



TARTU, ESTONIA



A MODEL POSITIVE ENERGY DISTRICT ?



EU SmartEnCity Project



WHAT IS A PED?



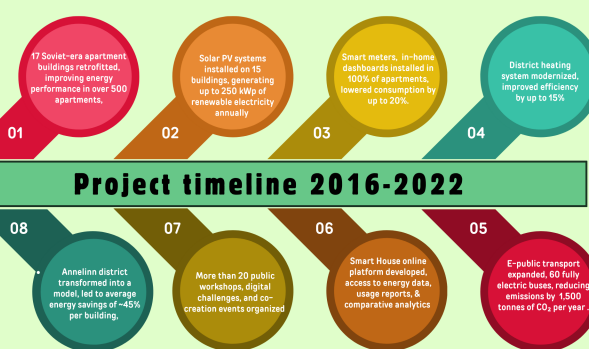
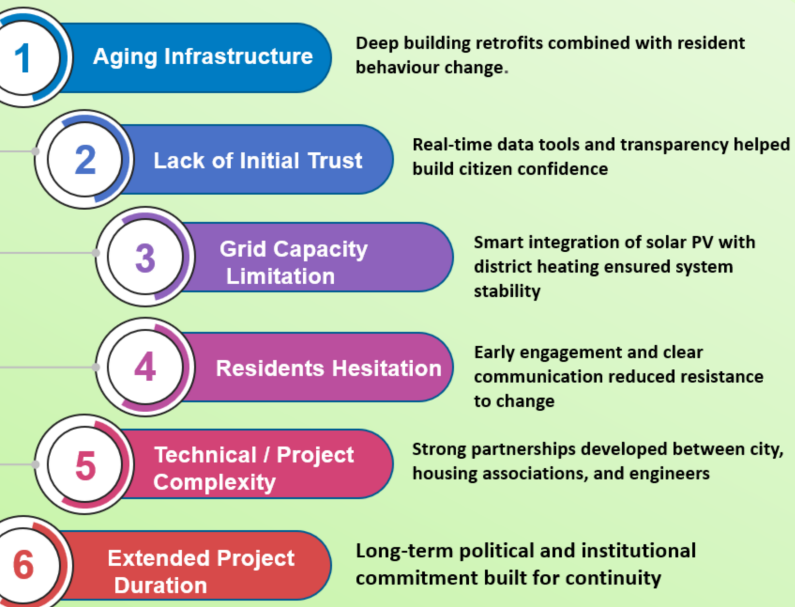
- Net-positive renewable energy balance and energy-efficient building design
- Local renewable energy systems (e.g. solar, district heating) and smart energy management with digital monitoring
- Citizen involvement and sustainable mobility options
- Data-driven energy optimization and circular resource use with waste minimization
- Strong interaction with local energy storage and climate-neutral, mixed-use urban planning

FROM RETROFIT TO ROLE MODEL: TARTU'S JOURNEY



- **Scalable Size:** Mid-sized city (~93,000 residents) – ideal for piloting solutions replicable across Europe.
- **Urban Renewal:** Transformed the Soviet-era Annelinn district into a smart, energy-positive neighborhood.
- **Energy Upgrades:** Combined deep renovation, solar panels, smart meters, and modernized district heating.
- **Strong Leadership:** Enabled by effective local governance and active public-private partnerships.
- **Measured Impact:** Demonstrated quantifiable energy savings and emission reductions, with ongoing data monitoring.
- **Citizen Engagement:** Interactive dashboards, workshops, and open data ensured public involvement.
- **Clean Mobility:** Promoted e-buses, cycling infrastructure, and low-emission transport options.
- **Smart Technology:** Used digital tools for real-time energy monitoring and system optimization.
- **High Replicability:** Reflects common EU city features, making Tartu a practical PED blueprint
- **EU backed PED transformation:** Selected & funded as a Lighthouse City under the EU SmartEnCity project, supported by Horizon 2020 program as the front-runner.

OVERCOMING BARRIERS



FRAMEWORK: EU HORIZON 2020

LEARNINGS



- Renovation and smart tech work best together
- Involving people makes the project stronger, Local partnerships (city, universities, housing associations) ensured smooth coordination
- Starting small and scaling up helps manage risks and gain public trust
- PEDs are achievable in existing OLD urban districts, not just new developments,
- Strong EU funding and municipal leadership are key.

RECOMMENDATIONS



- Scale the PED model city-wide
- Boost renewable energy capacity
- Enhance citizen engagement tools
- Develop long-term financing models
- Strengthen monitoring and data transparency
- Build strong partnerships between municipalities, universities, housing associations, and tech providers



Poster/Research by Sameera Siddiqui
 Course # 62882-01: Positive Energy Districts: A New Way to Realize a just Energy Transition?
 For more information, scan the QR Code



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