



# Reconstruction can bring renewable energy communities to life, but how to connect them to grid?

Marten Saareoks, January 2022



**Tartu Regiooni Energiaagentuur**  
Tartu Regional Energy Agency



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 894255. The sole responsibility for the content of this document lies with the DECIDE project and does not necessarily reflect the opinion of the European Union.



[decide4energy.eu](https://decide4energy.eu)



- ❑ TREA, only energy agency in Estonia, is located in Tartu (office space also in Tallinn)
- ❑ Established by City of Tartu and Tartu Science Park to provide expertise and consultancy for city on energy management and citizens of Tartu to consult in reconstruction issues to accelerate renovation wave.
- ❑ Today providing services for municipalities all over Estonia as well for apartment associations all over Estonia (mainly south, centre and north Estonia), cooperating with relevant ministries. Most of the budget – EU projects (19 ongoing).
- ❑ Main topics:
  - ❑ energy planning (energy and climate plans for municipalities),
  - ❑ energy performance in buildings,
  - ❑ efficiency in street lighting,
  - ❑ renewable energy systems,
  - ❑ fostering cooperation between public and private sector,
  - ❑ energy communities,
  - ❑ energy poverty.



Forerunners in Estonia

# Reconstruction of apartment buildings

- ❑ From the beginning TREA's main task has been dealing with apartment associations (apartment buildings) to promote renovation, introduce renovation needs and possibilities to help them to achieve best and most suitable outcome.
- ❑ We have consulted multiple-multiple apartment associations all over the Estonia, brought in innovative energy efficiency, reconstruction process and renewable solutions and co-funding for integrating solutions in apartment associations via multiple EU projects:
  - Smartcity (hrushchyovka to smartovka) – 18 soviet era buildings in city centre district renovated to nZEB (including PV-panels, smart home (feedback), demand-based heat recovery ventilation in each apartment);
  - Renozeb – renovation with prefabricated insulation panels (integrated PV)
  - openLAB (started 2021) – three first 9-floor buildings renovated by using prefabricated insulating panels, PV-panels, higher RE self consumption (joint purchase, inbuilding sharing), central battery storage, district heating CHP heat storage.
- ❑ TREA is moving direction to offer one-stop shop kind of renovation service – so far providing energy labelling, energy auditing, technical consultancy, construction supervision, design projects energy simulation, PV-panels design projects....



- ❑ Kalda area, Annelinn district - Energy consumers (district heating, electricity) in compact area of soviet-era buildings (sample of Annelinn) that need renovation.
- ❑ Annelinn 27k inhabitants of 95k Tartu and over 120 apartment buildings

## Actions:

- ❑ Implementing cooperative local renewable production (PV-panels on rooftops), deep renovation with features like installing smart meters and controlling systems, insulation, new windows and new HVAC systems with heat recovery.
- ❑ Main task is to reach the people – offer consultancy (including indoor climate and electricity flows monitoring and analyzing) and prove renovation is affordable and results can be achieved by right design.
- ❑ Saving energy thru changing behavior and efficient building envelope and technical systems (Goal 4 GWh energy savings)
- ❑ Installing PV-panels and increasing self-consumption (Goal: 150 kWp,10 MWh/a)

**Pilot actions**

**Regulations (still missing supportive framework of REC)**

# Energy communities – getting to grid, self-consumption

- ❑ To reach goals we need to work with EC regulations development in Estonia.
- ❑ Energy Communities are just mentioned/defined in our law – with no supportive framework developed. Absolutely no benefits to be one compared with any other organization form of RE production unit.
- ❑ There seems to be interest in managing authority to meet climate and renewable energy goals and they see CE contribution into it. On other hand Estonia has strong DSO (90% of Estonian consumers under one DSO).
- ❑ In upcoming regulations say very softly that DSO should cooperate with EC – not mentioning any details.
- ❑ No virtual metering possible, but in range of one building internal distribution and billing possible, but on most cases extra investment needed to modify electrical system to be ready for joint electricity purchase (expensive if not part of reconstruction process) – higher self consumption still possible.
- ❑ Connecting with grid (even 15 or 50 kWp PV -station) is often blocked (all substation reconstruction cost for who is last to go over substation current limit)
- ❑ CE framework that will be developed one day should enable/support to form ECs practically (auction slot, DSO cooperation, virtual metering, knowledge rising,...)

# PARTNERS



## CONTACT

**Marten Saareoks**

**[marten.saareoks@trea.ee](mailto:marten.saareoks@trea.ee)**



**Tartu Regiooni Energiaagentuur**  
Tartu Regional Energy Agency

**[www.trea.ee](http://www.trea.ee)**

## FOLLOW

**E** [info@decide4energy.eu](mailto:info@decide4energy.eu)

**W** [www.decide4energy.eu](http://www.decide4energy.eu)

**Twitter** [@DECIDE4energy](https://twitter.com/DECIDE4energy)

**LinkedIn** [DECIDE Project](#)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 894255. The sole responsibility for the content of this document lies with the DECIDE project and does not necessarily reflect the opinion of the European Union.