



Multiple benefits of higher energy efficiency

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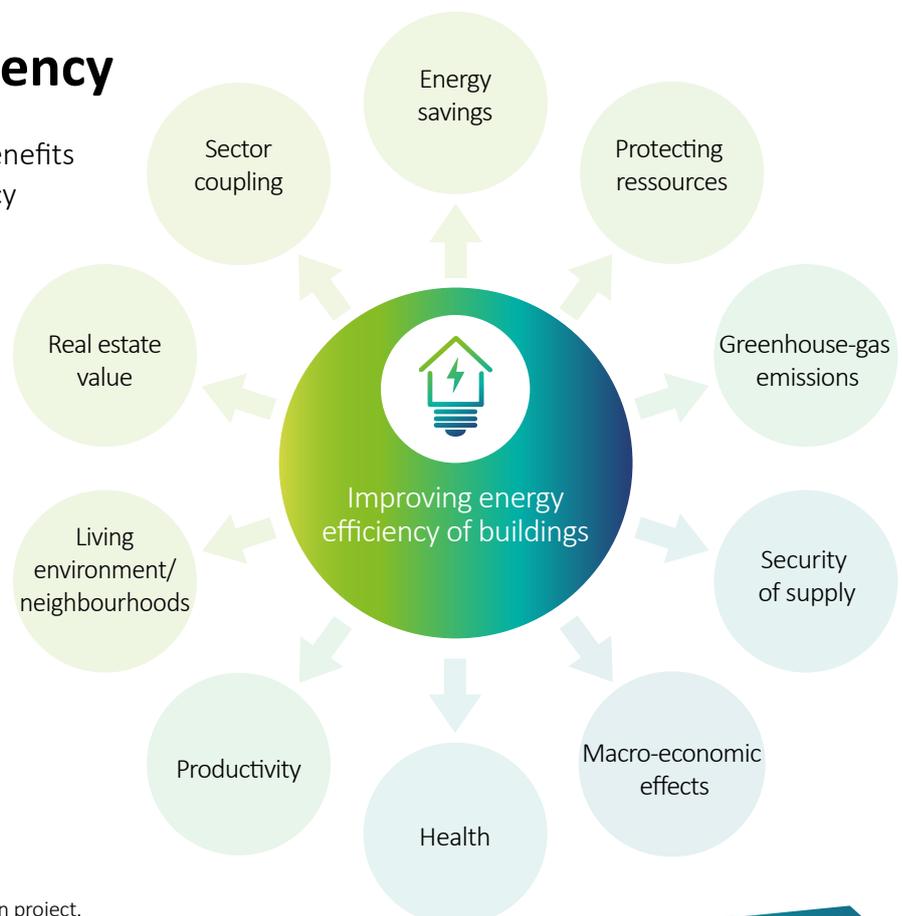


Building renovation not only offers multiple health and well-being benefits to the occupants but can also have significant impacts on the building value, rentability and climate protection. Moreover, as well as saving considerable amounts of energy and greenhouse gas emissions, investments in energy efficiency can generate direct or indirect benefits on micro and macro levels, including energy security and decreased health costs.



Benefits of energy efficiency

Here are the most important benefits from improving energy efficiency of buildings:



Source: HVGP, BPIE, DBU. Multiple Benefits as a Driver of Energy-Efficient Building Renovation project.



Reduced energy costs and heat loss

Energy efficiency improvements reduce the amount of energy used, which in turn leads to cost savings on utility bills. The reduction in energy consumption can range from 25% to 75% or more, depending on the condition of the building and the amount and type of renovation measures. Installation of heat meters or heat cost allocators allows flat owners to pay for individual consumption of space heating, creating motivation to adjust the heating demand and to not waste heat.

A household is generally considered energy poor if it is unable to maintain adequate levels of heating and other basic energy services at an affordable cost. This often leads to difficulties in affording adequate levels of comfort. Most often, energy poverty is caused by a combination of low income, poor housing quality and high energy costs. Research has shown that this can lead to a decrease of physical and mental health, which energy-poor households are more affected by. Energy efficiency retrofits of low-income housing can offer a solution that permanently makes comfort more affordable.



Increased safety and sustainability of the building (reduced risks of breakdowns)



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Deep renovation offers an opportunity to eliminate construction defects by replacing components that are approaching the end of their lifetime or strengthening the structural stability of the building. This increases safety for tenants and passers-by and extends the life of the building. It is also economically feasible to carry out energy efficiency measures at the same time as a general overhaul of a multi-family building. This not only improves the stability and technical condition of the building, but also its energy efficiency.



Reduced maintenance costs

After the renovation homeowners have lower maintenance and administration costs. Costs for repairs are reduced to almost zero in the first years after deep renovation and the lifespan of the building is considerably increased.



Increased financial independence

Carrying out a renovation with an energy advisor who ensures the quality of the work significantly reduces the need for energy for heating and hot water requirements. Residents can become more independent from increases in tariffs for communal services and energy prices. A delay in renovation will lead to higher costs in future as the price of materials and works continues to rise.



Increased quality of indoor living environment and improved health

Energy efficiency measures can support good physical and mental health by creating a healthy indoor living environment with comfortable air temperature, humidity levels and noise levels, and improved air quality indoors and outdoors.

Measures to improve insulation, heating and ventilation systems can have positive impacts on air quality, reducing respiratory and cardiovascular diseases, rheumatism, arthritis and allergies, as well as reducing injuries.

Energy poverty is also strongly associated with sub-optimal mental health, in part because of the financial stress of coping with high energy bills and debt. Energy efficiency measures that improve the affordability of energy bills in low-income homes can have a measurable effect on improving mental well-being (e.g. happiness and coping) and preventing mental disorders (e.g. anxiety and borderline depression).

After renovation, temperature distribution in flats improves and occupants are able to regulate the temperature. Improved air quality as a result of a modernised ventilation system helps to control the humidity level and prevent damp and mould, which exacerbates many health conditions.



Efficient use of resources protecting the environment

Reducing environmental pollution is a direct consequence of reduced energy consumption. Renovation plays an important role in the fight against global warming, e.g. by reducing exhaust emissions from heating of residential buildings.



Enhanced image and marketability

Renovation can be a tool to increase the value of the building in general and individual flats in particular. Owners benefit from market attractiveness of flats for sale and rent and through increased market value of the building after refurbishment.

The insulated facades of the building at the final stage of the renovation usually are freshly painted, improving the aesthetic appearance of the building and increasing the neighbourhood value.

Recommendations

1

Comprehensive monitoring of the renovation works by energy advisors before, during and after completion should be ensured in order to guarantee and demonstrate improved indoor air quality. Measurements after energy-related renovation projects can make the positive impacts for homeowners more tangible.



2

The individual benefits that result from an improved building energy performance should be communicated and exploited well to encourage households to participate in renovation interventions and perform energy performance upgrades on their buildings. Energy advice resource centres and energy auditors can provide additional information on the individual benefits of renovation measures.



Country-specific financial support

Public funding initiatives such as the German KfW programmes could subsidise energy renovations with multiple benefits, linking their level of support to the multiple benefits achieved, and offering higher funding volumes or dedicated budgets to certified sustainable and healthy buildings. Energy advisory services that measure the impact of energy-related renovation projects should be financially supported.



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