European Construction Sector Observatory

Policy measure fact sheet

Belgium

Enegery Renovation Programme 2020

Thematic Objectives 1 & 3

February 2018

In a nutshell

Implementing body:	Flemish Energy Agency (Vlaams Energieagentschap – VEA)
Key features & objectives:	A support programme providing a package of measures to ensure all Flemish homes (houses and apartments) are energy efficient by 2020. Primary measures support the installation of energy efficient roof insulation, double glazing and central heating systems in existing housing.
Implementation date:	2007 – 2020
Targeted beneficiaries:	Housing cooperatives, homeowner associations, natural and legal persons (homeowners), households, and public authorities (e.g. cities or municipalities) that own residential buildings.
Targeted sub-sectors:	Residential, energy efficiency
Budget (EUR):	EUR 136 million (2007-2011) EUR 105 million (2011-2014) EUR 205 million (2015-2020)

There are just over three million homes (houses and apartments) in Flanders, most of which are in need of some level of renovation. Roughly half are over 40 years old and the average annual renovation rate is just 0.7%. It is essential to increase the renovation rate, particularly for older residential buildings, as many are far from being energy efficient. In fact, only about 200,000 Flemish homes are energy efficient. Realistically, the renovation rate will need to increase by a factor of 3 if Flanders is to achieve its energy saving goals.

Domestic heating and hot water systems consume approximately 17% of the total electricity and fuel consumption in Flanders, excluding consumption by the transformation sector

> The Flemish Government has identified inefficient heating and inadequate insulation as the main challenges to energy efficiency in Flemish homes.

(13% including the transformation sector). This consumption accounts for approximately 16.2% of Flanders' total CO_2 emissions. As shown in Table 1, many Flemish homes (houses and apartments) have outdated heating systems. If they can be replaced with more energy efficient systems, there is the potential to achieve important energy savings in the residential sector.

Table 1: % of Flemish homes by type of heating system used

	Natural Gas	Fuel Oil
Traditional boiler	49%	72%
Low temperature or high efficiency boiler	35%	21%
Condensing boiler	35%	3%
Other (mainly heaters)	10%	4%

Source: Energy Renovation Programme 2020 in Numbers

Another challenge highlighted by the Flemish Government in 2011 is that almost one third of Flemish homes (houses and apartments) – 80 million m² – are poorly insulated and are in need of energy saving improvements. As shown in Table 2, many Flemish homes lack adequate roof, floor and exterior wall insulation, and many only have single glazed windows installed.

Table 2: % of Flemish homes without adequate insulation (1998-2008)

	Natural Gas	Fuel Oil
Single glazing	49%	72%
No roof insulation	35%	21%
No floor insulation	35%	3%
No exterior wall insulation	10%	4%

Source: Flemish Ministry of Energy, Housing, Cities & Social Economy, 2011

The Flemish government has introduced a number of policy measures to improve energy efficiency in buildings in recent years. One example is the Building Line Decree which was introduced on 30 April 2009. It introduced a requirement for existing buildings to be retrofitted with external wall insulation of up to 14cm in thickness. The need to ensure that all residential buildings adequately insulated (especially exterior walls) was also an important topic of debate during discussions on the policy document 2009-2014.

To confront this energy efficiency challenge, the Flemish Government set itself the ambitious goal of ensuring that every Flemish home is energy efficient by 2020. The Energy Renovation Programme 2020 (ERP2020) was launched to achieve that goal.

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The ERP2020 provides financial incentives and support services to encourage and assist households and social housing providers to carry out energy saving renovations on their properties. The scheme is proving to be quite successful, as it is largely meeting its ambitious objectives. The latest data on results indicates strong performance (to date) against objectives in two of four categories – exterior wall insulation (129% achievement) and window replacements (100% achievement) – and good performance in another category – roof insulation (75% achievement). The only category in which the ERP2020 is not meeting its main objectives is in the installation of condensing boilers to replace traditional solid fuel boilers (25% achievement).

1
General description

The Energy Renovation Programme 2020 (ERP2020) aims to make all Flemish homes energy efficient by 2020.

In practice, the ERP2020 has three primary objectives for the region of Flanders:
• Adequate insulation of all existing residential building roofs;
• Replacement of all single-glazed windows in existing residential buildings with energy efficient double-glazed windows (as a minimum);
• Replacement of all outdated heating systems with energy efficient heating systems.

In addition, the ERP2020 has four secondary energy saving objectives for existing homes:
• Installation of exterior wall insulation;
• Installation of cavity wall and floor insulation;
• Replacement of electric heating systems;
• Discourage the installation/use of air conditioning and electrical resistance heating systems.

In quantitative terms, the ERP2020 aims to achieve the following annual renovation targets with the support of grants paid to homeowners by network operators linked to ERP2020:
• 60,000 roof insulations per year;
• 40,000 houses per year to have single glazing replaced by at least double glazing;
• 80,000 solid fuel boilers per year to be replaced with condensing boilers, with priority given to boilers over 20 years old;
• 10,000 wall insulations per year.

To achieve its objectives, the ERP2020 is delivering a range of measures to support all parties interested in undertaking energy saving renovation work. The measures include:
• Premiums and tax relief for energy saving investments;
• Provision of accurate technical and economic information;
• Online renovation cost and savings calculation tool;
• Agreements with the construction sector;
• Assistance provided by energy saving experts;
• Signed covenants with key industry stakeholders, such as:
• • Energy suppliers, to provide expert energy advice and guidance to interested parties, including their own extensive customer base;
• • Construction industry representation and membership organisations, such as the Flemish Construction Confederation and the Glass Industry Federation, providing a commitment to ensure close supervision of their members, especially contractors and installers, to actively promote energy saving measures to their customers.

The ERP2020 Action Plan Monitoring Report 2011 provides some rough estimates of the average cost of the energy saving measures supported by the ERP2020, as well as an estimate of the typical premium and/or tax relief available to applicants, and the expected annual savings on energy bills (EUR value) and return on investment that can be achieved. These cost-benefit estimates are presented in Table 3 and are considered likely to deliver the greatest impact on energy consumption in existing Flemish homes.

Table 3: Cost-benefit estimates for ERP2020 measures

Installation of roof insulation (EUR) (by a contractor)	
Average cost:	EUR 2,500
Tax relief:	EUR 1,000
Premiums from network operators:	EUR 400 (+ 20% for protected customers); EUR 500 (Flemish roof insulation premium)
Net cost:	EUR 1,100
Estimated annual savings:	EUR 750
Payback period (years):	1.5
Installation of roof insulation (EUR) (DIY – Do It Yourself)	
Average cost:	EUR 1,200
Tax relief:	n/a
Premiums from network operators:	EUR 200 (+ 20% for protected customers); EUR 500 (Flemish roof insulation premium)
Net cost:	EUR 500
Estimated annual savings:	EUR 750
Payback period (years):	<1
Replacing single glazing with [at least] double glazing	
Average cost:	EUR 7,200n/a
Tax relief:	EUR 2,880
Premiums from network operators:	EUR 160 (+ 20% for protected customers) um)
Net cost:	EUR 4,160
Estimated annual savings:	EUR 400
Payback period (years):	10.4
Replacing an old boiler (natural gas)	
Average cost:	EUR 4,500
Tax relief:	EUR 1,800
Premiums from network operators:	EUR 125 (+ 20% for protected customers)
Net cost:	EUR 2,575
Estimated annual savings:	EUR 460
Payback period (years):	5.6
Replacing an old boiler (fuel oil)	
Average cost:	EUR 7,000
Tax relief:	EUR 2,800
Net cost:	EUR 4,200
Estimated annual savings:	EUR 420
Payback period (years):	10

Source: ERP2020 Action Plan Monitoring Report 2011

By supporting the installation of roof insulation, high efficiency window glazing and high efficiency heating systems (boilers), the ERP aims to deliver some important benefits to residents and the residential building sector:

- A 30% reduction in the energy consumed by Flemish homes (central heating and hot water) by 2020, compared to 2004. Total energy consumption in 2004 amounted to 204,352 TJ. By 2020, the goal is to reduce that figure to 141,747 TJ;
- Increased residential property prices/value;
- Better energy performance certificate to improve sale or rental prices/value;
- Premiums and tax relief on energy saving investments.

The ERP 2020 is open to applications from homeowners and all owners of residential buildings (e.g. apartment buildings), regardless of the type of building, construction or technology used:

- Housing cooperatives;
- Homeowner associations;
- Natural and legal persons (e.g. individual homeowners);
- Public authorities (e.g. cities or municipalities) that own residential buildings.

2
Achieved or expected results

The first large-scale ERP2020 communication campaign was launched in February 2009 with a focus on roof insulation. The campaign was titled 'Is your home leaking money?' and it ran in a broad range of public media (newspapers, online and printed media, TV and radio). Other campaigns ran in October 2009 and 2010, both of which also focused on roof insulation, as this was deemed to be the main priority. The 2010 campaign was specifically focused on disadvantaged groups (e.g. economically or otherwise), as they were identified as being less likely than other groups to carry out roof insulations.

Table 4 presents the results of the ERP2020, according to the latest published data by the Flemish Energy Agency (VEA). The most recent data available is up to 2016 and it shows that roof insulation premiums proved to be the most popular with Flemish homeowners (37%), in terms of the number awarded and share (%) of the total, followed by premiums for window replacements (33%), condensing boilers (19%) and wall insulation (11%).

Nearly half a million roof insulation premiums were awarded by ERP2020 network operators between 2006 and 2016. Roof insulation premiums jumped very significantly from under 10,000 premiums awarded in the first two years of the ERP2020 (2006-07) to over 50,000 premiums awarded in 2009. Since 2009, the number of premiums awarded has remained at over 50,000 per year (with one exception), peaking in 2011 (just under 70,000) and 2012 (just under 72,000). 2014 was the only year since 2009 to record a total under 50,000. Over an eleven-year period, the annual average number of roof insulation premiums awarded was 44,251, which is an achievement rate of about 74% compared to the annual target of 60,000 set by the ERP2020.

Nearly half a million window replacement premiums were also awarded by ERP2020 network operators between 2006 and 2016. The number of window replacement premiums awarded increased significantly year on year from 10,000 in 2006 to over 50,000 in 2009. From 2009 to 2012, the number of premiums awarded remained at over 50,000 per year, peaking in 2011 (just under 59,000). Since 2013 however, the number of premiums awarded for window replacements have fallen steadily year on year to 29,000 in 2016. Over an eleven-year period, the annual average number of window replacement premiums awarded was 40,072, which is an achievement rate of just over 100% compared to the annual target of 40,000 set by the ERP2020. The number of condensing boiler premiums awarded increased significantly year on year from 11,000 in 2006 to over 40,000 in 2009 and over 50,000 in 2011. However, the number of premiums awarded per year for condensing boilers decreased significantly to just over 38,000 in 2012, followed by a very sharp fall to just over 1,000 in 2013. The figures recorded between 2014 and 2016 are under 1,000 per year. Over an eleven-year period, the annual average number of condensing boiler premiums awarded was 23,217, which is an achievement rate of about 25% compared to the annual target of 80,000 set by the ERP2020.

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Table 4: Number of premiums awarded to homeowners by network operators linked to ERP2020

Year	Roof insulation	Window replacement	Condensing boiler	Wall insulation	Totals
2006	4,661	10,178	11,033	626	**26,498**
2007	8,861	24,835	21,227	1,856	**56,779**
2008	19,523	40,671	34,571	4,064	**98,829**
2009	52,451	54,632	44,023	7,171	**158,277**
2010	58,662	56,058	47,677	9,160	**171,557**
2011	69,958	58,709	54,440	13,240	**196,347**
2012	71,644	55,047	38,339	14,492	**179,522**
2013	53,298	48,639	1,388	21,215	**124,540**
2014	41,117	* 29,508	865	** 19,990	**91,480**
2015	54,015	* 33,202	959	** 26,036	**114,212**
* 2016	52,575	29,318	867	23,997	**106,757**
Totals	**486,765**	**440,797**	**255,389**	**141,847**	**1,324,798**

* Provisional figures for 2016
* including window replacement premiums that are part of combined premiums
** including wall insulation premiums that are part of combined premiums

The number of wall insulation premiums awarded increased incrementally year on year from under 1,000 in 2006 to a peak of over 26,000 in 2015, with some moderate dips in annual performance in 2014 and 2016. Over an eleven-year period, the annual average number of wall insulation premiums awarded was 12,895, which is an achievement rate of 129% compared to the annual target of 10,000 set by the ERP2020.
Horizontal bars. [number of wallinsulation premiums awarded by ERP2020] 2006: less than 1,000. 2015: over 26,000:

VEA data on the results of the ERP2020 up to 2016 provides an indication of the effectiveness of the communications campaigns that were run in the early years of the scheme. They placed particular emphasis on roof insulations because they can deliver very significant energy savings. One can conclude that the campaigns were important contributors to the overall uptake of roof insulation work. In contrast, the weaker results for condensing boiler premiums (25% of total annual target) indicate that homeowners gave this measure the lowest priority. In addition to the overall results of the ERP2020 published by the VEA, results are also periodically compiled and assessed by the Flemish Social Housing Society (Vlaamse Maatschappij voor Sociaal Wonen – VMSW). On behalf of the Flemish Government, the VMSW conducts a biennial survey of social housing companies (SHMs) to evaluate the results of the ERP2020 in terms of its impact on the social housing sector.

According to the data collected by the latest VMSW surveys, the percentage of single-family social rented houses without roof insulation fell from 22% to 16% between 2014 and 2016. The total number of social rented houses without roof insulation was reduced by 4,848 units (down from 16,966 to 12,118 houses). The number of single family social rented houses with single glazing fell from 17% to 13%, with 2,914 fewer units (down from 12,895 to 9,981 houses). The number of single family social rented houses with an outdated (inefficient) heating system decreased from 17% to 15% (down from 12,925 to 11,248 houses). When compared to the data compiled by the first VMSW survey in 2010, the ERP2020 had achieved:

• 57% reduction in the number of single-family social rented houses that lacked roof insulation, down from 28,199 in 2010 to 12,118 in 2016;

• 51% reduction in the number of single-family social rented houses with single glazed windows, down from 20,231 in 2010 to 9,981 in 2016;

• 28% reduction in the number of single-family social rented houses with an outdated (inefficient) heating system, down from 15,722 in 2010 to 11,248 in 2016.

The VMSW survey data also shows that the percentage of social rented apartments without roof insulation fell from 11% to 9% between 2014 and 2016. The total number of social rented apartments without roof insulation was reduced by 1,467 units (down from 8,203 to 6,736 apartments). The number of social rented apartments with single glazing fell from 12% to 9%, with 1,742 fewer units (down from 8,934 to 7,192 apartments). The number of social rented apartments with an outdated (inefficient) heating system decreased from 15% to 13% (down from 8,021 to 6,906 apartments). When compared to the data compiled by the first VMSW survey in 2010, the ERP2020 had achieved:

• 38% reduction in the number of social rented apartments that lacked roof insulation, down from 10,886 in 2010 to 6,736 in 2016;

• 39% reduction in the number of social rented apartments with single glazed windows, down from 11,834 in 2010 to 7,192 in 2016;

• 31% reduction in the number of social rented apartments with an outdated (inefficient) heating system, down from 9,991 in 2010 to 6,906 in 2016.

Given that the ERP2020 aims to make all Flemish homes energy efficient by 2020, the VMSW surveys indicate that the ERP2020 has managed to reduce the overall number of energy inefficient social rented homes (houses and apartments) by nearly 50% between 2010 and 2016. The overall number of social rented homes that are still in need of one or more of the priority renovations that are supported by the ERP2020 fell from almost half of the social rental housing portfolio (48%) in 2010 to just over a quarter (27%) in 2016.

Although the progress made by the social housing sector has been good, it is clear that the renovation rate will have to increase if the remaining 27% of the social housing sector is to meet the target of 0% energy inefficient homes by 2020. One of the key challenges will be to address the different levels of progress being made at regional level, as shown by the VMSW surveys. In the Antwerp area, for example, it is estimated that 15.7% of social rented homes currently still have single (or mixed) glazing, compared to just 5% in Flemish Brabant. In East Flanders, 19.7% of social rented homes lack adequate roof insulation, compared to just 2% in Limburg. In West Flanders, 21.4% still use an outdated (inefficient) heating system, compared to just 6.5% in Limburg.

Interesting data is also provided by the Rational Energy Use (Rationeel EnergieGebruik – REG) Survey. The latest survey (June 2017) of 1020 Flemish households showed that 93% considered energy saving to be either important or very important. However, the survey also shows that only 60% of Flemish households consider themselves to be energy efficient, and the other 40% are either partially efficient or not at all efficient. Recognition of the importance of energy saving does not therefore necessarily translate into energy efficient behaviour or investment.

3
Perspectives and lessons learned

The general consensus of opinion is that the ERP2020 has been a successful scheme so far and is having a positive impact on building owners and construction services.

From a government perspective, a Member of the CD&V (Flemish Parliament) says that ERP2020 has achieved significant progress to date. The Flemish government will continue to work to meet the objectives of the ERP2020. The government has already prepared supporting actions to continue ERP work, especially in the most needed areas (Antwerp, West Flanders and East Flanders). For instance, to make more funding available to help building owners in these areas to install roof insulation, high efficiency window glazing and high efficiency heating systems.

In terms of areas that need improvements, the Member of Parliament says that the government did not do enough to make social housing companies fully aware of the ERP2020. For example, surveys have shown that only 20% of social housing companies are fully aware about the objectives and purpose of the ERP2020. That means that the vast majority still need to be reached and engaged. It is therefore important for the government to agree sufficient financial support to target all social housing companies and increase awareness of the scheme.
At first glance, this view seems to contradict the more positive results reported by the Flemish Social Housing Society (Vlaamse Maatschappij voor Sociaal Wonen – VMSW) in their biennial survey, and which are presented and analysed in the previous section of this factsheet. However, the survey results actually support this conclusion, because they report that there is an uneven level of uptake of ERP2020 support by social housing companies in Flanders.

There has been high uptake by about 20% of social housing companies which has resulted in those companies being close to achieving the ERP2020 target of 0% energy inefficient homes by 2020, in terms of the social rented homes that each of these companies own. Another 60% still have a lot of work to do if they are to achieve the 0% target by 2020. A sizeable percentage of their social housing stock remains energy inefficient and they will need to significantly increase both their uptake of ERP2020 support and their renovation rate. The remaining 20% are significantly behind the rest in terms of the percentage of their social housing stock that are energy inefficient, their level of uptake of ERP2020 support and their renovation rate. The social housing companies that make up this final 20% are unlikely to achieve the 0% target by 2020.

According to a Member of Parliament, the ERP2020 is having a positive impact on the construction sector, and particularly on specialised services providers. However, more needs to be done to involve greater numbers of small construction companies in the scheme, in order to maximise the scheme's benefits to the construction sector, in terms of increased activity and new business opportunities.

From a homeowner perspective, a Flemish homeowner that has benefitted from the ERP 2020 says that the scheme is helping families to improve their living conditions and increase energy efficiency. It is also helping them to lower their energy bills. However, the homeowner also argues that many homeowners that are not particularly motivated to renovate their homes because, under the current terms of the scheme, homeowners are required to cover most of the costs incurred. He also says that although an owner's property may increase in value following the completion of renovation work, the increase is only moderate and not significant to persuade many homeowners to invest in renovation work.

Endnotes

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