

# PREOBLIKOVANJE DALJINSKEGA OGREVANJA ŠALEŠKE DOLINE IN NJEN TRAJNOSTNI RAZVOJ



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# KEY CHALLENGES



**New image of the city/region**



**Sustainable Mobility**



**5.000 new comparable and stable jobs**



**Circular Economy and Waste Reduction**



**Transformation of The District Heating System**



**Digitalization**



**Act on the Velenje Coal Mine Closure  
&  
Act on the Restructuring of Savinja-Šalek Region**



**Energy efficiency of buildings**



# EU Mission: Climate-Neutral and Smart Cities



EUROPEAN UNION

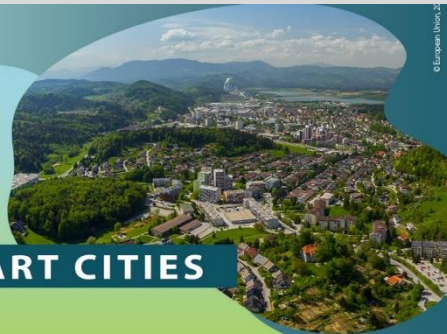


## EU MISSIONS

### CLIMATE-NEUTRAL & SMART CITIES



## VELENJE



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#EUmissions #HorizonEU #MissionCities

# TRANSFORMATION OF THE DISTRICT HEATING SYSTEM

The future of the district heating system in the Šaleška Valley lies in the green transformation and diversification of sources.





# From BLACK to GREEN AND BRIGHT!

## District Heating System Transformation

### I. Phase

**2022 – 2027**

Renewal and digitization of the district heating distribution network.

Updates and construction of new thermal stations and substations.

Lowering the temperature regime and operation from the current 140/70 °C to 85(110)/45 °C.

Estimated energy savings:

**≈ 21.1 GWh**

### II. Phase

**2023 – 2030**

Establishment of new units for heat production from RES (different scenarios):

- multifuel boiler,
- heat pumps,
- solar thermal,
- high voltage electrode boiler,
- thermal energy storage,
- biomass (ORC), ...

Estimated energy production:

**≈ 101 GWh**

### III. Phase

**2023 – 2030**

Energy renovation of private and public buildings is necessary to achieve the green transition of DHS.

Estimated energy savings:

**≈ 51 GWh**



# From BLACK to GREEN AND BRIGHT!

## District Heating System Transformation

### I. Phase of the transformation of the DHS:

- the insulation of pipelines will be renewed in a length of 7,585 m,
- renewal of 12 thermal sub-stations,
- renewal of 84 internal thermal stations,
- modernization of secondary and primary network in a length of 3,064 m,
- estimated cost: 24 million EUR
- EIB JASPERS support.

#### I. Phase

**2022 – 2027**

Renewal and digitization of the district heating distribution network.

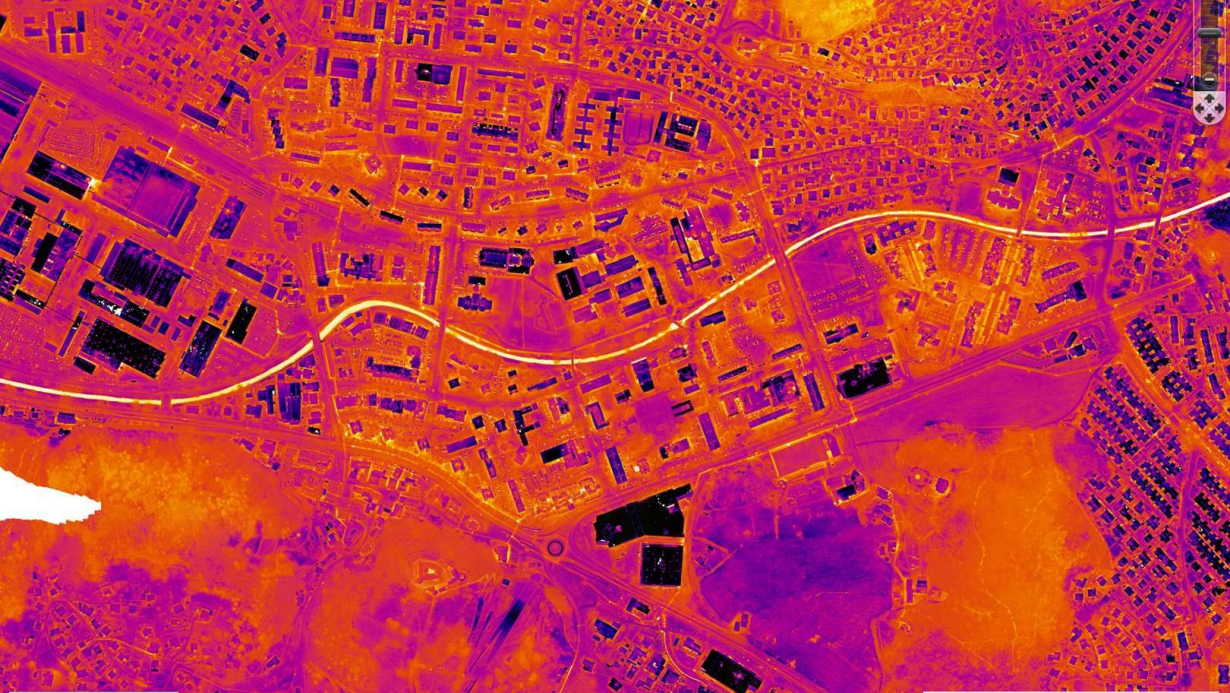
Updates and construction of new thermal stations and substations.

Lowering the temperature regime and operation from the current 140/70 °C to 85(110)/45 °C.

Estimated energy savings:

**≈ 21,1 GWh**







# From BLACK to GREEN AND BRIGHT!

## District Heating System Transformation

### II. Phase of the transformation of the DHS:

- New sources of heat production.
- Solar, heat pumps, biomass.
- Exploring geothermal.

#### II. Phase

**2023 – 2030**

Establishment of new units for heat production from RES (different scenarios):

- multifuel boiler,
- heat pumps,
- solar thermal,
- thermal energy storage,
- biomass (ORC), ...

Estimated energy production:

**≈ 101 GWh**





# Phase III.

## Energy transformation of the City

### Work Group for the Analysis of Energy Heat Consumption in Residential Buildings

- The analysis included 245 buildings (residential communities) in Velenje.
- 88 multi-apartment buildings have undergone partial renovation, with one or more measures implemented.
- Only 10 multi-apartment buildings (4%) have completed comprehensive energy renovation.

| Measures of energy renovation   | No. of buildings | Share (%) |
|---|------------------|-----------|
| Implementation of the thermal retrofit of the building (envelope, roof or basement) | 91               | 37        |
| Replacing the windows   | 84               | 34        |
| The hydraulic balancing of the building   | 26               | 11        |
| Restoration of the heating system (internal installations)                          | 21               | 9         |
| Reduction of the billing power of the facility (built-in thermal fuse)              | 39               | 16        |
| Change in temperature regime  | 118              | 48        |
| Energy certificate (legal obligation)   | 101              | 41        |
| Comprehensive energy renovation   | 10               | 4         |



## ELENA „MOVeNERGY“

The aim of the project is **to prepare project and investment documentation for the implementation of comprehensive energy renovations of public buildings and multi-apartment residential buildings, the installation of electricity generation systems, and the establishment of a system to produce thermal energy from renewable energy sources for the DHS Šaleška Valley.**

- 8 preliminary designs for EE public,
- 24 preliminary design for EE residential,
- 8 extended audits for private buildings,
- 12 extended audits for residential buildings,
- 8 preliminary design for PVs,
- 4 preliminary design for DH.





## **COMPONENT 1 - Energy Renovation of Public Buildings:**

- Total area of public buildings is 35,000 m<sup>2</sup>.
- The investment value is estimated at 20,400,000 EUR including VAT.
- Annual energy savings are estimated at 2.2 GWh per year.
- Reduction in CO<sub>2</sub> emissions is estimated at 1,323 tons of CO<sub>2</sub> per year.

## **COMPONENT 2 - New Heat Energy Production Sources:**

- New production source:  
solar collectors/solar power plant/heat pump/high-efficiency boiler.
- The investment value is estimated at 14,400,000 EUR.
- Annual production of thermal energy is estimated at 9.781 GWh per year.
- Reduction in CO<sub>2</sub> emissions is estimated at 4,575 tons of CO<sub>2</sub> per year.



# Energy Atlas of Velenje „EPA“

Digital tool for monitoring and analyzing energy data in the city.

- **Key features:**
  - Evaluation of energy efficiency for each building.
  - Identifying potential energy sources based on location.
- **Impact: Contributing to city-wide energy optimization.**



ENERGETSKI  
ATLAS  
SLOVENIJE

test\_

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☐ Zapomni si me

Pozabljeno geslo?

Prijava

# Climate and Energy Office „PEP“

Provide Lectures, workshops  
and expert advice on:

- Energy efficiency.
  - Sustainable mobility.
  - Waste management.
  - Renewable energy sources.
- Goal: Raise public awareness and encourage sustainable changes.

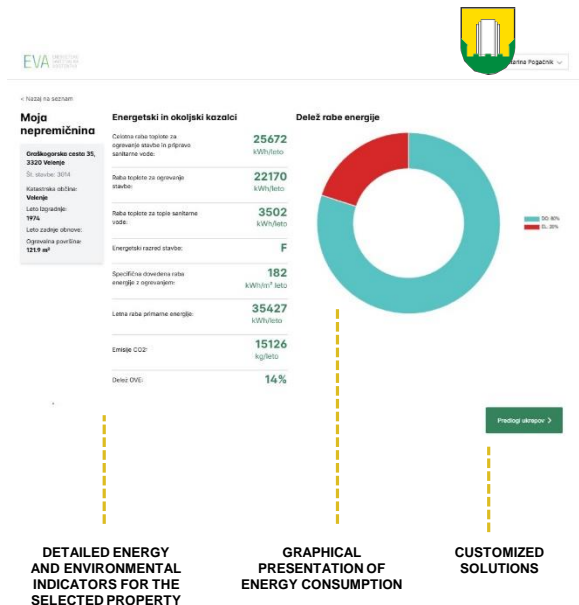


PODNEBNO  
ENERGETSKA  
PISARNA

Kreativni center Čuk, Stari trg 11, 3320 Velenje

# Energy Saving Assistant „EVA“

- Digital tool developed to help citizens optimize energy use.
- Provides information on:
  - Energy efficiency of their buildings.
  - Potential energy sources based on location.
- Benefits:
  - Monitoring energy consumption
  - Reducing energy costs.





**Green**

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**Smart**

**Innovative**

[www.velenje.si](http://www.velenje.si)

