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Abstract 1: Impact of HPs installation on the real estate property value.

From the paper "Drivers to heat pump adoption by European Households".

The installation of a heat pump has a positive effect on the EPC (Energy Performance Certificate) of buildings in Europe, often resulting in a jump of 1 or more energy classes. Subsequently, prospective energy savings and improved comfort provided by energy-efficient homes are reflected in an increase in the value of the property or the rental fee. The value increase is in the order of 2 to 8%.

The Energy Performance of buildings directive (EPBD) sets out minimum requirements and a standardized framework for calculating energy performance. The goal is to improve the energy performance of buildings in the European Union (EU). Since 2019, Energy Performance Certificates (EPC) became mandatory when selling or renting a building in the EU.

Heat pump installation contributes to the energy efficiency of homes. This means it improves the Energy Performance Certificate (EPC). Installing a heat pump can contribute to a jump of one or two energy classes. This depends on two factors.

- The original heating system, such as an oil fuel non-condensing boiler or a gas-condensing boiler
- The decision to change or retain emitters, such as underfloor heating or radiators.

An increase in energy class leads to energy savings, more comfort and an improved environmental profile. These benefits can then be reflected in the value of the home. This is expressed as the post-retrofitting listing price. At the European level, energy efficiency improvements also result in a premium for rental prices (around 5 to 18%, depending on several factors). But the impact on rent is generally lower than on property prices.

A review of academic literature reveals positive findings in the real estate markets across Western Europe, Finland, and Sweden. Daikin has collected relevant evidence of energy efficiency premiums in Europe where the main focus was on the following countries: Germany, France, Italy, Spain, Belgium, the Netherlands and the UK. In all countries, energy efficiency interventions with a jump in EPC class are associated with positive price premiums and increased rental prices. The effects are more significant in rural areas and houses in Germany and France. Opposite findings apply in Spain and Italy, with a higher price sensitivity of urban multifamily homes.

In Germany, urban areas experience an average price increase of 6.3% when energy consumption decreases by 100 kWh/m2a. In France, the impact on the price of houses switching to a label A or B from a D label ranges from +6 to +14%. In Spain, A, B, or C labels command on average a 7,5% premium compared to D, E, F or G. In Italy, the change in value between an E class and a D class is around 5% to 6%, but rises between 14% and 18% when moving from a G label to a D label.

Regional differences also apply in all the investigated markets. For example, the Occitanie Region in France demonstrates higher premiums for both houses and apartments. The Province of Groningen in the Netherlands shows a similar trend.

In Eastern Europe, limited peer-reviewed articles have been published. This means it is harder to draw country-specific conclusions. An exception is Romania, where a study demonstrated the existence of positive energy premiums on the property market.

In conclusion, the EPC labels have been fully implemented across most Member States. They have also become influential factors in property purchase decisions. The impact of EPC on prices has been investigated heterogeneously in each country, making it difficult to provide precise estimates of the premiums associated with higher labels. Nonetheless, it is evident that more energy-efficient homes consistently result in higher prices in the market compared to similar properties with lower energy labels.

For a more precise quantitative assessment, for sources and references, please refer to the complete paper.