



## **Spain - Technical Framework**

*When considering an energy efficiency retrofit within your national housing market, a wide plethora of consideration needs to be made. Below, we list key findings to facilitate your analysis of the retrofit investment. More details and backgrounds can be found on the website [www.rentalcal.eu](http://www.rentalcal.eu).*

### **Residential buildings and building types in Spain:**

- According to the 2011 census, the Spanish real estate stock have got 25.2 million dwellings, 18.08 million of which are primary homes, 3.7 secondary and 3.4 are registered as vacants or with a non-determined use.
- Rental data are available for the primary home dwellings (18.80 million, 71.75% of the housing stock) in the official statistics and accounts for 12% of total principal homes.
- The 90.3% of the building stock is in good condition, well maintained, 5.6% have some deficiencies, 1.1% is bad, 0.3% is in ruin and the remaining 2.7% are not registered, all referred to primary homes. It is because the strong renovation occurred during the expansion decade (1998-2008).
- The 46.03% of housing stock have a gas installation, 51.2% does not have it and the remaining 2.77% have not information provided.
- The 30.16 % of housing stock has a central installation of hot water, 67.07 % does not have it. There is no information for the remaining 2.77 % of housing stock.
- Energy consumption rates vary depending on the period when the building was built. Three different periods can be distinguished depending on the evolution of energy regulations: Before 1979 there were no regulations referring to thermal insulation measures in buildings. Between 1979 and 2007, the Basic Standard of Building Thermal Conditions (NBE CT-79) was applied. From 2007 to the present, the Technical Building Code is the technical reference standard (CTE DB HE).

### **Energy saving measures and investment costs in Spain:**

- With regard to the building envelope, the common installation of thermal insulation is on roofs and exterior partitions as well as with the replacement of carpentries by other aluminum with thermal bridge breakage or PVC.
- Related to the heating system and air conditioning, the common rule is replacing the less efficient boilers by other more efficient equipment such as condensing boilers or the installation of heat pumps.
- The installation of solar generation systems or wind turbines, as well as ventilation systems with heat recovery, are measures that will be incorporated in the medium term, provided that there are no administrative/regulation barriers to the entry of this equipment in the case of industrial production but some at retail generation at housing level and other than as source of hot water system energy.
- Average costs are available for items separately, systems and typical installation and not always associated to building type. The cost values are based on empirical cost function of previous interventions and unify in technical documents available in the Building Engineer Professional body and Official institutions.
- There is no information about the fixed/sunk costs of energy measures.

### **Energy performance calculation methods in Spain:**

- The regulation establishes four calculation methods to estimate the energy requirements to demand satisfaction (1) Energy demand calculation; (2) Energy efficiency in lighting installations; (3) Minimum solar energy contribution for domestic hot-water; (4) Minimum photovoltaic contribution to electric power
- The basic procedure for certifying the energy performance of buildings is regulated by Royal Decree 235/2013 of 5 April.
- From 14 January 2016 onwards, only the valid Energy Efficiency Certificates will be issued with the 20151113 version of the LIDER-CALENER unified tool (HULC), the 2375.1015 version of CE3, the 2015/06\_2.1 version of CE3X or the 4 version of CERMA or later versions of those. Only Certificates issued by them will be valid and accepted by the Registries of the Autonomous Communities.
- These applications are available on the Ministry of Energy, Tourism and Digital Agenda website:  
(<http://www.minetad.gob.es/ENERGIA/DESARROLLO/EFICIENCIAENERGETICA/CERTIFICACIONENERGETICA/DOCUMENTOSRECONOCIDOS/Paginas/procedimientos-certificacion-proyecto-terminados.aspx>)

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