

# **Energy Efficiency & Urban Regeneration Experiences in Vitoria-Gasteiz**

**Patxi Hernandez**

**VIIESA- Basque Country Public Housing Body**



# Who we are

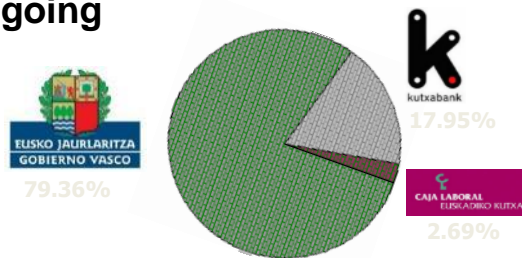
**VIRESA** is a public company of the Housing Department of the Basque Government, whose **main objective is to promote high quality subsidized housing in the Basque Region**, thus contributing to the effort by the Regional Government to make real the right of housing in all social sectors.

VIRESA also promotes and participates in urban regeneration, renovation and refurbishment, as a way to improve quality of life of the citizens and contribute to the region's sustainability goals.

- Set up in 1990, began to operate in 1992.

- Leading property developer in the Basque Region: 12.516 social housing flats completed and 4.469 ongoing

- Partners:

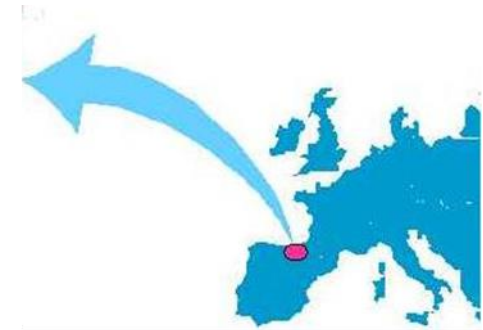


- Since 2011 VIRESA, as ESCO, supports social housing tenants, managing thermal facilities and providing heating and DHW (10 years long contracts)

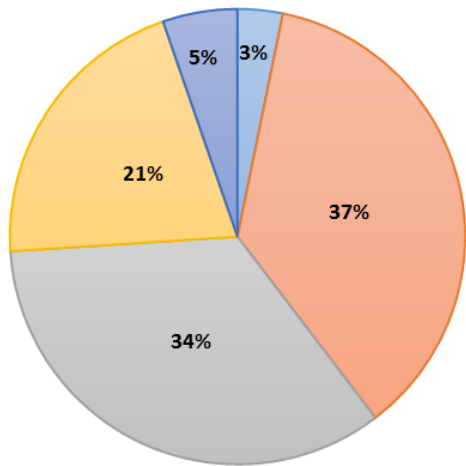


# Vitoria-Gasteiz

- ✦ Capital of the Basque country
- ✦ 240,580 inhabitants
- ✦ 276.81 km<sup>2</sup>
- ✦ 46 dwellings/ha
- ✦ 101.51 hab/ha (residential areas)
- ✦ Proximity city, accessible by foot and bike

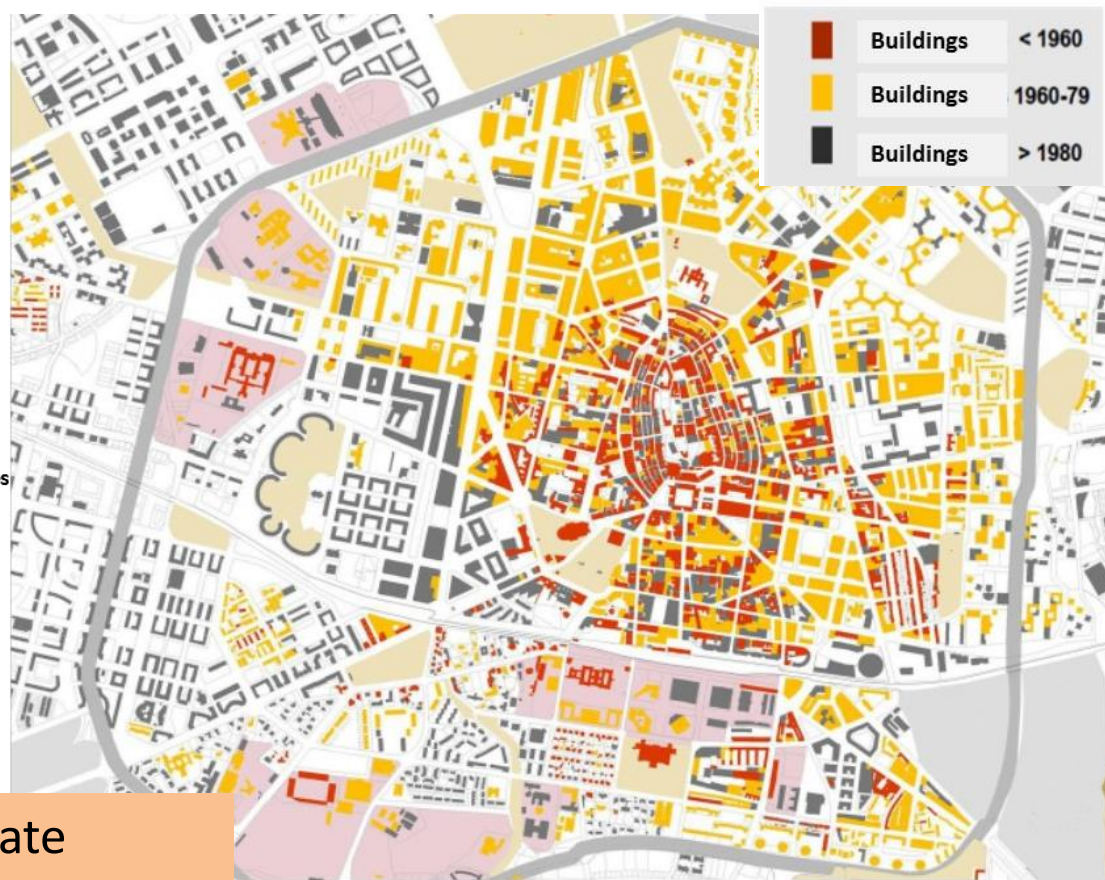


# Vitoria-Gasteiz – Building Sector Energy challenges



Share of energy-end uses, by sector (excluding industrial sector)

- primary sector
- residential
- mobility
- services
- municipal services



Buildings' construction date in Vitoria-Gasteiz. Inner city

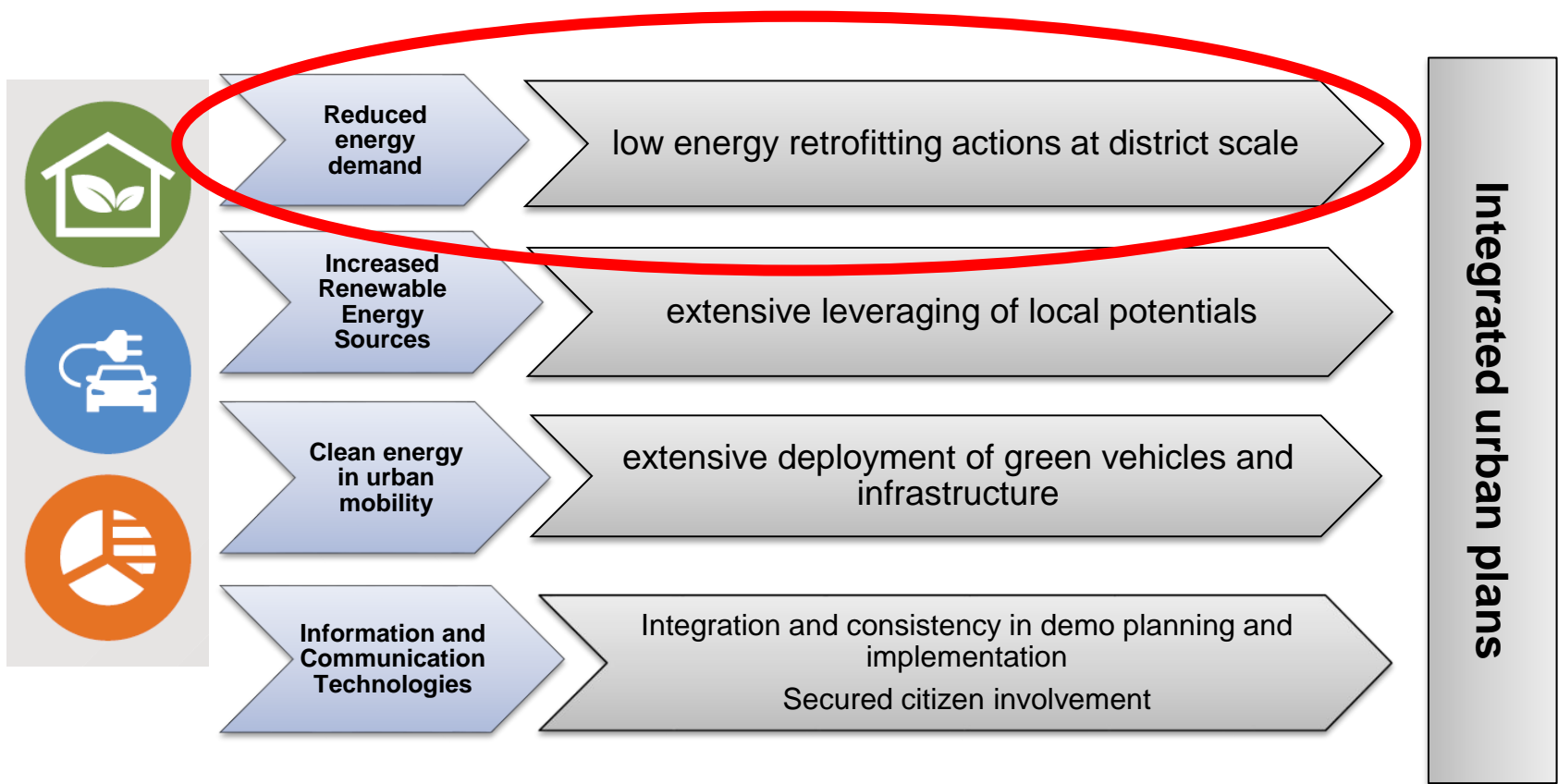


Plan against Climate Change 2010-2020

Commitment to become a Carbon neutral city by 2050



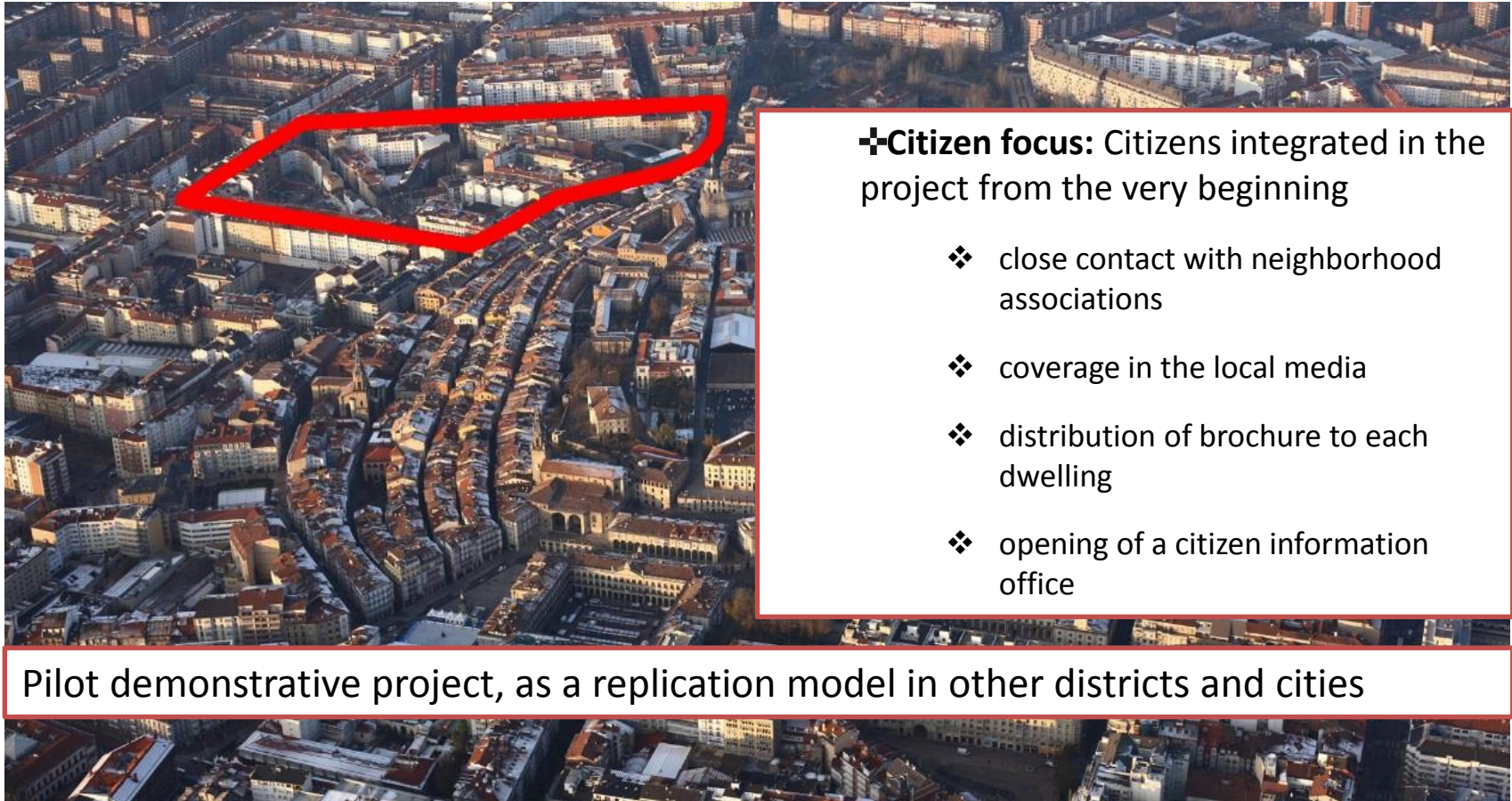
✚ New models of energy supply, urban mobility, and citizen engagement





# Coronación: Demo area

- + Intervention area: 1,313 dwellings
- + SmartEnCity funding: up to 750 dwellings



+**Citizen focus:** Citizens integrated in the project from the very beginning

- ❖ close contact with neighborhood associations
- ❖ coverage in the local media
- ❖ distribution of brochure to each dwelling
- ❖ opening of a citizen information office

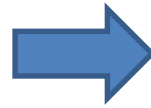
Pilot demonstrative project, as a replication model in other districts and cities

# Diagnosis and baseline

## Progress so far:

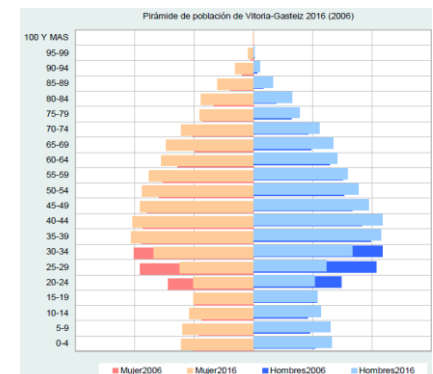
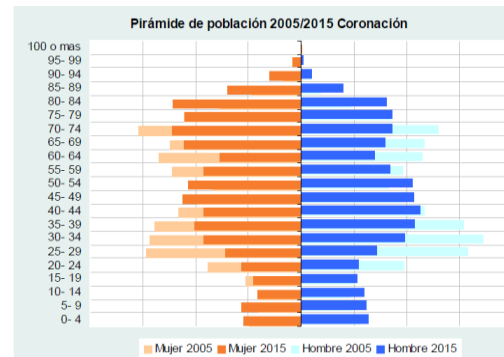
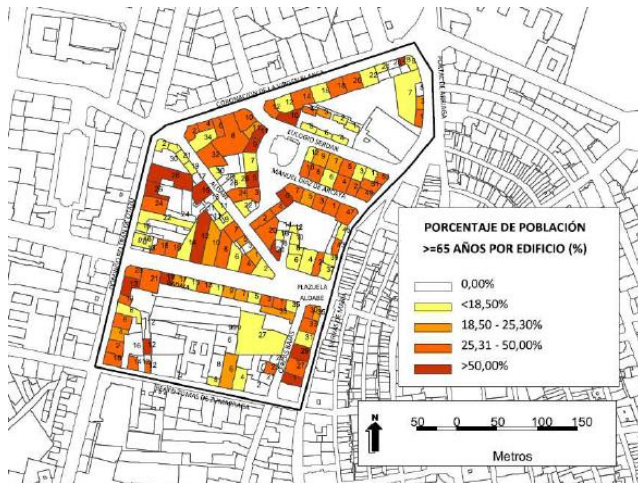
### SOCIOECONOMIC ANALYSIS

- ✦ RESIDENT CHARACTERISTICS
- ✦ N° OF ROOMS PER HOUSE AND BUILDING
- ✦ AGE POPULATION PER BUILDING
- ✦ % IMMIGRATION
- ✦ % SECONDARY HOUSING
- ✦ LEVELS OF RENT



### SOCIO-ECONOMIC DEGRADATION

- ✓ Increase in **immigrant population** and decrease in Spanish population.
- ✓ **Decrease of population decline in the last 10 years**, with the existence of **empty or secondary housing** and undeclared rentals
- ✓ Considerable aging of the population compared to the average in the city. A 25% of the population over 64 years
- ✓ Priority accessibility measures to respond to this population.

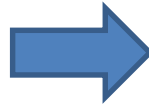




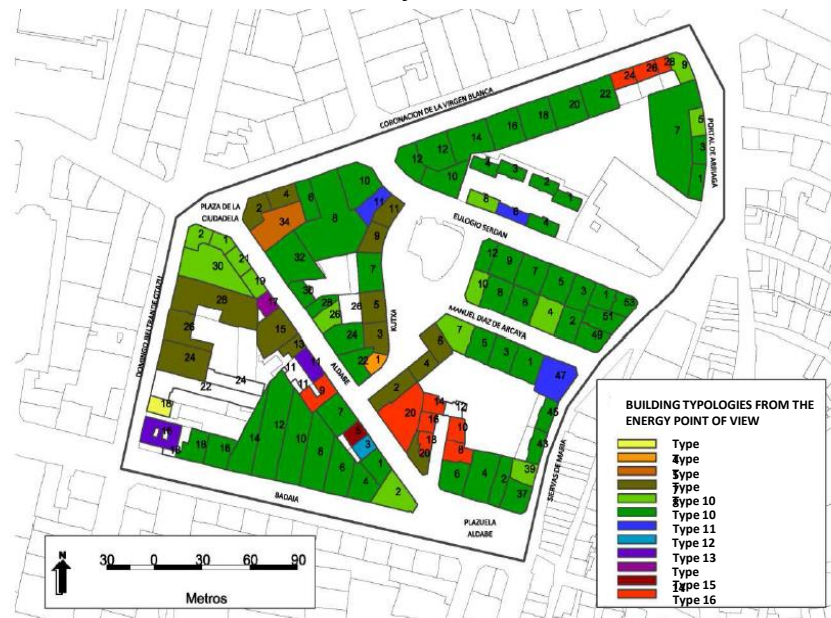
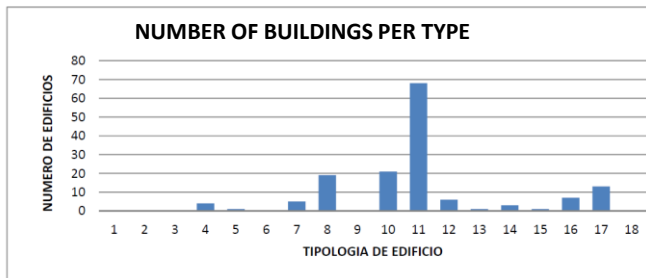
# Diagnosis and baseline

## BUILDING ANALYSIS

- ✦ ACCESSIBILITY
- ✦ ENVELOPE
- ✦ INSTALLATIONS
- ✦ STRUCTURAL SECURITY
- ✦ BUILDING AGE
- ✦ Nº DWELLINGS PER BUILDING
- ✦ REHABILITATED YES / NO
- ✦ ENERGY TYPOLOGIES



- ✓ Typologies identified, from the energy point of view
- ✓ **Not insulated** => Strong potential for improvement in terms of energy efficiency and thermal comfort
- ✓ There are no structural problems due to the typical concrete structures
- ✓ **Problems of accessibility** => No elevator in many cases.



# Building Retrofitting

## Detailed Study by building:

- ✦ **Visits** to each building to gather information regarding:
  - Update of available data
  - Type of building and state of conservation
  - Level of accessibility
  - Contact details of the building administrator or president to schedule meetings
  
- ✦ **Rehabilitation budget per building:**
  - Fees, Execution, Licenses, VAT ...
  - Global measurements and prices according to preliminary projects, own experiences and external contrast
  - Available funding (EU, Basque Government, Vitoria City Council)
  
- ✦ **Specific financial products** for the project, agreed with the main local financial entities.



CORONACIÓN 12	
DATOS GENERALES	
Nº MANZANA	MANZANA 1
NUMERO	12
CALLE	CORONACION VIRGEN BLANCA
TIPUS/OBJA ENERGETICA (Europe)	2 (type 2)
AÑO DE CONSTRUCCIÓN	1997
NUMERO DE VIVIENDAS	37
Nº PLANTAS	7 (Baja + 6)
PROGRAMA	2 en entrepiso, resto de plantas
VIV X PLANTA	3
PLANTA BAJA	4 locales
BALD CUBIERTA	Camarotes



### REHABILITACIÓN ENERGÉTICA

ENVOLVENTE	
TIPO DE FACHADA	Doble hoja in situ aislamiento
ACABADO (p/parte)	carvato
BALCONES / MIRADORES	No
ESTADO DE VENTANAS	Mejorable
ESTADO DE FACHADA	Satisfactorio
MATERIAL DE ESTRUCTURA GENERAL	Hormigón
ESTADO DE ESTRUCTURA	Satisfactorio
MATERIAL DE CUBIERTA	Teja cerámica
SOPORTE DE CUBIERTA	Hormigón
TIENE ITE?	NO
SUPERFICIES	
Fachada principal	442,3
Fachada patio	381,6
Cubierta	2.53,7
Med de vivienda	
Construido principal	1.337,0
Total de planta	3.900
Construido solo vivienda	1.337,0
Construido total	1.337,0



INSTALACIONES	
TIPO CALIFACCIÓN/ACS	Individual de gas (no todos)
MONTANTE	2, 1 por el principal, 1 por el
TOMA DE TV	Bajo cubierta



### ACCESIBILIDAD

ACCESIBILIDAD (grado)	2
ASCENSOR	Si (e en trayectorias)
ACCESIBILIDAD PORTAL	No
ACCESIBILIDAD HORIZONTAL	No

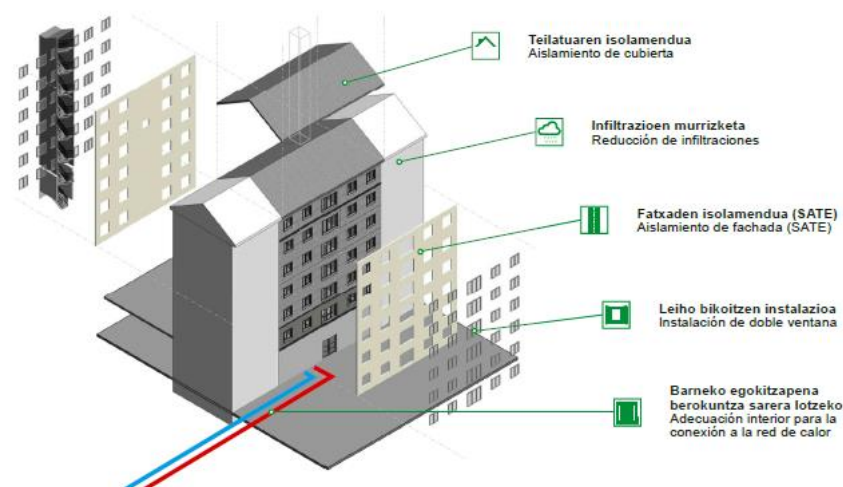


# Building Retrofitting

- ✦ Diagnosis of the residential buildings in the demo area (1,313 dwellings), **six main typologies** (from the energy point of view) have been identified.



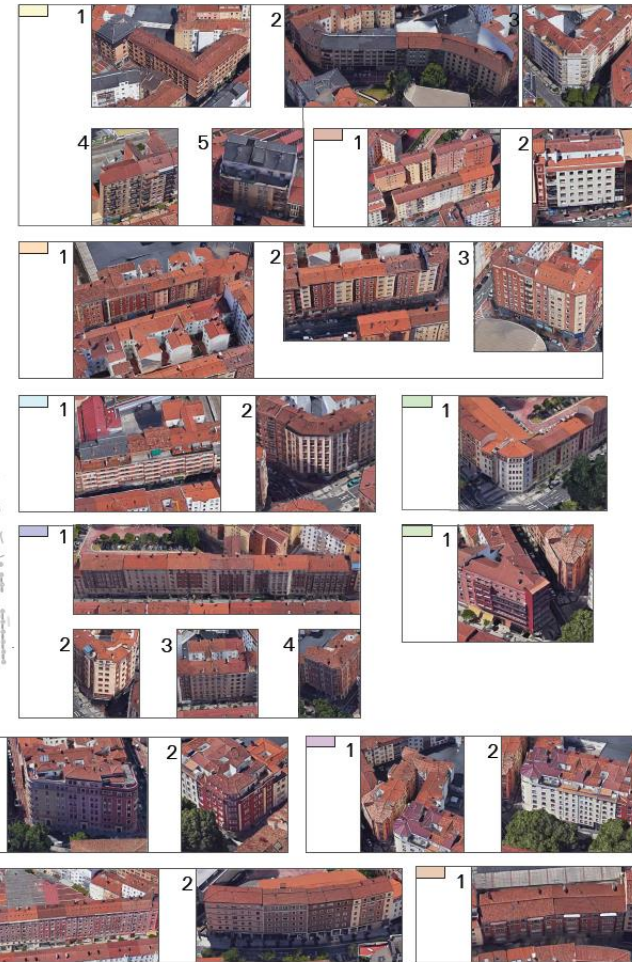
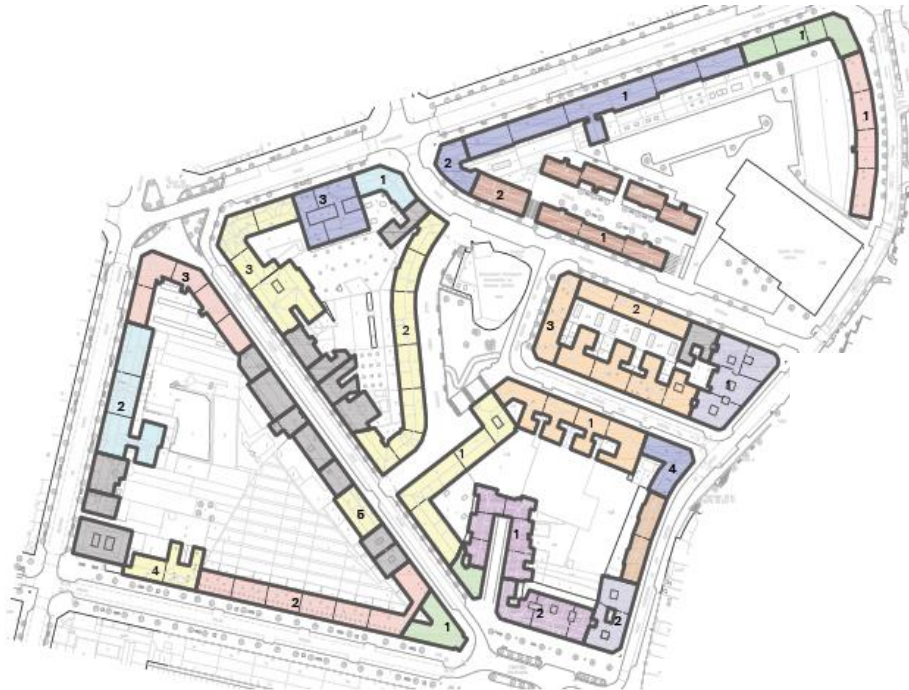
- ✦ **Preliminary design projects** for building retrofitting have been developed for a sample building of each typology, complying with the energy demand reduction commitments of the SmartEnCity project.



# Building Retrofitting

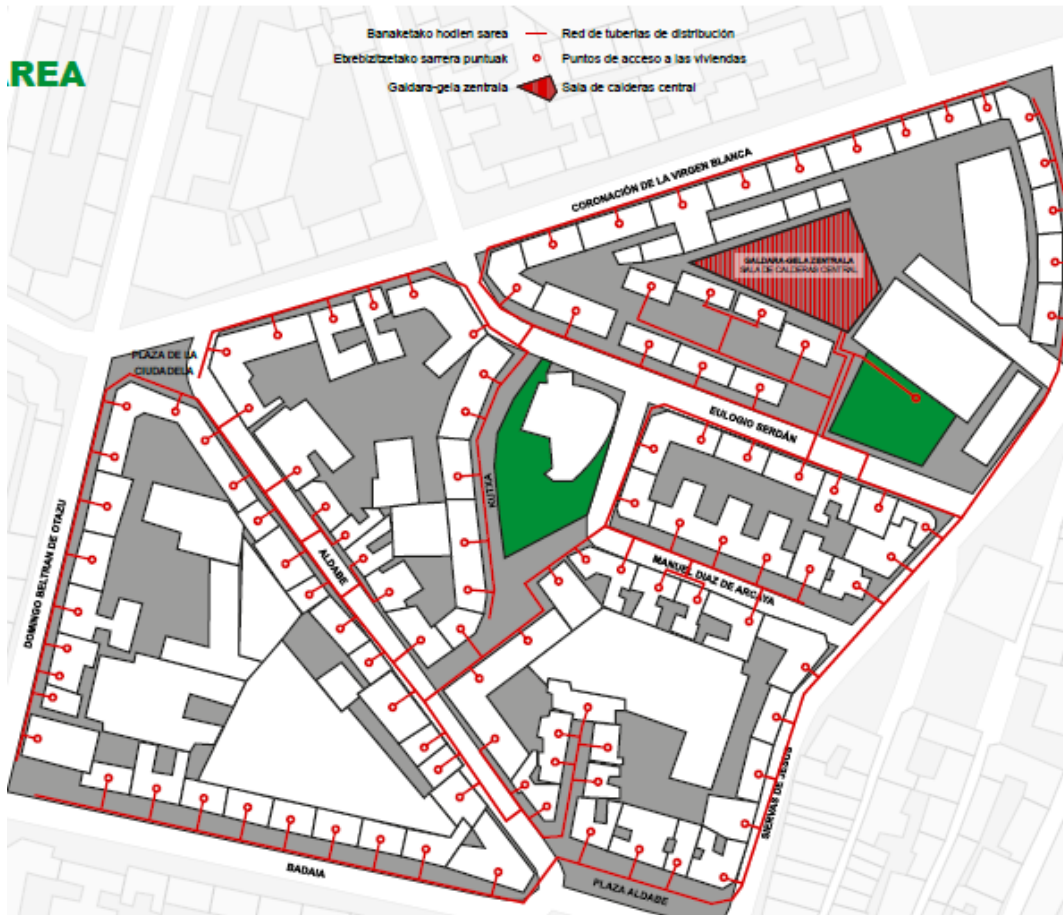
## Next steps:

- ✦ Technical designs will be contracted by Visesa as they reach the agreements with home owners. **108 communities of owners** (buildings) => design projects and construction work will be undertaken **in phases**
- ✦ If possible => “**building groups**” projects and works
- ✦ It is planned to begin the public tenders for retrofitting works by July, starting the first works by October.



# Integrated Infrastructures

Deployment of a new District Heating network is an important challenge of the measures to be carried out in Coronación district



REA

## RED URBANA DE CALOR

Una red urbana de calor, distribuye energía térmica por la vía pública, proporciona agua caliente para cubrir las necesidades de agua caliente sanitaria y calefacción en todos los bloques de viviendas, edificios públicos y privados, que se conecten a dicha red.

- € Mejores tarifas para los servicios de agua caliente y calefacción.
- kW Reduce la potencia instalada y el combustible consumido por vivienda.
- ✂ Reduce el coste de explotación y mantenimiento de la instalación.
- 🕒 Evita los problemas asociados al bajo rendimiento en las calderas antiguas.
- 🔊 Reduce el ruido de las instalaciones en los edificios.
- 🏠 Mejora la calificación energética de los edificios conectados a la red.
- CO<sub>2</sub> Reduce las emisiones de CO<sub>2</sub> y gases de efecto invernadero.
- ♻️ Posibilita el uso de biomasa, una fuente energética renovable y autóctona.
- 🔥 No es necesario manipular ni almacenar combustible en el edificio.

CO<sub>2</sub>

CO<sub>2</sub>

CO<sub>2</sub>

CO<sub>2</sub>

CO<sub>2</sub>

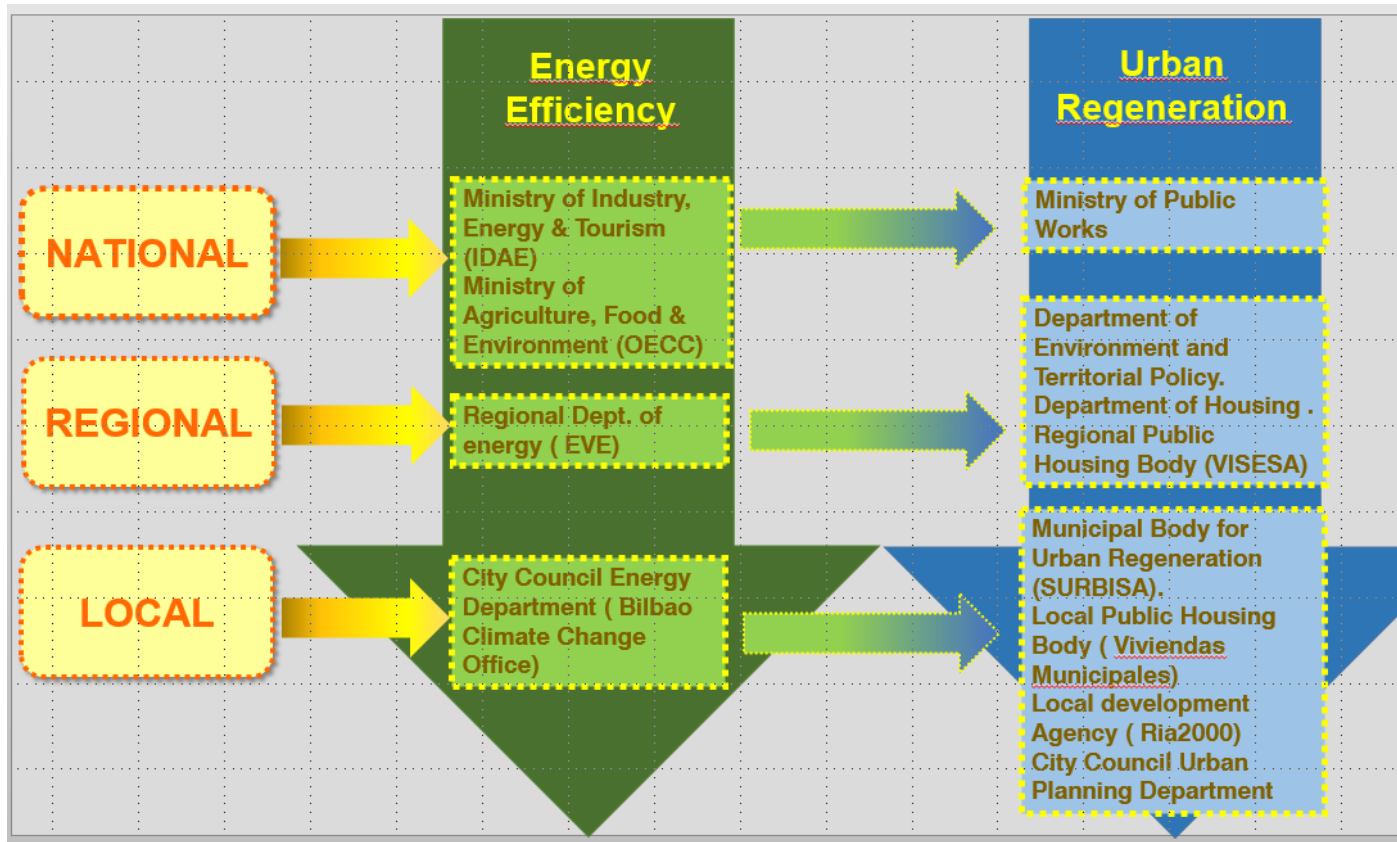
CO<sub>2</sub>

CO<sub>2</sub>

Los inspectores asignan el CO<sub>2</sub> emitido por la caldera

# Importance of Stakeholders' coordination

Promote coordination and collaboration, and capacity building for the different administrations and stakeholders working on energy efficiency & urban regeneration



# Importance of Stakeholders' coordination

Several workshops to discuss barriers and solutions for integration of energy efficiency in urban regeneration



- Legal and regulatory
- Management
- Financial
- ...

NORMATIVA		GESTIÓN	
1.	Normativa cortoplacista, estática y <del>diversa</del> diversa	1.	INEXISTENCIA DE MARCO REGULADOR (LÍNEAS Y PROBLEMAS PARTICIPATIVOS Y ASPECTOS JURÍDICOS-ADMINISTRATIVOS)
2.	Suficiente normativa, necesidad de <u>aplicación, gestión, vigilancia y control</u> , y <u>comunicación</u> a los usuarios. (recursos)	2.	CONFLICTOS JURÍDICOS, INCERTIDUMBRES LEGALES — SITUACIONES LEGALES ATÍPICAS NO RESPONDIDAS CON DETERMINACIONES JURÍDICAS A NIVEL LEGISLATIVO
3.	Necesidad de <u>coordinación y colaboración</u> entre Administraciones, Departamentos	3.	REQUISITOS PARA SER UN BUENO PARTICIPANTE EN UN PROCESO DE TRANSICIÓN ENERGÉTICA — ADMINISTRACIÓN PÚBLICA LOCAL — ENTIDADES PARTICIPANTES
4.	No hay recetas: hace falta <u>flexibilidad</u> para abordar la complejidad y la realidad social ( $\neq$ económica)	4.	PLANIFICACIÓN — PLANES Y PROGRAMAS DE TRÁFICO — INCERTIDUMBRES LEGALES — TRÁFICO EN MARCO DE LOS SISTEMAS ACTUALES Y SU EVOLUCIÓN — OPTIMIZACIÓN AUTOMATIZADA DE TRÁFICO EN EL DISEÑO DE SISTEMAS DE TRÁFICO
5.	Necesidad de mejorar la normativa de aplicación a nivel municipal, como clima para que la EE considere inversión y no gasto	5.	PLAN DE CALIDAD — CONSUMIDORES EN EL DISEÑO DE SISTEMAS DE TRÁFICO



FINANCIACIÓN		INTEGRACIÓN EE-RU	COORDINACIÓN MULTINIVEL
1.	<b>PÚBLICA</b> CORTOPLACISTA POLÍTICAMENTE DISPERSA, SIN INTERLOCUTOR ÚNICO LIMITADA / DIFÍCIL EN EL DISEÑO DE AYUDAS FALTA DE ASISTENCIA, ASESORAMIENTO MEJOR SOLUCIÓN DONDE MÁS NECESIDAD	1.	NO QUISIERON DEJARLOS (CORPORACIÓN) NO HAY COLABORACIÓN EE
2.	<b>PARTICULARES</b> MAJOR DIFICULTAD ACORDAR EN MARCO DE PARTICIPACIÓN FALTA VISIBILIDAD / PROXIMIDAD A LA EJECUCIÓN DIFERENTES SITUACIONES INDIVIDUALES / ALTO RIESGO	2.	SISTEMA TARIFARIO DIFÍCIL
3.	<b>ENTIDADES FINANCIERAS</b> FALTA SOLIDARIDAD, RESPONSABILIDAD O FALTA GARANTÍAS COMÚNES PLAZOS INCOMPATIBLES CON RETORNO INVERSIÓN FALTA PRODUCTOS ESPECÍFICOS FINANCIEROS AFERENCIA A SITUACIÓN FINANCIERA INDIVIDUAL	3.	NORMATIVA EXISTENTE DIFÍCIL DE INTEGRACIÓN EE-RU
4.		4.	CONSIDERAR LOS DECRETOS EE EN EL DISEÑO DE REHABILITACIÓN MUNICIPAL
5.	<b>SECTOR PRIVADO</b> NO EXISTEN ESTRUCTURAS CREDITICIAS DE INVERSIÓN Y SUBVENCION (TIPO ESE) ALGO TIENE QUE PASAR PARA QUE SEAN DIFÍCILES	5.	

Eskerrik asko!

¡Gracias!

Thank you!

Patxi Hernández  
[patxi.h@visesa.eus](mailto:patxi.h@visesa.eus)



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