CONAMA LOCAL
TOLEDO 2019

02 ABR / 04 ABR ENCUENTRO DE PUEBLOS Y CIUDADES POR LA SOSTENIBILIDAD

CAMPO Y CIUDAD AGENDA GLOBAL

LAS TRES ESCALAS DE LA TRANSICIÓN ENERGÉTICA MUNICIPAL

Escala de barrio; distritos de energía positiva (PED

Proyecto MAKING CITY

Emilio Miguel Mitre, GBCe (Green Building Council E

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¿QUIÉNES SOMOS? ¿QUÉ HACEMOS? SALA DE PRENSA AGENDA ÚNETE

QUIÉNES SOMOS

GBCE

GBCe es una asociación sin ánimo de lucro que aúna a **representantes de todos los agentes del sector de la edificación** con el fin de contribuir a la transformación del mercado hacia una **edificación más sostenible.**

La Asociación GBCe, o Consejo para la Edificación Sostenible de España, es una organización autónoma afiliada a la Asociación Internacional, sin ánimo de lucro, "World Green Building Council", WorldGBC, de la cual constituye el Consejo Español.

WORLD GREEN BUILDING COUNCIL

ROCKWOOL®

SAINT-GOBAIN

www.gbce.es

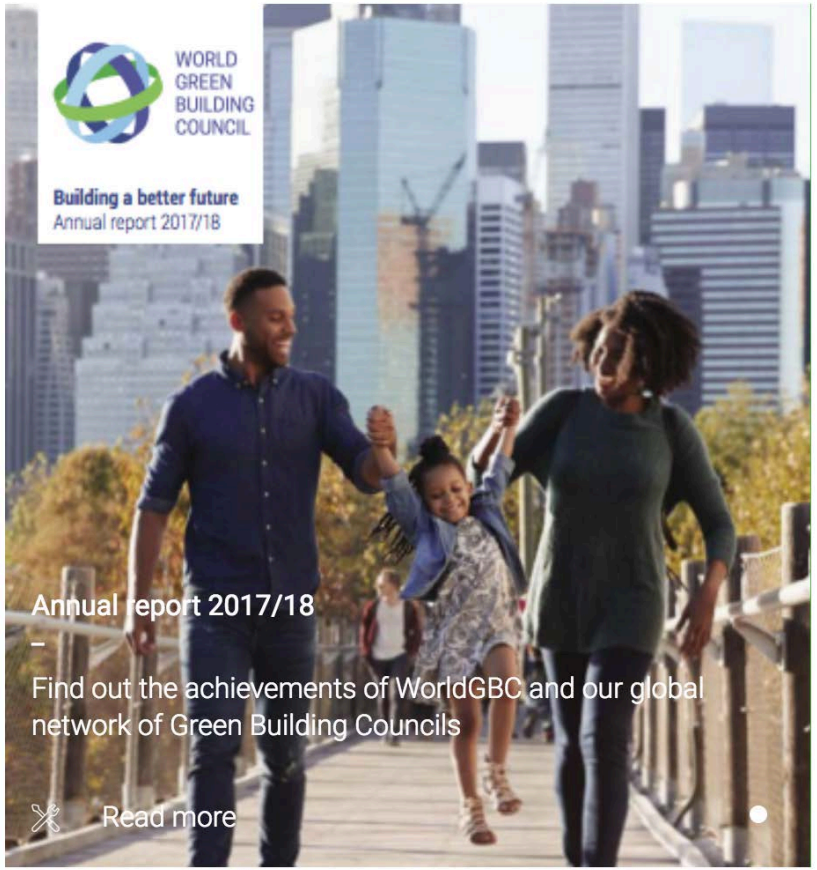
Green Building Council España

GBCe es la **Asociación de Edificación Sostenible**, sin ánimo de lucro, en la que **todos los agentes del sector de la edificación están representados**

Comparte la misión de contribuir a la **transformación del mercado** hacia una **edificación más sostenible**

Se posiciona como **Referente** de la **Edificación Sostenible en**

Somos parte de un movimiento global - WorldGBC



WORLD GREEN BUILDING COUNCIL

Alianzas de World GBC

Building Efficiency Accelerator

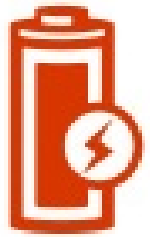
Building Efficiency Accelerator (BEA)

10-year framework of programmes on sustainable consumption and production patterns

Global Alliance for Buildings and Construction

The Global Alliance for Buildings and Construction (GABC)

Construcción y uso de edificios en la UE



40%

35%

50%

30%

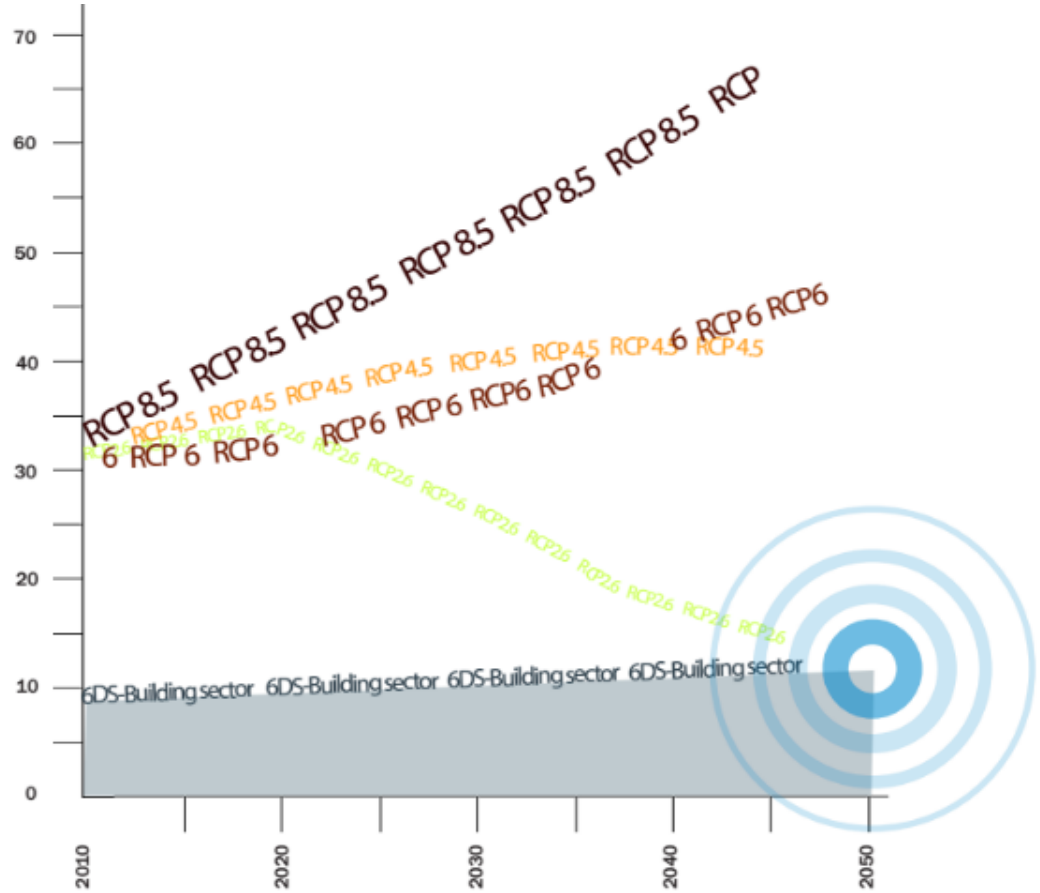
35% residuos

54% **de demolición a vertedero**

Con las tendencias actuales, el sector producirá en 2050 todas las emisiones globales que permite para ese año el escenario de aumento de 2°C de temperatura

No es posible alcanzar los escenarios más deseables de cambio climático con el actual sector de la edificación

Evolución anual de emisiones de C02 globales y del sector de la edificación (Mundial, 2010-2050)



6DS and 2DS are different scenarios defined by IEA
Units: GtCO2/year
Sources: Elaborated by Report authors on the base of IEA (2013a); IPCC (2014)

Impulsar políticas de sostenibilidad

GRUPO DE TRABAJO SOBRE REHABILITACIÓN
GTR
Coordinado por:
GBCe green building council españa
FUNDACIÓN CONAMA

Grupo de Trabajo por la Rehabilitación

BUILD UPON

Comunidad de actores para la Estrategia Nacional de Rehabilitación

Hoja de Ruta para el Código Técnico

RENOVATE EUROPE

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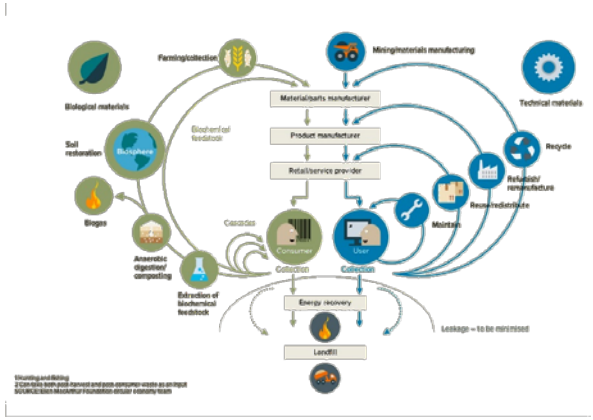
Impulsar la economía circular



Grupo de Estudio Sobre Economía Circular

Certificación sostenibilidad VERDE

Herramientas de evaluación

Plataforma de materiales

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Impulsar nuevas herramientas

Guía
BIM-Sostenibilidad

Advancing Net Zero

EeMAP
Energy efficient Mortgages Action Plan

Una Hipoteca para la Eficiencia Energética de los Edificios

Con la colaboración estratégica de:

Triodos Bank

Hipotecas
VERDES

GBCe
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Impulsar los objetivos europeos en sostenibilidad

- Huella de carbono en el ciclo de vida
- Uso eficiente de recursos naturales
- Uso y gestión eficiente del agua
- Espacios saludables y confortables
- Adaptación al cambio climático
- Coste de ciclo de vida y valor

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Actividades

https://gbce.es/wp-content/uploads/2019/01/Informe-Anual-2018.pdf

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Advancing Net Zero

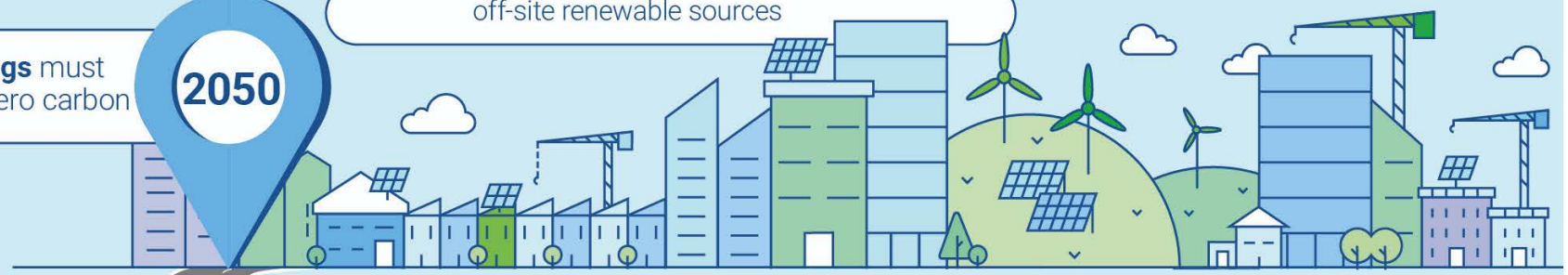
A World Green Building Council global project

WorldGBC definition:
A net zero carbon building is highly energy efficient with all remaining energy from on-site and/or off-site renewable sources

WORLD GREEN BUILDING COUNCIL

100% of buildings must operate at net zero carbon

2050



2030

All new buildings must operate at net zero carbon

Key Principles

1. Measure and disclose carbon
Carbon is the ultimate metric to track, and buildings must achieve an annual operational net zero carbon emissions balance based on metered data

2. Reduce energy demand
Prioritise energy efficiency to ensure that buildings are performing as efficiently as possible, and not wasting energy

3. Generate balance from renewables
Supply remaining demand from renewable energy sources, preferably on-site followed by off-site, or from offsets

4. Improve verification and rigour
Over time, progress to include embodied carbon and other impact areas such as zero water and zero waste

Version 1 | March 2018

Clean Energy for All Europeans Package

What are our objectives?

Creating jobs & growth, bringing down greenhouse gas emissions, securing energy supply

Putting energy efficiency first

Demonstrating global leadership in renewables

Delivering a fair deal for consumers

European Commission

What can we expect in terms of results?

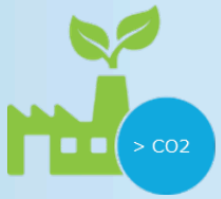
2016 → **2030**

The package presents a **dual opportunity** to speed up **decarbonisation** and to speed up **growth and job creation**.

Investment:
- extra 177bn EUR euros per year of investment from 2021 to meet 2030 climate & energy targets
- Crucial role for EFSI

Economic growth*:
- 1% increase in GDP
- 190bn EUR into the economy
- 900,000 new jobs

*Upper end of estimates



Decarbonisation:
- Carbon intensity of the economy 57% lower in 2030 than in 2015
- 72% share of non-fossil fuels in electricity generation in 2030

European Commission

CLEAN ENERGY FOR ALL EUROPEANS

POLICY CONCLUSIONS FOR 2030

Building renovation has to do more

→ **Review of EPBD**

→ **Review of EED (target, Art. 7 EED**

Financing has a more important role to play

→ **Smart Finance for Smart Buildings**

Digital/ICT has a big potential to contribute

→ **Development of a 'Smartness indicator for buildings'**

→ **Review of Art. 9-11 EED**

A smartness indicator will reflect the ability of buildings to:

1. adjust to the needs of the user and empower building occupants providing information on operational energy consumption (complementing the energy performance information provided in the EPCs);
2. ensure efficient and comfortable building operation, signal when systems need maintenance or repair; and
3. readiness of the building to participate in demand response, charge electric vehicles and host energy storage systems.

European Commission

Focus on buildings

- 75% of the housing stock is energy inefficient, missing the benefits of increased renovation.
- Renovation rates are too low and renovation depth is too shallow.
- Need to accelerate and finance building renovation investments.
- Tapping the potential of smart building technologies.

Main outcomes of the revised EPBD

A STRENGTHENED DIRECTIVE

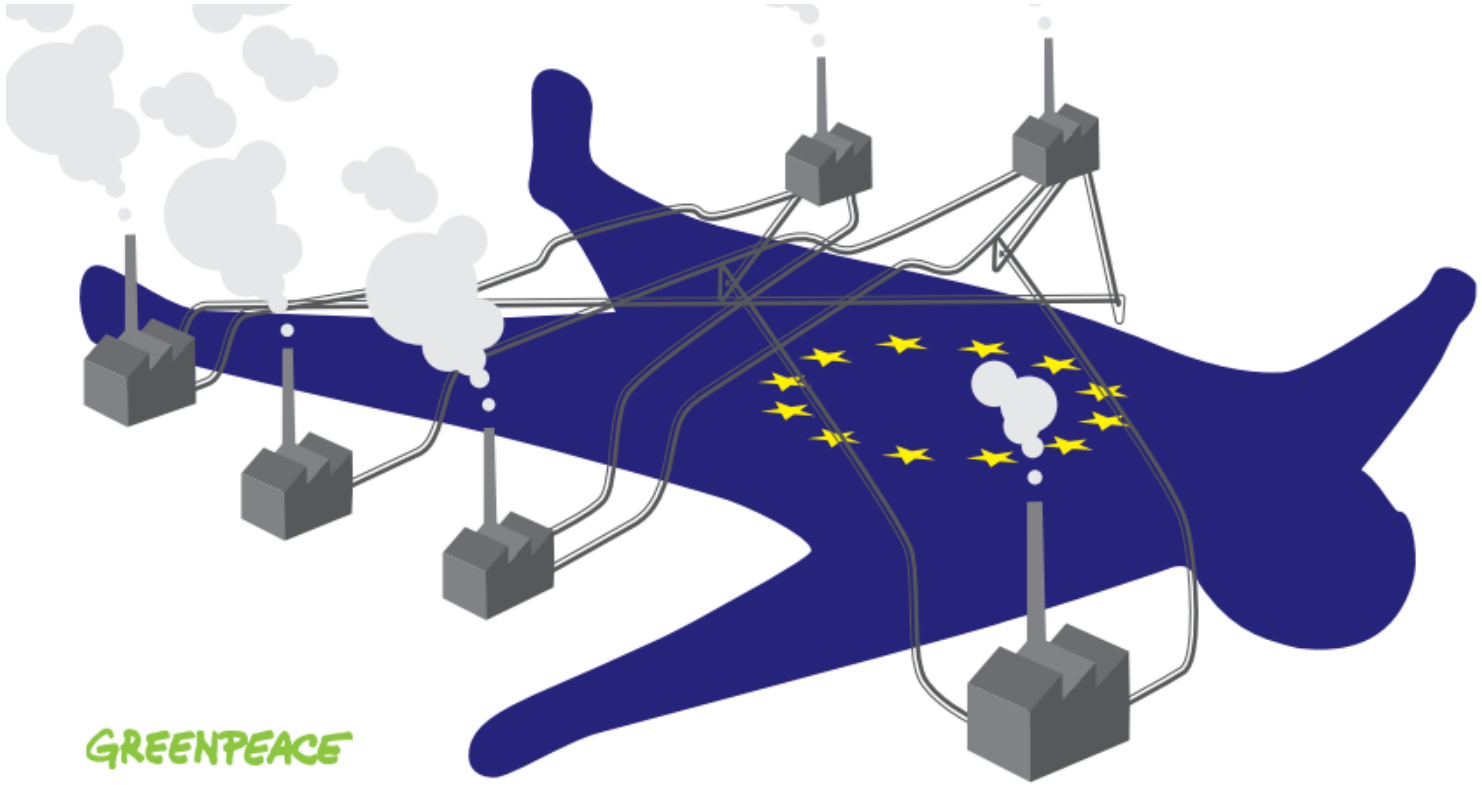
- Stronger **long term renovation strategies** for Member Sta… decarbonisation by 2050 and with a solid financial com…
- Targeted support to **e-mobility** infrastructu…
- Higher thresholds for **inspectio**… …ir conditioning systems and reinforced provisions on h… …on
- A **Smart Read**… …buildings.
- Str… …quirements.
- …**transparency** of national building energy performance calculation …odologies.

…upportive of building renovation, by linking policy and financing to results.

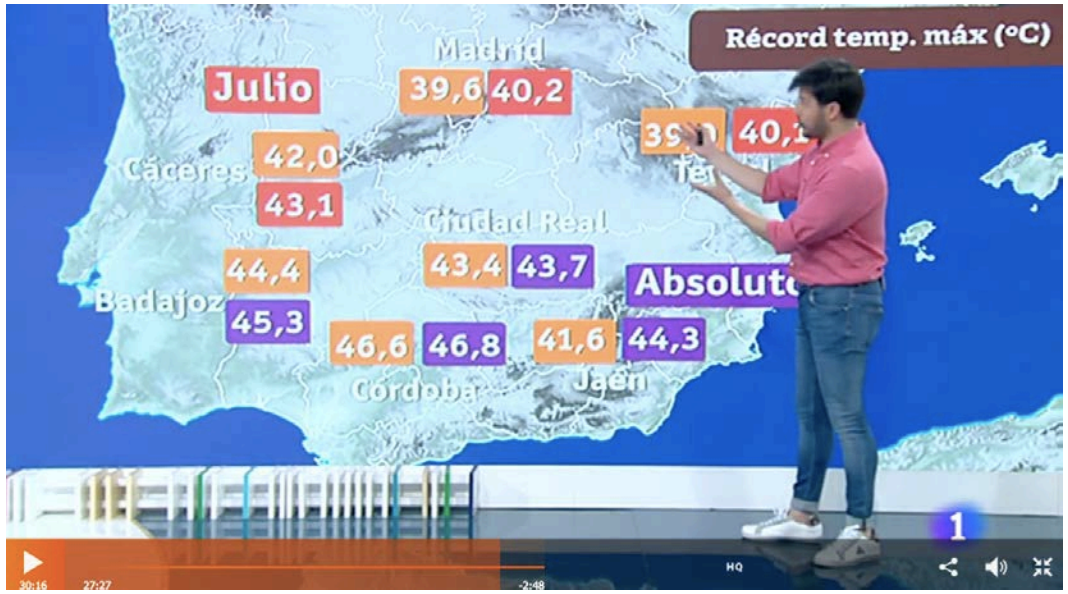
Smart, by ensuring the use of ICT and modern technologies,

European Commission

Decarbonization of the building sector by 2050


GREENPEACE

Una civilización superficial



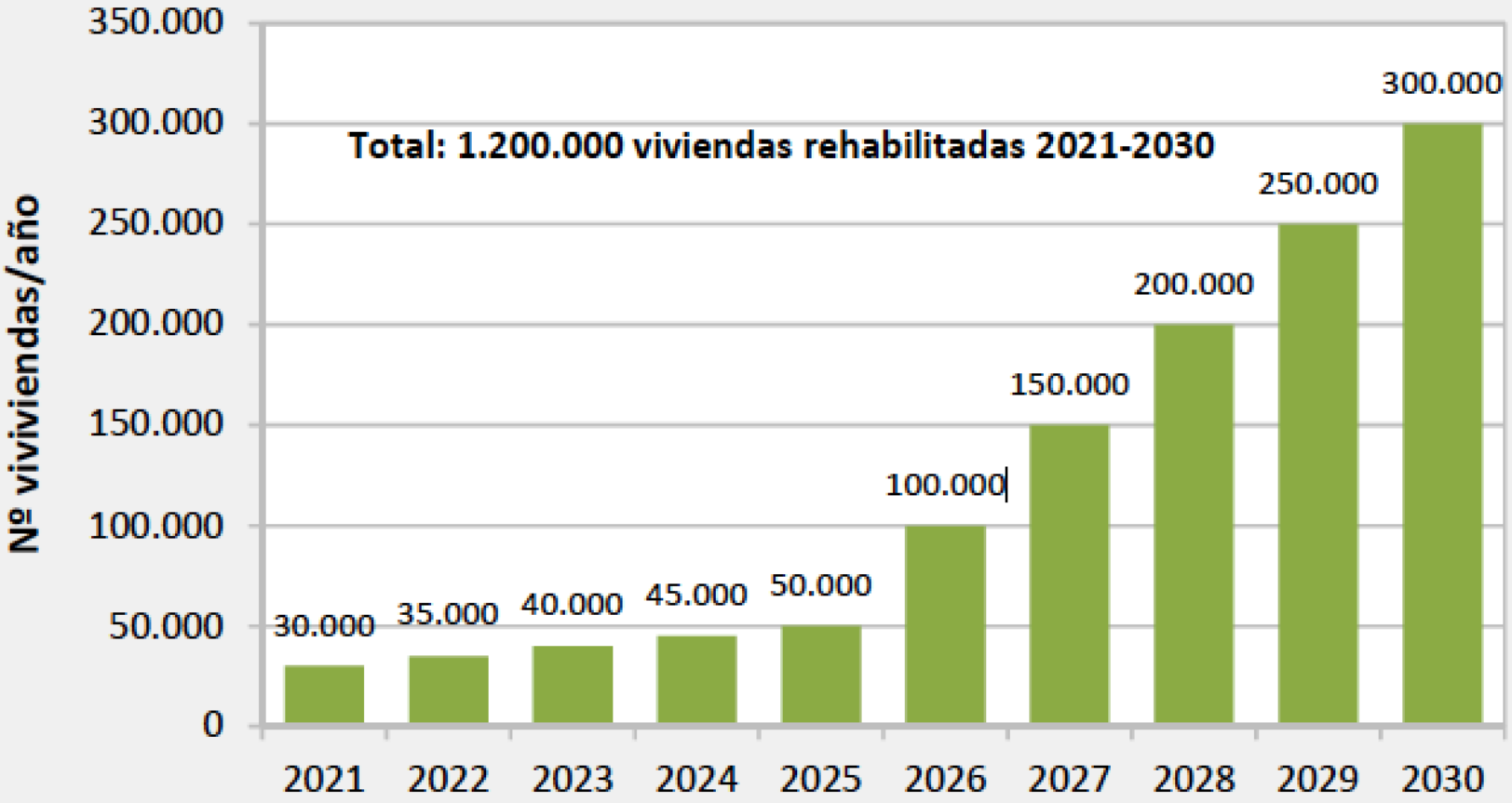
14 de Julio de 2017

Emilio MIGUEL MITRE

Mi visión de la ciudad

GBCe
green building council españa

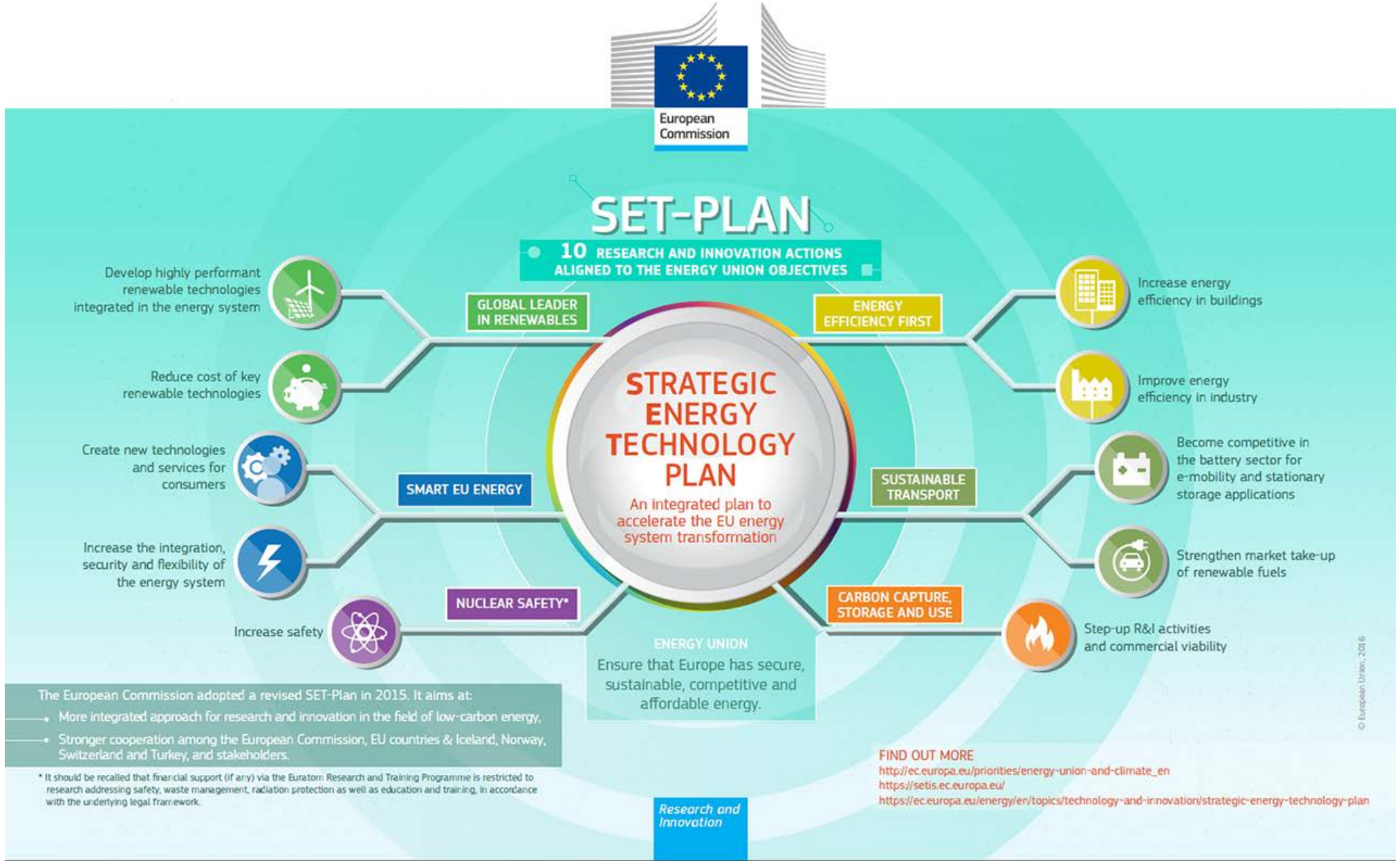
Figura 3.6. Previsión indicativa anual de viviendas rehabilitadas energéticamente 2021-2030



Fuente: Ministerio para la Transición Ecológica, 2019.

Medida 2.6 Rehabilitación residencial
Borrador Plan Nacional Integrado Energía y Clima

Agenda Urbana Española


European Commission
SET-PLAN
10 RESEARCH AND INNOVATION ACTIONS ALIGNED TO THE ENERGY UNION OBJECTIVES
STRATEGIC ENERGY TECHNOLOGY PLAN
An integrated plan to accelerate the EU energy system transformation
GLOBAL LEADER IN RENEWABLES
Develop highly performant renewable technologies integrated in the energy system
Reduce cost of key renewable technologies
SMART EU ENERGY
Create new technologies and services for consumers
Increase the integration, security and flexibility of the energy system
NUCLEAR SAFETY*
Increase safety
ENERGY EFFICIENCY FIRST
Increase energy efficiency in buildings
Improve energy efficiency in industry
SUSTAINABLE TRANSPORT
Become competitive in the battery sector for e-mobility and stationary storage applications
Strengthen market take-up of renewable fuels
CARBON CAPTURE, STORAGE AND USE
Step-up R&I activities and commercial viability
ENERGY UNION
Ensure that Europe has secure, sustainable, competitive and affordable energy.
The European Commission adopted a revised SET-Plan in 2015. It aims at:
More integrated approach for research and innovation in the field of low-carbon energy,
Stronger cooperation among the European Commission, EU countries & Iceland, Norway, Switzerland and Turkey, and stakeholders.
* It should be recalled that financial support (if any) via the Euratom Research and Training Programme is restricted to research addressing safety, waste management, radiation protection as well as education and training, in accordance with the underlying legal framework.
FIND OUT MORE
http://ec.europa.eu/priorities/energy-union-and-climate_en
https://setis.ec.europa.eu/
https://ec.europa.eu/energy/en/topics/technology-and-innovation/strategic-energy-technology-plan
Research and Innovation
© European Union, 2016

Targets and implementation

Following the consultative process launched in 2016 identifying key priorities and setting targets for each of the ten key actions, which led to the endorsement of highly ambitious goals by the SET-Plan community, eleven implementation plans have been adopted until January 2018 in these areas:

- Concentrated Solar Power/Solar Thermal Electricity
- Energy Efficiency in Industry
- Carbon Capture Storage and Use (CCS/U)
- Photovoltaic Energy
- Global Battery Sector to Drive E-Mobility
- Energy Systems
- Deep Geothermal Energy
- Ocean Energy
- Bioenergy and Renewable Fuels
- Offshore Wind
- Positive Energy Districts

They include specific R&I actions needed to achieve those targets. This process is steered by the SET-Plan countries in close cooperation with the Commission with a very active involvement of European research and industry stakeholders.

Three new SET-Plan Implementation Plans have been endorsed

19/02/2018

During the last SET Plan Steering Group meeting on the 13th June 2018, three new Implementation Plans were approved. One in the context of the ***Initiative for Global Leadership in Wind Energy***, another on ***Bioenergy and Renewable Fuels for Sustainable Transport*** and the last one on ***Europe to become a global role model in integrated, innovative solutions for the planning, deployment, and replication of Positive Energy Districts***.

Find the relevant Implementation Plans here

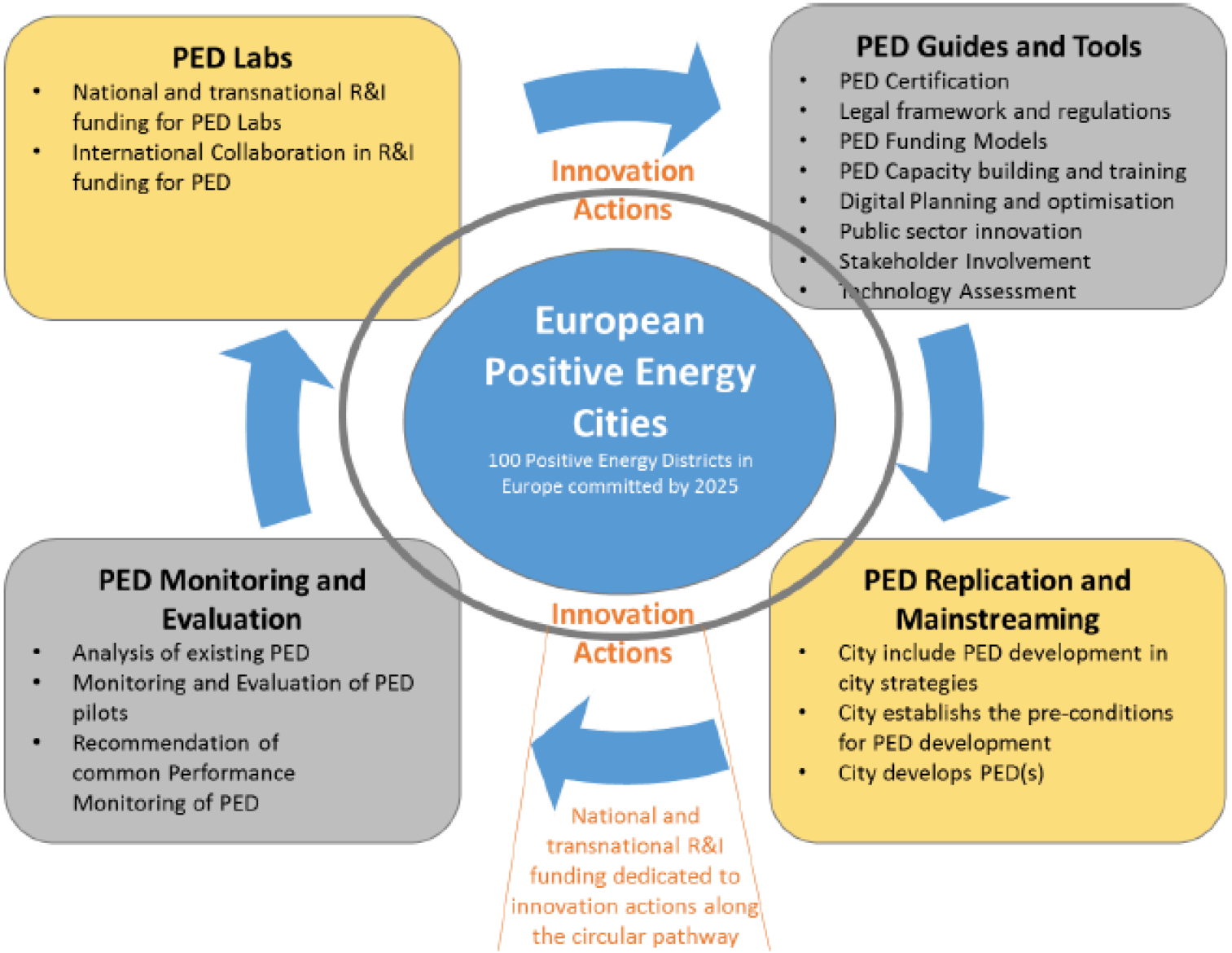


Figure 2: Pathways to Positive Energy Districts in Europe

Positive Energy Districts

Europe to become a global role model in integrated, innovative solutions for the planning, deployment, and replication of Positive Energy Districts

Endorsed by the SET Plan Steering Group members in June 2018

Figure 1: Countries involved in the TWG 3.2. Smart Cities and Communities

SET PLAN 3.2 WORKING GROUP: 100 POSITIVE ENERGY DISTRICTS IN EU BY 2025

Positive Energy Districts

Europe to become a global role model in integrated, innovative solutions for the planning, deployment, and replication of Positive Energy Districts

Endorsed by the SET Plan Steering Group members in June 2018

Making City

SET PLAN 3.2 WORKING GROUP: 100 POSITIVE ENERGY DISTRICTS IN EU BY 2025

This project has received funding from the Horizon 2020 programme under grant agreement n°824418. The content of this presentation reflects only the author's view. The European Commission and INEA are not responsible for any use that may be made of the information it contains.

Making City

Lighthouse helps city transformation

Guidance of EU cities
Urban Transformation
More sustainable places
Citizens as the core of city

... be Lighthouse cities

LIGHTHOUSE cities in LIGHTHOUSE projects...

Making City

CARTIF

Lighthouse initiative in H2020

SCC1 - 2014

SCC1 - 2015

SCC1 - 2016

SCC1 - 2017

SCC1 - 2018

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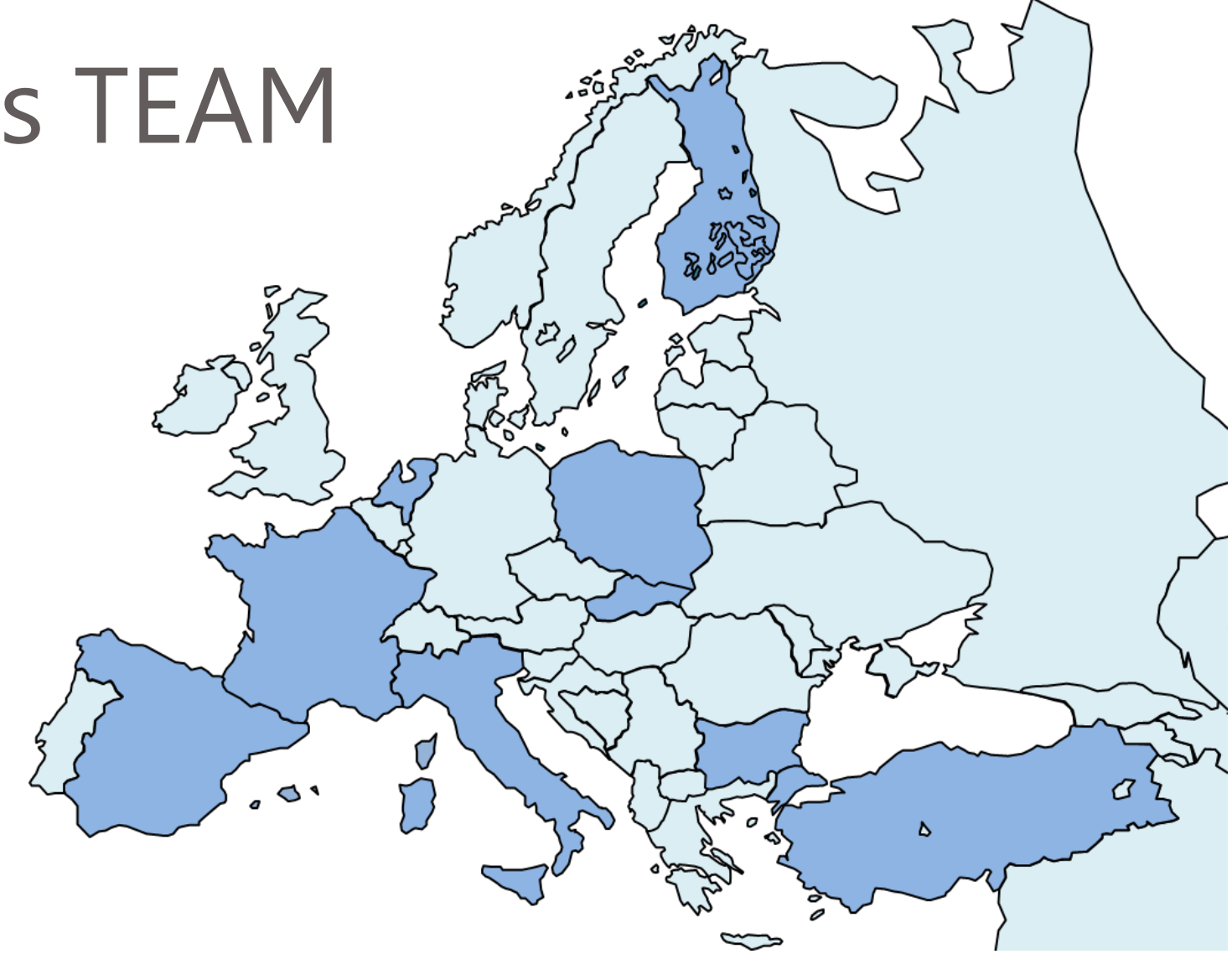
Today's TEAM



Making City

CARTIF · Gemeente Groningen · GRUNNEGER POWER · Nijestee · SUSTAINABLE BUILDINGS · Hanzehogeschool Groningen · rijksuniversiteit groningen · Sivakka · YIT · OULUN ENERGIA · ARINA · tecnalia · TNO · energy valley · WAARBORG · CGI · OULU · Oulu Capital of Northern Scandinavia · UNIVERSITY OF OULU · JETITEK · VTT · CITTA' DI BASSANO DEL GRAPPA · UniSMART · AYUNTAMIENTO DE LEÓN · DemirEnerji · Mesto POPRAD · KADIKÖY BELEDİYESİ · SPECTRA Centre of Excellence · Green Synergy Cluster · Lublin · R2M SOLUTION · GBCe · LGi · cap-digital

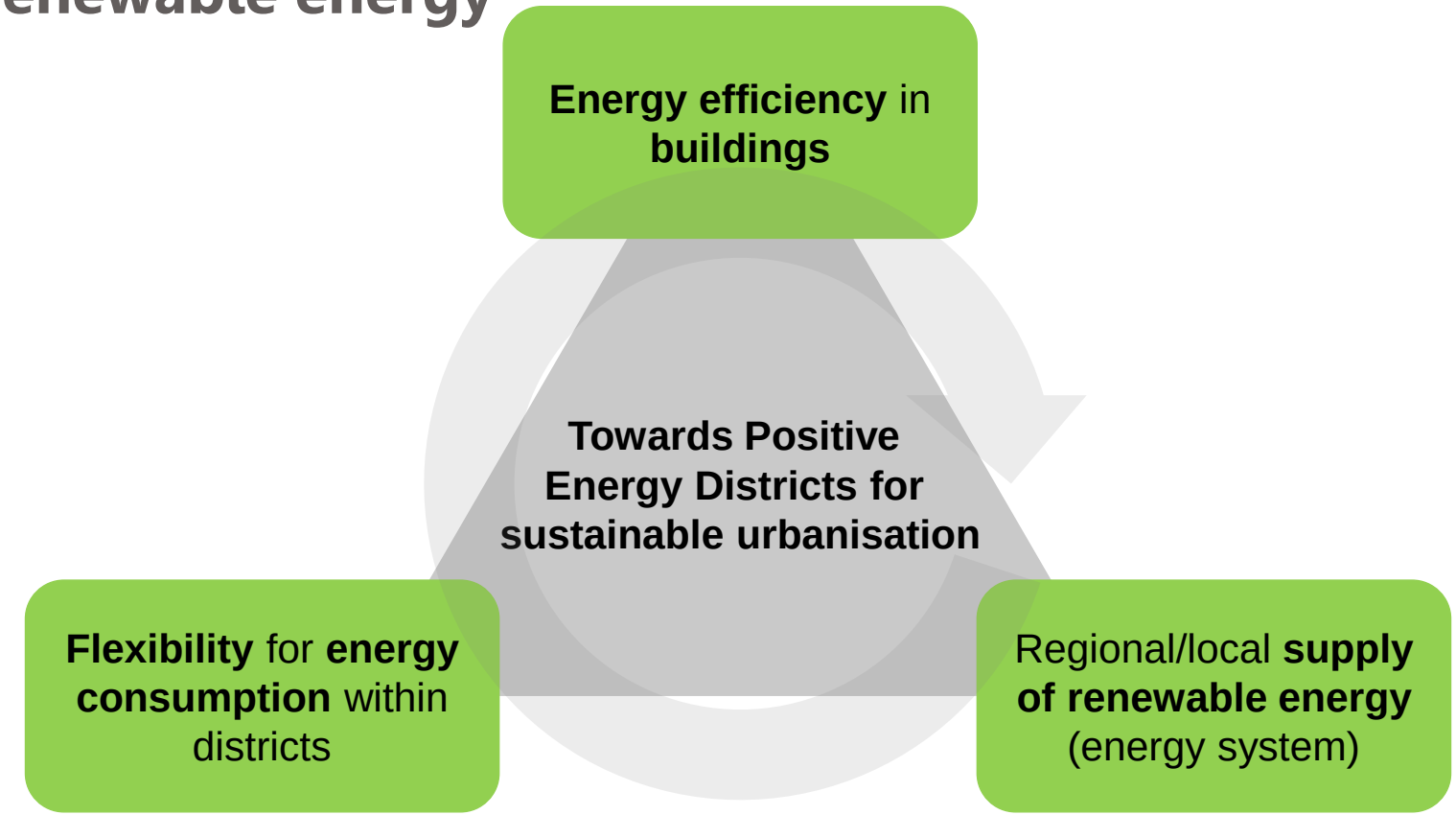
MAKING-CITY main objective

- Develop of **new integrated strategies** to address the **urban energy system transformation** towards **low carbon cities**,
- with the PED approach as the core of the urban energy transition pathway.

Making City

PED concept

- A PED is seen as a district with **annual net zero energy import**, and **net zero CO2 emission** working towards an annual **local surplus production of renewable energy**



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transition into PEDs

- Mix of uses and storage are key elements to ensure **flexibility** and **coupling demand and production**
- There are still important social, economic and regulatory **barriers** that prevent the full deployment of nZEB, nZED and PED concepts
- New technologies are still needed (as RES, storage or ICTs) but technology is not the main barrier
- **Engagement of users** is essential to ensure the success of Positive Energy Districts

Making City

Actions

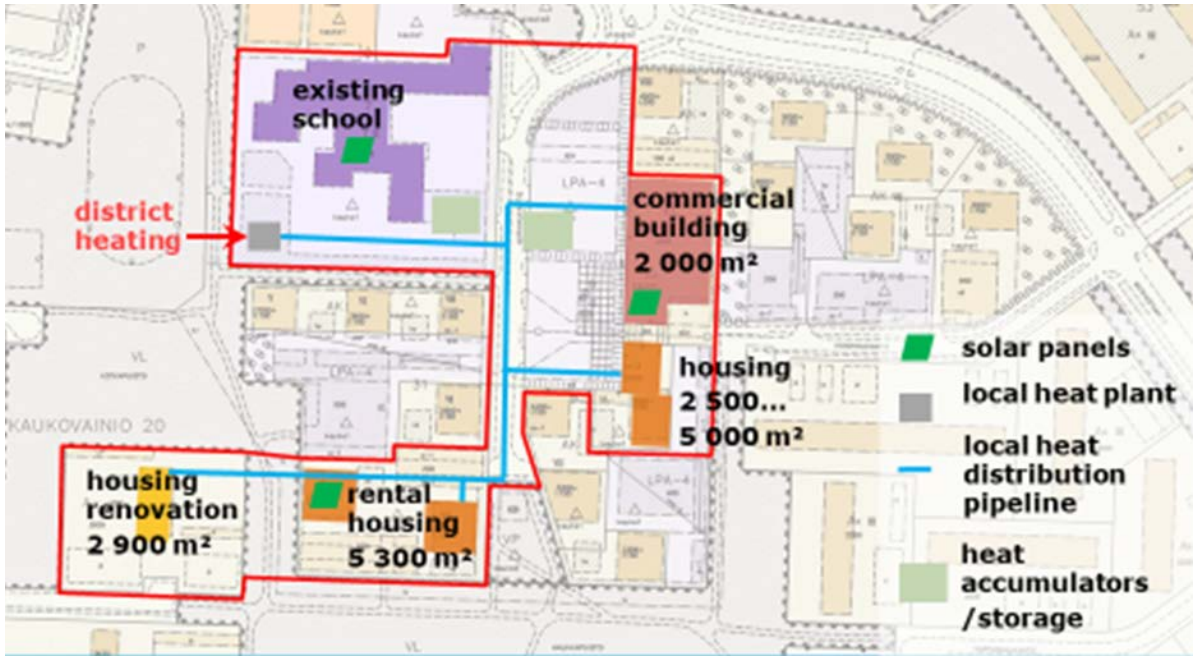
OULU

KAUKOVAINIO district

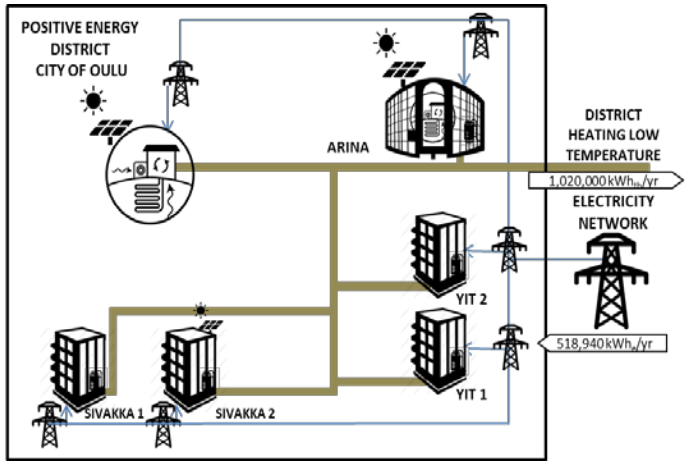
GRONINGEN

Groningen NORTH

Groningen SOUTHEAST



- New buildings + Retrofitting
- Energy retrofitting in buildings
  - Windows
  - Low Tª heat system
  - Heat recovery
- Solar PV
- Heat pumps
- Phase transfer thermal Storage



Actions

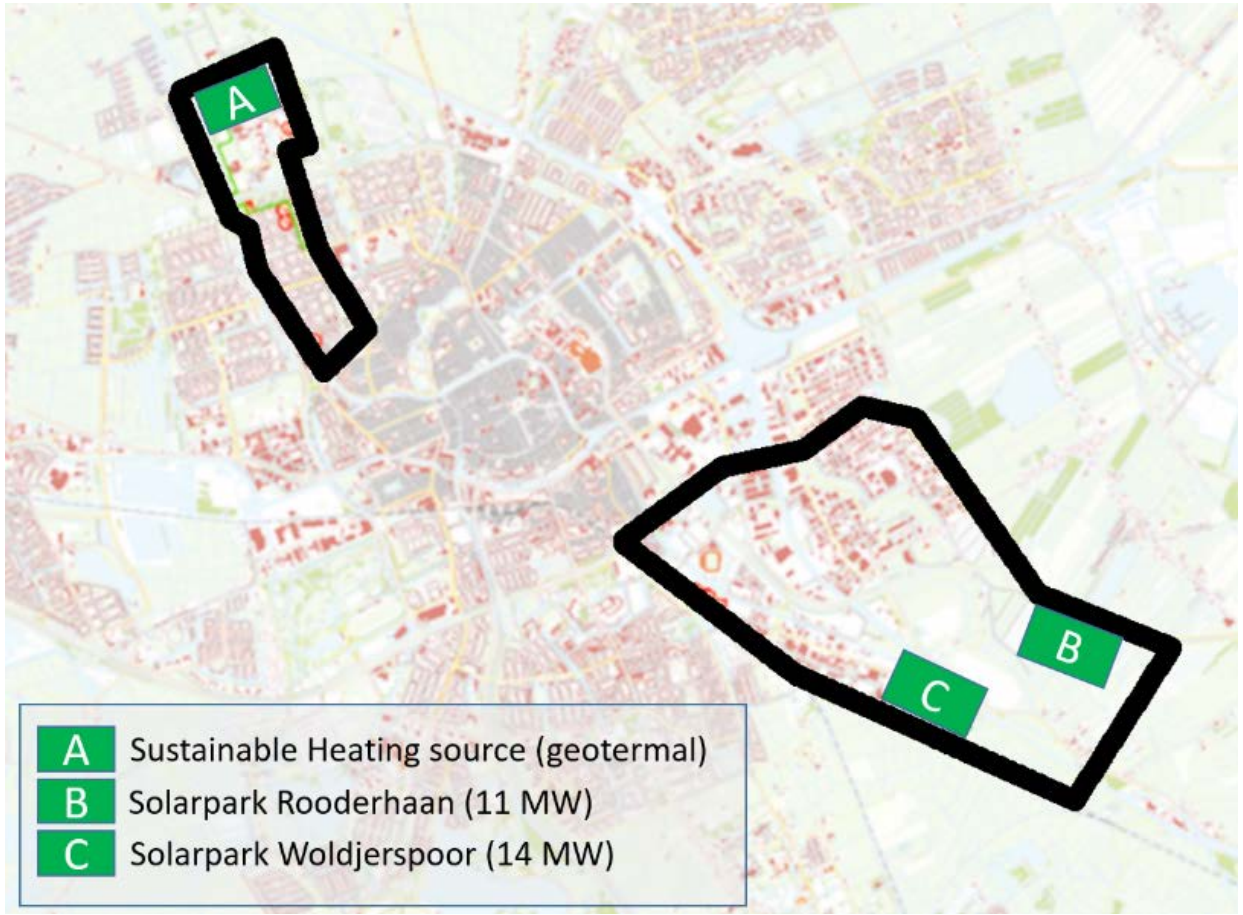
OULU

KAUKOVAINIO district

GRONINGEN

Groningen NORTH

Groningen SOUTHEAST



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Actions

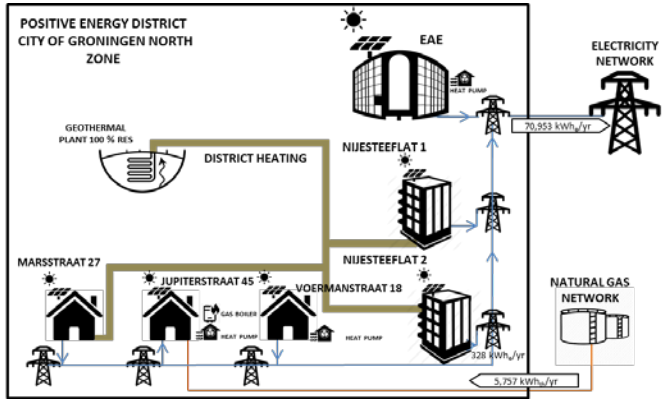
OULU

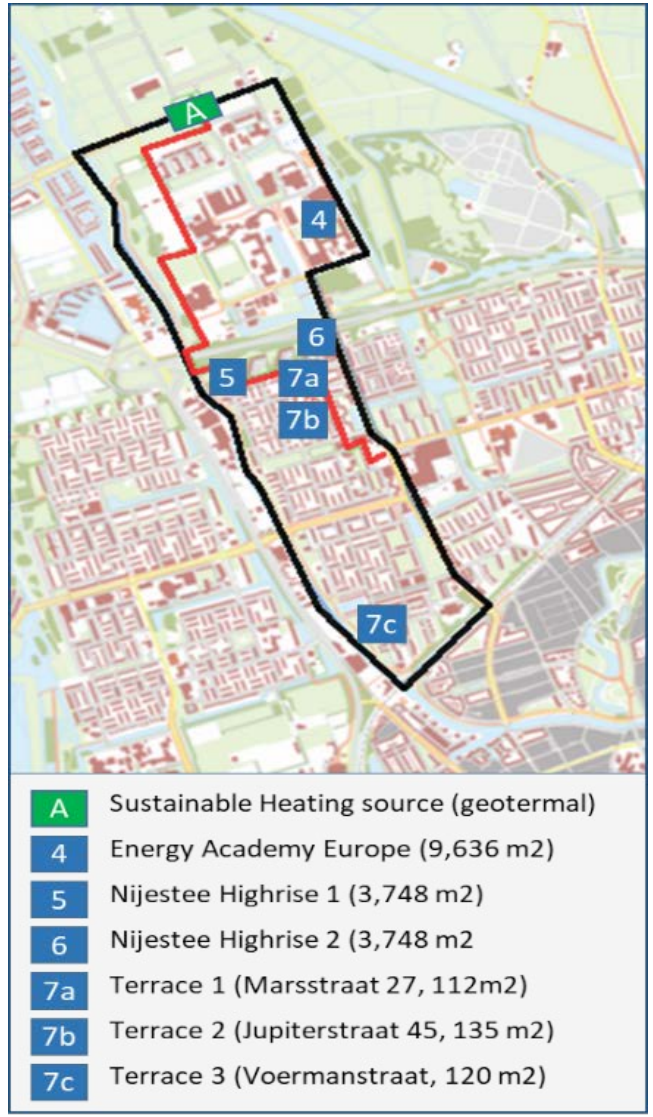
KAUKOVAINIO district

GRONINGEN

Groningen NORTH

Groningen SOUTHEAST





- New buildings + Retrofitting
- Energy retrofitting in buildings
  - Façade & Roof insulation
- PVT, PV in roof and parking lot, BIPV
- Geothermal
- Heat pumps
- Thermal Storage
- Electro Storage

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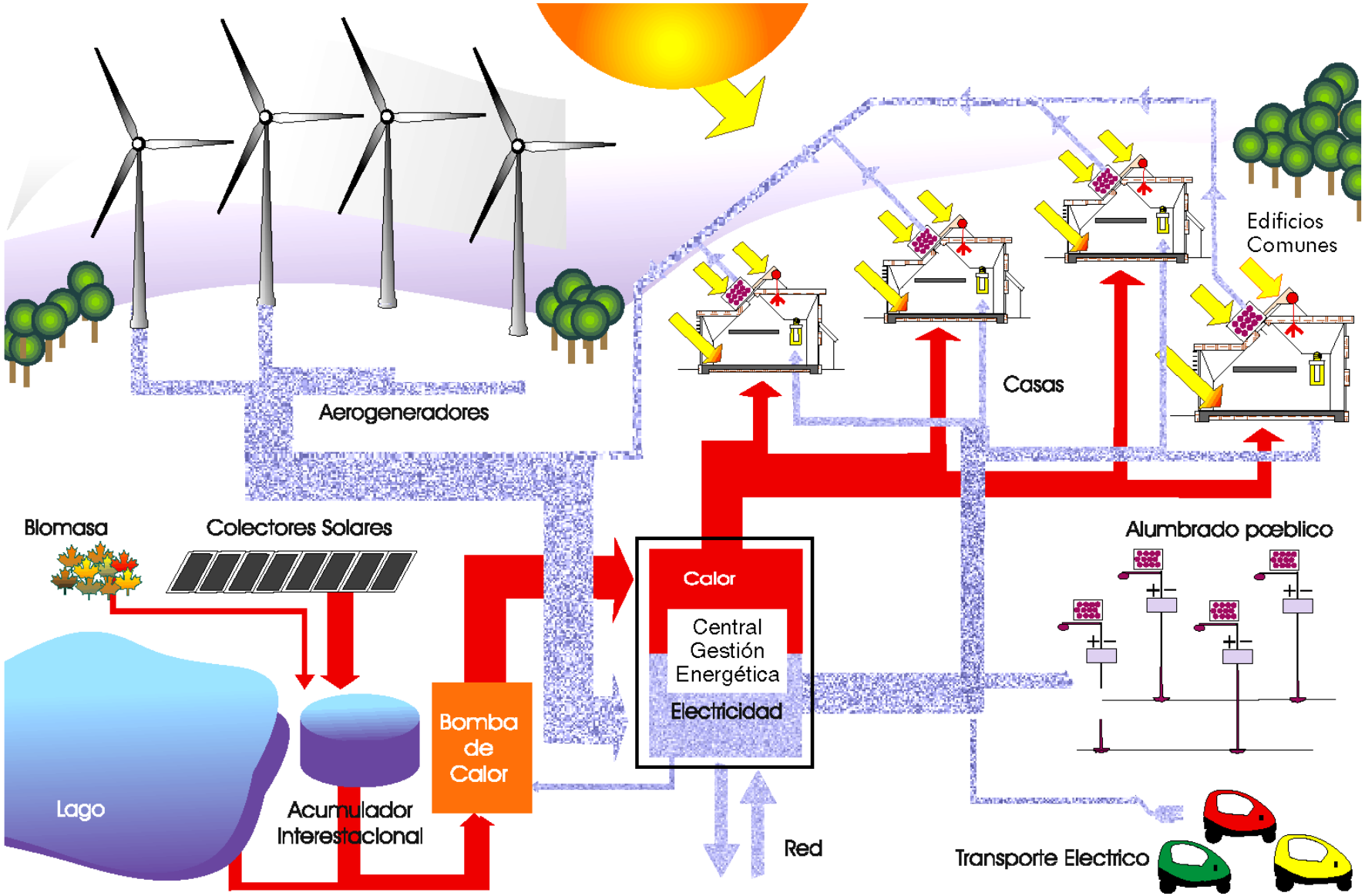
Planeamiento energético urbano integrado 1995



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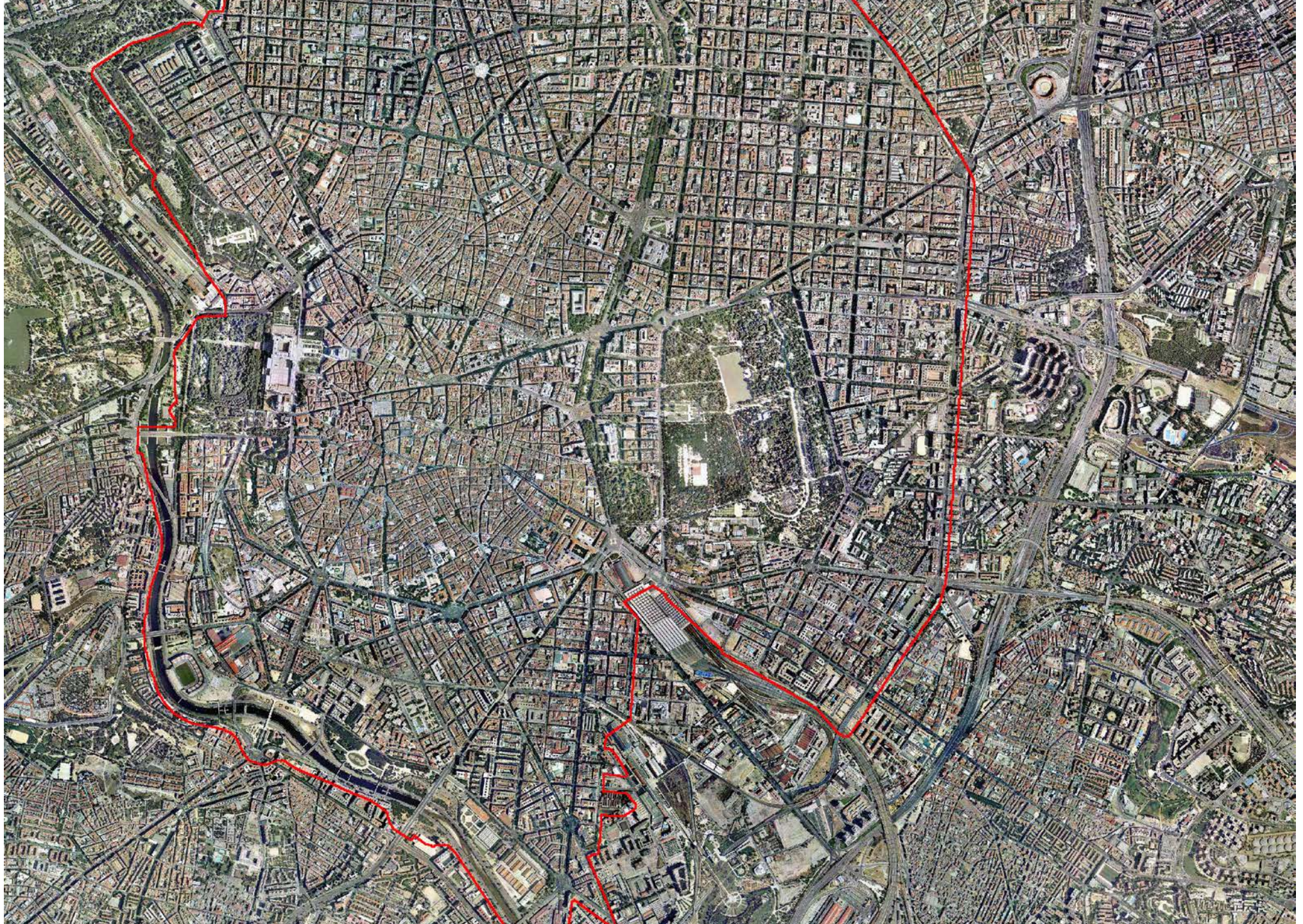
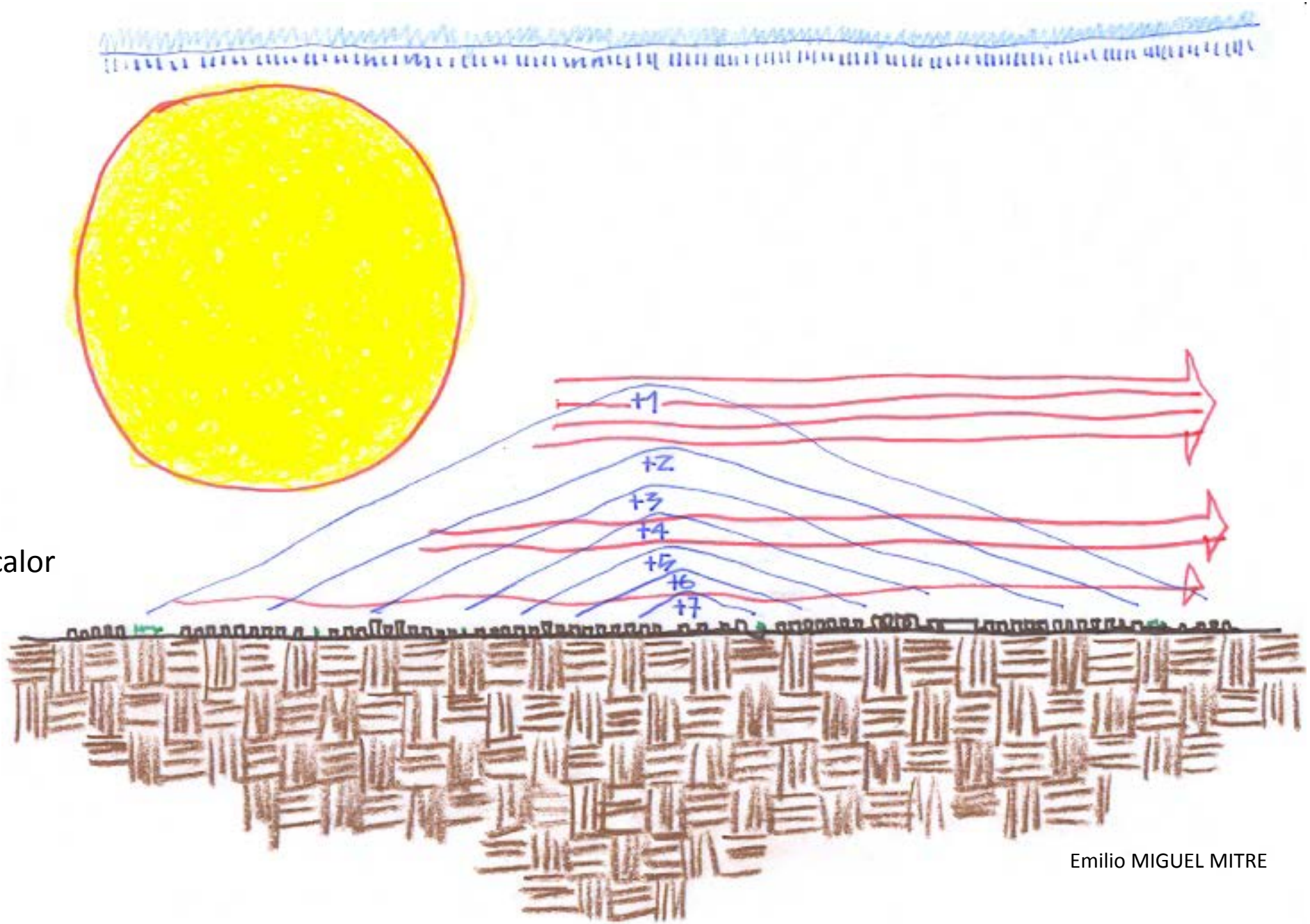
Sostenibilidad en el Centro de Madrid 2000



Fuentes
y
sumideros de calor

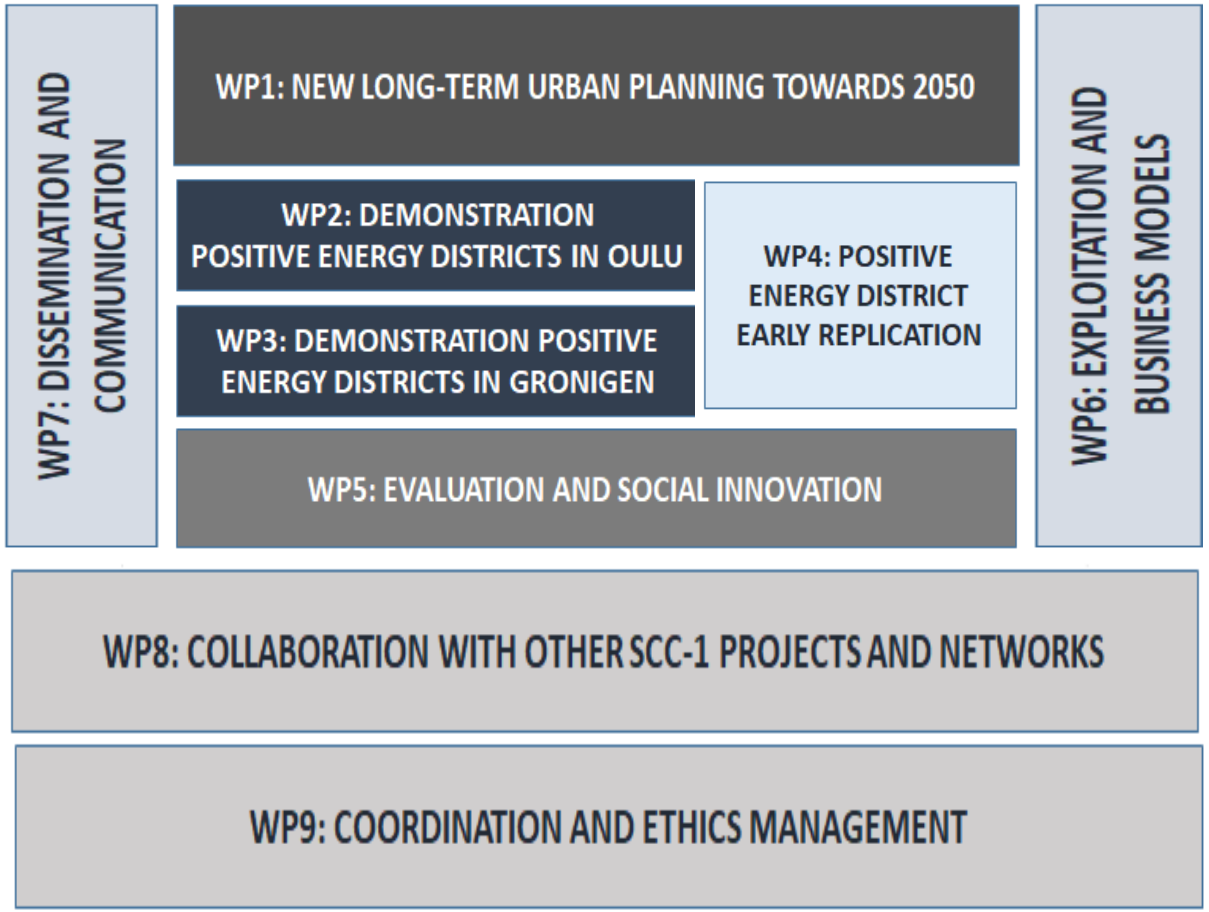


Emilio MIGUEL MITRE

El Centro
de
Madrid
bajo el sol

Agua y
simbiosis vegetal !!!

MAKING-CITY work-plan



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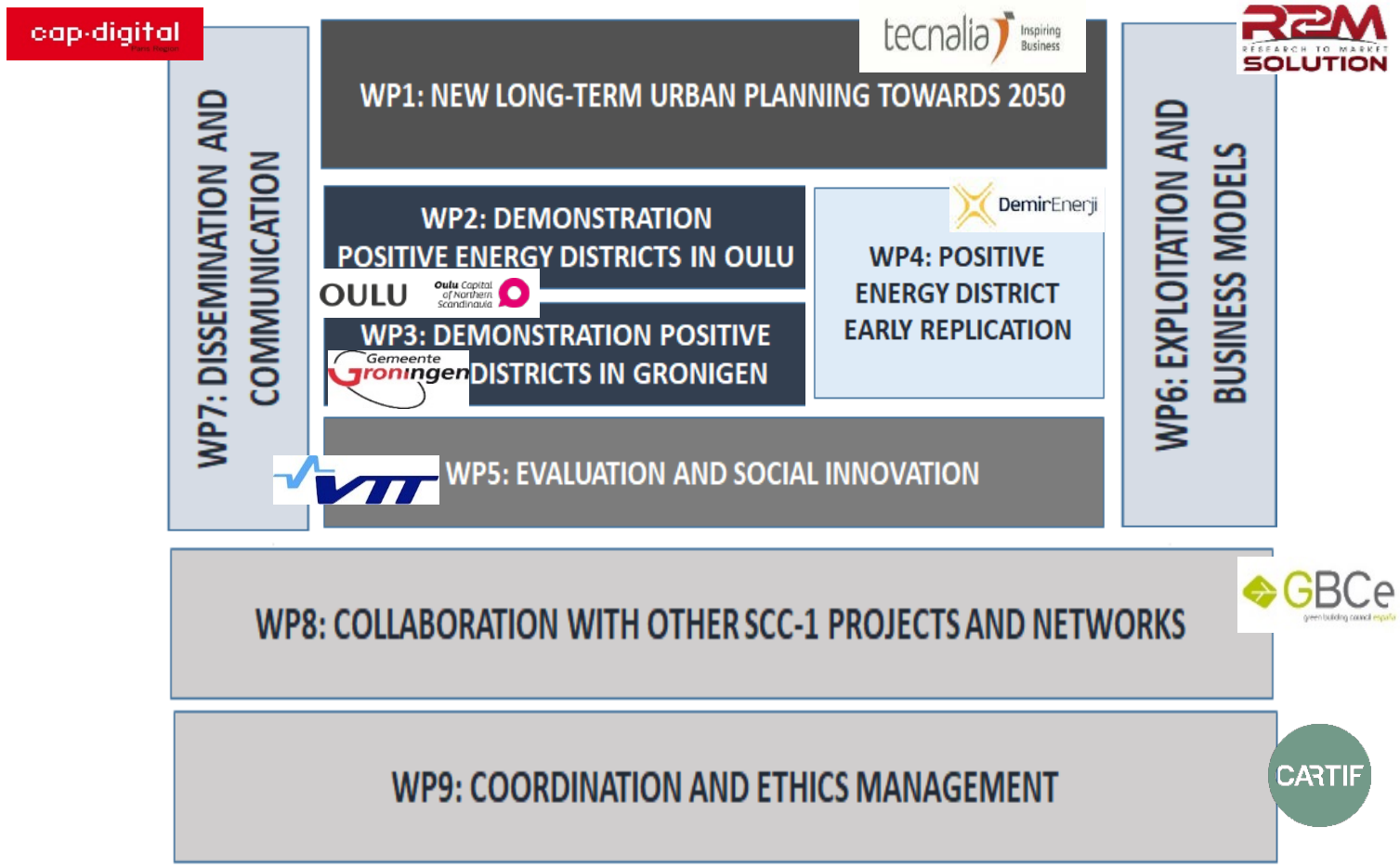
MAKING-CITY work-plan



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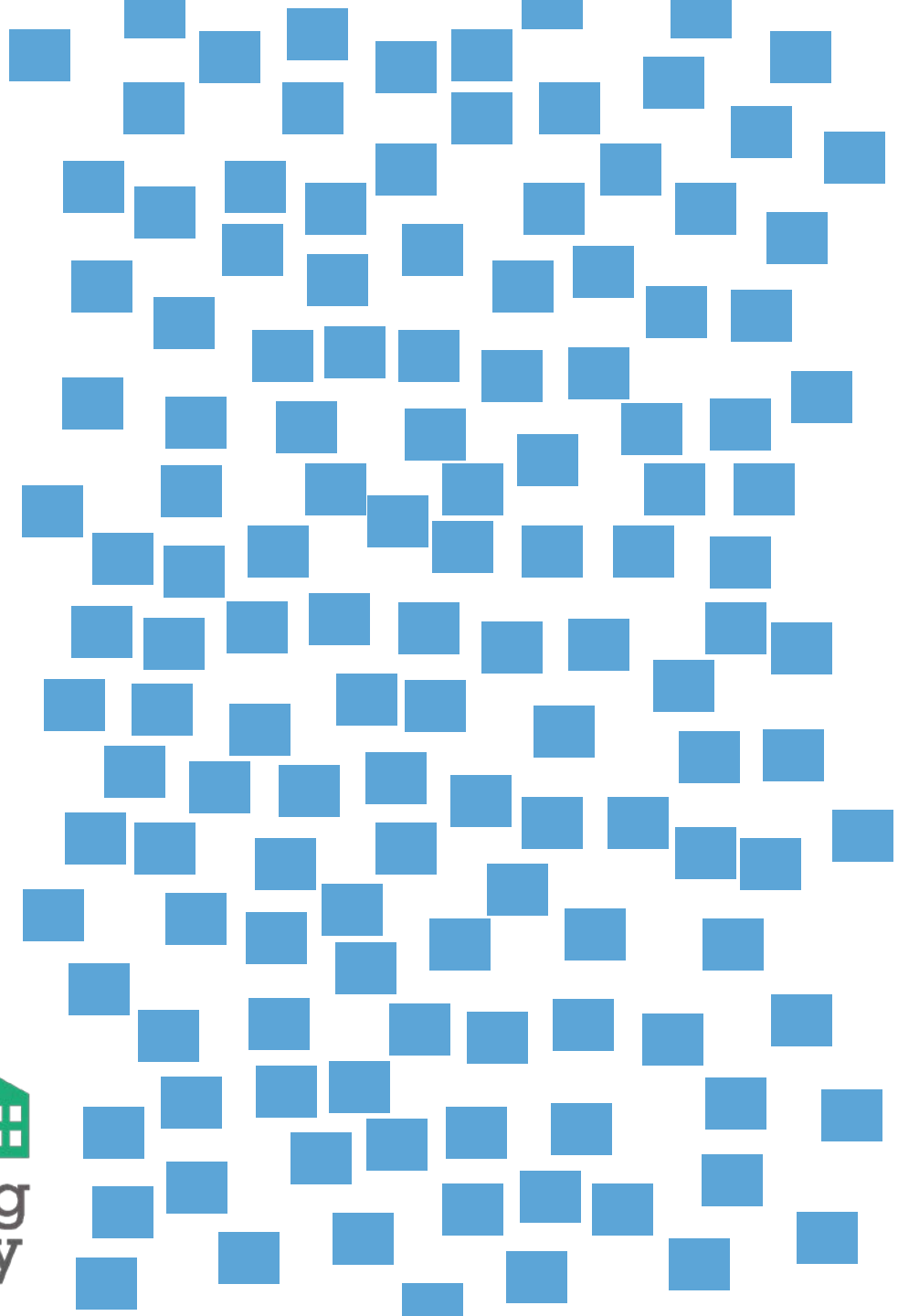

Imagine we all lived in a single home with one envelope

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BUILD UPON