ESCALATE
DECARBONISING HEATING AND COOLING SYSTEMS

HEATING & COOLING PLANNING ACROSS EUROPE

Bridging gaps and speaking the language of local and regional authorities to support the national transposition of the EED Recast Art. 25

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WHY DOES IT MATTER?

The building sector is the EU's largest energy consumer with around 40% of total final energy consumption, around 80% of consumption in buildings is needed for heating and cooling (H&C). The European Commission (EC) announced the first preparation of H&C policy in 2015 based on EU Energy and environmental goal projections which aims at increasing the efficiency of Europe's building stock and the share of renewable and other low carbon supply sources. Although any confirmed figures are yet to be set as measurable goals, decarbonising H&C is critical to achieving the EU's climate neutrality target by 2050. To accelerate this, the revised Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency (the recast EED) Article 25 introduces a legal obligation for cities over 45,000 residents to develop local H&C plans impacting around 1,220 municipalities and over 154 million citizens.

Art 25.6 of the EED states: For that purpose (LHCP), 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.

Check the updated Energy Cities' EU Tracker. The tool monitors the readiness of Member States to implement the Energy Efficiency Directive (EED) and supports municipalities in developing local heating and cooling plans. The tracker also includes a set of recommendations for the effective transposition of Article 25.6 of the EED.

ESCALATE's first assessment report reveals that while some countries show varying favourable degrees of H&C and spatial planning integration between national, regional, and local structures, others exhibit centralised models with limited local coordination. Local and Regional Authorities are key implementation actors, yet face systemic barriers:

WEAK MONITORING SYSTEMS, WITH INSUFFICIENT DATABASES ON ACTUAL IMPLEMENTATION PROGRESS. Municipalities lack access to granular, georeferenced heat consumption data and renewable heat potential at **local scale, limiting their ability to identify priority zones and conduct robust territorial assessments. In particular, data on the potential for recovery and utilisation of waste heat—from industry, waste treatment, data centres or tertiary buildings—remains scarce or inaccessible to local actors** (Italy, Greece, Poland, Slovenia).

NEED: 1) support disaggregated climate, energy and heat data availability and integration of data sources concerning building energy performance and the estimation of renewables heating and cooling potential sources. For instance, in Slovenia, H&C planning is strongly dependent on energy use by end-users in all sectors. The most important thing is to have the right (relevant) data, which is also the main challenge in preparing a H&C plan. Concerning waste heat, mechanisms should be in place to ensure that local industrial or commercial activities share data on waste heat with the local authorities. Also, **2)** enhance monitoring and transparency, by equipping national and regional energy-climate observatories to track H&C plan deployment and impact, and ensuring data feedback loops for adaptive planning.

INSUFFICIENT TECHNICAL AND FINANCIAL ENGINEERING CAPACITY to design and implement complex low-carbon heat systems (e.g., low temperature H&C networks, heat pumps, recovery of waste heat, renewable district heating). Due to the structural lack of human resources in the local and regional administrations, dedicated financing for H&C plans should be provided as well as dedicated **staff and targeted training** for staff to overcome limited financial, administrative, and technical capacities at the regional and local level (Italy, Greece, Poland)

NEED: a number of municipal technical staff required based on the number of inhabitants of the municipality should be roughly estimated and established.

LACK OF INTEGRATION OF COOLING NEEDS AND CLIMATE ADAPTATION, despite rising summer temperatures and future demand shifts (Italy, France)

NEED: robust H&C strategies aligned with energy efficiency and adaptation as well as resilience efforts, reflecting future demand through proper climate-adaptive sizing. Plus, align EU tools to embed local implementation needs in the upcoming EU H&C strategy

HIGH INVESTMENT COSTS OF H&C INFRASTRUCTURES

NEED: provide (co-financing) mechanisms to systematically align public and private investments and leverage EU funds (ERDF, Just Transition Fund, LIFE, Horizon Europe) to support local value chains and cross-regional cooperation and set up a Clean Heat Facility.

WEAK ALIGNMENT WITH NATIONAL PLANNING, which remains largely top-down and insufficiently responsive to local dynamics and integrated urban planning processes (Croatia, Poland, France):

NEED: national authorities to adopt and incorporate into the content of the applicable national laws and by-laws more detailed guidelines or elements regarding the minimum content of Heating and Cooling Plans. For example, the Energy Efficiency Directive has been implemented in Croatian legislation through the Energy Efficiency Act and the Heat Energy Market Act. Nevertheless, this implementation has not yet achieved the goals of the Directive, given that no Heating and Cooling Plan has been prepared in the Republic of Croatia that would meet European standards and decarbonisation objectives. In the context of integrating the H&C plans into French legislation, hence into French EPCIs' (inter-municipal bodies) Climate-Air-Energy Territorial Plans (PCAET), AURA-EE emphasizes the urgent need to strengthen the involvement of local and regional authorities in Heating & Cooling planning, given their role in urban planning, building renovation, and energy transition coordination

Lack of visibility for local success stories and leadership through EU platforms all 6 countries

NEED: 1) establishment of a knowledge hub on cooling at European level within the Covenant of Mayors, which gathers technical data, case studies, success and failures on district cooling and other strategies to provide sustainable cooling. Examples of urban or industrial symbiosis on cooling would be also beneficial. 2) Raise awareness and political buy-in by developing targeted communication to counter misinformation (e.g., on biomass, air quality). 3) Enhance the exemplary role of clear national strategies, backed by EU guidance, to empower regions to initiate planning processes, move from planning to action, and ultimately accelerate sustainable H&C deployment while ensuring balanced development across Member States. Notably, a national strategy will not only help in preparing regional plans, but will be seen as good example. Shaping the national strategy for H&C is where the EU support will be invaluable.

Local and regional authorities (LRAs), responsible for building regulation, are central to implementing these plans but often lack the technical/engineering and financial capacity, particularly in smaller or carbon-intensive municipalities, have limited access to local data, and are affected by sub-optimal integration with national planning frameworks. Without targeted support, H&C plans risk becoming figurative exercises rather than strategic tools. Moreover, robust monitoring systems, climate adaptation modelling, and inter-municipal coordination are crucial to ensure these plans deliver on EU climate objectives.

Regional energy agencies can bridge these gaps. With technical staff and established networks, they are well placed to support LRAs in bridging support from national authorities (data access, technical support, formal recognition) and the EU (targeted funding, local inclusion in EU strategies). The ESCALATE project strives to strengthen regional energy agencies' role by developing a standard methodology for H&C plans, training energy agencies in six EU countries, and rolling out technical assistance to municipalities. With energy agencies now formally recognised in the EED, ESCALATE positions them as key enablers of the clean energy transition and reduced reliance on fossil fuel imports. In this regard, plans will be co-developed with local and regional governments and key stakeholders, across the entire process

THE ESCALATE METHODOLOGY BREAKS DOWN THE HEATING AND COOLING (H&C) PLANNING PROCESS INTO FIVE KEY STEPS.

1.

Process and data management creates a solid foundation for an integrated approach, ensuring stakeholder engagement and coordination across departments, energy providers and community organisations.

2.

The *inventory analysis* assesses current heating and cooling demand and energy consumption, identifying existing infrastructure and supply systems, including district heating, individual technologies and renewables. It also evaluates associated greenhouse gas emissions.

3.

The *potential analysis* highlights ways to reduce heating demand and integrate renewable and waste heat, with a focus on better insulation and improved efficiency in industry and commerce.

4.

The *target scenario* then outlines a pathway to a climate-neutral heat supply, including the projected supply structure for the target year.

5.

The *implementation strategy* is based on this scenario and provides a detailed roadmap and specific measures for achieving climate-neutral heating and cooling.

WHAT'S NEXT?

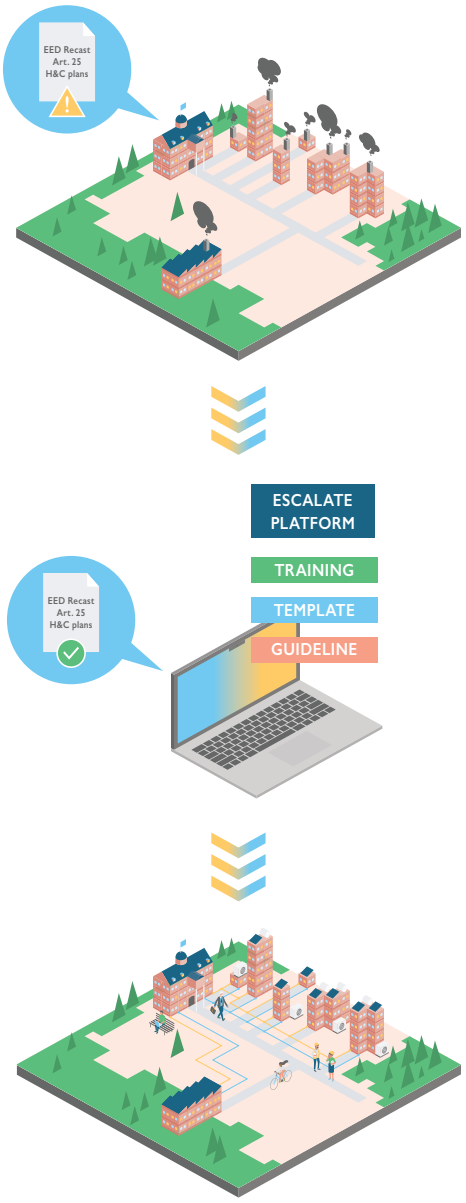
The Commission is planning to release a **new H&C strategy in early 2026**. Therefore, national and EU institutions must act now to ensure local H&C plans are not merely delivered but bring about **multiple benefits**. A combination of targeted funding, structured technical support, strategic spatial planning, local stakeholder engagement and strong national backing, are crucial to empower municipalities in driving the clean energy transition from the ground up.

Call to participation for LRAs! With EU Member States required to transpose the majority of the EED recast provisions into national law by 11 October 2025, revisions are to be applied as of 12 October 2025, the ESCALATE partners will orchestrate a series of webinars per project country, to clarify to LRAs the new obligations under Art. 25.6 as of October 2025. ESCALATE is committed to establishing the link and facilitate dialogue between regional and national levels, as well as local partners to support local structures in their regular implementation. Several suggestions will be explored in the next training activities as well as the local and national working groups facilitated by the project.

Insights from the webinars will be rendered public, and current implementation barriers will be synthesised by the project - validated with the support of regional energy agencies and participants - for wider awareness of multi-dimensional challenges that regions are currently facing in the application of the EED recast revisions.

ABOUT ESCALATE

The ESCALATE Project is committed to accelerating the Clean Energy Transition by assisting EU Member States (MS) and their municipalities in meeting the requirements of Article 25.6 of the EED Recast. This directive mandates that local authorities in cities with populations over 45,000 must develop local heating and cooling (H&C) plans. ESCALATE provides a standardised methodology and advanced technical training to regional energy agencies across eight EU MS, enabling them to support local administrations in creating effective H&C plans. These efforts aim to decarbonise buildings, optimise energy use, and align local plans with broader climate objectives, thereby driving Europe toward its 2050 climate-neutrality target.



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