

Bilbao PED Implementation

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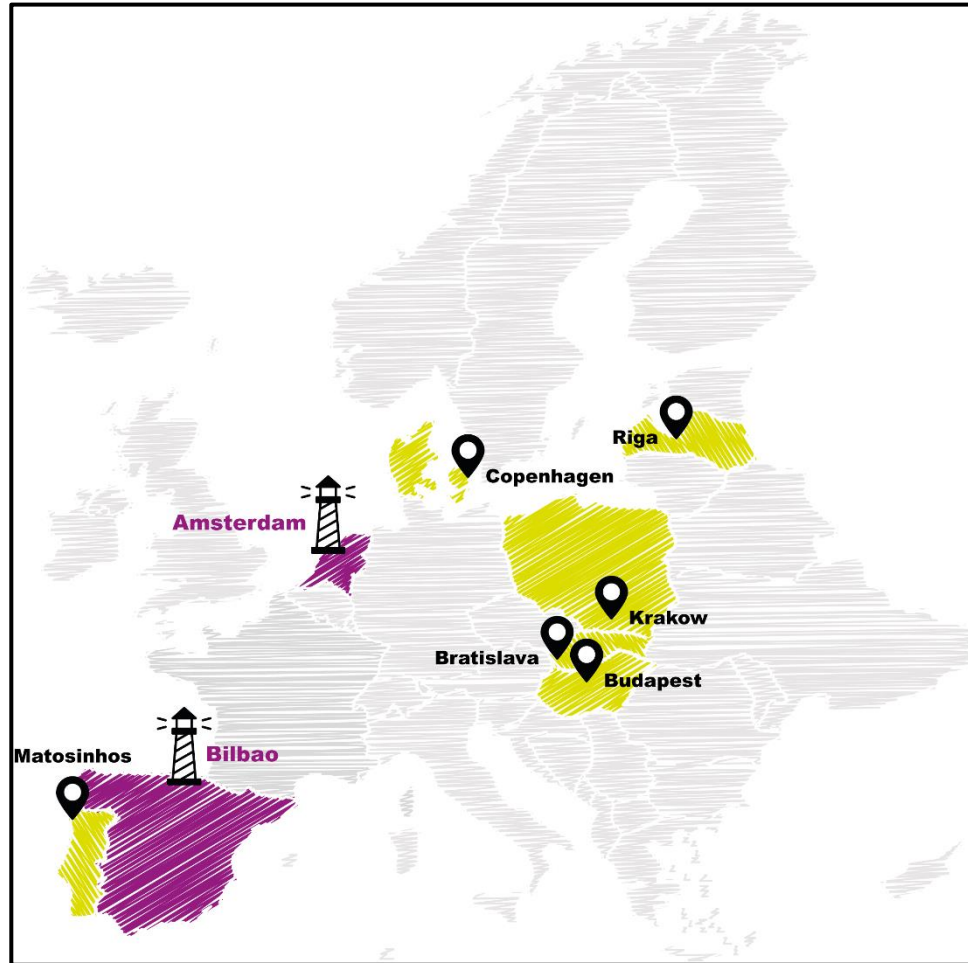
AmsTERdam BiLbao citizen drivEn smaRt cities



atelier
Positive Energy Districts



ATELIER – General overview



- Consortium: 30 partners of 11 countries
- Length: 5 years 2019 – 2024
- Financing: 19,5 M€ EU
- Coordinator: City of Amsterdam

Positive Energy District (PED):

“urban district with anual local surplus production of renewable energies “

Three principles :

1. **Reduction of CO² emissions**
2. **Sustainable, secure and affordable energy systems for citizens – Zorrozaurre Laboratorio Urbano**
3. **Collaboration and knowledge sharing**

3 areas conform Bilbao's demo



- Demosites located in the Zorrozaurre island, the new big urban development of the city.
- Atelier has transformed Zorrozaurre into an urban laboratory and three sites were selected in order to meet PED ambition and environmental targets.
- The demo includes a wide selection of kind of buildings:
 - Old and new
 - Public and private
 - Residences and offices
- Bilbao's PED generates electricity via PV panels in the roofs and heating and cooling via geothermal power
- Bilbao's PED will also process all the generated data as an input for the optimization of energy resources
- A 5th generation district heating based on a low temperature geoexchange network will cover the heating and cooling demand of the island. For the PED, specific geothermal projects have been defined.

Industrial Background



This project has received funding from the European Union's Horizon 2020 research and innovation programme.



New Urban Development

1- IMPROVING EXTERNAL ACCESSIBILITY AND INTERNAL MOBILITY

2- REGENERATING ENVIRONMENT AND URBAN QUALITY

3- INVESTING IN HUMAN RESOURCES AND IN TECHNOLOGY INNOVATION

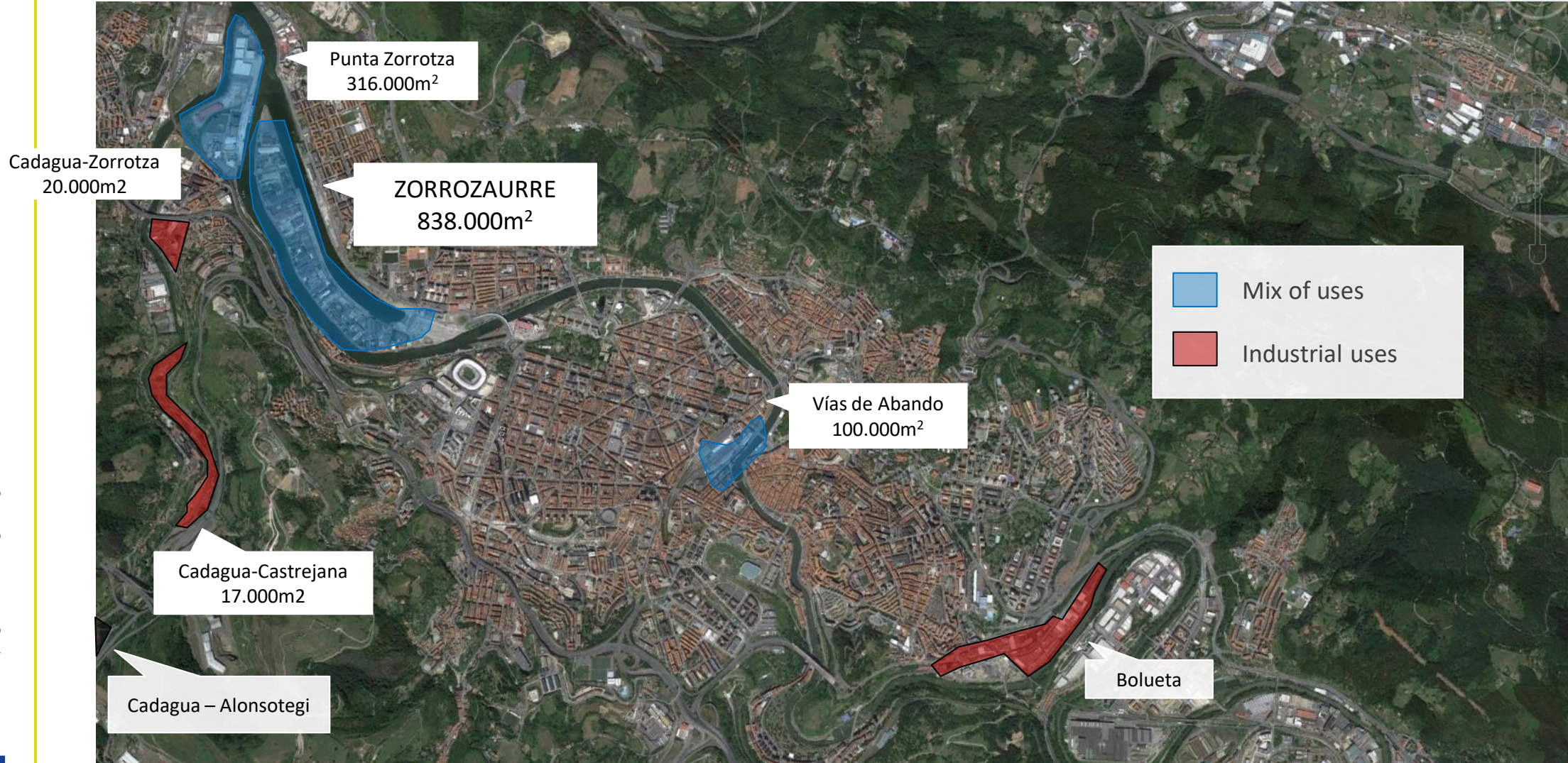
4- FOCUSING ON THE CULTURAL DIMENSION



Many old industrial spaces have been recovered for the city...



but not all of them have.



Zorrozaurre: strategic placement



Zorrozaurre: link between old industrial city and future Bilbao



1. **Heritage:** Refurbishment of 320 homes and 20 old industrial buildings
2. **Decontamination:** Recovering 285,000m² of polluted soils
3. **Climate change:** Opening of Deusto Canal, the peninsula will become an island lowering 0.5m the level of the Nervión estuary
4. **Accessibility:** 4 tramway stops, 7.5km of roads transformed into promenades and bike lanes
5. **Mix of uses:** 5,500 new homes, 150,000m² of office spaces in a Urban Technological Park, sport centres, training centres...
6. **Renewable energies promotion:** A District heating network consulting analysis





Zorrozaurre: link between old industrial city and future Bilbao



2 New Technological Parks

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6. **Renewable energies promotion:**

ATELIER - Zorrozaurre

The project aims to contribute to the transformation of the island of Zorrozaurre in terms of energy and sustainability by trying to define, implement and validate innovative solutions.

In this context, it is committed to generate a **Positive Energy District (PED)** through the deployment of:

- Geothermal Network
- Photovoltaic
- EnergyDigitisation solutions
- Etc



Zorrozaurre to be used as a Living Lab for the deployment and validation of the PED

ATELIER - PED Area

PED area include:

- *Geothermal system for heating/cooling*
- *Local RES electricity generation*
- *Smart metering and monitoring equipment*
- *A digitalized electric distribution network*
- *Smart charging points for e-vehicles for residentials*
- *Smart Street furniture – smart poles*

NORTH AREA

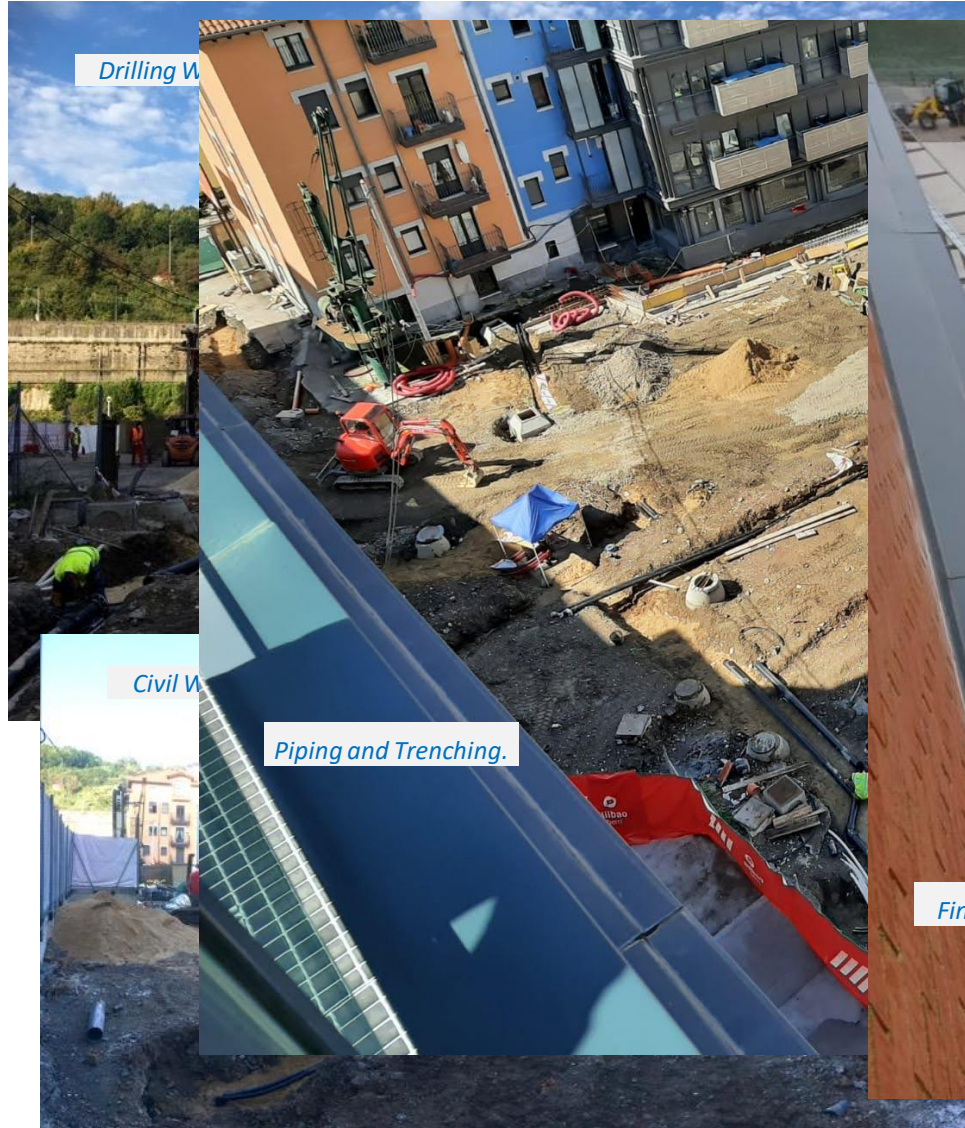
CENTRE AREA

SOUTH AREA

Northern site



Central site



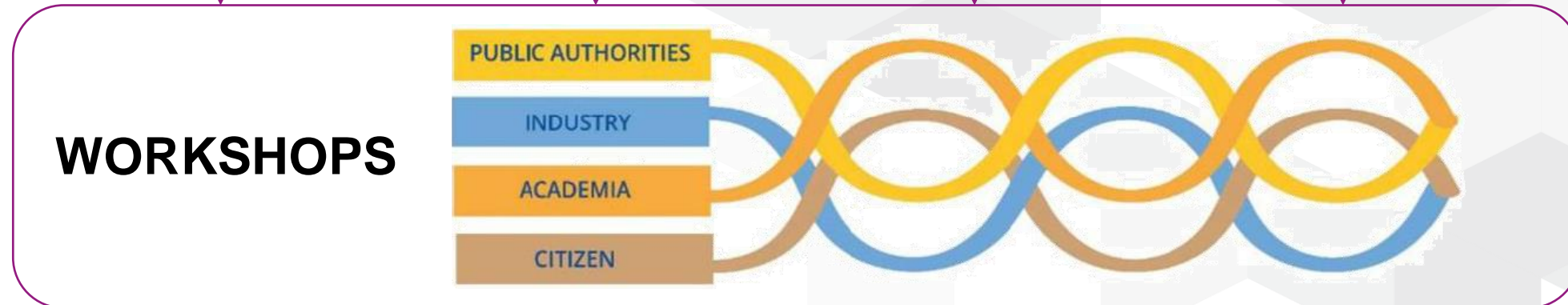
Bilbao Innovation Atelier



Atelier Bilbao
Core Team



Innovation
Tracks
Coordinators



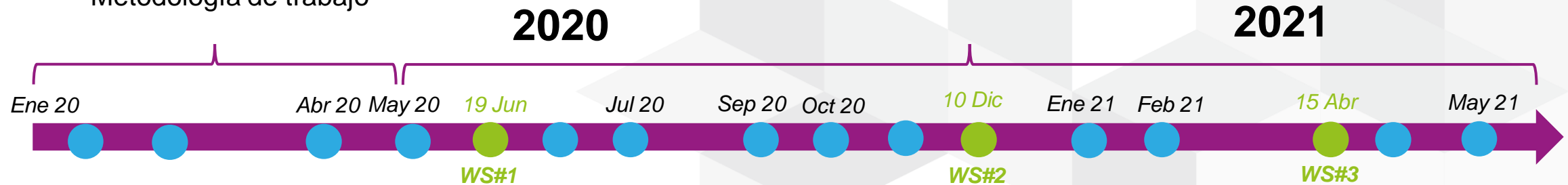
Local
Stakeholder
Community



Talleres Bilbao IA

- Definición de Bilbao Innovation Atelier
- Estructura, roles y responsabilidades
- Metodología de trabajo

- Reuniones mensuales de seguimiento
- Talleres



WS#1 – Taller con Smart Cities vascas

- Ciudades/proyectos: San Sebastian (Replicate), Vitoria (SmartENCity), Pamplona (Stardust), Sestao (+cityxchange) and Bilbao (ATELIER)
- Compartición de experiencias y buenas prácticas entre las ciudades/proyectos
- 32 participantes (online)

WS#2 - La financiación del ahorro energético: experiencias y alternativas (Sesión 1)

- Innovation Track #3
- Serie temática de talleres
- Compartición de conocimiento y buenas prácticas de empresas y organizaciones sobre instrumentos de financiación en el marco del desarrollo de PEDs
- 25 participantes (online)

Lanzamiento de Atelier Bilbao + WS#3 Taller de diagnóstico integral y participado para la Transición Energética de Bilbao

- Sesión institucional (kick-off)
- Taller técnico para el co-desarrollo de la visión de Bilbao 2050 (diagnóstico DAFO) con un grupo de agentes involucrados en la transición energética
- 6 Grupos de Trabajo + sesión plenaria
- 48 participantes (presencial + online)

WS#4 – El valor de la información

- Inno Track #4
- Comprensión de la percepción de los ciudadanos sobre los pilares de la transición energética de Bilbao.
- Reflexionar sobre el valor de la información y los datos e identificar los más valiosos para la ciudadanía
- 11 participantes en representación de 7 de los 8 Consejos de Distrito de Bilbao (online)

10 Jun



WS#4



6 Jul



WS#5



Sep 21



26 Oct



WS#6



Nov 21

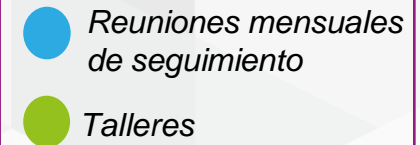


15 Dic



WS#7

2021

- 
- Reuniones mensuales de seguimiento
 - Talleres

WS#6 – Generación de la visión energética de Bilbao 2050 y escenarios a 2030

- Contraste de la visión a 2050 y los escenarios a 2030 con los agentes participantes en el taller de diagnóstico DAFO de Abril'21
- 3 Grupos de Trabajo sobre rehabilitación y edificación, movilidad y espacio público, y generación energética.
- 30 participantes (presencial)

WS#5 - Experiencias y buenas prácticas de colaboración público privada para la financiación de la eficiencia energética (Sesión 2)

- Inno Track #3
- Centrado en la rehabilitación llevada a cabo en Zorrotzaurre en el periodo 2009-2020: cómo se desarrolló, agentes involucrados, mecanismos de financiación, retos y barreras.
- 15 participantes (online)

WS#7 – La electrificación del calor en los distritos urbanos de energía positiva (PED)

- Inno Track #1
- Conocimiento de soluciones técnicas que contribuyan a la reducción de emisiones contaminantes mediante el empleo de la bomba de calor en la demanda de calefacción y ACS.
- 43 participantes (online)

Bilbao Energy Transition

Sustainable Energy Action Plan 2012-2020

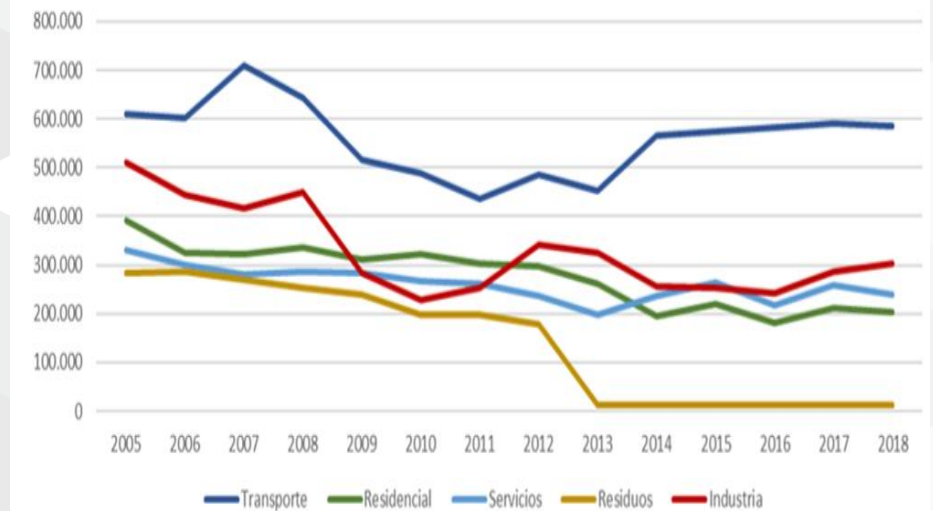
Bilbao Environmental Strategy 2050

SECAP 2030

Energy Agency creation

Heating and Cooling Plan

Evolución histórica de las emisiones de GEI del municipio de Bilbao por sectores (tCO₂/ año) para el periodo 2005-2018



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RETOS DE BILBAO

que sea una
ciudad de las
personas

que se encuentre
a la vanguardia del
desarrollo urbano

que sea generadora
de riqueza y empleo

y que mantenga su
identidad propia

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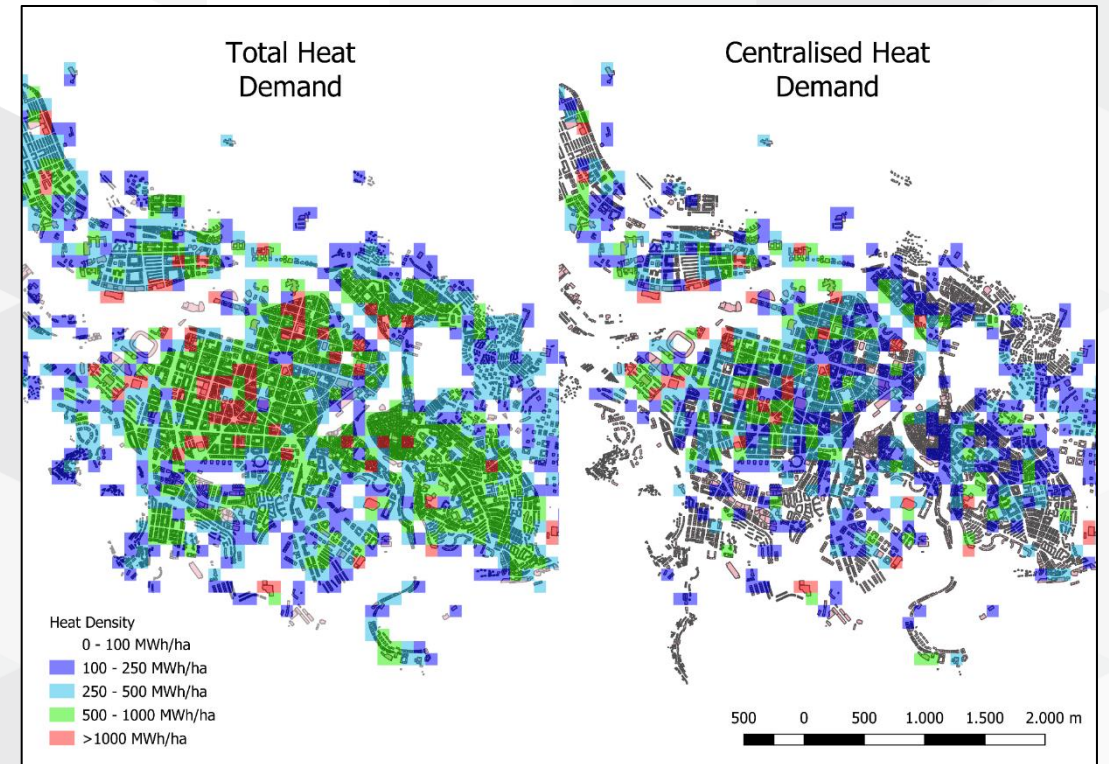
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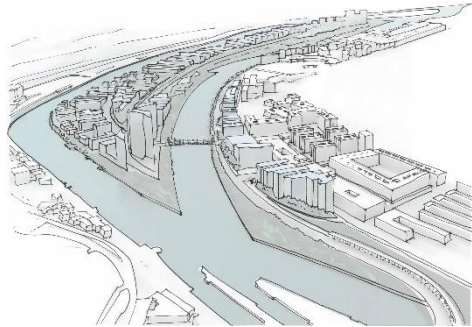


Heating and Cooling Plan

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