

Pilot Energy Strategies – Aims and conditions

1 Introduction

1.1 Problem

1.1.1 European Climate and Energy Framework 2030

- Defines course for future orientation of European and national climate and energy policies as well as successful implementation of energy transition [1]
- Key targets for 2030 [1]:
 - At least 40 % cuts in greenhouse gas emissions (from 1990 levels)
 - At least 32 % share for renewable energy
 - At least 32.5 % improvement in energy efficiency

1.1.2 Current situation of heating and cooling in the European Union

- Heating and cooling in buildings and industry accounts for half of the EU's energy consumption [2]:
 - In EU households, heating and hot water account for 79 % of total final energy use
 - Cooling demand from households and businesses (e.g. food industry) is rising during summer months (linked to climate change and rising temperatures)
 - 75 % of heating and cooling: generated from fossil fuels [2]
 - only 19 % is generated from renewable energy [2]
- ➔ To fulfil the EU's climate and energy goals: reduce energy consumption and cut use of fossil fuels

1.2 Aim

- Countries and their municipalities can contribute to EU's climate and energy goals by installing LTDH systems
- LTDH represents only one solution. Other solutions might be working as well.
- Pilot Energy Strategies function as documents for European municipalities which are implementing LTDH systems or want to implement such solutions

1.3 Definition of terms – Pilot Energy Strategy

A Pilot Energy Strategy (PES) is:

- A strategic tool, i.e. document, describing specific actions to implement EU's global targets on local municipal level
- A transferable approach and guideline for stakeholders to create achievable energy concepts

Pilot Energy Strategies:

- focus on the implementation of sustainable energy systems and smart thermal grids in district heating infrastructures
- Describe existing urban structures as well as future developments for transforming DH system
- bring together stakeholders, politicians, citizens and administrations
- develop existing DH heating networks into next DH generation: LTDH 4.0
- Provide basis for long-term processes (local goals and framework conditions must be checked and adjusted regularly (if necessary))

PES complement and deepen existing national, regional, or local strategies or planning documents (if they already exist). The recommendations given in a PES are not the only solution, but provide a scope for action. It is important to note, that PES are not legally binding and are informal tools only.

2 Development of a Pilot Energy Strategy

2.1 Methodology for strategies to implement LTDH

The methodology for strategies (PES) to implement LTDH is described in the according output of the LowTEMP project, refer to seminar module 04.

- Contains 10 planning steps (working steps)
- Planning steps should be implemented one after the other
- Planning steps can be worked out individually, depending on the local preconditions, resources (e.g. administratively, financial budget), requirements and political goals
- Each step contains specific instructions to enable partners / authorities / stakeholders to develop a PES
- Each step recommends potential institution/s which should carry out the task

1. Transformation process dynamics (inducement)
2. Analysis of preconditions
 - 2.1 Existing planning documents / regulations
 - 2.2 Technical preconditions (infrastructure)
 - 2.3 Urban preconditions (common)
3. Stakeholder analysis
4. Institutional and organizational framework
5. Strategy pathways for transformation / transition
 - 5.1 Building heat requirements
 - 5.2 Energy sources
6. Initial district identification
7. Data collection and scenario evaluation
 - 7.1 Data sources and quality levels, data collection methods
 - 7.2 Development of balance sheet
 - 7.3 Identification of development scenarios
8. SWOT analysis
9. Evaluation of implementation conditions and synergies
10. Reflection and Learning

Fig. 1: working steps from PES methodology, Romagnoli, Francesco at lowtemp.eu [3]

- structure may vary for each PES

2.2 Involved institutions

- Key role: municipality, local politicians, city councils
- Stakeholders: utility companies, housing companies, private owners
- Further interest groups: experts in construction and technology, financial institutions, consumers / users

2.3 Outcome

The outcome (PES) should represent:

- A jointly elaborated document developed by all important stakeholders of the region
- A summarizing, non-compulsory guideline, combining already existing planning documents
- A strategy defining the future developments that are necessary for the transformation towards LTDH
- A range of all possible, feasible and reasonable pathways for future developments

2.4 PES examples

Three PES were developed during the LowTEMP project, namely for:

- Gulbene (Latvia)
- Ilmajoki (Finland)
- Tartu (Estonia)

These examples can act as guidelines and inspiration for other BSR municipalities and regions. They are elaborated in more detail in the module "Pilot Energy Strategy – Examples".

3 Conclusion

- PES are comprehensive strategies → promotion of LTDH in BSR regions
- Collaborative process of PES development → brings stakeholders together
- Transferable examples exist for other BSR municipalities with similar framework conditions → promotion of LTDH in whole BSR
- Inspiration and guidance for developing own energy strategies, especially underlying methodology for developing PES

Sources

- [1] European Commission, „2030 climate & energy framework,“ 2020. [Online]. Available: https://ec.europa.eu/clima/policies/strategies/2030_en. [Last access on 22nd March 2021].
- [2] European Commission, „Heating and cooling, facts and figures,“ 2018. [Online]. Available: https://ec.europa.eu/energy/topics/energy-efficiency/heating-and-cooling_en. [Last access on 22nd March 2021].
- [3] Romagnoli, F., „LowTEMP - Training,“ Methodology of Development of Energy Strategies 2020. [Online]. Available: <http://www.lowtemp.eu/training/>. [Last access on 22nd March 2021].