Reducing greenhouse gases emissions, especially CO₂ emissions, is one of the most important environmental challenges facing the European Union. Under the Kyoto Protocol, the European authorities have undertaken the challenge to reduce EU emissions by 8% on average below 1990 levels by 2008-2012. In order to achieve this target, it is necessary to control domestic energy consumption, which currently accounts for 40% of the total energy consumption in Europe. To that end, the EU Directive 2002/91/EC made it compulsory to set up certification systems, also known as energy rating systems, to report on energy consumption in buildings. This directive seeks to unify the criteria among the member States and to apply a common methodology to calculate the energy performance of buildings. The requirements of this Directive will have to be transposed into national legislations by January 2008.

This study analysed the various energy rating systems currently running in the EU countries. The authors assessed the legislative situation in each country and calculated the energy consumption under their respective national regulations. Consequently, the obtained figures were compared among them taking into account the climatic differences.

The result of this analysis showed that, even though all member states of EU-15 have established a compulsory maximum heat transmission coefficient (measure of the building insulation) for new buildings, there are still big differences with regard to the actual minimum heat insulation levels required by the Directive. More insulation means less energy loss and, indirectly, less greenhouse gases emissions.

For the moment, only a few countries have taken their legislation any further, these being Denmark, the United Kingdom, France, The Netherlands, Ireland, and Luxembourg. These countries have a more complete energy rating system, taking into consideration not just building insulation but also energy for heating, domestic hot water, lighting, and climate control systems, thus covering overall energy consumption by buildings. The method used in Belgium, Italy, and Germany is just a more sophisticated version of the regulations that determine the minimum insulation requirements for outer walls, not considering heating and hot water systems, or any other factor. Moreover, Austria, Spain, Finland, Greece, Portugal and Sweden have no official building energy rating system.

According to the authors, only the Danish system can be considered to be an adequate energy rating system because it is more constructive than the others. It provides more information, awards a score based on a more complete criteria, and proposes alternatives for improving the obtained score.

This study shows that governments are increasingly interested in bringing down the CO₂ emissions related to household’s energy consumption, but national regulations have only just begun to take shape. The majority of the countries are still far from meeting the European requirements in this regard.


Contact: luis-maria.lopez@dim.unirioja.es

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