what value streams are available and how to participate.



To participate in all value streams, battery capacity must be intelligently allocated for different use cases daily. It is key to be in the right place at the right time.

# Evolution of GB Flexibility Markets

Example of how frequency has changed in 12 months





# Trading Strategies

Steps to develop a set of bidding strategies tailored to client's needs

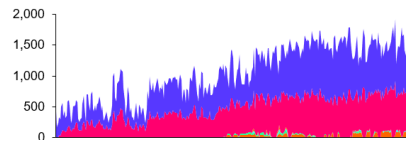


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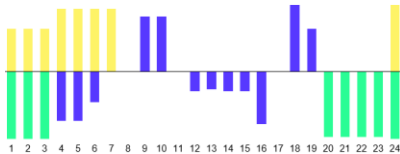
## Market analysis

### Market data

Daily-average DC, DM and DR procurement (MW)



### Assets behaviour



### Other techs & markets



2

## Programmes selection

Wholesale

Dynamic Containment

Dynamic Moderation

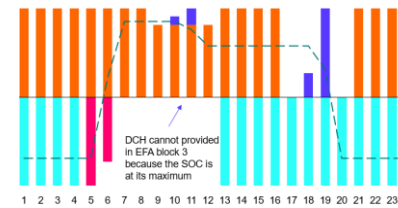
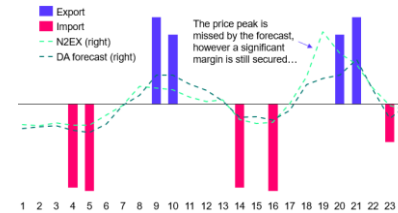
Dynamic Regulation

Reserve

Balancing Mechanism

3

## Testing bidding strategies



4

## Selection set of strategies

High risk

Medium risk

Low risk

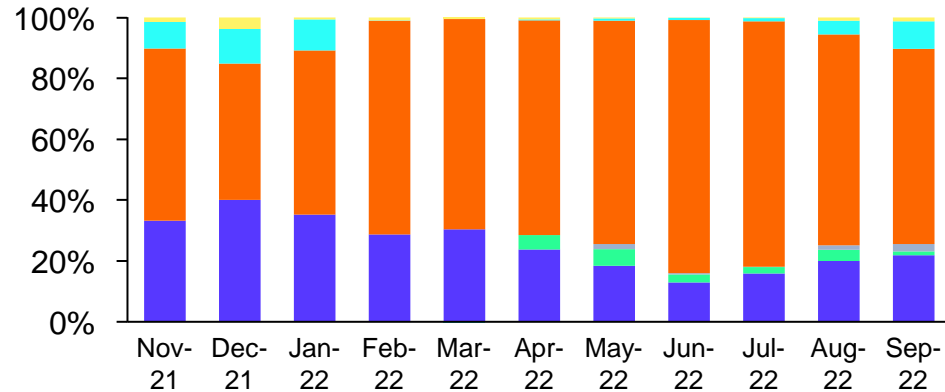
# Snapshot of market trends

Frequency programmes continue to be the most appealing markets to batteries

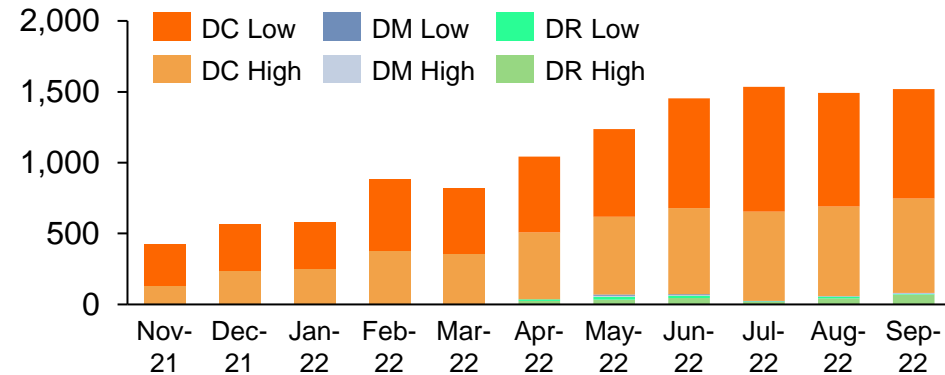


BM Wholesale DC DM DR FFR

Indicative gross margin breakdown for GB BESS portfolio (%)

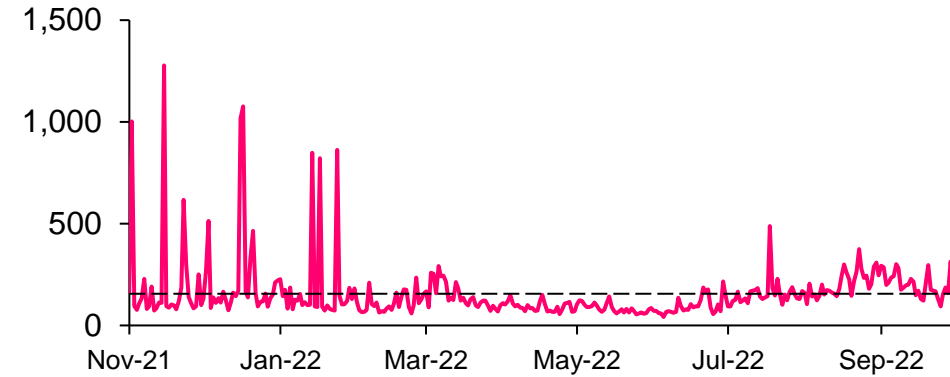


Average contracted volumes in DC, DM and DR (MW)

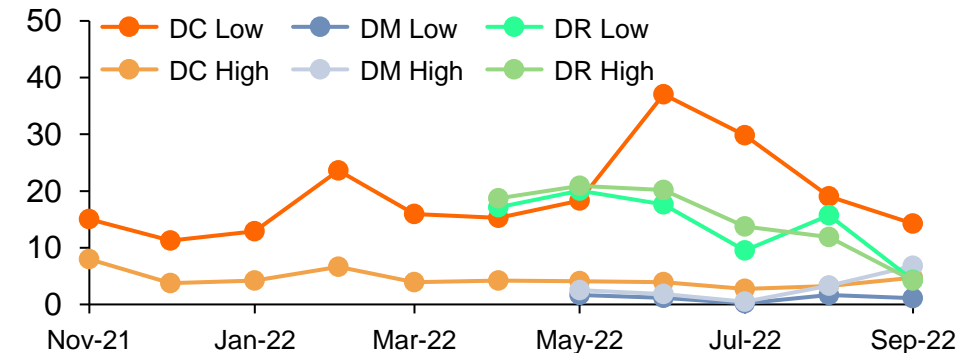


DC: Dynamic Containment, DM: Dynamic Moderation, DR: Dynamic Regulation, EFR excluded from the analysis  
Average availability payments are calculated across all EFA blocks

Daily N2EX price spreads (GBP/MWh)



Average availability payments in DC, DM and DR (GBP/MW/h)

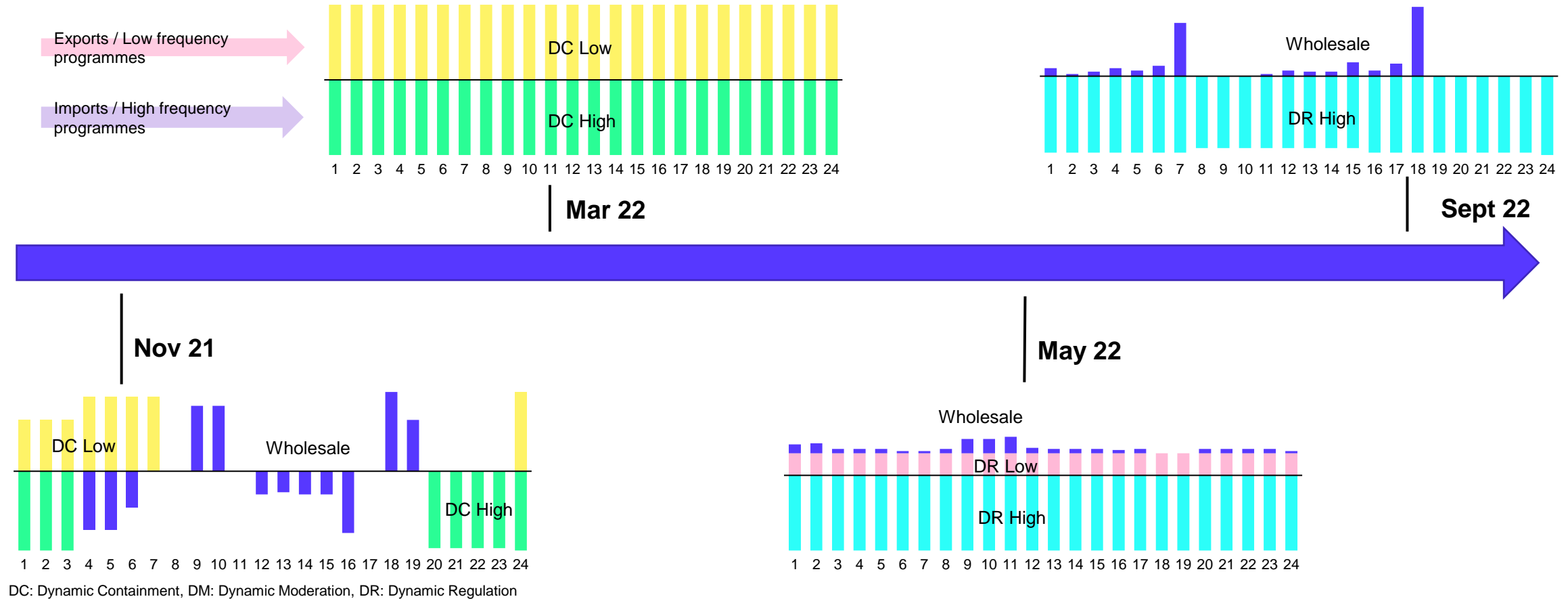


# Evolution of FTM BESS bidding strategies

The most advanced bidding strategies have been adapting to evolving market conditions

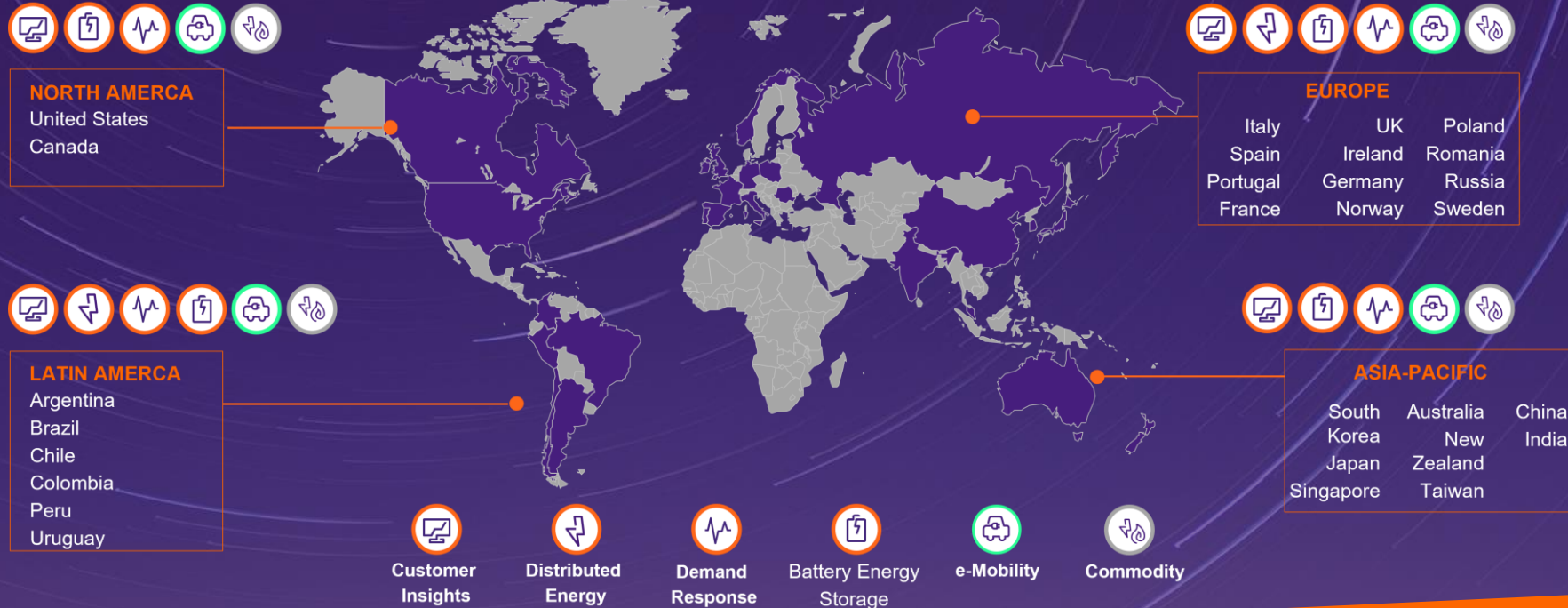


Wholesale, DC, DM and DR stacking by hour of the day





# We have the expertise & are a trusted partner to many organisations globally...



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enel

enel x

# The Enel Group is recognized as a trusted player in the electricity sector...



**510 TWh<sup>3</sup> energy distributed**  
1<sup>st</sup> network operator<sup>1</sup>



**0,3 M<sup>3</sup> charging points**



**53 GW RES capacity (59% on total)<sup>3</sup>**  
World's largest private player<sup>2</sup> in renewables



**68 B€**  
Market cap @Dec 2021  
**19 B€<sup>3</sup> 2021 EBITDA**



**69 M customers**  
Largest retail customer base worldwide



**66 K<sup>3</sup> employees**  
Among top 20 Equileap ranking for gender equality



**8 GW**  
World leader in Demand Response



**15+ B€**  
Energy spend under management

<sup>1</sup> By number of end users (publicly owned operators not included)

<sup>2</sup> By installed capacity

<sup>3</sup>2021 Results



# Enel X guides businesses, cities and people through the energy transition



## Our Mission

Assist our customers in their decarbonization process and in a more efficient use of energy, through electrification and digitalization



## Our Vision

To be the preferred energy solution partner for businesses across the globe. Creating new value by offering new products and services

Enabling a sustainable progress.  
**TOGETHER**

# Our diversified offering...



## e-City

Smart Lighting

E-Powered Public transport

Digital Services

Urban design



## e-Industries

Customer Insights

Distributed Energy Generation & Infrastructure

Battery Energy Storage solutions

Demand Response



## e-Home

Onsite generation

Home Assistance

Smart devices



## e-Mobility

Public chargers

Private chargers

Smart Energy services



## Financial services

Payments

PayTech Factory

Microloans



## Ultra Broadband

Fiber to the business

Fiber to the home

Fiber to the tower

# ...is consolidated by a proven track record...



## e-Industries<sup>1</sup>

The trusted energy partner for businesses

**15+ B€**  
Energy spend under mgmt

**3.5 GW**  
Green PPA transacted

**158 MW**  
Energy generation asset

**375 MW**  
Storage installed capacity

**7.7 GW**  
Demand response

## e-City<sup>2</sup>

An ecosystem of digitalized infrastructure and innovative services

**2.8 Mn**  
Streetlights

**1.821 (k)**  
e-buses awarded/contracted

**813 (#)**  
Chargers

## e-Home<sup>2</sup>

A sustainable ecosystem accessible to all

**3.6 Mn (#)**  
active maintenace & repair contracts

**1.1 Mn (#)**  
Micro insurance active contracts

**159: K (#)**  
HVAC installations

**34.7 K (#)**  
Smart home products sold

## e-Mobility<sup>2</sup>

We envision electrification of public and private transport

**17.5 (k#)**  
Public charging points

**120.5 (k#)**  
Private charging points

**118.6 (k#)**  
Available charging points on Juicepass app

**134.9 (k#)**  
N.Unique downlaods Juicepass app

## Financial services<sup>2</sup>

Instant and digital payment services to residential and business customers

**220.0 (k)**  
Digital customers

**0.9 Mn**  
Cards issued

**7.9 k**  
Proximity network points

**6.8 Mn**  
Payment transactions

**8.9 M**  
Transactions (including partner's)

## Ultra Broadband<sup>2</sup>

Create value through fiber by leveraging synergies with Enel Group's distribution network

**77.5 k**  
Deployed

**585 (#)**  
Antennas

**110.0 k**  
households passed

<sup>1</sup> FY2021 data

<sup>2</sup> Q3 2021 data



# Get in touch



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