

BENEFITS OF ENERGY EFFICIENCY INVESTMENTS IN THE CONSTRUCTION SECTOR

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ABSTRACT. *The construction sector has in recent years made a particular contribution to the GDP growth of countries, despite global financial uncertainty. Investments in energy efficiency in the construction sector are crucial to achieve the objectives set in the European Union and achieve an optimal transition to a low-carbon, environmentally friendly building stock. Highly efficient buildings are considered to bring significant benefits in a number of aspects. Investments in energy efficiency can be useful for socio-economic, energy, health, etc. Sectors. This report aims to specify the types and summaries the benefits of energy efficiency investments in the construction sector. The applied qualitative approach can support the development of appropriate financing options supporting energy performance in the construction sector, which will be a starting point for overcoming obstacles to energy efficiency improvement procedures.*

KEYWORDS: *investment, energy efficiency, construction sector*

JEL CLASSIFICATION: *E22, R39*

INTRODUCTION

The construction sector is considered a complex and highly fragmented sector. In order to achieve the challenges it faces, compliance with a number of rules is required, such as: competitiveness, to be guided by the basic economic laws of market demand, to offer innovative, creative and flexible business solutions. The sector is among the most highly sensitive to the global processes that affect the demand of the supply of real estate. The financial crisis, which caused (Prodanov, Stoyan; Angelov, Petko; Zarkova, Silvia, 2022) significant pressure on real estate prices in most of the countries of the European Union, highlighted the need to seek options for renovation of the housing stock (BPIE, 2023). Based on expert opinions, the future development of the construction sector can be developed through the following more important factors (Angelova, 2023):

- sustainable growth of gross domestic product;
- increasing EU funding;
- the availability of high-quality building materials;
- improving the quality of the construction sector by borrowing from the experience of foreign companies.

Urbanization presents an essential challenge that could be turned into an opportunity. The EU's energy efficiency targets contribute to the search for options to achieve them. At the same time, they represent a starting point for considering the advantages that would be achieved from undertaking an investment in energy efficiency.

Investments in the construction sector are considered less risky and create better returns when directed towards energy-efficient buildings. Globally, buildings and construction are responsible for 60% (Mackers, 2023) of electricity consumption, 12% of water consumption, 40% of waste and 40% of material resource use. In cities, buildings occupy 50% or more of the land area. Each is a cost, but any improvement in efficiency in the use of energy and resources eliminates a cost that the city and its residents no longer have to pay.

Investment itself in the construction sector is an essential element of the economic policy developing the efficiency of the building industry.

Decision-making to take action on improving energy efficiency has engaged in increasing attention in recent years. Decisions to implement measures are based on the cost-benefit (Prodanov, 2009) trade-offs of taking such a measure. Among the most common drivers of taking

such decisions for energy efficiency investments are the financial aspects they would bring. The concrete benefits of investing in energy efficiency in buildings is systematized in Figure 1.

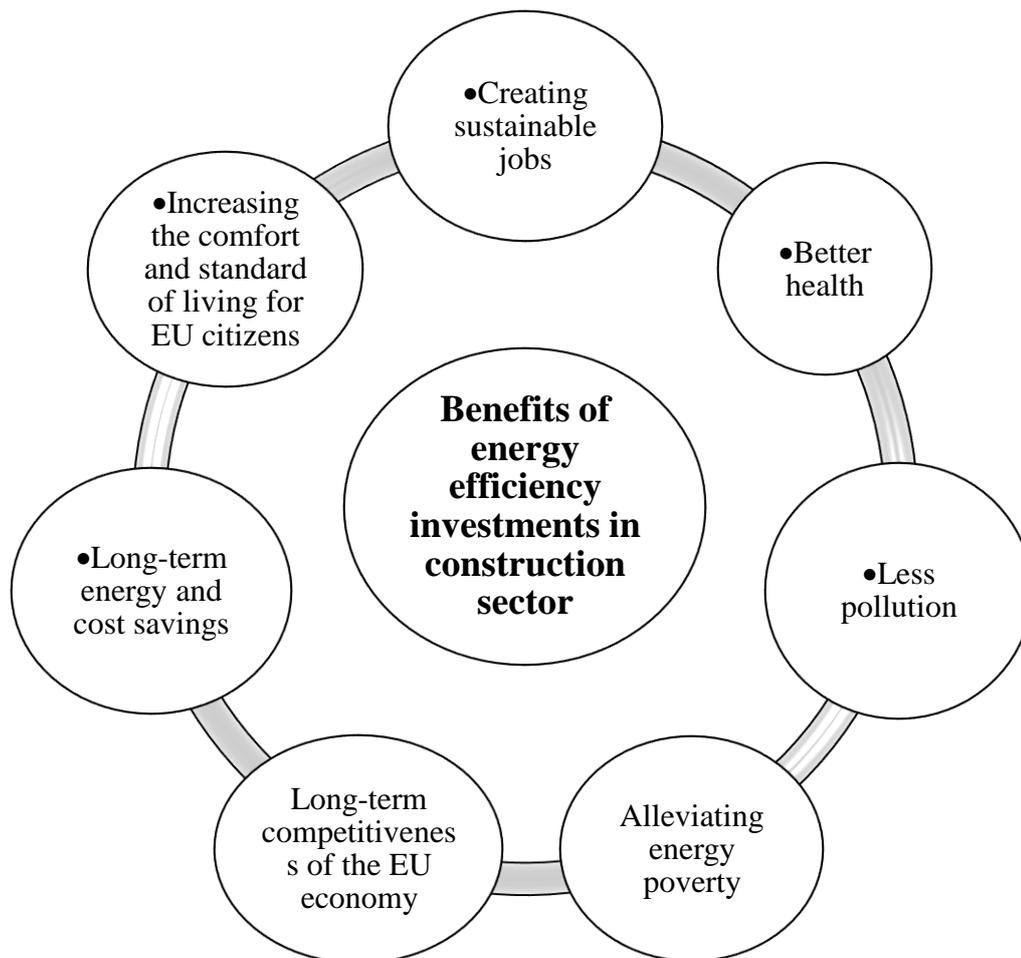


Figure 1. Benefits of energy efficiency investments in the construction sector

Source: Author's adaptation based on and (European Commission, 2022) (Baniassadi, Jannik, Pablo, Weber, & Holly, 2022)

Thus, the concrete benefits of energy efficiency investments in the construction sector have a direct effect on the wide range of blasts corresponding to the additional benefits that actions aimed at ensuring energy efficiency can contribute. Improving energy efficiency in buildings for one reason or another is an often overlooked strategy that can help improve a number of problems. In particular, the main areas can be reduced to: environment, economy, utility system, risk management, production, operation and maintenance, working environment, etc. The actual effects on each of the listed sectors can be traced in Figure 2. In recent years, the energy efficiency of public buildings (schools, hospitals, administration, theatres, libraries, etc.) has become particularly important, where heating and lighting costs are often the cause of accumulating deficits, which at the government level give rise to a cumulative negative effect (Zarkova, Kostov, Angelov, Pavlov, & Zahariev, 2023).

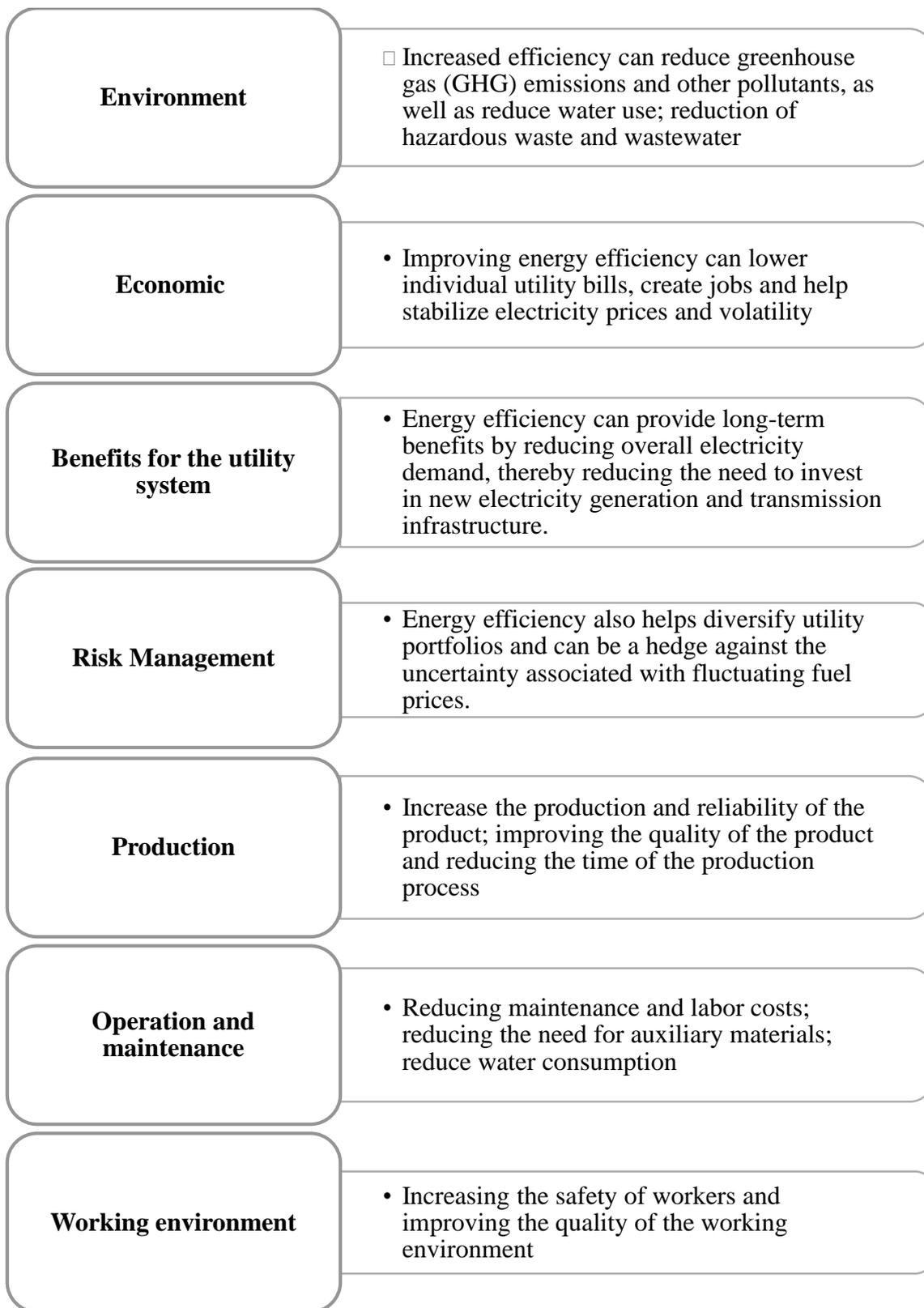


Figure 2. Areas of additional energy efficiency benefits

Source: Author's adaptation based on (Better Buildings Beat Team, 2022)

Referring to the main and additional benefits of taking action to improve energy efficiency, it is appropriate to differentiate the factors that hinder the shift to actions aimed at improving energy efficiency. They can be characterized as technological, economic and behavioral concepts. For the purpose of better visualization in Figure 3. The main aspects leading to the lack of action are presented in detail:

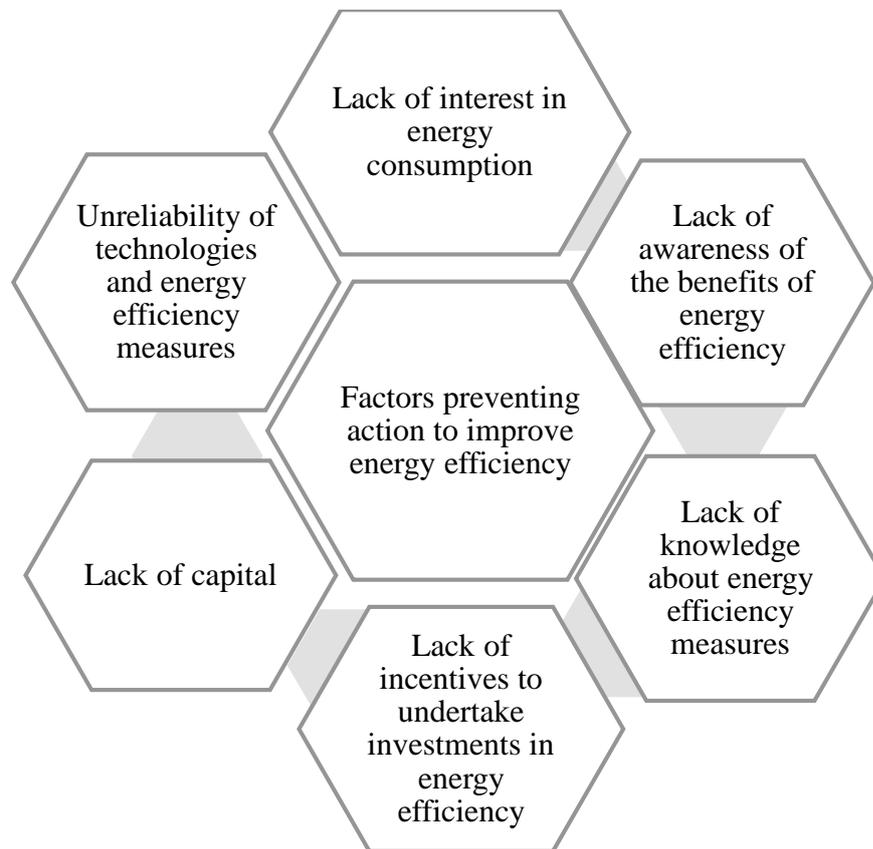


Figure 3. Factors preventing action to improve energy efficiency

Source: Author's adaptation

The above factors affecting directly and indirectly the taking of decisions to improve energy efficiency show that targeted decision-making is highly individualized and based on a combination of multiple factors. In the construction sector, these decisions are considered strategic, with decisions on the final implementation of measures being taken on the basis of the baseline characteristics of the options and alternatives.

CONCLUSION

The qualitative approach based on research, systematization and analysis of the benefits of investing in energy efficiency and the factors preventing action to improve energy efficiency derive the significant effect of considering and adhering to taking action to improve energy efficiency. The main advantages that can be derived are related to: increasing comfort and standard of living for citizens, creating sustainable jobs, maintaining better health, reducing pollution, alleviating energy poverty, improving long-term competitiveness, enabling long-term energy and cost savings. The development of appropriate financing options supporting energy performance in the construction sector could be a starting point for overcoming barriers to energy efficiency improvement procedures. All this, combined with additional impacts in the fields of environment, economy, utility, risk management, production, operation and maintenance, working environment, etc., minimize in some aspect the impact of the factors preventing action to improve energy efficiency, both at national and European level.

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