



Local Replication Roadmap

Local heating and cooling plans in line with EED 2023

Checklist to test compliance with the requirements in the directive

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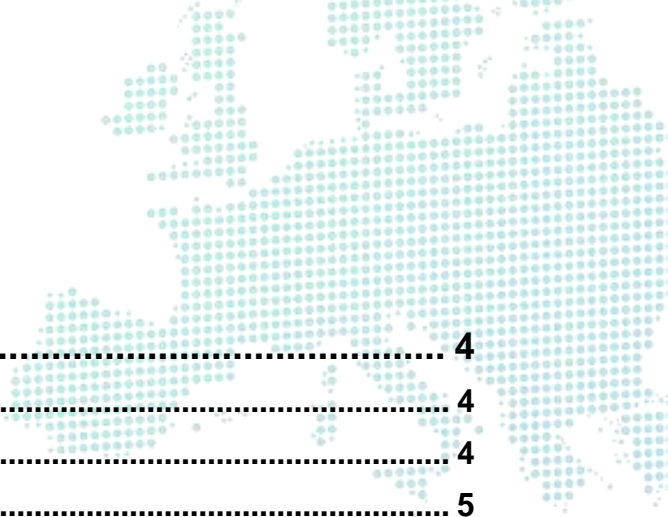
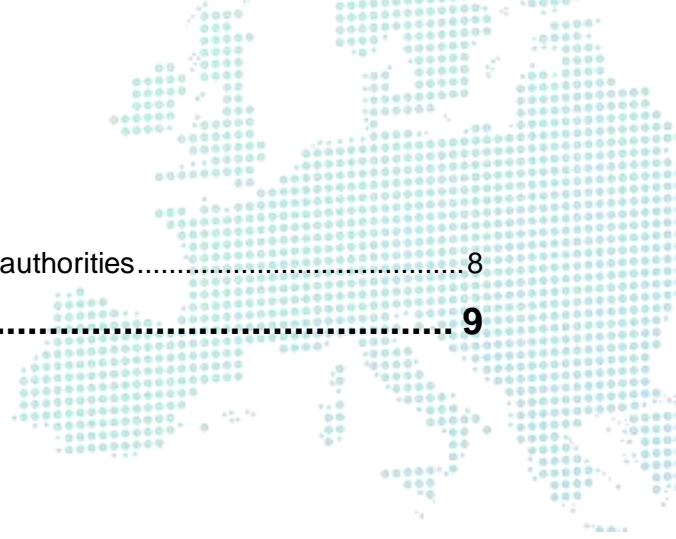


Table of contents

1	Methodology	4
1.1	Recast EED 2023 Article 25	4
1.2	Development of the checklist	4
1.3	Opportunities for replication	5
2	Compliance Checklist.....	5
a)	Estimate and Mapping of the Potential	5
	Potential for increasing energy efficiency	5
	Potential for low-temperature district heating readiness (readiness of buildings).....	5
	Potential for high-efficiency cogeneration	5
	Potential for waste heat recovery.....	6
	Potential for Renewable Energy	6
	Potential for cooling.....	6
b)	Compliance with Energy Efficiency First Principle.....	6
	Steps to comply with the energy efficiency first principles	6
c)	Strategy Development for the Implementation of Identified Potentials.....	6
	Strategies for increasing energy efficiency	6
d)	Involvement of All Relevant Stakeholders and Participation of the General Public	6
e)	Take into Account Relevant Existing Infrastructure	6
f)	Consider the Common Needs of Local Communities and Multiple Local or Regional Administrative Units	7
g)	Assess the Role of Energy Communities and Consumer-Led Initiatives in Implementing Local Heating and Cooling Projects.....	7
h)	Analysis of Appliances in Local Building Stock	7
	Analysis of needs of vulnerable and worst-performing buildings	7
i)	Assess Financing Mechanisms for Local Policies and Measures to Shift Towards Renewable Energy	7
j)	Trajectory to Achieve Goals	7
	Trajectory to achieve goals and plans in line with climate neutrality policies and measures.....	7
	Monitor implementation of policy and measures	7
k)	Replace Inefficient Heating & Cooling Systems in Public Buildings	8
	Identification of old inefficient technologies in buildings	8
l)	Synergy with Neighboring Authorities to Encourage Joint Investment.....	8



Assessment of synergies with neighboring authorities.....8

Annex 9



1 Methodology

1.1 Recast EED 2023 Article 25

Under Article 25 of the recast Energy Efficiency Directive (EU) 2023/1791, Member States (MS) are obliged to submit a comprehensive heating and cooling assessment for their countries to the European Commission as part of their national energy and climate plans. This assessment, is integral to identifying efficient heating and cooling solutions based on climate conditions, economic viability, and technical feasibility. MS are required to facilitate stakeholder involvement in the planning processes while safeguarding sensitive business information. A mandatory cost-benefit analysis will help pinpoint the most cost-effective and resource-efficient heating and cooling options, potentially integrating with environmental assessments under Directive 2001/42/EC. Where benefits such as enhanced efficiency and utilization of waste heat are identified and outweigh the costs, MS must develop supportive infrastructure for district heating and cooling and cogeneration systems. Conversely, if benefits do not justify the costs, exemptions may apply. Policies must be enacted to ensure the identified potential is actualized, with updates included in subsequent national energy and climate plans.

Furthermore, MS must ensure that local and regional authorities prepare local heating and cooling plans in municipalities with populations over 45,000, aligning local actions with national objectives. The recast EED 2023 provides detailed requirements which must be included into the local heating and cooling plans. All plans are required to be compliant with these requirements. These requirements listed in the recast EED 2023 are stated in detail in the annex of this document.

1.2 Development of the checklist

Despite the recast EED not yet being fully transposed into national laws in all MS, many municipalities across Europe have already begun developing their local heating (and cooling) plans. However, these plans often reflect local needs and, having been developed before the publication of the recast EED requirements, frequently do not meet all requirements set out in the directive.

In this context, the Act!onHeat support facility 1 partnered with [VEKA, the Flemish Energy and Climate Agency](#), to examine how well existing municipal heat plans align with the EED requirements. This analysis was crucial for identifying which aspects of the EED were already being addressed in the plans and determining what additional elements needed to be incorporated, particularly in light of resource and expertise constraints at the municipal level.

To facilitate this, VEKA provided several municipal heat plans as reference materials. Through multiple rounds of discussions and exchanges with this regional energy agency, the [Energy Economics Group \(EEG\)](#) at Technische Universität Wien (TU Wien) together with [e-think energy research](#) developed an initial version of a compliance checklist. This checklist was refined over time into a set of minimum criteria necessary for a local heating and cooling plan to meet the requirements set out in the recast EED 2023.

The development and testing of the checklist revealed that all requirements set out in Article 25 (6) are relevant for integrated and strategic heating and cooling planning and thus should be included in such a plan. However, a strict interpretation of each requirement could render many plans non-compliant. Therefore, it could be meaningful to grant compliance for the first round of local heating and cooling plans, if all requirements are at least considered in the plans, while an in-depth consideration of certain requirements could be implemented at later



stage, whether in a separate activity or in a later update of the plan.

1.3 Opportunities for replication

Although initially designed to align with Flemish heat plans, the compliance checklist has also been tested in other countries, demonstrating its broader applicability. While the minimum requirements set by the checklist correspond with MS plans, they are also influenced by the political structures of individual countries and regions. Our analysis supports the notion that this checklist could serve as a valuable tool for MS and their regional authorities. It offers a preliminary validation of the eligibility of local heating and cooling plans and helps identify areas for potential improvement. This ensures that local initiatives can more effectively meet overarching energy efficiency goals.

To further support these initiatives, it is meaningful to provide assistance from the regional or national level. This could include the provision of guidelines for the implementation and interpretation of the requirements, draft texts to be included in the local heating and cooling plans, framework agreements for strategic heating and cooling planning, and direct involvement of regional energy agencies in the development process. Such support would enhance the ability of municipalities to develop plans that not only comply with the requirements in the recast EED 2023, but also align with regional energy strategies and related objectives.

2 Compliance Checklist

The following checklist helps to identify if a local heating and cooling plan is compliant with the requirements of the recast Energy Efficiency Directive (EU) 2023/1791, article 25(6). The idea is that each of the requirements set out in the directive is at least considered in the plan.

a) Estimate and Mapping of the Potential

Potential for increasing energy efficiency

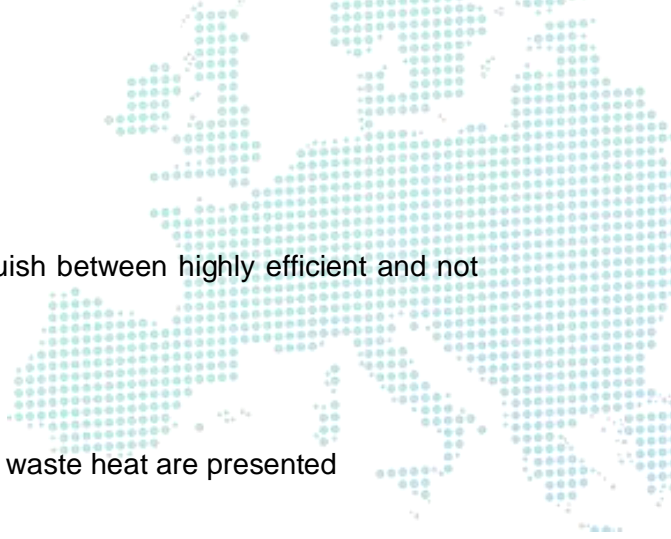
- Building renovation scenarios are presented
- A description of the method and the assumptions of the renovation scenarios is provided
- Heat zoning based on building renovation/demand/building type is presented
- A map with savings over the territory is provided

Potential for low-temperature district heating readiness (readiness of buildings)

- The temperature level of the existing heat supply systems in the buildings is mentioned/analyzed
- Buildings potentially supplied by low-temperature district heating (LTDH) are identified
- Zones potentially suitable for LTDH are identified

Potential for high-efficiency cogeneration

- High-efficiency cogeneration is mentioned in the plan
- Existing (cogeneration) plants are presented on a map
- Relevant parameters for cogeneration plants to be highly efficient are presented



- Presented potentials of cogeneration plants distinguish between highly efficient and not highly efficient

Potential for waste heat recovery

- Locations of waste heat sources are identified
- Estimates of the temperature level and the available waste heat are presented

Potential for Renewable Energy

- The available potential of renewable energy for heat and cold supply is presented
- The potential is shown on a map (at least for a majority and most important potentials)

Potential for cooling

- An estimation of the energy demand for cooling of buildings is presented
- A map showing the (theoretical) energy demand for cooling in the territory is presented
- The increasing cooling demand due to climate change is addressed

b) Compliance with Energy Efficiency First Principle

Steps to comply with the energy efficiency first principles

- Scenarios for increasing energy efficiency are presented, and the assumptions regarding renovation depth and renovation rate are argued
- A cost-benefit analysis (CBA) of efficiency increase versus carbon neutral supply is presented

c) Strategy Development for the Implementation of Identified Potentials

Strategies for increasing energy efficiency

- Strategies for utilizing the identified potentials are presented
- The following measure is formulated in the plan: “The potentials identified under a) need to be checked whenever a proposal for a renewable energy project is assessed in the municipality.”
- The following measure is formulated in the plan: “Found a task force “H/C transition” (in the local authority), consisting of individuals from different departments who work together to develop strategies as next steps.”

d) Involvement of All Relevant Stakeholders and Participation of the General Public

- Stakeholders are identified, and their roles and level of involvement are described
- The role of the general public in the development of the plan is described
- The planned role of the involvement of the general public in the transformation process in the coming years is defined

e) Take into Account Relevant Existing Infrastructure

- Existing infrastructure (gas grid, heat grid, electricity grid, supply plants) are described
- Existing infrastructure is shown in a map (at least for the most important infrastructure)

f) Consider the Common Needs of Local Communities and Multiple Local or Regional Administrative Units

- Ongoing and upcoming planning activities related to heating and cooling as well as spatial and infrastructure planning in the municipality as well as on the regional level are described

g) Assess the Role of Energy Communities and Consumer-Led Initiatives in Implementing Local Heating and Cooling Projects

- Local energy communities and consumer-led initiatives active / existent in the region are described
- The potential role of local energy communities and consumer-led initiatives for the transition in the region is described
- A framework for supporting local energy communities and consumer-led initiatives is described

h) Analysis of Appliances in Local Building Stock

- A description of the appliances used for heating/cooling in the buildings is provided
- A map with savings over the territory is provided --> NOTE: this is the same checklist point as under a) potential for increasing energy efficiency

Analysis of needs of vulnerable and worst-performing buildings

- Vulnerable households and worst-performing buildings in the region are identified
- The needs of vulnerable households and worst-performing buildings are described

i) Assess Financing Mechanisms for Local Policies and Measures to Shift Towards Renewable Energy

- Existing financing schemes (public and/or private) relevant to the territory are described

j) Trajectory to Achieve Goals

Trajectory to achieve goals and plans in line with climate neutrality policies and measures

- A trajectory of energy demand and CO₂ emissions related to heating and cooling is presented
- The presented trajectory is in line with the climate neutrality goals of the EU, national goals, and regional/local goals

Monitor implementation of policy and measures

- A concept for monitoring the implementation of policies and measures is presented in the plan

k) Replace Inefficient Heating & Cooling Systems in Public Buildings

Identification of old inefficient technologies in buildings

- Specific plan(s) for decarbonizing public buildings are presented

l) Synergy with Neighboring Authorities to Encourage Joint Investment

Assessment of synergies with neighboring authorities

- The decarbonization plans/activities of neighboring municipalities are described / mentioned
- Representatives of neighboring municipalities are considered stakeholders in the development of the heat plan

Annex

The following presents a copy of the text of Article 25 (6) of the recast Energy Efficiency Directive (EU) 2023/1791. The full document of the directive can be downloaded under the following [link](#).

**DIRECTIVE (EU) 2023/1791 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 13 September 2023
on energy efficiency and amending Regulation (EU) 2023/955 (recast)**

Article 25.6:

6. Member States shall ensure that regional and local authorities prepare local heating and cooling plans at least in municipalities having a total population higher than 45 000. Those plans should at least:

- (a) be based on the information and data provided in the comprehensive assessments carried out pursuant to paragraph 1 and provide an estimate and mapping of the potential for increasing energy efficiency, including via low-temperature district heating readiness, high efficiency cogeneration, waste heat recovery, and renewable energy in heating and cooling in that particular area;
- (b) be compliant with the energy efficiency first principle;
- (c) include a strategy for the use of the identified potential pursuant to point (a);
- (d) be prepared with the involvement of all relevant regional or local stakeholders and ensure the participation of general public, including operators of local energy infrastructure;
- (e) take into account the relevant existing energy infrastructure;
- (f) consider the common needs of local communities and multiple local or regional administrative units or regions;
- (g) assess the role of energy communities and other consumer-led initiatives that can actively contribute to the implementation of local heating and cooling projects;
- (h) include an analysis of heating and cooling appliances and systems in local building stocks, taking into account the area-specific potentials for energy efficiency measures and addressing the worst performing buildings and the needs of vulnerable households;
- (i) assess how to finance the implementation of policies and measures and identify financial mechanisms allowing consumers to shift to renewable heating and cooling;
- (j) include a trajectory to achieve the goals of the plans in line with climate neutrality and the monitoring of the progress of the implementation of policies and measures identified;



- (k) aim to replace old and inefficient heating and cooling appliances in public bodies with highly efficient alternatives with the aim of phasing out fossil fuels;
- (l) assess potential synergies with the plans of neighbouring regional or local authorities to encourage joint investments and cost efficiency.

Member States shall ensure that all relevant parties, including public and relevant private stakeholders, are given the opportunity to participate in the preparation of heating and cooling plans, the comprehensive assessment referred to in paragraph 1 and the policies and measures referred to in paragraph 5.

For that purpose, Member States shall develop recommendations supporting the regional and local authorities to implement policies and measures in energy efficient and renewable energy based heating and cooling at regional and local level utilising the potential identified. Member States shall support regional and local authorities to the utmost extent possible by any means, including financial support and technical support schemes. Member States shall ensure that heating and cooling plans are aligned with other local climate, energy and environment planning requirements in order to avoid administrative burden for local and regional authorities and to encourage the effective implementation of the plans.

Local heating and cooling plans may be carried out jointly by a group of several neighbouring local authorities provided that the geographical and administrative context, as well as the heating and cooling infrastructure, is appropriate.

Local heating and cooling plans shall be assessed by a competent authority and, if necessary, followed by appropriate implementation measures.



About Act!onHeat

Heating and cooling (H&C) accounts for about half of Europe's total energy needs with 75% still dependent on fossil fuels. Thus, rapid and significant change is needed to reach the EU 2050 goals. Due to the local nature of H&C systems, action has to be taken at local level involving a variety of stakeholders. This has been recognised in recent years and activities have been started like developing best practice policies and open source analysis tools. However, (efficient) H&C planning and project development are still not commonplace in most European municipalities.

Act!onHeat will enable and accelerate local Heating & Cooling transitions by:

- identifying success factors of effective energy plans, turning them into practical workflows;
- developing individual and group support activities to guide municipalities, local planners and stakeholder in applying these workflows;
- facilitating finance and the design of effective heat & cooling projects and policy frameworks

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