

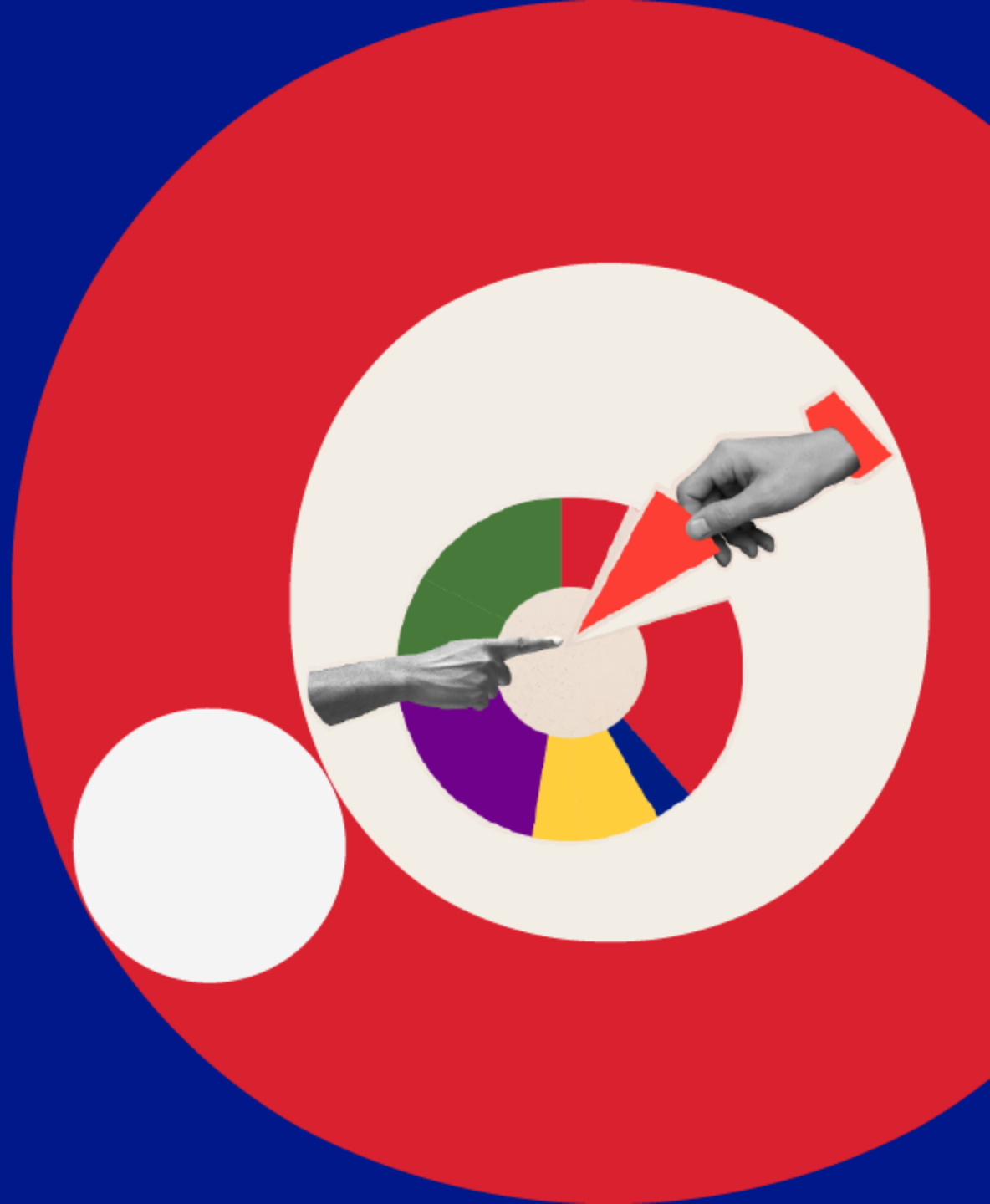
WEBINAR

# Reusing energy data: working towards a smarter and greener Europe

data.  
europa  
academy

22 May 2026

10:00 – 11:00 CEST



# Rules of the game



The webinar will be recorded and published on the data.europa academy



For questions, please use the ClickMeeting chat



Please reserve 3 min after the webinar to help us improve by filling in our feedback form



# Today's speakers



**Hannah Kroker**  
European Data Portal,  
Publications Office of the EU



**Andries de Brouwer**  
Policy Officer at the  
European Commission  
DG ENER



**Adrián Carrasco**  
Lead Data Scientist at  
Inetum



# Agenda

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10.00 – 10.05

Opening and introduction – *Hannah Kroker*

10.05 – 10.25

Energy data exchange in the EU – *Andries de Brouwer*

10.25 – 10.45

Cosmic – in the middle of a long winding road – *Adrián Carrasco Revilla*

10.45 – 11.00

Q&A and closing – *Hannah Kroker*



# Energy Data Exchange in the EU

## Policy Context, Legal Framework and Remaining Gaps

22 May 2026 | [data.europa.eu](https://data.europa.eu) academy webinar on open data and energy

*Andries De Brouwer, Policy Officer DG ENER*

# Why energy data exchange matters

## Renewables integration

Variable wind & solar cannot be dispatched on demand. Real-time data on generation, consumption and grid conditions is essential to balance the system without fossil backup.

## Demand-side flexibility

EVs, heat pumps and batteries can shift load to match supply — but only if data signals like prices and grid needs can flow to devices and service providers in real time.

## Efficiency and cost reduction

Better data exchange enables better grid operation, reduced congestion and losses, better use of existing infrastructure resulting in lower bills

## AI & digitalisation

AI for load forecasting, grid optimisation and predictive maintenance requires large, interoperable, cross-border datasets — not siloed data held by individual operators.

## Consumer empowerment

Consumers can switch suppliers, participate in flexibility markets and monetise their solar & storage assets — but only if they can access and share their own energy data.

## Competitiveness and strategic autonomy

Without European AI tools for energy, Europe risks becoming dependent on non-EU AI solutions and losing technological sovereignty in a sector that is strategically important

**A more digital, decentralised and renewable-based energy system depends on the ability of many different actors to access and exchange data securely, efficiently and, where needed, in near real time**



# Energy = open data?

## **Personal data (GDPR)**

Smart meter data reveals household behaviour in some cases — strict GDPR rules then apply. Free access is legally impermissible.

## **Open Data Directive: partial fit**

ODD applies mainly to public sector bodies. Many energy actors — retailers, aggregators — fall entirely outside its scope.

## **Outside public-sector reuse**

TSOs & DSOs are public undertakings, not public bodies. DGA Chapter II reuse regime does not apply to their data.

## **Commercially sensitive**

Energy data can reveal grid constraints, market positions and asset performance — shared only for specific regulated purposes.

Energy data follows a **controlled-access model** — not an open-data model.



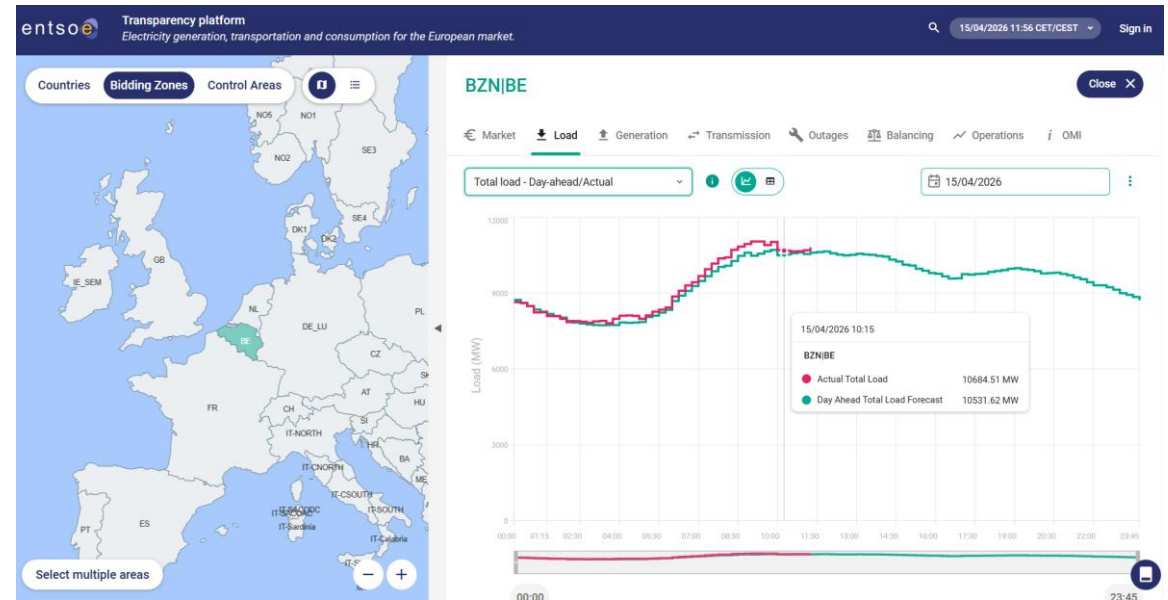
# A case of open data in energy: the ENTSO-E Transparency Platform

## What the platform provides

- Launched 5 January 2015 under Regulation 543/2013
- Free, continuous access to pan-European electricity data
- Covers: load, generation, transmission, outages, balancing
- Machine-to-machine interfaces with common formats & rules
- Submitted by TSOs, power exchanges & qualified third parties

## What it does not cover

- Covers a defined subset of wholesale market data only
- No access to smart metering or household consumption data
- No granular network or grid topology data
- Does not resolve data quality or harmonisation gaps
- A targeted transparency tool — not a general access regime



Key lesson: successful open access requires a clear **legal basis + common technical standards** — openness remains selective and purpose-driven.

# Primary vs secondary use of energy data

## PRIMARY USE

### *Operational & transactional*

- Deliver, operate & regulate the energy system
- Defined actors with identified roles (TSO, DSO, supplier)
- Real-time or recurrent data flows
- Governed mainly by energy law + GDPR
- Output: a service, grid action or market decision



## SECONDARY USE

### *Research, innovation & AI*

- Reuse beyond original operational purpose
- Broader set of actors: researchers, AI developers
- Pooled, cross-border, large-scale datasets
- Needs dedicated governance & safeguard regime
- Output: knowledge, models, reusable tools

*Example: smart meter data for demand response or billing*

*Example: grid data to train AI models*

### Smart energy services

Demand side flexibility and bidirectional charging of electric vehicles

#### What they bring:

- Unlock flexibility: Converts real-time data into dynamic adjustments supporting the system
- Empower consumers: Helps users optimise consumption and lower bills
- Boost system efficiency: Optimises grid operations and renewable integration

#### Partly covered by

- Electricity Directive and Regulation
- Data Act and GDPR
- Commission Implementing Regulation (EU) 2023/1162 on accessing metering and consumption data across Europe
- Draft Implementing Act on Access to Data for Demand Response
- Draft Network Code on Demand Response

### AI foundation models

Large general-purpose model trained on vast datasets that can be adapted to different tasks

#### What they bring:

- Sharper grid intelligence: Better forecasting, congestion management and fault detection
- Faster innovation: Once trained, they can be rapidly fine-tuned for many use cases
- Boost EU competitiveness & sovereignty and secure AI capacity for critical energy systems



# Primary vs secondary use of energy data

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Empower consumers: Helps users optimise consumption and lower bills

Boost system efficiency: Optimises grid operations and renewable integration

#### Hindered by:

Lack of interoperability: fragmented systems, no common standards

Barriers to remote control: limited device access, restrictive rules

No real-time data exchange: delayed data flow, ineffective control

### AI foundation models

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#### What they bring:

Sharper grid intelligence: Better forecasting, congestion management and fault detection

Faster innovation: Once trained, they can be rapidly fine-tuned for many use cases

Boost EU competitiveness & sovereignty and secure AI capacity for critical energy systems

#### Hindered by:

Limits to exchanging commercial/proprietary data and personal energy data

Reluctance to exchanging grid data (critical infrastructure) in secure way

Data being siloed across actors and sectors



# Implications for AI development in the energy sector

## Data access

Uneven access to high-quality, interoperable real-world datasets — the primary bottleneck.

## Trust & explainability

Black-box AI faces reluctance in critical uses like grid control and flexibility activation.

## Regulatory fragmentation

Complex overlapping rules impose disproportionate compliance costs on smaller firms.

## Open vs proprietary models

Current balance supports innovation, but access may become more restricted over time.

## Computing

AI compute resources remain concentrated despite emerging competitive pressure.

## Skills gap

Personnel shortages and infrastructure deficits limit deployment, especially for smaller operators.

## Cybersecurity

Security risks across hardware and software layers add complexity to energy AI deployment.

**Larger, digitally mature operators move faster — fragmented deployment weakens a genuinely European AI market for energy.**



# AI.grids: a Pan-European AI Foundation Model for Power Grids

## What it is

- Launched December 2025; 20+ organisations (TSOs, DSOs, research, tech)
- First general-purpose AI foundation model for power system operations
- Trained on diverse grid datasets: topology, time-series measurements, documentation
- Coordinated by CRESYM; outputs shared with all European system operators



## Applications (14 use cases consolidated)

- Renewable generation forecasting & congestion management
- Dynamic security assessment & flexibility management
- Asset monitoring & AI-assisted operator decision support

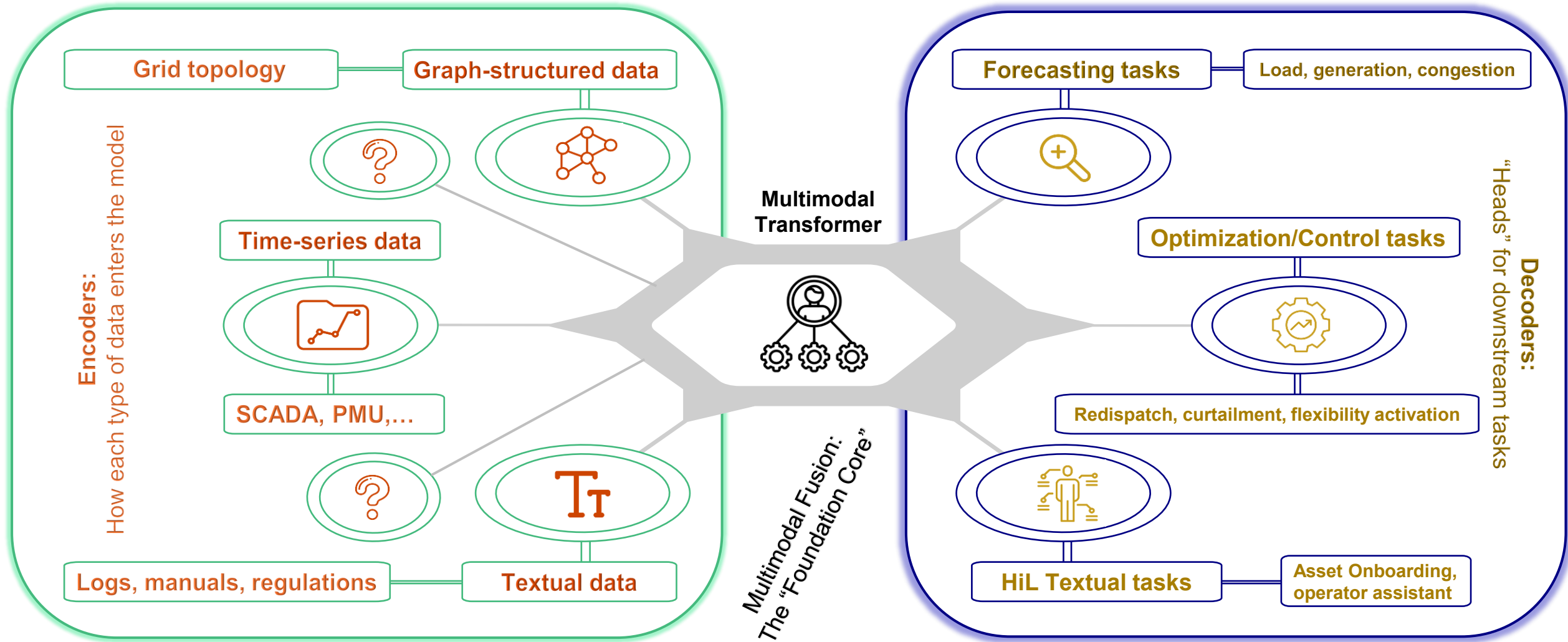
## The data challenge

- Success depends on large-scale, high-quality datasets from system operators
- Current EU law does not sufficiently incentivise sharing of operational & system data
- A robust secondary-use framework is needed: governance, cybersecurity & trusted environments

**AI.grids is not just a tool — it is a system-wide digital intelligence layer and critical infrastructure for European power grids.**



# What is a Foundation Model?



# Towards a framework for secondary use of energy data?



## Objectives & scope

Public-interest innovation: AI tools to improve grid operation & management and renewable integration



## Legal conditions

Clarify relationship with GDPR, cybersecurity law & energy legislation



## Governance for access

Who may request, for which purpose, under what conditions & safeguards



## Data safeguards

Minimisation, proportionality, confidentiality, secure access



## Data categories

Metering, network, flexibility, renewables, market & contextual data



## Interoperability

Common quality principles, metadata, standardisation & formats



## Authorisation

Access procedures, request assessment, traceability & accountability



## Adaptability

Commission powers to update via tertiary legislation over time

# Thank you

Questions welcome — connect at [data.europa.eu](https://data.europa.eu)

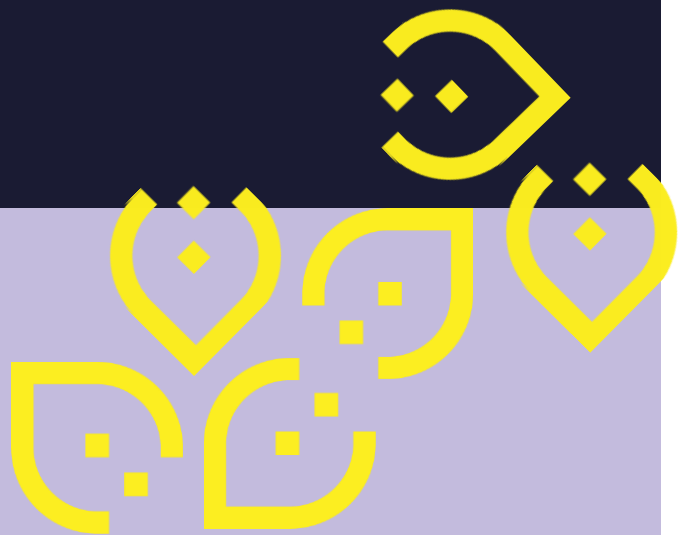
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COSMIC

AI-POWERED  
ENERGY OPTIMISATION



# COSMIC – In the middle of a long winding road...

**Adrián Carrasco Revilla, Inetum**

22 May 2026



**Funded by  
the European Union**

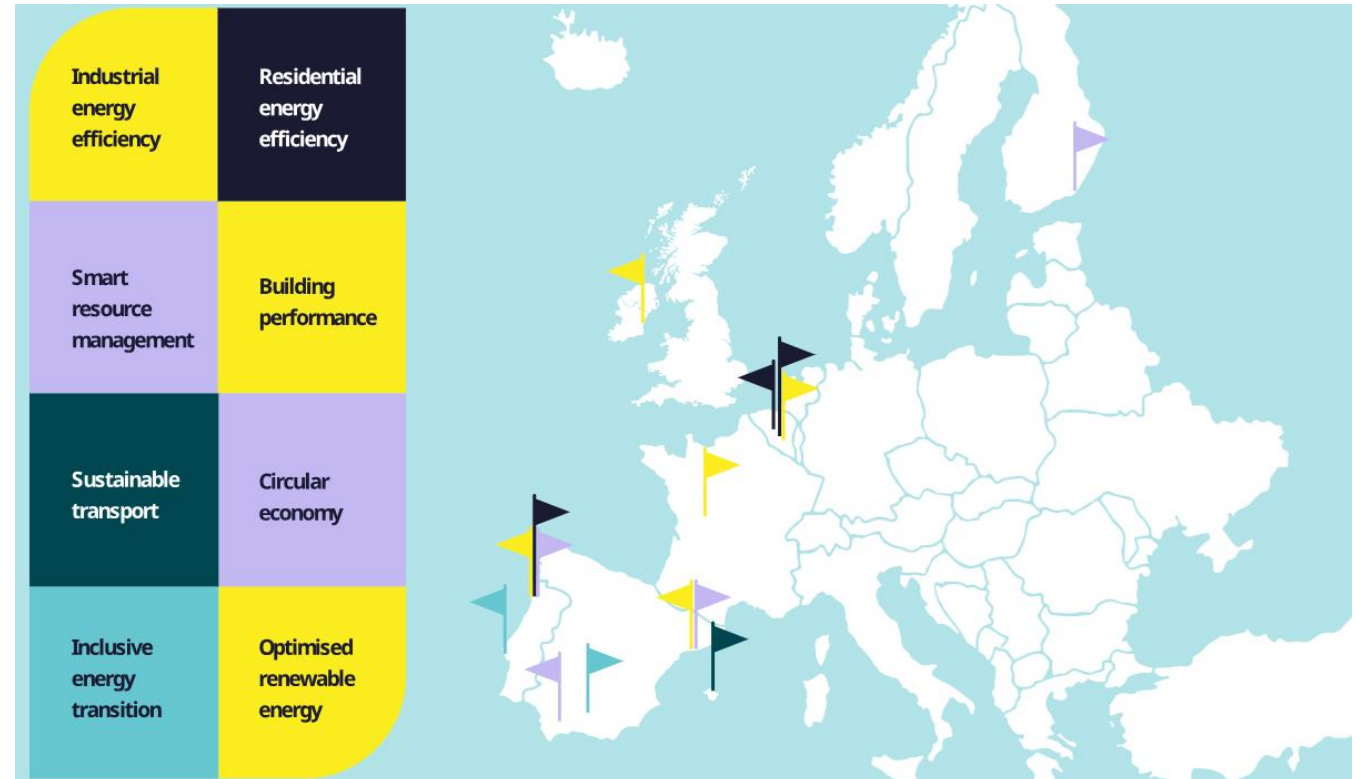
Views and opinions expressed are those of the author(s) only and do not reflect those of the European Union or European Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them.

# PROJECT OVERVIEW



## COSMIC in numbers:

- Partners: 21
- Budget: 10 801 484.46€
- EU contribution: 9 999 846.75€
- HORIZON Innovation Action
- Countries: 9
- GA N°: 101189676
- Duration: 36 Months
- Start: 01/12/2024
- End: 31/11/2027

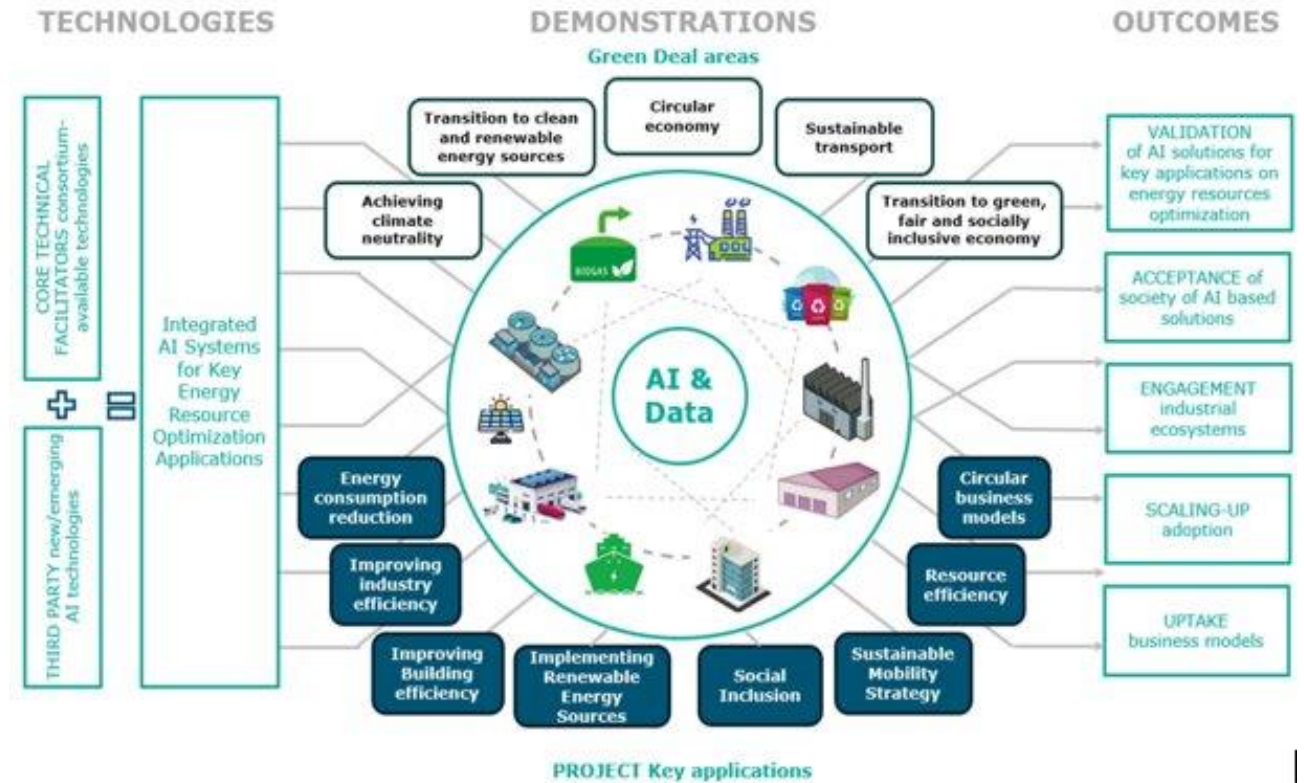


# ABOUT COSMIC



**COSMIC is a European project funded by the Horizon Europe programme.**

It aims to demonstrate how Artificial Intelligence (AI) and Big Data technologies can drive the optimization of energy resources across industrial, urban, and residential sectors, in alignment with the goals of the European Green Deal.





## Objectives

- **Optimize energy resources** through Big Data and AI by integrating innovative SME solutions into technological platforms (CTFs) to create scalable Integrated AI Systems (IAIS).
- **Implement 15 large-scale pilots** across key sectors to enhance resource efficiency, in alignment with the Green Deal.
- **Develop European scaling strategies** for industrial ecosystems, facilitating IAIS replication and strengthening the competitiveness of Europe's AI and data-driven industries.

## Main Activities

- **Open calls** for SME participation, targeting innovative AI-based solutions.
- **Implementation of large-scale pilots** with access to extensive historical and real-time datasets.
- **Development of training materials** to support AI adoption in European industry.

# ABOUT COSMIC



## Selecting innovations through Open Calls

We fund innovative AI & data-driven solutions from startups and SMEs and apply them to sustainability projects across different industries.



## Testing and integration in pilots

Selected innovations are deployed alongside existing core technologies in our 15 pilots, optimising energy and resource efficiency in real-world conditions.



## Scaling up for long-term impact

We ensure solutions are scalable and replicable, sharing results with industries, policymakers, and communities to drive widespread adoption.

# ABOUT COSMIC



## **Expected Results:**

- Significant reduction in energy consumption and associated costs.
- Creation of new industrial ecosystems that can be replicated across Europe.
- Strengthening of European leadership in AI and data technology.




## **Societal Impact:**

- Reduction of residential energy costs by more than 10%.
- Reduction of energy poverty by up to 20%.
- Improvement in resilience by over 20%.
- Democratization of the AI market: lowering barriers to deploy innovative solutions.






# Pilots overview







## Climate Neutrality

- **Private housing in multi-family buildings** – Belgium  
 *Thomas & Piron Bâtiment*
- **Renewable Energy Community (REC)** – Portugal  
 *Porto Energy Agency*
- **Efficient use of heat pumps – European Union**  
 *Daikin*

## Transition to Clean and Renewable Sources

- **Industrial energy communities** – Spain  
 *Granollers Mercat*
- **Tertiary-use buildings (schools)** – Ireland  
 *OHLA (Spain)*
- **Sustainable residential buildings** – Belgium  
 *Thomas & Piron Bâtiment*
- **Predictive maintenance of photovoltaic plants** – France  
 *PHOTOM*
- **Sustainable management of a REC** – Portugal  
 *Porto Energy Agency*



## Circular Economy

- **Urban cooling system using rainwater** – Spain  
 *University of Seville*
- **Energy optimization and decarbonization of wastewater treatment plants** – Spain  
 *Consorci Besòs-Tordera*
- **Leak detection in biomass district heating** – Finland  
 *LRP Energiaverkot Oy*
- **Energy sustainability indicators based on waste** – Portugal  
 *Porto Energy Agency*

## Sustainable Transport

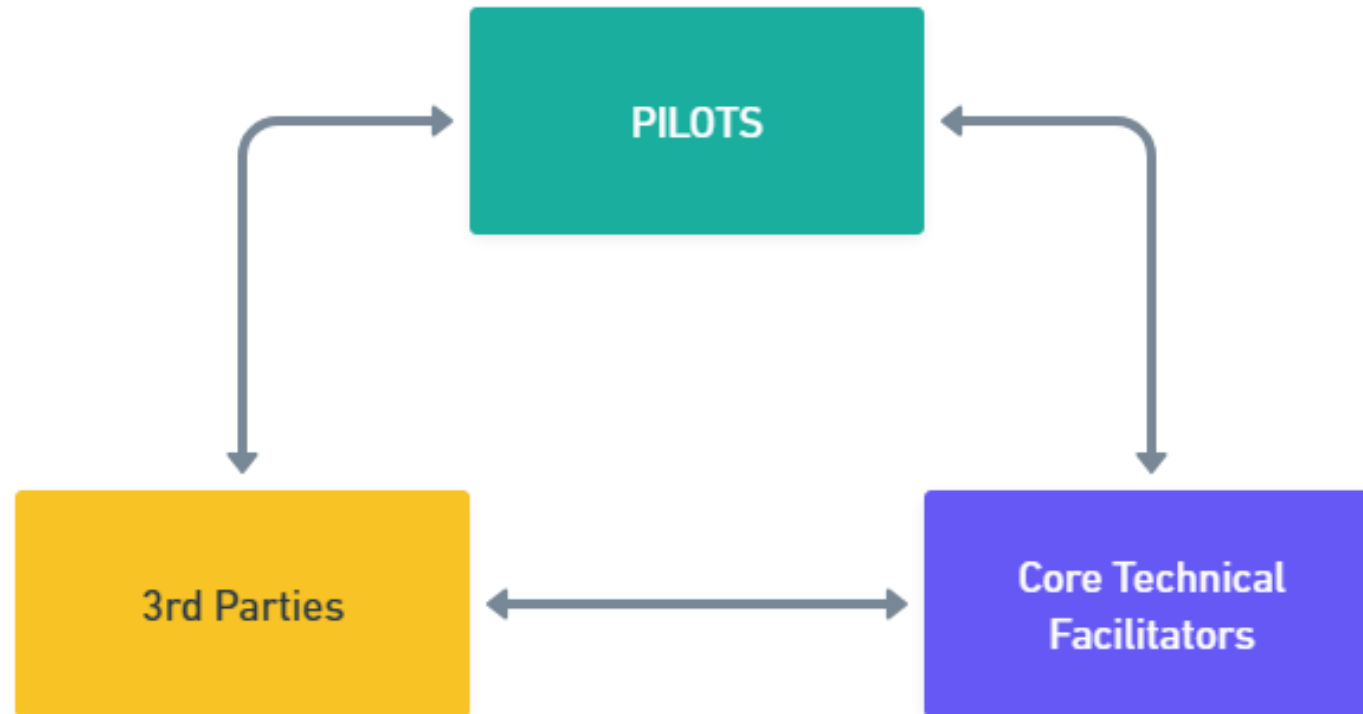
- **Support system for electrical supply in ports** – Spain  
 *Balearic Port Authority*

## Just and Inclusive Transition

- **Fighting energy poverty in social housing** – Spain  
 *AVRA (Housing and Rehabilitation Agency of Andalusia)*
- **Flood risk mapping for fair insurance** – Portugal  
 *FID R&D*



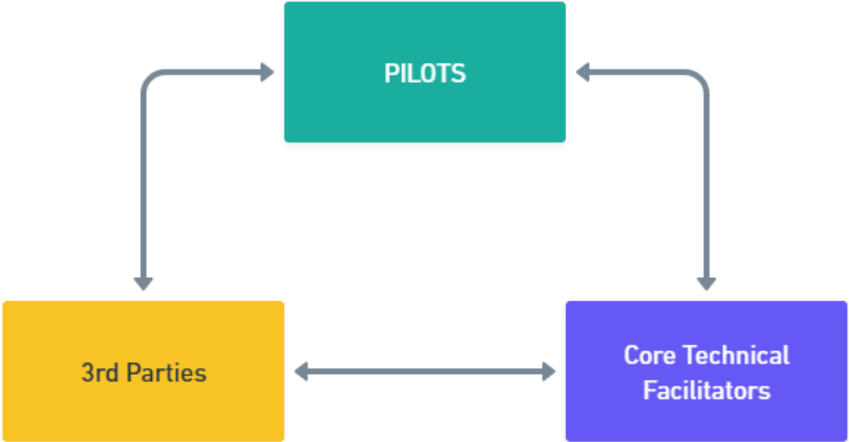
# STRENGTHS OF THE PROJECT





# STRENGTHS OF THE PROJECT

## DATA & USE CASE



**FINAL DEVELOPMENTS**

**PRE-EXISTING SOLUTION AND CONTACT**



# WHAT DO WE HAVE SO FAR?

## Challenge 1

- Using LLMs to power a solution to design façades.
- Taking into account possible climate events, try to adapt design to that

## Challenge 8

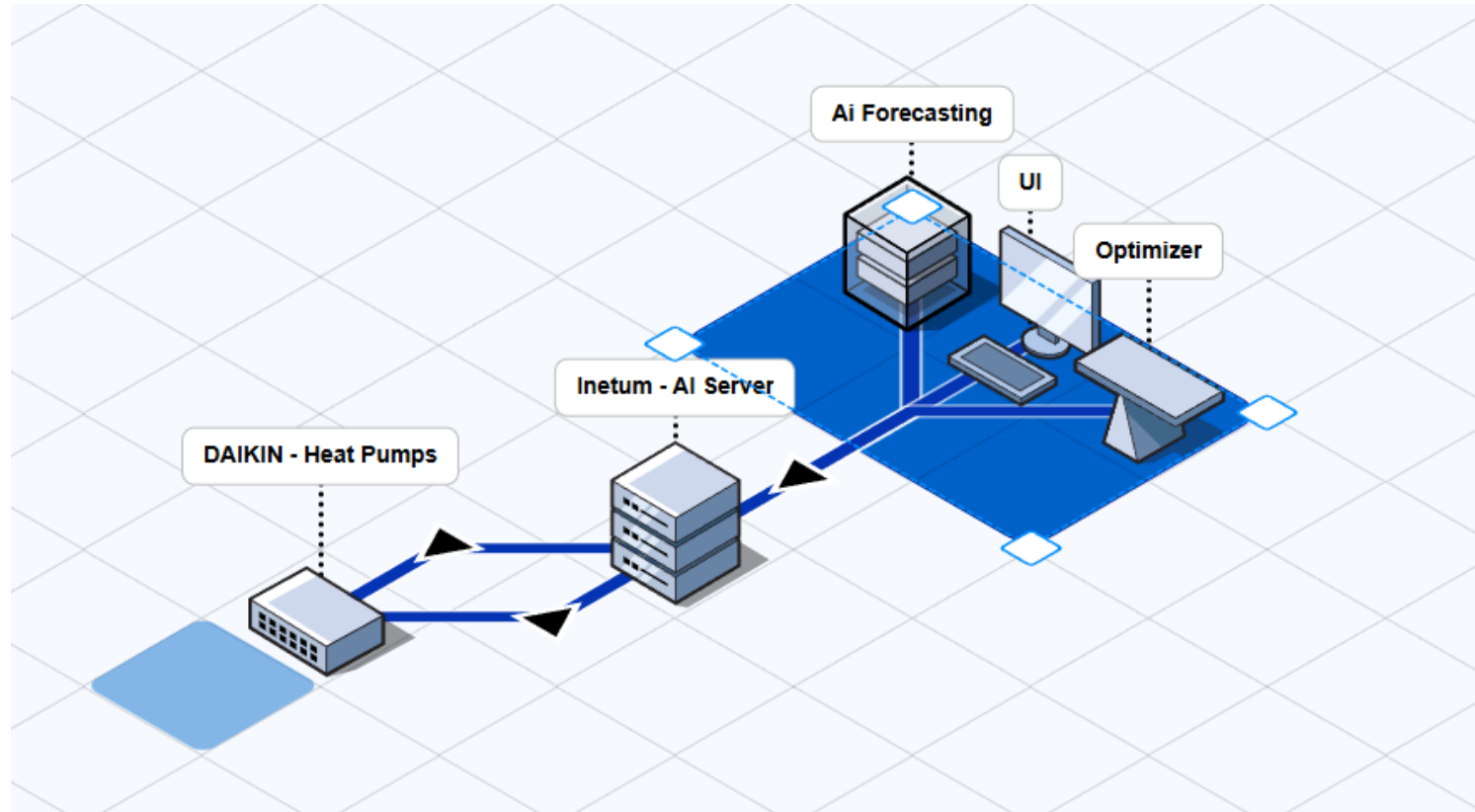
- Transformers used for AI Forecasting. Easy to implement, versatile and powerful
- How do we use those forecastings to empower other tools

## Challenge 10

- Multipurpose app development to tackle the use cases.
- User behaviours and experiments

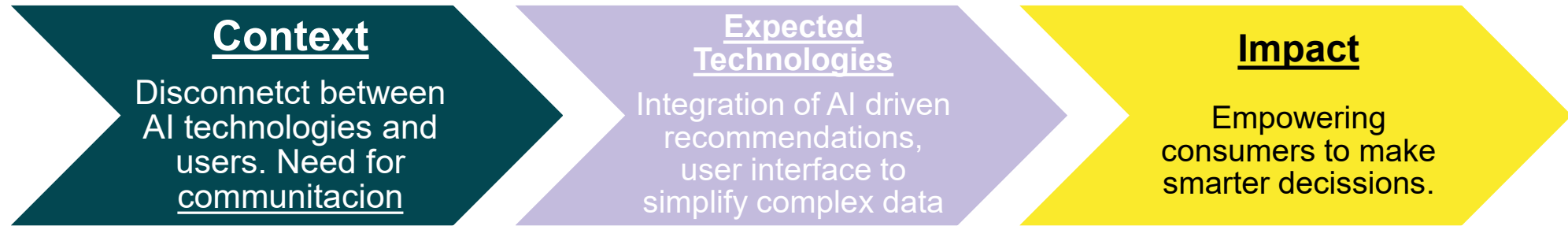
# Challenges Overview - CH10

## CTF - PILOT (INETUM - DAIKIN)



# Challenges Overview - CH10

## [INETUM & SEEBURG]



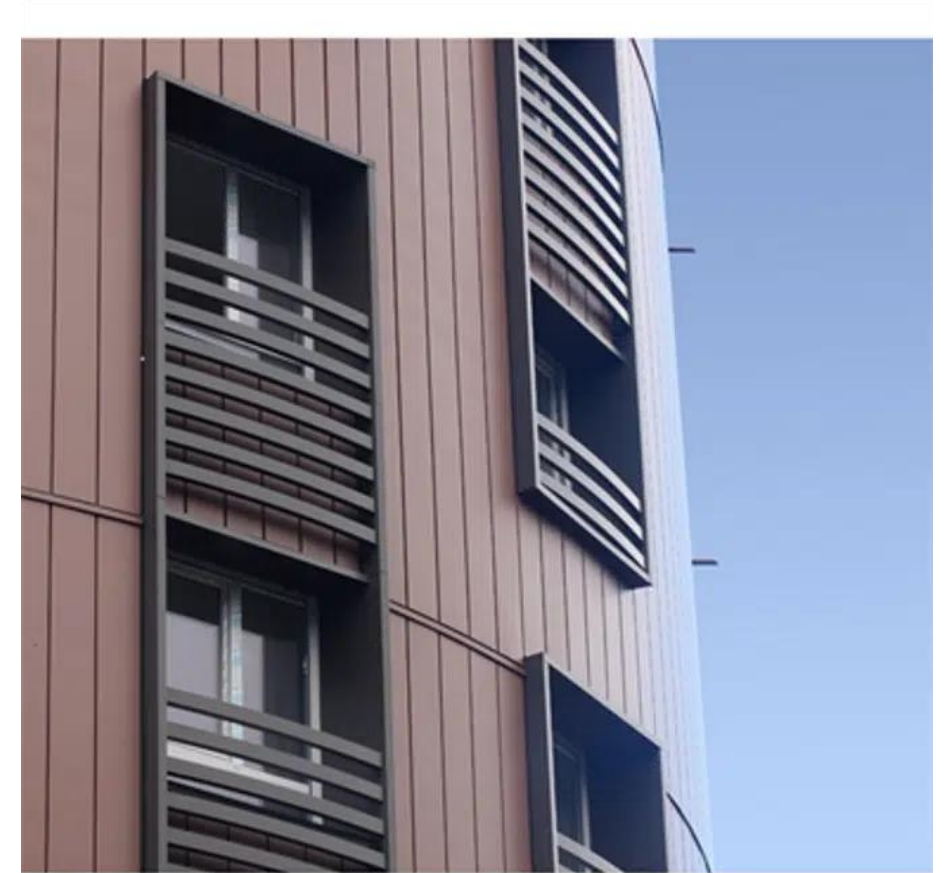
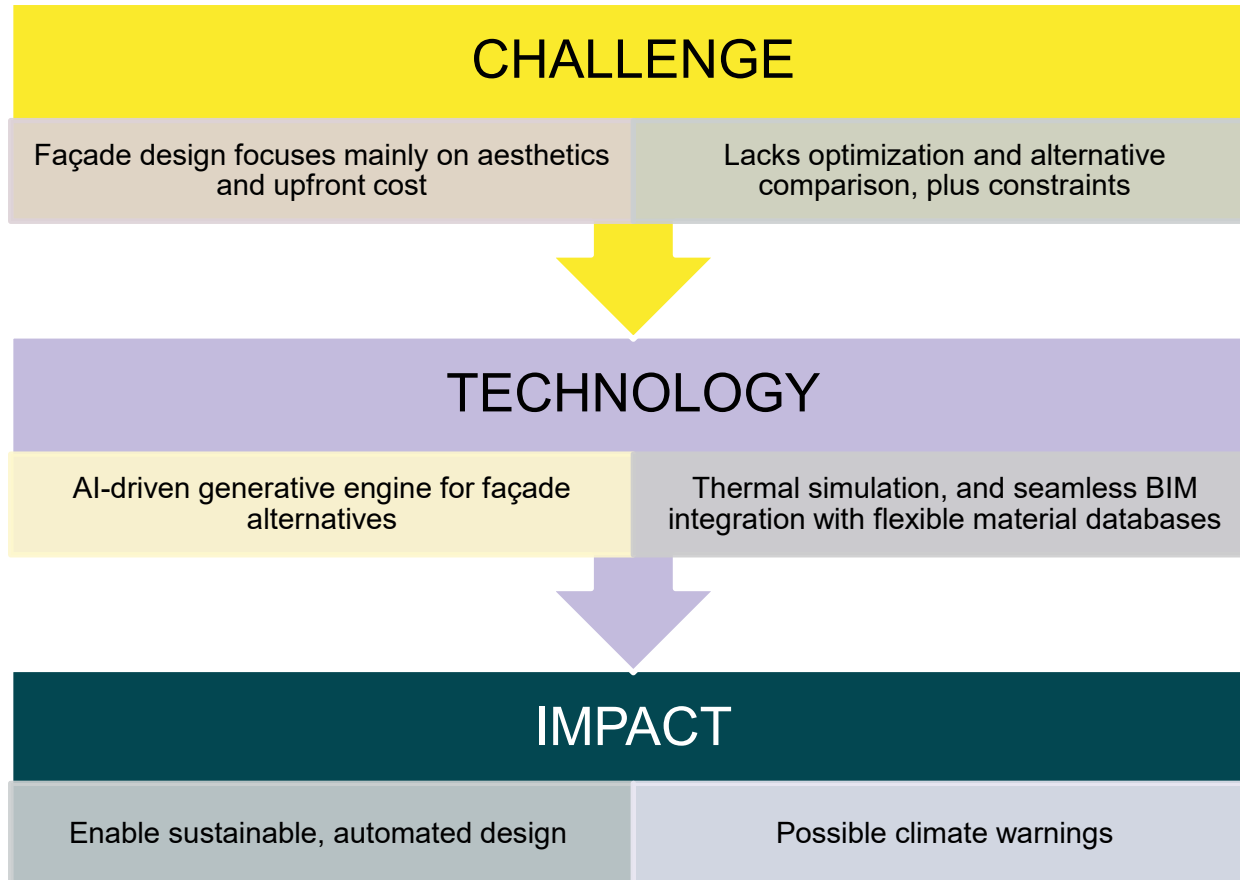
CH OC1	PILOT	CHALLENGE Name
<b>CH10</b>	Daikin (EU) - Efficient usage of the heat pumps	Apps for Consumers
	Lappeenranta	
	Porto Energy	
	AVRA	

# Challenges Overview – CH1

[INETUM]



CH OC1	PILOT	CHALLENGE Name
CH1	OHLA (Spain) - Tertiary use Building	Construction Material and Facade Simulation



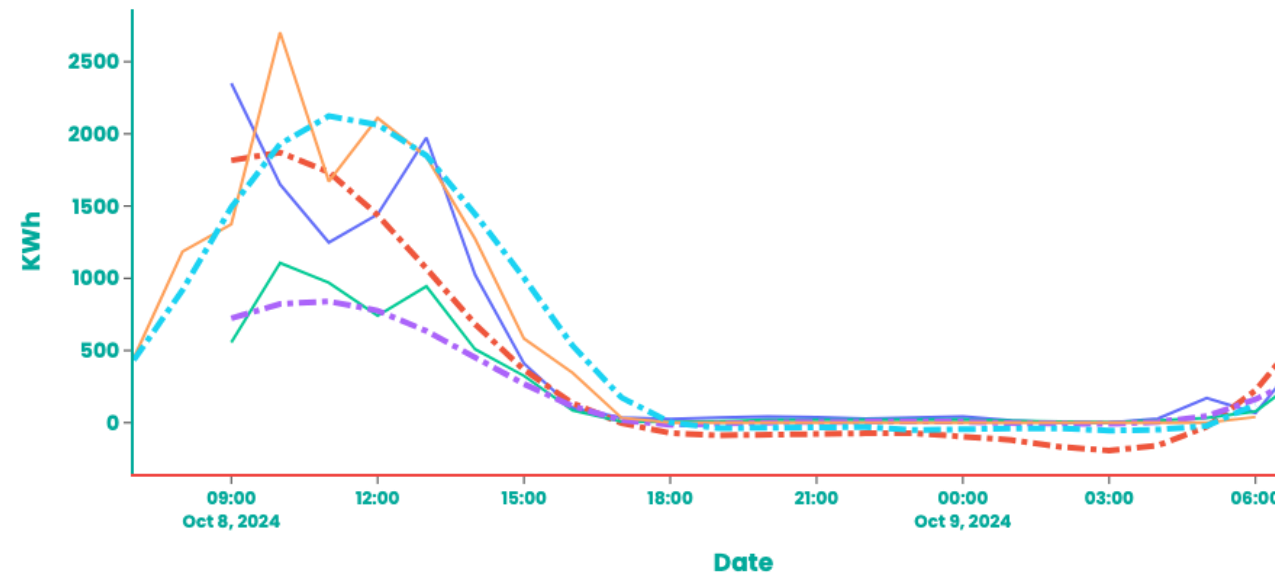
# Challenges Overview – CH8

## [INETUM]



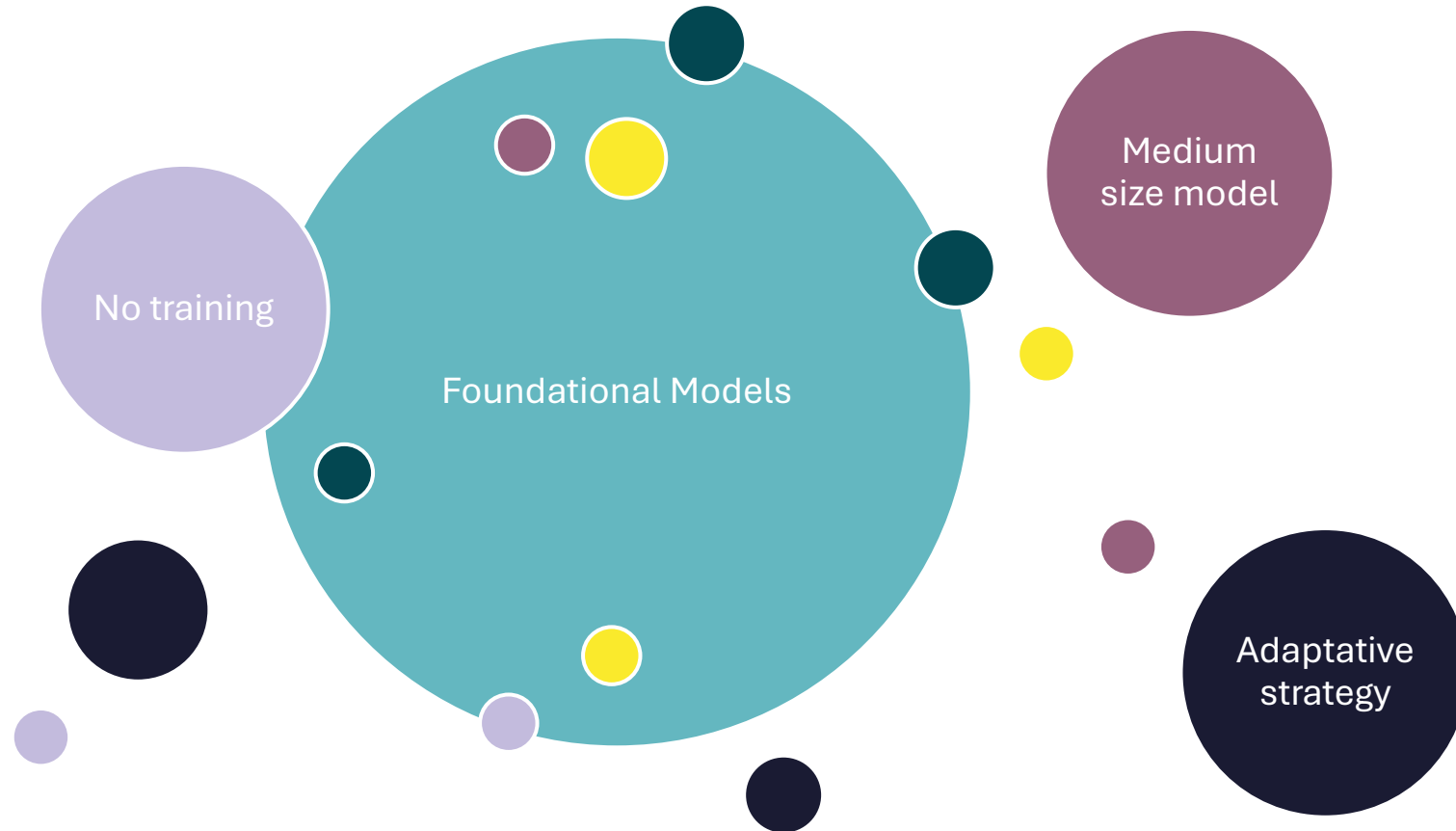
- Need to get future values for optimization problems
  - Porto Baleras: Peak Shifting
  - Lappeenranta: Accurate heat demand predictions at the level of individual buildings or customer groups
- Solution → Adaptable Forecast

Energy production forecast



# Challenges Overview – CH8

[INETUM]



# Challenges Overview – CH8

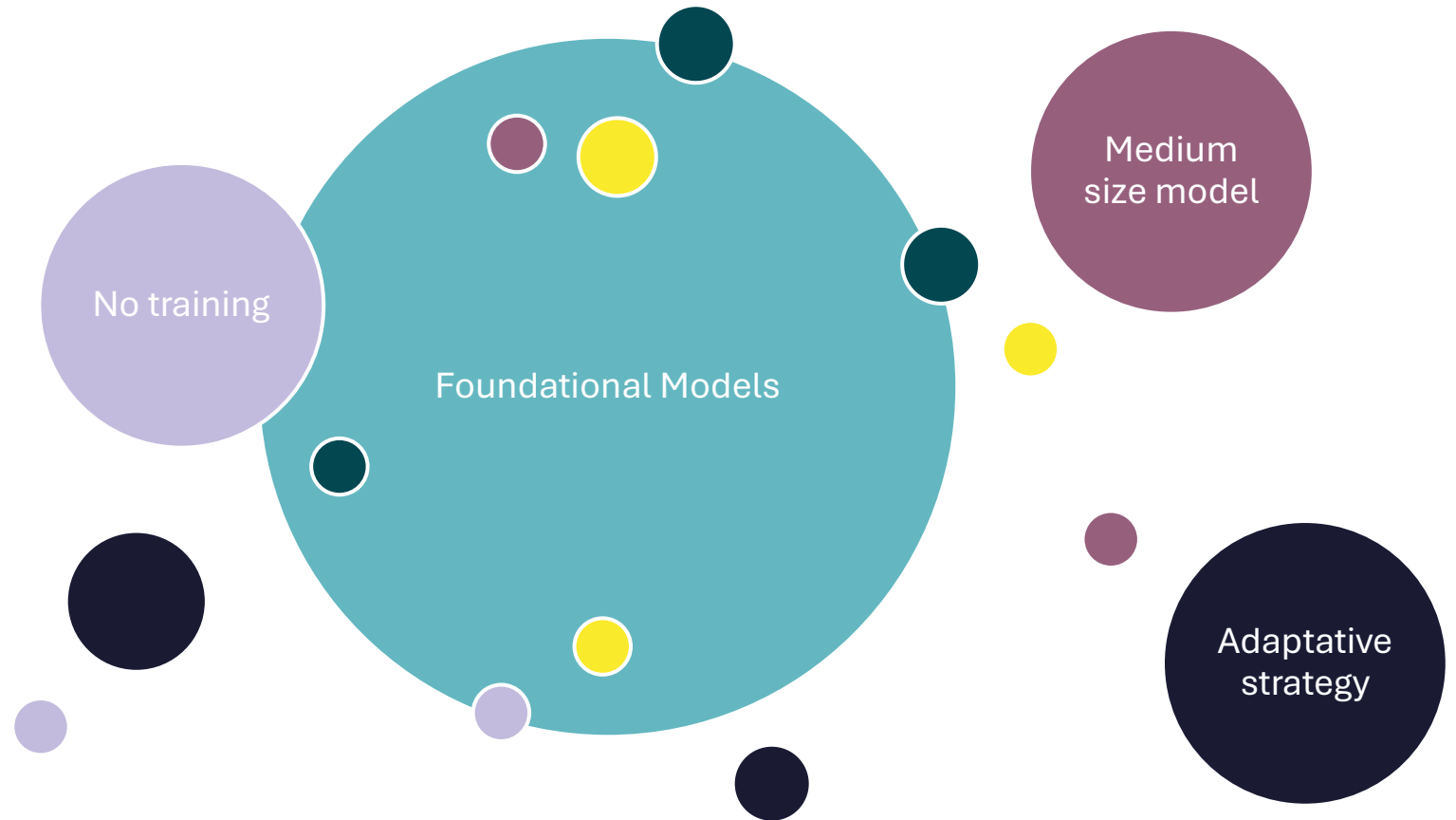
## [INETUM]



### But it is not just about forecasting!

Once the inference comes in, we use it for different purposes:

- Optimization
- Flexibility
- Understanding Data



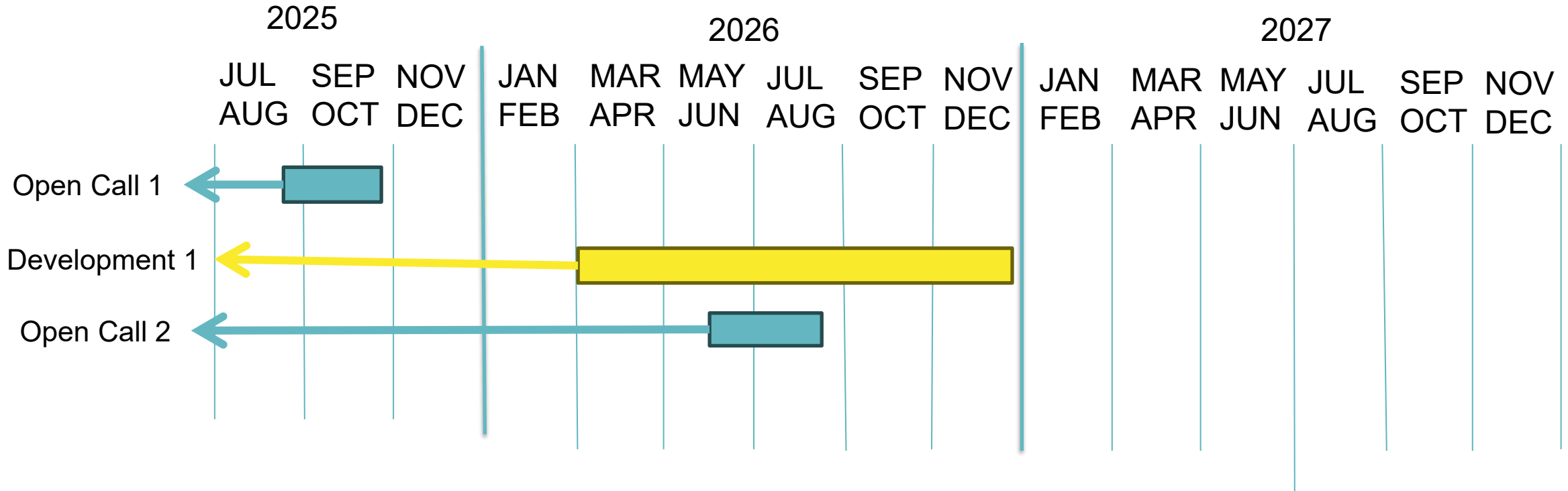


# WHAT KIND OF TALK HAS IT BEEN?

- Cosmic, our project of projects.
- Collaborative effort between the CTFs, Pilots and 3rd Parties.
- Uses of data to solve issues:
  - Façade design
  - App for Multiple Purposes
  - Optimization using forecast.



# WHAT HAPPENS NOW?



**New Challenges  
New Opportunities**

**Open Webimar coming soon -> Stay  
tuned to our LinkedIn!**

# THANK YOU!



Adrián Carrasco Revilla

adrian.carrasco@inetum.com

*We should never forget, that we are pioneers, that we have barely begun, and that our greatest accomplishments are not behind us, our destiny lies above us, among the stars, in the cosmos.*

Learn more:

[www.cosmic-horizon.eu](http://www.cosmic-horizon.eu)

 @COSMIC project



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# Q&A Session



**Hannah Kroker**  
European Data Portal,  
Publications Office of the EU



**Andries de Brouwer**  
Policy Officer at the  
European Commission  
DG ENER



**Adrián Carrasco**  
Lead Data Scientist at  
Inetum



Stay up-to-date on our  
2026 activities!

The logo for Data Europa Academy is located in the bottom-left corner. It consists of a dark blue circle containing the text "data.", "europa", and "academy" stacked vertically. The word "data." has a small yellow dot above the 'a'. To the right of this circle is a white circle, and both are set against a larger red circular background.

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# Register for our upcoming webinar!

**WEBINAR**

**Open data,  
academia, and  
ethics: responsible  
use of AI-generated  
and synthetic data  
in research**

**data.  
europa  
academy**

5 June 2026  
10.00 – 11.00 CEST



# Continue the discussion after the webinar!

## Reusing energy data: working towards a smarter and greener Europe

Submitted by [Hannah KROKER](#) on Fri, 08/05/2026 - 14:41

Topic: [Academy webinars](#)

**Did you enjoy our last webinar on energy data?** Join the conversation below to share your thoughts and opinions about open data and energy!

Making the most of data can enable our energy ecosystem to become **more sustainable and efficient**. During the webinar, we heard from a Policy Officer how the European Commission is trying to promote **energy data sharing** across sectors. This was followed by a presentation of COSMIC, a concrete project **applying data and AI** to optimise our energy management.

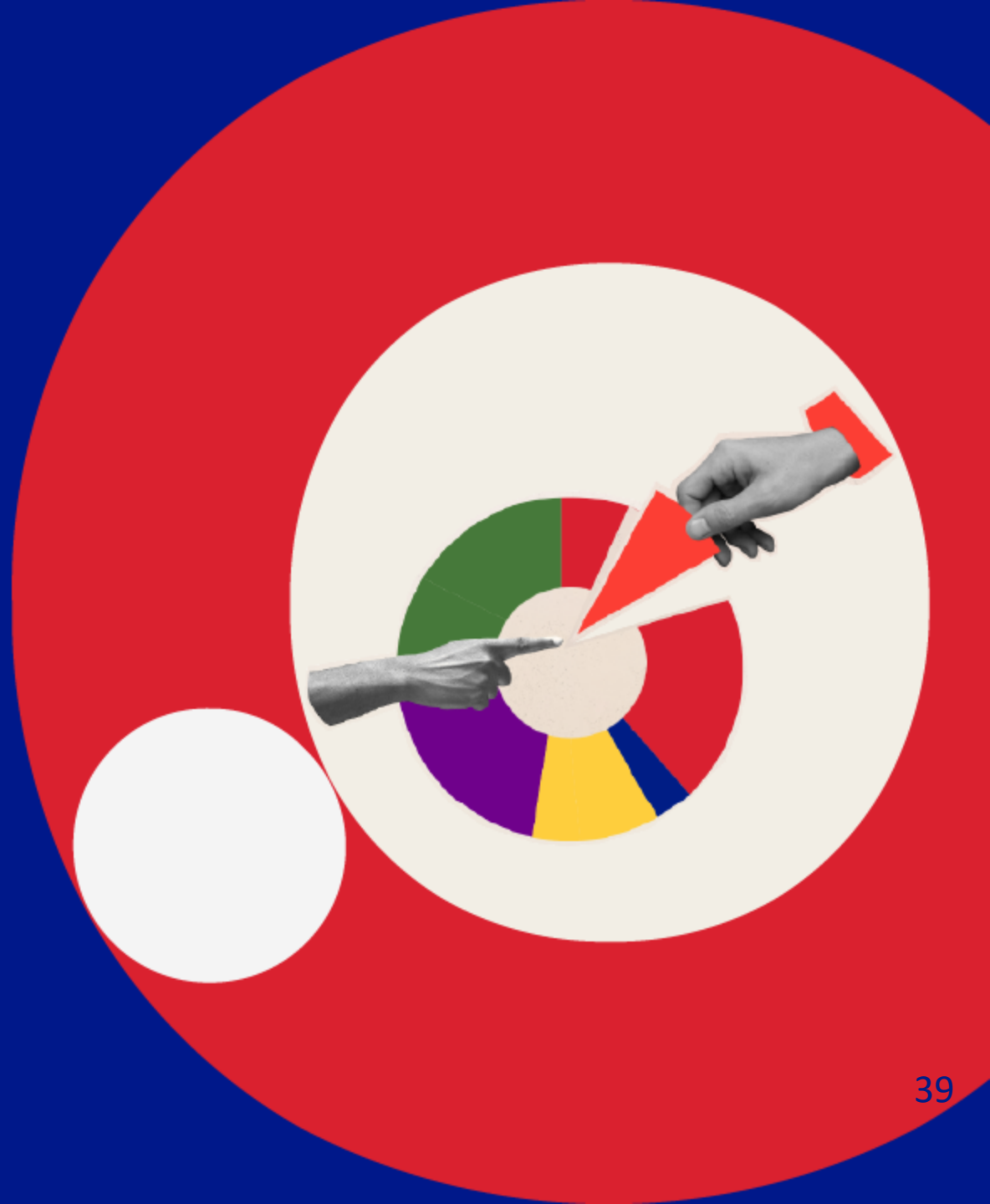
What do you think: how can we use open data more effectively to respond to energy crises? Do you have experiences of reusing energy data for your organisation?

**Let us know in the comments below!**

*Login using your EU login account and join our [Data reusers group](#) to share your thoughts in the comment section down below.*



# Your opinion is important to us



# Thank you!

