Session B2: Barriers to energy transition and supporting policies

AmsTErdam BiLbao cItizen drivEn smaRt cities

atelier
Positive Energy Districts

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.864374

Short Introduction

Inspiring session on challenges of energy transition for cities and understanding good practices in policy options to overcome barriers. Four speakers to provide:

1.- Review of European programs to support cities' energy transition
2.- What are the pathways to energy transition with the reference of a case study: Riga
3.- Approaches from public sector to activate transition and overcome barriers. The case of a public company: SestaoBerri
4.- Barriers felt by the private sector in their relevance role for the energy transition. The case of Iberdrola

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Speaker1: Cecilia Sanz (Cartif)

Project coordinator in Energy Division

Chemical Engineer and MEng in Process & System Engineering by education, works in CARTIF Technology Centre implementing strategies on sustainability and energy efficiency in Smart Cities. Now coordinating NEUTRALPATH (Horizon Europe City Mission project) and recently MAKING-CITY (H2020_Lighthouse project) both focused on demonstrating Positive Energy District (PED) concepts in order to reach the Climate Neutrality of our cities. Additionally, her background is completed by experience in water treatment, bioenergy and biomaterials

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Speaker 2: Nika Kotovica (Riga)

Urban planer in Riga City Municipality

MGeog in Urban Planning (University of Latvia) and MSc in Economics (University of Latvia), lecturing at the University of Latvia in the fields of strategic management of urban development, project management, sustainable mobility planning and other fields.
Over 20 years of experience in development, content management and coordination of large scale and notable complexity urban development projects in the Riga City Municipality within the fields of urban planning, climate resilience and sustainable development.

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Speaker 3: Iñigo Bonet (SestaoBerri)

Manager of Innovation, Sustainability and Urbanism Unit

Head of Sustainability, Innovation and Urban Planning at **Sestaoberri SAMP** in Spain.
He has over ten years of experience in urban regeneration and building rehabilitation, both in the private sector and in public urban development initiatives.
At Sestaoberri he is involved in managing European projects and strategies related to urban regeneration, energy transition and the Urban Agenda.

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Speaker 4: Pedro Otazua (Iberdrola)

Position: Energy Efficiency & Services Projects Development. Smart Cities.

He holds a master's degree in Mechanical Engineering from the Bilbao Engineering School. He has developed most of his career within the Iberdrola Group, where he began working in 2007 and has since taken on various roles across the Engineering & Construction, Generation, Energy Management and Smart Solutions divisions. He currently focuses on Energy Efficiency & Services, leading comprehensive decarbonization projects for public authorities and private clients. His work includes renewable energy supply, energy efficiency solutions, port electrification, photovoltaic deployment, heat electrification and e-mobility initiatives.

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Thank you

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2030 NEUTRALPATH

NEUTRALPATH project: Climate Neutral Labs for Energy Transition

Cecilia Sanz-Montalvillo, CARTIF Technology Centre

Funded by
The European Union

ATELIER Final Conference
11th March 2026

About NEUTRALPATH

25 PARTNERS

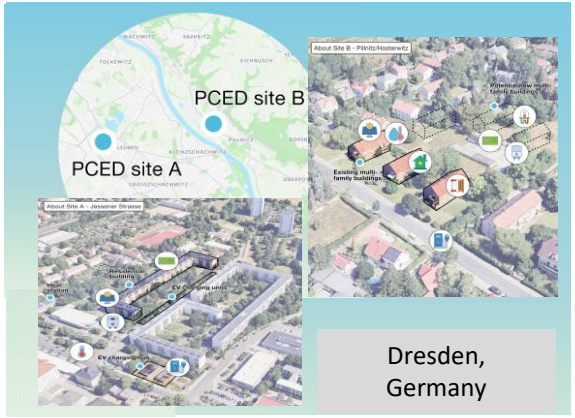
60
Months
2023-2027

7
Countries

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

FROM DEMONSTRATION TO LONG-TERM CITY TRANSFORMATION

accelerating climate-neutrality



- PCED human-centre designed
- Cost-effective & Flexible solutions
- Energy Surplus for sharing
- Climate-Friendly energy approach
- 5 Climate-Neutral City Labs

Maximize replication with LIGHTHOUSE and FELLOW cities

Ghent

- 'Muide-Meulestede' and 'Mariakerke' are implementing projects.
- Potential PCED in Muide-Meulestede.

Istanbul

- One of the Mission Cities.
- Potential PCED in Ghazane.

Vantaa

- Potential PCED in Aviapolis, which is one of the fastest growing areas.

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

Climate Neutral Labs as a tool for Energy Transition

CN-Labs are urban living labs designed to:

- Engage **citizens and stakeholders**
- Co-design **climate neutral solutions**
- Support the **development of PCEDs**
- Facilitate **knowledge exchange between cities**

They function as innovation and experimentation hubs to support the whole participatory process

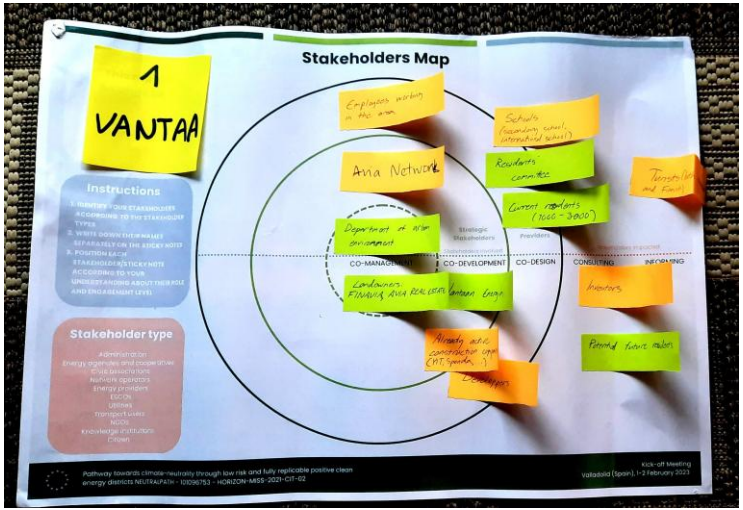
Methodology to set up the CN-Labs

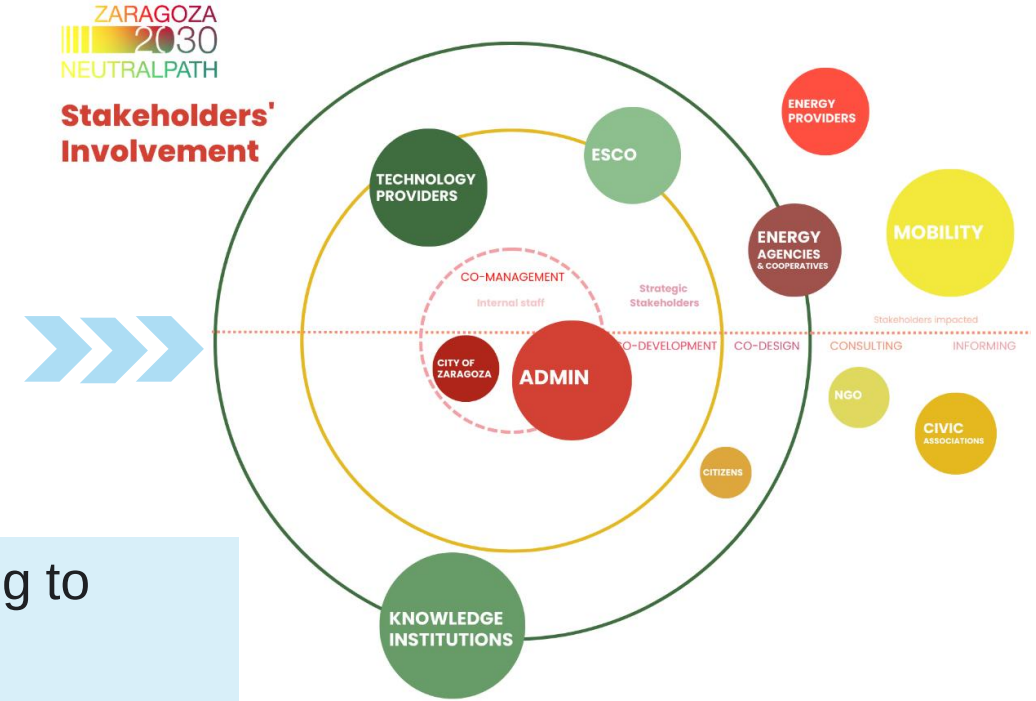
All labs follow a common methodology based on co-creation.
Three main steps:

- Stakeholder mapping
- Governance structure definition
- Vision, mission and roadmap of actions

This process ensures that the labs reflect the **local context and priorities of each city**

Stakeholder mapping





Stakeholders analyzed according to **Interest, Influence, role in the Participatory Process**

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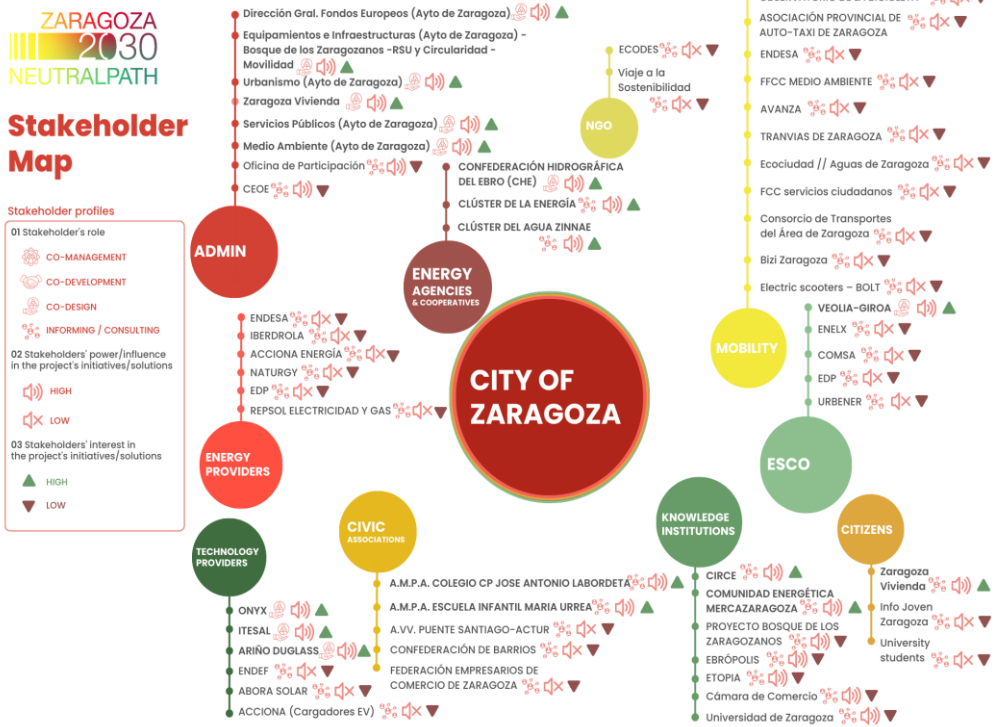
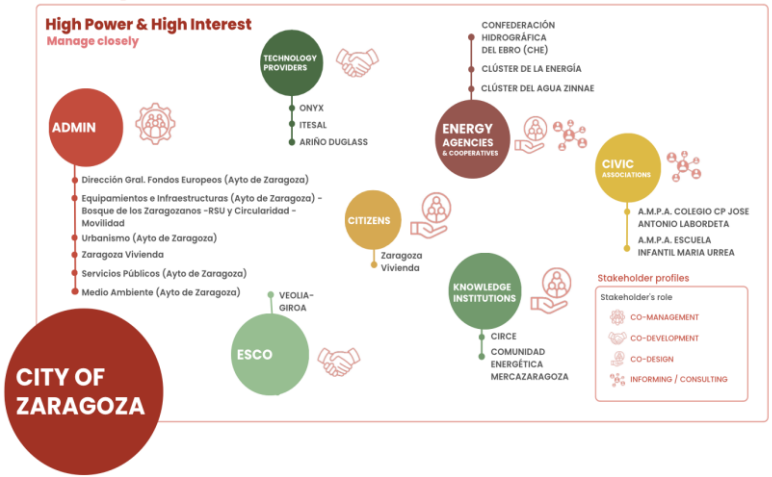
Stakeholder mapping

- Identify all relevant actors
- Analyze interest and influence
- Define core participants of the CN-Lab



Primary stakeholders



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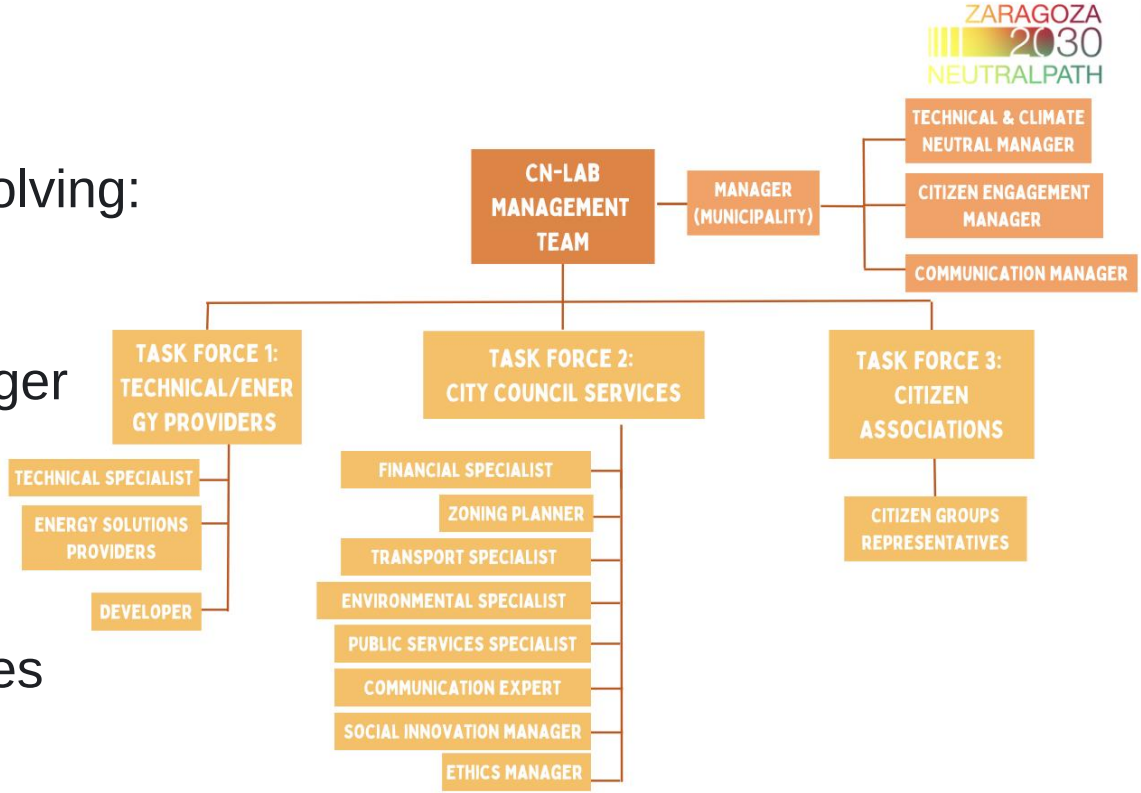
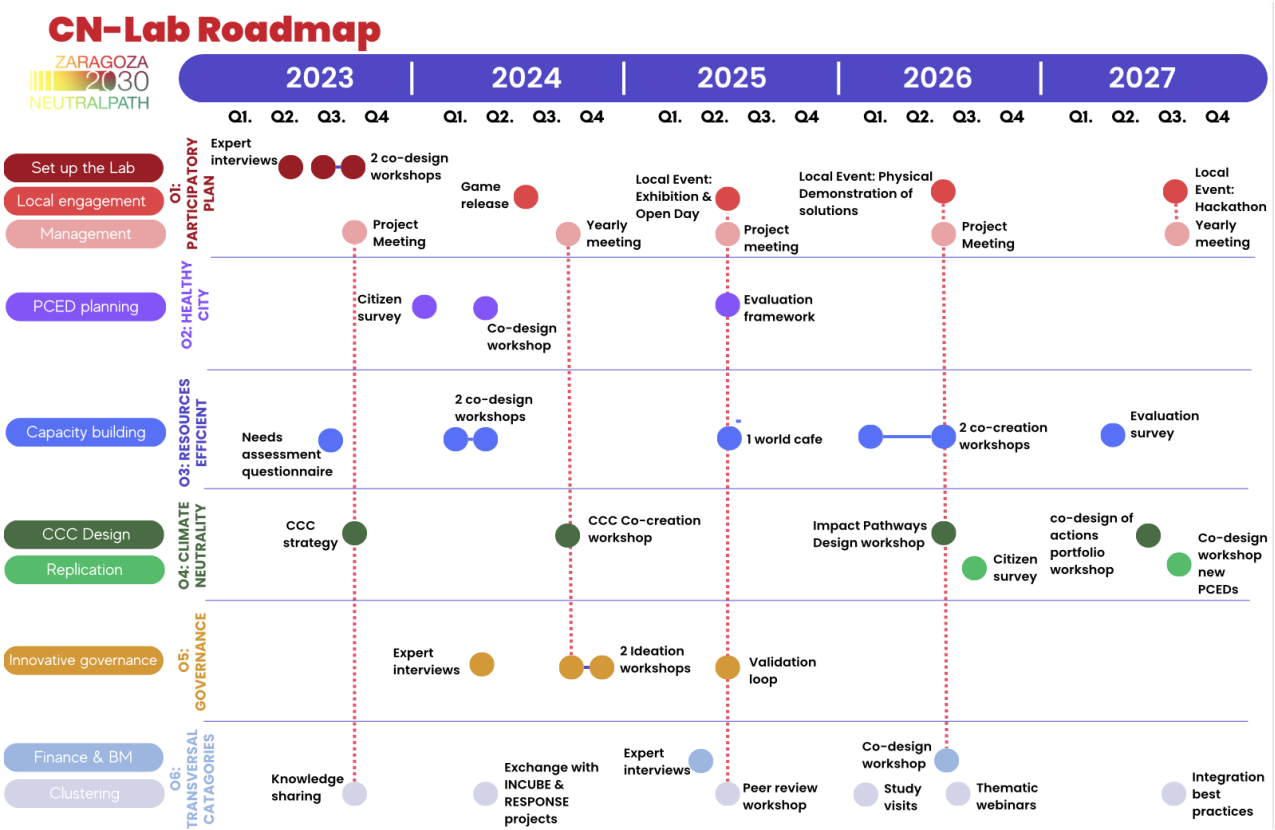
Governance structure definition

Each CN-Lab defines a **governance structure** involving:

- CN-Lab manager
- Social innovation manager
- Technical manager
- Financial manager
- Citizen engagement roles



Vision, mission and roadmap of actions



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NEUTRALPATH: 5 different CN-Labs with the same approach

Same **strategic objective**: achieve Climate Neutrality through PCEDs

Same **public driven tool**: Establishment of CN-Labs as collaborative governance spaces

Same **methodology** to set up the CN-Labs

Zaragoza's CN-Lab
from governance to implementation

Context

- Focus on improving the energy performance of the existing residential building stock
- Strong link with the city's climate neutrality target for 2030

Governance approach

- CN-Lab coordinated by the municipality
- Collaboration between
  - city departments
  - research centres
  - private companies
  - citizens and local organisations
- Public–private partnerships and mixed funding schemes.

The Zaragoza's CN-Lab acts as a **municipal coordination instrument to implement concrete urban energy projects**.

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

Dresden's CN-Lab

Systemic transformation of the urban energy system

Context

- Two demonstration districts testing different solutions for climate-neutral energy systems

Governance approach

- Municipality leads the process
- Horizontal collaboration between:
  - city administration
  - energy providers
  - property owners
  - researchers
  - citizens
- Implementation through independent task forces and stakeholder workshops

The Dresden's CN-Lab works as a **platform for systemic planning and coordination of the urban energy transition**.

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

Vantaa's CN-Lab

Planning climate-neutral districts

Context

- Focus on the transformation of the Aviapolis district
- Integration of climate neutrality in urban development

Governance approach

- Strong emphasis on:
  - co-creation
  - knowledge sharing
  - collaboration between city, developers and citizens
- CN-Lab supports the design of climate-smart urban planning strategies

The Vantaa's CN-Lab functions mainly as a **strategic planning tool for future climate-neutral districts**

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

Ghent’s CN-Lab

Collaborative governance for climate action

Context

- Focus on developing governance and implementation models for PCEDs

Governance approach

- Multi-stakeholder collaboration involving
  - local administration
  - universities
  - private sector
  - civil society
- Strong emphasis on participation and co-creation processes

The Ghent’s CN-Lab is used primarily as a **governance mechanism to coordinate stakeholders and shape climate policies.**

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

Istanbul's CN-Lab

Capacity building and institutional learning

Context

- Complex metropolitan context with strong institutional diversity

Governance approach

- CN-Lab promotes collaboration between:
  - universities
  - industry
  - local administration
  - civil society
- Focus on knowledge exchange and institutional cooperation

The Istanbul's CN-Lab serves mainly as a **platform for experimentation, learning and institutional capacity building.**

Cecilia Sanz-Montalvillo - cecsan@cartif.es - CARTIF Technology Centre

NEUTRALPATH: 5 different CN-Labs with the same approach

City	Project stage	Main challenge	Governance role of the CN-Lab
ZARAGOZA 2030 NEUTRALPATH	Implementation	Energy renovation of existing buildings	Coordination tool to implement concrete projects
DRESDEN 2030 NEUTRALPATH	Implementation	Transformation of urban energy systems	Platform for systemic planning and stakeholder coordination
VANTAA 2030 NEUTRALPATH	Strategic planning	Developing a climate-neutral district (Aviapolis)	Strategic planning platform for urban development
GHENT 2030 NEUTRALPATH	Policy & governance design	Building collaborative governance models	Mechanism for stakeholder coordination and policy design
ISTANBUL 2030 NEUTRALPATH	Capacity building	Integrating climate neutrality in a complex metropolitan context	Platform for learning, cooperation and institutional capacity

Thank you!

2030 NEUTRALPATH

ATELIER Final Conference: Riga's Journey to Climate-Neutrality

Nika Kotoviča
City of Riga

AmsTErdam BiLbao cItizen drivEn smaRt cities

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Positive Energy Districts

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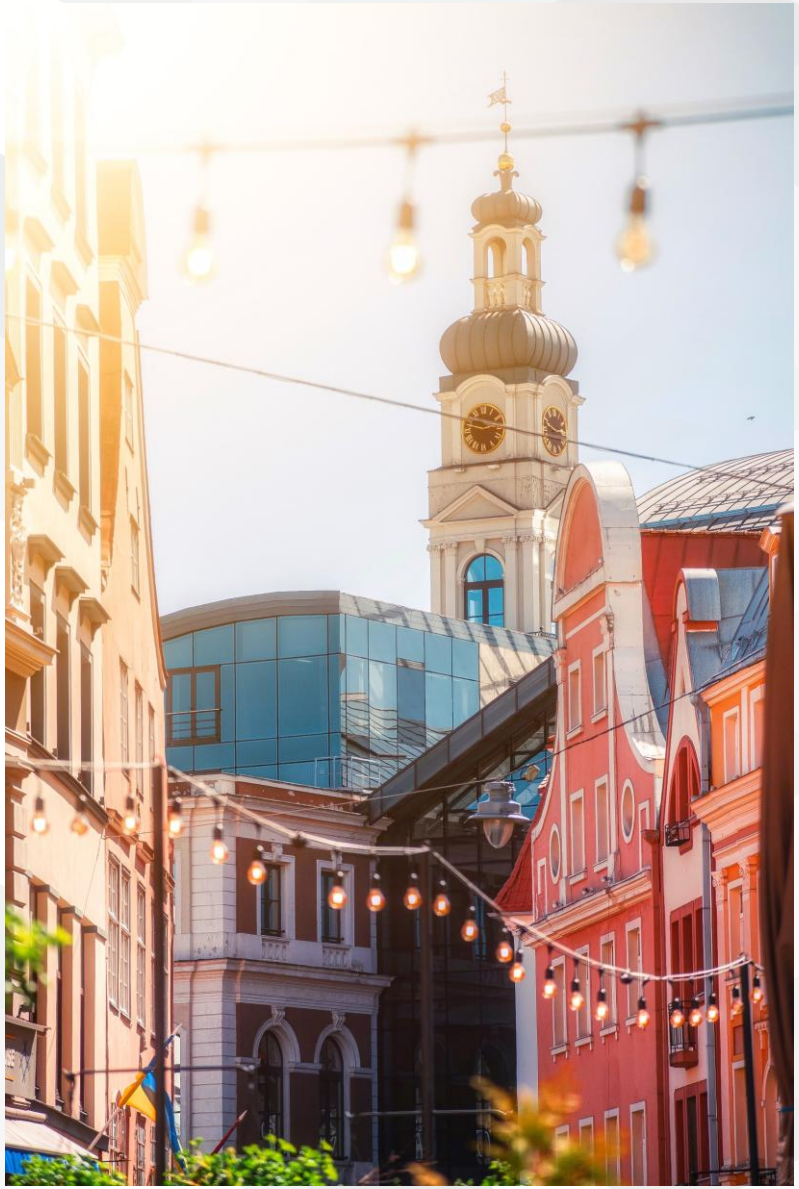
Riga's Climate Ambition

- Climate-neutrality is not only an environmental goal – **it is an urban development strategy!**
- Since 2007, Riga effectively addressed the EU policies and targets …

  … often going beyond the National government



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«Our goal is to make Riga the first climate-neutral city in the Baltic states, and we want to be among the first 100 climate neutral cities in Europe by 2030»

Mārtiņš Staķis,
Ex-Mayor of
Riga, 2021

Riga: Early Commitment to Climate Action

- **2008:** Riga became one of the first EU capitals to sign the **«Covenant of Mayors for Climate and Energy»**
- **2010:** Riga's first **«Sustainable Energy Action Plan»** (SEAP) set the target 20-20-20 by 2020
  - *This target was achieved already in 2012*
- **2014:** Riga's renewed **«Smart City Sustainable Energy and Climate Plan 2014-2020»**
- **2019:** Elaboration of the new **«Riga Sustainable Energy and Climate Action Plan 2022-2030»** (SECAP) launched

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Why Climate-Neutrality is important for a municipality?

1. **Energy efficiency** – rational energy consumption, energy renovation…
2. **Renewable energy resources** – energy transition to resources which recover fast…
3. **Energy security** – Latvia does not own oil or natural gas deposits…
4. **Economic growth** – less imported fossil fuels, less money transferred to others, more jobs…
5. **Circular economy** – efficient use of materials…
6. **Reduction of air pollution** – electrification, efficient energy production, energy efficiency…
7. **Adaptation to climate change** – greener city, less heat islands, less load on stormwater sewage systems…

Riga: Climate Action Accelerated Through Participation in ATELIER

- **2021:** Riga joined the Paris Climate Declaration **«Cities Leading the Way to Climate Neutrality»**
- **2021: Climate Neutrality Commission** at the Riga City Council was established
- **2022:** The City of Riga was selected to participate in the European Mission «100 Climate-Neutral and Smart Cities by 2030»
- **2019-2022:** Development of the **«Bold Vision 2050»**
- **2022-2023:** Elaboration of the Master Scenaro for the Climate-Neutrality

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Riga: Challenges

Energy production (heat energy and electricity, RES integration)	**Multi-apartment residential buildings** (massive retrofits, innovative construction materials and energy solutions)	**Municipal infrastructure** (municipal buildings, water supply and sewerage, urban lightning, municipal transport fleet)	**Transport** (sustainable public, commercial, and private transport)	**Adaptation** (integration of adaptation measures in urban planning at all planning levels) **+ Mitigation** (ambitious resilience and climate-neutrality policies)	**Communication on environment and climate** (education, energy efficiency measures in public buildings, energy communities, promotion of circular economy, open data and digitalisation)
					
Riga is located in the **Northern Europe**: over 60% of the energy resources are used as heat energy	Riga has one of the lowest rates of renovated residential buildings in the EU while **around 6000 multi-apartment residential buildings need urgent renovation**	**Committment** to achieve the status of a **climate neutral municipality** already by 2030	**Transport is the main polluter** of the urban environment in Riga - conventional, fuel-powered vehicles account for 46% of total CO_2 emissions (2020)	**Ambitious goals:** to become the first climate-neutral city in the Baltic States and among the first 100 climate-neutral cities in Europe by 2030.	**Participatory urban planning approach:** education and achieving behavioural change of each citizen, as climate-neutral cities are made by responsible residents.

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Riga: Response to Challenges

- **Riga's renewed SECAP – an ambitious, goal-oriented, integrated policy framework** for a smart urban decarbonisation transition

  inspired by the «Cities4ZERO» methodology applied in ATELIER project

- **Participatory planning:** Riga's renewed SECAP – one of the most widely discussed climate policy documents in Latvia

  18 working groups in smaller and larger formations, involving more than 280 specialists of various fields representing municipal departments and municipal services providers, academia, research, advisory and other experts, associations, NGO's and active civil society

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Riga's Climate City Contract Climate Targets for 2030

By 2030, the City of Riga commits to:

- reducing CO_2 emissions **by 53% compared to 2019**
- reducing CO_2 emissions **by 80% compared to 1990**
- achieving **climate-neutrality in municipal infrastructure**

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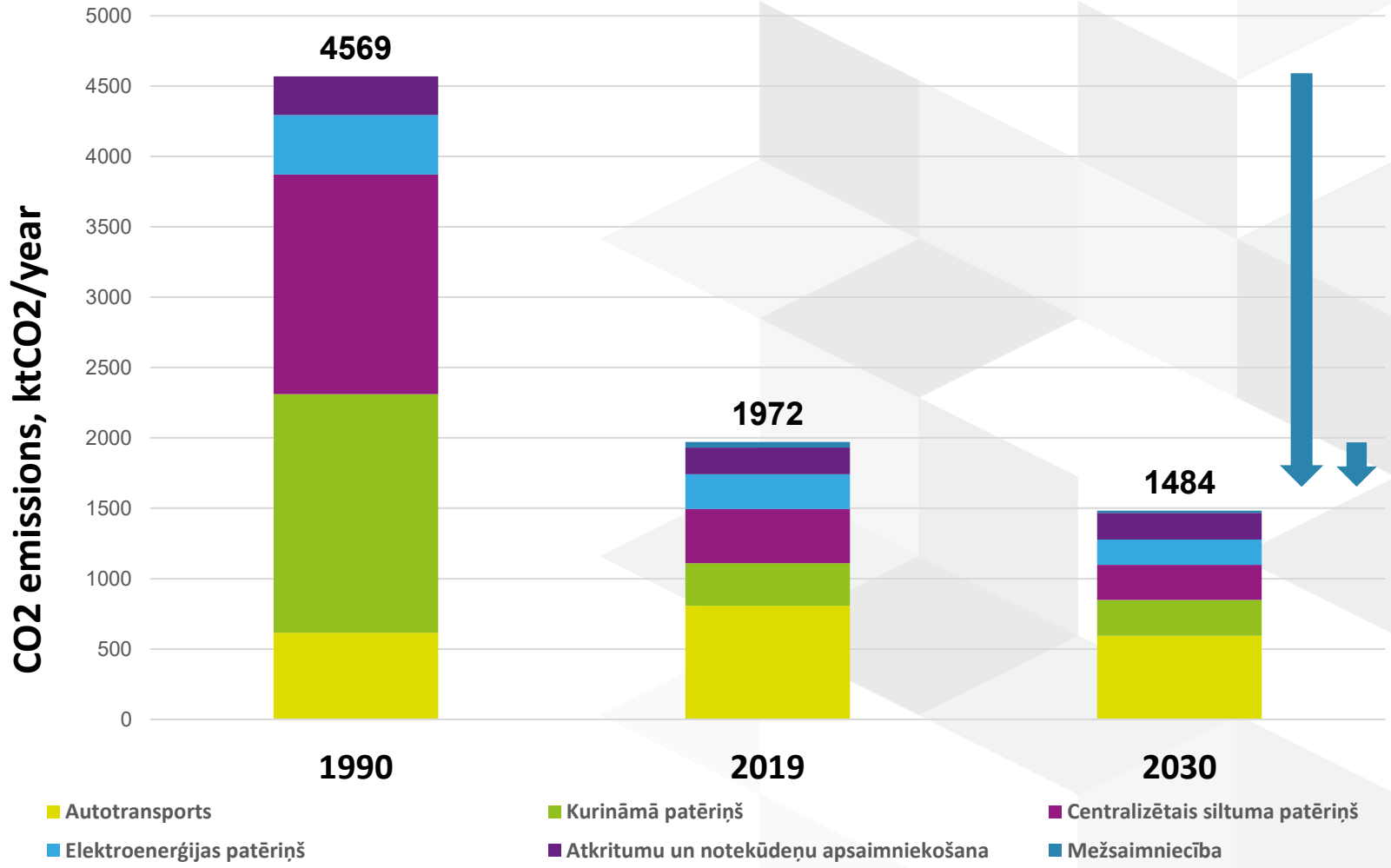
Riga's Climate City Contract: Reduction of GHG Emissions



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Role of European Cooperation

- EU funding instruments
- Interregional cooperation
- Knowledge exchange
- Innovation pilots
- …

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Contact

Nika Kotoviča

City of Riga | Riga Municipal Agency
«Riga Energy Agency»

www.rea.riga.lv

www.smartcity-atelier.eu

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Implementing European Urban Innovation

Semi-public companies as implementation tools

Case study: Sestaoberri SAMP – Sestao

Iñigo Bonet Badiola

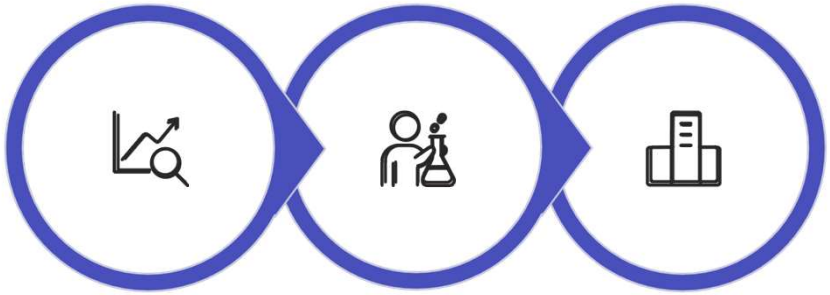
Head of Sustainability, Innovation and Urban Planning

Sestaoberri SAMP-Sestao

Urban challenges in European cities

- Energy transition
- Climate change
- Urban regeneration
- Social challenges

From innovation to implementation



- European research projects
- Pilot projects
- Real urban transformation
- Cities need implementation tools

Sestaoberri SAMP

Semi-public urban company

Created by:

Municipality of Sestao

Basque Government

Mission:

Urban regeneration

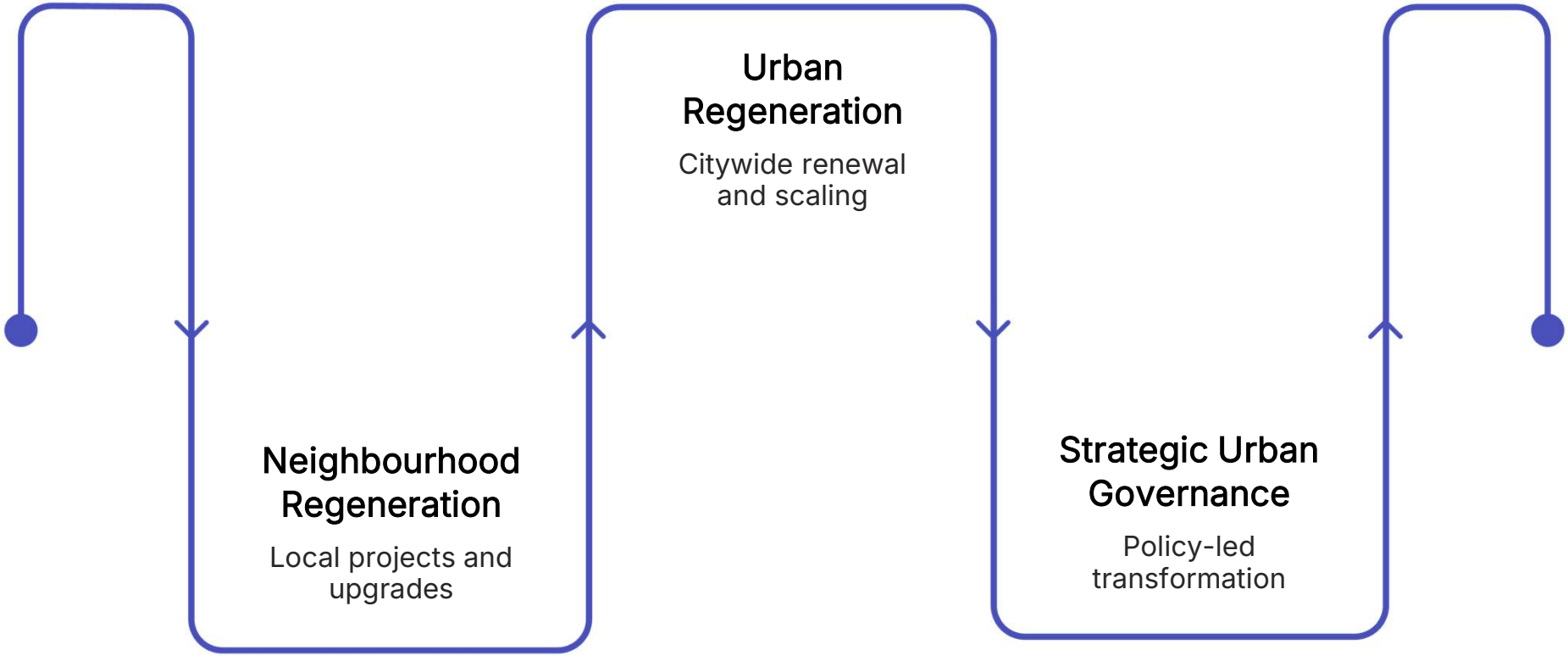
Strategic urban development

First phase: urban regeneration

- Regeneration of degraded areas
- Housing improvement
- Social regeneration
- Community engagement

Evolution of the company

From neighbourhood regeneration initiative to a strategic tool for city transformation.



European innovation projects

EU-GUGLE

PAPIRUS

TRIME

NEZER

+CityxChange

Positive Energy District approaches

Buildings
Efficient, smart-connected buildings

Energy Systems
District heating and smart grids

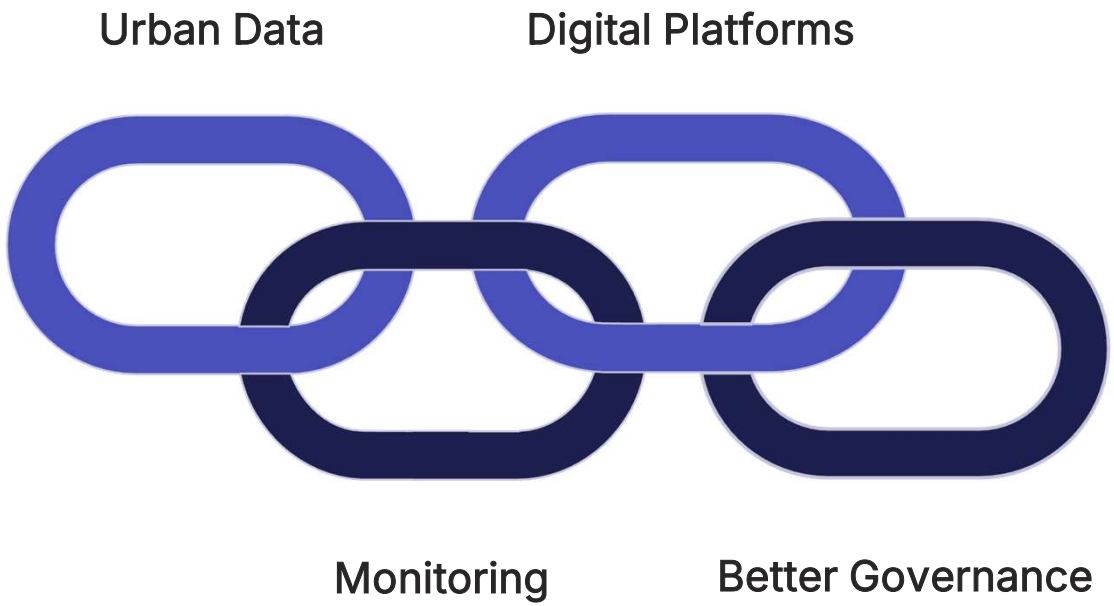
Renewables
Local solar, wind and storage

Urban Integration
Planning, transport and public space

Positive Energy Districts integrate these four pillars to create energy-resilient urban environments, moving beyond individual building efficiency to district-wide strategies like municipal heating and smart grid management.

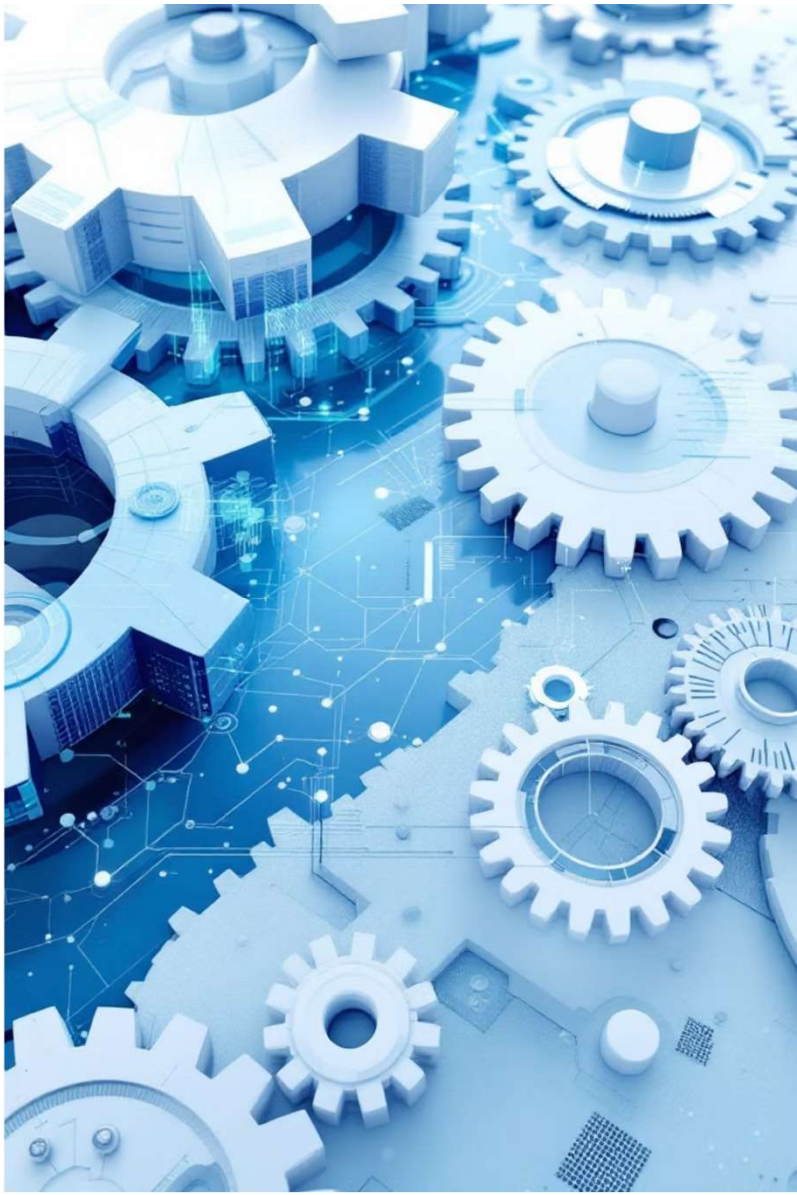
Data-driven cities

Efficient urban data systems and monitoring of urban performance through digital platforms, aligned with European initiatives such as GAIA-X.



Advantages of semi-public companies

- Flexible management
- Faster implementation
- Multi-level governance
- Local ecosystem



Process innovation

- Lean management
- BIM and digital tools
- Agile project coordination

Future decarbonisation strategy

- SESMART programme
- Municipal energy strategy
- Large photovoltaic installations
- Integrated urban energy systems

THANK YOU

We appreciate your time and interest in European urban innovation

Contact us

Iñigo Bonet Badiola

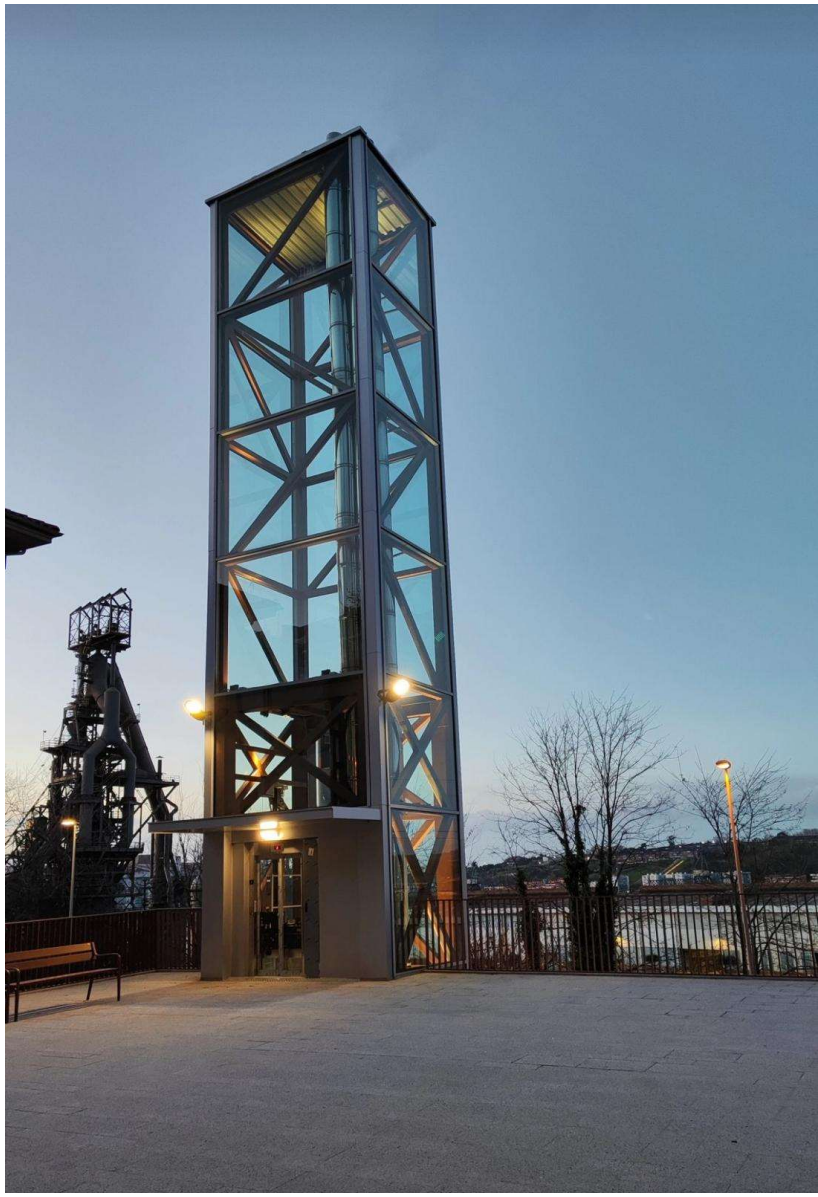
Head of Sustainability, Innovation and Urban Planning

Sestaoberri SAMP-Sestao

Email: ibonet@sestaoberri.eus

Phone: +34 695 89 10 11

Web: www.sestaoberri.eus



SMART CITIES

Smart Cities. The urban energy transition

Integrated electrification solutions

SMART SOLUTIONS ESPAÑA

03/2026

Global presence

Global leader in clean energy, grids and storage

With more than 170 years of history

Iberdrola is today a stronger, more sustainable and more diversified company than ever before

Leading utility in Europe and second in the world, by stock market value.

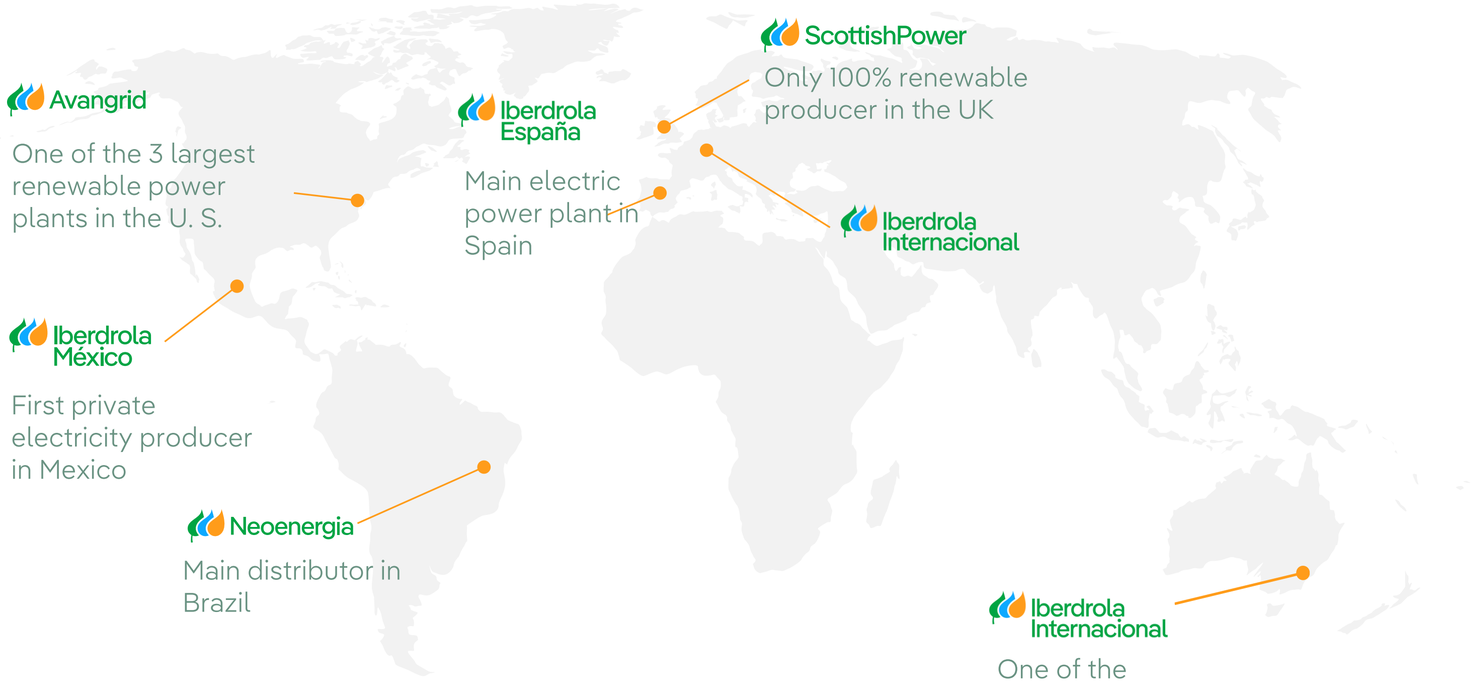
Present in more than **40 countries**.

The Iberdrola Group supplies energy to more than **100 million** people worldwide.

It also employs, directly and indirectly, more than 400,000 people.

One of the companies with the **lowest emissions** of polluting gases in the world.

Carbon neutrality in Europe by 2030, and globally by 2050.



Iberdrola Internacional

Globlal presence in Portugal, France, Germany, Australia, Japan, Italy, Ireland, Norway, Sweden, Poland, Hungary, Greece, Philippines, Taiwan or South Africa, among others

Business areas and strategic pillars

Clean, efficient and safe value chain

Decarbonisation of electricity

Renewable Energies

Wind power Onshore

Offshore

Solar Photovoltaic

Hydroelectric

Electrification of demand

Clients

Electric Mobility

Photovoltaic Self-consumption

Heat

Renewable Hydrogen

Digitalization

Port Electrification

Integration of the system

Grids

Smart Grids

Batteries

Smart Cities. The urban energy transition

Our vision

Grid update development

- **Smart & flexible**. Advanced metering. Surplus generation management.

Decarbonization through Electrification

- Transport **Infrastructure**: EV, e-bus, heavy-duty, and OPS (Onshore Power Supply) for ports.
- Heating: **Heat Pumps**, district heating using **renewable sources** and data-center heat.
- Self-consumption & Communities: Solar Communities enabling access **without rooftop or investment**.

Energy Efficiency Solutions

- Buildings renovation: **80%** of homes rated E/F/G; up to **50% energy cost savings** after rehab.
- **Energy monitoring** and management in public and private buildings.
- Energy and Energy Efficiency Service Contracts (**ESCO**)

Transport electrification

Infrastructure development

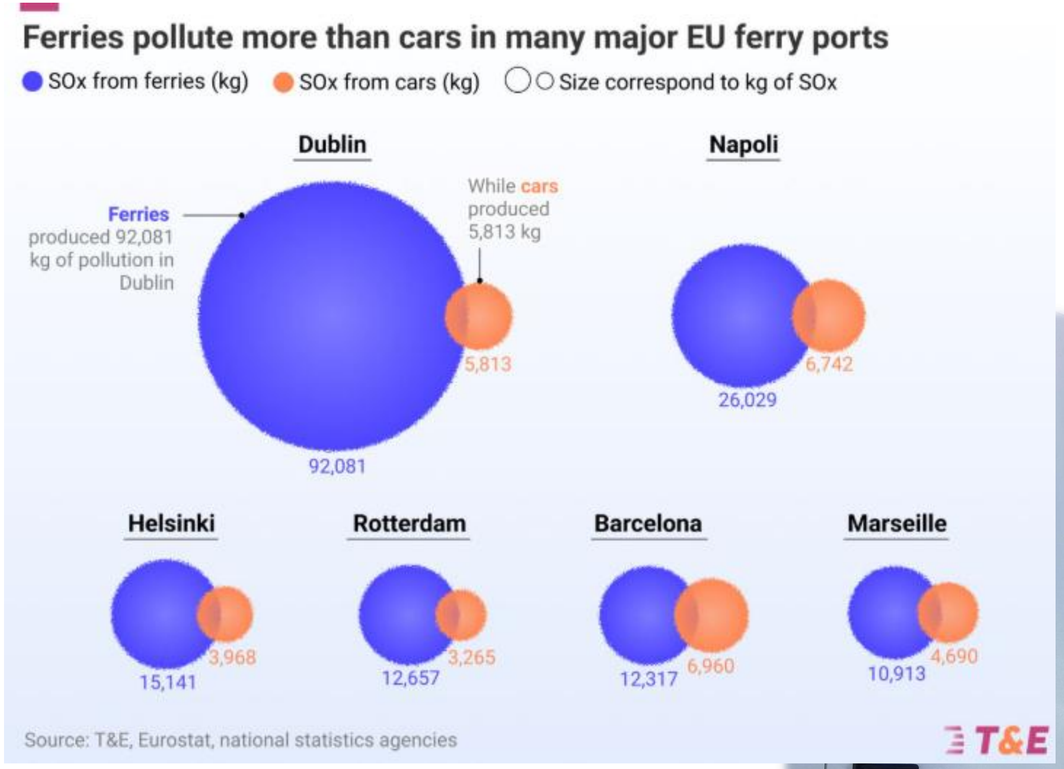
Public EV fast charging infrastructure

Heavy duty transport electrification

E-bus infraestructure

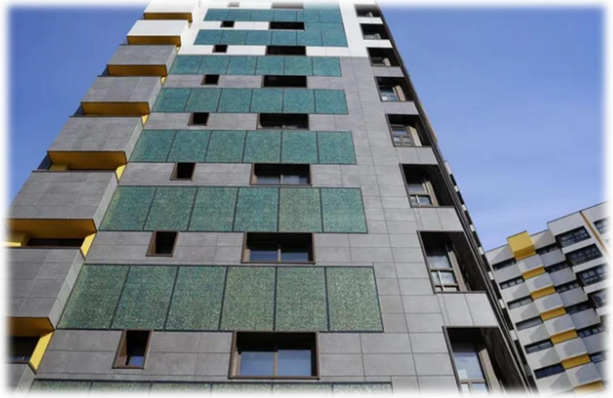
OPS (Onshore Power Supply)

Vessels switch off their fossil-fuel engines



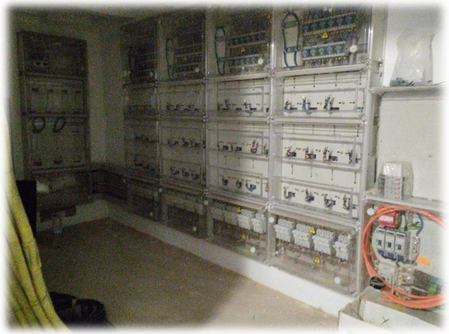
Heat Electrification: Torre Efisa Project - A Coruña

Passive efficiency measures



Heat Electrification: Torre Efisa Project - A Coruña

Active measures. Hybrid Energy Systems



On site Self-consumption & Communities

Self consumption: Local, on-site energy is the most effective approach

Communities: Enabling access without rooftop & investment

Iberdrola Music. Electrical infraestructure development

MV infrastructure with automatic electric back-up supply (100% availability)

Burial of the 45 kV overhead line. **2 km of 45 kV buried line**, removing of the 7 supports crossing the venue

Next steps: Solar Community & public fast charging EV Station

Carbon footprint reduction expected >80% for Mad Cool Festival 2026

Urban energy transition

Key barriers and challenges

- Grid upgrades requires investment.
- Need for large initial investment.
- Unclear regulatory frameworks.
- Misalignment between EU directives and national regulations.
- Complex permitting and administrative bottlenecks.
- Social acceptance and urban-integration challenges.
- Rigidity of public procurement contracting procedures.

Where there´s a will there´s a way