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Title: The heating transition; what can we learn from the German Energiewende?

There is an urgent need for energy renovation of the existing building stock to reach the climate goals, set in Paris in 2016. Unfortunately, energy renovation rates across the EU remain at a low level of 1% per year. Moreover, the depth of the achieved energy renovation is in most cases rather shallow. Deep renovation, referring to renovation which lowers energy use with 60% or more, accounts for only 0,2% of total refurbishments. This means that both the pace and the quality of energy renovation needs to increase to achieve climate goals in 2050. In this article we identify lessons-learned from policies for energy renovation, in particular policies regarding the Energiewende in Germany. With an effective approach, combining remuneration and information, a revolutionary increase in RES-installations was brought about.

We performed a literature study to investigate the effect of the Energiewende on the transition in the building stock in Germany, to draw lessons for policies in the Netherlands. Unfortunately, it appears that the Energiewende did not much stimulate energy renovation; therefore, German renovation goals are at present not on track. Without dedicated subsidies fossil fuel heating systems will continue to dominate the heating market for decades to come. One of the causes of the slow heating transition may lie in the configurational character of the technological innovation system (TIS), which is characterized by a multitude of actors, both on the demand and the supply side.

We conclude that the lessons from the German Energiewende are not as straightforward as we hoped. Nevertheless, we find that the renovation supply sector could improve its performance by standardization, improvement of monitoring and information and joining forces on a national level for energy renovation goals. Furthermore, improvement of local knowledge is of utmost importance. Policies could be improved by learning from the simple, long-term financial remuneration structures from the Energiewende. Lessons for the demand side include the provision of independent, trustworthy advice to customers. Lastly, the TIS connected to the heating transition should be further investigated to follow up this literature study.