

# OPEN LAB REVITALISES URBAN AREAS IN **TARTU PAMPLONA GENK**



**32 PARTNERS | 7 COUNTRIES | 3 CITIES**



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# KEY FACTS

## DURATION

54 months (Oct. 2021 – Mar. 2026)

## EU-FUNDING

≈ 19 Mio. €

### **oPEN Living Lab Pamplona**

From an industrial landmark towards a solar-driven sustainable and social inclusive innovation hot-spot.



### **oPEN Living Lab Tartu**

From a historical Soviet cultural heritage to a Positive Energy Neighbourhood project representative of 50 million flats.



### **oPEN Living Lab Genk**

From coal to a positive energy future, a green transition of a former mining town.



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# LIVING LABS

## What does oPEN Lab stand for?

- Integrated energy solutions
- Aggregated renovations on neighbourhood level
- Optimal pathways for chosen technologies

**Open  
Innovation  
Environment**

**Positive  
Energy  
Neighbourhoods**

**Living Lab  
Approach**

- Co-creation among companies, citizens, research organisations & governments
- Structural changes beyond what any organisation could do alone

- User-oriented innovation models
- Innovation processes in real-life communities

oPEN Living Lab Tartu is in the Annelinn neighbourhood and the city's largest apartment building neighbourhood, housing over 30,000 of Tartu's 95,000 citizens. The typical Soviet-style apartment buildings, constructed in the eighties and nineties, are of poor quality and energy standards.

As part of the city's new Sustainable Energy and Climate Action Plan "Tartu Energy 2030" and Annelinn's urban regeneration programme, the pilot site will be transformed into a Positive Energy Neighbourhood. This process will be supported by the implementation of innovations such as pre-fabricated renovation elements, energy storage solutions and grid flexibility services combined with EV charging. The residents of the oPEN Living Lab will be engaged in co-creation to produce original artworks in the neighbourhood and improve the public space.

**TARTU**  
(ESTONIA)



oPEN Living Lab Pamplona will implement one of the first operational Positive Energy Neighbourhood concepts in Spain. It will demonstrate an advanced, scalable, and replicable urban energy model, as well as develop and validate innovative solution packages for renovation and energy services. Pamplona's oPEN Living Lab will carry out a deep energy renovation of the former industrial site of Rochapea, and two apartment blocks of the San Pedro housing group. To subsequently create an energy linkage between the industrial site and San Pedro, sowing the seed of the Rochapea Positive Energy Neighbourhood.

The driving force behind Pamplona's oPEN Living Lab comprises a decisive investment, prominently in photovoltaics, to reach a critical mass of urban energy generation. It will also demonstrate innovative industrialised renovation solutions, advanced energy management systems and process improvements, leveraging upon digitalisation, to cover the entire life-cycle of buildings and neighbourhood infrastructure.

## PAMPLONA (SPAIN)



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## GENK (BELGIUM)



Photo credits: EnergyVille

oPEN Living Lab Genk is in the suburban residential neighbourhood called "Waterschei". The neighbourhood consists of two distinct areas: a former miners' district constructed in the 1920s and a more recent social neighbourhood called Nieuw Texas constructed in the 1990s.

Together with the suburban context, a very high level of social housing ownership (85%) in the neighbourhood of Nieuw Texas, and the nearby presence of former mines, represent a unique opportunity for large-scale, real-life demonstrations of promising technology, process and social innovation towards the creation of a Positive Energy Neighbourhood.

The design of the Positive Energy Neighbourhood will be realised through highly energy-efficient building retrofit, combined with optimal control of innovative building services at individual and/or collective levels. These concepts will be brought together in a collective renovation concept, applicable for both rental and private dwellings.



# OBJECTIVES

The main objective of oPEN Lab is to upgrade the existing buildings and district facilities in specific neighbourhoods in the cities of Tartu, Pamplona and Genk to fully operational Positive Energy Neighbourhoods and operate them as Positive Energy Neighbourhood Living Labs.

A Positive Energy Neighbourhood is understood to be an energy-efficient and energy-flexible urban area or group of connected buildings, which produces net-zero greenhouse gas emissions and actively manages an annual local or regional surplus of renewable energy.

The oPEN Lab project will demonstrate the feasibility of promising technologies, processes and social innovations, leading towards Positive Energy Neighbourhoods and paving the way for wider replication.

## **This objective is based on the following principles:**

- To engage and involve the neighbourhoods' communities in the creation of a vision for their Positive Energy Neighbourhood, by using participatory approaches.
- To test innovation in an integrated approach combining the sustainable design tailored to the local context, the seamless industrial renovation workflow as well as the generation of renewable energy combined with storage systems.
- To accelerate the spread of Positive Energy Neighbourhoods by upscaling and replicating the solutions tested within the regions and countries of the oPEN Living Labs and across Europe.
- To showcase how the innovative technologies and participatory processes applied in the oPEN Lab Positive Energy Neighbourhoods can best contribute to the implementation of the Renovation Wave and its objective of doubling the renovation rate in the EU.



# PARTNERS

The oPEN Lab project is coordinated by VITO and builds on the expertise of 32 partners from seven countries, leveraging a vast amount of knowledge and expertise to revitalise urban areas across Europe and to lead to the transition into Positive Energy Neighbourhoods.

