



ACHIEVING AND FINANCING CLIMATE TARGETS IN SOCIAL AND AFFORDABLE HOUSING

AN EFL STUDY



EUROPEAN FEDERATION
FOR LIVING



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ABOUT EFL

The European Federation for Living (EFL) is a European network of more than 70 housing associations, companies and experts working to create more affordable, sustainable housing in 19 European countries. With a joint portfolio of over 1.3 million homes and commercial units across Europe, the EFL network offers easy access to topical insights, information, and expertise from the European housing sector. Through events, research, and projects, we make sure our members and associates are at the forefront of innovative property and community development in Europe.

ABOUT THE EFL FINANCE TOPIC GROUP

Led by Hendrik Cornehl from Dr. Klein Consulting, Germany, the EFL Finance Topic Group, was set up for EFL members to exchange knowledge about the different European financing systems within the housing sector. Through the group, members and associates share best practice with a focus on finance and investment in the European housing sector.

The group analyses financial and investment trends for social and affordable housing as well as digital business models. So far, the group has gained an in-depth understanding of several domestic housing finance markets, created a comparison tool for financial KPIs among European housing providers, published a “Financing Affordable Housing” report and initiated a project for creating a sustainability label for the European housing sector.

ABOUT THE PROJECT

The aim of the ‘Achieving and Financing Climate Targets in Social and Affordable Housing’ project is to help participants meet climate targets for their housing stock by building a robust strategy/business plan. It provides an overview of the general landscape and enables each member to derive viable ideas and measures for their own company.

The information in this report has been gathered by sharing information and carrying out research into the financial aspects of energy efficiency and sustainability as well as related European regulations. This has enabled the project leaders to provide an overview of the different ambitions to achieve climate targets in housing across multiple levels (government, organisation, tenant), as well as of individual measures and financing opportunities.

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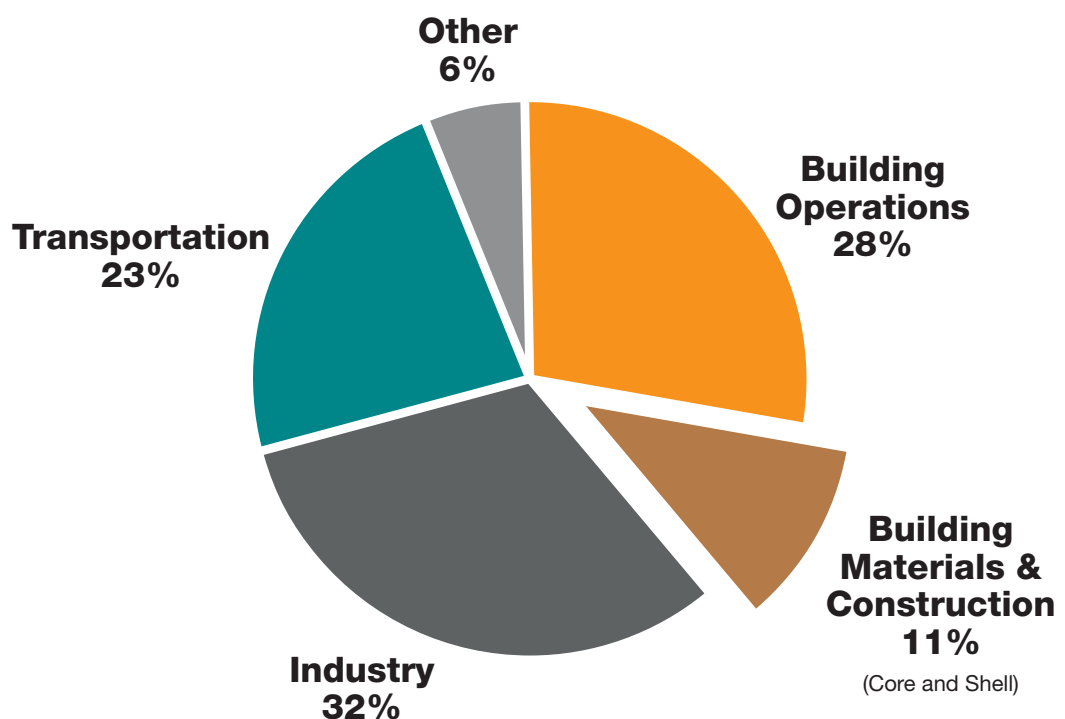
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We would like to express our thanks to the EFL network members and staff for their contributions and to the housing organisations that have taken the time to be interviewed and answer all questions raised.

INTRODUCTION

The Paris Agreement, adopted by 196 Parties at COP 21 in Paris on 12 December 2015, is a legally binding international treaty on climate change. Signing this agreement is a commitment by countries worldwide to fight global warming and its effects. The Agreement's principal goal is to limit global warming to well below 2 degrees Celsius above pre-industrial levels, and preferably to limit the increase to 1.5 degrees Celsius. To achieve this long-term temperature goal, global emissions must peak as soon as possible to achieve a climate neutral world by the mid-21st century.

Global CO₂ Emissions by Sector



Source:
Global Alliance for Buildings en Constructions
2018 GLOBAL STATUS REPORT

In response to this Agreement, national governments have begun to draft their Nationally Determined Contributions (NDCs), which provide a roadmap to achieving the Agreement's goals. NDCs embody each country's efforts to reduce national emissions and address the impacts of climate change.

Unsurprisingly, the built environment is an important pillar in national climate action plans. Buildings generate nearly 40%

of annual greenhouse gas emissions. While new buildings are generally energy efficient and produce low carbon emissions, approximately two-thirds of the building that exists today will still be there in 2050. Currently, building refurbishments affect only 0.5-1.0 % of building stock annually. To meet the emissions targets set by the Paris Agreement, a significant increase in the retrofitting of existing stock is required to enhance energy efficiency, including the use of renewable energy.

Housing is the predominant land use in most cities and a major contributor to greenhouse gas (GHG) emissions. The sources of these emissions vary depending on climatic factors, building designs and occupant behaviour. Housing providers need to prepare for the future and assess the sustainability of their assets as this is one of the major risks for their business.

Recognising this challenge, the EFL and its members share best practice to develop solutions that do not have a negative impact on their activities either financially or operationally. In 2020, a working group was set up to provide a snapshot of the current situation for housing providers and which studies the state-of-the-art solutions available on the market to retrofit existing stock.

Meeting emissions targets is a huge and multifaceted challenge. The solution will need to involve multiple stakeholders which now, more than ever, need to collaborate to set objectives. All these stakeholders need to start to think outside the box as a paradigm shift is required.

To better understand the challenge in housing, different parameters must be looked at, including characteristics of stock, sources of energy supply, political choices, funding potential, operational issues, consumer behaviour and much more. Each of them interacts with the other and only for modelling purposes can we look at them as static data.

To find the optimum solution, we need to weigh up each element and decide what outcomes are most important to us. We know that we need to limit greenhouse gas emissions so would expect this to rank first. However, we cannot keep decreasing emissions without running into other challenges such as the financial viability of different stakeholders, availability of energy sources, infrastructure, and consumer behaviour.

The EFL working group has tried to contribute to the debate by outlining the current state of play with the member housing organisations. We conducted a series of semi-structured qualitative interviews. In the interviews, we divided the questions around the key internal topics: policy, technical, financial, organisational, reporting, and environmental. In addition to the in-depth interviews, we also carried out a survey among a wider group of housing associations, which provided us with additional information for this report.

The aim was to get a complete picture of housing organisations' current position. The process has also provided us with insights into the challenges of scaling up a retrofit programme and a clearer picture of the elements that need to be studied in more detail. Housing organisations have to cope with uncertainties and the more we can model, the better we can prepare our organisations for the future.

The working group wanted to understand how different organisations approach the challenge. Its objectives were to:

- Understand how housing companies in other countries manage the financing of energy refurbishment measures and how costs can be shared fairly between tenants, landlords, and the government.
- Give EFL members the chance to derive viable ideas and interventions for their own company by collectively pooling knowledge and brainstorming.
- Map the financial aspects around energy efficiency and sustainability.
- Understand European regulations around energy efficiency and sustainability, and the effects of EU taxonomy on individual housing companies.

INTERVIEWS

To develop a deep understanding of the sustainability agenda, the working group conducted in depth, semi structured interviews. A total of 10 interviews were carried out, each lasting between 40 and 90 minutes. To get a balanced international perspective, we aimed to cover as many European countries as possible. This resulted in interviews with housing organisations from seven different countries (Belgium, Denmark, England, France, Germany, Ireland, and the Netherlands).

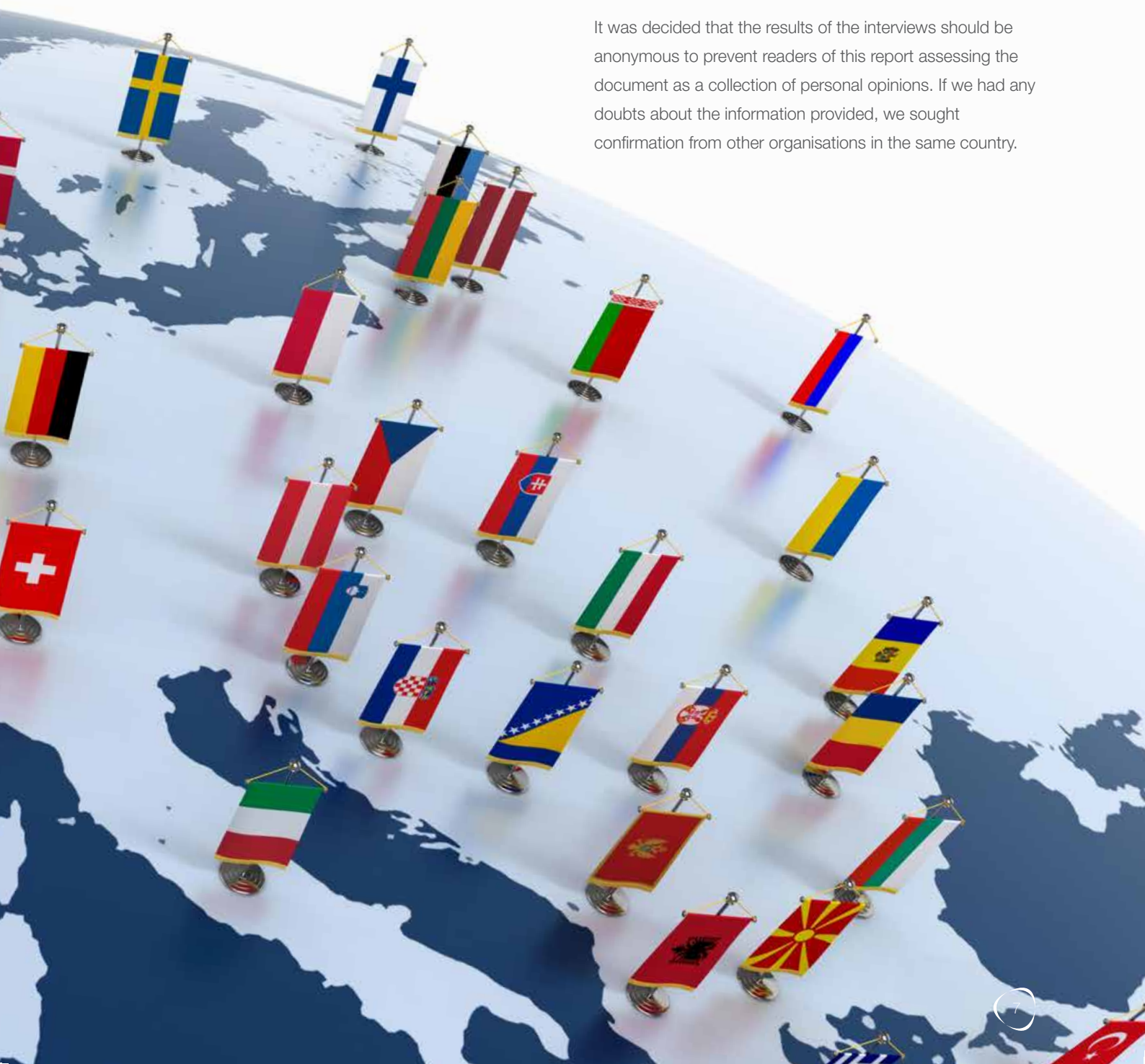


The interviews were recorded and, when necessary, transcribed so the whole working group could study the results. A core team prepared a summary of the findings per chapter (general policy, financial, organisational, environmental, technical, and reporting). From the working group, several members were involved in the interviews, which were conducted by teams with different interviewers.

The summaries of the interviews were reported back to the working group, which met once a month for over a year. The working group studied the summaries and asked for clarifications on specific matters. With this additional information, the summaries were amended and completed during this stage.

The working group went on to further discuss the general state of play across the countries and aims for the future. These observations were used to draft the chapter of conclusions and recommendations.

It was decided that the results of the interviews should be anonymous to prevent readers of this report assessing the document as a collection of personal opinions. If we had any doubts about the information provided, we sought confirmation from other organisations in the same country.



BELGIUM



General policy

The calculation of minimum energy standards has been dictated by the Flemish Government where the interviewed organisation is based. The minimum energy standard that needs to be achieved for newly constructed dwellings from 2021 onwards will be E30 as defined under the so-called BEN standardisation (BEN stands for near energy neutral).

For regeneration projects, the standards set by the Government are not as high. If the standards, set by the Government are not met, no building or renovation permission will be given to the housing association that intends to execute the project.

The methodology described is specific for the Flanders region and can be completely different in the Walloon or Brussels region. Housing is a regional competence (Belgium has three autonomous regions: Flanders, Walloons, and Brussels).

Financial

Regarding sustainability, the Belgian interviewed organisation follows the Flemish regulations and not the European ones. This is because there is a very tight financial regime that needs to be followed. Household income determines the rent price in Belgium and makes it difficult to make standard calculations in respect of the business case for regeneration interventions.

In Flanders, the Government supports housing providers with a 1% discount on loans. But even with this support the business case does not always stack up.

The Flemish Government supplies loans for regeneration projects that are basically interest free (with the above mentioned 1% discount) through the Flemish society of Social Housing - Vlaams Maatschappij Sociaal Wonen (VMSW). All renovations need to be registered and are assessed. If all requirements are met, the VMSW will approve the work and give permission. VMSW does the technical check, for example, checking if the room sizes are correct, but local government also needs to approve permission (urban planning).



For every type of intervention, prices have been standardised (simulation tables) so there is a price for renovating the basement, technical installations, and so on. A renovation normally cannot amount to more than 80% of new build costs according to these tables. It is possible to accept higher investments, but investment above the 80% threshold is directly supplied by the housing provider. In the interviewed organisation's case, that would need an internal decision by the Board of Directors.

Currently, there is enough Flemish Government budget to realise the full renovation programme and there is no competition between projects from different housing providers.

Organisational

The Belgian interviewed organisation is a co-operative limited company. However, the Government will force the organisation to change its legal structure due to new corporate laws. The federal (central) Government needs to approve an organisation's legal structure and there are seven co-operative principles (ICA principles) that need to be met to qualify as a co-operative limited company.

Regarding financial management, the organisation falls under the regimes of the Flemish Government, and this leads to some issues interpreting the seven co-operative principles. The accountability to both government levels (federal and regional) could lead to different assessments and the legal format of the organisation needing to change.

Organisationally, a very limited sustainability strategy has been defined in the general strategic plan. The organisation is a socially responsible organisation, so aims to act in line with strong environmental, social and governance (ESG) ethics. Sustainability is prioritised in the design process with a strong focus on the use of materials, particularly their durability and the components used in new projects. Not all tenants look after the interior of their homes which is why durability is important.

Environmental

The organisation needs to upgrade a significant part of its stock. There are currently 600 dwellings being refurbished, which is 11% of a total of 5,600 homes under management.

All operations are part of the ERP2020 (Energy Renovation Programme) imposed by the Flemish Government that sets certain quality standards which must be met by housing associations by 2020, including the need for double glazing, roof insulation and an energy efficient heating boiler.

Energy Performance Certificate (EPC) labels (A, B, C, and so on) are not used by the organisation. There is an EPC that determines the energy use of homes based on a detailed analysis that can be determined by the methodology of Vlaams Energieagentschap (VEA Flemish Energy Agency). The methodology is very detailed with a focus on factors such as floor insulation, wall insulation, and air tightness.

Technical

Generally, housing associations do not yet list materials that should be avoided in buildings to meet sustainability goals. The only list that does exist relates to health and safety, including materials like asbestos.

Collaborations with organisations like the VIBE (Flemish Institute for Bio-ecologic construction and housing) help housing associations to make the right choices in terms of materials use.

Some Belgian organisations have attempted to apply sustainability goals at a top-line level in respect of materials used. This approach has sometimes backfired as the costs of this approach have caused financial problems and there are usually no in-house energy consultants.

Building data, with detailed information about homes, is being collected. The interviewed organisation is working on a building passport for all dwellings. Part of the information can be extracted from the EPC calculations, and some is individually collected. For older projects, detailed information was not yet available, but a dedicated staff member has been hired to complete the building passports, which is considered an important step to support decision-making.

Reporting

There is generally no specific reporting on sustainability. There is no requirement to report to specific governmental bodies on sustainability.

DENMARK



General policy

In 2020, an Act of Parliament was passed which set a goal to decrease carbon emissions by 70% by 2030, from the baseline in 1990. This is what all housing associations are working towards now. There is currently no penalty system from the Government, but this could change. There will be carbon taxes and there are several national partnerships across sectors (private/public) to ensure the private sector is also responsible for achieving the goal. The Government has also recently discussed a goal for 2025 to keep the country on track.

There is a national initiative requiring housing associations to report annually on how they are performing in line with the UN Sustainable Development Goals (UN SDGs). The interviewed organisation is aiming to reduce energy use by 30% across its housing stock by 2030, using 2014 levels as a baseline. This applies to 7,000 homes or 600,000 sq m. The organisation has a good measurement system for energy use. This measures some consumption related to tenants, but the aim is to just monitor the building's energy use, including water, heat and electricity consumption related to the building's operations.

Financial

Housing associations in Denmark are regulated. In legal terms, they are corporate housing bodies that act as independent co-operatives. They are not state owned but regulated by the state on a national level. For 50 years, there has been a national building fund for a four-year rolling programme, in line with changes in Parliament. For many years, refurbishments of existing stock have not had public funding and have had to be financed through this national building fund and locally by housing associations.

For new build housing, there is still some public funds available, but it is diminishing especially when interest rates are currently so low. To apply for the national fund, housing associations must justify the projects in terms of need and solution, and they must have support from the tenants and local government.

Even if there is enough money in the fund, the Government may decide not to invest as it must balance investments in new and existing buildings. This year, there has been a huge increase in the number of refurbishment projects being put forward; around 5-10 times higher than the previous year. This is because of an over-supply in the new build sector, which also means there will be more capacity in the construction industry.

As far as funding is concerned, if the refurbishment enhances the quality of the homes, then there is a contribution from tenants. In addition, the money in the national fund is effectively sourced from tenants. When a new estate is established, housing associations get a loan (mortgage) for 30 years but when this time has passed, tenants continue paying their rents to landlords. Instead of the annual expenditure on repayments, landlords then start to make a contribution to the building fund. The fund's policy is to only finance improvements, not maintenance, which means housing associations and tenants fund maintenance themselves. As part of the new deal that's been agreed in Parliament, energy improvements are now included in the fund. The interviewed organisation does not currently use European funding but is considering it.

The national focus is on district heating systems, but now policy generally is to increase the amount of renewable energy being used to fuel the district heating. Renewable energy cannot replace all coal, so there is a gap. Housing associations as building owners must close this gap by optimising their buildings and ensuring tenants are more aware of energy consumption by sharing data.

There are now partnerships between housing associations, universities, and the energy industry to focus on how they can work more closely across geographies instead of working alone as building owners.

Organisational

To use energy sources efficiently, the organisation needs to understand energy use and focus on the content and quality of the reported data to understand patterns. The Danish housing association has therefore recruited a Co-ordinator for Energy and Climate Action. However, consumer (tenant) data and information are required as well as a willingness to work with the housing association. Gaining access to this data can be more complicated for privacy reasons.

The organisation globally benefits from good quality data on its stock. As the level of detail varies from one home to another, the potential estates to be refurbished are fully digitised to prepare for the project and provide detailed specifications. The organisation has access to digital plans for its entire stock, down to single homes and their exact surface in square meters. External consultants support the organisation as they analyse the housing stock and make reports.

Environmental

The interviewed Danish housing association focuses more on energy use than reducing emissions. The latter is more in the hands of the energy supplier and the public. Housing associations in Denmark are responsible for bringing energy use and needs down. In other words, the organisation focuses on efficiently using energy resources and avoiding energy consumption peaks with the goal to only use renewable energies by 2030. The key challenge therefore lies in transforming the industry.

Denmark has a national rating system that evaluates the homes' performance from A (the best possible ranking) to F (the worst possible ranking). The organisation's target is to improve the ranking of its homes by 2030. Some homes cannot be improved as buildings from the 1950s are protected and not equipped with insulation.

The Danish housing association has started to apply circularity policies and use sustainable materials. It is aiming to phase out concrete and turn to wood, a material that emits less carbon dioxide. However, it is still early days, and it is expected more will be done in the next four or five years.

Technical

The organisation uses consultants from the outset of a project. The first step is to collect all project data, considering what the estate looks like and its characteristics. This information is also needed to get funding from the Danish national fund.

There is a lot of data available within the organisation, which is supplemented by information gathered by a consultant using tools such as infra-red photography. Specialist energy advisors also usually work in the team. The fees for consultants will be between 6-8% of the overall project costs. To promote sustainability in housing, the organisation should offer a high-quality product in terms of comfort and energy consumption and works closely with the University to develop new housing products.

Reporting

The social/affordable housing sector reports on sustainability to the Government as the Danish Fund was specifically established to finance retrofitting in affordable housing.

In addition, the organisation reports its progress based on the UN SDGs.

FRANCE



General policy

The interviewed organisation is operating in support of most of the UN SDGs, in particular: access to housing, gender equality, water quality, affordable clean energy, innovation and infrastructure, reducing inequalities, city and sustainable community, fight against climate change and partnerships.

The National Low-Carbon Strategy (SNBC) was published in 2020. The Réglementation Thermique 2012 (RT2012) regulates the energy efficiency of new buildings. The future French Environmental Regulation RE2020 includes carbon objectives. The interviewed organisation has started to try to achieve these objectives via the 'E+C- experiment', which focuses on more efficiency and less carbon. The Territorial Climate-Air-Energy Plan (Le Plan Climat Air-Énergie Territorial or PCAET) is published by collectives and there is one for Lille, for example.

In July 2021, France passed a new climate law. This will cap rents for apartments and houses with the poorest energy efficiency ratings, also known in France as "thermal sieves". These account for around five million homes nationwide.

From 2025, homes with an energy efficiency rated label F or G - the worst possible score - will no longer be considered decent housing, and owners will need to refurbish them before they can legally be rented out again. From 2034, the rental ban will apply to homes rated label E too.

Financial

The interviewed organisation has not forecast how much it will invest in sustainability or zero carbon goals over the next five years but should be able to fund their goals via equity, loans, green bonds, and Socially Responsible Investing (SRI) financing. Its climate neutrality strategy is still in progress and the financial limitations for investments in sustainability will depend on the regulations that are set.

Dwellings labelled EPC F and G are already unsaleable, but there is no penalty within the construction process for underperforming homes or landlords. The ADEME (Environment and Energy Management Agency) can refuse to give certain grants if organisations do not have the right carbon footprint. In 2028, organisations will no longer be able to let homes with the F and G labels. A bad energy transition strategy leads to assets that are less attractive and decline in value.

Organisational

The French interviewed organisation does not believe that major changes will be needed to reach the goals set in its sustainability strategy or that it lacks human resources. However, the organisation is aware that the new sustainable strategy may negatively impact certain stakeholders as working methods and use of technology may change.

The French housing association only relies on external support to measure and track its carbon footprint. Also, the organisation has a set portfolio strategy plan to refurbish homes. These may increase rents, but the overall energy savings means the impact on tenants will not be significant.

Environmental

The objective of the interviewed organisation is to reduce carbon emissions by 24% by 2023. This will be achieved through 20 actions, estimated by consultants, and focus mainly on retrofits.

Carbon emissions are measured based on the ADEME (French Agency) methodology and the EPC rating of each dwelling. Currently, 88% of the organisation's stock has an official EPC rating – 12% are missing. Circularity policies are currently being studied, but do not appear in the organisation's sustainability strategy.

Technical

The French organisation that participated in the interviews has a good knowledge of the characteristics of its stock and limitations in terms of the technical solutions available for its portfolio. It has a good understanding of technology and is monitoring creative start-up companies. There is a technical innovation department, which is strengthened by multiple partnerships, forums, and professional networks.

The organisation knows that some key data, currently not available, needs to be collected to enable it to make the best decisions.

Reporting

The French housing association does not use specific reporting standards on sustainability like the Global Reporting Initiative (GRI), the German sustainability code (DNK) or the Greenhouse Gas Protocol. These standards are known but the French organisation uses a European CSR framework (EURHO-GR). In France, the transcription of EU standards is embedded in French commercial laws.



GERMANY



General policy

Germany, along with almost 200 countries signed the Paris Agreement to reduce carbon emissions to almost zero by 2050. The interviewed organisation aims to consistently link the SDGs with its sustainability strategy and will provide information on its related activities in current and future reporting.

As a first step, it has selected the SDGs which it can achieve through its business activities, and which address its key sustainability issues. These are: Good Health and Wellbeing (SDG 3), Affordable and Clean Energy (SDG 7), Industry, Innovation, and Infrastructure (SDG 9), Sustainable Cities and Communities (SDG 11), Climate Action (SDG 13), Life on Land (SDG 15) and Partnerships for the Goals (SDG 17).

In the new European Green Deal, the European Union set the target of becoming carbon neutral by 2050 and emitting up to 55% less carbon by as early as 2030. To do so, it wants to transform industry, energy supply, transport, and agriculture without reducing prosperity. Public and private investment of at least 1 trillion EUR is to be generated by 2030 via a Sustainable Europe Investment Plan, including 120 billion EUR for residential buildings. In view of the EU's plans, the German Property Federation (ZfA) has calculated that approximately 100 billion EUR needs to be invested in buildings and technical systems every year up to 2030.

By 2050, the German federal Government intends to lower emissions by 80 - 95% compared to 1990. According to the Climate Action Programme adopted in 2019, a carbon reduction of 55% is targeted to have been achieved by 2030. Decreasing carbon emissions in the construction sector to 72 million tonnes by 2030 is strategically important. This equates to a reduction of more than 65% compared with 1990 (209 million tonnes).

The construction sector has already lowered its carbon emissions by 40% since 1990. The 2030 target can only be achieved if there is an annual reduction of 5 million tonnes from now on. The German Government recently announced the aim to cut emissions by 65% by 2030 compared to 1990 levels, increasing the previous 55% target. It also

aims to introduce a new target to cut emissions by between 88 -90 % by 2040, before achieving net zero emissions by 2045, five years earlier than planned. Further information on how this affects the sectoral savings targets is not yet available.

Although there are no existing policies that require the refurbishment of set numbers of buildings, the organisation continues with a dynamic programme to achieve this. The ability to allocate costs in connection with carbon emissions between tenants and landlords is currently being discussed in Germany, but there is no decision yet on how this will work. If new policies are introduced in this regard, then the organisation will change its strategy.

Financial

It is possible to make Germany's building sector zero carbon by 2050, and it can be done in a socially acceptable manner. This is evident from a survey which the interviewed organisation conducted with the Institut der deutschen Wirtschaft (IW). To achieve carbon targets in Germany, an investment of 498 billion EUR is needed to modernise housing. This would equate to a 1 to 2.5%, increase in refurbishments meaning that 1.04 million apartments would have to be upgraded every year.

As a leading company in the residential property sector, the German respondent is aware of its responsibility to protect the climate. The organisation wants to use its knowledge to find innovative solutions for achieving political objectives. The company has set itself a target of making its property portfolio net zero carbon by 2040. At the beginning of 2021, the company published its climate action strategy for a net zero carbon portfolio.

The company will invest an additional 2 billion EUR in its portfolio until 2040. From this, 1.5 billion EUR will be spent on energy-efficiency refurbishments. This is a powerful lever for achieving the climate targets. That is why it is increasing investment in energy-related measures from around 33% to around 50%. The remaining 0.5 billion euros will be focused on expanding the use of renewable energy.

For organisations like the German respondent, there are currently very good opportunities for financing on the capital market. The company has just issued two green bonds and raised 1 billion EUR on the capital market. The net proceeds will be used to finance green projects. As a result, the organisation will, in the future, be able to invest more both in the acquisition and construction of climate-friendly buildings and in the energy-efficiency refurbishment of its existing buildings. The organisation does not currently measure the cost of not achieving these goals and there are no penalties from the Government at present.

Organisational

The latest commitment to new sustainable goals has led to organisational changes at housing associations. The interviewed organisation is a prime example. To meet the new targets and challenges, the organisation has established a sustainability team and a sustainability committee. Furthermore, the organisation adopted a strategic sustainability programme with strategic and operational goals addressing five areas, including its responsibility for the environment and climate. The organisation plans to further strengthen its operations to achieve its climate goals.

These are all issues that challenge the housing industry and require companies to adopt new technologies. For this reason, the organisation has teamed up with external consultants to analyse and anticipate the best energy saving and performance measures. Of course, these changes and new targets come at a cost, which are covered to a certain extent by tenants. However, tenants should not have to carry the entire burden, which is why the organisation has devised an innovative scheme.

It has recently submitted a concept that solves the "climate protection versus housing costs" dilemma. It stipulates that the surcharge of up to 8% which the tenant would have to pay, is partially taken over by the so-called Energy and Climate Fund (EKF). The fund was introduced in 2011 to finance measures for energy efficiency, climate protection and environmental protection, and extended in 2021.

GERMANY



Environmental

As mentioned before, Germany signed and committed itself to respect the Paris Agreement, which legally binds the country to meeting strong environmental targets. The German housing industry has a considerable role to play as it is accountable for one third of national emissions. – a fact the interviewed organisation is aware of. The organisation owns and manages approximately 160,000 homes.

Regarding its climate strategy, the organisation has set an ambitious goal and wants to make its portfolio net zero carbon by 2040. The various measures aim to minimise energy use within its properties and use energy sources that emit as little carbon dioxide as possible to cover the remaining unavoidable energy requirement. This will enable the organisation to reduce its carbon intensity from 33 kg of carbon dioxide equivalent per sq m to below 12 kg per sq m by 2040. The company will then have reached the target rate for a near net zero carbon property portfolio as defined by the Initiative Wohnen 2050 (IW.2050) and others.

The aim of achieving net zero carbon by 2040 builds on what the organisation has already done in this area. Thanks to its continuous investment in building fabric, heating units and energy efficiency, the organisation already has a climate-friendly portfolio compared with the industry average. It began to modernise the fabric of its buildings and heating systems many years ago, installing combined heat and power plants and switching to more environmentally friendly sources of energy. Today, some 90 % of the communal electricity requirement in the rental properties is already covered by 100 % certified hydroelectric power.

The organisation aims to build on this progress in the years ahead through focused investment, increasing the amount of decentralised heating supplied by combined heat and power plants and the use of renewable energies. The roll-out of photovoltaic systems will provide renewable power for the estates. The construction of new climate-friendly buildings, home automation services and intelligent heating management systems will also contribute to achieving the goal of net zero carbon.

The company has identified five key action areas which it intends to address to make the property portfolio net zero carbon:

Low-carbon heat and power: it is investing in what is known as sector coupling: linking decentralised heat generation and efficient combined heat and power plants with renewable electricity and a charging infrastructure for electric vehicles.

Energy-efficiency refurbishment: it is refurbishing its portfolio to make it more energy-efficient and improve the carbon footprint of its properties.

Green energy: by continuously increasing district heating, the company is significantly reducing the primary driver of energy consumption and making its heating systems more climate-friendly.

Climate-friendly new construction: a key focus of the organisation's investment is to reduce the resources required for constructing new homes and to meet high energy-efficiency standards, based on certification to the German Sustainable Building Council (DGNB) Gold standard. The organisation is also striving to achieve the KfW 55 standard, which calls for an energy requirement that is 20 % lower than required under current legislation of the German Energy Saving Ordinance.

Home automation: the organisation enables its tenants to save energy with automated controls and helps them to make more environmentally friendly choices through smart home solutions.

Technical

The interviewed organisation believes that it has a good understanding of the characteristics of its stock and limitations regarding technical solutions for its portfolio. It monitors new technologies that come to market although it is impossible to constantly scan the innovative concepts and products that are being launched. The organisation knows what key technical data it needs to collect to make useful assessments of its stock.

Reporting

The organisation uses GRI, DNK and the Greenhouse Gas Protocol standard for carbon accounting/carbon footprint.

Highlights and Strategy Update | Market and Portfolio | Financials and Outlook | Appendix

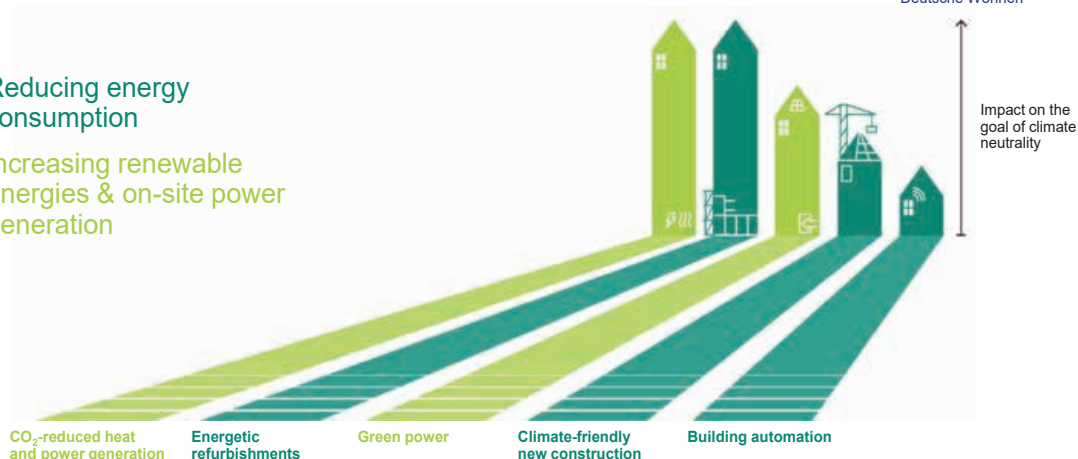
DEUTSCHE
WOHNEN 

Mission climate neutrality

The two key fields of action

1. Reducing energy consumption

2. Increasing renewable energies & on-site power generation



IRELAND



General policy

The interviewed organisation has quite an ambitious sustainability strategy with three strands: Build green (new build, retrofit), Be green (engagement with residents and green spaces), Live green (organisation footprint). This is in line with Government targets for 2030 and the high-level target for 2050. It incorporates everything not just energy.

The Government recently launched a Climate Plan aiming to achieve net zero carbon by 2050. By 2030, the Government wants an average 51% reduction in overall emissions and zero emissions by 2050. The targets also include the retrofitting of 500,000 homes to a B2 minimum standard (this is out of about 2 million homes in Ireland), and all new homes must meet the A2 building energy rating standard.

It has set a target of 70% electricity from renewable sources, the installation of 600,000 heat pumps, 400,000 of which should be put in existing buildings. The installation of gas and oil boilers will be banned by 2022, and all grants that previously supported this have been cut. The Government is also in the process of creating a body to oversee the effectiveness and efficiency of delivering retrofits, with the intention to focus on an area-based approach. There are also plans for new SUDs (sustainable drainage systems), for flood risk areas in particular, and sustainable housing in terms of transport, embodied carbon, and the circular waste economy.

Construction waste in Ireland is currently twice the EU average. The 500,000 homes are not all owned by housing associations as many are privately owned. The aim is to offer incentives to upgrade which is a big challenge, but grant schemes are all geared towards homeowners. For housing associations, there is still a split incentive issue making it difficult to invest. There has been some discussion about addressing this to see how a proper modelling structure could be put in place. It is likely that most renewable energy will be delivered through wind sources, but Ireland is keen to find a mechanism for homeowners to sell back energy into the grid. Currently this approach is not fit for purpose so local community energy schemes are taking off.

Financial

The interviewed organisation owns about 7,700 homes and in the next two years about 40% asset growth is forecast through new construction. The organisation completed an

energy masterplan with support from the sustainable energy authority of Ireland (SAI). This has provided an overview of two thirds of its stock.

The challenge is that the funding mechanism is geared towards homeowners since SEAI (Sustainable Energy Authority Ireland) provides 50% funding and the homeowner recoups the remainder via energy savings over approximately seven years. Housing associations cannot reap these benefits as they go to the residents (split incentive). The organisation has invested £7.2 million over the last two years in fuel poverty retrofit measures, receiving 50% from SAI and spending £3.6m of its own money on improving 300 properties from E/F rating to B2/B1 standard. This was roughly a £25k investment per house. Any further investment will have to be phased to maximise the impact with the money available. There is now a bigger plan to look at cost effectiveness and different scenarios for future years.

Part of the 2021 plan comprises scenario modelling for the costs of different types of retrofit to see what can be achieved. The organisation has also been working on large scale regeneration projects, including a £23 million investment in the regeneration of an apartment block with very poor standards. This involved a complete revamp including adding two additional floors and a communal heating system. The properties are now all A3 minimum standards. There were some government grants and loans available for these programmes as well. There is currently no intention to change the split incentive model, but the Government needs to consider how this works in terms of grant.

Organisational

The interviewed organisation's sustainability team currently comprises one member, but it is aware of the need to dedicate resources to devising clear action plans to help project teams meet the overall sustainability goals and strategy.

The organisation has relied on external support from consultants to design its sustainability strategy and consults with contractors, suppliers, and architects to come up with optimal energy solutions for buildings. Once the organisation has designed and officially managed its future properties, the housing association will handle sustainability issues internally.

The organisation has not begun to focus on circularity policies yet. Developers are installing extra photovoltaics at their own costs to study and analyse the data and energy costs but face some reluctance from residents to share their data.

Environmental

The Irish Government has set the targets for all new homes to be net zero carbon by 2050 and produce 40% less embodied carbon by 2030. The interviewed organisation in Ireland manages approximately 7,500 units and intends to grow by 40% in the next 2.5 years. The housing association wants its operations to be net zero carbon by 2030 and align with the 2050 carbon neutrality goal.

Carbon emissions are calculated through building regulation. Meeting the sustainability goals will in part, need to be achieved by measuring carbon across all the organisation's operations. The Government has also set clear incentives and is expected to offer different kinds of energy sources to help housing associations reduce carbon emissions.

Circularity policies are still to come. The organisation needs to measure waste cycles to integrate circularity into the sustainability strategy, but there will be questions to address for procurement and contracts team to make the business more mindful on circularity topics.

Technical

The organisation has a reasonable knowledge of its stock. The circularity of materials is one of the issues that the organisation will have to further explore. For technical assessments, the organisation uses external advisors (architects, energy advisors, etc.). It is necessary to use different advisors as there are no advisors that cover the full spectrum of solutions. Normally, the organisation would pilot certain technologies before replicating. It is important to use tried and tested solutions.

Reporting

The organisation does not provide a specific report on sustainability or have a sustainability strategy in place. There are no regulatory obligations in terms of reporting on sustainability. It would like to learn from other organisations to see what such a strategy could look like. In the annual accounts, there will be a chapter on sustainability in the future. The organisation has an action plan of how to further embed sustainability into its operation.

THE NETHERLANDS



General policy

The interviewed organisation is familiar with the UN SDGs and is working to achieve these goals daily. There is no specific reporting on these goals, but the targets set by the UN are used as a source of reference.

In the Netherlands, the focus has been on getting off the gas grid and moving towards renewable energy. Insulation to reduce energy demand is normally the first step. Electrification (all electric) is one of the solutions to meet energy demand, but electricity must be generated in a renewable way. As electricity is still more expensive than gas, this also influences the business case for investment as the organisation uses a lifecycle cost approach.

In Dutch politics, a Climate Agreement has been reached and housing associations have embraced the objectives which are aimed at the country becoming carbon neutral by 2050. There are also regional energy strategies determined by different stakeholders such as energy companies and policy makers. The organisation actively participates in discussions about the energy strategy in the region where they operate.

The organisation has begun a regeneration programme for homes with poor energy labels. This has gradually changed to homes that are ready to be taken off the gas grid and can be added to a heat net (district heating). The transition has started well, and results have been achieved quicker than expected. The organisation manages stock comprising around 50% single-family homes and 50% multifamily homes. New policies are thoroughly studied and depending on their content, the organisation's approach could change.

Financial

The organisation has developed a long-term strategy with a detailed investment plan for the first five years. Sustainability is important, but there are also ambitions in terms of investment in part of its existing stock and to construct new homes to meet high demand in the market. A fixed investment sum has been budgeted based on its plans and the organisation will be able to fund its strategy for at least the next 10 years. After that period, the forecasts become more uncertain.

The organisation had a relatively strong balance sheet when the energy transition programme began. However, it is anticipated that they will need to increase their loan portfolio

from 500 million EUR to € 1 billion EUR to realise their ambitions. The organisation owns sufficient assets to back these loans. In the past, there have been grants for energy transition (the STEP programme that was nationally funded with € 395 million EUR). Now, national grant schemes are limited and only available for investments that meet strict criteria.

Currently, the organisation gets some financial support from the EIB (European Investment Bank) for investments focused on improving energy efficiency and is able to execute its strategy, but its financial capacity is limited. The question will be whether its financial limits will be reached before achieving the zero-carbon goal for 2050.

Organisational

Currently, some regeneration projects have been delivered by the planned maintenance team and others by the project investment team. Workloads have shifted towards consumer-oriented departments such as customer and online services.

The Dutch organisation recognised from an early stage the value of collaboration and is being supported by the Urgenda Foundation, an organisation fighting climate change, to help increase its knowledge. The organisation also uses energy consultants.

Energy transition is so multifaceted that different organisations are continuously searching for the best solutions. There is no one-size-fits-all solution, and most organisations are being supported by a range of specialists, including energy consultants.

The goal is to reduce the energy costs for tenants. In some cases, some of the reduced energy costs will be recouped by the housing association to cover some capital investments. The organisation is familiar with the “rebound effect” (if energy efficiency improves, so does tenant comfort) and understands that tenants expect a positive impact on their fuel bills when they agree to an ambitious regeneration programme.

Environmental

The target is to become zero carbon by 2050 or earlier, if possible, to reduce energy poverty as well as to contribute to fighting climate change.

Although the organisation has no specific experience in calculating carbon emissions, it does have a clear picture of its stock’s energy use through certified energy labels. The housing association also knows its carbon footprint and has identified four solutions to upgrade its stock:

- All electric
- Thermal storage open loop
- Thermal storage closed loop
- Projection Key Performance Indicators

The organisation is running a pilot project at one estate based on the principles of circularity. There is also a list of preferred materials for projects. Together with other housing associations, there is a move towards timber-framed modular housing. To make modular housing financially viable, a certain scale or critical mass (which balances demand and supply) needs to be achieved. The organisation is closely monitoring a project being delivered by another housing association in the Netherlands (Eigen Haard) which is re-using building materials.

Technical

The organisation interviewed in the Netherlands, has several Key Performance Indicators (KPIs) that are being used internally. Some of these are calculated based on data that was collected to make energy indices for the stock.

The Dutch participant uses technical consultants to bolster its knowledge.

It is aware of the data needed to make useful assessments and believes a more in-depth study of the trade in carbon emissions is required, considering exactly what is being traded, how prices are set and who are the buyers and sellers. Another element that needs to be improved is the monitoring of energy use before and after an intervention and the Dutch participant is currently working to introduce these assessments.

Reporting

The Dutch participant is currently not using standard reports to specifically inform about sustainability or energy efficiency.

UNITED KINGDOM

ORGANISATION 1



General Policy

The interviewed organisation is aligning its sustainability strategy to the UN SDGs, following work carried out to develop a sustainable housing finance framework and to further detail ESG goals.

These goals also align with Government policy, including achieving zero carbon by 2050 and a new environment bill around net positive biodiversity on new builds as well as social targets around poverty.

The UK's Clean Growth Strategy is targeting an EPC label C for existing homes. To achieve this sustainably, buildings must be upgraded at the right time, rather than just aiming for EPC C across the board. The main challenge is that the right target for housing is not clear. This is because the Government has set a zero-carbon goal, but has not set a strategy that will support energy affordability. This is critical for the housing sector as the energy efficiency of the building must be in line with what the tenant can afford.

Financial

There is a project underway with the Green Finance Institute, which is working with the energy sector, banks and the Coalition for Energy Efficient Buildings (which the interviewed organisation is a member of) to look at the finance gap and how this might be addressed. This work has identified the need for a building refurbishment passport, that goes further than the usual energy performance certificate and sets a pathway to zero carbon for every building. It is also looking at options for financing zero carbon.

There are some small regulatory barriers that currently prevent UK housing associations from bridging the finance gap for zero carbon. Housing associations cannot afford a full zero carbon transition as they cannot recoup from rents, but if regulations change this could be possible. The organisation already has positive relationships with funders and some internal resources, but they cannot close the financial gap completely.

Organisational

Rather than having a dedicated sustainability team, the organisation is aiming to introduce sustainability specialists to adopt a more holistic approach that could be applied in other sectors. Due to the size of the business, it would be

impossible for it to have a separate sustainability team, so everyone is involved in the overall strategy. Nevertheless, changes are underway as the organisation hopes to recruit a sustainability specialist in assets, recognising the gap in its operations.

The organisation is aware that a long-term approach is needed to address sustainability issues and that this needs to be financed. It is essential to focus on reporting and collecting quality data. Each part of the business will be given specific targets and strategies to meet common long-term goals.

Regarding external support, most of the technical delivery is carried out externally, whereas the organisation handles project management.



Environmental

The first interviewed organisation in England has set itself a clear target to become carbon neutral by 2050. To do so, it is aiming to reduce its annual carbon emissions by 2% each year and gradually improve its minimum EPC ratings, achieving EPC D by 2025 and EPC C by 2040.

In addition to meeting government requirements and potential changes to housing regulation, the housing association wants to increase the resilience of its homes, protect its tenants from fuel poverty and gain access to ESG capital markets and low-cost financing.

Carbon emissions are measured directly by energy bills and traced back to the EPC/SAP scoring of each home.

Approximately 60% of the organisation's homes have an official EPC rating, and the housing association is focused on improving this total and looking at new reporting measures from contractors and suppliers to better trace carbon emissions.

Regarding circularity and the use of sustainable materials, the organisation has proposed new policies for new builds in its sustainability strategy, currently being reviewed.

Technical

This organisation is now undertaking pilots to examine technical solutions to achieve “zero carbon ready” homes and develop an improved retrofit toolkit. There is potential for the organisation to be better informed of available technical solutions through a hub for retrofit design and information on technical components.

The organisation knows what data to use although data management needs to be refined and the cost of data gathering reduced, which the organisation is planning to explore in pilot projects.

Reporting

This organisation is now using “The sustainability reporting standards for social housing” https://thegoodconomy.co.uk/resources/reports/SRS_final-report.pdf and the certified sustainable housing label criteria.

UNITED KINGDOM

ORGANISATION 2



General Policy

There is limited content in legislation in relation to sustainability because 2030, 2035 and 2050 are still seen as so far away.

In Scotland, the Government introduced a quality standard about 10 years ago and an energy efficiency standard for social housing five years ago, which is now coming to an end. Neither of these policies are futureproofed – they are based on things that need doing now and some measures in these policies will need to be removed in a zero-carbon future.

This highlights the risk of shorter-term policies; they are based on parliamentary rotations and not on longer term goals such as achieving carbon neutral/EPC A by 2050. This is changing in England through an interim EPC target by 2030 which is mostly based on the building's fabric, including windows, doors, and insulation.

In many respects, England is very light on policy and there are no locally based targets. Even new build standards are driven by the technical requirements of SAP and EPC. This usually results in minimum fabric standards topped up with solar panels for example, but has no benefits to wider society or the people living there as the individual panels are not doing anything to drive the sustainability agenda.

Another big issue is that the planning process has such a lag that the organisation is still building homes today that were approved under plans from 5, 10, 15, or 20 years ago. Even new local development plans are not sustainable.

By 2024, no new approvals for new build in Scotland (2025 in England) can have gas installations but everything approved before that, even homes being built up to 2030, can have gas. The other main challenge is that organisations do not have a large enough footprint in most places to manage the infrastructure required for energy production. The organisation has 70,000 properties but they are spread over the country, so it is very difficult to get a powering solution for all of them without focusing on the grid and individual households. Not only is Government policy short term, it is focused on individual sectors like social housing when what is really required is planning reform.

Financial

As of the end of 2020, an asset team was established which is developing an asset investment strategy for all 70,000 homes. The organisation has some dated stock condition information so financial planning cannot start properly until this is updated, which may take between one and two years. Financially, the challenge is determining when to draw a line under data collection and make a plan for sustainability. Compliance, particularly in England, is now the priority, including fire risk assessments, legionella, and gas safety.

The Government's Social Housing White Paper, published post-Grenfell, reiterates the need for customers to have a greater understanding of the business and a greater say in what it does. From the customer's perspective, this puts the focus on a property's current safety and condition and not the asset's performance over the next 50 years. A big challenge is that achieving compliance does not generate a return on investment. Even though the need to address health and safety issues and the EPC 2030 target overlaps, data on both matters is not complete yet.

In terms of financing, the organisation first needs to protect the value of its assets. There may be lenders who will lend at more favourable rates, but these could come with strict conditions that could become a burden on the business.

For the first time in 10 years, the organisation now has a sustainability strategy which sets out what is needed but the focus must now be on the practicalities. There is a desire to set out a long-term financial plan but defining the detail is challenging in the short term. Culturally, there is not an appetite for risk in society, but it is going to be needed to

meet the environmental agenda. There is funding for new builds, but no money for regeneration or retrofits which is where it is really needed.

Organisational

The second interviewed organisation in England believes it is ready to apply its sustainability strategy in terms of compliance and data. It intends to build on its progress to date once the Government's requirements are made clearer to avoid the risk of setting broad sustainability goals that cannot be efficiently implemented.

Furthermore, to achieve sustainability goals, housing associations use tenants' money, so this must be carefully invested. The priority is to therefore focus on data to better understand the organisation and its operations.

Currently, the organisation collects data in four different ways, but the aim is to gather the information in one clear and effective way. Moreover, new data points need to be established. Energy efficiency data was not collected 30 years ago, so some sets are now obsolete. This is a trend that applies not only to this organisation or the UK, but to Europe as a whole.

A challenge for the organisation of the size of we interviewed, is to work with external consultants or business partners as generally, they do not understand the overall context of the housing association's business. External stakeholders usually try to sell a package deal that most tenants cannot afford and that does not address their needs. It is therefore essential to be on top of the latest trends in technology and aware of the desired outcomes for the business.

Environmental

The second interviewed organisation in England has set both corporate and group targets. Given the diversity and size of the group, there is a real risk that goals set for one part of the organisation, will not apply to another part. Also, internal group targets are complicated to meet and require long-term thinking, which is why a whole house approach to refurbishment is a priority.

Improving a home's energy consumption and efficiency with a new gas boiler system is a low-risk investment that will last five to 10 years and will cost approximately £2,500. An air

source heat pump will cost between £8,000 and £10,000, and nobody knows if it will last five years. Momentum and timing are a real challenge as technology and solutions are expected to improve over time in a near future.

Regarding circularity, the organisation has not adopted a policy yet. There is no clear consensus on what sustainable construction is, making it difficult to select specific materials.

Technical

The organisation has extensive knowledge of innovative techniques but does not yet know what type of investment would deliver the best value for money. It does not know what the lifetime and operational costs are of certain technologies.

In five years' time, there could be options on the market that are currently not known or factored into solutions. The organisation looks first at the building's fabric before looking at the energy system. Its number one priority is to complete a study on the energy performance of its portfolio.

It does not yet consider the circularity of materials used in new buildings. There is a specification of what materials the organisation would like to use in its projects, but it has not specified the materials that cannot be used. The question of how to build in the most sustainable way, leads to different answers, depending on who you ask and what methodology is being used. Obviously, a whole lifecycle approach would make sense to get a deep and full understanding.

Reporting

The organisation uses EPC/SAP ratings. Housing stock has also been assessed based on different models to help determine the best retrofit investment strategy. The organisation would like to report in more detail on its existing stock and this reinforces the need to complete the database on its stock, confirming details such as what types and numbers of boilers are used, and when they were installed.

There is no reporting beyond statutory requirements. The organisation has not yet defined what to report and why, but it has started to study this question. Ideally this would lead to a situation where the organisation would fully know and understand the data before deciding what to share externally or how to use that information in decision making.

UNITED KINGDOM

ORGANISATION 3



General Policy

The interviewed organisation's policy has been driven by the UK Government's declaration of a climate emergency in 2019, which shifted the target from an 80% carbon reduction to 100%. The organisation is now focused on achieving zero carbon, while maintaining all its other work around sustainability.

It does not use the SDGs as it is part of the Ritterwald Sustainable Housing label so has a robust framework to evaluate its sustainability progress. The organisation publicly reports on carbon through its financial reporting as part of the Government's streamlined energy carbon reporting requirement.

There has been an increase in awareness around carbon in the last 18 months. The bulk of the organisation's carbon emissions come from its housing stock, with its overall carbon footprint totalling 52,455 tons of emissions. The Government has for some time, required local authorities and large organisations to report on carbon. The interviewed organisation is on the border in terms of needing to report, but as a social organisation has done so voluntarily. It has a policy team that keeps abreast of new initiatives as does its sustainability team. The local planning requirements are also important as these affect the standards for new build homes.

Financial

The interviewed organisation's finance team understands the full implications of zero carbon and the importance of including these in its plans. The challenge is establishing what details to include now as part of long-term (30 year) plan; for example, it is currently difficult to predict how much a heat pump will cost in 10 years.

It is clear that retrofit will generate the most costs, but it is still not known how high these will be. The organisation commissioned a report two years ago to create a roadmap to zero carbon, which resulted in an initial cost estimate of £380 million to get up to EPC A. This represents an investment of £12m per year which would be at least 35% of the existing planned investment budget. The thinking is that this may well be underestimated, although there are likely to be some cost reductions as retrofit and heat pump manufacturing become more mainstream.

The UK Government has launched some funding projects for decarbonisation in the social housing sector, which are

expected to be ongoing. The organisation will be targeting these funding pots and is also looking at the financial structure of the Energiesprong model. With accreditation under the sustainable housing label, it is also keen to access green finance.

The Greater London Authority has had a carbon tax since 2016 for all new developments if they are not meeting 100% carbon reduction; the organisation has negotiated with the local authority to use this carbon tax to retrofit homes in its area. This could be another option for funding in the future, while also trying to reduce emissions on new builds.

Organisational

From an organisational point of view, the focus on sustainability will drive changes within the third UK-based housing association. It registers approximately 12,000 homes and has a dedicated sustainability team, which is due to grow this year. Currently, the sustainability team consists of two members, but the organisation is aiming to train its workforce so everybody is focused on the topic rather than just a few people.

To move sustainability up the agenda at director level, a Director of Energy and Sustainability will be recruited. This will not be an easy task, as certain directors are known to have a “traditional” view of things and may not be willing to take on a new challenge.

The UK housing association recognises the benefits external consultants can bring to the table (defining strategy, carbon accounting, targeting and stock, etc.), but achieving the right balance between internal efforts and external support is key.

Environmental

The third and last organisation interviewed in England has a target to become carbon neutral by 2050 and for its stock to reach EPC level C by 2030. Retrofitting buildings can be expensive and there is a risk of having to repeat the process 10 or 15 years later. The Executive team understands that taking a whole house approach to retrofitting, makes more sense commercially. The real challenge does not lay in setting targets, but in establishing how retrofitting schemes will be financed, especially given the stricter building regulations being imposed following the Grenfell Tower tragedy and the decision to remove timber kits in construction for fire safety reasons.

Technical

The organisation has a list of preferred materials, like FLC timber, in its design briefs, but it is an ad-hoc approach. An innovation manager scrutinises the materials being used in the design. This is challenging because some preferred materials from an environmental perspective, have been criticised for health and safety since the Grenfell fire. The whole life approach that has been advocated will hopefully bring timber back on the agenda.

The organisation uses Chrome software and recognises that the quality of its data could improve, as its current score for completeness is 5.5/10. The stock condition surveys will help to get better quality data and there is a data team to help fill the gaps. One of the key corporate objectives is to digitalise information and improve the database.

The organisation follows new technologies through professional networks, webinars and magazines. It also pilots projects to gain a deeper understanding around smart technology, and organises Continuing Professional Development (CPD) for asset management colleagues working closely with SME consultants for new builds. There is also a focus on energy strategies and how best to choose from the available technologies. Combined Heating Power (CHP) used to be favoured but attention has now turned to a range of different heat pumps such as air source, ground source, water source, and hydrogen. The sustainability team provides the development teams with information for their projects. Some project managers are more engaged in environmental matters than others. For some sustainability standards currently being developed, all staff should be aware of the importance of sustainability in all projects.

Reporting

The organisation has taken part in the SHIFT index since its inception in 2008. The index gives a clear picture of how well the organisation performs compared to its peers (benchmark). Recently, work has been done on ESG factors to obtain the certified sustainable housing label.

It is good to see there are new standards being developed in the market for social housing. The Streamlined Energy and Carbon Reporting (SECR) informs the Government about progress and looks at Scope 1, 2 and 3 of the Greenhouse Gas Emissions as defined in the Greenhouse Gas Protocol. This reporting standard has been in place since 1 April 2019.

EUROPEAN REGULATIONS AROUND ENERGY EFFICIENCY AND SUSTAINABILITY

Reducing energy consumption and waste is of growing importance to the EU. In 2007, EU leaders set a target to cut the annual energy consumption of the EU by 20% by 2020. In 2018, as part of the “Clean Energy for all Europeans” package, a new target was set to cut energy consumption by at least 32.5% in 2030.

Energy efficiency measures are increasingly recognised as a means not only to achieve a sustainable energy supply, cut greenhouse gas emissions, improve security of supply and reduce import bills, but also to promote the EU’s competitiveness. Energy efficiency is therefore a strategic priority for the Energy Union, and the EU has promoted the principle of “energy efficiency first.”

Directive 2010/31/EU on the energy performance of buildings contains several provisions to improve the energy efficiency of both new and existing buildings. Key requirements of the directive include:

- A common methodology for calculating the integrated energy performance of buildings and building units.
- Applying minimum energy performance requirements to new buildings and new building units, establishing, for instance, that by 31 December 2020 all new buildings must be nearly zero carbon.



- Applying minimum energy performance requirements to existing buildings, building elements that are subject to major renovation, and technical building systems whenever they are installed, replaced or upgraded.
- Energy certification of buildings or building units, regular inspection of heating and air-conditioning systems in buildings and independent control systems for energy performance certificates and inspection reports.

On 30 November 2016, the Commission presented a proposal for a review of the Energy Performance of Buildings Directive (2010/31/EU), as part of the broader Clean Energy for all Europeans (COM(2016)0860) package, that should help to deliver on the EU 2030 energy and climate goals. According to data from the Commission, buildings account for 40% of energy consumption and 36% of CO₂ emissions in the EU. Currently, about 35% of buildings in the EU are over 50 years old. By improving the energy efficiency of buildings, the total energy consumption in the EU could be

reduced by 5-6% and CO₂ emissions by about 5%.

The directive requires member states to establish long-term national strategies to support refurbishments of their national buildings. The directive sets out to ensure a highly energy-efficient and decarbonised building stock in each member state, as a cost-effective contribution to achieving the energy efficiency targets for Europe - such as reducing CO₂ emissions in the EU by 80-95% compared to 1990.

In addition, a 'Smart Finance for Smart Buildings (COM(2016)0860I) initiative was presented at the same time. It analyses how to stimulate public and private investment concerning the energy efficiency of buildings, sends a signal of confidence to the market and encourages investors to engage with energy efficiency.

The amended Energy Performance of Buildings Directive (Directive (EU) 2018/844) introduced long-term refurbishment strategies. Under the directive, each member state must establish a long-term refurbishment strategy to support the transition of national residential and non-residential buildings, both public and private, into highly energy efficient and decarbonised building stock by 2050, facilitating the cost-effective transformation of existing buildings into nearly zero-energy buildings. National strategies must contain a roadmap with indicative milestones for 2030, 2040 and 2050 and must specify how these milestones contribute to achieving the EU's energy efficiency objectives.

The UK has been involved in setting the European regulations and will largely follow what was agreed in the Union. The UK policy has been collected in the Clean Growth Strategy 2020. In that strategy, the UK Government aspires to further reduce emissions from homes while ensuring everyone has a home that is comfortable, healthy, and affordable to run. Its objective is to ensure policies will encourage people to improve their homes where it is cost effective and affordable for them to do so. One possible pathway to 2032 could involve emissions from homes falling by almost one fifth compared to 2018, to around 58 Mt by 2032. To achieve this 2032 pathway, the UK needs to ensure existing buildings use even less energy. This pathway could see a further six to nine million properties insulated.



THE EFFECTS OF EU TAXONOMY ON INDIVIDUAL HOUSING COMPANIES

The EU taxonomy is a tool to help investors, companies, lenders and project promoters navigate the transition to a low-carbon, resilient and resource-efficient economy. The taxonomy sets performance thresholds (referred to as ‘technical screening criteria’) for economic activities which:

- make a substantive contribution to one of six environmental objectives;
- do no significant harm (DNSH) to the other five, where relevant
- meet minimum safeguards (for example, OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights).

The performance thresholds will help companies, project promoters and issuers access green financing to improve their environmental performance and help to identify which activities are already environmentally friendly. In doing so, it will help to grow low-carbon sectors and decarbonise high-carbon ones. The EU taxonomy is one of the most significant developments in sustainable finance and will have wide-ranging implications for investors and lenders working in the EU and beyond.

As a start to the EU taxonomy, the EU Sustainable Finance Disclosure Regulation (SFDR) was introduced on 10 March 2021 and is compulsory to fund managers, pension funds and insurance companies. These organisations are among the core investors in affordable housing across Europe.

In short, the SFDR determines that the mentioned organisations need to be transparent when incorporating sustainability risks into their assessments of investments, and it forces them to inform investors about the impact of the investments on the environment. Detailed standards have been formulated regarding the information that needs to be disclosed to investors, such as the information memorandum, annual accounts and information available on websites.

The SFDR is closely related to the EU taxonomy that comes into force by 1 January 2022. The EU taxonomy introduces a common set of definitions in respect of ecological, sustainable, and economic activities. This means investors



Climate change mitigation



Climate change adaptation



Sustainable and protection of water and marine resources;



transition to a circular economy



pollution prevention and control;



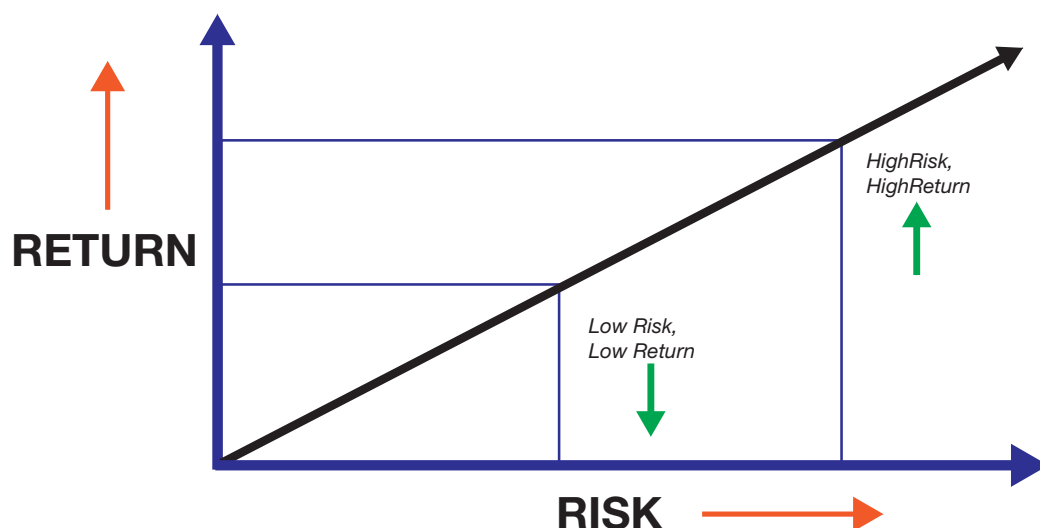
protection and restoration of biodiversity and ecosystems.

will be able to assess if and how an investment is made in ecology and sustainable economic activities.

An objective of the EU taxonomy is to make sustainable investments easier. Currently, the definition of terminology like “sustainable” and “green” has not been set in stone. Because of different interpretations, the unintended practice of ‘greenwashing’ has been observed in recent years.

The demand for sustainable investments is quickly growing. Well balanced, futureproofed portfolios support the move to a sustainable, circular and inclusive economy. These portfolios are not only better for the environment or society but also carry a lower risk profile and offer a good risk/return.

RISK RETURN TRADEOFF



The final taxonomy regulation introduces a new disclosure requirement for companies already required to provide a non-financial statement under the Non-Financial Reporting Directive (NFRD). National implementation varies, but NFRD covers, at a minimum, large public-interest companies with more than 500 employees, including listed companies, banks and insurance companies. Normally, housing associations qualify as public-interest companies.

EU law requires large companies to disclose certain information on the way they operate and manage social and environmental challenges. This helps investors, consumers, policy makers and other stakeholders to evaluate the non-financial performance of large companies and encourages these companies to develop a responsible approach to business.

The requirements differ between financial and non-financial companies. Some financial companies will also be subject to the Financial Market Participant disclosure requirement. All companies subject to this requirement will include a description of how, and to what extent, their activities are associated with taxonomy-aligned activities. For non-financial companies, the disclosure must include:

- the proportion of turnover aligned with the taxonomy
- capital expenditure (CAPEX) and, if relevant, operational expenditure (OPEX) aligned with the taxonomy.

This disclosure should be made as part of the non-financial statement, which may be included in an annual report or in a dedicated sustainability report.

Under Directive 2014/95 of the EU, large companies have to publish reports on the policies they implement in relation to:

- environmental protection
- social responsibility and treatment of employees
- respect for human rights
- anti-corruption and bribery
- diversity on company boards (in terms of age, gender, educational and professional background)

Directive 2014/95/EU gives companies significant flexibility to disclose relevant information in the way they consider most useful. Companies may use international, European or national guidelines to produce their statements.

TAXONOMY UK

With the UK leaving the EU on 1 January 2021, it will no longer be bound to EU regulations. The UK Government developed its own, similar strategy to promote green funding. The Taskforce on Climate-related Financial Disclosures (TCFD) was set up. The broad aim of TCFD, in line with the Government's 2019 Green Finance Strategy, is to make TCFD-aligned disclosures mandatory across the UK economy by 2025 at the latest and implement a significant number of mandatory requirements by 2023.

SUSTAINABILITY STRATEGIES

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030, all people enjoy peace and prosperity. The 17 SDGs are integrated, recognising that action in one area will affect outcomes in others, and that development must balance social, economic, and environmental sustainability. The creativity, knowledge, technology, and financial resources from all members of society are necessary to achieve the SDGs in every context.

Housing companies have started to adopt the SDGs and to develop their sustainability strategies. In the EFL working group, we have been studying a number of these strategies. It became apparent that housing companies are aware of the SDGs but details on how to reach the goals are often limited in action plans.

Housing companies are advised to begin to work on more comprehensive plans that not only address the SDGs as defined by the UN, but how they can be applied at an operational level. This would mean a clear focus on the elements where housing companies can make the biggest impact.

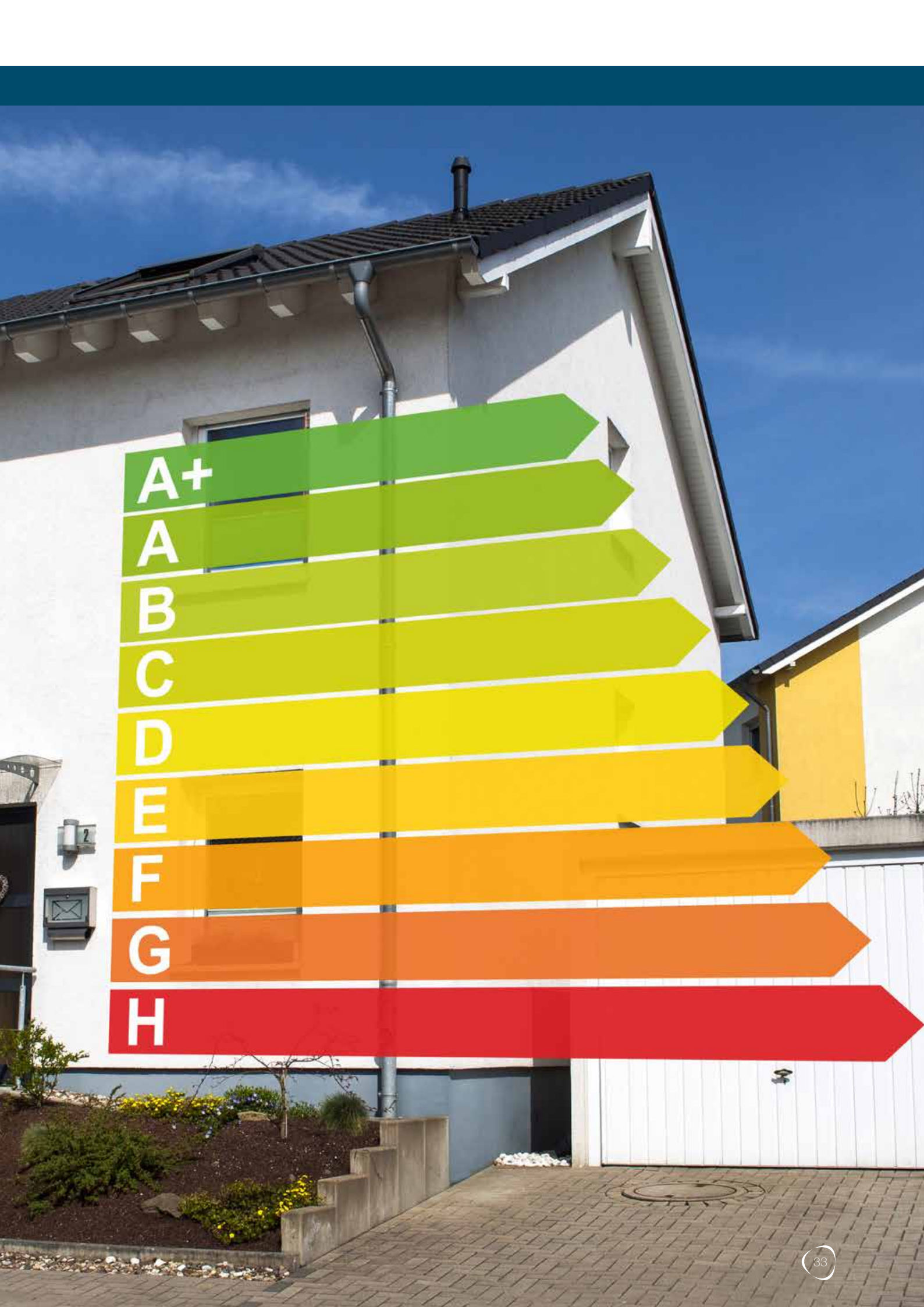
To make visible progress, measurable parameters must be observed and monitored. In the future, it will not be sufficient to just make statements. Policy makers and regulators are shifting towards reporting structures where progress and impact can be monitored.

In terms of reporting, non-financial statements in annual reports will become increasingly important. As a part of ESG reporting, supplementary information on environmental, social and governance issues will be published.

A sustainability strategy should aim to address challenges associated with commitment and responsibility and to find practical solutions based on compromises. A strategy needs to balance the different expectations and requirements – without losing sight of quality, financial viability, social, and ecological responsibility. The aim must be to create affordable, and simultaneously zero carbon, housing in modern and sustainable neighbourhoods where people can work and live.

Climate action is the responsibility of everyone in society and can only be achieved by policy makers, businesses and residents working together. To get the best results for society, ongoing debate is needed, and a common understanding reached between the different stakeholders. The strategies of different stakeholders should be aligned to avoid conflict. The multifaceted challenge requires strong collaboration and creativity to achieve the best possible outcomes.





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CONCLUSIONS AND RECOMMENDATIONS

This report confirms that more attention is being paid to improving energy efficiency and diminishing carbon emissions from social and affordable housing in Europe. The interviews conducted with housing companies in Europe showed that progress in various countries is at different stages. Some have adopted frontrunner roles, while others are more hesitant and seeking to follow the practices from other countries. Although only time will tell what the best approach is, it is important for some countries to show leadership and begin to put the wheels in motion to transform and meet climate targets. We had difficulties finding pan-European approaches.

The construction, including housing, sector is currently responsible for around 40% of greenhouse gas emissions. To reach the climate goals set by the Paris Agreement, it is inevitable that significant change will be required throughout the sector.

Housing companies, like the ones that are organised in the EFL, have started their transformation processes. One of the aims of this study was to find out how organisations set their objectives and develop action plans to meet these. A general observation was that changing legal frameworks and additional requirements imposed by governments quickly affect organisations' operations. Policy makers can have a direct impact, but for policies to be successful, they must not frequently change, and their potential impact needs to be carefully explored. In some cases, such policies have been victims of their own success and have had to be stopped prematurely, for example feed-in tariffs.

Many of the strategies of the interviewed organisations are not holistic. There are only a few key objectives and not enough detail to achieve the desired results. It was acknowledged that housing organisations should do more to address this, but this is a complex challenge which requires input from other stakeholders. We need to know what sources of energy will be used and be available in the future. We also need to know what the energy infrastructure will look like (for example, how to transport hydrogen) and in what areas energy demand will go up or down.

If we limit ourselves to housing organisations, there are a number of elements that could be improved:

Data

All housing organisations use datasets to support their decision making. Having studied the information that is being collected, there is still a lack of good quality data which can be used to support decision making on the sustainability agenda. We observed that housing organisations all use unique datapoints with different definitions, and that datasets are often incomplete or incorrect. Data cleansing and data collection is one of the big challenges when preparing to assess the different retrofit scenarios. Organisations will have to ask themselves what information to collect and why.

Generally, we believe that a way forward could be through developing so-called building passports that can objectively store the key data of buildings or estates, especially information around the building envelope which is currently lacking.

Circularity

Most housing organisations have limited attention for circularity; a circular economy (also referred to as 'circularity') is an economic system aimed at eliminating waste, the continuous use of resources, and environmental pollution (definition from Wikipedia).

Most housing organisations have started to think about circularity but are struggling to apply the philosophy in practice. There have been great examples of projects that have been built or transformed according to the principles of circularity, but this often comes with a price that is too high for large scale replication. As a sector, we need to find ways to optimise circularity in a financially viable way.

Learning from best practice

Every housing organisation has piloted new technologies or innovative methods to retrofit its stock. Although outcomes are recorded, a thorough analysis of the advantages and disadvantages of the solutions is often lacking. If this information was gathered more transparently, it would help prevent the sector from making repeat mistakes. We learned that different typologies of houses demand different solutions. Moreover, different geographies and climates also need different solutions.

Funding the decarbonisation challenge

Housing organisations do not have a clear picture of the future capital investment required to retrofit. An investment strategy will need to responsibly spread the investments over the next decades. Housing organisations would benefit from clear financial pathways to finance the challenge ahead of them. Their position would be stronger, if they were to be guided through the maze of different grant programmes, funding sources and ESG programmes. Financial continuity is the priority of every housing organisation, so the investment programme needs to be realistic and well balanced.

In certain countries there are decarbonisation funds, and it would be interesting to study their dynamics.

Organisational

Although reducing carbon emissions and sustainability is now very high on the agenda of housing organisations, they are not fully equipped to manage this transition. The whole house approach, which involves retrofitting the whole home at once rather than staged improvements, is gaining momentum. Organisations still operate old-fashioned maintenance cycles that replace components rather than deliver holistic improvements. We recommend making energy management part of housing organisations' core business. The teams that have been set up to guide organisations through the transition are small and lack the resources to accelerate progress. This is likely to be one of the main risks when planning decarbonisation.

Resources and Covid-19

The ongoing Covid-19 crisis has resulted in a shortage of building materials and available technology. With economic recovery plans now in place, it is expected that investments in the decarbonisation of national economies, including housing, will accelerate. There are, however, concerns that there will be insufficient skilled workforces to meet demand, so there is a clear need to quickly prepare and generate additional capacity.

Above, we described the most obvious challenges for housing organisations. Through collaborations like the EFL, we could support elements of this work. In the working group we discussed how EFL could support its members in this transition. We tried to list the actions that could be delivered by EFL and to use the combined knowledge of the individual members of the network.

How can we use EFL to progress the energy transition?

The working group for sustainability (as part of the Topic Group Finance) that has been working on this document would like to continue working on the energy transition. The Topic Group Finance divided itself in March 2020 to work on two different assignments. To keep focus and interest high, it was recommended to go back to full Topic Group Finance meetings.

Involving the highest levels of management at certain stages in the process would also be beneficial. To keep the working group members motivated, we should also aim to divide the work into small assignments which focus on a specific element of the transition.

It was also noticed that work for the EFL is often delivered by a limited number of staff from the member organisations. It is recommended to raise awareness of EFL's work among a broader range of staff within the member organisations. It would be interesting to work on joint projects rather than just discuss them. There could be elements where a collaborative approach could lead to the development of tailor-made products for the housing sector, for example building passports and funding pathways.



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