ESG revolution: both a technical challenge and an opportunity for European banks

Part II: mortgages, a new tool for sustainable development

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Summary:

In Europe mortgages represented nearly €9,000 billion outstanding at the end of 2020. This activity is set to undergo an "ESG revolution" just like the other banking sectors. With greater availability of lending for the current or future most virtuous properties, potentially at a more advantageous cost for "green" projects, ***in a few years mortgage lending could become a tool reinforcing the energy transition****.*

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The stakes are high: housing remains one of the major sources of greenhouse gas emissions in Europe. But we have to be able to properly assess a building's carbon footprint. It was not easy to find and produce the comparable data in this report based on the available sources. We note that European commitments in terms of the energy performance of buildings look difficult to achieve without any additional tax incentives, in our view.

Real estate, a major greenhouse gas emitter

Providing an accurate assessment of the carbon impact of buildings in Europe is no easy task. However, estimates all converge to show that in the EU, **buildings account for between 30% and 43% of greenhouse gas emissions**. These figures include housing, office and retail consumption.

Housing

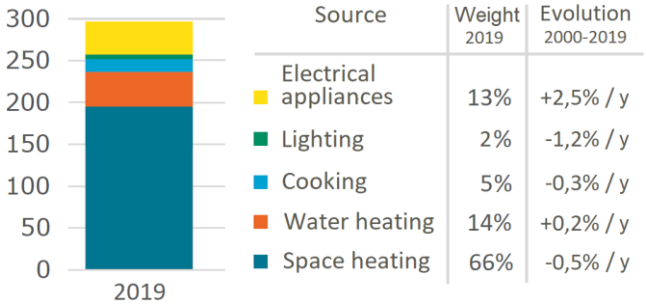
2/3 of building consumption

Offices & Retail space

1/3 of building consumption

Source: Odyssee.

Heating in winter, air conditioning in the summer, cooking, lighting, charging of electrical appliances and production of hot water: these are the main sources of energy consumption associated with housing. In Northern and Eastern Europe in particular, the harsh winter implies a much greater use of heating

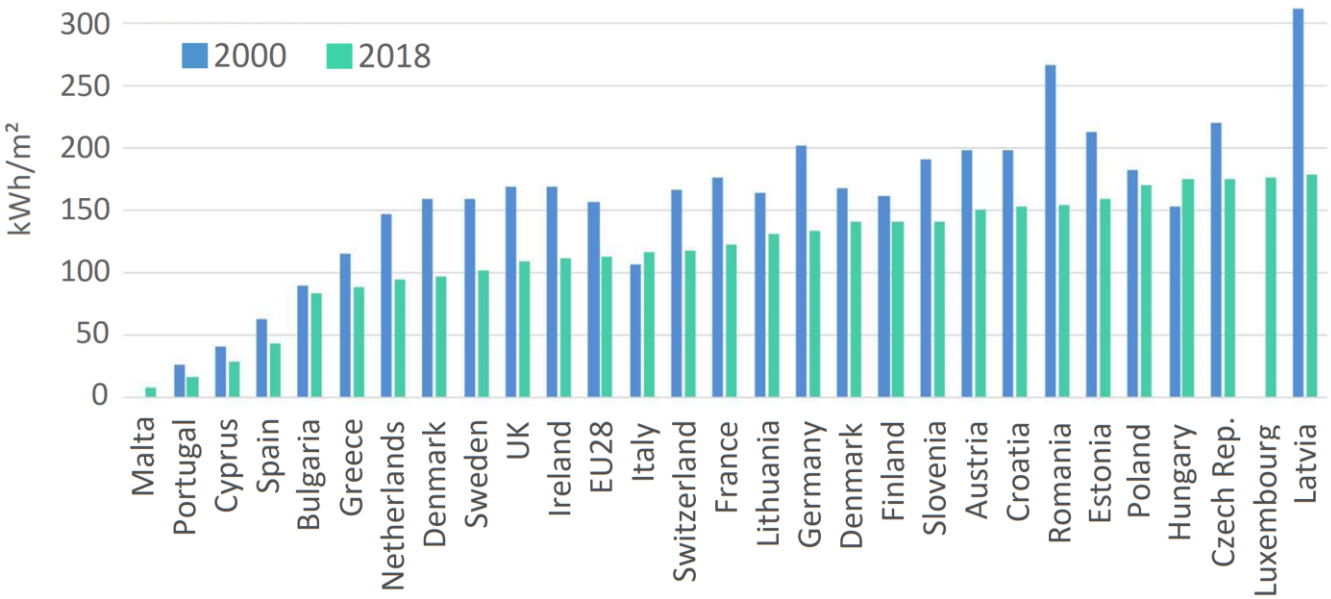


Source	Weight 2019	Evolution 2000-2019
Electrical appliances	13%	+2,5% / y
Lighting	2%	-1,2% / y
Cooking	5%	-0,3% / y
Water heating	14%	+0,2% / y
Space heating	66%	-0,5% / y

Breakdown of the energy consumption of housing (EU), in megatonnes of oil equivalent (Mtep).
Source: Odyssee.

than in Southern Europe. This is therefore the main source of CO_2 emissions for homes. This item recorded a drop of 0.5%/year between 2000 and 2018, but the weight of charging electronic devices increased by +2.5%/year and that of hot water by +0.2%/year over the same period.

We note that for several decades now a reduction in this source of consumption has been sought for both economic and ecological reasons. **Between 2000 and 2018, the European Union was able to reduce energy consumption per square metre related to the heating of its homes by almost a quarter.**



Change in the energy consumption of (EU) housing in kWh/m²/year, solely for heating purposes (the data does not include the other energy consumption items of buildings).
Source: Odyssee.

The difficult exercise of energy assessment

The challenge is to know how to accurately measure the carbon footprint of a real estate asset. In the European Union, the "Energy Performance Certificate" (EPC) has become widespread, and is mandatory when selling a real estate asset, with significant legal consequences.

EPCs are established by an approved professional, using a theoretical calculation based on the building's technical characteristics, and no longer on the occupants' energy bills. Energy performance ratings range from A (best) to G (worst).

The aggregate data in the EU, obtained on transactions carried out in recent years, give an approximate picture of the state of the building stock as a whole. However, cross-country comparisons are difficult because national valuation standards vary and these statistics can be distorted by an over-representation of recently built assets.

However, we note the low proportion of properties in the best categories (A/B).

More generally, there is a question of the quality and relevance of the EPCs. Depending on the assessment methods and the people doing the assessment, the ratings assigned to buildings can vary significantly. Similarly, depending on the lifestyle of its occupants, the actual consumption of a home can fluctuate significantly. In Germany, housing consumption is estimated at 170 kWh/m²/year according to the Wirksam Sanieren site, but the energy assessments attribute a theoretical average consumption of 250 kWh/m²/year.

Lastly, the assessments have a flaw: their sometimes high cost can constitute a real obstacle to getting all households to have their property assessed and thus to obtaining reliable data for the entire housing stock.

Distribution of EPC ratings by country, based on samples of recent transactions.
Source: X-Tendo, March 2020.

Energy consumption

Rating	kWh/m²/y	kg CO_2/m²/y
A	⩽ 70	⩽ 6
B	71 - 110	7 - 11
C	111 - 180	12 - 30
D	181 - 250	31 - 50
E	251 - 330	51 - 70
F	331 - 420	71 - 100
G	⩾ 421	⩾ 101

A major challenge: transforming the building stock

Regardless of the quality of the data available, one thing is certain: there is still a long way to go to reduce building consumption. **According to the European Commission, 75% of the European building stock was not energy-efficient in 2020, mainly due to its age and insufficient insulation.**

Construction standards have been raised considerably in recent decades to develop a more efficient European building stock. However, improving performance means not only the construction of new buildings with lower energy consumption, but also renovation of existing buildings.

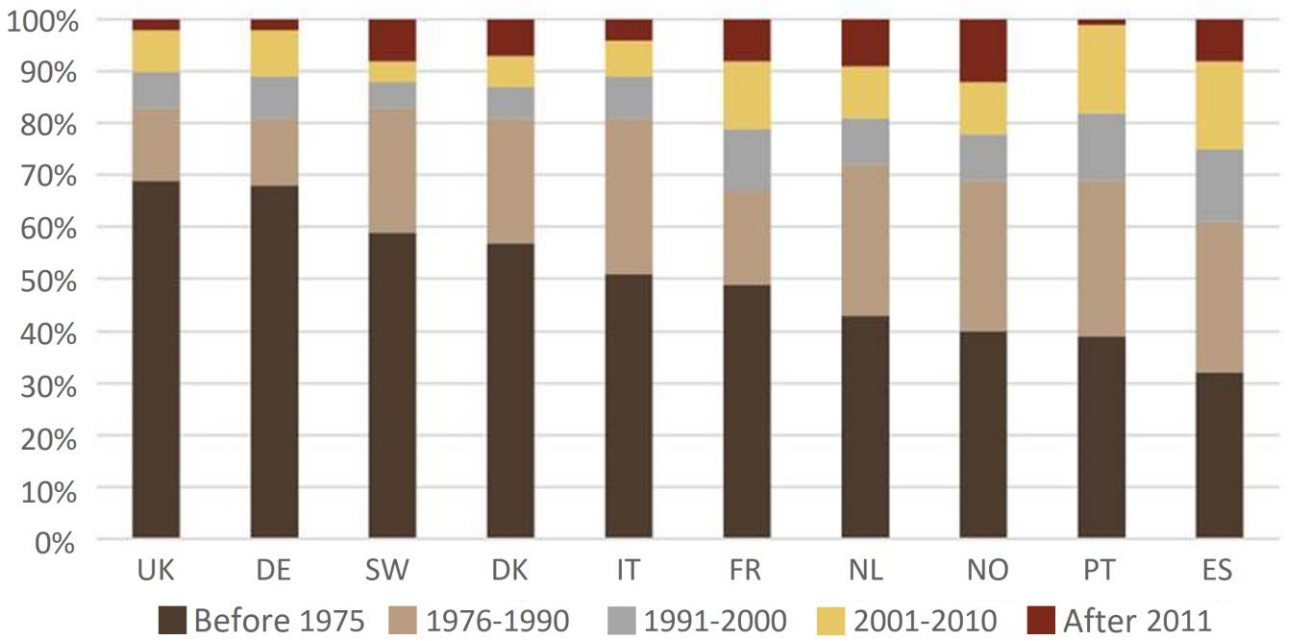
European countries have been involved in the issue for a long time, also under the impetus of the European Commission. **In 2012, the European Energy Efficiency Directive (EED) set an ambitious renovation objective at the pace of 3% of housing per year**. However, no official statistics have been published since then to reflect the actual rate achieved. Independent estimates suggest a real rate of less than 1% per year. Europe is therefore struggling to renovate its housing stock to meet its targets. Furthermore, a quantitative measurement of the energy efficiency of renovations is generally not done at the their completion.

244 million homes in the European Union

Renovation target:	Actually achieved:
3% per year	**<1%** per year

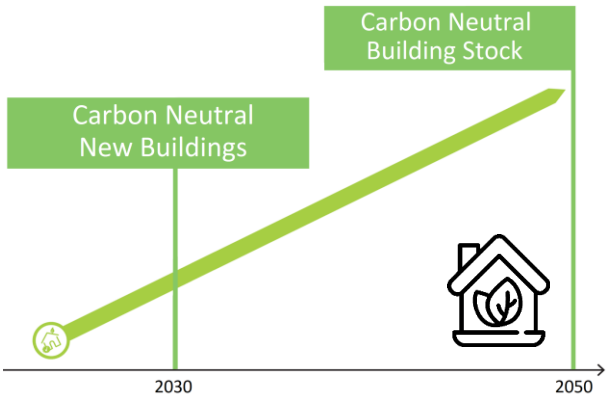
No quantitative measurement of post-work improvement

Source: European Commission.



Construction dates of the building stock by country. The average age of the building stock suggests the need for major renovations to achieve better energy performance.
Source: European Commission, national data.

Despite these difficulties, the EU set itself new even more ambitious targets in 2021. **Thus, as of 2030, all new buildings built will have to undergo a neutral carbon assessment**. Even more complex: **by 2050, the entire building stock must have achieved carbon neutrality**, either through the renovation of old buildings or by offsetting their greenhouse gas emissions. This implies a 32.5% reduction in CO_2 emissions by 2030 and an 80%-95% reduction by 2050 (compared to 2012).



However, the work necessary to ensure that all assets achieve category C has a significant cost, estimated by Nationwide at £11,650 per household (approximately €15,000). According to other sources, the costs of renovation would be higher: in Spain, Caja Rural de Navarra estimates this budget at €15,000-20,000 for an apartment and €30,000-40,000 for a single house. In France, according to the Sichel report, improving a single dwelling from category F/G to A/B would cost an average of €46,000.

Above all, these commitments imply a particularly rapid pace of implementation. Nationwide estimates that more than 20,000 European homes would have to be renovated every day until 2050 to achieve these goals. In the United Kingdom alone, the pace of renovation would have to be 2,900 homes per day, that is two homes per minute, to achieve a total "decarbonisation" within 30 years.

D	Average EPC rating of the building stock.
62%	Proportion of housing rated D, E, F or G.
W	EPC rating that all buildings will have to reach by 2035 (target).

Source: Nationwide Building Society (data for England and Wales, 2021), UK Clean Growth Strategy (2017).

A	Target rating to achieve carbon neutrality by 2050 (target: 40 kWh/m²/year)

Source: European Green Deal (2021).

D	Average rating of the building stock, 170 kWh/m²

Source: Energy efficient Mortgages Action Plan (EeMAP) Initiative.

E	Average rating of the building stock

Source: Certicalia.

D-E	Average rating of the building stock, between 170 and 250 kWh/m²)

Source: Wirksam Sanieren, EeMAP Initiative.

D-E	From 2030, F-G rated assets (>330 kWh/m²) will have to be renovated to be sold.
1/min	Pace required to reach 500,000 renovations/year.
€46,000	Estimated renovation cost for a house to move from F/G to A/B.

Source: Loi de transition énergétique (2015), Plan de rénovation énergétique des bâtiments (2018), Rapport Sichel (2021).

Multiple consequences for home-owners and property prices

For homeowners and landlords

These objectives will have important implications for the real estate market. **However, the energy performance consideration is not currently a priority for buyers when buying a property.** Study data shows that priorities are focused on the price and location of the property. Energy performance, although at the core of public policy, is the last priority for households.

Price	**65%**	**53%**	**71%**
Location	**62%**	**42%**	**62%**
Surface area	42%	--	35%
Energy performance	19%	37%	24%

Key factors taken into account by buyers when acquiring real estate.
Source: EeMAP, E.ON, February 2018.

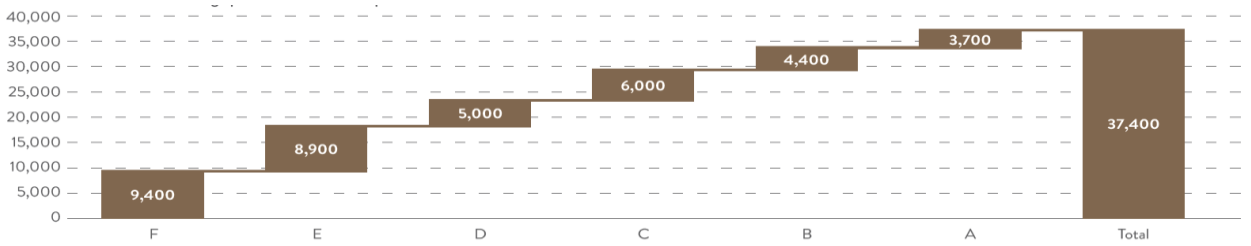
However, the energy performance issue will soon have very concrete consequences for households, particularly for homeowners/landlords. Most European countries are planning, or already apply, a ban on renting the lowest rated assets. As of 2028, the United Kingdom plans to prohibit the rental of properties with a rating below C. **Under the Climate Act, France will prohibit the rental of properties rated G (600,000 housing units) from 1 January 2025, then exclude assets rated F (horizon 2028) and E (horizon 2034).** Similarly, as of 25 August 2022, rents for properties classified F and G may no longer be raised, including in the event of a change of tenant.

For real estate prices

As a result of the measures mentioned above, it would make sense in the coming years to see a rise in the price of the best performing assets, while **the lowest rated ones could see their value fall or stagnate**.

However, if buyers still focus on selling prices, many households would first be able to buy low-performing, but even more affordable assets. Conversely, for tenants, the situation is set to lead to higher rents due to the fact that a large number of homes will be excluded from the market and that only recent or renovated properties will be able to be offered to them.

The situation would nevertheless create an incentive for homeowners to renovate, either to avoid a devaluation of their property, or to increase its market value. However, it should be noted that these value gains are stronger for a low-performance asset moving up from category G to C than for a property already rated C, and moving to category A or B (marginally decreasing gain). As the cost of the works to obtain the best categories would, inversely, become higher and higher, it is unlikely that individuals will seek to renovate their property up to categories A and B.



Increase in the value of residential real estate when renovations are made to achieve a higher EPC rating. The amounts are calculated in relation to an asset initially rated G.
Source: Copenhagen Economics.

Multiple consequences for banks

For banking institutions, the theme will also become key to the granting of mortgage loans.

In the next few years, banks are likely to see their regulatory capital requirements vary depending on their proportion of "green", "brown" or "neutral" loans, as well as their proportion of loans subject to transition risks (see Part I of our analysis). **The entry into force of the EU Green Taxonomy implies that a property built before 31 December 2020 will only be able to be included in the calculation of the banks' future Green Asset Ratio if the property has an EPC in category A, or is among the 15% best performing assets at national or regional level.**

This classification work is a wager for the banking sector, which faces three major challenges to succeed:

A comprehensive challenge

EPCs are issued when a property is sold. However, only 2%-3% of real estate assets are subject to a transaction each year. Gaining knowledge of the performance of the building stock as a whole is thus a very slow process. Over the next 10 years, only 20% to 30% of the fleet is likely to have been assessed or reassessed.

A statistical challenge

Despite the lack of information about the performance of the building stock as a whole, banks will need to provide an assessment of their existing loan portfolio to identify their proportion of "green" loans. They will therefore have to make statistical estimates on the basis of factors such as the location of the property, their technical characteristics, or equivalence compared to other assets that have recently received an EPC. This work is likely to be huge. For example, in Spain, Caja Rural de Navarra reported that only 15% of its outstanding mortgages have an EPC, which implies that 85% of the loans will therefore have to be reassessed on a statistical basis.

An IT challenge

Finally, this work will involve creating an internal database, filled with information previously stored by banks in the form of pdf documents, e-mails, even paper documents. This represents millions of data items to be retrieved and included in an IT system enhanced with these energy characteristics.

Given the inadequacy of the EPCs and their cost, it is possible that banks will use additional data, in particular from energy suppliers, which have the real consumption data of the building stock. We note that this data collection process will have a human cost and entail a non-negligible IT investment for European banks.

What will the pricing policy be for mortgages?

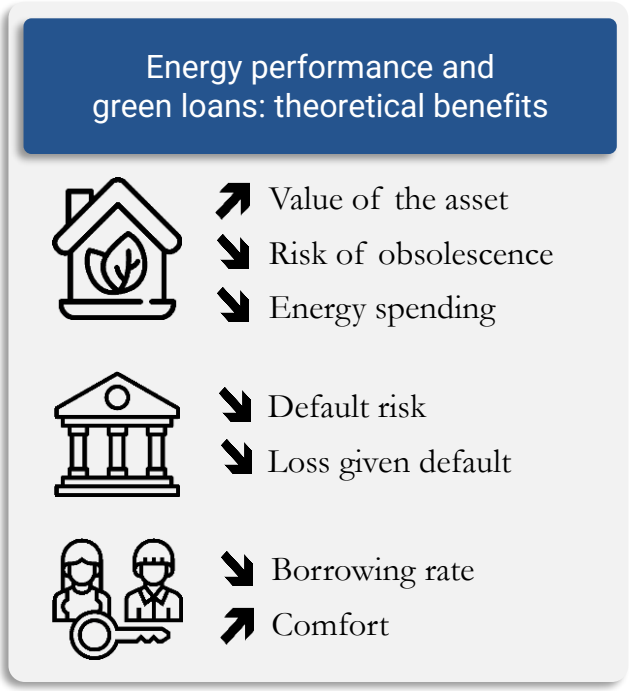
One thing is certain: in the coming years, energy assessment will be of key importance to the banking sector. European banks will have every interest to favour mortgage lending for the acquisition of good performance assets and will likely encourage individuals to move in this direction via preferential lending rates for the purchase of higher-quality goods or the financing of renovations.

Note that some banks have already adapted their loan offer: Since 2017, Caja Rural de Navarra has already been focusing on granting mortgages to the best performing properties, as well as financing renovations that generate an energy performance gain of at least 30%, upgrading the renovated properties to category A, B or C. These financing schemes could become more widespread in European banks.

Conclusion

The adoption of high energy performance standards will give banks a role as referee in the real estate market within a few years. **Bank lending could contribute to directing individuals towards the best performing assets**. As for construction loans, they will promote the necessary renovation work that the European Union is calling for in order to achieve, or draw close to, its very ambitious targets in this area.

On paper, this approach could create a virtuous circle. Renovating the building stock would not only make it more comfortable and environmentally friendly, but would also add value. Thus, the risks associated with the financing of these properties would be lower: in the event of default by a borrower, the bank would recover a good quality asset, the sale of which would compensate for the losses. Hence the possibility, from a regulatory point of view, for banks to reduce their prudential capital requirements for the financing of "green" projects. However, this approach remains theoretical: we have seen that high prices can discourage buyers. It is therefore not certain that this virtuous circle will become a reality. Lastly, we note that **the renovation work the EU needs could encounter another pitfall: that of the available capacities (raw materials, craftsmen) to do this work**.



In short, will the EU succeed in achieving its goal to renovate the building stock thanks to the leverage from lending? At this stage, nothing is less certain. Although measures have already been taken to encourage energy-saving renovations, the real pace of renovations remains well below expectations. Mortgages will play an undeniably key role in the future energy transition, but additional tools will be needed. Tax incentives and government bonuses for the renovation of old buildings will also be essential solutions.