

EU and German requirements on energy efficiency in residential buildings:

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Preamble:

During the last few years, the question of how to save energy occupies national and international discussion like almost no other energy policy topic. In recent times, the EU and also Germany have set themselves very ambitious energy savings targets. The reasons are the ever increasing prices for energy, and also the effect of climate change.

EU requirements on energy efficiency of buildings

The basics of the EU requirements on energy efficiency of buildings is to increase the energy efficiency of new or existing buildings within the European Union.

To reach the reduction of CO₂-emissions, they have created an instrument, which is called "energy certificate", to compare the energy efficiency of buildings.

During the last few years, the targets for saving energy where raised and the newest European directive is called "directive 2010/31/EU" and the new energy certificate contains the following bullets:

- Tenants or buyers get a copy of the certificate, if they sign the contract.
- In commercial rent or sales advertisements, the overall energy efficiency and primary energy consumption must be mentioned.
- Modernization recommendations: In the statement, two sets of measures for rehabilitation and their costs shall be named.
- Energy Performance Certificates have to be posted in public buildings with more than 500 m² floor space.

German requirements on the energy efficiency of residential buildings

In Germany, the exhibition, use and principles of energy performance certificates are regulated in the Energy Conservation Ordinance (EnEV Energieeinsparverordnung).

To reach the reduction of CO₂-emissions, they have also created the same instrument, which is called "Energieausweis". With this instrument, the energy efficiency of buildings can be compared.

This energy certificate was created for all residential buildings. There are two types:

On the basis of energy requirements (the "requirements certificate" or "**Bedarfsausweis**"), the energy requirement characteristics are calculated on the basis of the year of construction, construction documents, technical building and heating data, and assuming standard boundary conditions e.g. (climate data, user behavior, room temperature).

On the basis of energy consumption (the "consumption certificate" or "**Verbrauchsausweis**"), the energy consumption value is constructed on the basis of heating and possibly hot water heating costs, by the appropriate consumption data for the entire building.

The content of the certificate

The first side of the energy certificate contains all the important general information about the building, address, year of construction of heating, year of construction of the building and the number of tenants.

On page 2, the characteristic values for the energy requirements and energy consumption are included. These are represented graphically on a speedometer and are used to compare different buildings. A presentation of comparative values allows the classification of the individual building.

On page 3, the site for the energy consumption, energy consumption value is shown. This is calculated from the type of energy source and the energy consumption of at least 3 years.

On page 4, details of the technical terms is contained. It explains in detail what is meant by the energetic quality of the building envelope and the energy consumption value.

On the last page of the certificate, modernization recommendations are made. This leads to the improvement of saving energy for the building.

The announcement:

By posting an announcement in a central location in the building, where all technical information is included, every tenant will be informed.

Modernization measures

Older buildings are not only the largest group of buildings; they also consume a lot of energy.

The reason is the poor insulation. To decrease the consumption and the costs of energy, it is possible to redevelop parts of the building.

The first step is an inventory of the necessary total costs: exterior walls, roofs, floor, windows and exterior doors, heating, ventilation and water heating.

The second step is to check the financing with a bank.

The third step, it makes sense to carefully plan the necessary measures for the complete redevelopment of the building. The construction costs should be systematically assessed.

For example, if a roof is insulated, you need a framework, the gutters have to be removed and later be remounted again.

For planning and costing, an architect or engineer should be involved. Only they can work out a comprehensive redevelopment plan for an old building and calculate the costs.

However, renovation of an old building is not only just about reducing energy consumption and increasing comfort. A renovation of a building is also an opportunity to improve the design of the house. Usually the sanitary facilities are not of the current standard. Larger windows and corrections to the interior layout can lead to more comfort and spaciousness of the property. This further increases the value and rental potential.

The fourth step is to implement the modernization. It is advisable to plan the construction with a construction expert.

An independent implementation planning and monitoring of renovation saves the client a lot of trouble and possibly for many an unpleasant surprise.

Apportion on Tenants

Apportion on tenants is regulated in the German BGB §559. If the landlord has performed building work that increases the value of the facility, and it also improves the general living conditions, or the permanent or long term effects on energy savings or water, it is then possible to increase the rent.

Therefore, the annual rent of a building can be increased by 11 percent.

If these measures affect more than one apartment, the costs have to be adequately split amongst them.

Subsidizations

Subsidies are measures for the modernization of a building-especially for energy efficiency purposes. In general the subsidies are credits with a lower interest rate. So it becomes attractive for landlords who have to modernize their facilities

The „Kreditanstalt für Wiederaufbau – KfW“ offers grants to owners who want to reduce the energy consumption of their property through a renovation. It supports for example all buildings constructed before the 31st of December 1994, for the installation of a modern heating systems, thermal insulation of the roof and the basement ceiling or the replacement of windows.

Conclusion

By increasing the energy efficiency of buildings, it is possible to make a facility more attractive. It is possible to raise the rent of the apartments and achieve a higher yield.

The disadvantage is that it is not possible to make an investment with a win-win situation in every area, because the demand is not always the same and it may be that the net present value is negative.