CONTEXT & CHALLENGE

- The built environment is key to Europe's transition to a **climate-neutral society** by **2050**.
- An estimated **97% of dwellings are not fit for this purpose.** A clean energy system and a just transition require more than isolated technological solutions for individual buildings.
- **To optimally decarbonise the urban environment**, it is crucial to implement fully interoperable solutions at the neighbourhood level, that improve **energy efficiency** and **integrate local renewable energy sources and excess heat** more effectively.
- **A Positive Energy District (PED)** is an urban area that produces at least as much energy on an annual basis as it consumes.

Project start date: 01/01/2024
Duration: 36 months

7 countries

15 organisations

Total EU Budget: 4,3 million €

THE OPPORTUNITY

PEDs are the pinnacle of urban energy ecosystems. They can improve energy efficiency, integrate local renewable energy sources and excess heat more effectively and enable interaction with the **energy & non-energy sectors such as mobility, ICT and industry.**

A crucial, often neglected fact is that PEDs are in constant **evolution** due to **ever-evolving** changes in their environment, including **social context, legislation, energy market, technologies, energy prices.** As such, there is a strong analogy with the theory of evolution.

Still, the **DNA** of PEDs varies, and the implementation & evolution of different PEDs, as well as their probability of success in the urban energy transition, is determined by **the environment.**

Discover PEDvolution

Would you like to learn more about PEDvolution?

Are you interested in Positive Energy Districts?

Get in touch with us through our website!

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www.pedvolution.eu

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PEDvolution

Interoperable solutions to streamline Positive Energy District evolution and cross-sectoral integration

ACCOMMODATING THE CONSTANT EVOLUTION OF POSITIVE ENERGY DISTRICTS

Co-funded by the European Union

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Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

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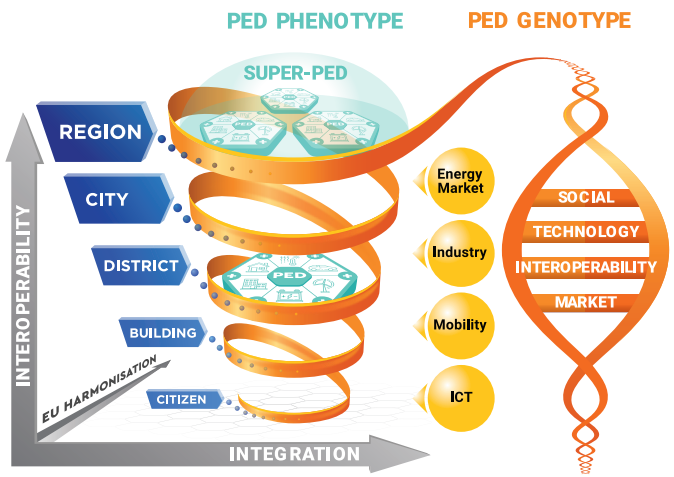
7 INTEROPERABLE SOLUTIONS

- PED Design and Planning Toolset
- PED Energy Manager
- PED Social Innovation tool
- PED Readiness Assessment
- Dynamic Decision Support Guideline for PED Development
- Data Exchange, Integration and Interoperability Platform
- PED Business Models Innovation Tool



The PEDvolution solutions will design, process, optimise and strengthen the PEDs genotype and/or phenotype.

The **genotype** of a PED is its set of **genetic material**, built through a unique combination of Social-Technology-Interoperability-Market related aspects.

The PED's **phenotype** is the set of **observable characteristics** resulting from the interaction of its genotype with the environment.

SPECIFIC NEEDS

- Improve energy efficiency coupled with a better integration of local renewables and local excess heat sources within the districts.
- Increase citizen participation and integration of consumers and energy communities in the value chain of the energy system.
- Improve cross-sectorial integration on energy and non-energy sectors within PEDs.
- Demonstrate fully interoperable solutions for planning, design, development, and management of PEDs.

EXPECTED RESULTS

- Increased availability of tools, guides and interoperable solutions for planning, design, development, and management of PEDs.
- Improved integration of energy and non-energy sectors within PEDs.
- Improved integration of PEDs in energy systems and improved contribution of PEDs to energy grid robustness regarding dependencies to energy supplies.
- Increased social entrepreneurship and citizen participation and engagement in energy communities.
- Increased participation of consumers and energy communities in the value chain of the energy system.

TARGET GROUPS

- Energy service providers & Mobility service providers
- Residents / Energy consumers
- Energy prosumers
- PED developers and managers
- PED investors
- Local authorities and City planners
- Policy makers & Standardisation bodies
- Research & Academia
- Specialist media

3 PED CO-DEVELOPER DEMONSTRATORS

Schönbrunn village Wunsiedel, Germany

- In Operation
- 6,709,386.4 m²
- 1,230 residents
- 400 households & 9 businesses
- Relevant PEDvolution Partners: SWW, ZENOB, ESG

Residential neighbourhood, Planina, Kranj, Slovenia

- In planning stage
- 740,000 m²
- 16,000 residents
- 4,300 apartments & 40 businesses
- Relevant PEDvolution Partners: EG, GEK

Gemeinschaft Hard, Winterthur, Switzerland

- In Operation
- 80,000 m²
- 250 residents
- 45 apartments & 40 businesses
- Relevant PEDvolution Partners: WIN, ZHAW