



Agência para a Energia

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PROJECT NAME RED IMPLEMENTATION FOR HEATING AND COOLING  
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## Measures for the decarbonization of heating and cooling

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# REDI4HEAT

## General Information



**Project Name:** RED IMPLEMENTATION FOR HEATING & COOLING

**Funding:** European Climate, Infrastructure and Environment Executive Agency (CINEA), EU LIFE Programme

**Coordination:**

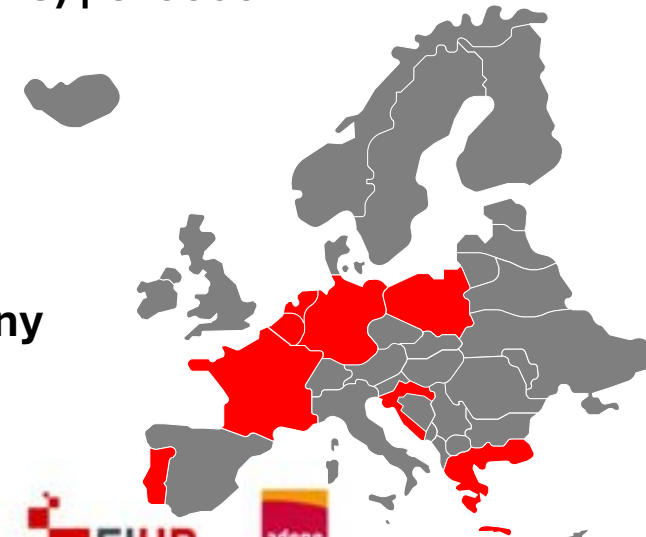
Center for Renewable Energy Sources (CRES) | Greece

**Duration:**

1<sup>st</sup> October 2022 – 30<sup>th</sup> September 2025

**Focus countries :**

Greece, Portugal, Poland, Croatia, Germany



**Consortium Partners:**



# REDI4HEAT objectives

- To support the implementation of the Renewable Energy Directive provisions on heating and cooling
- To assist Member States and local authorities to comply with updated regulation and therefore, to achieve the binding targets



# Heating and cooling in the EU

- Heating (and cooling) represent roughly 50% of EU's energy consumption;
- Represents more than 60% of the energy used by households affecting both people's comfort and their health;
- 70% comes from fossil fuels, mainly gas, while the share of renewables is growing very slowly, mostly from solid biomass;
- Renewables provided 26.2% of the final energy consumption in the heating and cooling sector in 2023, [according to Eurostat](#).



# Heating and cooling policy framework

The **Renewable Energy Directive** (Directive EU/2023/2413| 20 November 2023) establishes provisions to accelerate the integration of renewable and waste heat within the EU energy mix.

- **double the existing share of renewable energy sources**
- **promotes the decarbonization of heating and cooling and the uptake of renewable H&C solutions**

The Directive introduces **sectoral renewable energy targets**, namely **for heating and cooling**:

- **a binding target to increase the share of renewables in heating and cooling by 0.8% per year from 2021 to 2025, and then by 1.1% per year from 2026 to 2030,**
- **an indicative target to increase the share of energy from renewable sources and waste heat in district heating and cooling by 2.2% per year from 2021 to 2030.**



# Heating and cooling policy framework

The **Energy Efficiency Directive** (Directive EU/2023/1791| 13 September 2023) establishes new obligations to be met by Member States:

- **comprehensive H&C assessment** as part of the National Energy and Climate Plans (NECPs), considering current and future H&C needs, as well as the economic viability and technical suitability of H&C solutions.
- obligation for municipalities with more than 45,000 inhabitants to carry out **local heating and cooling planning**.
- extended definition of **efficient district heating and cooling** (DHC) systems, pushing for the decarbonization of these networks ( via a gradual inclusion of renewable and waste heat sources or decreasing CO2 content per KWh).



# Heating and cooling policy framework

The **EPBD** (Directive EU/2024/1275 | 28 May 2024)  
**requirements concerning H&C:**

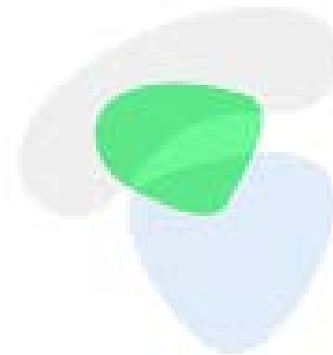
- **national Building Renovation Plans**, must address the reduction of H&C needs, and be implemented with supporting initiatives such as building renovation passports
- increased deployment of solar technologies in all new buildings and certain existing non-residential buildings where technically and economically feasible, and efforts to ensure that **new buildings are solar-ready**
- gradual **phase-out of boilers powered by fossil fuels**
- Energy Performance Certificates should include a detailed assessment of the performance conditions of heating, ventilation, air conditioning, and DHW systems, aiming to increase the **planned replacement of H&C solutions**



# National Energy and Climate Plans

The **National Energy and Climate Plans** (NECPs) were introduced by the Regulation on the governance of the energy union and climate action (EU)2018/1999.

- These are the most important national framework in terms of energy and climate planning, establishing the 10-year national energy and climate plans for the 2021–2030 period.
- Encompass five dimensions:
  - (i) decarbonisation,
  - (ii) **energy efficiency**,
  - (iii) energy security,
  - (iv) the internal energy market, and
  - (v) research, innovation, and competitiveness.



**National  
energy and  
climate plan**

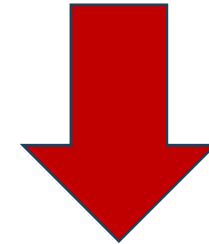
# Heating and cooling in the NECPs

In most NECPs H&C is addressed transversally, hindering a focused and straightforward approach, leading to a lack of vision and strong policies to impose it.

There is a need to verify the robustness of the policies and measures set, regarding:

- awareness,
- collaboration,
- decentralization,
- norms,
- standards,
- incentives,
- financial instruments, etc.

**Conclusion:** all the NECPs lack of vision, ambitious target, adequate policies and financing options to ensure the decarbonization in heating and cooling.



The REDI4HEAT **NECP assessment guideline** provides the methodological approach for this.

# NECPs assessment guideline



## Phase 1: NECP revision

- revising the NECPs aiming to assess how six different policy priority areas are addressed (relevance and completeness), finding gaps and weaknesses;
- identify the Strategic Policy Priorities (SPPs) that need to be further exploited.

## Phase 2: Policy options & actions

- identifies suitable policy options and effective measures that respond to the gaps and weakness;
- establish actions and monitoring indicators for the prioritized SPPs.

# Strategic Policy Priorities



## Strategic Policy

### Priorities

group multiple policies by themes to prioritize interventions that accelerate renewable energy use in heating and cooling sectors.

#### **SPP#1 - Define policy package per sector**

clear goals/targets for the decarbonisation of the H&C, and policy actions to reach it

#### **SPP#2 - Multi governance level - collaboration**

encourages collaboration between national, regional, and local authorities for smooth policy implementation.

#### **SPP#3 - Actively engage local / decentralized authorities**

acknowledge the know how and responsibilities from the authorities closest to the 'ground', and promote their engagement in the definition of policies and initiatives

#### **SPP#4 - Engage all key actors (i.e. from private sectors)**

promote the cooperation, consultation and implementation of initiatives with the support of private stakeholders

#### **SPP#5 - Create awareness & build capacities**

addresses awareness and capacity building for authorities, professionals, and consumers

#### **SPP#6 - Ensure a smooth transition for vulnerable groups**

supports dedicated programs addressing energy vulnerable consumers

# Strategic Policy Priority areas

focus of the selected countries



| STRATEGIC POLICY PRIORITIES                    | CROATIA | GERMANY | GREECE | POLAND | PORTUGAL |
|------------------------------------------------|---------|---------|--------|--------|----------|
| SPP#1: Define policy package per sector        | X       | X       | X      |        | X        |
| SPP#2: Multi governance level collaboration    | X       | X       | X      |        | X        |
| SPP#3: Actively engage local authorities       |         |         | X      | X      | X        |
| SPP#4: Engage all key actors (inc. private)    |         |         |        | X      |          |
| SPP#5: Create awareness & build capacities     |         | X       |        | X      |          |
| SPP#6: Smooth transition for vulnerable groups | X       |         | X      | X      | X        |

# Strategic Policy Priority areas

focus of the selected countries



| STRATEGIC POLICY PRIORITIES                    | CROATIA | GERMANY | GREECE | POLAND | PORTUGAL |
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| SPP#1: Define policy package per sector        | x       | x       | x      |        | x        |
| SPP#2: Multi governance level collaboration    | x       | x       | x      |        | x        |
| SPP#3: Actively engage local authorities       |         |         | x      | x      | x        |
| SPP#4: Engage all key actors (inc. private)    |         |         |        | x      |          |
| SPP#5: Create awareness & build capacities     |         | x       |        | x      |          |
| SPP#6: Smooth transition for vulnerable groups | x       |         | x      | x      | x        |

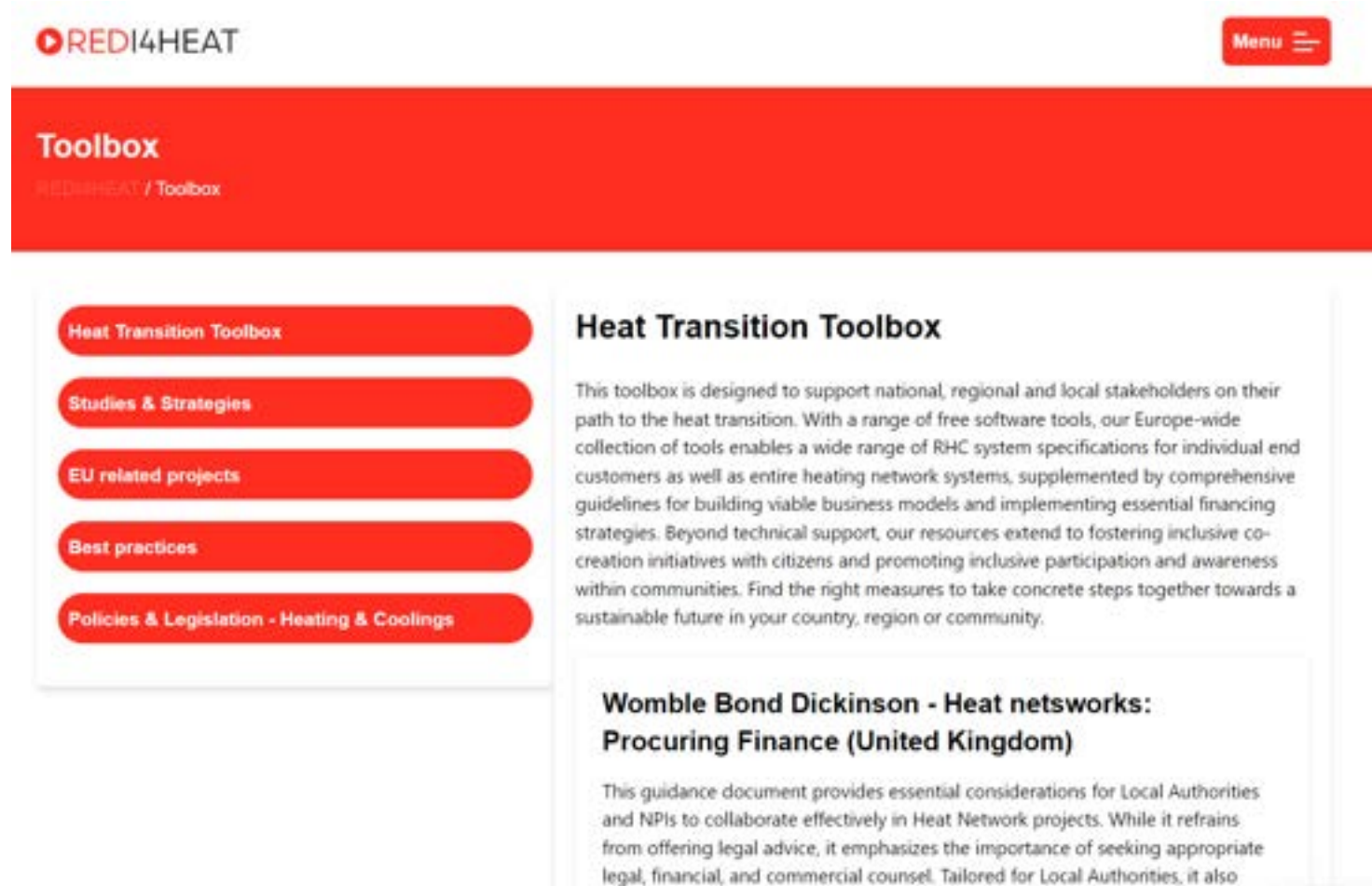
# Resources: knowledge sharing center



## Get inspired by others: knowledge sharing center

Resources available:

- Best practices;
- Policies;
- Studies and strategies
- Tools;
- Capacity building materials;
- Communication materials



# Focus of the measures per SPP



## **Financial Incentives in SPP#1**

focuses on financial measures encouraging renewable heating solutions and energy efficiency incentives.

## **Cooperation in SPP#2**

emphasizes collaboration between national, regional, and local authorities for smooth policy implementation.

## **Capacity Building in SPP#3**

highlights capacity building initiatives and guidance to help local authorities prepare heating and cooling plans.

## **ESCO Model and Public Authority Support in SPP#4**

promotes the ESCO model to support renewable heating uptake and improving public authorities' capacity.

## **Awareness and Capacity in SPP#5**

addresses awareness and capacity building for public authorities, professionals, and consumers in the transition.

## **Support for Energy Vulnerable Consumers in SPP#6**

focuses on financial support for energy vulnerable consumers to ensure a just energy transition.

# SPP#1 – Define a policy package per sector

## Promotion of renewable H&C energy communities



Local initiatives where citizens, municipalities, and businesses cooperate to produce, consume, share, or sell thermal energy from renewable sources. They promote inclusive governance, economic redistribution, and a strong sense of ownership. Activities can range from community heat production and storage to collective purchasing of energy-efficient technologies. (source – ConnectHeat project)

### Operationalization activities

- #1 – Set clear definitions and rights for RECs into national energy and climate laws
- #2 – Awareness campaigns and community engagement
- #3 - Upskilling, training of professionals for RES – HC
- #4 - Financial incentives and support for fast deployment of RECs

### Monitoring KPIs

- #1 - Number of informed and interested citizens
- #2 - Number of registered Renewable Energy Communities for heating
- #3 - Heating area covered by renewable heating



Sewage heat recovery



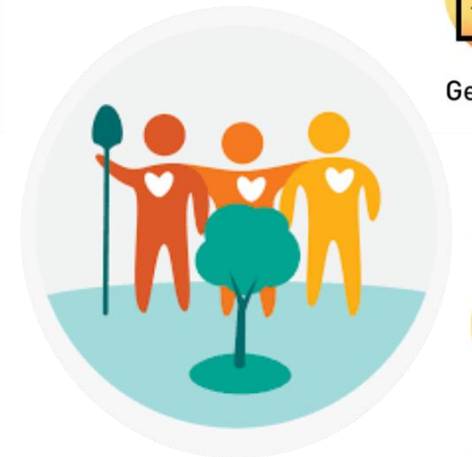
Geothermal



Solar



Biomass



Burning Garbage

# SPP#3 – Actively engage local / decentralized authorities

## **Support the introduction of local heating and cooling plans**

RED4HEAT

The new EED establishes a new obligation for **cities with more than 45.000 inhabitants to define and implement local heating and cooling plans** aiming to reinforce local paths for the decarbonization of H&C.

Regional and local authorities are the entities responsible for the development of these plans and lack know how, data and resources to do so. It is essential to provide clear guidelines, aligned with the national policies and targets and considering financing needs and options.

### **Operationalization activities**

- #1 - 1 Information on the new H&C requirements, measures and targets for the country
- #2 - Information on the requirements for the development and drafting of LH&CPs
- #3 – Experienced local authorities and energy planners share their experiences and know how with peers

### **Monitoring KPIs**

- #1 - Number of regions and municipalities informed about the new requirements for LH&CPs
- #2 – Number of energy advisors and planners capacitated to define LH&CPs
- #3 - Number of cities that present a LH&CP according to the EU and national requirements

# SPP#5 – Create awareness & build capacities

## Increase cities' authorities' capacity towards RES transformation



Local authorities face several challenges and new responsibilities within the framework of the European energy transition. It is essential to provide resources, engage in peer-to-peer exchange and reinforce synergies between neighboring cities and regions.

### Operationalization activities

- #1 - Provision of centralized information on the implementation of the heat transformation to support joint initiatives, accelerate implementation and leverage synergy effects
- #2 - Conducting training sessions to municipalities
- #3 – Regular exchange to share experiences and common solutions

### Monitoring KPIs

- #1 - Working structures established at the local and regional level to support municipal decarbonization planning
- #2 – Public authorities staff trained
- # 3 – Private stakeholders engaged in the initiatives



# SPP#6 – Ensure a smooth transition for vulnerable groups

## Prioritize incentives to finance low performing H&C appliances

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Vulnerable consumers should be at the center of the transition process and to that end dedicated mechanisms are essential to support the investment and operationalization costs of this transition. In establishing dedicated incentives, priority should be given to replace old and inefficient heating appliances for efficient and renewable based solutions.

This guarantees that public funding prompts the most urgent energy savings.

### **Operationalization activities**

- #1 - Awareness campaigns aimed at energy vulnerable consumers on H&C technologies /devices
- #2 Financial support provided by the government to promote the implementation of attractive financial schemes aimed at low performing H&C appliances
- #3 Strategic policy framework to prioritize low performing H&C appliances
- #4 Promote/implement calls aimed at financing the replacement of low performing H&C appliances

### **Monitoring KPIs**

- #1 Number of financing schemes aimed at vulnerable groups
  - #2 Number of low performing H&C appliances replaced
  - #3 Number of energy vulnerable citizens benefiting from available financing schemes
-

# Recommendations and future work

## Recommended areas for future work :

**Implementation and monitoring:** Focus on the practical implementation of the measures and establish monitoring frameworks to track progress and effectiveness.

**Capacity building:** Continue to invest in capacity-building initiatives to ensure that local authorities and stakeholders have the necessary skills and knowledge to implement the measures effectively.

**Stakeholder engagement:** Strengthen stakeholder engagement by fostering collaboration between public authorities, private sector actors, and civil society organizations to ensure broad-based support for the measures.

**Research and innovation:** Encourage further research and innovation in renewable H&C technologies to enhance efficiency and cost-effectiveness.

**Replication and scaling:** Promote the replication and scaling of successful measures across other EU Member States to maximize their impact and contribute to the EU's overall decarbonization goals.



# Measures for the decarbonization of heating and cooling

## Thank you for your attention!



Feel welcome to contact:

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