



**Energy transition and  
flexibility opportunities**

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# Elia Group

## REGULATED ACTIVITIES

## NON-REGULATED ACTIVITIES

  
**Grid management**

  
**System operations**

  
**Market facilitation**

  
**Trusteeship**



- Northern/Eastern Germany TSO operator
- On- and offshore transmission systems
- 80% owned by Elia Group (20% KfW)
- Monopolistic position in Northeast Germany



- National TSO
- On- and offshore transmission systems
- 99.99% owned by Elia Group
- Monopolistic position in Belgium



- 50/50 JV between Elia and National Grid (UK)
- Grid interconnection between BE and UK
- 50% owned by Elia Group



- International energy market consultancy and engineering services

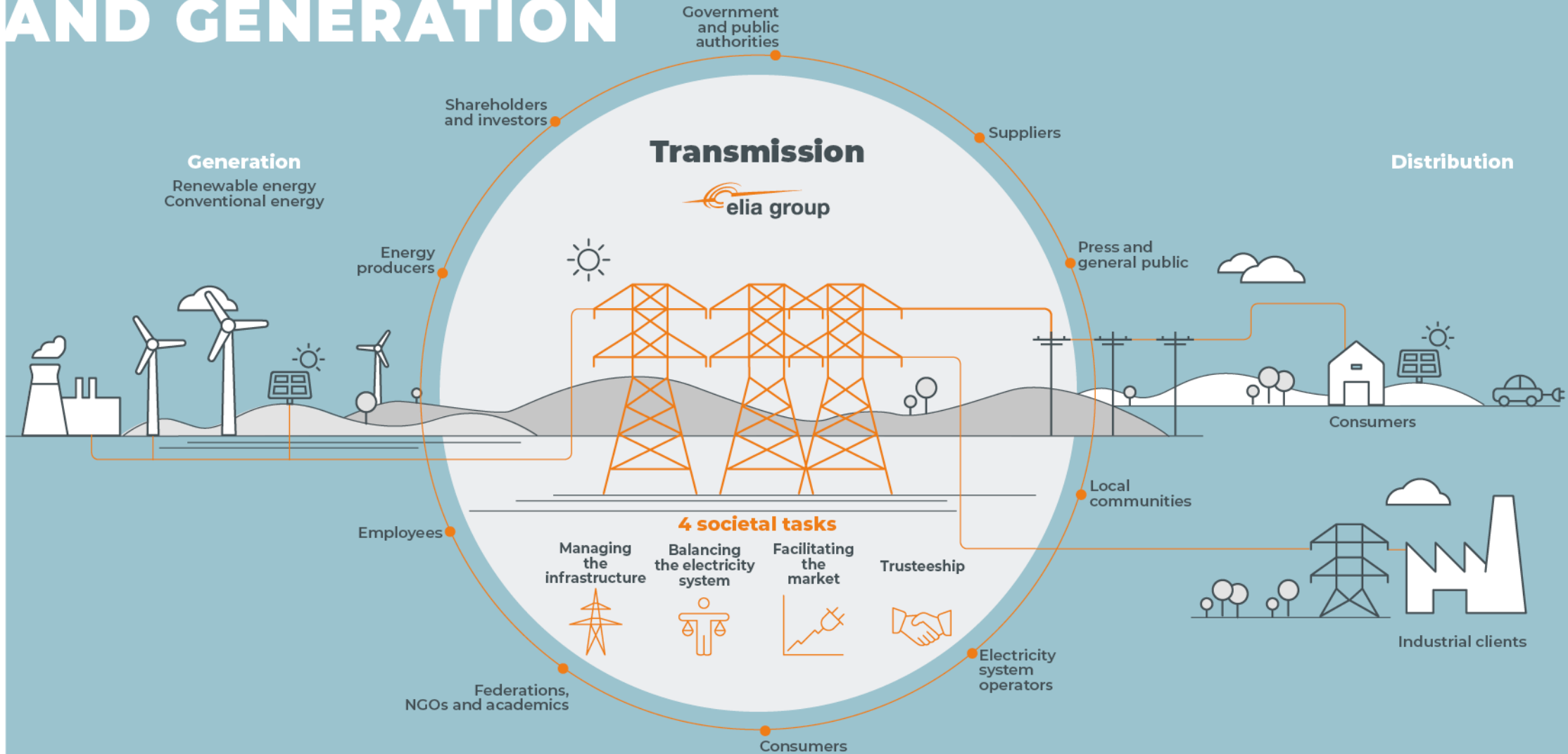


- European market platform
- Exchange and valorisation of data and digital services
- 100% owned by Elia Group



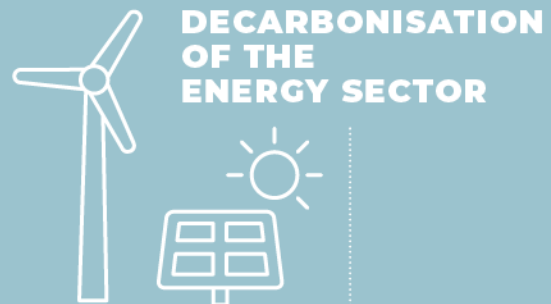
- 100% subsidiary of Elia Group
- Focusing on international offshore developments

# WE CONNECT DISTRIBUTION AND GENERATION



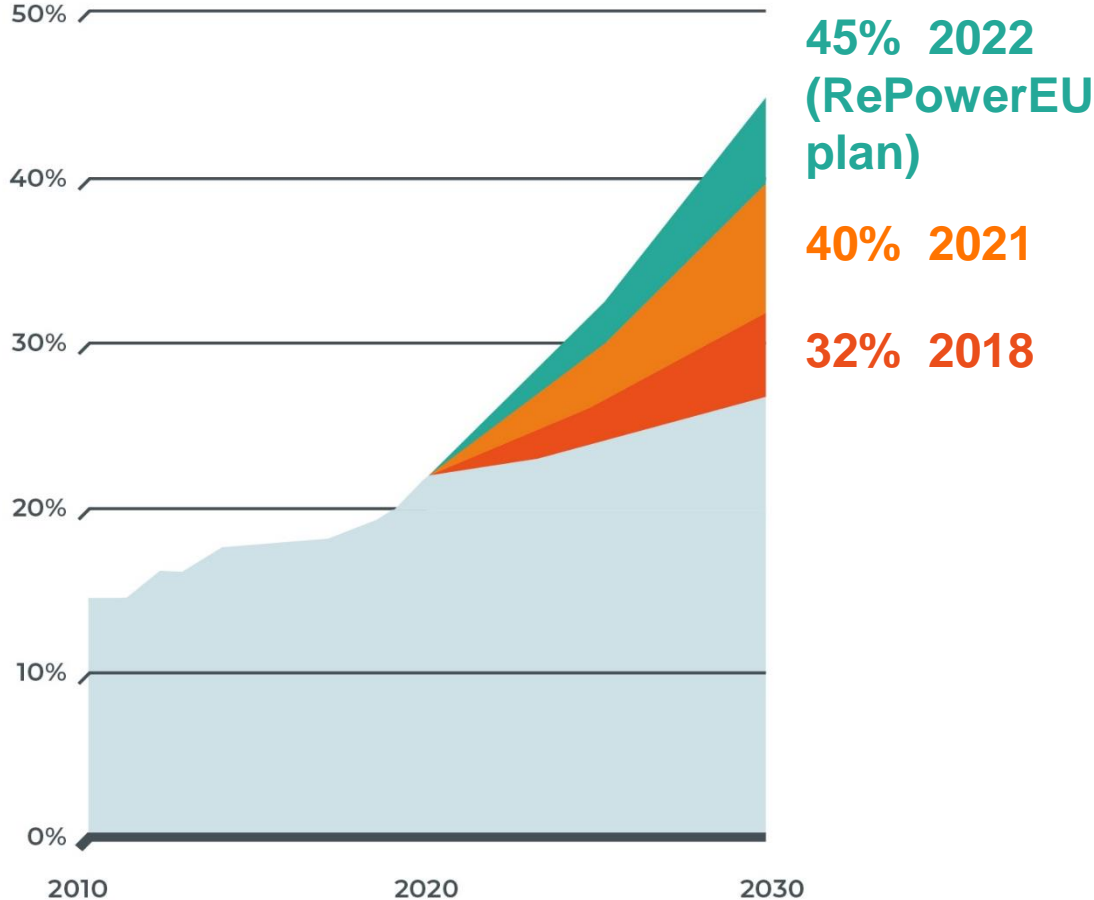
# The big picture

# KEY INDUSTRY MEGATRENDS



**DIGITAL  
TRANSFORMATION**

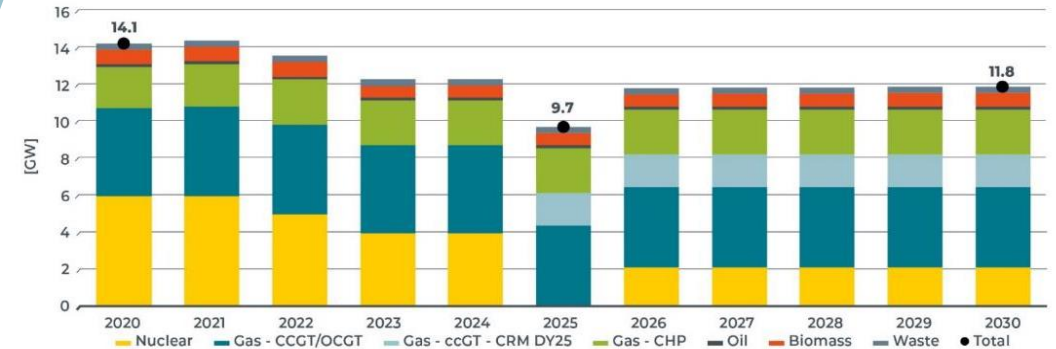
# Societal relevance of accelerating the energy transition



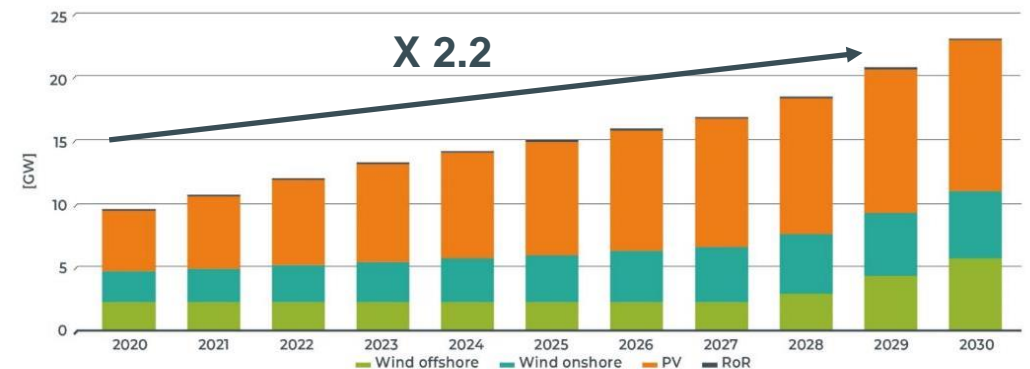
# Strong evolving generation mix in Belgium

- 1 Partial nuclear phase-out
- 2 Commissioning of new capacity (1.8 GW) contracted from the first CRM auction
- 3 More than double as much RES in the system by next decade  
From 2.3 to 5.8 GW offshore capacity  
From 5 to 10 GW of solar PV

Evolution of installed thermal capacity in Belgium at the end of the mentioned year [GW]



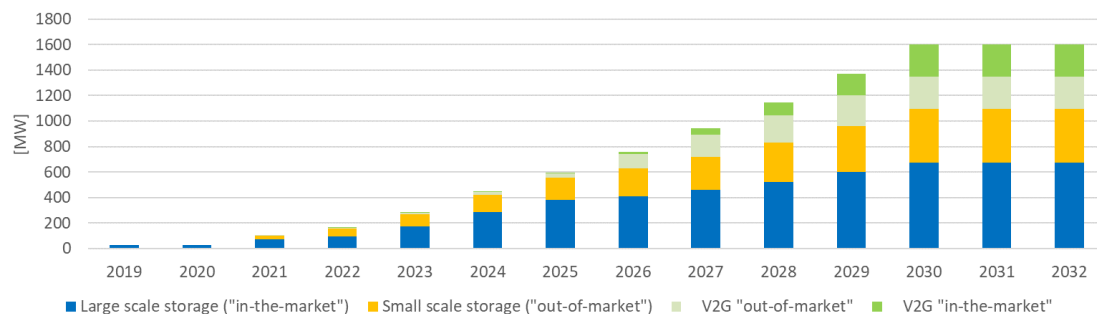
Evolution of installed renewable energy sources capacity in Belgium at the end of the mentioned year [GW]



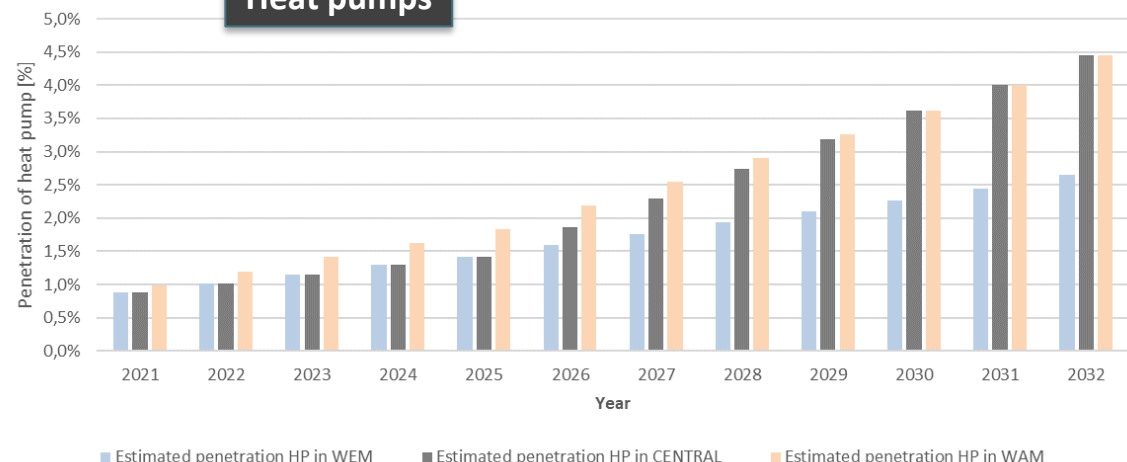
# Massive electrification in the coming years due to technological evolutions

## Storage

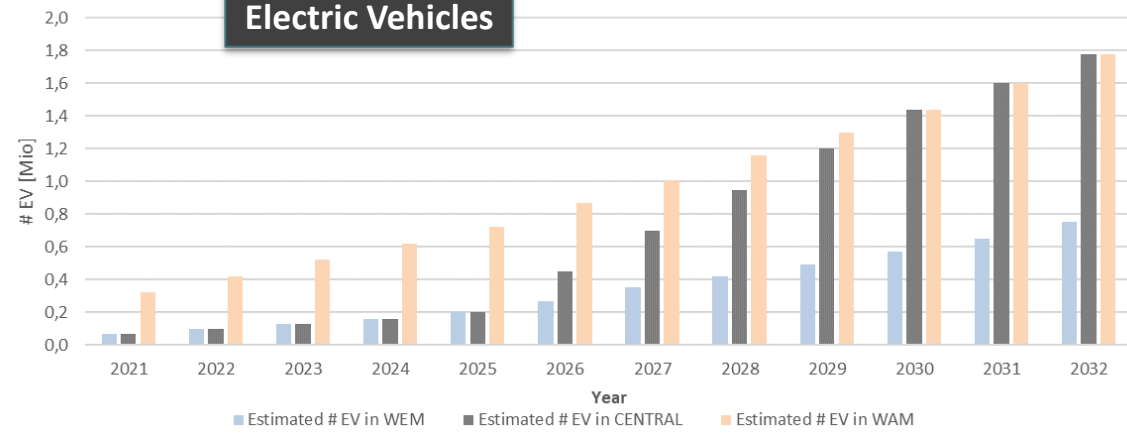
Evolution of installed capacity of "other storage facilities" - split per category



## Heat pumps



## Electric Vehicles



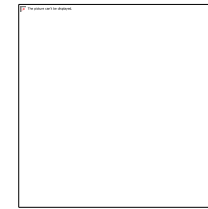
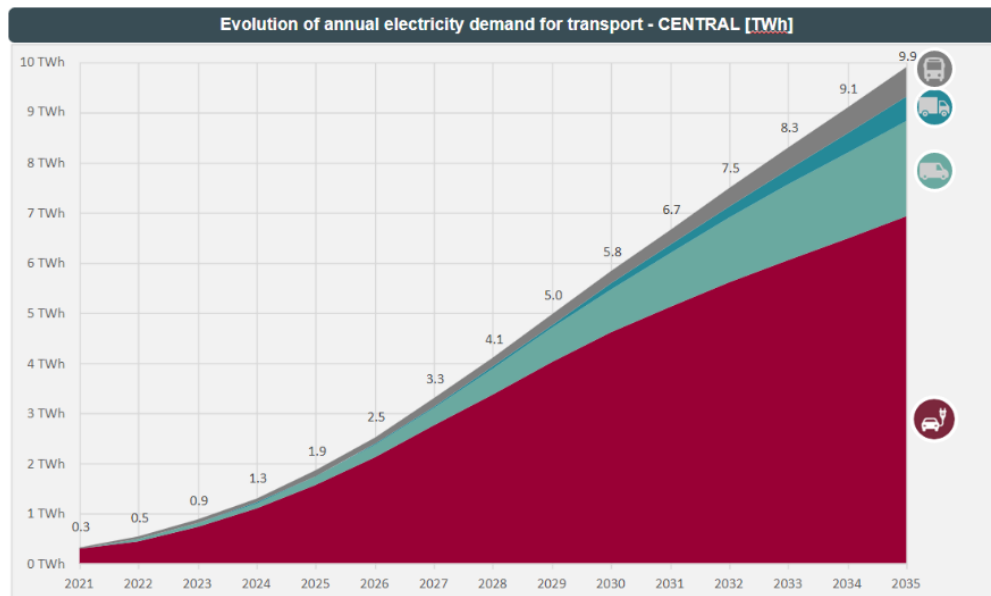
\*Source: ELIA Adequacy Flex Study 2021



# Industry and mobility are driving the increase of the consumption in Belgium...

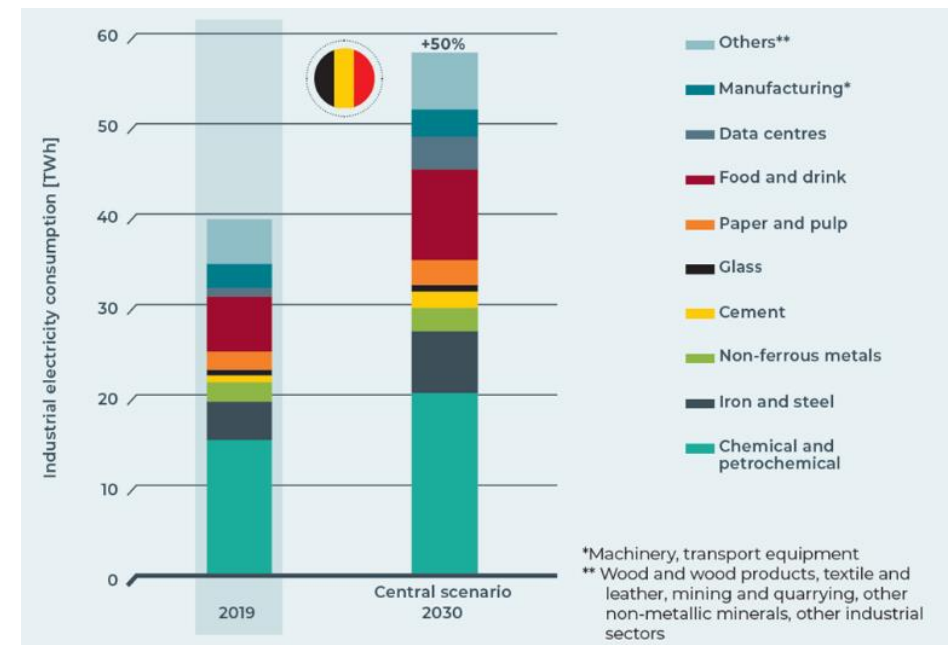


+10TWh



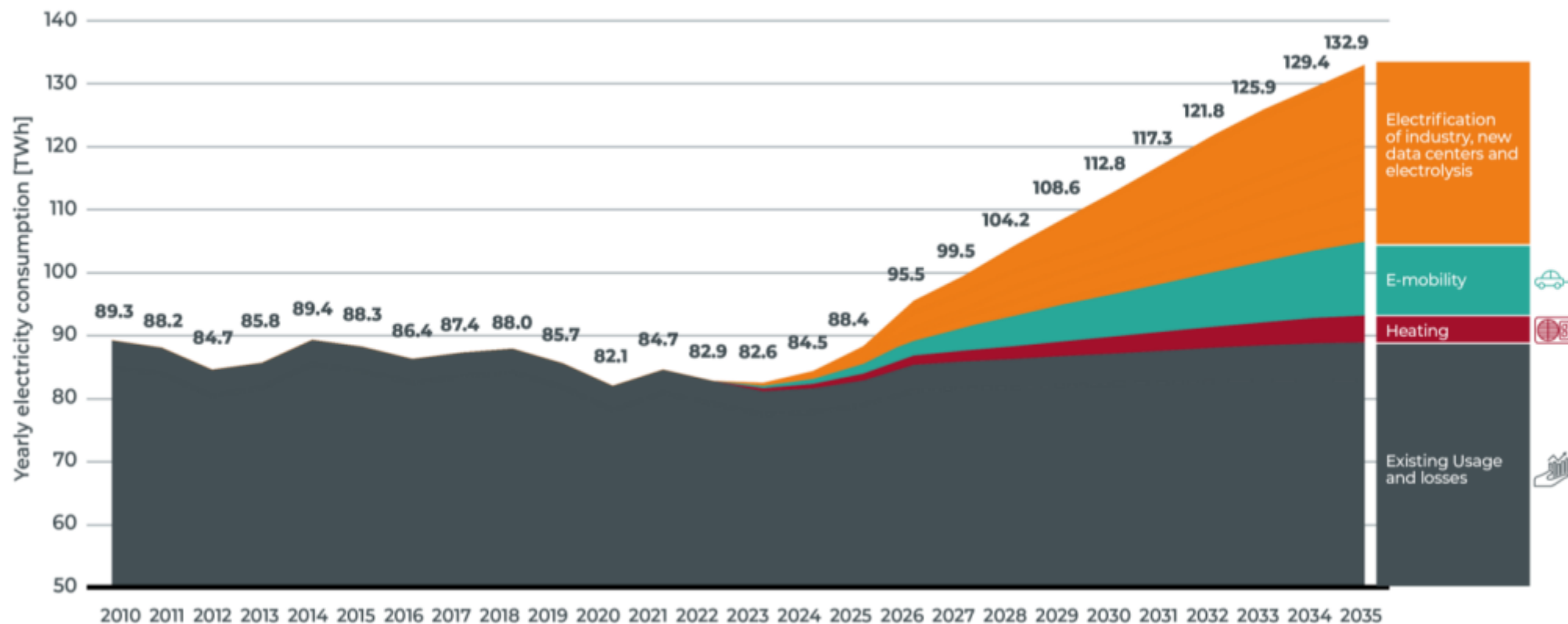
Industry electrification

+20TWh



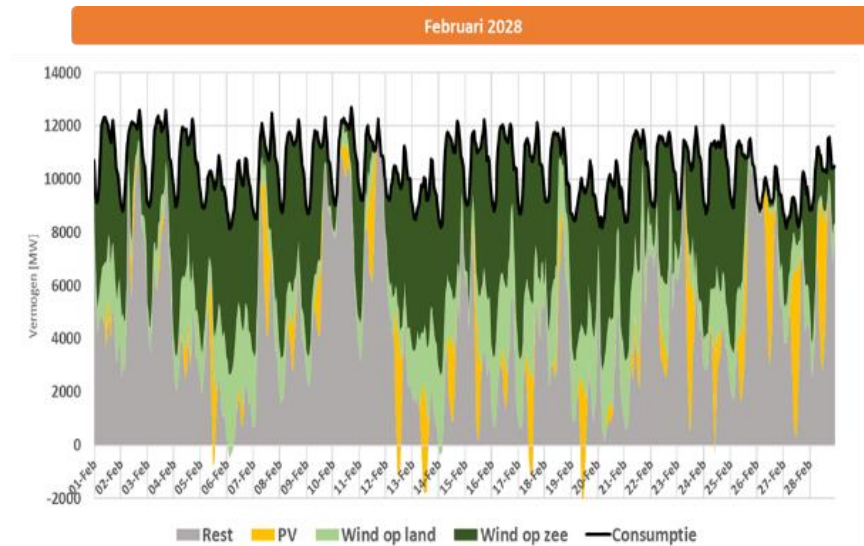
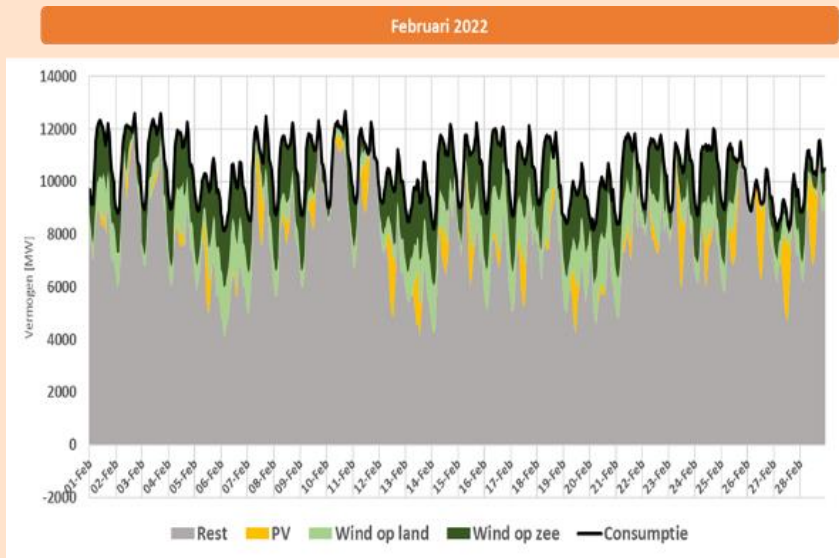
# Leading to 133TWh of final demand in Belgium by 2035

HISTORICAL AND ASSUMED FUTURE YEARLY ELECTRICITY CONSUMPTION IN BELGIUM



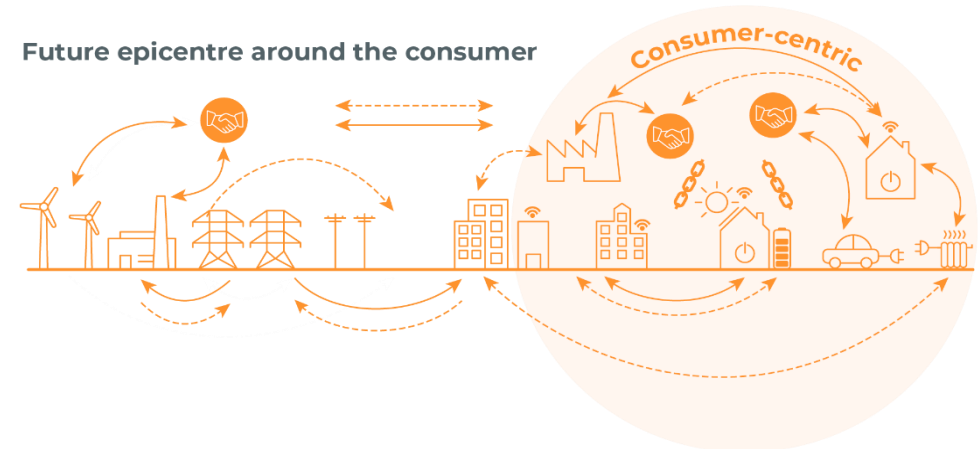
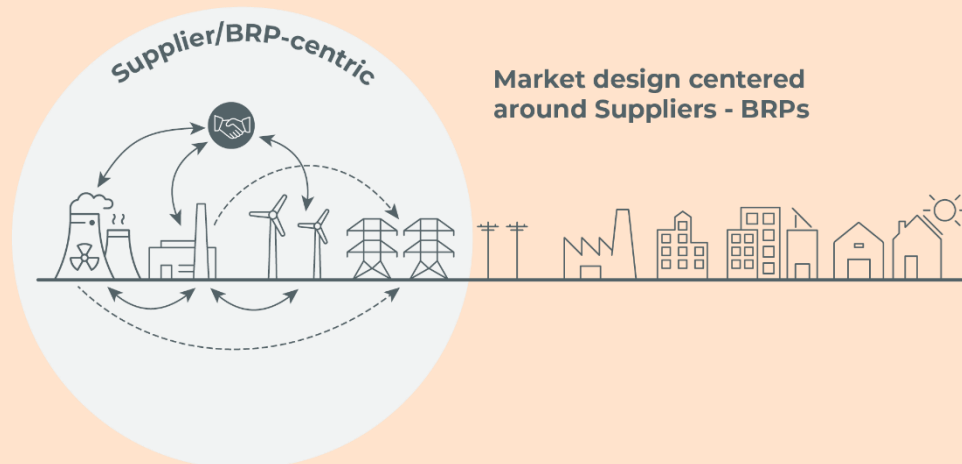
*Electrolysers and power-to-heat are an output of the economic dispatch model*

# Creating new challenges and a need to evolve the energy system



From generation following inflexible demand

To demand following intermittent generation





# Infrastructure development

NL

**Boucle du Hainaut**

New AC corridor to provide a solution to the need of additional transport capacity along the Bruegel-courcelles axis

DE

LU

FR



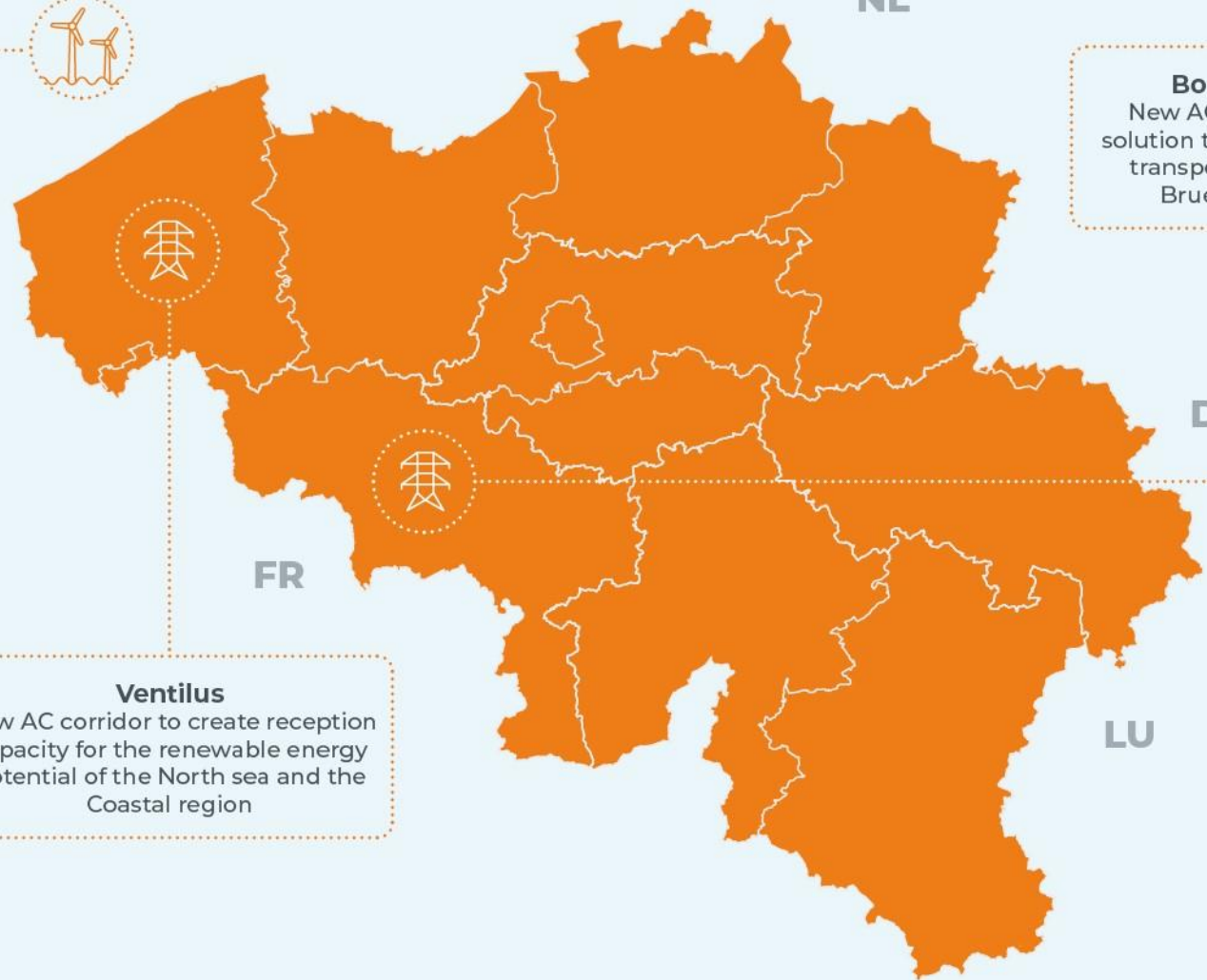
**Energy Island**

The connection of the 2<sup>nd</sup> wave of offshore wind investments increasing the capacity from 2.3GW to 4GW



**Ventilus**

New AC corridor to create reception capacity for the renewable energy potential of the North sea and the Coastal region





# Flexibility options

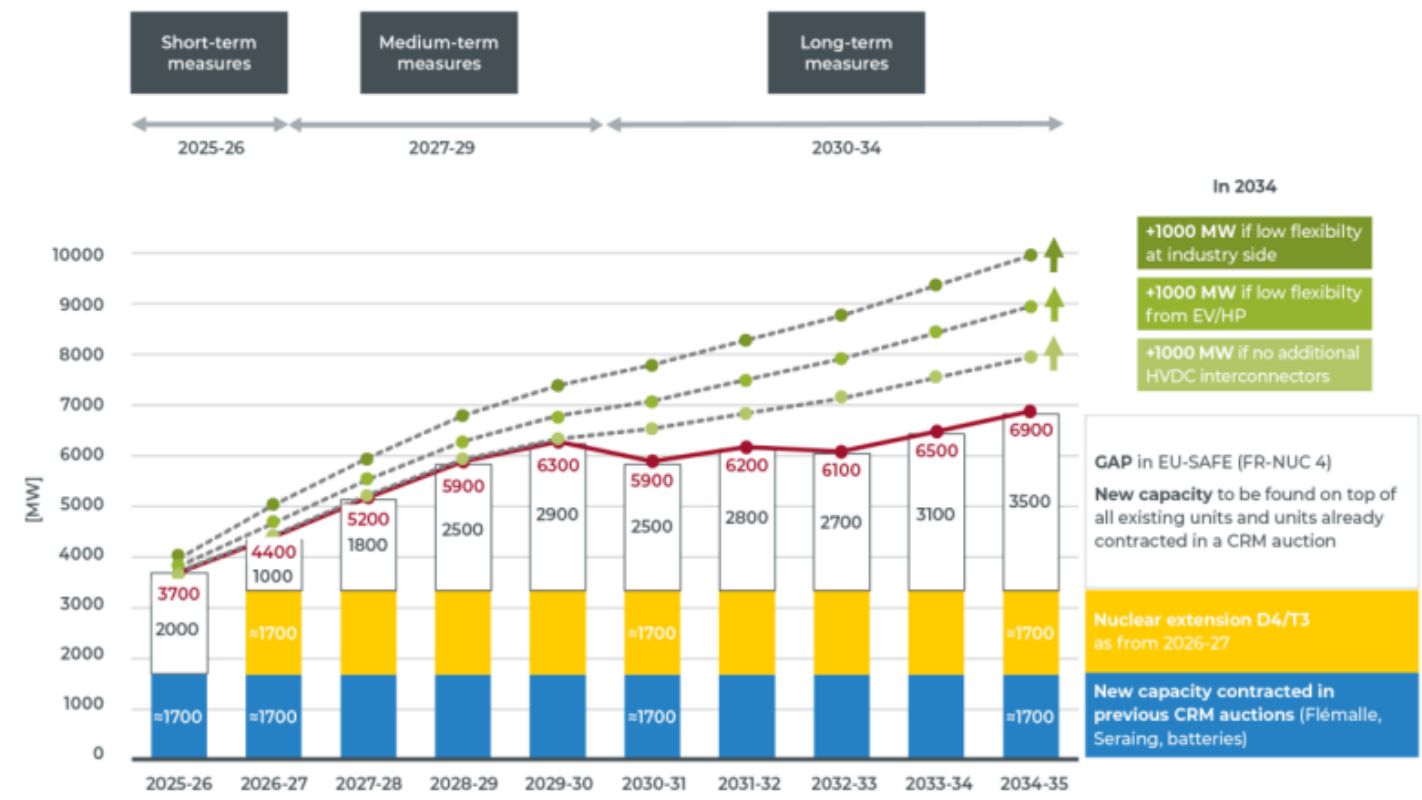


2024 - 2034

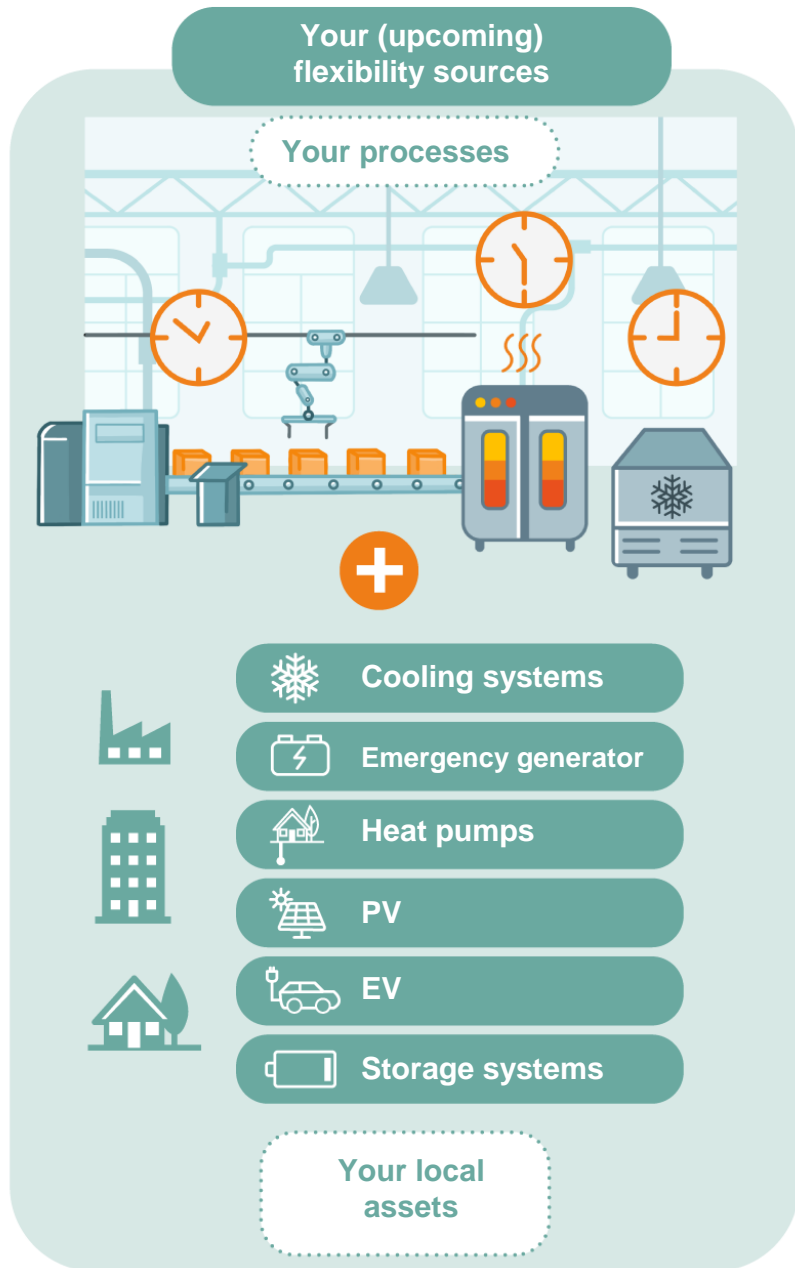
# ADEQUACY AND FLEXIBILITY STUDY FOR BELGIUM



Any delay in unlocking flexibility or realising grid infrastructure will result in additional capacity needs



# How to valorize your flexibility today?



1

2

## Energy Markets revenue



### Spot market

- Day-ahead , Intraday market, imbalances price
- Upwards / Downwards possible
- You or through an optimizer / partner



### Balancing Services to Elia

- Upwards / Downwards possible
- Through a Balancing Service Provider

## Capacity Remuneration yearly fixed revenue



- Incentive mechanisms for Upwards flexibility (less consumption / more production)
- New projects are surely welcome and may be granted of multi-year fix remuneration
- Auction / Low Carbon Tender in 2022, 2023, 2024
- For Effective delivery as of 2025 (2024\*)



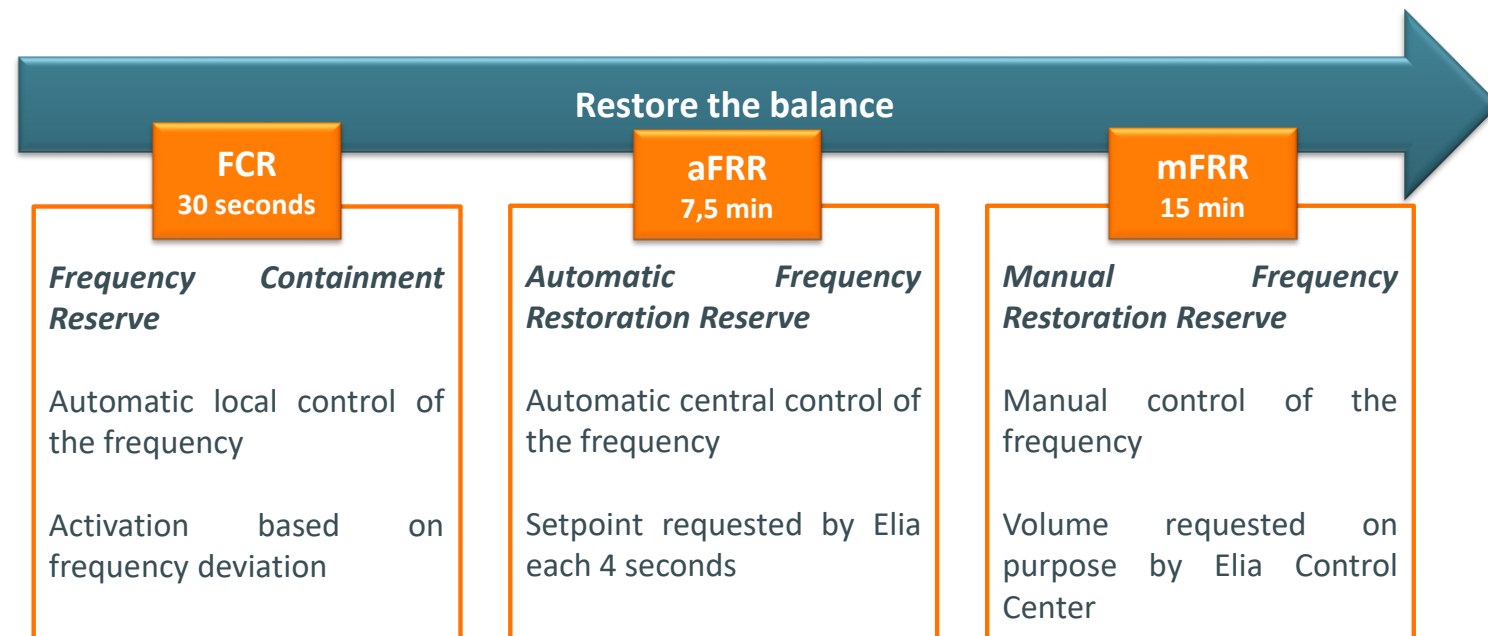
# Balancing Services

## A question of balance

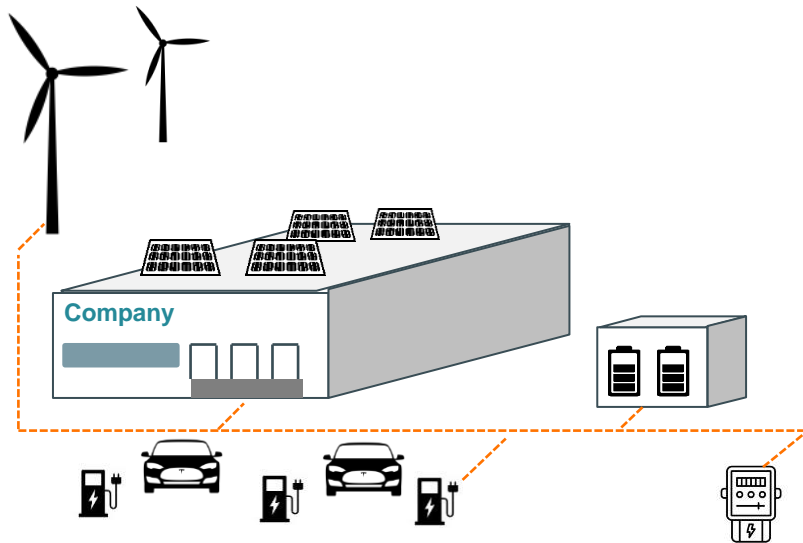


## ...Between injection and offtake

- Balance Responsible Parties (BRP) are in charge of taking all required actions to maintain their **portfolio in balance**
- Elia is responsible for the **residual imbalance** in real-time leading to activation of Balancing Services provided by the Balancing Service Providers (BSP)



# Create a significant additional revenue stream by participating to the balancing market



- ✓ **Grid user** or **third party**
- ✓ **Any technology** that can on its **own** or **pooled** deliver the service

## FCR

### Batteries – EV Flex

Average reservation fee: 20 – 30 €/MW/h

No activation remuneration

### Batteries – Wind turbines – Solar Park – EV Flex – Electrolyzer

Average reservation fee:

Upwards: 30 – 130 €/MW/h

Downward: 25 – 100 €/MW/h

Activation remuneration capped at ±1.000 €/MWh

## aFRR

## mFRR

### Industrial process – Back-up generators

Average reservation fee:

Upwards: 20 – 60 €/MW/h

Downward: no reservation

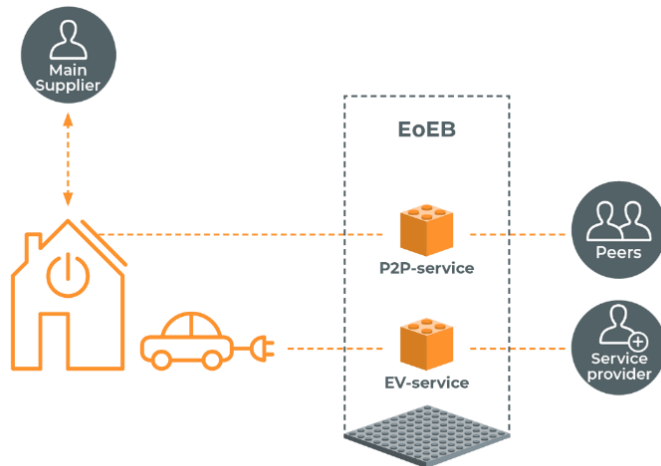
Activation remuneration capped at ±13.500 €/MWh

# How to valorize your flexibility **in the future?**

## Consumer-centric market design

### Exchange of energy blocks

A decentralized exchange of energy blocks between consumers and many other parties, **on & behind the meter**



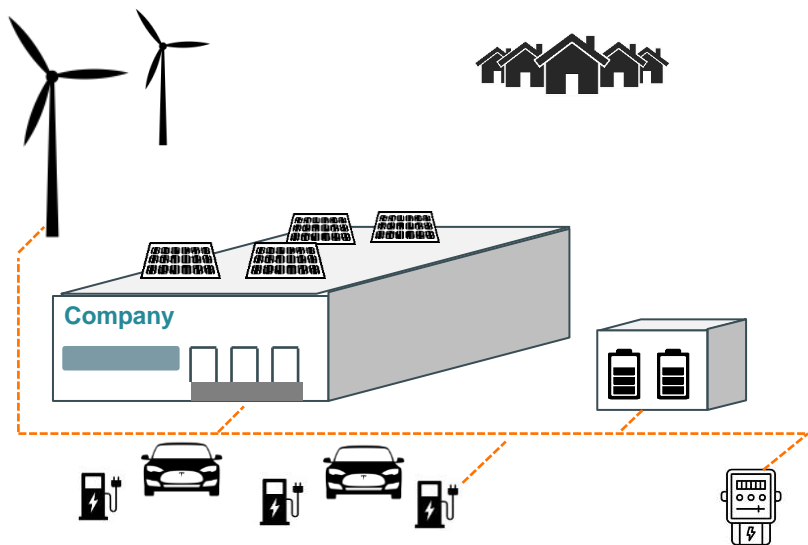
### A real-time market price

to reveal the true **value of flexibility** to consumers

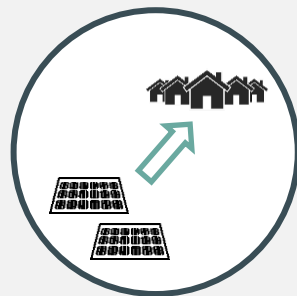


Facilitating the **development of additional flexibility** should come **together** with the development of a clear incentive, the **real-time price**

# How can I benefit from these upgraded market features?



- ✓ **optimize** my energy profile
- ✓ **valorize** my flexibility
- ✓ define my **tailor-made solution**

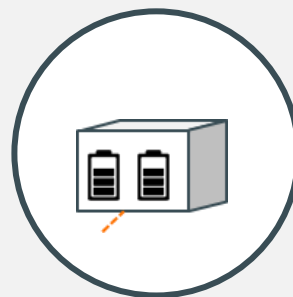
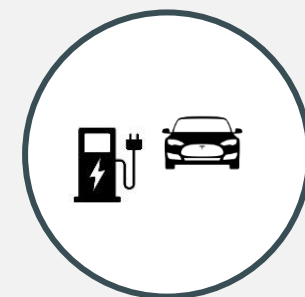


## Valorization of your own renewable production

Sharing your solar energy between different access points or with other grid users (eg. residential area) through an energy community

## Valorization of your employee's EV flexibility in balancing services

Steer your employees' EV to help Elia balance the grid without impacting your supplier or your employees' comfort

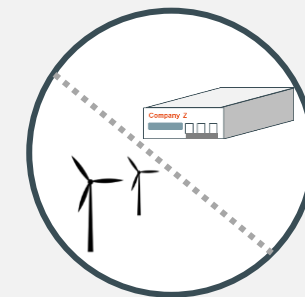


## Contract a dedicated supplier for your battery

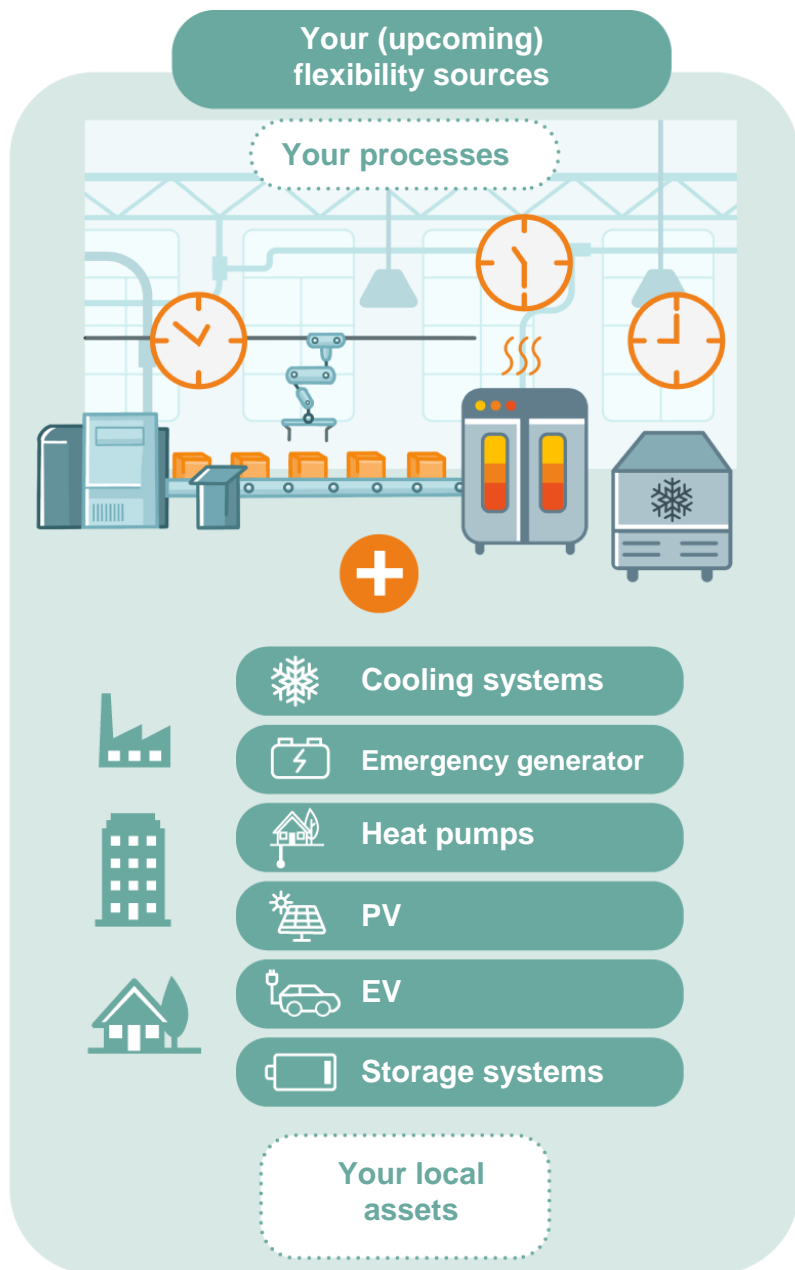
Keep your current supply contract for your baseload and optimize your flexible assets through a new supply contract sensitive to market prices

## Let investors build a wind park on your site without affecting your supply contract

Investors can appoint their own supplier and avoid financial risks on your own supply contract by splitting responsibilities



# How to start?



## Assessment\*

	Capacity	Flexible capacity	Upward/Downward	Time to react	...
Cooling system					
Emergency generator					
Heat pump					
EV					
Storage					
Process X					
...					

\*Example

# Simulate your earnings

Discover the potential of flexibility products

My asset is of type:

Batteries ▾

The power available for flexibility is (\*)

2

MW

Refine simulation →

Technical suitability:



**FCR**

Frequency Containment Reserve



**268 000** EUR

Estimated yearly earnings  
based on the asset's power:

**Thank you.**