POSITIEVE ENERGIEWIJKEN

EEN ESSENTIËLE STAP IN DE ENERGIETRANSITIE

Maarten De Groote, coordinator oPEN Lab project, VITO / EnergyVille
Vleva webinar duurzaam wonen & EPBD

The building stock decarbonisation challenge

>95% of existing residential buildings need an energy renovation by 2050

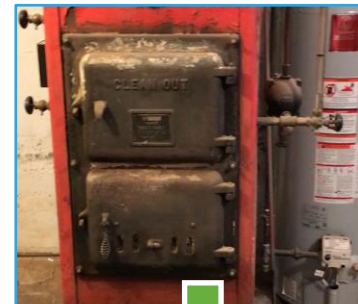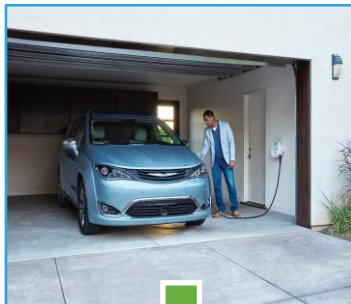**40 to 50%** of Belgian households can finance climate & comfort renovations
→ **Optimal renovation flow & targeted support**
→ **Servitisation & valorisation non-energy benefits**

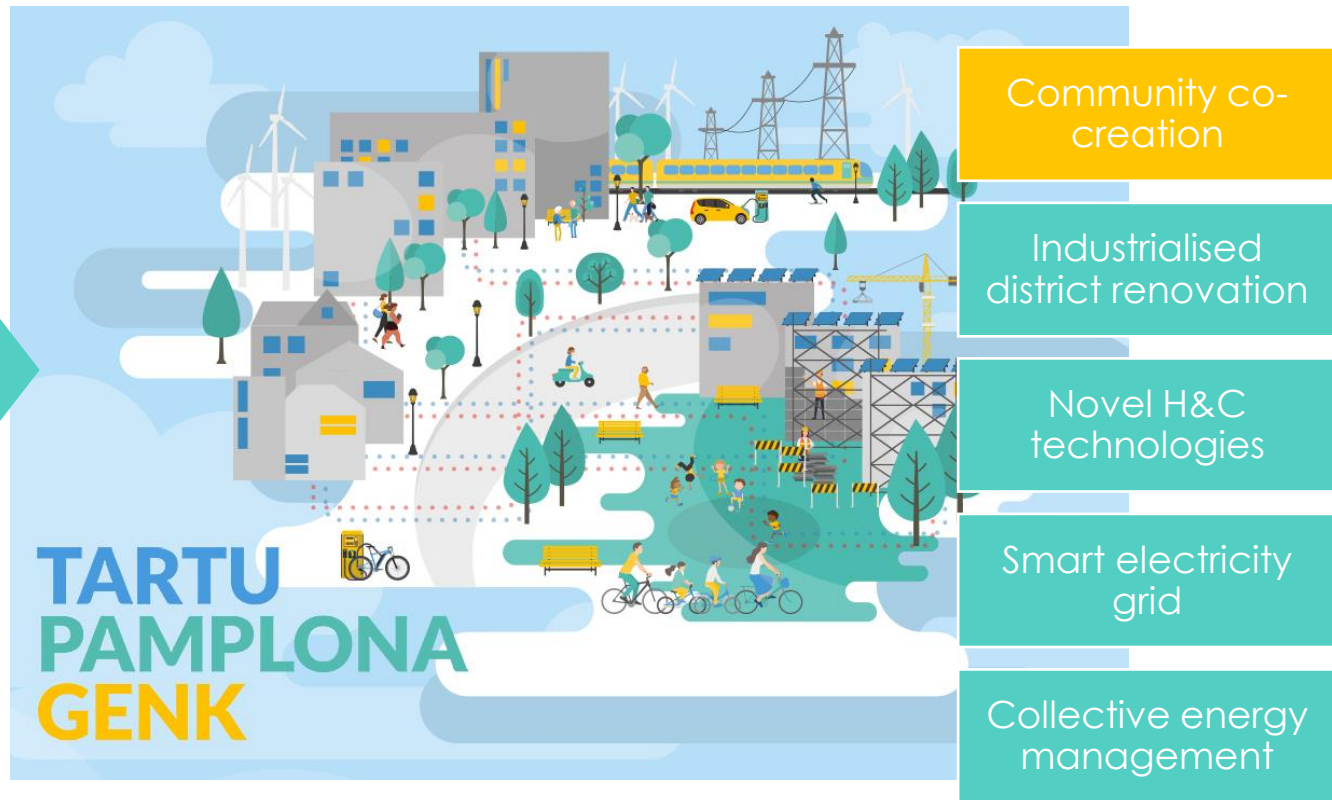**Climate neutral EU by 2050**
→ **Cross-sectorial energy system integration**

SOCIETAL OPTIMALISATION OF COLLECTIVE APPROACH

Driving transformational change through a neighbourhood approach

Community co-creation

Industrialised district renovation

Novel H&C technologies

Smart electricity grid

Collective energy management

oPEN Lab

TARTU PAMPLONA GENK

LEADING THE TRANSITION TO POSITIVE ENERGY NEIGHBOURHOODS

3 open innovation living labs
3 different settings

Tartu (EE): renovation of 3 apartment buildings to PEN

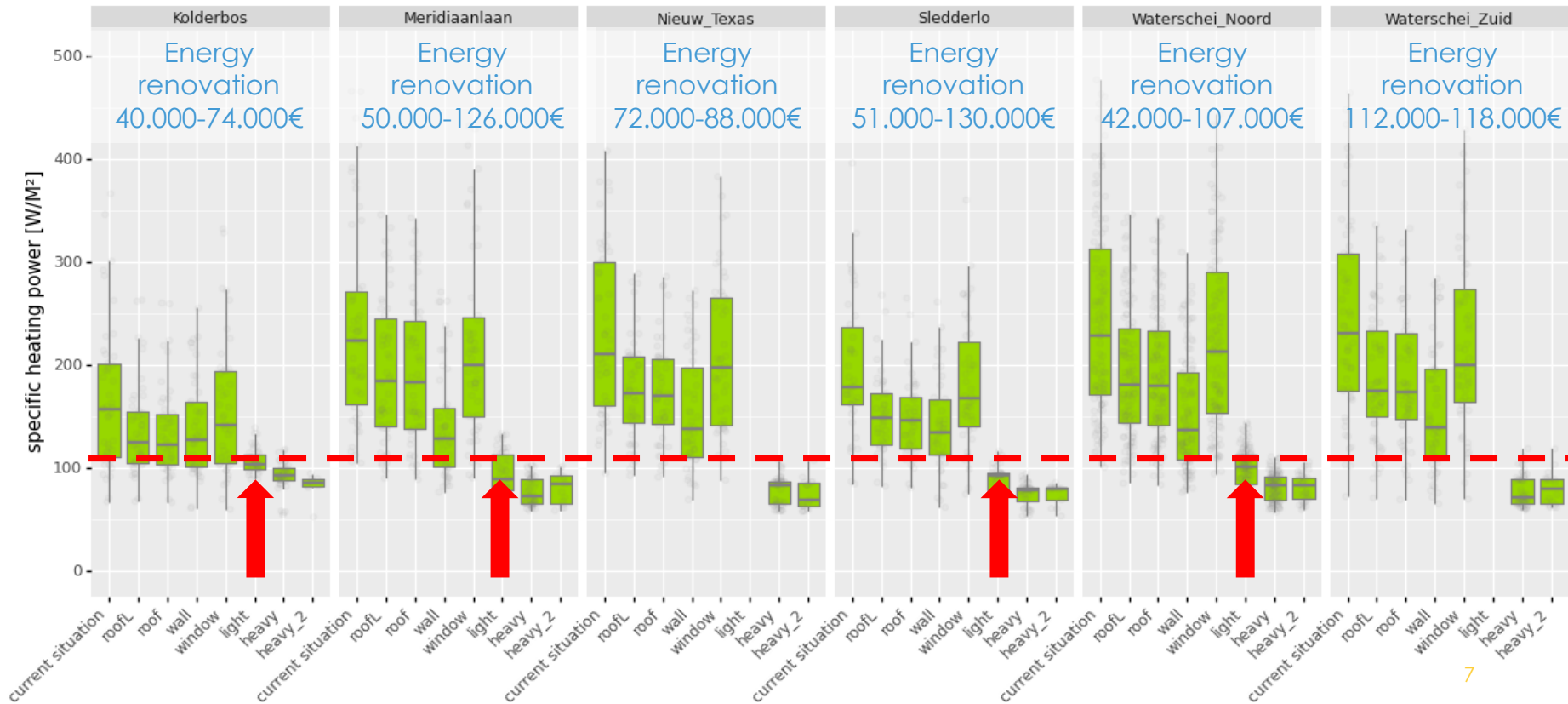**Genk (BE):** single family housing neighbourhood linked to a sandbox area

Pamplona (ES): combining tertiary building with social housing

Test how novel technologies interact in a Positive Energy Neighbourhood

oPEN Lab
TARTU PAMPLONA GENK
LEADING THE TRANSITION TO POSITIVE ENERGY NEIGHBOURHOODS

ENERGY EFFICIENT BUILDINGS

+

LOCAL RENEWABLE ENERGY GENERATION

+

SMART LOCAL ENERGY GRIDS

+

ENERGY STORAGE

+

SMART CONTROLS

- Cost & speed reduction through industrialisation

- BIPV
- PVT

- Novel gen district heating
- DC Grids
- Microgrids

- District batteries
- Home batteries
- Seasonal thermal storage

- Appliance control
- Building & district energy management

Renovation costs & heating power

Risk valorisation to foster business case of positive energy neighbourhoods
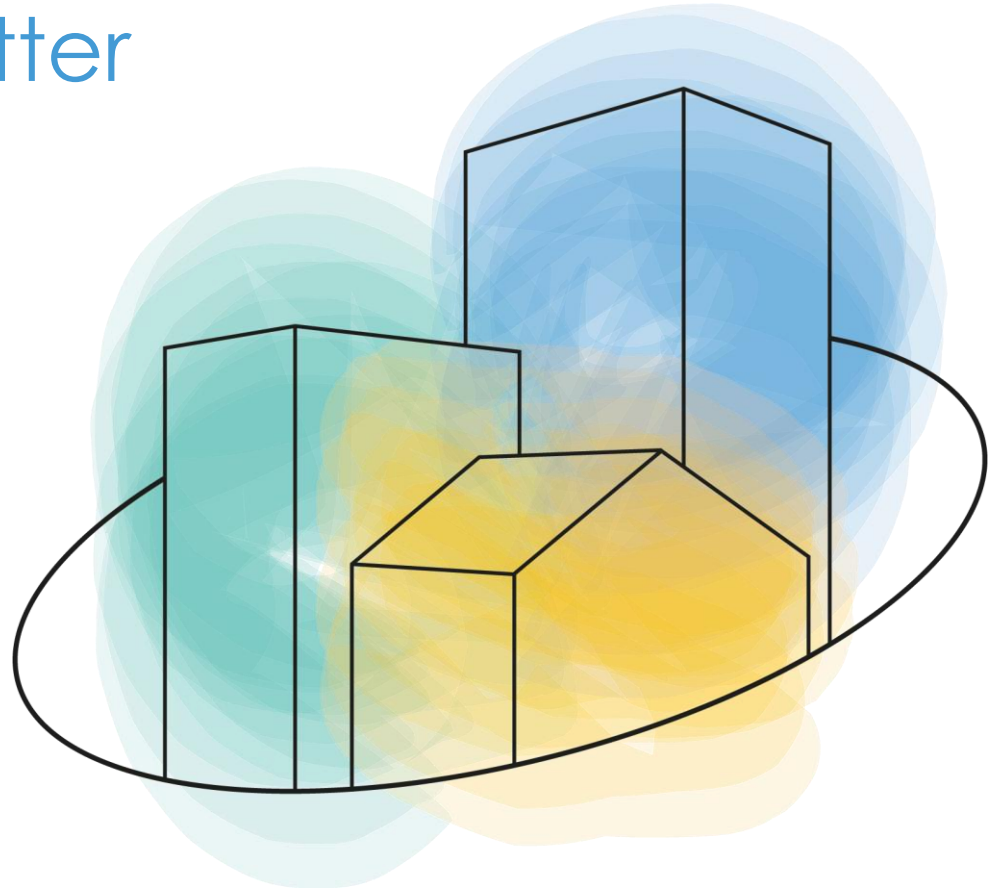
Risk valorisation through testing & research is key

- PEN = business cases with narrow margin
- Decrease high-risk, directly associated with uncertainties
- Valorisation and minimisation of uncertainties
  - →**Social**
  - →**Technical**
  - →**Economic**
  - →**Legal**
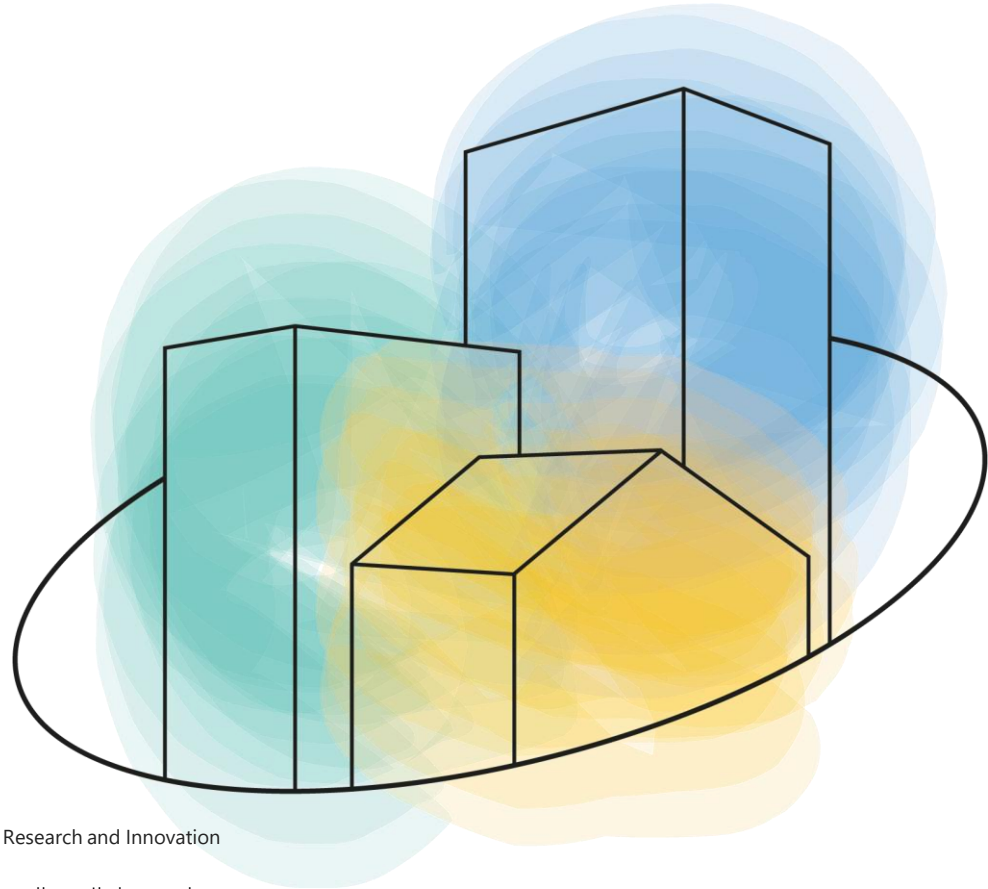
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Thank you for your attention!

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