European Insulation Manufacturers Association

EURIMA FEEDBACK ON THE EUROPEAN COMMISSION'S ACTION PLAN TO ACCELERATE THE ROLL-OUT OF HEAT PUMPS ACROSS THE EU

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Heat pumps are one of the most important energy efficiency solutions for decarbonising Europe's building stock. However, unlocking the full potential of heat pumps requires a dual focus: leveraging demand-side flexibility and prioritizing building renovations for energy efficiency, ensuring a sustainable and cost-effective transition to electrified heat supply.

It is widely recognized that the electrification of the heat supply in the buildings sector, and the resulting additional electricity demand, will have significant cross-sectoral implications[1], as Europe's current energy systems were not designed to accommodate this additional demand. As a result, we believe that in line with the Energy Efficiency First principle and the newly revised EED, Europe's heat supply electrification goals can only be met when accompanied by at least equally ambitious energy efficiency measures. Two key considerations should be taken into account in developing the Heat Pumps Action Plan:

1. **Energy-efficient buildings are key to ensuring that heat demand peaks, particularly the high demand for electricity during winter peaks, do not overwhelm Europe's power grid**. Research[2] on the challenges generated by the full adoption of heat pumps throughout Germany reveals that the total electricity demand for electric heating would rise by 356 Terawatt-hour (TWh) per year, while the extra generation capacity required to meet this demand, taking into account winter peaks and generation troughs, would be a staggering 2,129 TWh per year, nearly five times greater than current grid capacity.

Building renovations can help counteract these supply issues, as they reduce thermal losses and enable the shift of heating loads without thermal comfort loss, thus increasing demand-side flexibility. Studies[3] exploring cost-optimal solutions to the impacts of strong seasonal space heating demand peaks reflect this notion, highlighting building renovations as the most effective way to flatten the demand curve. Efficiency improvements in the buildings sector are shown to reduce the average European dwelling's space heat demand by 44 to 51%.

We suggest the European Commission evaluate the energy demands associated with the widespread adoption of heat pumps to ensure a smooth transition towards a decarbonized future. Understanding the projected rise in electricity consumption for heating purposes will enable policymakers, energy providers, and stakeholders to plan effectively and allocate resources accordingly. Such an assessment would also benefit Europe's energy intensive industries – such as mineral wool insulation – that are increasingly embracing electrification to reduce their carbon

[1] Thomaßen, G., Kavvadias, K., & Navarro, J. P. J. (2021). The decarbonisation of the EU heating sector through electrification: A parametric analysis. *Energy Policy*, 148, 111929.
[2] Knauf Energy Solutions (2022). Heat Pumps: the new Winter Peak. https://pim.knaufinsulation.com/files/download/download_62c8120d4469f.pdf
[3] Zeyen, E., Hagenmeyer, V., & Brown, T. (2021). Mitigating heat demand peaks in buildings in a highly renewable European energy system. *Energy*, 231, 120784.

footprint. Any assessment modelling the rise in electricity demand for heating should go hand-in-hand with a projection of the rise in electricity demand for industry, transport and other sectors. We, therefore, suggest that the European Commission develop a comprehensive analysis to shed light on the potential challenges and opportunities that arise from the interplay between the electrification needs of various sectors.

2. **The installation of heat pumps in homes with an inadequate building envelope increases the workload of heat pumps, translating to higher energy use, and ultimately, higher energy bills for end-users.** Studies analysing the operating conditions required for heat pumps to be installed in place of a boiler in 50% of French F and G class buildings have shown that, without suitable prior renovation, heat pumps generate high energy costs for consumers[4]. The impact of such high electricity bills is particularly significant for low-income households. In France, grant schemes aimed at phasing out fossil-fuel boilers through highly-efficient heat sources are expected to increase energy bills for low-income households by 14%[5]. This is because such households have less capacity to invest in more expensive technologies which can provide energy savings in the long run. Thus, to avoid financial and energy lock-in effects, focus should be placed on providing Europe's most vulnerable households with the means necessary to improve the thermal envelope of their residence before, or in conjunction with, the installation of heat pumps.

It is crucial to ensure that widespread heat pump adoption is accompanied by strategies that optimize their performance and minimize costs. To achieve this objective, we believe that further examination of the concept of "heat pump readiness" is necessary. This entails assessing and addressing the various factors that influence the successful integration of heat pumps into existing heating systems, including building retrofits, grid capacity, and infrastructure requirements. Conducting more comprehensive work on heat pump readiness will enable the identification of potential barriers and the development of appropriate solutions to facilitate the widespread and efficient deployment of heat pump technology.

[4] NégaWatt (2022). *Rôle de la pompe à chaleur dans la stratégie de renovation*. Association NégaWatt.
[5] Nogues, P., Osso, D., & Laurent, M. H. (2021, June). Evaluation of an incentive scheme for the energy renovation of low-income households: microeconomic modelling of a great policy with marginal impact. In European Council for an Energy Efficiency Economy

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About the European Insulation Manufacturers Association (Eurima)

Eurima (TR ID number: 98345631631-22) is the European Insulation Manufacturers Association, representing the interests of all major European mineral wool insulation producers.

Our industry members produce a wide range of mineral wool products for thermal and acoustic insulation, providing fire protection of domestic and commercial buildings and industrial facilities while offering innovative growing media and green-roofing solutions.

We are a science and research-driven organisation, communicating the benefits of mineral wool insulation while assisting our members in fields such as product standardisation and EU-focused issue monitoring and management, helping them to stay informed and contribute to EU affairs relevant to mineral wool insulation products and the industry's licence-to-operate.