

A path towards climate-neutrality in the building sector

How can the building stock be transformed so that the goals of the Paris Climate Agreement are met? The Passive House Institute examined the corresponding requirements of the new German coalition agreement and came to a conclusion: In theory, a climate-neutral building sector would be possible with the plans of the new federal government, but only based on very optimistic assumptions. With the use of highly energy efficient components in new constructions and retrofits, this goal can be achieved more easily, more cost-effectively and more reliably.

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Key messages and findings

- 1. The plans described in the coalition agreement are a welcome step in the right direction. If all the proposed measures were fully implemented, we could, in theory, meet our climate targets. However, since the implementation, in practice, comes with its own challenges, more adequate efficiency standards are needed. The implementation of highly efficient components, also in building renovation, is especially promising. In retrofits, the modernization with Passive House components, known as the EnerPHit standard, can deliver efficiency similar to the Passive House standard for new builds.**
- 2. The consistent expansion of renewable energy sources is equally crucial and, all the more effective, the lower the energy demand. One challenge is the limited availability of renewables in winter when the most energy is needed for heating. Therefore, the lowest possible heating demand is vital for achieving the climate targets. A strategy focused on high-quality, very energy-efficient refurbishments avoids lock-in effects and leads quickly to a sustainable building stock.**
- 3. Many measures can be implemented quickly and cost-effectively. However, whenever building components are updated anyway, we should always use the opportunity to simultaneously make them more energy efficient. Strategies that accelerate implementation beyond the usual refurbishment cycles in order to achieve the goals of the climate protection agreement more quickly are initially promising from a short-term perspective. However, these are cost-intensive. Suitable resources, such as trained specialists and sufficient capacities, would first have to be created in the building sector.**
- 4. The EnerPHit standard, i.e. refurbishments with highly energy efficient components, offers immense benefits. These include significantly increased supply and crisis security and improved residential health and domestic value creation. The low heating load relieves the grid in the sustainable supply structure of the future. Even if the expansion of renewable energies is 50% less than planned, or delayed, the standard still offers a lot of potential for the use of renewable energy. The resources that are freed up in this way are then available elsewhere. If we start using energy efficiently early on, we don't have to generate it later.**
- 5. Thanks to the low heating requirement, the Passive House and EnerPHit principles make it possible to avoid energy bottlenecks in winter: Sustainable supply security and climate protection fit perfectly with this strategy.**
- 6. Looking at the total projected costs over the next 50 years, it becomes clear that new buildings or refurbishments according to Passive House principles offer the most favourable opportunity to achieve climate neutrality. Only slightly higher investment costs are easily offset by significantly lower operating costs.**