interconnect

7 large-scale pilots

Our 7 large scale-pilots

The Belgium pilot

The French pilot

The German pilot

The Greek pilot

The Italian pilot

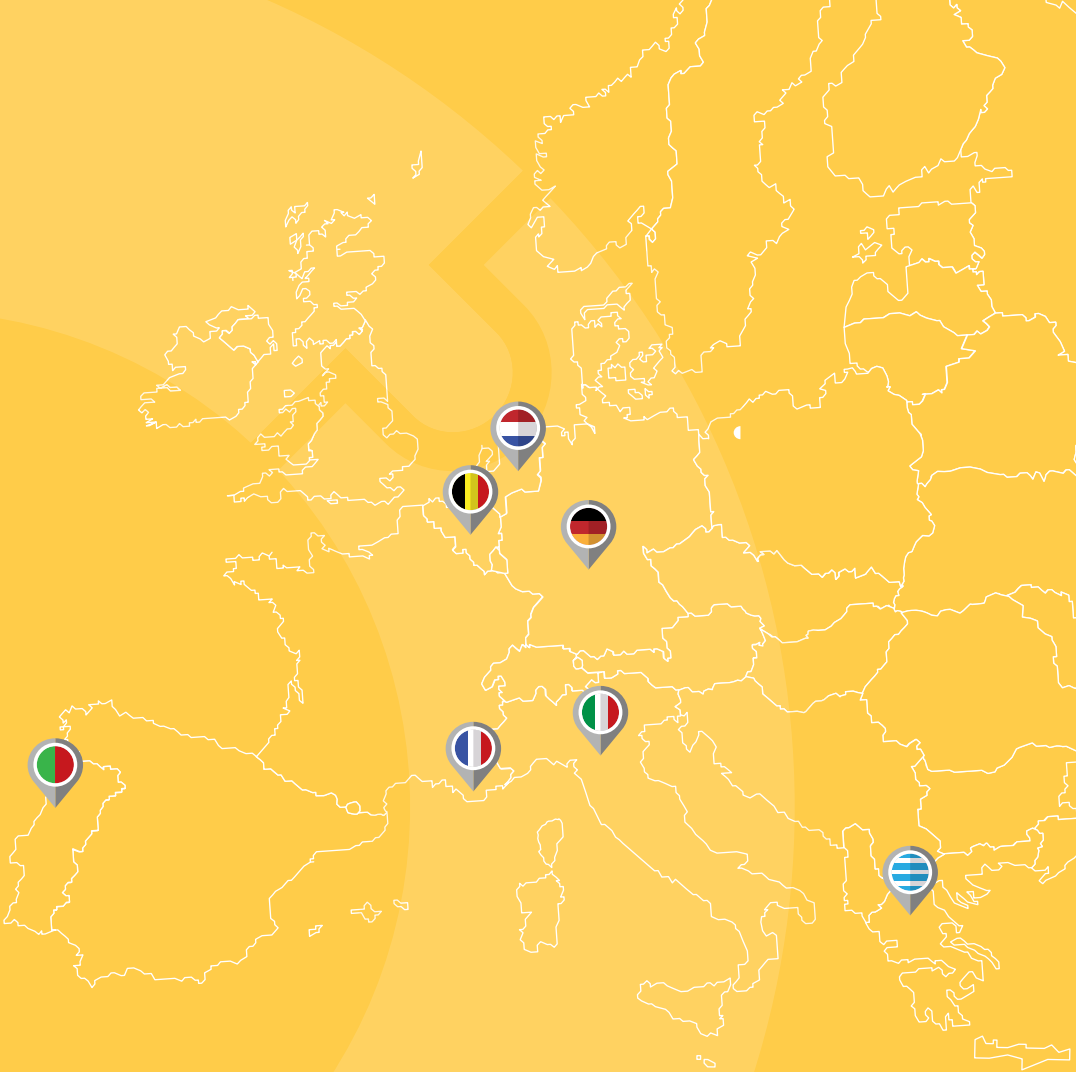
The Netherlands pilot

The Portuguese pilot

InterConnect places the foundation for the future of smart energy management solutions by seven connected large-scale test-sites in Belgium, France, Germany, Greece, Italy, Portugal and the Netherlands.

The pilots will be implemented from 2021 until October 2023.

In this booklet, you will be able to know more about all pilots.



Belgium
Residential and tertiary buildings in communities of multi-energy vectors

France
Residential & non-residential, with tertiary buildings and apartments

Germany
Groups of residential buildings and hotels

Greece
Large residential community with smart appliances and smart-home solutions

Italy
Residential social housing

Netherlands
Residential & non-residential buildings

Portugal
Residential & geographically widespread tertiary buildings

The Belgium pilot


Antwerp
Ghent
Genk
Hasselt
Kobbegem
Zellik
Oud-Heverlee

Objectives

The Belgium pilot of the InterConnect project is divided in eight different sites, located in seven cities - Antwerp, Genk, Ghent, Hasselt, Kobbegem, Oud-Heverlee and Zellik. Different partners will be managing the eight demos to achieve specific objectives. The general objectives of the Belgium pilot are:

→ Demonstrate the added value of a common ontology in 8 complementary set-ups.

→ Integrate energy and non-energy services and evaluate the added value for the stakeholders.

→ Implement and demonstrate future business model such as P2P exchange and dynamic tariffs (also for heat) in local energy communities.

→ Demonstrate the value of integrating bidirectional charging infrastructure and household appliances inside the micro-gird.

Unique features:

→ Includes multi-energy industrial and residential sites.

→ Interacts with one of Flanders's largest cooperation projects on energy systems which includes the DSO, all Flemish research institutes and 25 of Flanders' most active companies in the energy sector and backed up with support of the Flemish Energy Agency and the Regulator for the gas and electricity market.

Technologies & Infrastructures

The Belgium pilot includes the following technologies and infrastructures:

→ 636 households with electric boilers, heat pumps and/or electric heating; 51 buildings and 60 EV charging points.

→ Mix of commercial-educational and residential functions in a single building to deep retrofit with different communication technologies on site.

→Small scale public buildings and local energy community with direct electric resistance heating.

→ 80 households connected to a district heating network, with a district heating network substation and integrated electric booster in each housing unit.

→ New Nearly Zero Energy Buildings development with 200 new connections in the timeline of InterConnect, district heating & cooling with ice storage, heat pumps, PV, and electrical storage.

→ Industrial energy community with partially existing and partially new buildings, new district heating networks and solar park, including battery storage.

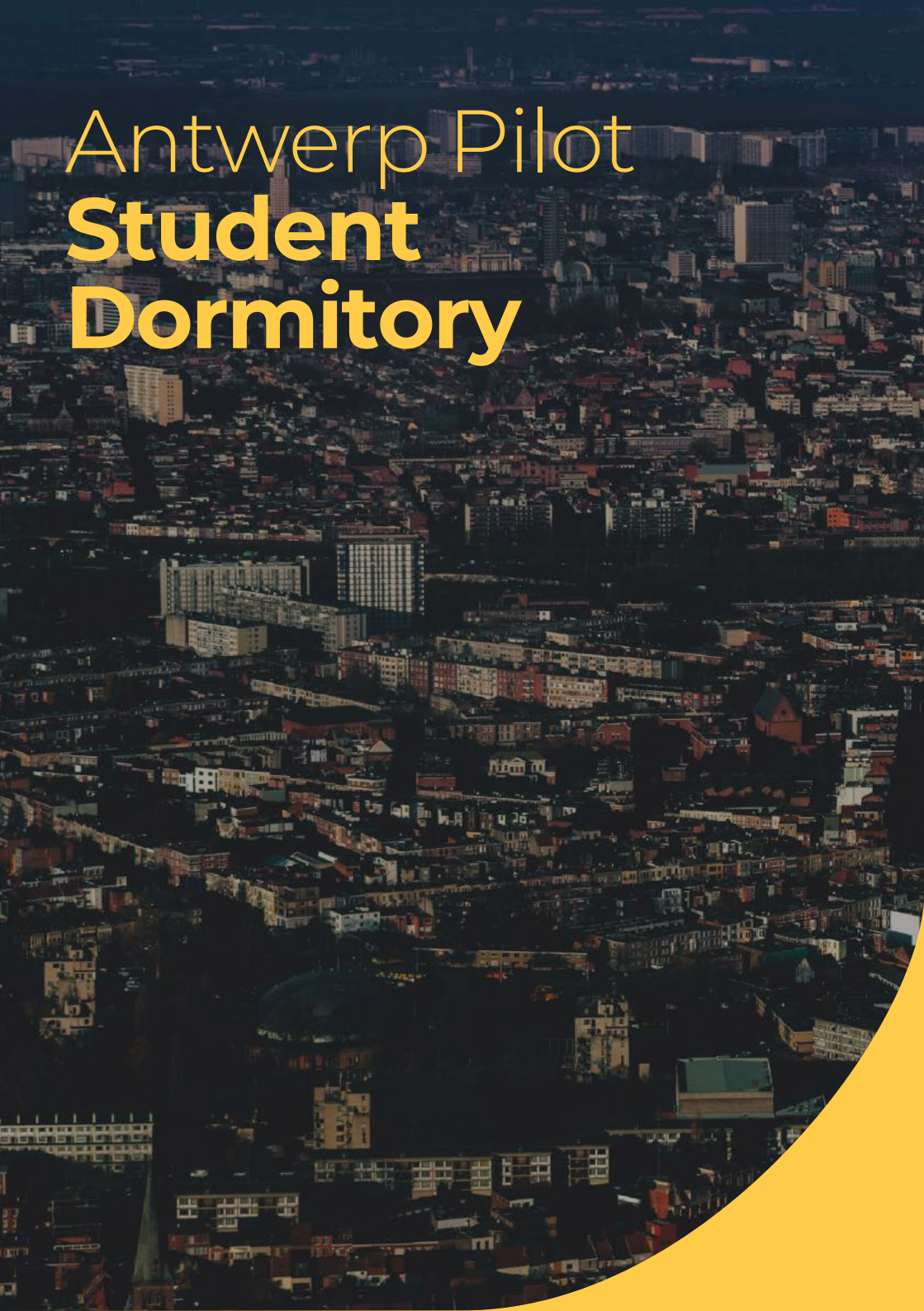
→ Advanced algorithm with AI and P2P designed in matching funding Flemish project context.

→ Science park EV charging set up with 1.3 MW of EV chargers.

→ SAREF compliant appliances, heat pumps and uni- |& bi-directional chargers.

→ Energy management systems at building & neighbourhood level as well as interacting with the grid.

→ P2P services and standardized interface with the distribution network.



Antwerp Pilot **Student Dormitory**

Location

Partners involved

imec

Objectives

If you are a student living in this dormitory, know that you will participate in a live experiment to test gamification approaches to maximize energy consumption efficiency and peal shaving in the student community. You will receive periodic updates on when the energy consumption is preferred to optimize overall consumption in the building. You will be incentivized and motivated to collaboratively use common appliances to use them more efficiently. Incentives will be in form of discounts or free tokens for common appliances. We want to:

⇀ Use gamification to optimize student behaviour and provide energy services.

⇀ Provide Lammp with a collaborative platform to reduce overall energy consumption and ultimately, reduce management costs.

2.

Technologies & Infrastructures

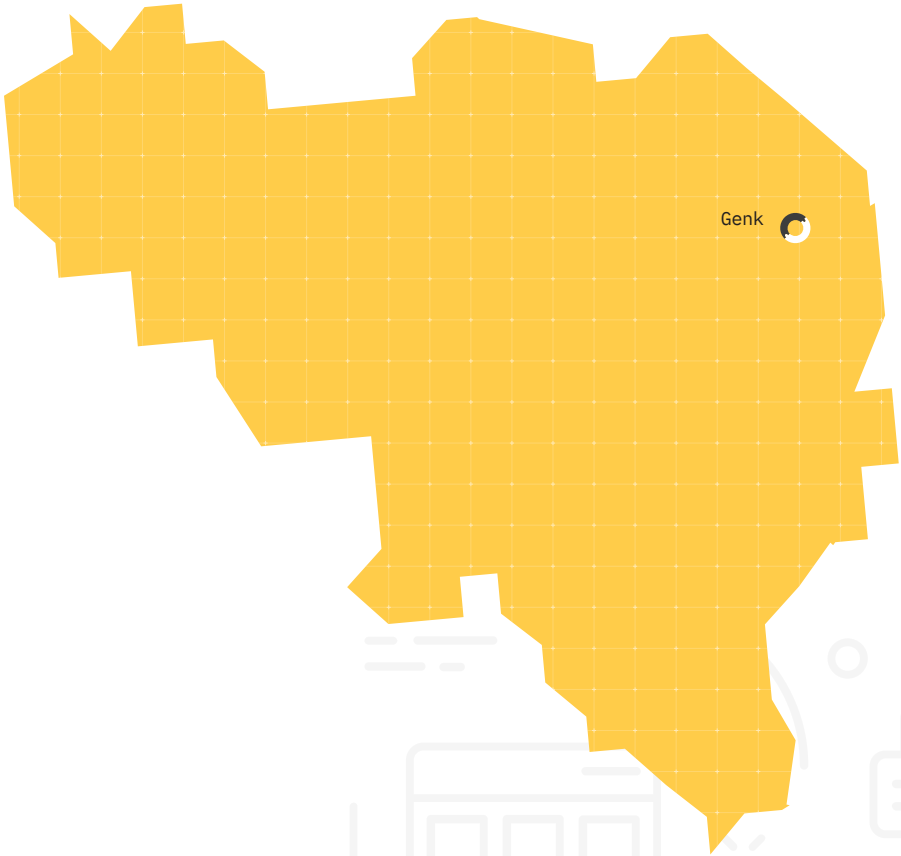
This pilot will deploy new technologies and solutions in 6 Student dormitories at Campus Drie Eiken, with 5 buildings: 108 student rooms, 5 kitchens and 1 laundry room. The following technologies will be intervened under the scope of this demo:

Shared whitegoods: washing machines, dryers, and dishwashers for common areas.

Smart metering – that will be installed.

Gent Pilot
Thermovault

Location



Partners involved

THERMO VAULT

Objectives

The impact of Local Energy Communities (LEC) regulation will be investigated for a heterogeneous selection of electrically heated apartment buildings from a technological and socio-economic perspective, considered to be representative for Flanders. This pilot objectives are the following:

–› Peak shaving and self-consumption by optimizing household boilers at community and household level.

–› Customers will save +20% of boilers energy consumption.

–› Customers will receive energy savings reports. Customers will save money with the peak reduction service.

–› Customers will reduce their carbon foot-print due to the self-consumption service.

Technologies & Infrastructures

32 apartments in the city of Genk will be part of this pilot. These apartments will be equipped with the following technologies:

Boilers (smartified by ThermoVault)
ThermoVault IoT modules and cloud service are used for smartify legacy-based assets like water boilers and space heaters.

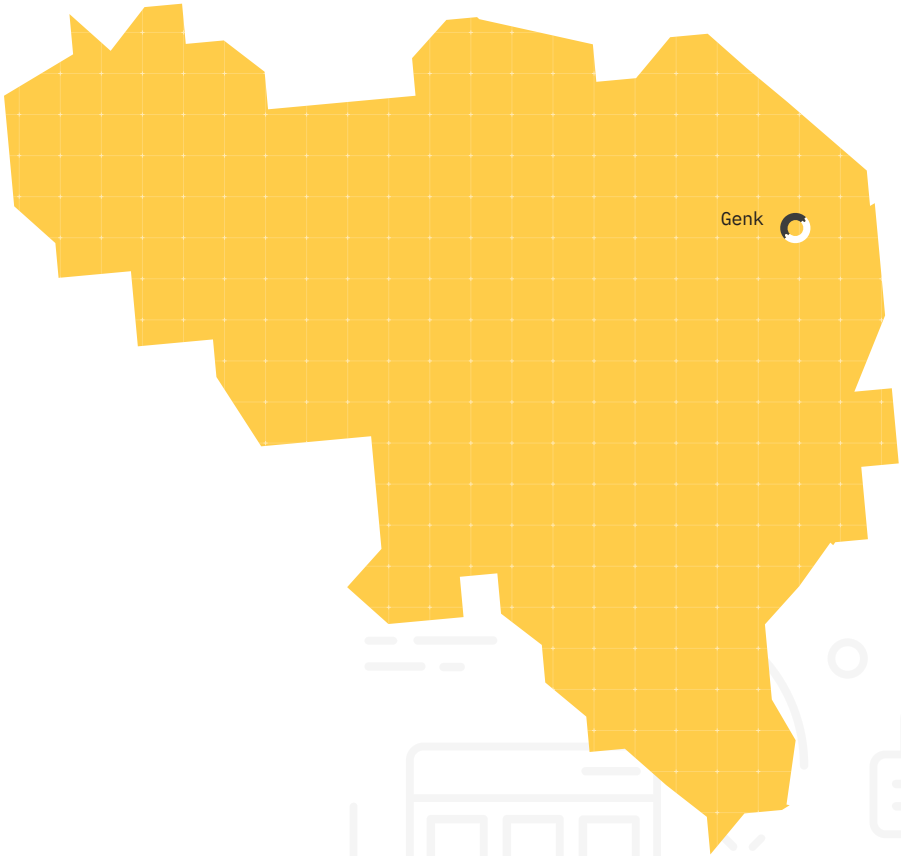
Charging poles

Smart whitegoods

Smart heat-pumps

Genk Pilot
Thorpark

Location



Partners involved

Objectives

Thor Park will be the test location for integrating Grid-interactive buildings in a common ICT platform in order to make them controllable as a Local Energy Community (LEC). By coordinating the flexible consumption of the buildings, related to EV charging and cooling, the collective self-consumption of local renewable generation will be increased, and it will be demonstrated how grid congestion problems can be mitigated.

The main goal of this pilot for the InterConnect project is to set up an integrated Building and Neighbourhood Energy Management system where Building Energy Management Systems share the forecasted consumption and flexibility information that results from their building-centric optimization with a Neighbourhood Energy Management system. The latter uses this information to determine an optimal and grid-secure consumption plan for the collection of buildings, with appropriate flexibility activations in each of them.

–› Manage flexibility at community level to reduce electricity bill.

–› Maximise flexibility in public parking without compromising on user comfort.

· Optimally coordinate the operation of EV charging and Cooling to make the most effective use of local generation.

Technologies & Infrastructures

Thor Park is a new science and business park on a former mining site, and it is the first regulatory sandbox in Belgium.
Three buildings will be part of this pilot:

EnergyVille 1 building
⇀ PV: 369 kWp;
⇀ EV charging stations: 527kW, 27 sockets distributed over 7 brands; including fast charging (AC and DC) and one Vehicle-to-Grid;
⇀ HP cooling 150 kW / heating 180 kW;
⇀ Smart whitegoods

IncubaThor building
⇀ HP cooling: 418 kW

Parking Tower
⇀ PV: 54 kWp
⇀ EV charging stations: 10 x 11kW
⇀ A research/office building with PV, EV charging poles and smart whitegoods

Ghent Pilot
Nieuwe Dokken

Location

Partners involved

DuCoop

OpenMotics

Objectives

The Nieuwe Dokken residents will all be making use of the energy services provided by DuCoop, as well as kept informed on the energy performance of the services. Additionally, residents will have access to their own electricity, heat and water demand data, allowing them to frequently track their own consumption.

Our objectives are to:

→ Offer residents energy (electricity, heat) and water (treatment) services.

→ Offer residents a visualization platform for data monitoring: users can read their energy and water data and act upon it.

→ Align the DuCoop asset portfolio using a smart Energy Management System, including storage and demand-side management.

→ Optimise the consumption of local renewable energy and waste heat.

→ Provide grid services (flexibility) to DSO and TSO.

→ Measure energy-awareness in an urban energy community.

Technologies & Infrastructures

De Nieuwe Dokken is a city district that consists of a kindergarten, sport infrastructure, a city administration building and over 400 apartments, complemented with a park. The following technologies will be installed:

District heating network

That distributes heat originating from different sources, being the waste heat from a nearby company, the heat from the wastewater produced by building residents (recovered using the heat pump) and biogas, produced by treating the biological waste generated on-site.

Heat pump

That transfers the heat available in the wastewater to the district heating network, and will in the future possibly be used to 'charge' the district heating network with that same heat when electricity prices are low.

Charging infrastructure

The charging infrastructure at De Nieuwe Dokken consists of 8 currently active charging points, with 32 installed, and >32 planned for future development phases.

PV panel

The solar panel installation currently includes 234 panels and delivers 76 kWp. In future building phases, this will be extended with 200 kWp.

Battery

The battery used has a storage capacity of 240kWh and will serve to store excess solar energy (mostly in summer) and charge when grid prices are low compared to expected prices (mostly in winter).

Energy management platform

To efficiently align the different technologies, an energy management platform is under development throughout the course of the InterConnect project. The aim here is to minimize costs for DuCoop by using either locally produced energy or cheap energy from the grid as source.

Belgium
Hasselt
Pilot

Location

Partners involved

vito Energy Ville

Cordium
eerste partner in sociaal wonen

Objectives

About 70 units – between apartments and households – will be intervened in the Belgium city of Hasselt to accomplish the following objectives:

–› For the combination of individual apartment heating and hot tap water: optimal ‘charging’ profile determination.

–› At apartment level: determining ’charging’ flexibility (of heating and boiler) next to optimal ‘charging’ profile based on the forwarding of selected sensor and measurement data from CW to VITO machine-learning algorithms.

–› Aggregation of all optimal ‘charging’ profiles and ‘charging’ flexibility Determination of optimal DHN heat generation profile and heating source selection.

2.

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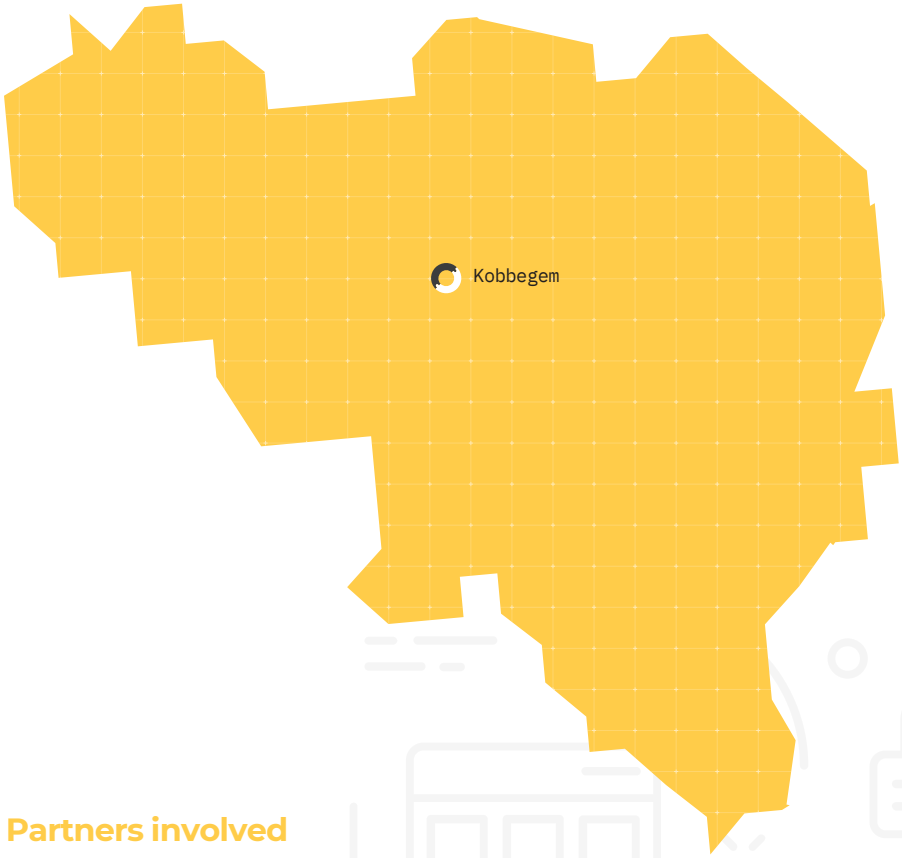
Technologies & Infrastructures

The city of Hasselt will be a test field of the InterConnect project in three clusters of multi-apartment buildings and about 70 units of apartments and households in total. The following technologies will be installed:

- Small scale wind turbines
- Gas-fired and electrical heat pump
- Smart whitegoods
- Substations with integrated thermal energy storage

Belgium
Kobbegem

Location



Partners involved

Th!nk E

Associated Partners

Imtech Belgium

Objectives

In the Belgium city of Kobbegem, the InterConnect project aims at creating a Local Energy Community with single connection to the grid and one management system. We want to:

→ Give freedom to the user to join and leave the energy community.

→ Maximize the energy efficiency of the household and of the community through automatic smart energy decisions with impower.

Technologies & Infrastructures

Two residential buildings in the local energy community and one building, part of the "virtual" energy community, will be intervened. The following technologies will be installed:

Energie Management Systeem

Combination of Loxone (existing technology) and Impower (new technology) that will be used as the 'energy brain' of the community. Through Loxone there is a user interface for the end consumer, Impower runs in the background and makes the smart decisions.

Heat pump

New device to be installed through Interconnect. It will be used to partially replace the current central heating and to heat up a swimming pool.

Energy storage

Existing technology: Enersys lead acid battery with Studer Invertor.

Charger

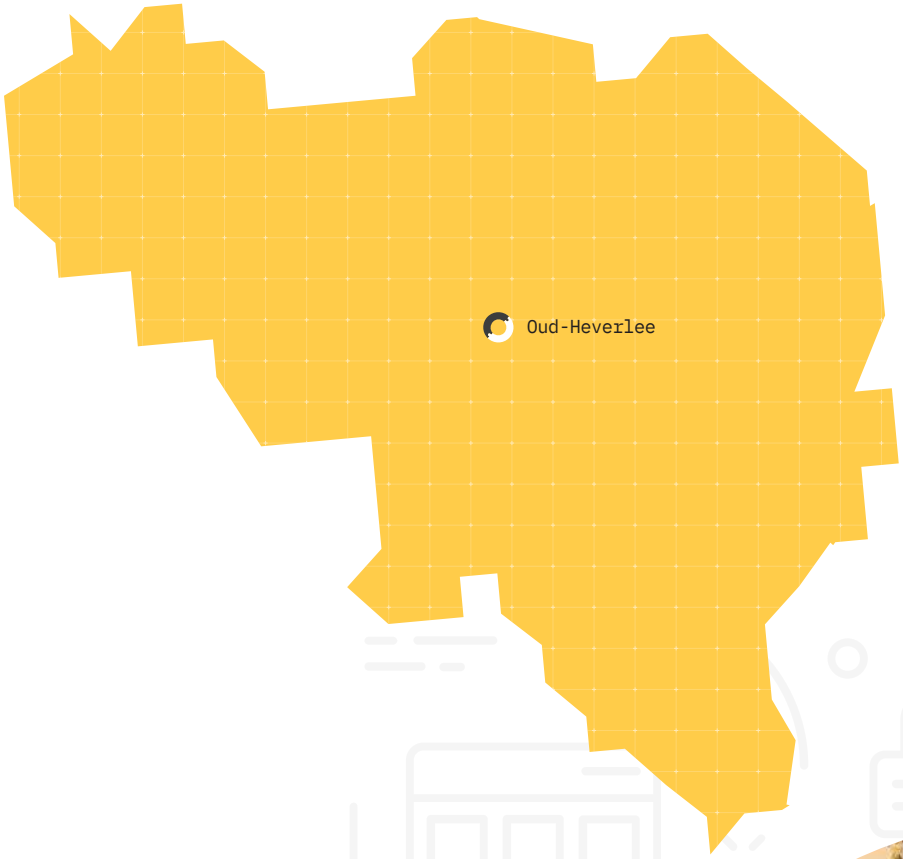
Existing technology: Powerdal Nextenderr charger to charge an electric car.

PV panels

Existing technology: 30 solar panels (in total 7.8 kWp) with an SMA invertor.

Belgium
Oud-Heverlee
Pilot

Location



Partners involved

Objectives

In the Belgium city of Oud-Heverlee, the InterConnect project will deploy new solutions in four buildings of the Local Energy Community. We want to:

→ Demonstrate the effective multi-asset flexibility in a community of tertiary buildings with the same owner.

→ Increase comfort, minimize energy consumption, aggregate self-consumption, peak shaving, demand response and demand charge management for minimizing the electricity bill in conjunction with maximizing the flexibility provision to the grid (DSO and energy supplier), providing new revenue streams for the community owner.

→ Deploy interoperability between three platforms: HVAC control, battery and EV control and PV/building and forecasting.

→ Deliver an interface for the user's setting and preferences as well monitoring of energy consumption.

Technologies & Infrastructures

The local energy community consists in four buildings – the city hall, OCMW office, the policy station and a day care centre -, all of them located next to each other. The following technologies will be installed:

Hardware

Split unit, battery, EV charger, PV panels.

Software

Generally, the HVAC installation of the building is controlled by a different software platform than the community demand management and grid interaction platform. On top of that, the battery or the EV charger might be linked to proprietary software on cloud. We will install:

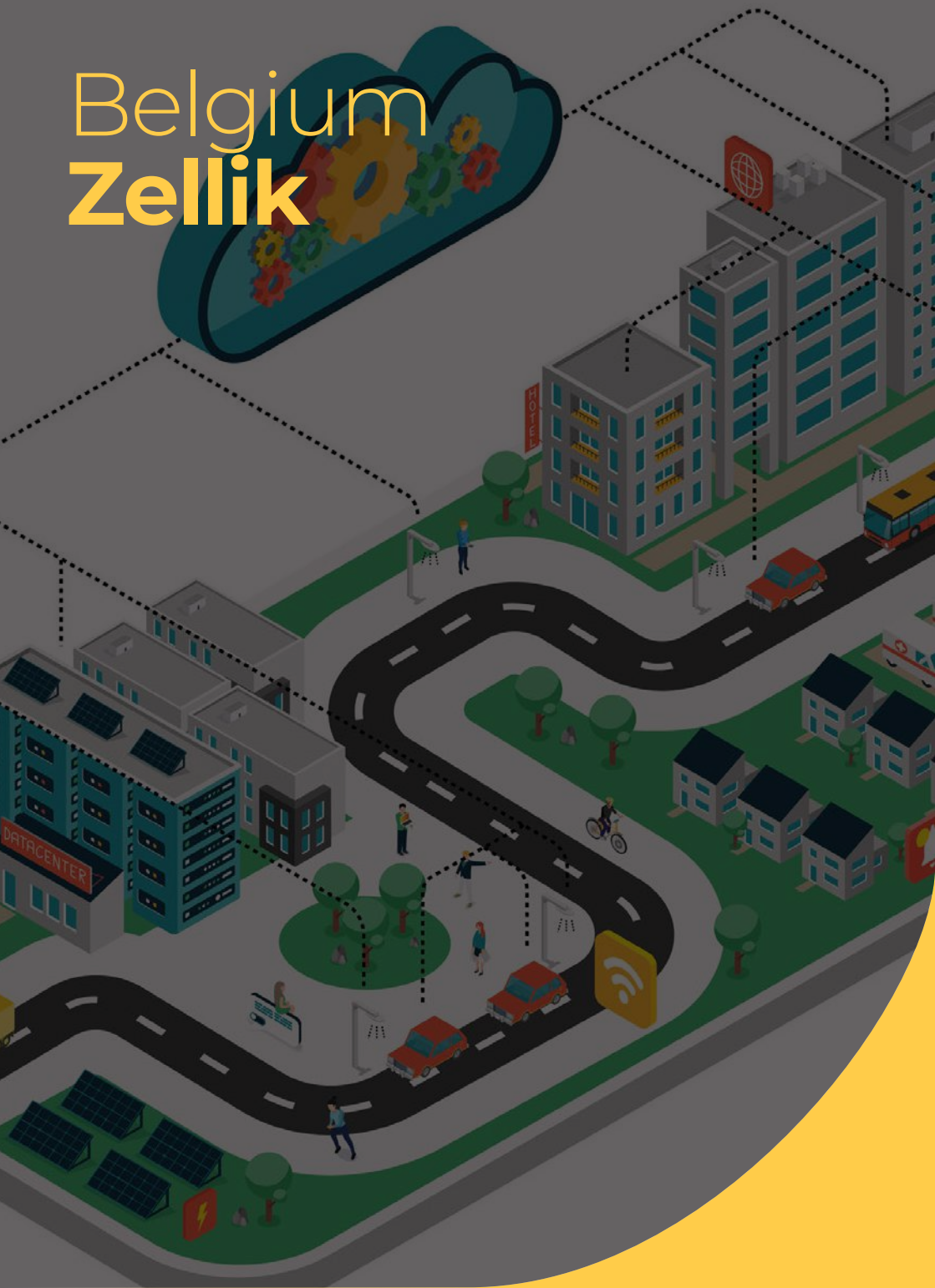
–› SynaptiQ Power builds on the commercial platform 3E SynaptiQ, which is a commercial platform for asset operations & management in the domain of renewable energy. SynaptiQ currently is being extended to include the monitoring & control of batteries and EV chargers.

–› DeltaQ based on a model-predictive control framework automatically optimizes the BEMS control settings on hourly basis combining monitoring data, user preferences, weather forecasts and energy tariffs.

Communication, monitoring and control devices

IoT gateways, field sensors and actuators, smart meters, heat pumps.

Belgium
Zellik



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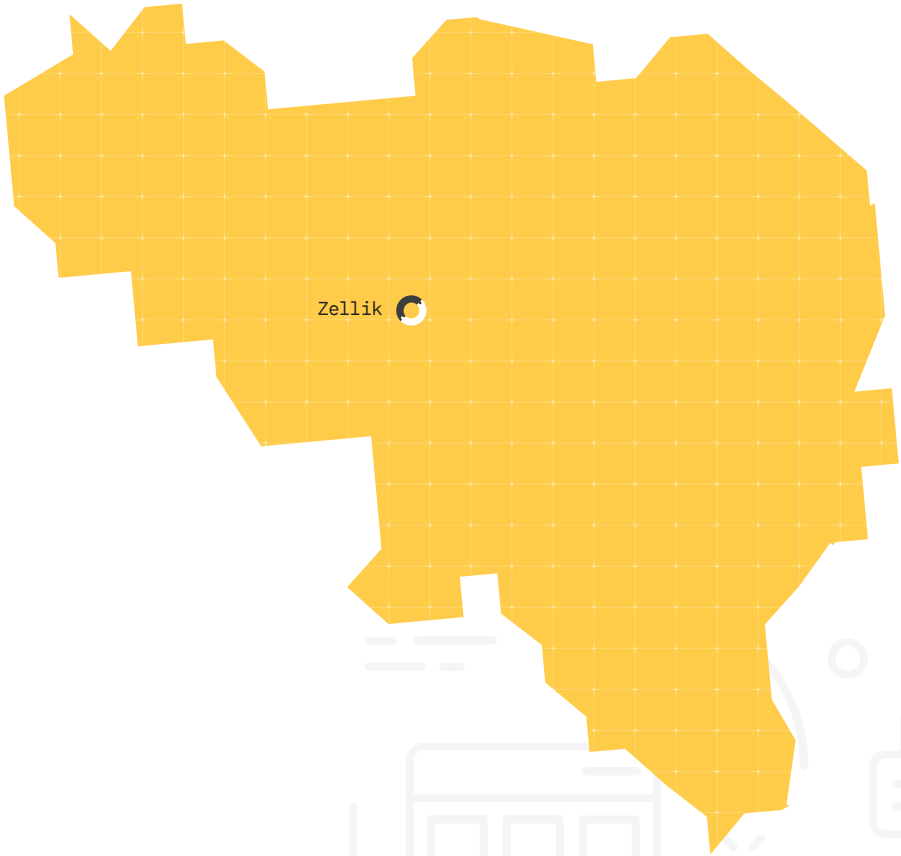

Partners involved

VUB VRIJE UNIVERSITEIT BRUSSEL

ABB

Objectives

The Green Energy Park is a project of construction and development of an innovation centre on green energy, that will be operational in 2021. It lays in an industrial zone – Research Park Zellik – where another 70 companies, from different sectors, are active.

The primary objective of the Green Energy Campus will be to develop and implement a CO2 neutral, self-sufficient multi-energy grid, that also serves as a living lab to develop, test, and validate market product and services for microgrids in real-life conditions. On the short term, the objective is to install digital meters for all the existing buildings and create a digital twin – a scale model that visualises the live energy data.

We want to achieve the following goals:

→ Local energy community based on P2P energy trading.

→ Aggregation of different smart homes to the smart grid.

→ Demonstrate the value of integrating bidirectional charging infrastructure and household appliances inside the micro-grid.

→ Enable flexibility services.

→ Increase RES.

Technologies & Infrastructures

The Green Energy Park will be a large-scale living lab that will enable the proof of concept of the IoT based technologies developed under InterConnect framework. Users will have access to their energy consumption data and will be allowed to control their assets. Additionally, users will have access to flexibility services, trading electricity whilst empowering them an increasing RES.
Its infrastructure is composed by dwellings, smart home lab, tertiary offices and tertiary labs.
The Green Energy Park will have the following technologies:

PV Panels

Energy storage

–› Neighbourhood batteries
–› House batteries

EV charging infrastructure

he charging infrastructure will consist of several charging points. It will include V2G system and fast charging points.

Smart whitegoods

Washing machines, dryers, fridges, heat pumps and others that will be controlled remotely by user preferences.

Energy management system

It will be an energy management platform that allows users to set preferences, control and monitor their energy consumptions, as well as receiving suggestions on their energy consumption behaviour.

Do you want to know more?

Follow us at
https://interconnectproject.eu/pilots/belgium/

Partners involved

Th!nk E

3E

ABB

Cordium
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DAIKIN

DuCoop

imec

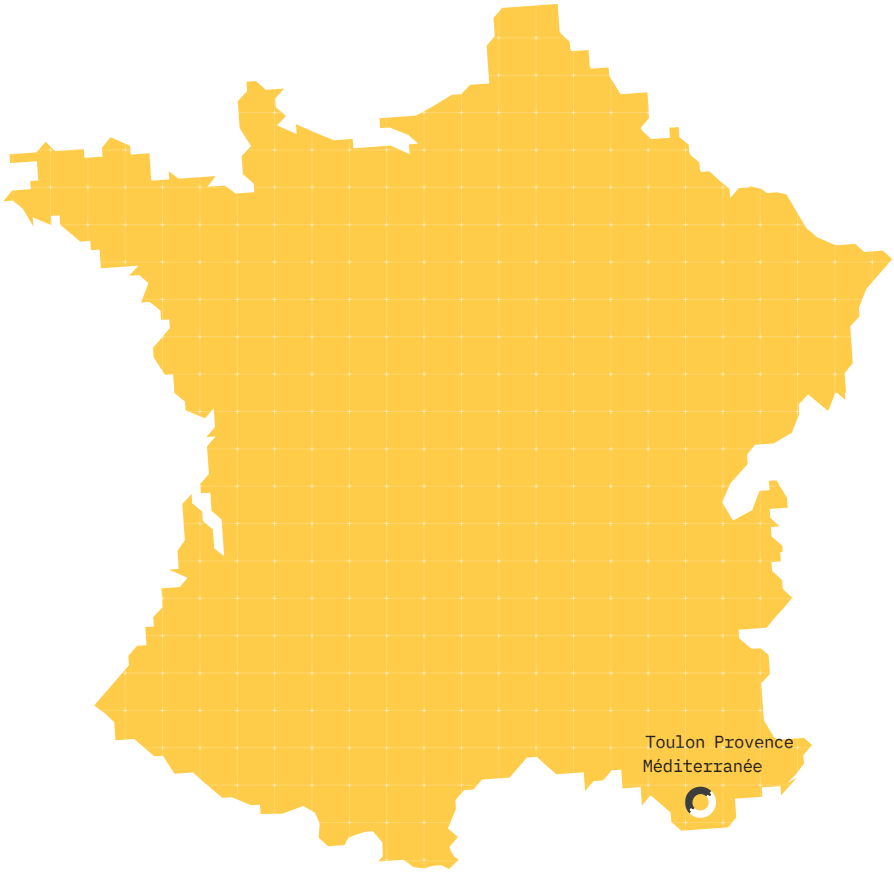
OpenMotics

THERMO VAULT

vito Energy Ville

VUB VRIJE UNIVERSITEIT BRUSSEL

The French pilot


Toulon Provence
Méditerranée

Objectives

The French pilot is located in the metropolis of Toulon Provence Méditerranée. The French pilot of the InterConnect project works with households and public buildings to achieve the following objectives:

Maximise the self-consumption of locally produced renewable energies:

→ By piloting the consumption of electrical equipment during periods of local renewable energy production. This solar energy is produced in your commune by the municipality or by private individuals.

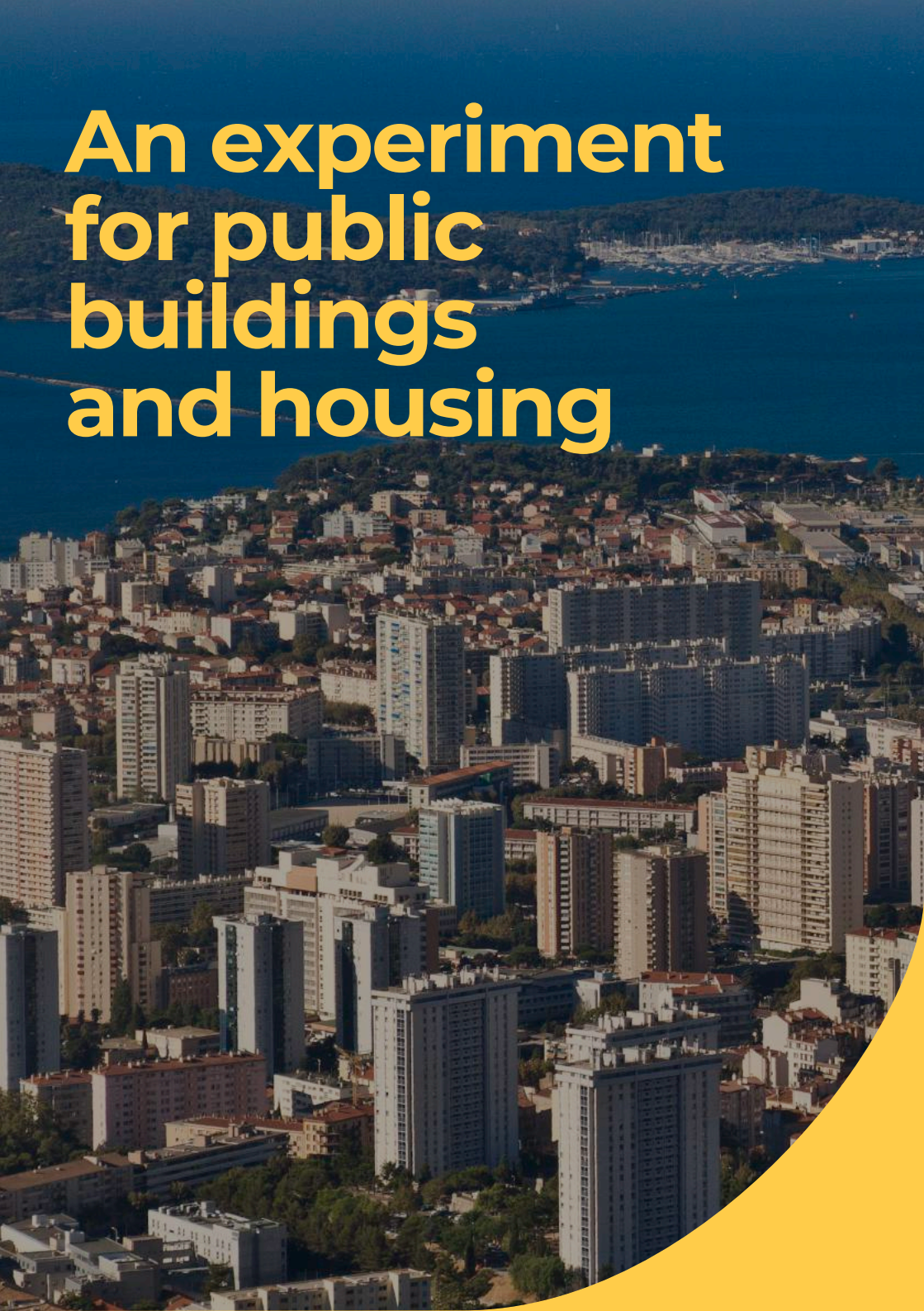
Helping to reduce the cost of electricity consumption:

→ By using intelligent equipment to consume during the best periods of the dynamic tariff (different hourly rates during the day).

Technologies & Infrastructures

The project plans to install the following technologies and services in 250 households, 20 public buildings and 1 school in the Toulon Provence Méditerranée metropolitan area:

An experiment for public buildings and housing



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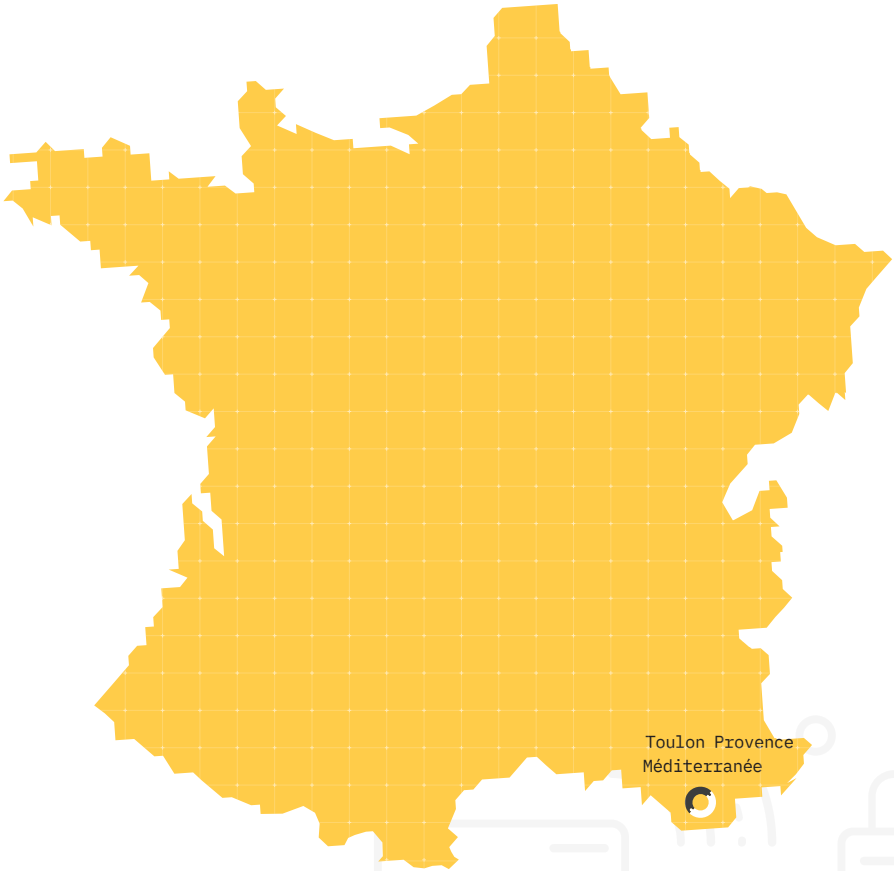


Partners involved

ENEDIS L'ELECTRICITE EN RESEAU

ENGIE

inetum. Positive digital flow

THERMO VAULT

Trialog

ISEN ALL IS DIGITAL! MÉDITERRANÉE | yncréa

Objectives

Public buildings and houses in the Toulon Provence Méditerranée metropolis will be concerned by the InterConnect project, in order to achieve the following objectives:

Maximise the self-consumption of locally produced renewable energies:

–› By piloting the consumption of electrical equipment during periods of local renewable energy production. This solar energy is produced in your commune by the municipality or by private individuals.

Helping to reduce the cost of electricity consumption:

You will have the opportunity to be one of the first in France to have access to innovative solutions to accelerate the energy transition. Thanks to your involvement, you will have access to cheaper and sustainable energy, as part of a collective and supportive approach.

Technologies & Infrastructures

The following technologies will be installed:

Intelligent management of your electricity consumption.

Devices that intelligently control the consumption of existing water heaters and radiators.

A solution for controlling electrical appliances to consume at the best time, while helping the electrical network thanks to a dynamic price offer that reflects the market.

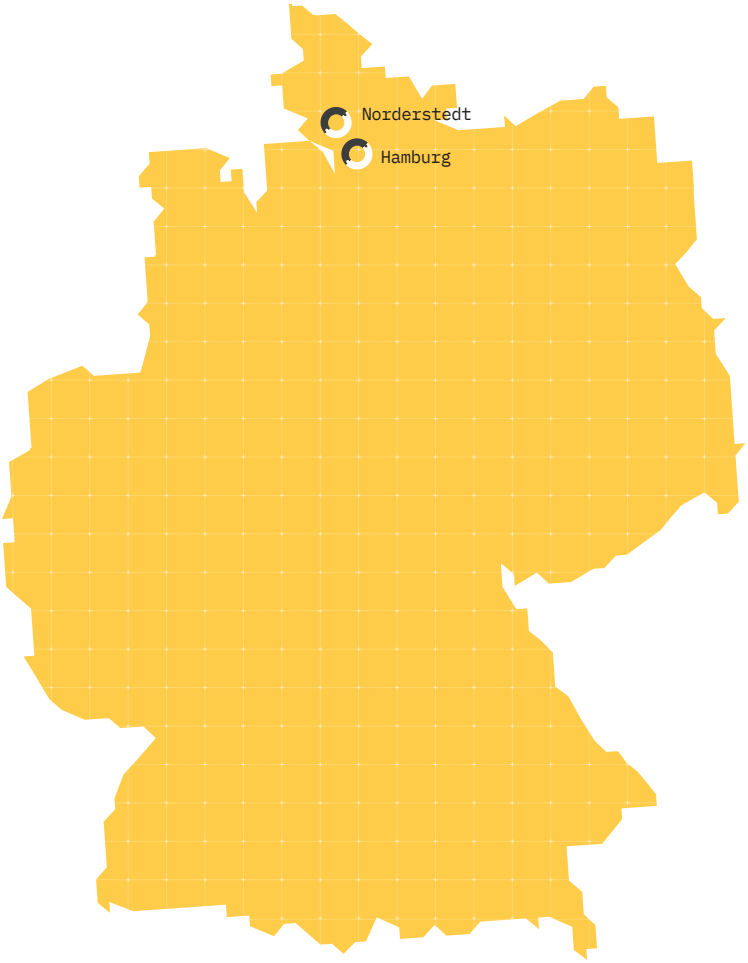
A recharging platform to intelligently control the charging of electric vehicles.

Do you want to know more?

Follow us at
https://interconnectproject.eu/pilots/france/

Partners involved

The German Pilot


Norderstedt
Hamburg

Objectives

Three types of demos, with different objectives, will be installed in the German pilot.

Residential (Norderstedt)

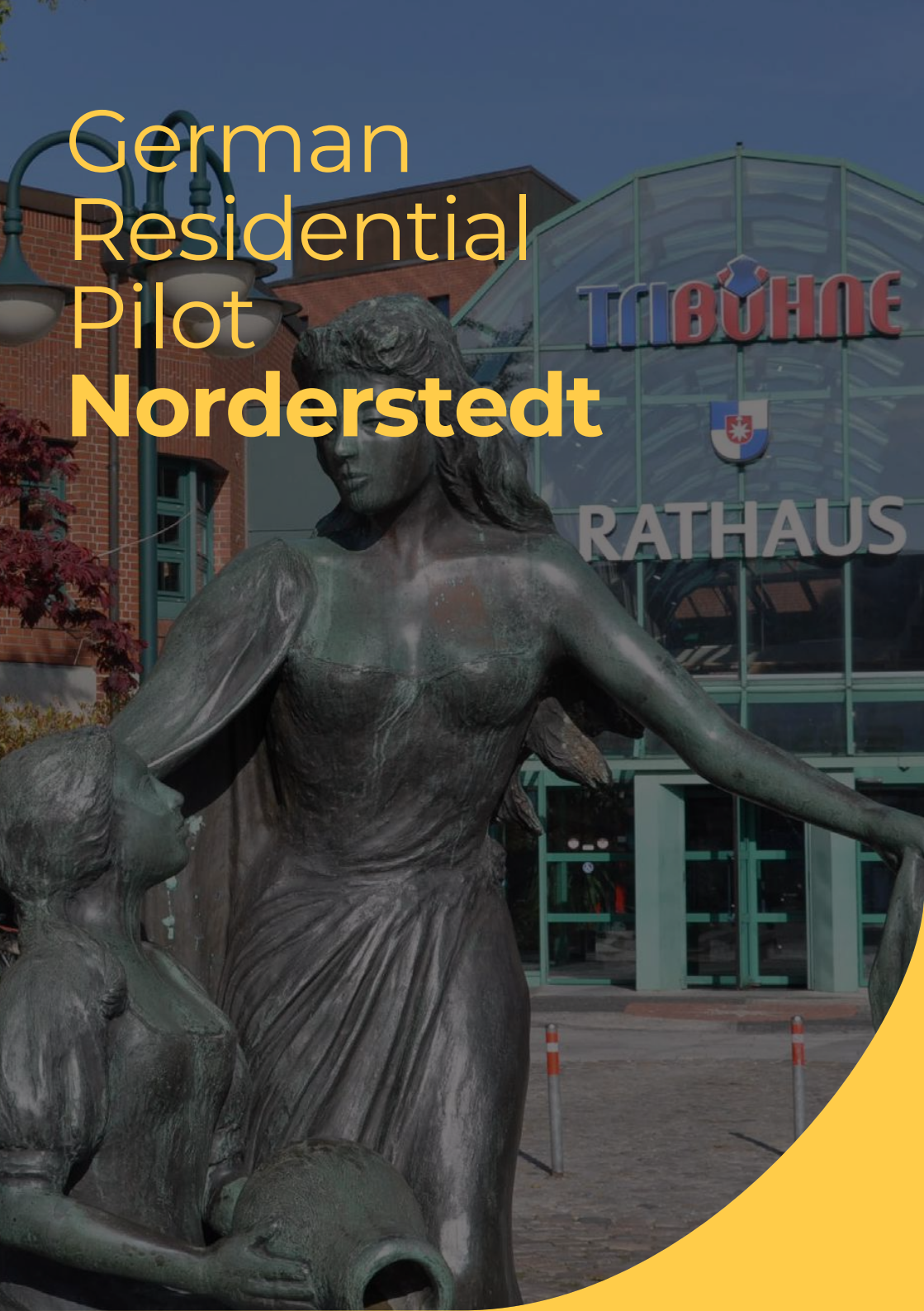
Hotel Guests (Hamburg)

Hotel operators & owners (Hamburg)

Technologies & Infrastructures

Residential homes and apartments will be intervened in the residential demo that will be installed in the city of Norderstedt. In Hamburg, several hotels will be part of the commercial demo, that will target guests and hotel operators and owners.

German Residential Pilot **Norderstedt**



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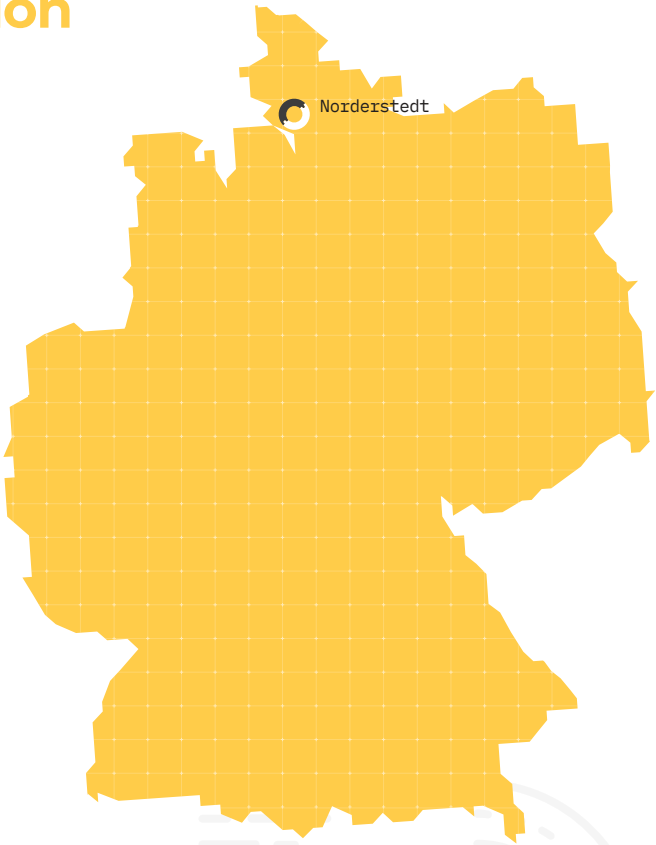


Partners involved

EEBUS Vaillant DAIKIN Miele

B/S/H/ Wirelane keo

Associated Partners

Stadtwerke Norderstedt

Objectives

We want your house to be part of the energy transition we are developing in the city of Norderstedt. Our goals are:

–› Manage overload and underload scenarios using bi-directional communication from grid to device level via an Energy Management System (EMS).

–› Installation of the EMS to aggregate energy demands and offers, manage flexibilities and grid commands.

–› Manage flexibilities to provide grid services and to optimize energy costs.

–› Show real interoperability through use of various manufacturers.

–› Demonstrate transition of mobility and heating as well as transition to renewable energy productions at no grid expansion.

Technologies & Infrastructures

**Installed in the city of Norderstedt.
The following technologies will be part of the residential demo of the German pilot:**

Smart meter gateway
Certified and secure communication entry point to enable safe communication and interaction between market and grid on the one side and buildings with their smart devices on the other side.

Energy manager
Central logic inside the building, monitors power consumption of connected devices (e.g., charging stations). The EMS receives from Stadtwerke Norderstedt. The user interface allows visualization of current and future energy behaviour.

HVAC system
Intelligent heat pump system for heating and domestic hot water. Manageable from the energy manager to be react on time of use tariffs or power limitation commands from the grid.

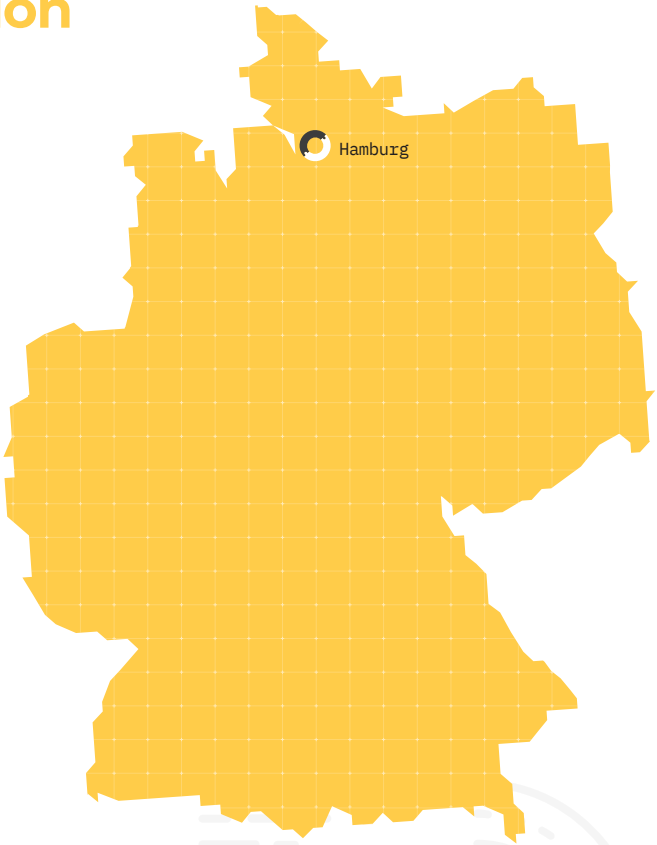
EV charging station
Electric charge station for EVs with smart/IP interface to connect to the energy manager.

PV system
Roof top PV system be part from the intelligent energy management system.

Dishwasher/washing machine/ tumble dryer
Intelligent appliances will be managed by the energy manager.

Hotel Owners and Operators **Hamburg**

Location



Partners involved

EEBUS

Fraunhofer IEE

keo

Wirelane

UNIKASSEL VERSITÄT

Associated Partners

Stromnetz Hamburg

Objectives

We will provide your hotel with the necessary charging infrastructure, meaning hardware and software. Your guests will bring the electric vehicles. Maybe, you may even have our own fleet! All you need to do is to offer the smart charging infrastructure to your guests. Together we will:

→ Turn you into a leading pilot in terms of smart charging concepts.

→ Support grid stability and the consumption of green energy.

→ Work on the prevention of power blackouts and guarantee stable supply of charging power.

This will be realized by the following measurements

→ Adoption of EVs energy consumption to prices and availability of energy.

→ Avoidance of high electricity prices for the Hotel operator via peak-shaving.

→ Flexible tariffs to harmonize the production and demand and enable price optimized operation of EVs.

→ Enhanced grid monitoring and transparency on hotel level to identify hot spots.

→ Blackout prevention in overload scenarios while enabling further energy consumption.

Technologies & Infrastructures

We will develop and install the following technologies inside the hotels:

Operation and energy management data integration platform

Backend Service to forecast and analyse energy relevant data.

Smart meter gateway

Certified and secure communication entry point to enable safe communication and interaction between market and grid on the one side and buildings with their smart devices on the other side.

Charge point operator

Backend to manage charging point, relevant for billing and maintenance purposes.

Energy manager

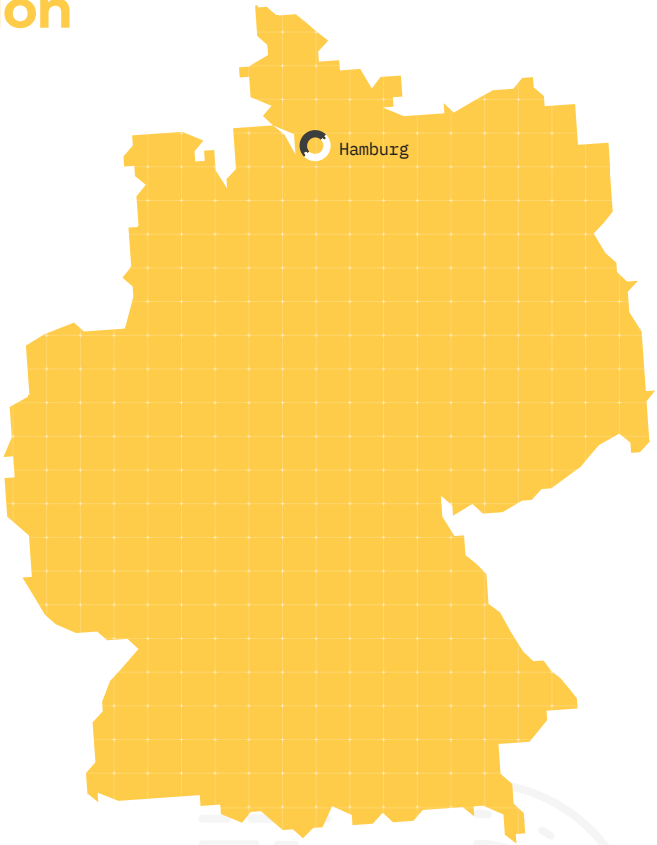
Central logic inside the building, monitors power consumption of connected devices (e.g. charging points). The EMS receives and fulfils incentives and signals from market and grid operators.

EV charging station

Electric charge points for EV's of hotel guests with smart/IP interface to connect to the energy manager.

Hotel Guests **Hamburg**

Location



Partners involved

EEBUS

Fraunhofer IEE

keo

Wirelane

UNIKASSEL VERSITÄT

Associated Partners

Stromnetz Hamburg

Objectives

As a guest of the hotel, with smart charging infrastructure, you can simply make use of the smart charging points provided by the hotel. You will receive information about the charging process and status of your vehicle throughout the hotel Energy Management System App or Interface.
We want you to:

→ Become part of a smart charging infrastructure.

→ Make use of that infrastructure.

→ Be one of the first guest of a future-orientated hotel providing grid compatible and tariff-based charging infrastructure.

Technologies & Infrastructures

We will develop and install in this hotel the following technologies:

Smart meter gateway

Certified and secure communication entry point to enable safe communication and interaction between market and grid on the one side and buildings with their smart devices on the other side.

Charge point operator

Backend to manage charging point, relevant for billing and maintenance purposes.

Energy manager

Central logic inside the building, monitors power consumption of connected devices (e.g., charging points). The EMS receives and fulfils incentives and signals from market and grid operators. The user interface allows visualization of current and future charging behaviour.

EV charging station

Electric charge point for EV's of hotel guests with smart/IP interface to connect to the energy manager.

Do you want to know more?

Follow us at
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Partners involved

EEBUS

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DAIKIN

Fraunhofer IEE

keo

Miele

UNIKASSEL VERSITÄT

Vaillant

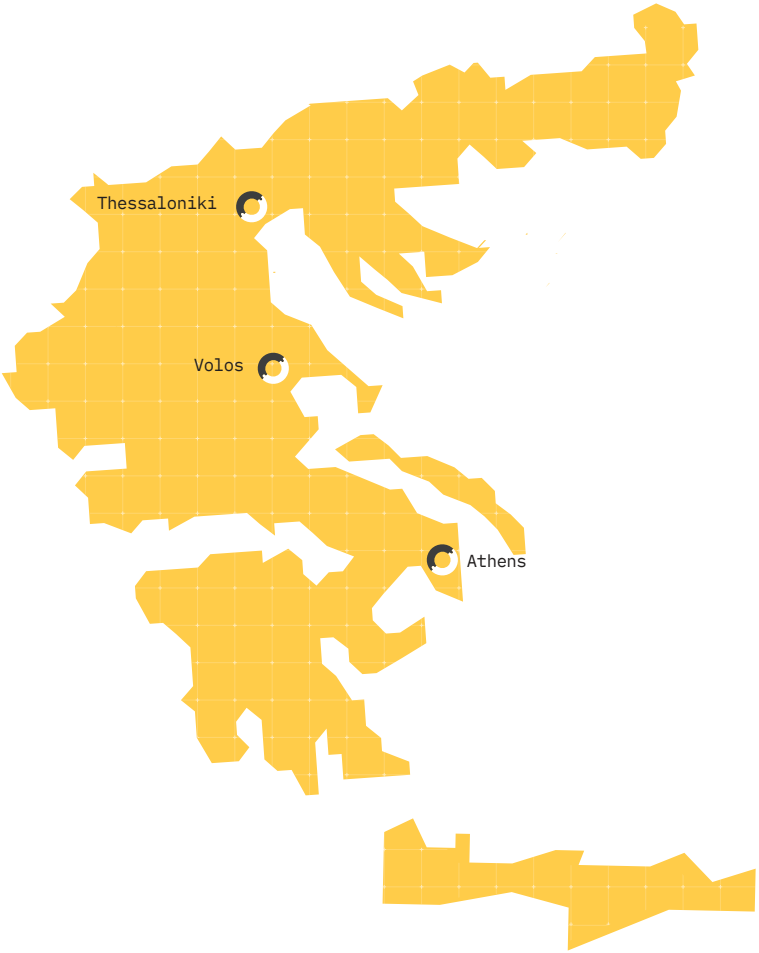
Wirelane

Associated Partner

Stromnetz Hamburg

Stadtwerke Norderstedt

The Greek Pilot


Thessaloniki
Volos
Athens

Objectives

The Greek pilot of the InterConnect project will be conducted in three different cities: Athens, Volos and Thessaloniki. We will pursue to enroll residential consumers in our pilot and offer them the opportunity to familiarize with new technologies focused on the digitalization of the energy sector

→ Demonstration of Demand-Side Flexibility services, through the active participation of large communities in energy markets.

→ Demonstration of IoT-assisted energy management, flexibility and interoperability across a wide range of both legacy and new smart appliances of different vendors.

→ Demonstration of home comfort automation services, including the integration of non-energy sensors (temperature, humidity, gas sensors, activity detectors, door/window sensors, cameras and more).

→ Energy demand predictions and recommendations (optimized DR decisions, energy forecasting, complex event processing, etc.).

→ Active engagement of residential end-users through mobile apps and incentives (energy cost, social responsibility, etc.) for understanding their energy consumption behavior and the continuous assessment of the solution/ application.

→ Demonstrate viable concepts that ensure privacy, liability, security and trust, by exposing only anonymized data out of user premises.

Technologies & Infrastructures

We will install 200 houses of HERON's customers and equip them with real-time power meters. We will convert 70 households into smart homes by equipping them with advanced end-to-end technological solutions offered by GRIDNET (50 houses) and COSMOTE (20 houses), including IoT gateways, sensors and power meters.

Smart-Energy-Meter

Real-time and historical energy consumption information per household.

Smart-home solutions

IoT assisted energy management and home comfort based on two open-source home automation frameworks (OpenHAB, home assistant).

Mobile Application

Mobile App developed by AUEB for user interface/engagement purposes, energy consumption monitoring, and remote control of devices.

Data Analytics

Data Analytics services by WINGS for recommendation and forecasting.

Flexibility Service

Optimized Demand-Response decisions developed by Inetum.

Do you want to know more?

Follow us at
https://interconnectproject.eu/pilots/greece/

Partners involved

GRIDNET

ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

COSMOTE

inetum
Positive digital flow

ΗΡΩΝ

WINGS
ICT SOLUTIONS

The Italian Pilot


Milan

Objectives

The Italian pilot of the InterConnect project will take place in the city of Milan. With this demo site, we want to accomplish the following goals:

→ Test and demonstration of an interoperable (SAREF compliant) HEMS for domestic apartments, involving different manufacturers of home appliances.

→ Demonstrate the interoperability and data exchange between systems and devices through the Planet District App.

→ Exploit different energy and non-energy services, including flexibility services for grid support.

→ Large scale piloting of digital services for grid, involving 200+ single apartments.

The piloting activities are focusing the deployment of a Digital Platform for End-User Control and Awareness (HLUC), targeting data security, Energy efficiency, comfort at premises level, monitoring and control and awareness capabilities leveraging on data mining.

2.

1. 2. 3. social housing in Milan promoted by REDO SGR

Technologies & Infrastructures

The piloting activities will take place in a social housing dwelling counting more than 600 apartments.

The end users selected for the activities will be purchased with smart white goods products that could be remotely monitored and controlled throughout the Planet App. This app allows residents to access the smart solutions available in the building. It serves both as an "information hub" for users, connecting them with various service providers, and as an "innovation hub" for facilitating connection, sharing and collaboration with residents/users.

1.

3.

Do you want to know more?

Follow us at
https://interconnectproject.eu/pilots/italy/

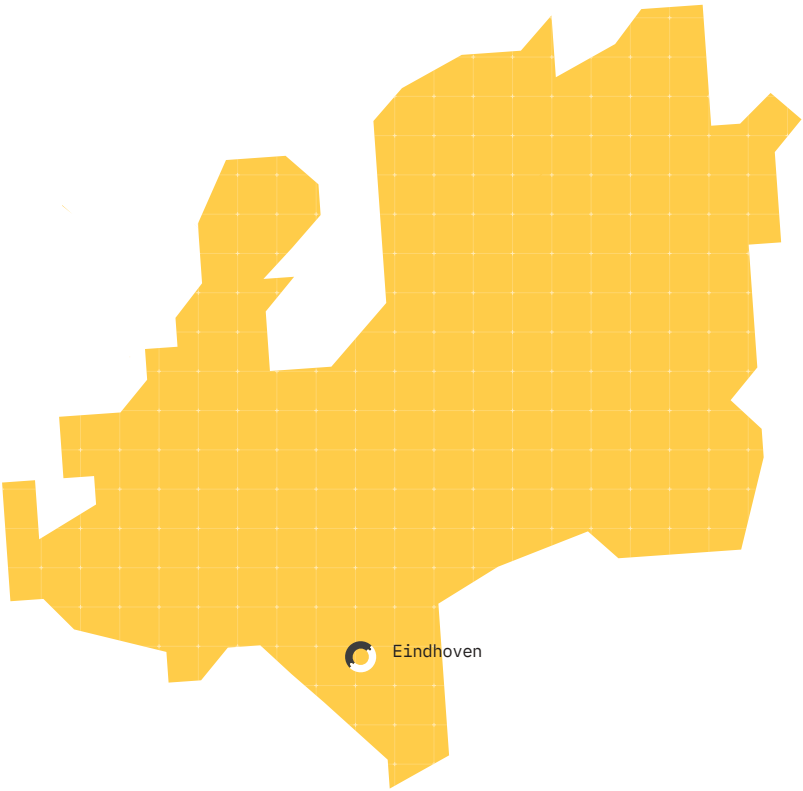
Partners involved

PLANET smart city

Whirlpool

RSE Ricerca Sistema Energetico

The Netherlands Pilot


Eindhoven

Objectives

The Netherlands' demos will be installed in two different buildings, aiming at distinct targets (building owners and households), following different objectives.

Commercial

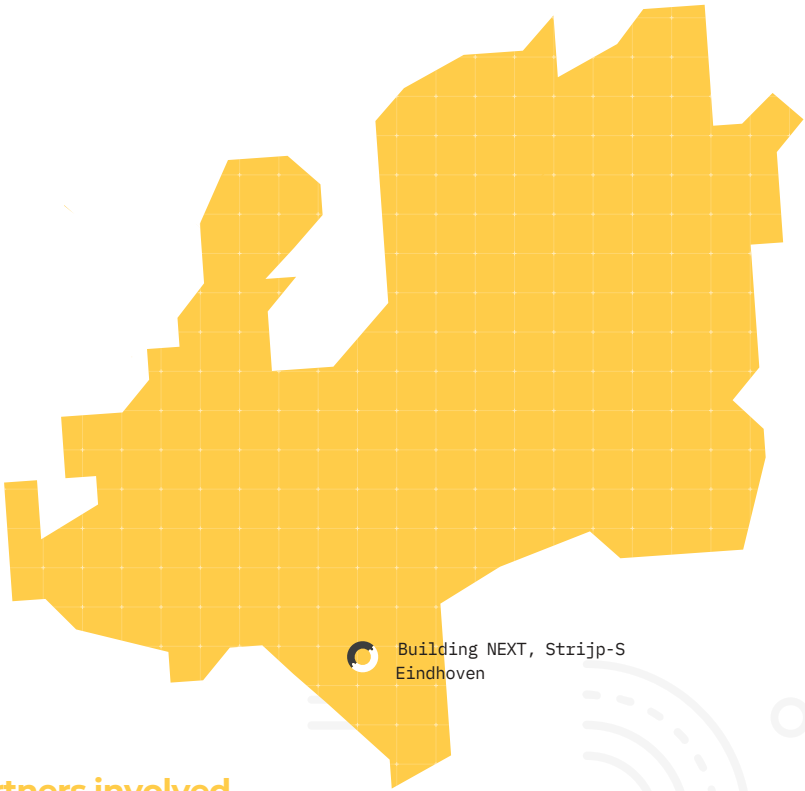
Residential

Technologies & Infrastructures

Building owners will be able to test the next level of facility management and explore new services; while households will experience new technologies and a whole new way of living.

The Netherlands
Smart home Smart grid

Location



Partners involved

iCity
Hyrde
recognize
VolkerWessels Telecom
TNO
VU Vrije Universiteit Amsterdam

Associated Partners

Bouwinvest
NEXT APARTMENTS

Objectives

The pilot will take place in Building NEXT, Strijp-S Eindhoven, with the following objectives:

→ Increase the level of comfort, convenience, safety and sustainability;

→ Enable the opportunity to participate on the energy market; Use house hold appliances as a source of flexibility in the demand for energy;

→ Lower the peak load of energy consumption;

→ Reduce the energy bill;

→ Provide a state-of-the-art smart home and an ecosystem to add individual sensors, devices and appliances;

→ Give access to the 'app store 'for smart home services;

→ Create awareness for the energy transition that is taking place;

→ Give an opportunity to be actively involved in the energy transition;

→ Creating and validating new business opportunities (services) for different stakeholders.

Technologies & Infrastructures

Households will be able to live and test the smartest home of the Netherlands, equipped with a central gateway, sensors and devices, smart appliances (dishwasher, washing machine and tumble dryer), a smart lock, a smart City Optical Fiber connection and the following new technologies:

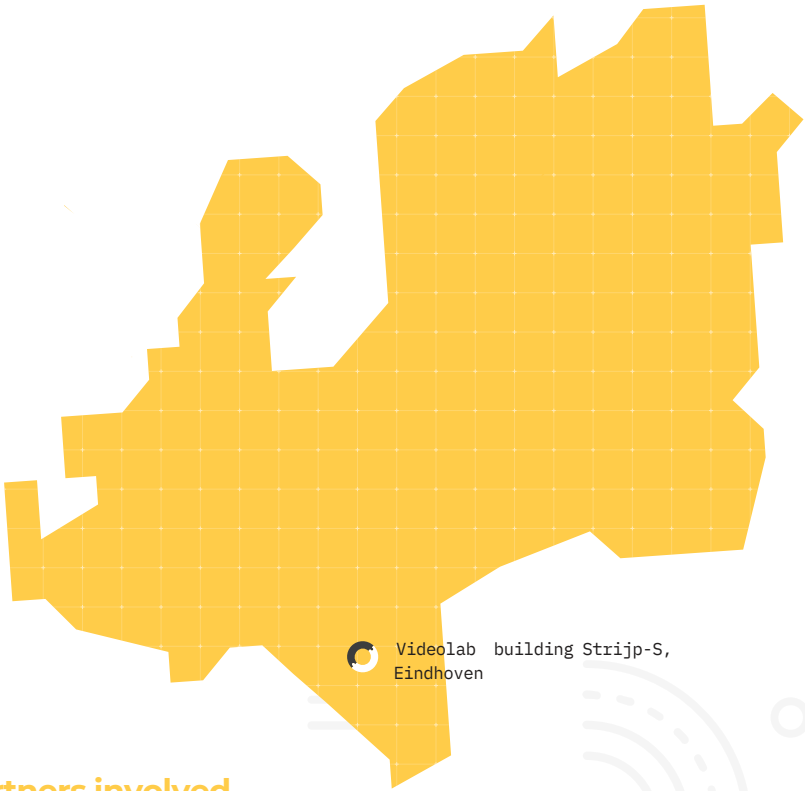
User friendly interface
This Graphical User Interface (GUI) is used to manage and control all sensors, devices and appliances in the home.

Hyrde's Ekco platform
This multi purpose platform provides additional services to the Smart Things app and is the central communication point of the home. It runs all the necessary software for operating the system.

TNO's ReFlex platform
This platform organizes demand and supply of energy, as tool for aggregation and scheduling of energy flexibility.

The Netherlands
Smart office Smart grid

Location



Partners involved

iCity
Hyrde
recognize
VolkerWessels Telecom
TNO
VU Vrije Universiteit Amsterdam

Associated Partners

OFFICE-S
STRIJP-S
Yask

Objectives

Building owners will be able to test and evaluate new functionalities and services aiming at:

→ Optimizing the energy consumption based on real time data and external data sources;

→ Enabling the opportunity to participate on the energy market;

→ Using thermal storage (heating & cooling) as flexibility source;

→ Reducing the energy bill;

→ Lowering the peak load of energy consumption;

→ Increasing the level of comfort, convenience, safety and sustainability for tenants of the building;

→ Implementing a state-of-the-art building management system;

→ Creating awareness for the energy transition that is taking place;

→ Giving an opportunity to be actively involved in the energy transition;

→ Creating and validating new business opportunities (services) for different stakeholders.

Technologies & Infrastructures

The building is equipped with gateway's, sensors & devices, Actuators & Smart Outlet's, Smart City Optical Fiber connection, Smart City Hub (data center), PV panels, EV charge station battery that will allow building owners to experience the next level of facility management and explore new services for office buildings.

Hyrde's Ekco Building Management platform
This multi-purpose platform enables its user to manage and control the complete (IoT) ecosystem of a building on an intelligent way. It runs all the necessary software for operating the system.

iOffice app
This interface enables office users to use different services and is a platform for communication between users and the community manager.

TNO's ReFlex platform
This platform organizes demand and supply of energy, as tool for aggregation and scheduling of energy flexibility.

Do you want to know more?

Follow us at https://interconnectproject.eu/pilots/netherlands/

Partners involved

iCity
SMART CONNECTIONS, QUALITY LIVING

Hyrde

recognize

VolkerWessels Telecom

TNO

VU VRIJE UNIVERSITEIT AMSTERDAM

Associated Partners

Bouwinvest

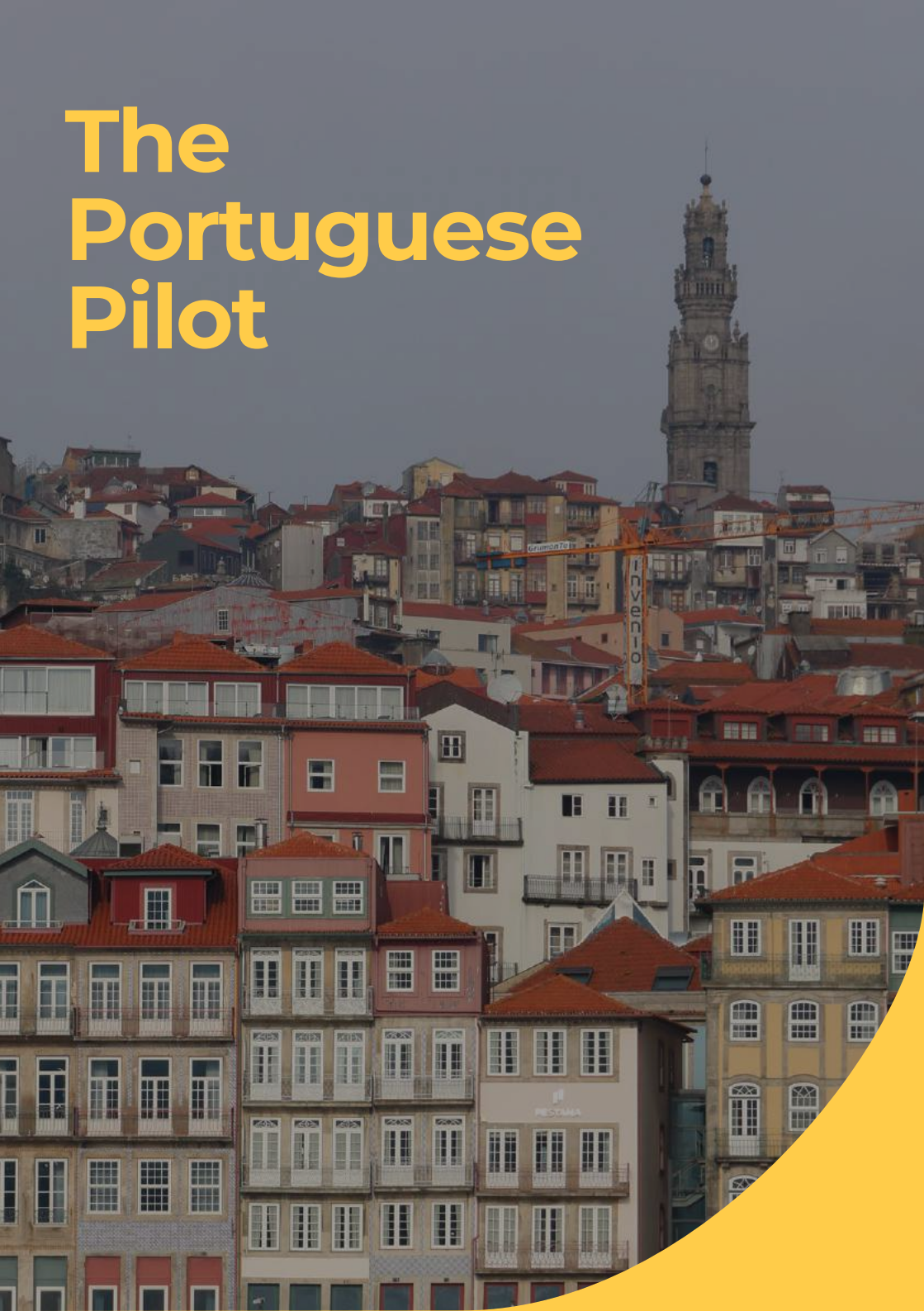
OFFICE-S
LIKE THE WAY YOU WORK.

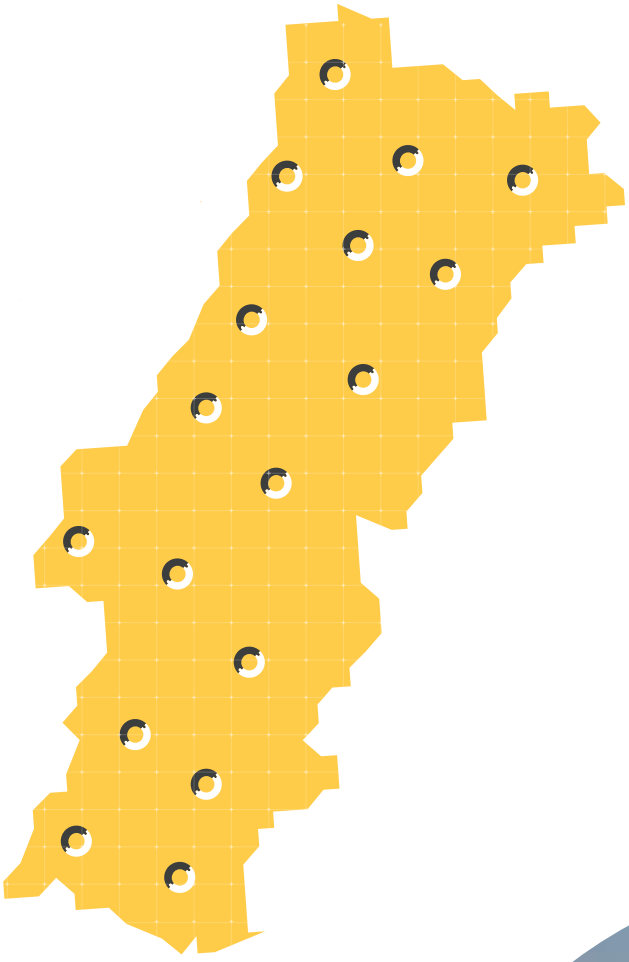
NEXT
APARTMENTS

STRIJP-S

Yask

The Portuguese Pilot





Objectives

The Portuguese pilot will allow two types of consumers – residential and commercial - to access the solutions that will allow connecting the energy of the future.
The residential demo will accomplish the following goals:

–› Exploit different energy services (P2P, flexibility management, etc.) for households, buildings, and energy communities.

–› Exploit interoperable digital platforms for energy and non-energy services based on cloud and hybrid connectivity solutions.

–› Validate and flexibility platforms and the data exchange interfaces within the DSO infrastructure and demonstrate the compliance with CIM standards and potential for wide adoption at the EU level.

The Commercial will take advantage of the interoperable framework developed within the project to:

–› Develop an integrated Energy Management System (iEMS) for retail stores.

–› Explore the provision of Energy Management services through the iEMS.

–› Demonstrate flexibility aggregation for DSF (Demand Side Flexibility) to DSO (Distributed Systems Operator).

–› Demonstrate that convenient Electric Vehicles (EV) charging in private areas can impactfully promote e-mobility.

Technologies & Infrastructures

The residential demo will be deployed in 250 households in 5 cities, located in the North of Portugal. The commercial demo will be developed and installed in 12 retail stores spread along the Portuguese territory, where: ~75% will have local RES, ~75% will have local e-mobility and ~50% will have both local RES and e-mobility.
The following technologies will be part of the Portuguese demo:

BMS – Building management system

System that integrates subsystems / devices available within a store.

iEMS

System that integrates the BMS systems of different stores.

Interoperability layer

Set of semantic adapters that enables different systems to communicate with each other.

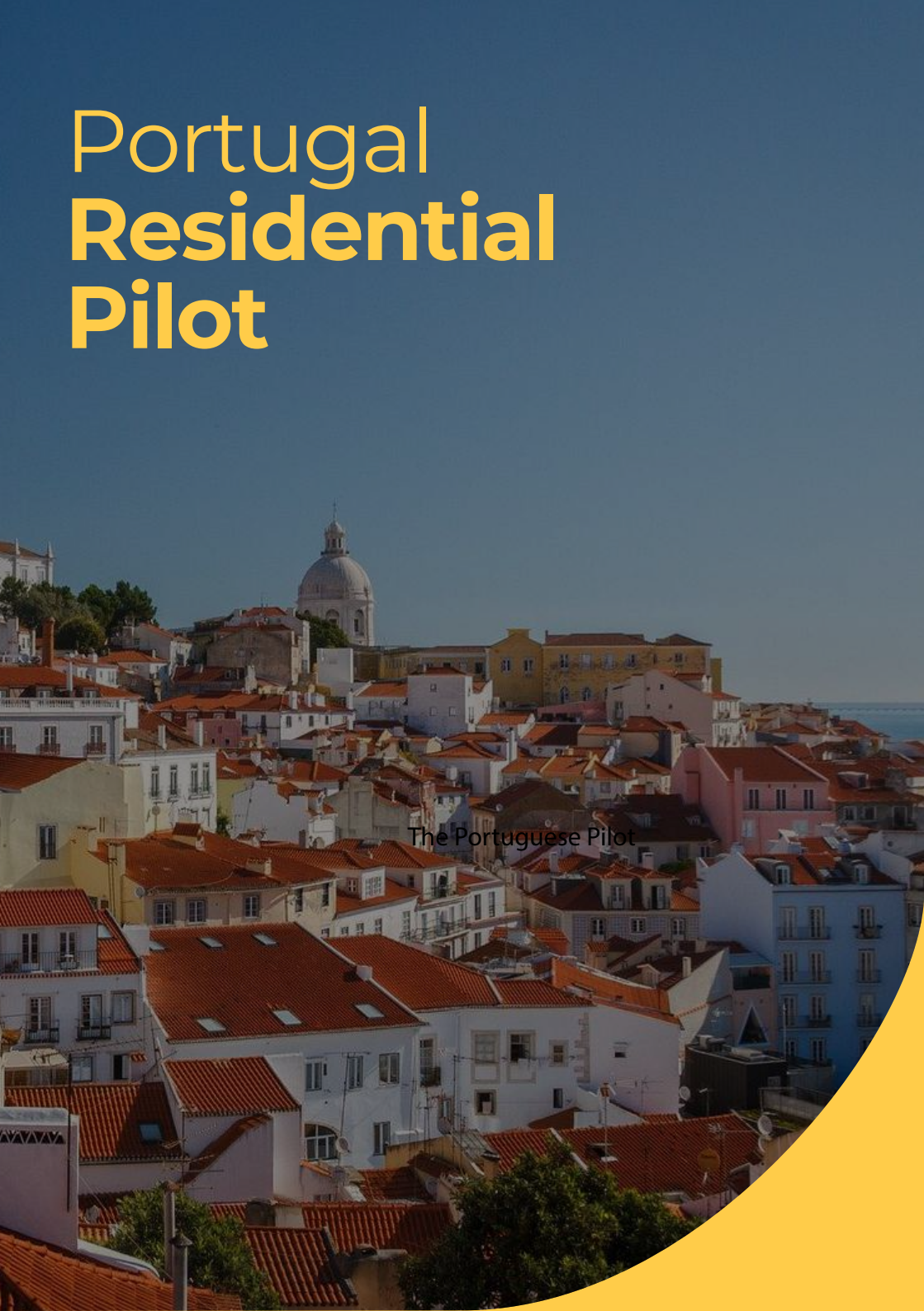
EV chargers

Hardware necessary to charge EV's.

Technical platforms

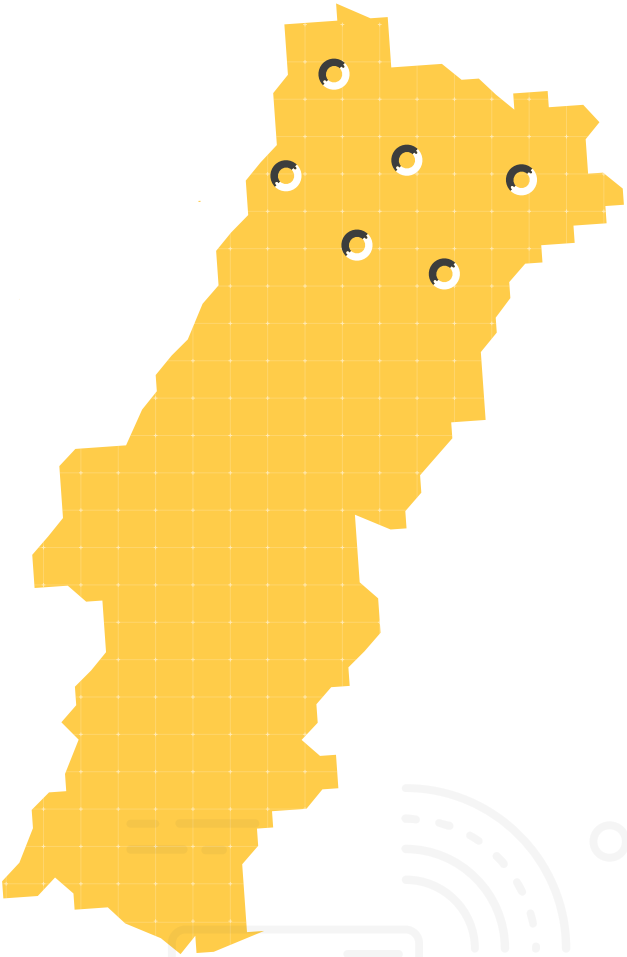
Set of technical platforms from various actors (e-mobility manager, retailer, flexibility aggregator, store manager, etc.) that will communicate through the interoperability layer enabling the deployment of new services and solutions. .

Portugal **Residential Pilot**



The Portuguese Pilot

Location



Partners involved

E-REDES

domotica sgta
gestão técnica de edifícios

INESCTEC

Schneider Electric

sensinov

SONAE MC

Objectives

The residential pilot will have the following objectives:

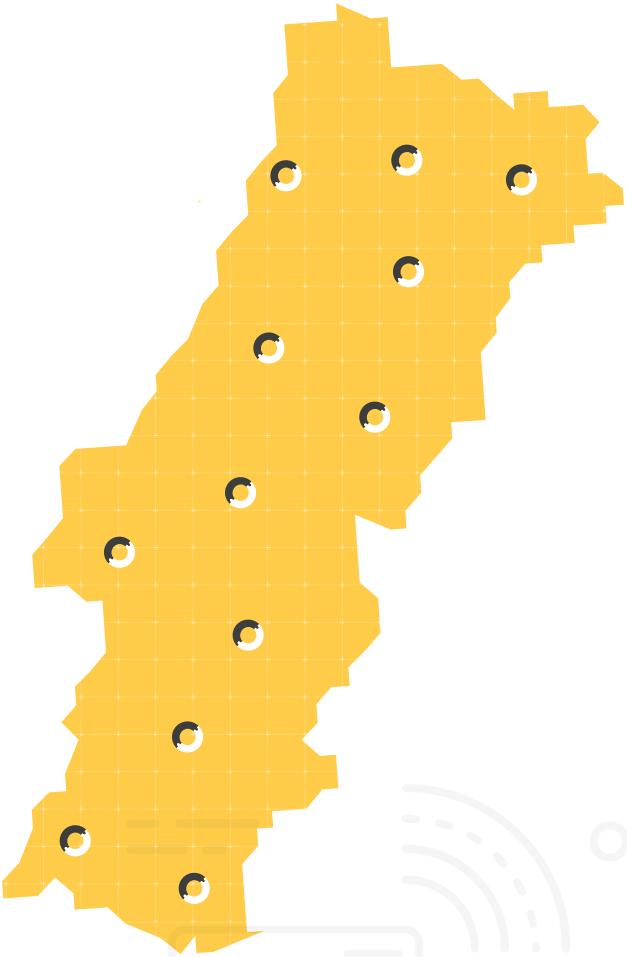
→ Exploit different energy services (P2P, flexibility management, etc.) for households, buildings, and energy communities;

→ Exploit interoperable digital platforms for energy and non-energy services based on cloud and hybrid connectivity solutions;

→ Validate and flexibility platforms and the data exchange interfaces within the DSO (Distribution System Operator) infrastructure and demonstrate the compliance with CIM standards and potential for wide adoption at the EU level.

Portugal **Commercial Pilot**

Location



Partners involved

SONAE MC

elergone energia

E-REDES

domotica sgta
gestão técnica de edifícios

INESCTEC

Schneider Electric

sensinov

Objectives

Take advantage of the interoperable framework developed within the project to:

→ **Develop an integrated Energy Management System (iEMS) for retail stores**

Retail stores network have a large diversity of devices and technologies responsible for energy consumption and generation, from HVAC systems, cold units, lighting, storage, PV generation, e-mobility, emergency generation, etc... the integration of these technologies from different manufacturers, running different software's poses a challenge to the retailers to have effective ability of monitoring and control over assets.

→ **Explore the provision of Energy Management services through the iEMS**

Energy Management can be done at local level, where each building management system will monitor and control the existing devices and systems, targeting specific goals such as, energy bill reduction, energy consumption reduction, maximization of local RES usage, among others. Similarly, energy management can be done at central level, where iEMS interact with buildings BMSs and orchestrates the whole ecosystem targeting specific goals.

→ **Demonstrate flexibility aggregation for DSF to DSO**

The increase of renewables penetration (and its associated variability) combined with the electrification of the economies, particularly regarding mobility, distribution networks management is set to be increasingly challenging. The key to unlock the solution might not be only on the DSO side. Consumers may also have a word in this context by adjusting its load upon grid operators request. In this context SonaeMC will interact with EDPD in order to demonstrate DSF.

→ **Demonstrate that convenient EV charging in private areas can impactfully promote e-mobility**

Convenient EV charging aims to take provide EV users the possibility to charge their vehicles while shopping while the system ensures charging is in line with any flexibility needs

Technologies & Infrastructures

The comercial pilot will be implemented in 12 retail stores (Continente, Continente Modelo and Continente Bom Dia) spread along Portuguese territory where: ~75% will have local RES; ~75% will have local e-mobility; ~50% will have both local RES and e-mobility. The pilot will test the following technologies:

BMS – Building management system

System that integrates subsystems / devices available within a store.

iEMS

System that integrates the BMS systems of different stores.

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Interoperability layer

Set of semantic adapters that enables different systems to communicate with each other.

EV chargers

Hardware necessary to charge EV's.

Technical platforms

Set of technical platforms from various actors (e-mobility manager, retailer, flexibility aggregator, store manager, etc.) that will communicate through the interoperability layer enabling the deployment of new services and solutions

Do you want to know more?

Follow us at
https://interconnectproject.eu/pilots/portugal

Partners involved

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SONAE MC

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FINANCING

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