

# European Calculation Tools for Energy Efficient Buildings

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## ABSTRACT

Energy Efficiency in the built environment is a complex matter involving various stakeholder on different levels and occupations. It is crucial that all the necessary pieces are aligned with each other and work hand in hand to develop a successful implementation of the EPBD, in the member ships as well as the contracting parties of the Energy Community. A crucial part here is the underlying calculation methodology and the aligning with national laws and rulebooks. Nevertheless at the end of the day, energy auditors will use a software to calculate the energy efficiency of buildings. That software needs to make sure, that the calculation methodology is implemented properly, but also that the requirements and rules from the lay and bylaws are matched. Therefore software products for implementing the EPBD must always adjusted on national level.

The FraunhoferEPCSoftware suite showcases that approach, offering solutions for the open software market in Germany, serving as the national calculation software for Luxembourg (for functional buildings), Montenegro, Georgia, Kosovo and Albania. The adaption to the different countries goes beyond a simple climate adaption, but also includes regulations from the laws on bylaws on user profiles, Energy Performance Certificates, Declarations of conformity with the Minimum Energy Performance Requirements. The software is linked within the Energy Community Countries already with a EPC database.

These adaption only have been possible as the calculation methodology is implemented in a highly adaptable calculation library. The “ibp18599kernel”, which has been initially released in 2005, is continuously developed, maintained and undergoes the necessary quality control mechanism for the open software market in Germany. Having multiple software products on the German markets, the continuous efforts in the associations of German EPBD software products is a crucial part in providing accurate, reliable and comparable EPCs on the German market. Besides that, the ibp18599kernel has own navigators for the different countries ensuring that the different rules and laws are fulfilled.