

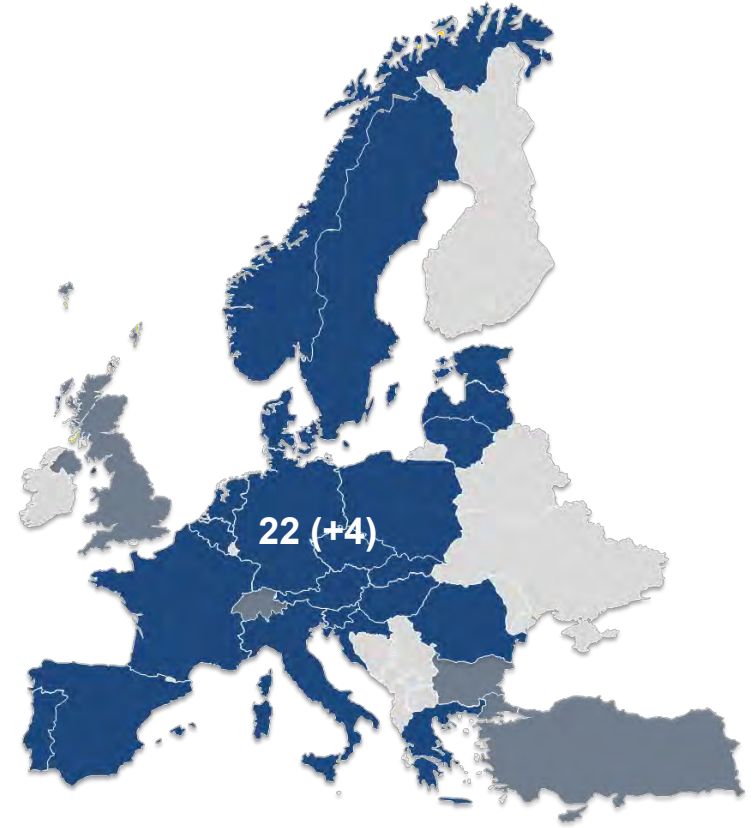
Margit Noll / Christoph Gollner  
UERA Webinar, 16 April 2021

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# The DUT Partnership

The DUT Partnership steps up the game to tackle urban challenges. We enable local authorities and municipalities, business and citizens to translate global strategies into local action. We develop the skills and tools to make urban change happen and boost the urgently needed urban transformations.



# Challenges and Objectives

Capacity and  
community building

Integrated  
approaches to tackle  
complex urban issues

Bringing knowledge  
to action across  
Europe

Shape a quadruple-helix  
innovation eco-system  
on urban transitions

Increase effectiveness of  
urban solutions,  
technologies and  
processes

Create benefits for  
neighbourhoods and  
urban areas across  
Europe

# Thematic Priorities of the DUT Partnership



**Positive Energy Districts and Neighbourhoods**  
transforming the urban energy system

- Preparing the energy system for PEDs
- Integrated urban planning
- Governance and PEDs for people
- Prepare mainstreaming and replication



**Regenerative Green Neighbourhoods**  
an integrated approach for urban greening and circularity transitions

- Nature-based solutions & green blue infrastructures
- Urban liveability and robustness – capacity building for doughnut economy
- Urban neighbourhoods circular economy

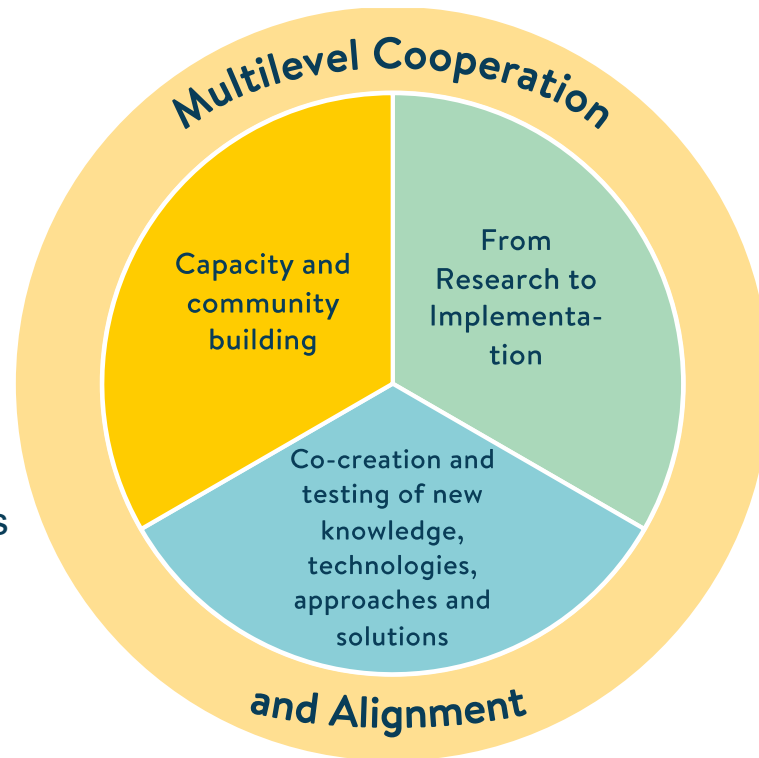


**The 15 Minutes Cities**  
rethinking the urban mobility system and space

- Multi-modal and sustainable urban mobility
- Urban morphology
- Urban production, logistics and services
- Urban governance for inclusive transition

# Implementation Measures

- Challenge-driven research and innovation
- Urban Living Labs 2.0
- AGORA dialogues
- Knowledge hubs
- Models for replication and mainstreaming
- Impact creation through synthesis, policy recommendations, trainings and success cases
- International outreach
- Cooperation with other Horizon Europe partnerships



# The DUT Pillars

integrated approaches for urban transformations



**Positive Energy Districts  
and Neighbourhoods**  
transforming the urban energy  
system



**Regenerative Green  
Neighbourhoods**  
an integrated approach for  
urban greening and circularity  
transitions



**The 15 Minutes  
Cities**  
rethinking the urban  
mobility system and space



# **PED Programme – a transnational, intergovernmental R&I programme and joint initiative between SET Plan Action 3.2 and JPI Urban Europe**

**Mission: 100 Positive Energy Districts in Europe by 2025**  
synergistically connected to the energy system in Europe

**Liveable, sustainable, inclusive urban neighbourhoods**  
PEDs as part of holistic urban strategies towards climate neutrality

**20 countries actively  
support the action:**

AT BE CH CY CZ DE DK ES  
FI FR IT LV NL NO PL PT RO  
SE TR UK

**Programme Management by  
JPI Urban Europe**



<https://setis.ec.europa.eu/>



<https://jpi-urbaneurope.eu/ped/>



## Focus

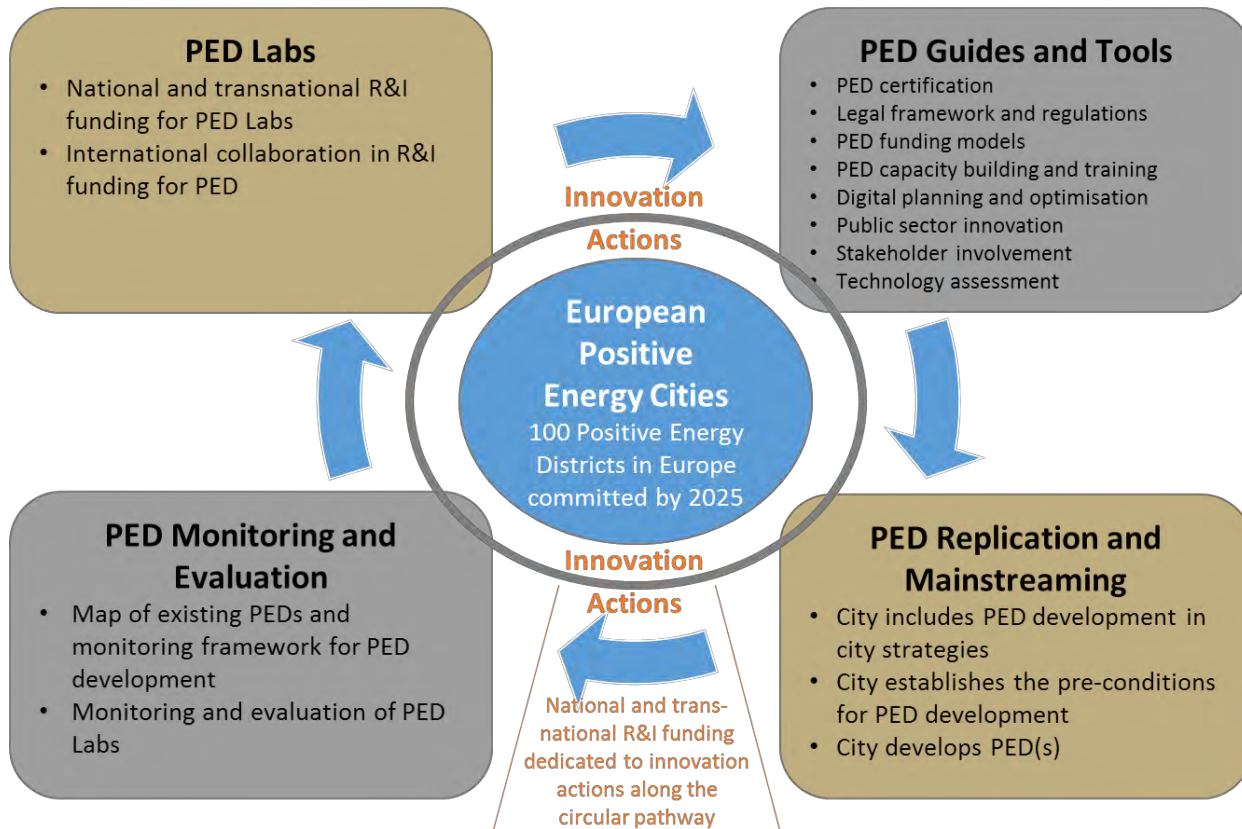
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- **Pooling and upscaling of national R&I funding towards PED implementation:**
  - Call agenda with ~100 Mill € until 2025
- **Creating impact beyond R&I projects: Technology relevance, capacity building and process design**
  - Climate action, energy transition, existing urban structure
  - Support and empowerment of problem-owners
  - European-wide PED ambition
- **PED Programme one of three innovation pillars in DUT Partnership under Horizon Europe**





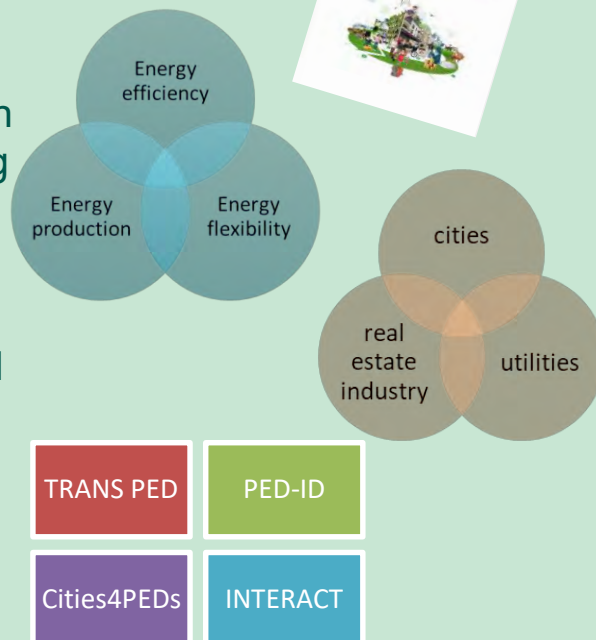
## Implementation Plan 3.2 for PEDs





## Key achievements

- **PED Inventory:** mapping of European projects aiming at energy transition and climate-neutrality
- **PED Framework:** framework definition as European-wide PED vision allowing for local solutions:
- **Involvement of key stakeholders:** PED City Panel as advisory board and other formats
- **PED Pilot Call 2020** – four transnational projects selected





## PED Framework Definition

*“Positive Energy Districts are energy-efficient and energy-flexible urban areas or groups of connected buildings which produce net zero greenhouse gas emissions and actively manage an annual local or regional surplus production of renewable energy. They require integration of different systems and infrastructures and interaction between buildings, the users and the regional energy, mobility and ICT systems, while securing the energy supply and a good life for all in line with social, economic and environmental sustainability.”*



## Draft DUT PED Roadmap: Overview of key areas of action

### Preparing the energy system for PEDs

Strategies for PED energy functions (efficiency, flexibility and production)

Urban resilience and robustness / Security of energy supply

Life cycle analysis (LCA) principles and approaches and strategies for CO<sub>2</sub> balancing

Sector integration strategies

### Integrated (urban) planning

Holistic concept, consideration of systems perspective in all planning phases

Climate change adaptation, urban revitalisation

Definition of system boundaries

### Governance/PEDs for people

Policy frameworks on different political levels

Tackling affordability of housing and fighting energy poverty

Stakeholder-oriented strategies and process innovation

Citizen participation and communication strategies

### Preparing mainstreaming and replication

Regulatory framework

Business cases and financing models

Standardization, certification and monitoring

Components for PEDs in different contexts (size, climate, RES available, etc.)



## Preparing the energy system for PEDs

Strategies for PED energy functions (efficiency, flexibility and production)

Urban resilience and robustness / Security of energy supply

Life cycle analysis (LCA) principles and approaches and strategies for CO<sub>2</sub> balancing

Sector integration strategies

- ICT and data management
- Building technologies and materials
- Adaption of existing infrastructure
- User behaviour
- Local/regional availability of RES
- Heating / Cooling / Electricity
- Mobility
- Grey energy
- Integration of energy production into urban structure (buildings, public spaces)
- Active management for balancing and optimization
- Peak shaving & load shifting
- Demand response and reduced curtailment of RES& load shifting



## Integrated (urban) planning

Holistic concept,  
consideration of  
systems perspective  
in all planning phases

Climate change  
adaptation, urban  
revitalisation

Definition of system  
boundaries

- Ecological, social and economic sustainability
- Integration of urban planning and energy planning
- Specifics of neighbourhoods, cities and countries
- Greening strategies, green-blue infrastructure
- Transformation of existing building stock
- Regional interaction, Functional Urban Area





## Governance/PEDs for people

Policy frameworks on different political levels

Tackling affordability of housing and fighting energy poverty

Stakeholder-oriented strategies and process innovation

Citizen participation and communication strategies

- Vertical (EU – national – regional – local) collaboration
- Horizontal (cross-departmental) collaboration
- Public-private cooperation
- Cooperation of problem-owners: city administrations/real estate developers/utilities
- Community-based initiatives, Energy Communities
- Communication strategies and awareness
- Inclusiveness and prevention of gentrification



## **Preparing mainstreaming and replication**

Regulatory framework

Business cases and  
financing models

Standardization,  
certification and  
monitoring

Components for PEDs  
in different contexts  
(size, climate, RES  
available, etc.)





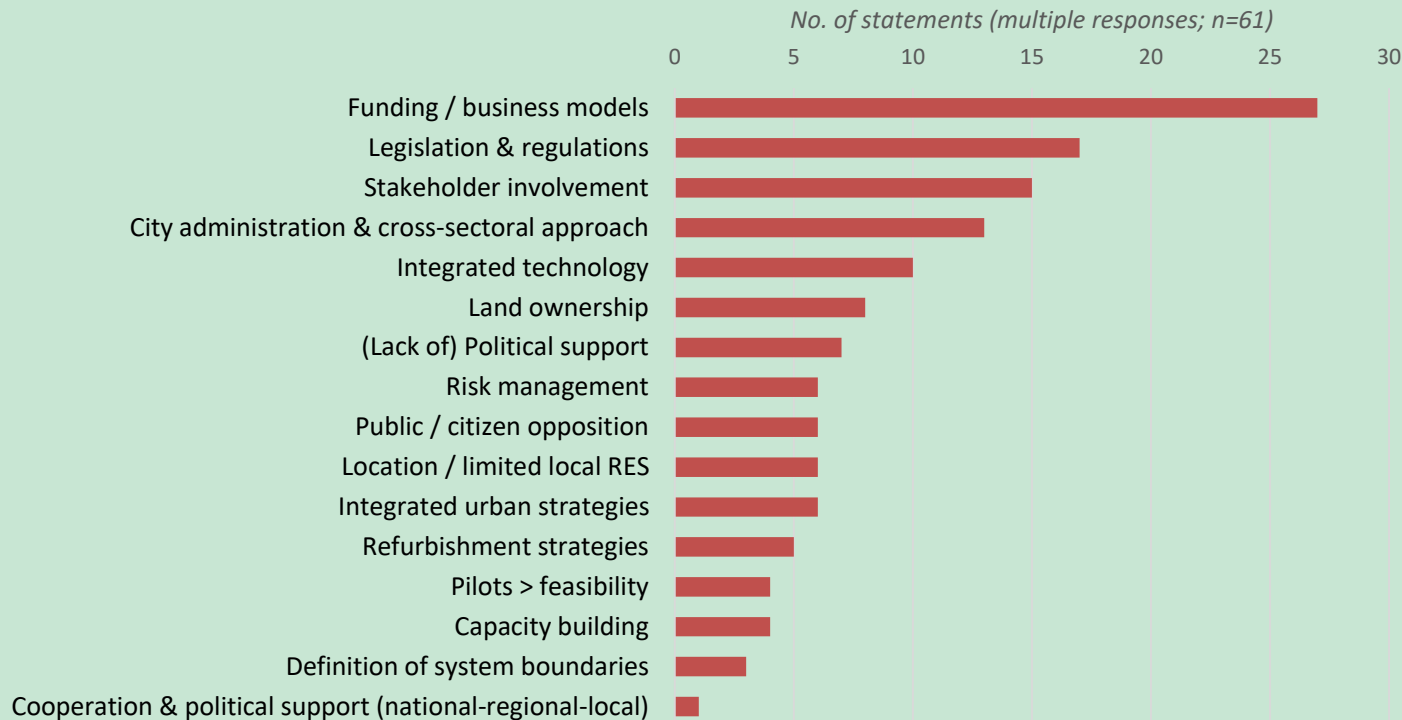
## Key challenges prioritized by PED Stakeholder Group

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- **Financing and business models: investment logic vs. LCA approach**
- **PED definition and mainstreaming: European ambition vs. local solutions**
- **Getting users on board: behavioral aspects, inclusiveness and individual benefits**
- **Integrated planning and governance: overcoming silos and cross-sectoral approaches**
- **Overcoming legal barriers**
- **Decentralization strategies and community-based development**
- **PEDs and the challenge of urban retrofitting**
- **Data management and ICT**
- **Stakeholder-oriented approach: tackling diversity and complexity**
- **Resilience / energy security**
- **Interaction with regional grid**
- **Sector coupling**



## Key challenges prioritized by projects (PED Inventory)





## Questions to UERA

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- Priorisation of top R&I priorities for PEDs?
- In which fields could UERA contribute? What/who is needed to put research into practice in DUT/PED?
- Specifically, how can UERA contribute to developing a refined PED Framework Definition on European level?
- How to increase impact of research for PEDs?

# Thank you!

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<https://setis.ec.europa.eu/>  
<https://jpi-urbaneurope.eu/ped/>

