



Heat Pumping Technologies

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A HEAT PUMP CENTER PRODUCT

Column

Navigating the Path to Decarbonization: Addressing Challenges in the Absence of Regulatory Building Policies

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Scenarios for decarbonizing the space and water heating sector show a significant increase in heat pumps, reaching levels of 30% to over 70% of buildings equipped with heat pumps across EU-27 by 2050. The remaining part is largely covered by district heating, where again, studies show significant shares (~50%) of district heating supplied by heat pumps by 2050. This high contribution of heat pumps will not only contribute to climate neutrality targets. It also opens up significant potentials for load shifting and contributing as a flexibility potential for future renewable power systems.

It needs to be understood that these scenarios are no prognoses. Rather, either they show what would be needed in order to achieve a certain target (normative scenarios), or they show what could be the outcome of certain policies in place (explorative scenarios). Most of the latter scenarios implicitly or explicitly assume a stringent set of regulatory policies to be in place.

Still, the last year has shown a significant drawback in the implementation of regulatory policies. The draft revised Energy Performance of Buildings Directive proposed by the European Commission has foreseen Minimum Energy Performance Standards requiring low-performing buildings to be renovated. The trialogue ultimately led to a much less ambitious instrument that only applies to non-residential buildings. Similar for the German “Gebäudeenergiegesetz” or the Austrian “Erneuerbare Wärmegesetz”. Concerns regarding the acceptance and public perception of these mandatory instruments need to be taken seriously, and policy decisions need to be accepted. The lack of stringent regulations will require alternative measures and framework conditions to make the huge changes happen. Obviously, we by far cannot take it for granted that the heat transition will be successful.

In recent years, prices for heat pumps have risen significantly and above the average inflation rate. This is partly due to increasing material and production costs. However, it is also partly

due to the absorption of subsidies and higher demand driving up prices. These price increases for heat pumps could jeopardize the transition, as they could lead to counterfactual public perception and opinion, which in turn would make it more difficult to implement regulatory requirements towards building renovation and heating system replacement in the coming years.

I draw the following conclusions from this situation:

- (1) We need a rapid increase in skills and personnel and a reduction in the associated bottlenecks along the whole supply chain to ensure that supply can meet rising demand at a reasonable price.
- (2) We need a broad portfolio of heat pumps. In particular, large-scale heat pumps for district heating supply and new solutions in 5th-generation energy grids could spread the risk of failure instead of focusing on individual heat pump systems alone.

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