



European Construction Sector Observatory

Policy measure fact sheet France

Heating Regulation 2012
(*Réglementation Thermique 2012*)

Thematic Objective 3

March 2016

Implementing body:	Ministry of Ecology, Sustainable Development and Energy
Key features & Objectives:	Limit the primary energy use in construction; improve energy efficiency in buildings
Implementation date:	October 2011 – 2020
Targeted beneficiaries:	Construction companies, providers of energy-efficiency solutions and the final users (households)
Targeted sub-sectors:	Providers of Vocational Education Training (VET)
Budget (EUR):	-

In a nutshell

The new French Heating Regulation (the RT or *Réglementation Thermique*) came into force in 2012 and was the result of an extensive stakeholder consultation process. Its main objectives were:

- To develop low energy and, subsequently, positive energy buildings;
- To reduce by 38% the energy use of existing buildings;
- To support stakeholders in facing challenges in terms of recruitment, training, and industrial development.

To design the 2012 Heating Regulation, the government conducted a broad construction stakeholder consultation since September 2008. The final policy was published in October 2010 to give the opportunity to stakeholders to understand the new requirements and potentially train construction workers accordingly.

This policy includes an important methodology change. It replaces the obligation of means by obligation of results, based on three indicators related to energy efficiency of buildings:

- The bioclimatic energy performance;
- The building primary energy use;
- The interior conventional temperature.

These three indicators monitor the building efficiency to limit the primary energy use to an average of maximum 50kWh/m². The policy requirements aim at an optimum between construction cost, energy cost reduction, and comfort improvement. By considering the building as a whole, the policy encourages cooperation between the different construction stakeholders.

The French Construction Federation (*Fédération Française du Bâtiment - FFB*) emphasises the positive impact of the anticipated release of policy requirements on the construction stakeholders. However, it recommends promoting scalable buildings through the coming Heating Regulation in 2020. This would give stakeholders the opportunity to find equilibrium between sustainable innovation used in the construction of new buildings and a cost-efficient building management.

General description

France has a long-standing history of energy policies aiming to foster energy efficiency in buildings. Namely, the Heating Regulation (*Réglementation Thermique*) was first introduced in 1974 to offset the energy price increases by improving the insulation of all new residential buildings. The government adopted a five-year revision process for the implementation of the new regulation until 2005. A turnaround occurred in 2007 with the **Grenelle de l'Environnement**. It was an open multi-party debate gathering representatives of national and local government, as well as non-governmental organisations, with the objective of defining the key points of public policy regarding ecological and sustainable development in France. Stakeholder consultation led the French government to cancel the Heating Regulation supposed to enter

into force in 2010 and slow down the implementation pace from five years to seven.

The Heating Regulation 2012 (*Réglementation Thermique 2012*) is the seventh legal act set out by the French government with respect to the heating regulation and is related to the EU directive on Energy Performance of Buildings and the Energy Efficiency directive¹.

The Grenelle de l'Environnement is the founding act of the RT2012, seeking to bring about an energy transition to zero-energy consumption in buildings by 2020. Since the construction sector is the first energy consumer in France, it made a focus on it through the **Building Plan**², aiming to:

- Develop low energy buildings by 2012 and positive energy buildings by 2020;
- Reduce by 38% the energy use of existing buildings by 2020;
- Renovate social housing to make them more energy-efficient;
- Renovate all public administration buildings to reduce energy use by 40%;
- Support stakeholders in facing challenges in terms of recruitment, training and industrial development.

To design the Heating Regulation 2012, the French government launched a broad stakeholder consultation since September 2008 including:

- 13 task forces gathering the different metiers of the construction sector;
- A scientific committee;
- Consultative conferences gathering national construction associations.

The Heating Regulation 2012 is related to the fourth article of the first Grenelle law. Its main objective is to limit the primary energy use of new buildings to an average of maximum **50kWh/m²**³. The additional objectives of the regulation are⁴:

- To support innovation for all the actors of the broad construction sector;
- To reach the highest energy efficiency standards, regardless of the energy system used;
- To ensure a technical and economical equilibrium with regard to the energy used for heating and hot water production.

The Heating Regulation 2012 includes an important change in the methodology. So far, the regulation was based on obligations of mean. Conversely, the requirements of the new regulation are based on **three result obligations** related to the building energy efficiency. A dedicated indicator monitors each obligation and is compared to a maximum value that should not be exceeded⁵.

The “Bbio” indicator evaluates the **bioclimatic building energy performance**. It represents a major innovation of this regulation. By considering the building quality as a whole, the bioclimatic approach optimises the orientation, the use of the sunlight, the insulation, the inertia and compactness of the building. The “Cep” indicator determines the **building primary energy use** and the “Tic” indicator concerns the **interior conventional temperature**. It also includes the concept of summer comfort⁶.

One of the requirements of the RT 2012 was amended as of January 2015, as a result of the Simplification of the Regulation (*Simplification de la Réglementation*). Namely, the obligation that the total surface of windows should be a sixth of the total living space was derogated (please refer to the dedicated Policy Fact Sheet⁷).

Expected or achieved results

The policy was first applied to all building permits issued as of October 28th 2011 for certain new non-residential buildings (namely offices, educational establishments and kindergartens), as well as residential buildings located in urban renovation areas. Subsequently, it became applicable to all building permits released as of January 1st 2013, for all new residential buildings (individual or terraced houses, collective dwellings, student accommodations), as well as the remaining non-residential buildings (such as hotels, restaurants, commercial and retail spaces, health establishments, sports halls, etc.⁸).⁹Based on the ICC-PRLN study¹⁰ for the calculation of the price index of new residential construction and the cost of new housing, an ex-post estimation of the additional construction costs resulting from compliance with the “low-energy consumption building” label (*bâtiment à basse consommation - BBC*) was proposed. As expected, these costs increase with the increasing stringency of energy requirements. Thus, the cost difference between a building complying with the previously existing RT 2005 and a building in conformity to the more stringent BBC label was estimated at about 14% (for individual houses) and 9% (for collective housing). This estimate also gives an indication of the additional construction costs related to the enforcement of the new RT 2012, since the two labels set similar energy performance requirements, and is slightly higher than the ex-ante estimation made prior to the launch of the RT 2012 (7-10% for individual homes and 4-7% for collective housing). However, the RT 2012 has a broader scale of action, being applicable to most categories of buildings. Therefore, the mass application of the RT 2012 to new constructions should entail a reduction of the additional associated construction costs, through the decreasing energy bills for households¹¹.

Perspectives and lessons learnt

In 2007, the government decided to cancel the 2010 Heating Regulation and postponed the implementation of the following one by two years. The **construction stakeholders** were in favour of this strategy, although it implied more regulatory changes for when the following policy would be implemented. According to the French Construction Federation, the result obligation approach of the RT 2012, regardless of the technology and the evaluation of the building as a whole, boosted the collaboration between all the construction actors. Moreover, sharing the content of the RT 2012 with the construction stakeholders is considered to be a key point to ensure the good implementation of the policy. The FFB emphasises the importance of the learning phase for the construction actors, which is decisive to understand the policy requirements in order to potentially upgrade the workers' skills.

From a **Government perspective**, this process allowed to adjust the policy from a technical point of view, and avoided future problems such as the ones related to the needed up-front investments by collective housing. Thus, the maximum average consumption was increased to 57.5 kWh/m² until January 1st 2018 for collective housing, which will therefore have three additional years to comply with the 50 kWh/m² requirement of the RT 2012¹². This was done to prevent property managers from reverting to traditional heating systems in the attempt to lower the higher maintenance costs associated with the newly installed energy efficient systems.

Indeed, from the **perspective of property owners**, the RT 2012 imposed an added expense, both in terms of the initial energy efficiency investments, and in terms of subsequent high maintenance costs. Moreover, the RT 2012 may have contributed to the decrease in the price of existing dwellings experienced since 2011, since the additional expenses incurred to comply with the policy lowered the values of the dwellings before the renovation works.

A further criticism to the policy comes from the **perspective of providers of heating installations**. According to the Interprofessional Group of Household Equipment Manufacturers (*Groupement Interprofessionnel des Fabricants d'Equipements Ménagers* – GIFAM), while the previous RT (RT 2005) made a distinction between fossil fuel heating systems and electric heating in the calculation of the average energy consumption, the RT 2012 imposes the same requirement (i.e. maximum 50 kWh/m²/year). GIFAM therefore criticised this calculation method, since it favours gas over electrical heating. Indeed, the RT 2012 does not include CO₂ emissions in the calculation of the maximum energy consumption, and cheaper CO₂-generating gas heating is therefore the preferred solution over carbon-free electricity heating, particularly in multi-dwelling buildings¹³. This stance is also shared by 'Equilibre des énergies' (Eden), an association of

stakeholders in the electricity sector, which believes that not taking into account CO₂ emissions hinders technical innovation and goes against one of the objectives of the Grenelle law¹⁴.

The RT 2012 also had an impact from the **perspective of Vocational Education Training (VET) providers**. Indeed, the policy implies the acquisition of new competencies and skills for construction professionals, leading VET institutions to progressively integrate the new installation techniques, energy performance issues, RT 2012 standards and requirements to their curricula, both within the framework of initial and continuous vocational training programmes.

However, according to the National Association for Adult Professional Training (*Association nationale pour la Formation Professionnelle pour Adultes* – AFPA), construction professionals sometimes hesitate to invest time in training¹⁵. There is a disparity of knowledge on energy performance issues and on the requirements of the RT 2012 among professionals in different sectors of activity. Thus, technical professions (e.g. electricians and heating technicians) have a better awareness of such matters, whereas masonry and insulation are lagging behind in the understanding and acquisition of these skills. This disparity is mainly due to the fact that it is technically easier to upgrade the energy performance of installations such as heating or hot water, rather than modify the structural elements of the buildings. The uncertainty around the requirements of the RT 2012 from the service providers also means that final beneficiaries (private households) receive conflicting and inconsistent information, thus slowing down their decision to implement the energy efficiency upgrades. These hesitations may also partially explain the decrease in the number of issued construction permits¹⁶.

Finally, a few recommendations can be made. The indicator monitoring the summer comfort is the same as in the previous policy (RT 2005), and the French Construction Federation therefore recommends an update in order to better assess the thermal inertia. Moreover, it recommends focusing on scalable buildings to give the opportunity to construction and property management stakeholders to combine innovative systems and cost-effective management.

Comparison with other analytical sources

This Fact Sheet concurs with the following sources:

- Country Fact Sheet France¹⁷ in the sections:
 - Section 3 (Access to housing);
 - Section 7 (TO 3 – resource efficiency/sustainable construction);
 - Section 8 (Outlook).
- Policy Fact Sheet – Simplification of the Regulation (*Simplification de la Réglementation*), general description;
- Country-specific recommendation for France¹⁸.

- Section 2.2 Public and Private indebtedness, Household financial situation.

Endnotes

- ¹ European Commission, Energy Efficiency – Buildings. <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>
- ² Ministère de l'Environnement, de l'Énergie et de la Mer, Le Plan Bâtiment du Grenelle Environnement. February 2009. <http://www.developpement-durable.gouv.fr/Le-Plan-Batiment-du-Grenelle.html>
- ³ Ministère de l'Environnement, de l'Énergie et de la Mer, Exigences réglementaires pour la construction des bâtiments neufs. November 2011. <http://www.developpement-durable.gouv.fr/Chapitre-I-La-reglementation.html>
- ⁴ Ibidem.
- ⁵ Ministère de l'Environnement, de l'Énergie et de la Mer, Réglementation thermique 2012 : un saut énergétique pour les bâtiments neufs. April 2011. http://www.developpement-durable.gouv.fr/IMG/pdf/DGALN_plaquetteRT2012_avril2011.pdf
- ⁶ Ibidem.
- ⁷ The Policy Fact Sheet on the Simplification of the Regulation (Simplification de la réglementation) is available here: http://ec.europa.eu/growth/sectors/construction/observatory/index_en.htm
- ⁸ The full list of buildings on which the RT 2012 is applicable (as of January 2013) is as follows: Dwellings; offices; early childhood care establishments; primary and secondary school buildings; university buildings; hotels; restaurants; shops; sports facilities, including changing rooms; health facilities; residential facilities for elderly; courts; industrial and commercial buildings. However, it does not apply to the following: temporary buildings with a planned time of use of less than two years; buildings and parts of buildings with normal temperature less than or equal to 12 °C; agricultural buildings; buildings or parts of buildings intended to remain open to the outside, buildings or parts of buildings which, due to specific constraints linked to their use, must guarantee specific temperature, humidity or air quality, and thereby requiring special rules; buildings or parts of buildings heated or cooled for use dedicated to an industrial process; buildings in the overseas territories. <http://www.planbatimentdurable.fr/comprendre-la-rt-2012-r174.html>
- ⁹ Ibidem.
- ¹⁰ Trimestral survey under the responsibility of the Ministry of Environment, Energy and Maritime Affairs (MEEM), General Commission for Sustainable Development (CGDD), Observation and Statistics Department (SOeS). <http://www.statistiques.developpement-durable.gouv.fr/sources-methodes/enquete-nomenclature/1542/138/enquete-lindice-cout-construction-prix-revient-logements.html>
- ¹¹ Commissariat Général au Développement Durable (CGDD), Un habitat plus compact et moins énergivore: pour quels coûts de construction? December 2015. <http://www.developpement-durable.gouv.fr/IMG/pdf/ED135.pdf>
- ¹² Actu-environnement, RT 2012 : Manuel Valls annonce un report de trois ans pour les logements collectifs. November 2014. <http://www.actu-environnement.com/ae/news/RT-2012-logements-collectifs-report-2018-Manuel-Valls-23277.php4>
- ¹³ Quelle Energie, Déjà la fin de la RT 2012 ?. May 2013. <http://www.quelleenergie.fr/pro/actualites/developpement-durable/bilan-rt2012-5305/>
- ¹⁴ Actu-environnement, RT 2012: Equilibre des énergies ne désarme pas contre la méthode de calcul. March 2014. <http://www.actu-environnement.com/ae/news/rt2012-equilibre-energies-eden-methode-calcul-21100.php4>
- ¹⁵ Quelle Energie, Se former à la Réglementation Thermique 2012 avec l'AFPA. May 2013. <http://www.quelleenergie.fr/pro/actualites/vie-entreprise/former-reglementation-thermique-afpa-5326/>
- ¹⁶ Quelle Energie, Déjà la fin de la RT 2012 ?. May 2013. <http://www.quelleenergie.fr/pro/actualites/developpement-durable/bilan-rt2012-5305/>
- ¹⁷ European Construction Sector Observatory, Country Fact Sheet France, February 2016. http://ec.europa.eu/growth/sectors/construction/observatory/index_en.htm
- ¹⁸ Commission Staff Working Document, Country Profile France 2016. http://ec.europa.eu/europe2020/pdf/csr2016/cr2016_france_en.pdf