REPLACE – Policy recommendations for the heat transition in North Macedonia

From November 2019 to April 2023, the EU project REPLACE supported households to replace their old, inefficient heating appliances with modern, clean and climate-friendly heating systems that are more comfortable and resilient. Within the context of the energy and climate crisis, enabling energy systems based on nearby, renewable energy sources - instead of fossil fuels imported from non-democratic states - is highly relevant for free societies.

This document contains recommendations for action at the political level for the North Macedonia heating market, which the SDEWES-Skopje consider helpful for the heat transition based on the results of the project.

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Challenges & Solutions for North Macedonia

- Latest economy crisis led to **high energy prices** especially for households that are not connected to district heating, resulting in:
  - Massive **return to fossil** fuelled heating systems;
  - Lack of sufficient supply and more than double **price increase of wood and pellets**;
  - Record **highest prices for gas and electricity**

- There are **waiting lists for purchase and installation** of PV heating systems
  - Need for manufacturing capacities & qualified staff in the Renewable Heating and Cooling (green jobs).

- There is urgent **need for** greater **control** of wood and pellet manufactures and retailers.

- There is **need for greater integration of heat pumps and PVs** in houses and buildings:
  - Introduction of **new subsidy models**
  - Installation of **inverters** recommended for buildings
  - Creating enabling environment for introduction of **energy communities** as crucial tool for sharing energy.

- The latest national energy and climate **strategic documents highlight following recommendations** that should be prime short term focus:
  - Binding **Energy Efficiency Scheme;**
  - **Retrofitting of existing residential buildings** and construction of energy efficient and passive buildings;
  - Increased use of **District Heating systems;**

- Capacity building and pilot projects for **smart energy communities;**
- Introduction of **CO$_2$ tax;**
- Increasing the level of **education and information about Renewable Heating and Cooling systems;**
- **Public awareness campaigns** and a network of information centers for energy efficiency;
- Development of programs for **socially responsible and just transition;**
- Adoption of an **annual program for vulnerable consumers.**

Further outlook & research needs for North Macedonia

- As promoted during the REPLACE project, the pilot region (municipalities of Karposh, Gjorche Petrov and Aerodrom), supports the following concept: district heating system for densely populated areas, whereas for sparsely populated areas the heat pumps (air-to-air or air-to-water) have been identified as the most cost-effective heating solution. This concept could be replicated nationwide and enhanced with an additional focus on smart energy communities and sector coupling.

- Alignment with the EU regulatory framework and increasing the diversity in donor funds should be one of the priorities, as part of the pre-accession process. Furthermore, it is vital to streamline the energy transition technologies into national Research & Innovation priorities, as well as to strengthen the cooperation between research centres, policy makers, industry, utilities, municipalities, and associations.

- Spatial energy mapping and heat demand identification is of utmost importance in order to visualize the potentials for renewable energy sources capacities and ease their installations in the following period.