

A successful heat-pump action Plan must support the expansion and modernisation of heating and cooling networks, as well as the uptake of local renewable and clean heat sources.

The current energy consumption in the EU significantly relies on fossil fuels, particularly for heating and cooling purposes. Approximately **50% of all energy consumed is used for heating and cooling**, with over 70% based on fossil fuels, primarily natural gas. In the residential sector alone, around 80% of final energy consumption is dedicated to space and water heating. **It is urgent to transition towards clean and efficient heating and cooling solutions for buildings and industries.**

Efficient DHC networks are vectors of integration for clean heat sources and provide system flexibility

Heat pumps have a significant role in achieving the EU's climate and energy goals: either through individual systems located in a building or apartment, or through larger units connected to a district heating and cooling network. The capacity of large heat-pumps connected to heating & cooling networks is expected to nearly double by 2030, from 2.5 GWth installed today ([EHP, 2022](#)). Large heat pumps are **instrumental to harvest clean and local heat sources distributed via district heating and cooling networks (DHC)**: solar thermal and geothermal energy, waste heat from industry and tertiary sectors, lowering and upgrading to the required temperature level for the use.

Heat pumps are not isolated units: they are part of an energy ecosystem marked by an underlying infrastructure (electricity or heat networks), and a diversity of supply sources. **To accelerate the deployment of large-heat pumps, it is therefore essential that the Heat Pump Action Plan also supports the expansion and modernisation of heating and cooling networks, as well as the uptake of renewable and clean heat sources.**

Over the past decade, the electricity sector in the EU has undergone a remarkable transformation, making it the cleanest energy carrier in the region, with 37.5% of gross electricity consumption from renewable sources in 2021. However, the increasing integration of variable renewables like wind and solar power requires a stronger focus on system flexibility to effectively balance real-time demand and supply.

District heating and cooling networks, when combined with power-to-heat solutions such as large-scale heat pumps and e-boilers, as well as thermal storage technologies, can play a crucial role in absorbing significant amounts of renewable heat and variable green electricity, thus providing flexibility and balancing to the energy system.

1. Measures to boost the deployment of clean heat sources and DHC

Require the mandatory implementation of local heating and cooling planning assessments: The Energy Efficiency Directive requires cities and municipalities above 45.000 citizens to carry out heating and cooling assessments, with the aim to identify and harvest clean heat sources locally. It is essential to ensure that the implementation of such heating and cooling plans is mandatory, including an obligation for cities and municipalities to establish zones for clean heating, based on the assessment of local needs, availability of energy sources. Making subsurface data more accessible would also help assessing the potential and harness geothermal resources.

Incentivise the expansion and modernisation of efficient district heating and cooling systems: the only energy infrastructure enabling the combined use of local renewable heat sources (e.g. sustainable bioenergy, geothermal, solar thermal), renewable electricity sources, and the recovery of sustainable waste heat from industrial and urban sources. The EED (Art. 24) establishes a clear pathway leading to 100% renewables and waste heat supply or zero CO₂ emission for efficient DHC systems by 2050.

Provision of special funds for public pre-financing of heat decarbonization: Special funds should be made available for the public pre-financing of heat decarbonization projects. This fund would cover 100% of upfront costs, which would be paid back through savings on energy consumption costs. Priority should be given to high-impact measures such as building insulation and the transition to clean and efficient heating systems.

Establish an EU-wide guarantee scheme to identify local subterranean heat reservoirs: This should also be extended to include the construction of medium to large-scale geothermal heat pumps, thermal-loop systems and heat networks for individual, multi-residential, commercial, public buildings, industrial processes and associated heat networks or district systems.

Develop de-risking instruments for clean heat projects: De-risking instruments must be developed to reduce investment risks and upfront capital costs for clean heat projects. These include the recovery and utilization of available and sustainable heat sources from data centers, metros, sewage systems, supermarkets, hospitals, industries, and other sources, as well as geothermal energy. These resources have high CAPEX and risks (e.g. connected to development or exploitation phases), and require a minimum of certainty as regards the need to secure a critical mass of consumers which can be provided by the mandatory implementation of local heating and cooling plans.

Member States have the option to develop **risk mitigation frameworks** in RED III (Art. 23.4). Such schemes could combine elements of public grant and loans (e.g. French Heat Fund supporting clean heat projects) combined with private financing and insurances.

The [ReUseHeat project](#) developed the idea of a **credit facility** which could cover a portion of the risk for waste heat recovery projects to bridge the gap between projects and investors. The facility would minimise the risk for commercial banks due to technical assistance and (if required), involve public guarantee to cover possible defaults.

The development of private product such as **insurance schemes** should also be incentivised, as well as risk analysis methodologies for investors (e.g. industrial waste heat risk grid analysis and associated mitigations being developed, by the French Energy Agency).

2. Measures to accelerate the deployment of large-scale heat pumps

Incentivise sector integration: Introduce dedicated grid fees and electricity tariffs for heat pumps, e.g. discounts on the distribution fee to promote sector-integration, demand response and flexibility in their interface with DHC networks using large scale heat pumps, thermal storages and combine heat and power plants (CHP).

Maintain certainty for the market by carefully considering dispositions and bans on large scale heat pump refrigerants: While supporting the goal of the F-gases Regulation, we see possible blind angles in its design and scope, as well as inconsistency with other policy requirements, creating uncertainty. The deployment of heat pumps used in district heating and cooling application can bring substantial energy and emissions

savings considerably outweighing any potential benefits from further reducing emissions from refrigerants. Fully switching all application areas to natural refrigerants requires lead time that is not provided in the proposal, there should be exemptions and transition periods for the bans.

Some countries submitted a joint proposal to restrict the manufacture and use of a wide range of per- and polyfluoroalkyl substances (PFAS). A possible restriction might have a serious impact on several renewable technologies, including large scale heat pumps and technologies used in district cooling systems. Upon the publication of ECHA's report, we invite the Commission to carefully consider the impact of a decision to proceed with such proposal.

Euroheat & Power is the international network representing the district energy sector to promote sustainable heating and cooling in Europe and beyond, with the objective of full decarbonisation before 2050. As we work towards this common objective shared with the EU, we appreciate the efforts of the Commission to develop a comprehensive plan to promote the use of heat pumps as an efficient and low-carbon heating and cooling solution.