DMFCO
Asset Management

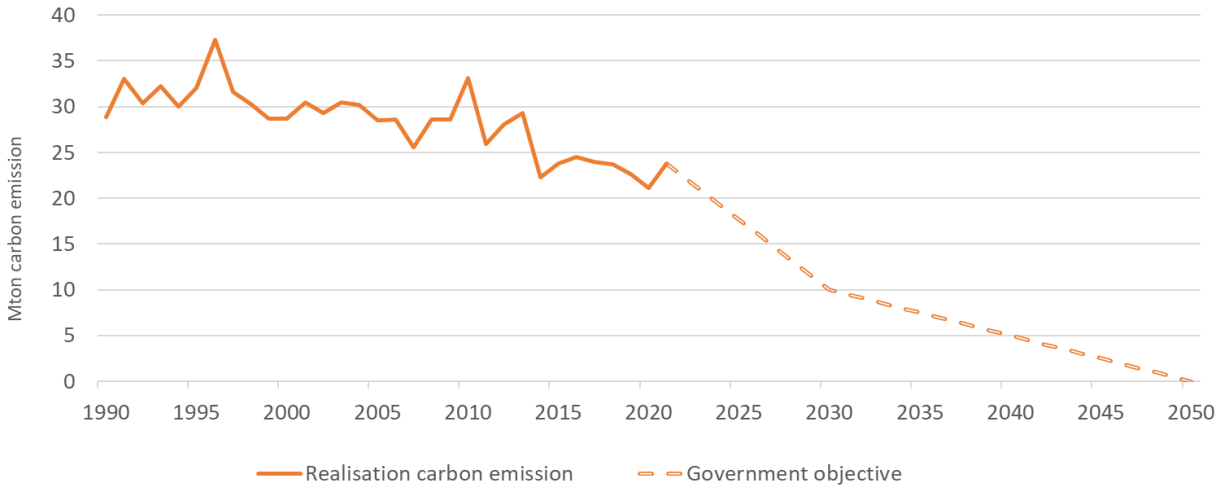
Sustainability in the Dutch housing stock

The Dutch housing stock must become more sustainable and carbon-neutral by 2050. This target has been set by the Dutch government and is widely supported by homeowners and the financial sector. This whitepaper discusses *the road to net zero* for the Dutch housing stock, addressing the following questions:

- **How sustainable is the Dutch housing stock?**
- **What barriers are encountered in achieving a more sustainable housing stock? And how can these be removed?**
- **What role can the financial sector play in the energy transition?**

Chapter 1 – State of affairs

In line with the Climate Agreement[1], the government has the objective to limit carbon emissions from the built environment to a maximum of 10 megatons by 2030. This means that carbon reduction will have to take place at an accelerated pace in the coming years.



That is why the government decreed that from 2021 all new houses must be 'Nearly Energy Neutral'. This is equivalent to an A+++ energy rating. In addition, all renovations to existing houses must be carried out to a set standard to ensure sustainability.

The construction of new-build houses may seem like a positive step toward a more sustainable housing stock. However, the biggest gains can be made in the sustainability of the existing housing stock. We will therefore focus on this topic in this whitepaper.

In addition, the development of new construction often means building in green areas negatively impacting biodiversity. The Netherlands does not yet have any mandatory requirements regarding biodiversity in the development of new construction. However, these are in the making and will contribute to making the Dutch housing stock more sustainable. It is also important to consider the carbon emissions associated with the production and transport of building materials for new construction. Wood or other natural materials are becoming an increasingly attractive alternative to traditional construction methods, as wood construction has lower carbon emissions than stone and concrete construction.

In short, strict requirements for the development of new construction are an important step. But more is needed to achieve large-scale change.

[1] Dutch Climate Agreement (2022)

Existing housing stock

Energy labels are the most widely used indicators for assessing the sustainability profile of Dutch homes. The basic aim of energy labels is to provide insight into a home's primary fossil energy consumption and its resulting carbon emissions. There are two types of energy labels in the Netherlands: *preliminary* and *final* energy labels.

In 2015, every dwelling received a provisional energy label based on a rough estimate considering the type of house and year of construction.

Until 2021, final energy labels were obtained by providing (online) evidence of the sustainability measures taken.

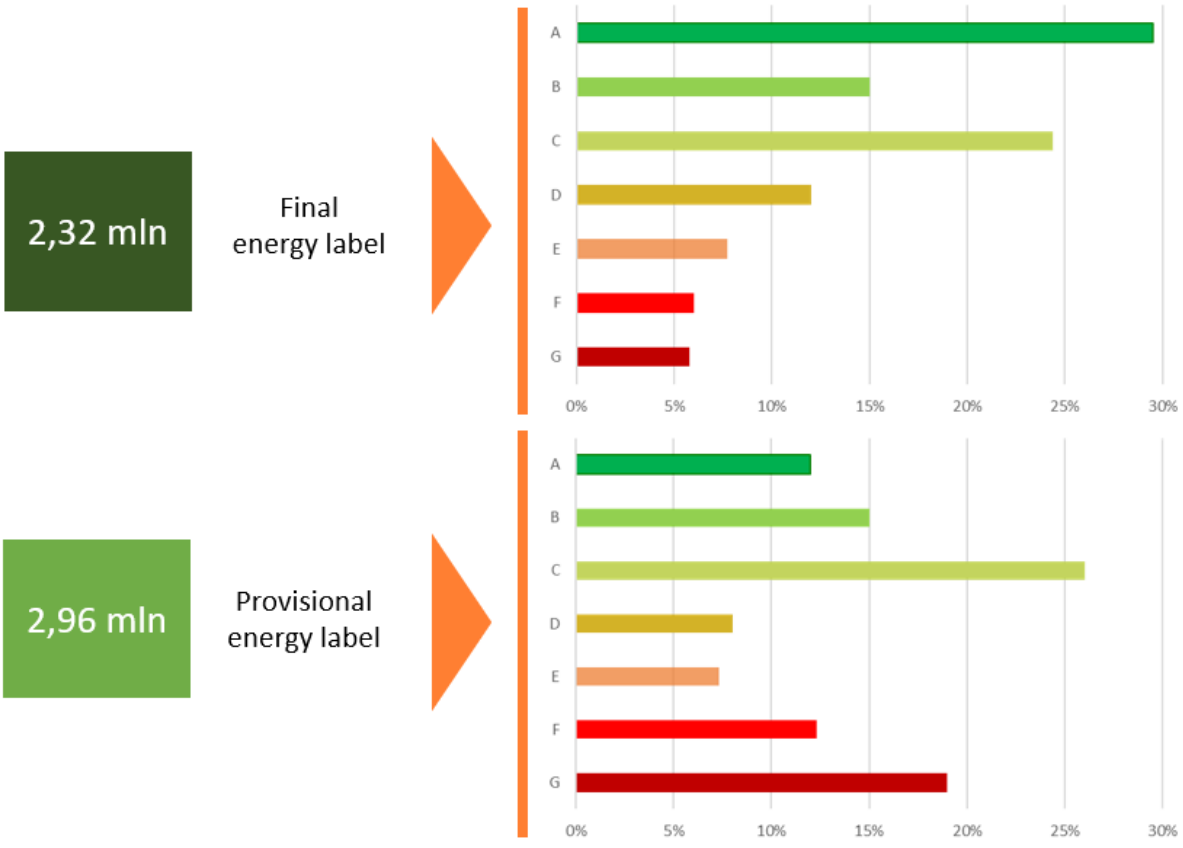
Since 2021, final energy labels are mandatory when a house is sold, rented or completed. An energy label can only be issued after a visit to the home by an energy adviser, who will take precise measurements of, for example, the dimensions, existing insulation and installations such as the central heating boiler or solar panels. These labels provide an accurate indication of the primary fossil fuel usage, unlike labels issued before 2021.

Although this approach improves the accuracy of estimating a home's energy consumption, the cost of such a home visit is significant, at around €200-300.

Use and restriction of energy labels

The Dutch housing stock consists of 8.3 million dwellings, of which 3 million are in the public rental sector and 5.3 million are privately owned (owner-occupied and privately rented). 45% of the privately owned dwellings currently have a final energy label.

Within this category, 30% have an A- energy label, 25% have a C-label and one in ten have an F- or G-label. If we look at provisional labels, a different picture emerges: more than one in three dwellings



Graph 2: Distribution of final and provisional energy labels for privately owned dwellings (Source: RVO)

have an F- or G-label. As previously mentioned, provisional energy labels are estimates, often based on the year in which a dwelling was built. One-fifth of the housing stock is built pre-war, which automatically results in a relatively poor energy label using this method. In addition, sustainability measures that have been implemented are often overlooked, further distorting the overall picture.

It is therefore important to realise that an energy label is not a perfect representation of the sustainability of Dutch houses:

- Not every house has a definitive energy label and provisional energy labels provide an incomplete picture;
- Energy labels are mostly not up to date. An energy label is not yet mandatory in the Netherlands unless you are selling or renting a house; and
- Energy labels do not accurately reflect actual energy consumption, because this eventually depends on the behavior of the occupants.

Better insights

A more realistic picture can be found in alternative data sources. The Dutch Central Bureau of Statistics (CBS)[2] survey shows that 86% of dwellings possess a high-efficiency boiler and 98% of dwellings have had some form of insulation installed in the past.

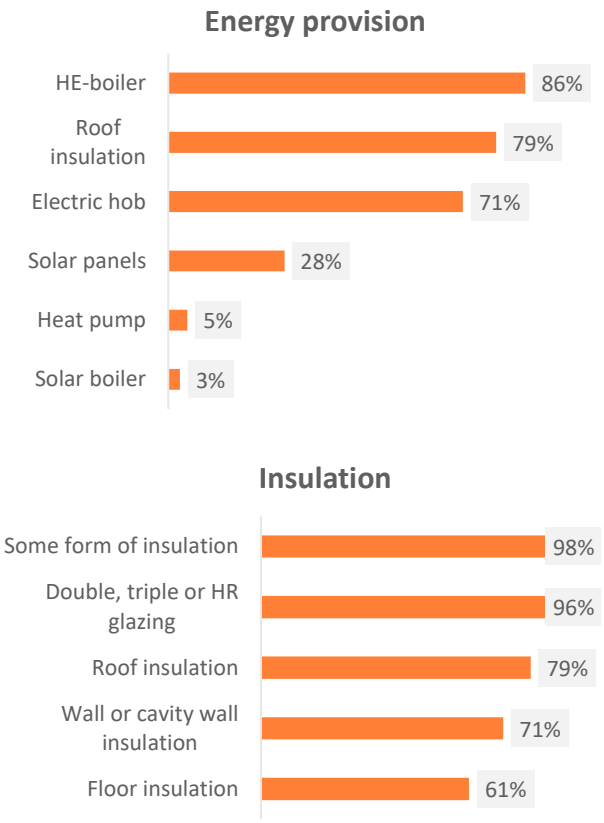
In addition, nearly all (96%) single-family dwellings are fully or partially fitted with double, triple or HR glass. Of these, 79% have a (partially) insulated roof and 71% have façade or cavity wall insulation. Furthermore, the Netherlands has the highest number of solar panels on houses in Europe.

Another positive aspect is that smart meters are installed in almost 90% of dwellings providing households with greater insight into their energy consumption and can help raise awareness of the importance of sustainability.

According to CBS, only 1.5% of single-family dwellings had not taken any measures by 2020, while almost half had completed all standard insulation measures.[3]

As a result of all sustainability measures, total carbon emissions from the built environment[4] were reduced from 30 megatons in 1990 to 24.5 megatons in 2021 (-18%).[5]

CBS figures on gas and energy consumption show a slight downward trend in the use of fossil fuels, partly



Graph 3: Sustainability measures (Source: CBS research)

[2] CBS, 2021

[3] For smaller homes, this study is not available

[4] Part of the built environment includes rental housing, government buildings, offices, etc. The government is also taking measures to make these buildings more sustainable.

[5] RIVM (2023) and CBS (2023)

due to a strong increase in solar energy produced by households.[6]

In summary, almost all Dutch households have implemented insulation measures and the number of solar panels on roofs is high. This has led to a decline in energy consumption and carbon emissions. At the same time, there is still a lot of room for improvement.

Chapter 2 – Bumps on the road

Although great progress has been made for part of the existing Dutch housing stock, even well-intentioned homeowners face problems. With the current technical possibilities, not every home is suitable for achieving energy efficiency equivalent to an A-label. Examples of technical limitations are:

- Insulating houses with single-stone walls. This is very invasive and costly, especially as it comes at the expense of living space. In cities with high prices per square meter, this is not an attractive option;
- Not all roofs are structurally suitable for solar panels or have the right solar orientation; [7] and
- In the case of national monuments, regulations impose additional costs and restrictions.

Furthermore, some technologies are already available but not yet profitable or too expensive. Examples include home energy storage batteries and solar tiles (solar panels integrated into roof tiles).

Costly investment and long payback periods

For houses without technical constraints, the primary concern raised against implementing sustainability measures is the perceived lengthy payback period. This is becoming less relevant as energy prices have risen and subsidies for sustainability measures increase. The significant increase in the number of solar panels on the roofs of Dutch houses confirms this trend.[8]

Nevertheless, 47% of respondents in a recent ABN Amro[9] survey indicated they still find the cost of further maintenance to be too high. Among owners of apartment complexes, three out of ten owner associations[10] (VvEs) indicate that the complexes are not being made more sustainable due to a lack of consensus among the residents. The costs in particular are a major reason for not taking action. In addition, elderly people declare that investing in sustainability measures is considered useful in general, but not for them, because of their age. They also argue that it takes too long to see such investments' benefits.

To address payback time concerns, the Climate Agreement stipulates that making existing homes more sustainable must be cost-neutral. In other words, the investment in sustainability measures must be earned back through lower energy bills. The aim is to make the energy transition more financially attractive for homeowners.

In order to enable a housing cost-neutral transition, the Central Planning Office (PBL) has calculated that making owner-occupied homes more sustainable is not financially feasible without subsidies.[11] As a result, the government has made various subsidies available:

- General sustainability subsidy for individuals who undertake two or more insulation measures;
- Energy saving subsidy (SEEH) and energy saving loan specifically for apartments (owners' associations). Owners' associations can seek advice from municipalities and some will actively target owners' associations; and

[6] The increase in residential electricity consumption in recent years has been driven by an increase in the use of heat pumps, but also the rise in the number of electric cars being charged at home.

[7] This applies to 19% of homeowners surveyed, according to research by CBS.

[8] By August 2022, the Netherlands had more than 1.5 million homes with solar panels.

[9] ABN AMRO (2022)

[10] Eigen Huis (2022)

[11] PBL (2020)

- VAT on solar panels can be reclaimed by individuals and a reduced VAT rate applies to insulation activities.

Until 2025, the net metering scheme is in place, allowing excess solar energy to be fed back into the electricity grid and credited against the homeowner's energy bill. These measures promote sustainability by removing financing hurdles and reducing the payback period of the investment. This addresses many of the concerns raised above. However, it is also an option for homeowners to wait for (higher) government subsidies. As long as sustainability measures are not cost-neutral, some households may prefer to wait.

As part of the European Green Deal, the EU wants to ban F- and G-labelled houses by 2030. How this will be implemented is still unclear. We do know that the EU will support this mandatory transition in two ways: by subsidising households and by subsidising research into technological innovations that will facilitate the energy transition.

This implies that not only will new technologies be developed, but existing technologies will also be further improved. Consider advancements such as high-performance solar panels integrated into roof tiles or the production of cost-effective and efficient home batteries. These innovations will facilitate a more affordable energy transition.

Households with insufficient financial resources for the transition

In addition to households that are able to make an informed financial decision to implement sustainability measures, there are households that simply lack sufficient financial resources. NIBUD[12] notes that 2% of homeowners have no resources at all to take sustainability measures. This percentage rises to 8-16% for sustainability costs of up to €50,000.

Having no resources means no savings and no room to increase the mortgage. Young people in particular, who are often the most motivated to become more sustainable, have the least financial leeway in terms of excess value, income and own resources.

Calcasa[13] regularly examines the correlation between income and energy labels. Interestingly, homeowners with higher incomes live mainly in A-label dwellings, but also in pre-war dwellings with lower energy labels.[14] The often-heard assertion that low-income households tend to live in the worst-insulated houses does not align with everyday reality. On average, lower-income households are more likely to live in B- to D-label dwellings. The positive aspect is that these dwellings require less investment to enhance their energy efficiency.

To provide these households the opportunity to take sustainability measures, the government offers two types of support:

1. An energy saving loan of €25,000 - rising to €65,000 for A++++ homes. This loan functions as a consumer credit, but the costs are similar to a mortgage. Some municipalities offer the possibility of taking out an energy saving loan with an additional interest rate reduction. In addition, low-income homeowners (up to €45,000) will be able to take out a loan at 0% interest since autumn 2022.
2. An energy saving mortgage of up to €5,000. This loan is designed for homeowners who do not meet the 'regular' energy saving loan requirements. Monthly repayments and interest are based on what the homeowner can afford to pay. The premise is that homeowners will not be financially burdened by this additional loan.

The energy saving mortgage offers the least wealthy homeowners the opportunity to make their homes more sustainable without contributing any of their own funds. This way, for example

[12] NIBUD (2020) The National Institute for Budget Information

[13] Independent technology company specialised in automated valuation and advanced statistical analysis

[14] Calcasa (2022)

homeowners with a C-label dwelling, will be able to renovate to at least a B-label. The government hereby aims to prevent the energy transition from leading to 'energy poverty' and ensures an inclusive transition, where vulnerable households, in particular, are less at risk from high energy costs.

In addition to these measures, the government is also focusing on educating households. Several websites and knowledge platforms offer simple tips on how to reduce energy consumption, such as closing the curtains more often or installing draught stops.

Transitioning away from natural gas, but how?

One of the main ways to achieve a net-zero housing stock is the replacement of natural gas with sustainable heating methods such as solar energy or heat pumps. Significant reductions can be achieved through insulation, but it is not realistic for older homes to achieve zero emissions. Therefore, a two-pronged policy is needed: insulation and a transition to renewable energy sources.

The vast majority of Dutch households (93% in 2020) still use natural gas for heating. However, heating a house with natural gas does not hinder obtaining an A-label.

The Dutch government's objective is to have all households off the gas by 2050, by making 200,000 homes gas-free annually starting in 2021. This is an ambitious goal, as the cost of replacing natural gas is high. For pre-war houses, the costs can quickly rise to around €30,000 net after accounting for granted subsidies. For a moderately insulated house, which is often the highest achievable level for pre-war houses, the use of a heat pump capable of heating to high temperatures is necessary.

The energy consumption of such a heat pump is such that there is little to no reduction in energy costs and carbon emissions. In these cases, it is often more financially attractive for homeowners to wait and see, as technological improvements and/or increased subsidies might reduce costs.

To reduce the cost of this gas transition, the government has decided to take a neighborhood-level approach. Entire neighborhoods will be converted to a new heating method at the same time. Collective purchasing and large-scale conversions can result in cost savings. The best solution for heat and power will be determined for each neighborhood, considering options such as heat networks, heat pumps, all-electric or perhaps even hydrogen gas in the long term.

The final route for replacing natural gas on a large scale is yet to be decided. In the meantime, the plan is to increase taxes on gas and reduce taxes on electricity. Starting from 2026 it will be mandatory to install at least a hybrid heat pump when replacing a central heating boiler. The government is also investing in research on the addition of biogas to natural gas, which will lead to reduced carbon emissions in the short term.

Chapter 3 – The role of mortgage lenders in the energy transition

The financial sector is increasingly paying attention to sustainability. Not only because the government is enforcing this attention, but also because of widespread awareness that the sector has an important role to play in making the housing stock more sustainable. Mortgage lenders can make a tangible contribution in very practical ways.

Additional borrowing for sustainability measures at attractive terms

The most important measure for mortgage customers is the exception in the lending standards that allows for an extra €9,000 to be financed for the sustainability measures without including this amount in the income assessment.[15] This limit can be increased to €25,000 for an energy-neutral home. Furthermore, mortgage advisors play an important role in accelerating the energy transition by providing information to homebuyers on different sustainability and mortgage financing options.

At MUNT Hypotheken, proactive customer engagement is one of the key focuses of our Environmental, Social, and Governance (ESG) policy. We cannot force customers to make their homes more sustainable, but we can encourage them by showing the possibilities and benefits. It is striking that many people are unaware of the possibility of co-financing sustainability measures within the mortgage[16] and/or indicate that they have never been informed about this possibility by their mortgage lender.[17] This presents a major challenge for mortgage lenders.

The process of buying a home is an opportune time to consider improvements. Sustainability is therefore primarily considered when buying a home. Mortgage advisors should therefore make sustainability a regular part of their mortgage advice. The increasing number of advisors with specific sustainability training highlights the growing importance of this topic.[18] In a recent survey conducted by MUNT Hypotheken, advisors reported that sustainability was discussed in 93% of the advisory discussion with customers. It was discussed with the customer in detail in 51% of cases. This is proving to be fruitful: more than 20% of NHG mortgages included an energy-saving budget when the mortgage was increased or (re)financed by 2021.[19]

Sustainability measures implemented after the home purchase are typically funded through personal funds. According to a survey conducted by the AFM, over 85% of respondents financed their sustainability measures through their own funds, with only 10% seeking assistance from their mortgage lender. The AFM also revealed that a significant number of households (30% in 2021) lack sufficient liquid assets to finance sustainability measures and are reluctant to take out loans for this purpose.

Households may also be unwilling to use the excess value of their homes to make them more sustainable. For households with lower incomes and substantial home equity, such as the elderly, rising energy prices can be the decisive factor in considering a loan to make their home more sustainable.

MUNT Hypotheken is committed to reducing the barriers for existing customers to apply for an energy-saving deposit. That is why we provide customers with the opportunity to easily apply for an energy-saving deposit online, without the need for assistance from a mortgage advisor. This streamlined application process not only simplifies the application but also helps customers save significant costs

[15] To prevent overcrediting, the total loan amount including sustainability measures should not be >106% LtV. The limit of €9,000 was set by NIBUD, because at this amount the increase in mortgage costs and the expected decrease in energy costs are almost equal. As a result, a household's expenses do not increase and therefore no income test needs to take place.

[16] 57% on the basis of the ABN Amro survey

[17] 95% on the basis of research AFM (2022)

[18] Vastgoedactueel (2022)

[19] NHG (2022)

associated with obtaining an additional loan on top of their existing mortgage, such as valuation, notary, and advisory fees. This can result in potential savings of up to €3,000 for customers.

Our main focus is to engage existing customers who have the aspiration to take sustainability measures but have not yet taken action. Within just two years, this approach, in combination with high energy prices, has more than doubled the number of applications for energy-saving deposits. These achievements demonstrate the importance for mortgage lenders to continuously explore new solutions and process enhancements that remove barriers and contribute to achieving a zero-emission housing stock. [20]

Offering an interest rebate

Another tool to accelerate the transition is to offer an interest rebate for houses with a favorable energy label. By offering an interest rebate, the payback period for sustainability measures can be shortened. This concept is increasingly being discussed by mortgage lenders and the first offers have already been launched.

Most lenders who offer an interest rate rebate typically apply it to homes with an A-label, and in some cases, homes with a B-label. This usually translates to a discount of 0.1-0.15%. Naturally, these mortgages are appealing to owners of new-build properties.

Research by the Dutch National Mortgage Association also shows that households with an A-label house, in particular, have benefited from refinancing their mortgage to lenders offering a rebate.[21] As a result, the impact on making the housing stock more sustainable is not direct, but rather a distribution of mortgages among mortgage lenders. NHG's research[22] also shows that higher-income households are particularly interested in sustainability, resulting in sustainability rebates often being claimed by these households. This increases the likelihood of income inequality, especially if the A-label discount leads to higher interest rates for households with lower-label houses.

An additional disadvantage of an A-label rebate is that it does not encourage homeowners with lower labels to make minor improvements. Small improvements, such as insulating a cavity wall, are not rewarded. Some parties have therefore introduced risk-based pricing with higher interest rates for lower-label homes. However, applying a tiered interest rate structure based on energy labels also penalizes households that lack the financial resources to make sustainability improvements. This can discourage young people, in particular, from taking steps towards a more sustainable home.

Interest rebates seem like a good tool to encourage sustainability. Those who are wealthy enough to make their homes more sustainable can benefit. But the very groups that have the most to gain - owners of lower-label houses and with less financial resources - may be less likely to qualify for an interest rebate. These are negative side effects that should not be overlooked.

[20] Vereniging Eigen Huis (2022)

[21] Hypotheekrente (2021)

[22] NHG (2022)

Chapter 4 - The road to net zero has started, but we are not there yet

In recent years, significant progress has been made in achieving net zero in the Dutch housing stock. However, many homes still fall short of the ambitious targets set by the Dutch government and various supranational organizations. To successfully reach the net-zero goal, further action is required.

Both the Dutch government and the European Union play an essential role. Technological advancements are pivotal in addressing this issue, as promoting innovation at the European level can help manage the costs associated with the energy transition.

Consequently, the appeal of enhancing sustainability will continue to increase among homeowners, driven by the financial incentives tied to energy efficiency. Technological advancements should also contribute to removing limitations currently encountered in making homes more sustainable.

The most important transition, however, is that the Dutch housing stock needs to move away from gas. The government holds a central role in this regard. As long as the costs for homeowners to become gas-free remain substantial and a final solution remains unclear, individual households will be inclined to postpone such investments. Only through a unified collective approach, coupled with subsidies, the transition of the Dutch housing stock can be facilitated.

It is essential that both the government and the financial industry prioritize an inclusive energy transition with specific attention to households with limited financial resources. Such an approach is necessary to prevent these households from facing a higher risk of energy poverty.

Furthermore, an inclusive energy transition is vital, ensuring that sustainability benefits are distributed equitably across society. This includes offering subsidies, financing, and attractive mortgage rates to all homeowners, regardless of their energy label or financial background.

By implementing these strategies, we can accelerate the transition of the Dutch housing stock and contribute to a greener and more resilient future. It requires collaboration, innovation, and a shared commitment from all stakeholders to achieve large-scale change and create a more sustainable living environment for generations to come.

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As the market leader for institutional investors investing in Dutch residential mortgages, DMFCO regularly provides whitepapers and market analysis on developments in the Dutch housing and mortgage market.

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