REVALUE

Recommendations for housing providers on valuation techniques and strategies in their investment programmes

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Executive summary

The REVALUE team has done extensive research in order to be able to understand the way housing providers assess and manage their stock in relation to value and energy efficiency. The (cor)relation between these two elements was especially crucial in the approach of the REVALUE project. We believed that only with a full understanding of the internal strategic and decision-making processes of housing providers (including the used parameters) would we be able to understand what really drives decision-making. By establishing these drivers, we could start to assess how to best employ management activities that have the potential to engender change.

In order to develop a deep understanding of housing providers, two members of the REVALUE team undertook a series of deep (1.5 - 2 hour) semi-structured interviews with decision-makers in the housing sector. The results of these deep interviews are documented in Part A of this deliverable and provide the understanding required to make recommendations to housing providers as to how they might be able to deliver energy improvements within their portfolios.

Although the results of the interviews provide the bedrock for this report, the key objective of the task was to make recommendations on valuation techniques and strategies in investment programmes of housing providers. These are covered in part B of this document.

Part B consists of a questionnaire that is designed to be used as a self-evaluation document for affordable housing providers to test their readiness for setting and delivering long-term sustainability objectives. The questionnaire is by design capable of promoting internal discussions and as such it is intended for quick completion (about 15-20 minutes) to act as an agenda setting device. The questionnaire can be (once filled out by numerous housing providers) used as a benchmark exercise allowing housing providers to find out how prepared they are for change in comparison to similar organisations in Europe. The questionnaire is available on the REVALUE website for interested organisations. Currently there is no mechanism after the end of the funded period to keep the questionnaire live or results monitored. However individual organisations could potentially pool results or use it as a regular management tool.

Part B also provides information about general recommendations from REVALUE to housing providers regarding energy efficiency and value. Recommendations were provided on different abstraction levels: portfolio level in order to improve internal decision-making processes (for individual housing providers) and for the housing sector in general, with reference to work done in cooperation with valuers and financiers (e.g. new guidelines, standards, etc.).

By dividing this deliverable in two parts (Part A and Part B), the intention is that readers of this document will develop a clear understanding of current practice in the operations of housing providers (Part A) as well as be provided with a suggested way in which their own organisations can see how to set their vision and assess how their practice could potentially develop (in terms of improvements in value and energy efficiency) towards the future (Part B).

The overall picture that emerged was that housing providers do take energy efficiency and sustainability seriously. However, due to constrained resources, housing providers must make choices; these choices determine the pace of upgrading investment programmes. With better information and more sophisticated scenario simulations, it would be possible to improve efficiency of the investment programmes. The most efficient use of resources would indeed free important resources for an acceleration in the programmes.

It should be noted that the document is structured such that parts A and B may be read together or separately so both have introductory sections, discussion and conclusions.

Table of Contents

Chapter 1 A.1: Overview of Part A - Understanding the attitudes and practices of social housing providers towards Energy Efficiency investments: analysis of interview findings

This report is one of a suite of documents reporting to the European Commission on the findings of the Horizon 2020 funded project REVALUE in response to the call to examine market uptake in relation to energy efficiency and assist in supporting moves to a low-carbon economy.

The REVALUE project flows from an acknowledgement that improvements to the building stock are vital to achieving EU targets as it is acknowledged that the majority of stock is sub-standard. A significant percentage of the housing stock in some European countries sits within the portfolios of social housing providers. Notably, the percentage of such stock is high in the Netherlands, UK, Denmark, France and Austria meaning that social landlords play a key role in supporting and delivering carbon reduction targets by upgrading their stock.

This report documents the findings from a series of twelve semi-structured interviews conducted in 2017 with a range of housing providers in England, the Netherlands and Sweden. Collectively these providers own in excess of 550,000 units. Of the twelve, ten are social housing providers (SHP); the remaining two operate differently but still offer social housing. One is a closed-ended fund utilising private equity to purchase houses and flats for social rent; the other describes itself as a professional residential landlord operating a range of social and market units. In almost all cases, despite challenges most of the organisations face in terms of creating a business case to invest in energy efficiency improvements, the providers interviewed have active building programmes and only one is reducing the size of their portfolio. In terms of the age of the portfolios, the largest proportion of units is post-1980 but it was reported that many units still pre-date this and are in need of energy upgrades. It was acknowledged that energy data held is limited: many do not even hold comprehensive EPC records.

The motivation for upgrades lies primarily in their social responsibility aspirations, rather than the achievement of profit levels, although rent capping and constraints on capital spend are very real barriers to investment. Working with, and in cooperation with, tenants is seen as very important, and in part dictates that improvements where possible take place as part of planned, holistic retrofits. Normally these are restricted to methods that are 'tried and tested' but it was found that evaluation of the impacts of energy investment was often not undertaken rigorously; instead it formed part of generalised tenant satisfaction surveys.

The role of the valuer and valuation professionals was explored and it was confirmed that valuation reports are not key to decision-making, though there was scope for the type of advice to be broadened to include some strategic advice. In terms of the role of governments and the EU, these were seen to be critical, especially in terms of regulation, but most of these investors do not make decisions based on what are often transient grant schemes.

The overall conclusions are that:

- The social housing sector is a complex and financially constrained sector but committed to improving the energy efficiency of their portfolios to levels which go 'beyond compliance.'
- The data held by housing providers on their existing estates is limited in relation to energy efficiency.
- Whilst financial considerations underpin the business case for energy improvements, their motivation stems from social responsibility and the health and wellbeing of their tenants.
- In deciding how and when to upgrade the energy efficiency of their properties, social providers tend to use 'tried and tested technologies' as part of planned, holistic refurbishment schemes, working in cooperation with their tenants.
- Quantitative evaluation and monitoring of energy upgrade projects undertaken by traditional social housing providers tends to be limited but investment is considered positive using 'soft' return analysis.
- The role of valuations and their professional bodies is tangential to decision in relation to housing providers' investments in energy efficiency improvements, but the role of valuations could be enhanced.
- Governments and the EU can assist the positive decision-making through cohesive, consistent and progressive regulation and grant systems.

Chapter 2 A.2: Introduction: the place of Social Housing Providers in Member States and their potential role in achieving greater Energy Efficiency

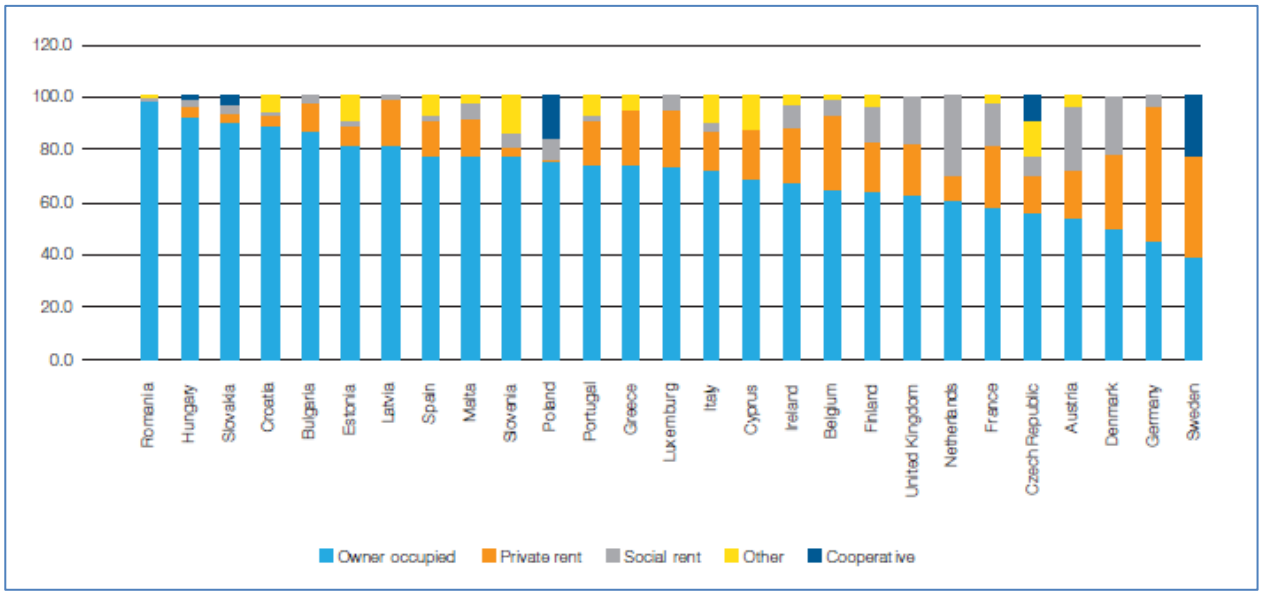
This report is one of a suite of documents reporting to the European Commission on the findings of the Horizon 2020 funded project REVALUE in response to the call to examine market uptake in relation to energy efficiency. The overall purpose is to help the Commission better understand the reasons why there may be barriers to achieving their ambitious targets for decreasing carbon emissions through greater energy efficiency. The current targets are to achieve a 20% reduction on 1990 levels by 2020 and a move to a low-carbon economy based on up to 80% reductions by 2050. Successive reports, notably from the IPCC (Inter-Governmental Panel on Climate Change), have identified buildings as major sources of carbon emissions (Bosteels and Sweatman, 2016).

The REVALUE project flows from an acknowledgement that improvements to the building stock are vital to achieving EU targets as it is acknowledged that the majority of stock is sub-standard. Further, sub-standard stock leads to poor outcomes economically, socially and environmentally speaking (Nicol et al ND)[1].

Owner-occupation remains the most common form of housing tenure across member states, as is shown in Figure 1 below. However, a significant percentage of the housing stock is rented and in some European Countries a large number of units sit within the portfolios of social housing providers. This percentage varies from country to country: within some member states it is high while in others it is very low, as is evident from the Figure below. For those countries where renting, in particular, social renting, is significant, the providers have a role to play in helping to reduce carbon emissions; this is considered to be of vital importance to them, given that many of their tenants are likely to be in fuel poverty. Energy is therefore a social matter to them as well as an environmental and economic one.

In the Netherlands, social housing is estimated to make up one-third of all dwellings and in the UK, Denmark, France and Austria, it plays a key role. Meanwhile the concept of renting is hardly known in Hungary and Romania and some other countries where there is a cultural tradition of family ownership. Where social provision of rented stock is large-scale, ownership is often concentrated in a few organisations with some social housing providers holding portfolios of thousands of units. In Sweden, rented housing is not labelled as 'social' but sits within private cooperatives or the public sector (see Figure 1).

Figure 1: Housing Tenure across EU Member States



Source: Pittini, A et al. (2017) The State of Housing in the EU 2017 Housing Europe

[1] *Nicol, S. et al (ND) the cost of poor housing in the European Union available from https://www.bre.co.uk/filelibrary/Briefing%20papers/92993_BRE_Poor-Housing_in_-Europe.pdf*

A similar pattern can be observed in relation to the private rented sector (PRS). This ranges from being very significant as a proportion of housing stock in Sweden and Germany to almost non– existent in some other countries. Within countries where the percentage is high, holdings may be concentrated in large estates, but the private rented sector (PRS) is, typically, characterised by large numbers of small portfolios. Notably in the UK the Council of Mortgage Lenders found that the rise of 'buy-to rent' has resulted in over 90% of private landlords owning less than 5 units[2].

Further, if rental housing tenure is interrogated more deeply, it reveals that the distinction between the categories which are shown in Figure 1, are, in reality, becoming increasingly blurred. Whitehead and Scanlon (2007)[3] show distinctions between differing types of tenure as between affordable, intermediate and social. What is also clear is that whilst 'a decent home for every household at a price within their means' (Whitehead, 2015)[4] is a common mantra, the way in which each country has approached this is different. Not only do the definitions of, and inclusions in, the term 'social housing' differ, so too do the legislative and regulatory patterns in terms of the ability to review rents, the responsibilities for payment of outgoings (such as repairs, maintenance and utility bills) and indeed the right (or otherwise) of tenants to buy their dwellings. This variation across jurisdictions means that it is to be expected that the approaches to strategically managing their portfolios will vary from housing provider to housing provider, based upon not just the type and quantum of stock that they own, but on their country location.

Another dynamic in the rented sector is the development of new types of tenure such as shared ownership, in which occupiers part-own and part-rent, and differing rental arrangements from the pure commercial, to intermediate, to affordable and then to social rent. This is beginning to 'blur' what had previously been a discrete picture. Not only that, but institutional investment interest has, since the start of the REVALUE project, seen some social providers moving towards a profit motivation, as they combine with equity investors, bringing in private sector expertise and building portfolios aimed towards investment by the hitherto commercial property landlords and social impact investors.[5]

All this points to a rapidly fragmenting picture of residential investment and investors across Europe, quite aside from the fluctuations of levels of owner-occupation. This, in turn, presents the EU with a challenge in terms of achieving greater energy efficiency of existing residential stock.

However, whilst this is undoubtedly the case, the most homogeneous group of investors are thought to be registered social housing providers (SHPs); although even here the pattern is changing, with SHPs offering more than one model of tenure in some cases. Given this, the REVALUE project has concentrated on understanding the perspective of such landlords in helping to achieve the desired move towards improving the energy efficiency of residential stock. In so doing, it is acknowledged that their drivers are likely to differ from those of other residential owners due to the nature of their tenants, who by definition tend to be on low incomes and the level of regulations they face (Bullier et al, 2011)[6]. Within the sample group of landlords investigated in this paper, most are 'mainstream' SHPs; however, within the UK group, one is company listed on the Stock Exchange attracting investor funds but letting on a range of different tenure, from market rent to social rent and to regulated[7] tenancies; the other operates a closed-ended fund using private investor funds and working in conjunction with a housing charity.

SHPs typically hold the freehold interest of their estates for the long term and this, combined with the type and level of regulation within their country of practice and the requirement to cap or even reduce rents[8], can influence the ways in which they can access finance for investment and indeed the rental and capital value of their stock.

Some of these elements are considered in other REVALUE deliverables. In particular, deliverable 2.4 comprises a detailed case study of four portfolios and evaluates some financial options. In this report, we detail the findings from a series of

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2 https://www.cml.org.uk/news/news-and-views/still-small-but-growing-how-have-landlord-characteristics/

3 Whitehead, C and Scanlon, K (eds) (2007) Social Housing in Europe LSE London, London

4 Whitehead, C M E (2015) From social housing to subsidised housing? accommodating low income households in Europe. Built Environment

5 See for examplehttps://realassets.ipe.com/markets-/sectors/residential/residential-social-housing-homing-in-on-cash-flows/1000715.article

6 Bullier, A., Sanchez, T., Le Teno, J.F., Carassus, J., Ernest, D. and Pancrazio, L., 2011. Assessing green value: A key to investment in sustainable buildings. In Proceedings of ECEEE(pp. 1061-1071).

7 Regulated tenancies are private sector tenancies which pre-date 1989 and offer tenants both restrictions on rent payable and lifetime security of tenure.

8 In the UK there has been a requirement since 2015 to reduce rental levels year on year by 1% for five years

qualitative interviews with senior staff members of a range of SHPs exploring how they arrive at their decisions about energy upgrades: what motivates them and how they fund them, before reporting on their views for the future and observations that are of relevance to the overall REVALUE objectives.

Chapter 3 A.3: Methodology

As indicated in Chapter 1, the REVALUE project team sought to understand the motivations of social housing providers (SHPs) towards investment in energy efficiency and the barriers, including financial, that they face, particularly given their strictures on rental increases. It was intended by so doing to understand the extent, if any, that real estate valuations play in the decision-making.

A number of qualitative research methods were considered including questionnaire survey, interviews and workshops. It was decided to conduct semi-structured interviews with a selection of housing providers based in countries with different regulatory regimes and in which social housing plays varying roles. This way, the team were assured of gaining a range of perspectives from which to distil key messages.

The interviews were conducted in the spring of 2017 by project partners; the interviewees were appropriate senior staff members of a range of SHPs in the UK, the Netherlands and with one cooperative and one public provider in Sweden. Additionally, some group discussions were held to support the information obtained in the one-to-one interviews. Interviewees held roles such as CEO, Director of Fund Management, Portfolio Fund Manager, Head of Asset Management, Member Executive Board, Energy and Green Manager, Head of Neighbourhood Planning, Sustainability Manager and Group Director of Assets and Growth.

Annex I A provides a list of the contributing organisations. Care was taken to obtain variation by size and location of the organisations in both the UK and the Netherlands. In Sweden, both organisations are headquartered in Stockholm but one organisation is a private cooperative and the other a municipal housing provider. In total, 12 interviews were conducted, two with Swedish organisations, four with Dutch and six with UK housing providers. Collectively the organisations own and manage a total of around 550,000 dwellings.

Each interview lasted between one and half and two hours. The interviews were semi-structured which allowed time to explore specific areas. A copy of the questions used and covering letter can be found in Annex I B. The main areas of discussions were around:

- The nature and extent of their portfolios including the data they hold on their properties in relation to condition and energy efficiency;
- Their motivations for undertaking upgrades and the type of business cases they prepare to justify expenditure;
- The process of decision-making and any technical issues involved in this and the execution of works;
- How the outcomes of investment are monitored and evaluated; and finally
- Their future plans and general views on current trends related to energy efficiency.

Interviews were conducted under conditions of total confidentiality and all views and information is supplied in aggregated form only so as not to identify any specific organisation or interviewee. Most interviews were audio recorded and a transcription document of the interviews was made in order to secure that other REVALUE team members had (confidential) access to the information; other interviews were recorded in note form. Summaries of the transcribed documents or/and interview notes were sent to the interviewees to ensure that they were a correct and complete record.

Chapter 4 A.4: Findings

This chapter presents a summary of the findings from the interviews under the main headings used for discussion.

4.1. The Respondents and Their Portfolios

Large holdings of variable age – but strong ambitions to grow

As indicated in Chapter 2, the organisations interviewed ranged in terms of size and type of housing product. Interviewees within the organisations were generally at senior management level and, as the questions had been sent in advance, were well briefed to respond.

Whilst most of the providers offer standard low-cost social for rent, products offered included private rental sector, sheltered housing and some shared ownership schemes. The smallest provider manages only about 500 dwellings and the biggest more than 180,000 dwellings.

Figure 2 provides an indication of the approximate breakdown of portfolio holdings and shows that the largest sample number was within the UK where six companies were interviewed.

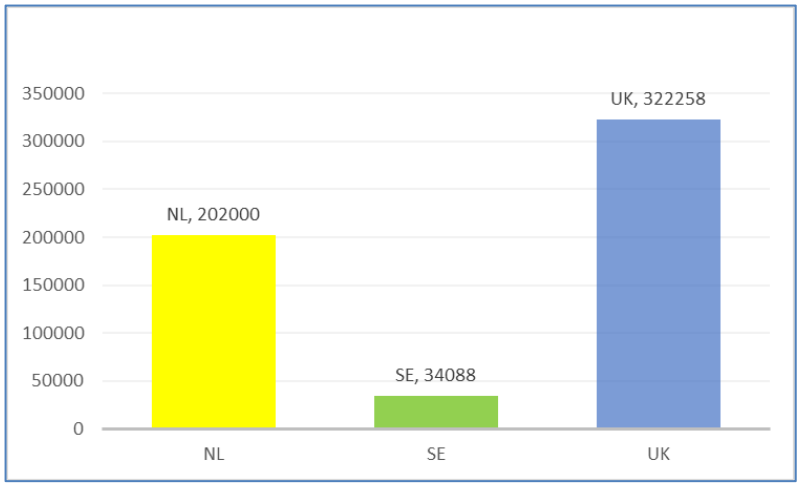

Figure 2: distribution and size of property holdings of interviewee organisations.

All participants hold stock of varying ages but in most cases at least half of the stock is post-1980 with few reporting stock going back to pre-World War 2. The majority of the holdings are in large block or estate format with some organisations having a major proportion of their stock concentrated in (comparatively) homogeneous units. However, the picture is more varied in the UK, where one provider specialises in owning only part of each block so that the block does not become labelled 'social housing,' whilst another provider has a policy of selling isolated units in order to gain a newer, more compact and concentrated estate.

All respondent companies have building programmes and all (except one)[9] believe that their portfolio will grow over the coming years. Funding for these is achieved through a variety of means: equity (reserves), loans, capital markets (bonds) revolving fund financing (sales of existing stock) and grants.

The joint programme of new builds and renovations of the interviewed organisations contains a pipeline of thousands of dwellings per annum and an investment worth several billions of euros per annum, although understandably interviewees were not able to give exact figures; some defined their building programme in number of units and others in terms of annual investment. What was noticeable was that the product differentiation mentioned in Chapter 1 is borne out of the intentions – and actual practice - of those interviewed to offer a range of differing tenures. Whilst this doubtless

9 *See also further detail below*

provides both the organisations and their tenants with increasing options, it makes for more complex challenges for policymakers and indeed for decision-making within organisations.

New Build standards are rising…

When building new dwellings, most respondents are aspirational in terms of energy efficiency, although some only aim for compliance level but with the acknowledgement that this requires increasingly stringent standards. In general, the targets set range from C (in UK) to near Zero Energy (label A+) for some Dutch/Swedish providers. This may well reflect both the variability between countries in terms of availability of finance and rental levels achievable in addition to the country's regulatory minimum building standards. There is a focus on technologies that are well established and understood such as LED lighting, grade A condensing boilers, etc. with notably less investment in renewable technologies such as solar.

Some of the housing providers have undertaken pilot PassivHaus projects but several reported that the financial business case is still problematic and there was no widespread discernible appetite to focus on PassivHaus per se. However, some are approaching the performance outcomes expected of this standard and noted that where these are achieved there are beneficial impacts for tenants, linked in one case to lower default rates. The point was also made by one respondent that there are concerns that such technology, whilst reducing energy consumption in use, increases the embedded energy used in construction insulation materials leading to a negative CO2 footprint.

No standard basis of valuation

Respondents were asked both how often they valued their portfolios and the basis used. Whilst almost all made reference to following the RICS Red Book, there is variation between the bases used. In the UK and the Netherlands, most use Market Value for Existing Use (EUV), with a further UK restriction that any sale would be to another social housing provider. Where this basis is used, the value placed in the company accounts is not a good guide to the realisation figure in the market place and is therefore not useful in terms of management decision-making. This discrepancy between reported and realisable value is further emphasised by the lack of consistency in terms of how often valuations are undertaken which varies between quarterly to every three years. Although EUV was the most commonly reported basis, other providers also commission Market Value with Vacant Possession to help their management/decision processes and in some cases, historic book values are also used. In every case, external professional valuers are used. Some respondents reported that they very seldom sell stock; others do, either individually (usually older stock deemed at value risk) or to other investors. When selling individual properties or estates, it is common that the prices achieved differ (both upwards and downwards) from the assessed value.

Condition and energy data

Having established general information in relation to the size and age of their holdings, interviewees were asked about the data they hold - in particular, the energy data. Given that accurate and extensive data are required both for valuation purposes and active management, it was anticipated that the number of data points held would be extensive. This proved not to be the case and there was some inconsistency in what was held, although all reported that they do regular condition surveys, but the frequency varied from annual to every 5 years. Whilst some use external organisations, most reported that they have in-house resources to do this, with some expressing the opinion that this gives them better information to inform the routine planned maintenance programmes which they all undertake.

For the REVALUE project, it was considered important to understand what type of deficiencies they encountered – and whether these related to poor energy efficiency. Only two respondents specifically identified poor energy efficiency as an issue, with damp and mould (possibly related to tenant behaviours) and outmoded kitchens and bathrooms being more pressing concerns for others. Indirectly, however, poor energy efficiency in the form of single glazing and inadequate insulation were raised as issues to be addressed.

In terms of energy data, no organisation holds consumption data, but all organisations, except one, collect Energy Performance Certificates (EPC). In some cases, there is a valid EPC for each dwelling, but in other cases, the percentage of units with EPCs can be as low as around 50%. This is indicative of when the property had been purchased or last let and several organisations reported that some of their EPCs are outdated and/or inaccurate. The practice of proactively obtaining EPCs for every dwelling was not commonplace. The only organisation that does not use EPCs uses another certification system called Sveby.

4.2. The Decision to Upgrade: motivations, planning and constraints

One of the key objectives of the REVALUE project is to have a deeper understanding of how the decision-making process works in terms of energy upgrades as valuers try to put themselves in the position of the likely vendor/purchaser in order to advise. Therefore, the housing providers were asked a series of questions around the rationale for undertaking investment work, the funding avenues used, the creation of the business case and any technical barriers to upgrading.

Motivation and planning improvements

Good estate management practice[10] advocates that a strategic estate plan is prepared and that this should provide the framework against which property decisions are made, including those involving capital investments, with decisions being undertaken at the appropriate level under the board's direction and to align with organisational strategy. It might have been expected that there would be some consistency of practice within the respondents, given that all have social purpose at the heart of their missions.

However significant variation was found with the major cycle for repairs and improvements spanning from as little as 5 to ten years to whole life approach of fifty to sixty years, depending on the purpose and goals of these plans (operational, tactical or strategic plans). One unifying factor was the uniformly held principle that improvement works should generally be undertaken holistically with energy efficiency being seen as an integral part of scheme of works, rather than a separate endeavour. This said, some organisations do have separate component plans for the renewal of major items such as bathrooms and kitchens and these tend to be updated annually.

In terms of identifying works a common, but not universal, practice is to start with the stock condition survey and from this, based on assumed lifetime of elements, major expenditure can be planned. But the ultimate decisions regarding analysis of findings and preparation of operational and strategic plans varies in terms of the seniority of the decision-maker: in some cases, this will be at board level; in others, the responsibility is at a lower (departmental) level. In summary, there are differing management layers that may decide on what stock needs upgrading. We received a 'blended picture' of the decision-making process although, in the end, the strategic management level is always ultimately responsible for approving the investment plans.

Seldom is the issue of energy efficiency a major consideration but it will be integrated with the general decisions and thus help to deliver on the aspirations or low-carbon estates. It was noted that some organisations operate rigidly in terms of replacement planning and most organisations reported that that they did not tend to undertake work out of cycle. However, some are more opportunistic – taking advantage of voids or short-term grant opportunities to undertake invasive and extensive works. Further, health and safety risks (open fire installations, asbestos, etc.) may prompt out-of-cycle interventions. Legislative changes or rising management/maintenance costs sometimes also accelerate interventions.

Given that the interviewees are all social housing providers, it was considered important to establish the extent, if at all, to which the health and well-being of tenants formed a key role in setting out strategic plans, particularly as this may relate to the energy efficiency of the dwelling. Few reported that this was very important at the strategic level, perhaps as tenant considerations underpin all activities, but where it was, a range of activities from the formation of wildflower gardens to master planning to bolster the provision of neighbourhood-wide facilities were mentioned – always tempered with the need to stay within capital and budgeting constraints. The message was also clearly delivered that energy efficiency helps to reduce costs for tenants and makes their rent more affordable.

Whilst the questions asked were, in general, open-ended, interviewees were asked to rank a set of factors in terms of their importance for creating the overall business case for investment. The factors presented included:

- financial (return on capital; rental and value enhancement);
- tenant welfare and wider sustainability (ESG – environmental, social and governance) factors; and
- future risks - including possible legislation.

10 *See for example Haynes, B., Nunningotn, N. and Eccles, T. (2017) Corporate Real Estate Asset Management Routledge*

Several organisations said that they could not rank the factors presented but what did emerge from the conversations was a lack of consensus. Overall, financial considerations were paramount, with one organisation mentioning a total cost of ownership (TCO) approach and others pointed out that rental increases were not a consideration due to regulatory controls. Welfare and social matters ranked very closely behind. For two organisations, reducing fuel poverty was the key factor in creating the business case. Most organisations did not see legislation as a future risk, given that they had aspirations to supply housing that was 'beyond compliance', but they saw more risk in negative impact on value or to reputation.

Respondents were then asked if the decision drivers varied according to the type of tenure or composition of households; almost unanimously, it is not being taken into the equation when considering an investment in energy efficiency; it is only in specifying new building that there is attention for specific target groups. A challenge is to diversify between ordinary single-family homes and multi-family buildings. In multi-family buildings, providers often own a part of the dwellings (and are hence a member of the cooperative) with some occupiers having a right to buy. In that case, there is the risk that dwellings are sold just after having had them improved and hence housing providers are at risk of losing a great part of their investment. Further in some cases, the landlord retains the liability for utilities in which an incentive for efficiency is underscored. In these cases, the 'split incentive' where the investor cannot collect the energy savings does not arise. In conclusions energy efficiency investment is still primarily an ethical investment issue.

Finally, in terms of the decision-making process, the organisations were asked about funding: both what sources were used and whether undertaking upgrades enables opportunities to be taken to obtain more money. Whilst a mix of sources is often used, the predominant source was reported in most cases to be corporate funds and capital reserves, with only two providers reporting sales revenue from surplus housing stock to be important and two sourcing some private equity. Bank finance and grant funding are used but these did not come through the answers as critically important. Indeed, the point was made that grants are often temporary in nature: they are 'tapped into' where they exist but they do not drive strategic decisions

Finally, it was noted that improving their stock may offer opportunities for extra funding due to the additional net present value of the cash flows resulting from improvements providing better security for loans; however, this applies to any improvements: energy improvements were not found to lead to more advantageous conditions of funding. Whilst it was reported that there may be some preferential conditions available in the capital market to qualify for these specific schemes, extra management costs are involved and these do not justify the improved loan conditions; hence interest in these programmes is limited.

4.3. Process and technical issues

It has already been identified that stock condition surveys - a legal requirement in the UK - are the key source of information in terms of informing what stock investments are needed; in all cases, energy efficiency is just one of the elements that is considered. Whilst for some owners the decisions will be led by prioritising the worst performing stock, there are key process and technical concerns that may influence the investment decision.

When asked what the easiest energy efficiency measures to install were, the following were mentioned: windows (double/triple glazing), cavity and sometimes solid wall or loft insulation, LED lighting, replacement heating systems (efficient boilers to replace old electric storage heaters) and, less frequently, solar panels. At a larger scale, some respondents quoted the installation of district heating systems, but these were not generally regarded as feasible.

In the experience of housing providers, the most cost-effective energy upgrade measures are: installation of LED lighting, double/triple glazing, replacement of open fire installations by highly efficient installations and improvement of the fabric (insulation). Solar heating was not generally regarded as cost effective. It also became obvious that the most effective measures can only be determined after the age and other characteristics of dwellings are assessed.

The interviewees were asked whether any of the technologies had proved to be difficult or had failed. Experience was mixed; most reported that they had trained staff with a good understanding of new technologies, but where necessary, external advisors are hired to advise. In many cases, housing providers let specialised staff follow dedicated training programmes (both internally and externally). However, there was a noted tendency to choose technologies for which there was a proven track record; there was little apparent take up of heat pumps or other less tested technologies.

One of the challenges in terms of establishing the financial effectiveness of upgrades that was raised was that tenants gain the benefit but the landlord does not have access to just how big that benefit has proved to be in financial terms . Where (for example) PassivHaus technology is used in multi-tenant properties, it is normally not possible to differentiate between varying energy requirements of tenants because energy bills go directly to the tenants. This type of information can only be gained with the cooperation of the tenants.

From the responses to the remaining questions, it is clear that the impact of tenant behaviours and tenant wishes is very instrumental in terms of both what work is done and its effectiveness. Questions were asked about tenant preferences in terms of the type of physical upgrades (windows, insulation, etc.) and the ability to influence behaviours. Additionally, questions were asked about the use of 'green' energy and smart meters. The answers received demonstrated just what a challenge it can be to ensure that the possibilities that exist are taken up effectively.

Most of the housing providers use 'green energy' where possible in communal areas and try to sign their tenants up to 'green' suppliers. However, it was reported that they could not stop tenants from switching back to other suppliers if there was a cost advantage. Similarly, where LED lighting has been installed, some providers reported that tenants switched back over time to conventional lights thereby reducing the efficiency gains.

In general, tenant preferences are important, and most providers reported that tenants were generally appreciative of improvements which could be carried out whilst they were 'in situ', such as installation of new windows and new efficient heating systems (especially district heating) even where there might be a rental implication as these improvements added to comfort and reduced utility bills. Whilst improved insulation was also reported to be liked by tenants, where this involved work to the interior (e.g. wall lining) there was often resistance due to the temporary disruption caused. Solar panels were reported as popular in only some cases. Additionally, there were some reports that shared heating systems that tenants could not control, and complex ventilation system were unpopular and hence were often not introduced. One of the benefits of energy efficiency measures is the reduction of carbon emissions; another is saving of cost to the user. Therefore, several housing providers install smart meters as standard to help tenants understand how they can reduce their consumption and bills; this is more common for new-build units. However, there were some reports that these were not proving effective in changing tenant behaviours and one provider was of the view that all the cost savings resulted in part in the 'rebound effect' with the money simply routed to other spending on energy intensive activities.

Whilst providers do seek to educate their tenants and support their wishes, it can be difficult when they meet with reluctance due to potential disruption, additional rent or failure to change behaviours. Where they cannot gain cooperation, interventions can be delayed or cancelled but in practice, it was reported that most tenants are cooperative - even though behaviours can continue to be sub-optimal.

4.4. Monitoring the results of investment projects

The sections above set out some of the aspirations and challenges that housing providers face in terms of creating a business case and executing energy improvements. In the next section of the interview, they were asked about the results of the projects that they undertook: how they were evaluated both financially and in terms of tenant satisfaction and whether the projects added overall to the value of the organisation. What was revealed was a lack of systematic evaluation and monitoring of investment spends.

In terms of financial evaluation, they were first asked whether payback periods were set and monitored and whether they used any other evaluation techniques. It was found that only three use a payback method, and the payback period, when used, varies from five to ten years – or longer. But for the most part, no systematic financial evaluation is undertaken: when the money is committed – the project proceeds.

They were then asked whether evaluation takes place in other ways: through the monitoring of energy cost savings, performance against design brief, tenant satisfaction surveys, increased retention or reduction of bad debts for example.

Most providers stated that it is hard to measure actual performance and cost savings because they are not able to access tenants' bill payments without consent; indeed, one provider pointed out that this could be a data protection issue. As a result, few ask and therefore most have no data on which to judge. However, on the positive side, several respondents

were of the view that the 'performance gap'[11] between design and outcome had decreased and was now generally low although one respondent opined that this could be because they were now more realistic in terms of their expectations.

Even though landlords are unable to access the billing information of their tenants, they are in a position to monitor retention rates, debt rates and management costs associated with their dwellings. However, of those landlords interviewed most do not do this systematically even though they could report a reduction in management costs. For some providers, void rates are never an issue given the tight housing markets within which they operate, but for those in lower demand areas, there was a reported improvement.

One area in which there is consistent practice is in running tenant satisfaction surveys although the shape and frequency of these vary between providers. However, while these are undertaken regularly, no organisation is currently able to track the impact of improvements made directly through the surveys.

Finally, providers were asked whether the upgrading of their portfolios to be more energy efficient had 'positive impacts' on company performance. This was couched so as to invite respondents to consider both quantitative and qualitative impacts. In general, the view was that, although it could not be directly measured, there was a positive 'soft' impact, as undertaking such work was part of their mission and aims.

Overall, it can be concluded that the housing providers that took part in the interviews are not currently very strong in monitoring and evaluating the results of their energy efficiency investments, although soft data points to its importance and positive impacts. The only area in which quantitative results are being measured and gains seen is in management costs and, in some cases, less bad debts and voids.

4.5. Future plans and general views

The final section of the interview was devoted to obtaining views as to the providers' future plans and their reflections on the role that valuers, valuation professional bodies and the government should play in supporting moves towards a more energy efficient housing stock.

In terms of future investment plans, it was the unanimous view of those in the Netherlands and UK that the social rent caps directly and negatively influence the investment capacity. Further, in the Netherlands, the levy on social housing can reduce money for investment and rent increases are only possible for energy improvements if they result in virtually zero energy - a level considered unattainable in most cases. The interviews took place at a time when England was transitioning in support for tenant from a housing allowance scheme to a Universal Credit system. This was seen to have had negative impacts on potential investment. In Sweden, all properties are let on market rents, so financing energy improvements is easier as a return on capital investment is possible.

Despite the difficulties presented by the restrictions on rental that can be achieved, all but one interviewee reported that there are plans to increase the size of their portfolios. This will primarily be driven by new buildings but a few also see a role for acquisition of standing stock. The only exception is one UK provider who anticipates the need to release capital via sales in order to fund the effective management of their remaining estate.

In terms of the aspirations for the energy efficiency of their stock, as stated earlier, new build aspirations are to be 'beyond compliance'. In terms of overall portfolio standards, the respondents also stated a desire to be 'beyond compliance' for their existing stock, but what this means differs from provider to provider and from country to country. The levels for the Netherlands (B – AA+) appear more ambitious than those for England which tend to be B (if stated specifically) but this reflects the current overall country position: in England an average of D; in Netherlands C. Therefore, the common approach appears to be to aspire to 2 grades beyond regulation, if possible. However, Sweden does not adopt the same EPC style rating and energy efficiency standards adopted were quoted as being high already with energy consumption of the interviewed organisations currently standing at approximately 55 kWh/m2.

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11 The gap in performance between design and execution of retrofit works and new build is a frequently examined subject. For a recent article exploring it see: Cohen, R., Austin, B., Bannister, P., Bordass, B. and Bunn, R., (2017). How the commitment to disclose in-use performance can transform energy outcomes for new buildings. Building Services Engineering Research and Technology, 38(6), pp.711-727.

Before moving on to explore the ways in which valuers, professional bodies and governments could play a facilitating role in helping delivery of increased energy efficiency projects, interviewees were asked their views on Building Renovation Passports[12], which are intended to provide a framework to assist building owners towards systematic renovations. The majority of respondents had no knowledge of the concept but when explained thought they could be useful. Some said that they used other systems such as BIM (Building Information Modelling) or Miljöbyggnad to ensure standards but these are not comparable in concept.

In terms of the role of valuers, valuation reporting and the professional body, most interviewees consider that it would be helpful if the energy label could be confirmed or included in the reports of valuers together with greater detailing of energy efficiency details. However, views were divided as to whether the role of the valuer was simply to provide a market value or or to extend to include the provision of strategic advice; those who would prefer greater levels of detail and advice did however recognise that there are resource constraints and fee implications. There was a recognition that valuers have to work on the basis of market evidence: they cannot report on what is not observable, but one respondent did opine that if valuers worked more closely together, perhaps they could gather greater evidence on the connection between energy efficiency and value.

Whilst there was a recognition as to the limitations as to what valuers can or should do to augment their value reporting, several interviewees were of the opinion that the RICS, as a/the leading professional body, could play a stronger role in education, communication and awareness raising. Although some felt they lacked knowledge of the role of professional bodies, the informed view was that the professional body could do more to analyse risks and extend the discourse beyond the bounds of energy efficiency.

Finally, respondents were asked about the role of governments: should they be regulators; enablers; funders or all three? All but one of the providers believed governments had some role to play. For several, the role should be triple-faceted and most saw a strong regulatory role as important. In terms of funding, the view was that it is important that it be stable and sustained and that policies should be cohesive – in reality they are, at times, inconsistent. If there is a belief in green energy – something that most interviewees supported, then there should be a discouragement for investment in fossil fuel activities, such as fracking; a coordinated approach is needed to ensure that as the demand for green energy grows, the infrastructure of supply is already in place. Finally, there was a desire expressed for governments to work closely with stakeholders, including housing providers to arrive at solution-based approaches.

[12] See *http://bpie.eu/publication/building-renovation-passports-consumers-journey-to-a-better-home/*

Chapter 5 A.5: Discussion and implications

Social housing providers control significant portions of the existing housing stock in several European countries – as high as 35% in the Netherlands. By interviewing a small but diverse range of social housing organisations in three countries with a range of different portfolio sizes and compositions, it was hoped that insights could be obtained as to the motivations and business cases for investing in energy efficient improvements and to better understand the role that valuations play within this process. Finally, the aim was to draw out any potential views on what governments could do to speed up and/or facilitate the rate of undertaking improvements.

From the interviews, a number of observations and conclusions can be drawn, always accepting that with such a small sample, the findings may not necessarily hold across the sector. However, given the efforts made to approach appropriate companies, it is unlikely that the views expressed are atypical of other SHPs. From the findings detailed above, a number of key conclusions can be drawn which collectively help to inform the fundamental thesis of REVALUE in terms of the market understanding, the role of valuations and the unlocking of potential to increase the rate of energy retrofits in the social residential rented sector.

The social housing sector is a complex and financially constrained sector but committed to improving the energy efficiency of their portfolios to levels which go 'beyond compliance'.

From the discussions with providers, what emerges is that new patterns of social provision are being developed. No longer does the sector offer 'one size fits all' tenure but a range from intermediate, affordable to market lettings, at least in the UK and Netherlands. There is an underlying purpose of offering good quality accommodation to a range of tenants and a firm commitment to upgrade their portfolios to levels which exceed statutory and regulatory compliance both through new building and schemes of work identified through condition surveys. Underlying the intentions however is a restriction on money due for the most part, in the case of Netherlands and the UK, to rental caps. So, the will is there, but not necessarily the means.

The data held by housing providers on their existing estates is limited in relation to energy efficiency.

During the early stages of work of the REVALUE project, it was suggested that in order to correctly evaluate the appropriate ways to upgrade property for greater energy efficiency a wide range of data points was needed. Indeed, it was proposed that use be made of building typologies as presented by Tabula formats[13] to give a template as to the fields of data which should be collected in order to fully assess the possibilities for energy efficiency improvements and, by implications, the impact on values.

From the interview participant organisations, it emerged there was very limited systematic data in terms of energy efficiency which could be passed on to valuers to inform their judgements. Whilst it was clear that undertaking regular stock condition surveys, as required in the UK, provides management data to identify the need for improvements, even base line energy data such as EPCs is not universally complete with some respondents only holding EPCs for approximately half their portfolios. As new stock is acquired, and tenancy turnover takes place, so more EPC records have been recorded but the position is currently patchy, except in Sweden where EPCs are not used but more comprehensive energy data is mandated. Given that valuers work with information obtained from their clients as well as that discovered through their due diligence process, it would appear that only limited energy efficiency data is currently available to them.

Whilst financial considerations underpin the business case for energy improvements, their motivation stems from social responsibility and the health and wellbeing of their tenants.

The main role of social housing providers is to provide affordable housing. Therefore, social purpose is at the core of their governance. Within all the countries represented in the sample, the providers have ambitions not only to meet compliance standards in their new and existing estates, but, in most cases, to exceed these. However, investment, most of which is funded from internal sources, is challenging in the UK and the Netherlands due to regulatory 'caps' on rents. Whilst the capping systems differ, they both make a standard business case based on return on capital difficult to justify.

[13] *See http://episcope.eu/index.php?id=97*

But although financial considerations are important to every organisation, the health and well-being of tenants is critical to formulation of the business case.

In Sweden, the model is different as social rent caps do not apply and a return on capital can be used. Whilst several organisations undertake cash flow analysis and may use discounted techniques, and all have regular surveys of their assets, the business modelling is influenced by their social purpose. The interviews did not explore the accounting methods used, but it was apparent that, for most housing providers, decisions are not taken with a primary view of obtaining either increased rents and/or capital value growth. However, there are exceptions: in Sweden, the ability to gain a rental return enables the use of a standard business model, at least in principle. In the UK, two of those interviewed are not 'standard' social housing providers and have the need to balance the requirement for investment returns with the social rent models.

However, among all the interviewed organisations, the variance from standard business case modelling means that valuations, which for housing associations are normally not prepared on the basis of open market transactions, were not presented as influential in the creation of the business case for investment in energy efficiency. The conclusion that is suggested by this finding is that the key business drivers, even within organisations with similar ambitions, will vary; this in turn influences the weighting given to different factors, such as energy efficiency and value gain, in the business decision–making process.

In deciding how and when to upgrade the energy efficiency of their properties, social providers tend to use 'tried and tested technologies' as part of planned, holistic refurbishment schemes, working in cooperation with their tenants.

The findings from the interviews point to organisations adopting simple, tried and tested ways of improving energy efficiency which give comfort and ease of operation in preference to complex systems which may require tenants being trained in the use of the technology. Whilst some have reported building to, or close to, PassivHaus standards, the emphasis has been on either cheap interventions (e.g. LED lighting) or fabric improvements such as insulation, or/and windows as well as services (e.g. boilers). Underlying the decisions are trust and understanding of the technology and the ability to integrate with 'in-cycle' maintenance (e.g. decoration) and refurbishment (e.g. kitchens) works. Operating upgrade works out of cycle is disruptive to budgets and occupants and, even if temporary grants are available, may not be considered. This is important as it indicates that grants, at least for this group, may be welcomed but are not in themselves sufficient to alter their estate planning.

Tying in with the conclusion above, the influence and impact of tenant behaviours and preferences cannot be underestimated. The issue of the 'split incentive' is well known[14] but it was apparent that social landlords wish to work with their tenants and that this is both a reason to work 'in-cycle' and to choose improvement methods which are non-disruptive: replacement windows are quick and can be done from the exterior; installing solid wall insulation may be intrusive. Whilst most landlords reported that resistance by tenants to upgrade works is not a common occurrence, the need to work with tenants and help them adapt their behaviours is paramount; too often tenant behaviour may reduce the effectiveness of the installation. A programme of education and awareness is therefore critical to long-term success of measures.

Quantitative evaluation and monitoring of energy upgrade projects undertaken by traditional social housing providers tends to be limited but is considered positive using 'soft' return analysis.

Good systematic monitoring and evaluation of capital spending is critical to future decision-making; underpinning this is reliable and accurate data. Whilst the organisations all conduct regular stock surveys, the combination of limited energy data and the inability to access the energy savings accruing to tenants, combined with little or no evidence that tenant satisfaction surveys enquire as to the savings and increases in comfort experienced by tenants as a result of works, mean that the learning to inform future decision-making is sub-optimal. Although respondents reported, with varying degrees of confidence, that the improvements had produced increased levels of satisfaction, if this is replicated across the sector, this is an area in which the development of external benchmark measures might help to drive more rigorous evaluations which in turn could lead to improved decisions.

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[14] *See for example Gillingham, K., Harding, M. and Rapson, D., 2012. Split incentives in residential energy consumption. The Energy Journal, pp.37-62.*

The role of valuations and their professional bodies is tangential to housing providers' investment decisions in energy efficiency improvements, but the role of valuations could be enhanced.

Fundamental to the REVALUE project is the aim to better understand the role that valuers and valuation do, and/or could, play within the drive for investments in energy efficiency. From the interviews it was apparent that valuations are not explicit in terms of detailing the energy efficiency of the building: they simply give a single figure. This confirms the findings of the roundtables with valuers (Deliverable 2.3) who are seldom instructed to consider energy efficiency specifically and normally lack evidence of its role in comparable transactions used to evidence value. Further, due to the requirements of the professional bodies, valuations prepared for corporate accounts are not necessarily a good indication of likely market transfer price due to the specific assumptions required which vary from country to country.

For these reasons and as most housing providers do not have sale in contemplation, the reported valuation figure is not a critical factor in their energy efficiency investment decision-making. However, whilst the role of the valuer was generally accepted to be to provide a valuation based on market evidence, the view of most interviewees was that they would like the role to extend into a more strategic advisory one but accepted that this would have cost implications. Further, in the UK especially, there was a view that the RICS, as the lead professional body, could perhaps do more to develop awareness and expertise in the area so that valuers could work more cooperatively between themselves to develop knowledge and thereby equip them to provide deeper insights. From the REVALUE perspective, these findings underscore the importance of the work of the professional body to engage in this area and provide greater guidance to members. However, it does also point to a need for clients to work with valuers and assist in developing more and better data for the purpose of comparative analysis.

Governments and the EU can assist the positive decision-making through cohesive, consistent and progressive regulation and grant systems.

A consistent view among those interviewed was that there is a large role for governments. Whilst most wish to see the level of regulation enhanced, there was support also to extend tax and grant systems and to raise awareness. It is and was acknowledged that much of this is being undertaken already; however, what came through strongly was that investment decision-making among this group is not strongly influences by transient incentive schemes: it would be more effective to have long-term schemes combined with education to help underpin decisions to invest. There was also concern that the energy improvement incentives could be seen to be working against other moves which appear to favour further exploitation of fossil fuels instead of supporting green energy generation; further, the inability for landlords to benefit from energy efficiency investments by way of extra rent or other means was seen as unhelpful and non-supportive of the moves to a low-carbon economy. Currently tenants benefit: landlords do not, and this is not due to valuers' failure to build in value growth! Long-term, one-direction, consistent policies and (if appropriate) grants, well supported by awareness raising and possibly tax breaks were the key message conveyed.

Chapter 6 A.6: Concluding Remarks

In conclusion, the interviews provided a rich data source of opinion from a range of social housing providers who collectively own more than half a million dwellings. All are ambitious and supportive of moves towards driving up energy efficiency and are so doing through a combination of building and retrofits. In terms of the former, they are setting their sights 'beyond compliance' and aim to do so with retrofits. The business case for the latter is aimed at taking tenants out of fuel poverty, enhancing comfort, health and well-being but only with levels of expenditure that they can justify as most funds are from their own capital reserves with the exception of two who are primarily external investor funded. Government grants, which tend to be short-term in nature, did not feature as key determinants of the timing or nature of improvement works.

Always trying to work in cooperation with their tenants, they tend to prioritise 'in-cycle' planned spend but such investments are not always rigorously evaluated. In terms of the role of valuation to support energy investment, this is not seen to be a driver, partly due to social rent caps in some countries. However, there was a widely held view that the professional body and valuers could possibly collaborate with stakeholders to do more in leading change.

Finally, whilst the ambition is there, these landlords face significant financial and logistical pressures and, despite the intentions, energy is not necessarily the top priority. This is summed up in the following quote from one respondent:

> "It currently feels like spinning plates: having to balance different priorities. We know what we want to do and when but with high costs and self-funding, do we focus all of our resources into energy efficiency or do we go and replace 200 roofs that need replacement? Unfortunately, at times the energy efficiency suffers as the roofs are a higher priority."

Chapter 7 B.1: Overview of Part B Introducing a Self-Evaluation Tool and recommendations

From Part A, the REVALUE team learned that housing providers may not always have the optimal data and systems to ensure that they are best placed to make their portfolios energy efficient. There was revealed a possible need to enhance their organisational intelligence to better prepare for both potential changes in legal energy requirements and to ensure that they deliver on their key objective which is to provide affordable, comfortable and efficient homes for their tenants.

The research has revealed that each housing provider has strengths and weaknesses when it comes to defining and reaching their energy goals, as well as a different range of constraints. In every country studied, we found that there were differences in how housing providers have defined their sustainability strategies. Notably, some organisations hold better and more complete datasets on their buildings' energy performance while other organisations have a more specialist view about knowledge management in regard of energy efficiency and sustainability. For optimal management, the team conclude that it is important that within every organisation, all departments have a role to best ensure successful and ambitious energy efficiency investment programmes. Most notably it is seen as critical to ensure that, as far as possible, works are done 'in-cycle' and combined with other upgrades.

In the light of the finding and conclusions in Part A, this part of the deliverable consists of a questionnaire for affordable housing providers aimed at helping them test their own readiness for setting and delivering long-term sustainability objectives. Furthermore, in the future and if respondents would allow data sharing, the questionnaire is presented as a possible platform from which to develop aggregate data from which benchmarks could be set which would allow housing providers to compare their own management and energy data holding practices with other, similar, organisations in Europe.

Finally, this section of the Deliverable provides general recommendations of the REVALUE project to housing providers regarding energy efficiency and its relation to value. Recommendations were provided on different levels: building portfolio level to improve internal decision-making processes (for housing providers – test group in D2.6), and for the housing sector in general with reference to work executed in concert with valuers and financiers (e.g. new guidelines, standards, etc.). These insights are aimed at enabling affordable housing providers to improve the current use of organisational resources in order to accelerate investments in energy efficient retrofits.

This deliverable is based on energy efficiency analysis and the valuation framework developed in WP1, asset specific information, financial data and other data from case study participants. Data were collected and classified (D2.1), and an analytical model was developed describing the main EE improvement options for key dwelling archetypes (D2.2). With key decision-makers from case study organisations, the investment policies and decision-making factors were discussed and explored (D2.4). Combining the work executed in these tasks we were able to quantify long-term investment programme scenarios (D2.3). The joint outcomes of these tasks were collected in this deliverable (D2.5) and used as practical insights to housing providers and other stakeholders in regard of EE investment planning.

Chapter 8 B.2: Introduction

The principal objective of this section of the Deliverable is to offer housing providers in Europe recommendations regarding how to improve preparations for EE investments, both from an internal management perspective as well as focused on improving interaction with valuers and financiers. The EU has set ambitious targets for cutting CO2 emission by at least 80% before 2050. The REVALUE project is an effort to accelerate investments in housing and follows the acknowledgement that improvements to the building stock are vital to achieving EU targets as the majority of housing stock is sub-standard in terms of energy efficiency. Due to increasingly ambitious sustainability policies at a European and national level, housing associations are driven to integrate energy performance objectives in their strategies and asset management programmes. Such strategies can include long-term goals, towards for example energy neutrality or a reduction in carbon emissions. Interactions with selected housing providers during the REVALUE project showed that, in most cases, detailed planning is limited to 1-2 budget cycles, with aspirational explorations of long-term plans. While these interventions are normally labelled under social or impact investments, the use of data-based decision-making frameworks is not yet common practice.

The REVALUE project collaborated with affordable housing providers in the Netherlands, Sweden, Germany and the United Kingdom in order to understand internal awareness and decision-making processes in regard of energy efficiency, both on the level of individual project investments as on a portfolio level. The analysis included meetings with managers responsible for asset management/maintenance, finance and sustainability, as well as general managers. In addition, company-specific data-driven investment strategies were developed to promote integrated (internal) discussions. REVALUE collaborated with over 15 housing providers in Europe and studied in-depth decision-making processes of 4 of these organisations. This led to the observation that some housing providers in Europe are better prepared to reach long-term sustainability goals than others.

Currently, most housing providers set their objectives in line with what is common in the sector: 'keeping up with the Joneses'. This usually means 'compliance plus'. There are also some trendsetters that drive towards more ambitious goals. Multi-annual investment programmes rely on negotiated budgets where investments in energy efficiency that fail to provide a return are taken as a deficit. Long-term aims are however much more aspirational and sometimes even targeting energy neutrality.

This deliverable consists of a questionnaire for affordable housing providers to test their readiness to set and deliver long-term sustainability objectives. Furthermore, the questionnaire can be used as a benchmarking exercise, allowing housing providers to compare how prepared they are compared to other similar organisations in Europe.

Finally, this deliverable provides the general recommendations of the REVALUE project to housing providers in regard of energy efficiency and its relation to value. Recommendations were provided on different levels: on a building portfolio level, to improve internal decision-making processes (for housing providers – test group in D2.3), and for the housing sector in general with reference to work done with valuers and financiers (e.g. new guidelines, standards, etc.). These insights should allow affordable housing providers to improve the current use of organisational resources in order to accelerate investments in energy efficiency renovations.

Chapter 9 B.3: The Questionnaire

Based on the work executed in the various work packages and with different housing providers across Europe, the REVALUE team have identified four main indicators that show the extent to which organisations have developed an internal ability to prepare for energy efficiency retrofit programmes. These four indicative areas are:

- Organisational policies towards social and environmental goals- often referred to as Environmental and Social Governance (ESG);
- Financial controls based on firm and reliable data to enable the business case to be developed;
- Asset management practices which enable energy upgrades to be undertaken in-cycle and in the most cost and socially effective manner; and
- Organisational structures, policies and decision-making which facilitate all the above.

It is the view of the REVALUE team, based on the cumulative research, that housing providers that have good practice in each of these areas are most likely to fulfil their own and government policies towards more energy efficient portfolios. Therefore, the questionnaire has been designed into a self-evaluation tool (or questionnaire) which is available through the REVALUE website (http://revalue-project.eu/). The questionnaire, reproduced below, is divided into (four) sections each relating to one of the indicative areas defined above. For each question a drop-down menu is provided to enable ease of analysis and potentially allow for more detailed on-going data to be collected. The beta version of the questionnaire was launched on the website on Sept. 2018. At the time of writing, 5 organisations had completed the form. The final version will be launched in January 2019.

Section A: SOCIAL AND ENVIRONMENTAL POLICIES

Sub-section: Achieving Tenant Satisfaction Objectives

1. Does your organisation have a policy concerning tenants' comfort and health, and associated products and services?
2. How often does your organisation review the policy concerning tenant's comfort and health, and associated products and services?
3. Does your organisation monitor tenants' comfort and health?
4. How often does your organisation monitor tenants' comfort and health?
5. Does your organisation monitor the financial impact of energy quality of buildings on your tenants' finances?

Sub-section: Environmental and Energy Objectives

1. Has your organisation set a target for reducing CO2 emissions?
2. Does your organisation have sustainability targets that go beyond CO2 savings (such as, reducing the use of chemicals, embedded emissions of CO2, etc.)?
3. Does your organisation have internally aligned programmes towards achieving energy performance objectives?

Section B: FINANCIAL

Sub-section: Valuing your Portfolio

1. How often does your organisation instruct valuers to make (external) valuations of your stock?

2. Do you use certified valuers?
3. Do you instruct valuers to consider sustainability/energy efficiency characteristics?
4. Do your investment plans consider future value or value at risk related to sustainability?

Sub-section: Financing Energy Efficiency Retrofits

1. Which type of funding/financing does your organisation use for energy efficiency projects?
2. Does your organisation have plans and a financial structure for sustainable renovation programmes and associated technical assistance?
3. How much do you foresee to invest in energy upgrades over the coming 5 years?

Section C: ASSET MANAGEMENT PRACTICE

Sub-section: Knowledge Management

1. Do you execute energy efficiency works on an ad hoc only basis or 'in-cycle?
2. Has your organisation predefined energy efficiency renovation packages for your main dwelling archetypes?
3. Who is managing the knowledge on energy efficiency and renovations in your organisation?

Sub-section: Leadership

1. What is the highest management level within the organisation where sustainability matters are presented?
2. What parts of your organisation are involved in defining sustainability and energy efficiency objectives?

Sub-section: Data

1. Which of the following best characterises the data you hold on your physical stock (options listed, see annex II)?
2. How do you store your data?

Section D: INTERNAL /ORGANISATIONAL MANAGEMENT

Sub-section: Plans

1. Are your organisation's strategies, departmental policies and operational plans vertically and horizontally integrated?

Sub-section: Processes

1. How frequently do you review your organisation's sustainability objectives and plans?

Chapter 10 B.4: Rationale behind the questionnaire

This chapter describes the rationale behind the different sections and sub-sections of the questionnaire that was presented in Chapter 1 of part B of Deliverable 2.5. It explains why certain elements that were addressed in the questionnaire play a role in planning long-term energy efficient retrofits. The rational has been built up on the work done in WP2 and WP5 of the REVALUE project.

10.1. Section A: SOCIAL AND ENVIRONMENTAL POLICIES

10.1.1. Sub-section: Tenants

Housing associations seek to look after the overall well-being of their tenants as their first priority and all actions of housing providers need to serve that objective. If potential changes to, policies or indeed the introduction of polices are identified that can lead to improvements of the well-being of tenants this could be a driver for change, in the satisfaction of tenants and this is likely to trigger a move towards energy improvements which give greater comfort. To achieve their objectives, housing providers need not only to understand their tenants' needs but measure the impact of their actions and/or improvements. Knowledge of clients can be used to improve products and services in an effective, comprehensive and measurable way. Improved performance can bring financial, technical and social benefits. These benefits could be (for example): attracting new investors with aligned goals, improving tenant retention, increasing customer satisfaction and reducing the number of tenant complaints. Tenants can benefit in different ways:

1. Financial impact: Within regulatory boundaries, affordable housing providers can determine their rent setting policy and decide whether or not tenants can contribute (by way of a rent increase) towards the long-term sustainability goals of the stock. In this way, housing providers can recover a part of their investments. Bearing in mind that most rents charged by housing associations (in our case studies) were social/affordable rents, there is a strong emphasis on making sure that rent increases (resulting from renovation investments) should not put tenants at risk of poverty. At the same time, improved EE standards can bring considerable savings to tenants as they pay the energy bills directly and hence benefit from lower energy consumption.
2. Comfort and Health: Housing providers understand how thermal comfort of their dwellings can impact on health and well-being of tenants. Increased comfort can diminish the use of health care, increase customer satisfaction and will serve the community in general. Proving the relation between comfort and costs can attract new investors with aligned goals (e.g. health care insurance companies). Political recognition of this proof could be used to take significant regulatory steps towards more energy efficiency and a higher level of comfort. There will also be a number of related benefits from better comfort, like increased productivity, tenant retention and reduction in the number of complaints. Examples of implemented strategies can include: improvement of thermal comfort, supply of good quality (indoor) air, better access to daylight, acoustic comfort, open access to recreational areas, smoke free policies, etcetera.

10.1.2. Sub-Section: Environment

Being sustainable has become an important policy driver to almost every European government and they consequently put an emphasis on energy efficiency elements in housing stock. This pushes housing providers towards a strategy that includes environmental matters like: climate change, water management, green procurement, energy efficiency, energy generation, and reduction of carbon emissions – (there are already signs that is not only becoming a priority from an international policy perspective but also from a lender's perspective).

1. CO2: European cities share the challenge of reaching ambitious targets of reducing CO2 emissions over the coming years. By 2050 greenhouse gas emissions should be reduced by at least by 80% compared to 1990 levels. To meet targets, leading housing providers are anticipating policy development by accelerating the development and deployment of cost-effective short and long-term targets reduction of CO2 emissions for their stock.

2. Beyond CO2: sustainability goes beyond reducing CO2 emissions, organisations with higher ambitions and greater awareness of their surroundings are looking for options that do not damage the earth by recycling construction materials, using materials that do not contain chemicals and that do not decompose easily. For example, many housing associations in the Netherlands have decided to follow the Natural Step[15] approach in their activities as recommended by AEDES[16], the national organisation promoting the interests of practically every social housing organisation in the Netherlands.
3. Definitions: many organisations have set goals and targets without clearly understanding the meaning of the objectives. Without clear definitions, it is not possible to make long-term back-casting exercises and the set objectives will not be met.
4. Energy performance objectives: improving the housing stock's energy efficiency could bring benefits to the environment as well as to tenants by reducing the risk of energy poverty, increasing comfort, etc.

10.2. Section B: FINANCIAL

10.2.1. Sub-section: Valuations

Housing associations are starting to explore qualitative and quantitative evidence of the relationship between different characteristics of stock (e.g. energy performance and value). Knowing the value of their stock and the elements that influence value could facilitate a better understanding of correlations for all stakeholders in the value chain. Numerous data points could drive change in value such as the average energy consumption, the energy label, etc. Consequently, housing providers will be able to visualise investment strategies that could exploit changes in property value and hence calculate their financial options.

1. Sustainability in valuations: lenders either lend against the security offered by individual properties or against the company's financial strength and performance in case of large portfolios. The REVALUE interviews confirmed that some lenders issuing mortgages to individual home owners are beginning to recognise that energy inefficient stock may represent an increased credit risk (see www.energyefficientmortgages.eu). From a corporate perspective, interviews with lenders findings pointed to companies with strong sustainability credentials being possibly regarded as likely to be a less of a credit risk – but this was not linked to the underlying stock condition. Nonetheless, the two are connected.
2. Long-term value at risk: major changes in legislation or customer preferences could lead to reduced demand for certain housing assets or may result in significant investment requirements. For example, energy performance requirements or minimum energy efficiency standards (MEES) as introduced within the UK (though not applicable to social housing providers) could force commercial landlords to spend significant amounts of money to comply with regulations. Tenants could also associate lower quality stock with unhealthy living environments and higher costs of living, with reduced demand as a consequence in certain housing sectors.

10.2.2. Sub-section: Financing

When it comes to realising housing providers' strategic energy efficient investment plan, the key is sound funding. Financing interventions includes process costs, technical assistance and the physical investments in housing assets. To execute strategic plans, housing providers need to secure funding. Funding is only available to housing providers with clearly defined short and long-term financial parameters that are supported by the strategic plan. Financial institutions are beginning to see energy efficiency as potentially significant to lending risk. If funded properties are liable to become subject to 'brown discounting', the risk to the lender is increased. Whilst the interviews with housing providers did not point to

[15] https://www.aedes.nl/artikelen/bouwen-en-energie/energie-en-duurzaamheid/vernieuwingsagenda/inhoudelijke-kennissessies-duurzaamheid.html
[16] https://www.aedes.nl/artikelen/aedes/vereniging/about-aedes.html

this being an issue currently, companies are seeking to control costs and in the future borrowing that is deemed riskier may also be more expensive.

10.3. Section C: Organisational

10.3.1. Sub-section: Knowledge management

Knowledge management is a key factor that should be embedded in the core of any organisation. Its importance should be at the heart of improving decision-making capabilities, creating a routine of learning and stimulating change and innovation. A housing association can collect a large number of data points, but its processing of the data will most likely determine its level of usefulness. Likewise, clearly knowing the characteristics of stock can create a culture where buildings are continuously assessed, looking for ways to improve their performance. Moreover, managing organisational knowledge at all organisational levels can stimulate cultural change and innovation by encouraging the free flow of ideas.

1. Renovation packages: Housing providers with clear ambitions often manage standardised renovation packages for their entire stock. These packages need to be well defined, transparent and known by all departments. This allows to develop a work plan based on no-regret renovation actions (no-regret strategies are based on concepts and measures that can begin to be enacted now without being certain about all potential solutions in the future) while maintaining the strategic priorities and ambitions of the housing provider.
2. Knowledge management: is a key factor that should be embedded in the core of any organisation. Its importance lies in facilitating decision-making capabilities, creating a routine of learning and stimulating change and innovation.

10.3.2. Sub-section: Leadership

Leadership support (high-level management) has a vital role to play when it comes to strategic plans. Leadership commitment and support can communicate the purpose and processes of the sustainability programme to all levels of the organisation and can help the organisation to deliver on commitments made.

10.3.3. Sub-section: Data

Data play an important role in determining informed investment plans and sustainability decision-making processes as it is the key component for informed back-casting scenario exercises. Having good quality data could make the difference between meeting or not meeting strategic objectives. The better the data quality, the more confidence organisations can have when making decisions. With good quality data, you can make well informed decisions that improve efficiency. Furthermore, this can help professional valuers to determine a more precise value and help to assess the general performance of the entire stock. To better understand the impact of investment decisions, financial performance indicators and sustainability aspects of renovation programmes should be studied.

Data categories: based on REVALUE's experience (when working with housing associations) in developing data-driven analysis and strategies for asset energy efficiency renovations (D2.6 and D2.1), it has been possible to predetermine the 5 most important categories of variables needed for sound back-casting assessments. Data can offer details of the current characteristics of stock and thus be used as a strong basis to forecast the impact of renovations on future performance and predict the contribution of plans to organisational goals.

We identified the following stock characteristics required for more informed decision-making processes:

- Basic information (identifier, address, construction year, type of dwelling, usable area and surveyed dwellings).
- Technical components (heating system, energy sources, windows, roof, ventilation).
- Energy performance (Energy Performance Indicator; energy consumption, CO2 emissions (Kg of CO2).
- Maintenance (date of refurbishment, maintenance condition, maintenance costs and building standard).
- Market valuation (average market value and rent potential).

- Software: Given the increased availability of data within housing associations, it is common to find several datasets stored in different departments without any standardisation. Consequently, its access and analysis can be hindered by having different software or datasets that do not communicate without extensive cleaning of data. This could jeopardise the overall process of data collection as the general outcome of all datasets will not be easily accessible what diminishes the potential use of it in important decision-making processes.

10.4. Section D: Internal Management

10.4.1. Sub-section: Plans

The best sustainability results can be achieved if an organisation integrates its plans towards a complete horizontal and vertical alignment in which the organisation´s strategies, departmental policies and operational plans are taken into consideration.

10.4.2. Sub-section: Processes

Housing associations with large portfolios are often challenged by complex management processes when implementing their asset investment strategy. Bearing this in mind, several organisations opt for different solutions in which assigning specialised staff to oversee the processes is a viable option. This member of staff is in charge of the guidance and analysis within the execution of elected energy efficiency projects and is responsible for the robustness of the assessments in order to meet the organisations' environmental objectives. Moreover, dedicated staff are visible at all organisational levels through a vertical and horizontal alignment characterized by a high frequency of meetings per year. A sound process can assure that the planned sustainability upgrades will take place.

Chapter 11 B.5: Individualised recommendations

The benchmark evaluation tool offers an opportunity for organisations to obtain a realistic view of their policies and processes and help them to consider and internally evaluated ways in which they can improve these with resultant benefits for tenants and their own environmental, financial and social performance overview of dwelling characteristics, aiming to provide an estimated insight in possible recommendations towards improving the current organisation´s performance within social, financial, organisational and internal key performance indicators.

The questionnaire assessment tool offers an analytical framework that allows an organisation to benchmark its own progress over time and potentially could be developed into an inter-company benchmarking tool. However, the assessments are based on a simplified interpretation of departmental policies, operational plans and decision-making processes. Deeper analysis is needed to develop a realistic strategy, such as described in D2.6.

Due to the complexity of the questionnaire, housing providers who complete it will receive individual feedback based on an analysis of strengths and weaknesses. Below we have listed a limited number of recommendations for housing providers performing weakly in mentioned sub-categories. The aim of this questionnaire is to keep disseminating the REVALUE project's results even after the project has ended. The questionnaire will still be available for 2 years after the project ends.

Section A: SOCIAL IMPACT

Sub-section: Tenants

Improving thermal comfort can be an important matter for housing associations affecting the experience of tenants, potential new clients, the health care system and the community in general. Acknowledging the impact of comfort on the quality of life will bring awareness and improve possibilities to attract investors that have aligned goals. Tenants of energy efficient dwellings may enjoy health and well-being benefits in addition to reduced energy bills. This will result in fewer tenants likely to leave or to default on rent payments.

Sub-section: Environment

There are long-term risk implications for poor energy performance of properties and the lending industry is beginning to recognise this. Vanguard financiers are starting to collect data on energy efficiency (starting with EPCs). Certain building archetypes in the residential sector located in low-value problem areas may particularly be at risk of becoming stranded assets. Therefore, organisations should consider including sustainability planning in their organisational strategy.

Section B: FINANCIAL

Sub-section: Valuations

Professional bodies, such as the RICS, have been encouraging valuers to enhance their due diligence and reporting in relation to energy efficiency. Knowing the components of value of stock could facilitate the understanding of correlations between characteristics such as the average energy consumption, EPC, maintenance costs, etc. Consequently, you should be able to visualise the different investment strategies that you could exploit, including changes in property value and thus examine the impact on financial performance.

The REVALUE interviews confirmed that some lenders are beginning to recognise that energy inefficient stock may present an increased credit risk. Thus, if your stock has a better energy performance it should be brought to your lender's attention.

Sub-section: Financing

There are long-term risk implications for poor energy performance and the lending industry is beginning to recognise this.

Section C: ORGANISATIONAL

Sub-section: Knowledge Management

Good knowledge management structures can help to ensure that knowledge and lessons learned are shared across the entire organisation, which leads to more efficient resource management.

Sub-section: Leadership

Leadership support (high-level management) has a vital role to play. Leadership commitment and support can communicate the purpose and processes of the sustainability programme to all levels of the organisation and could help to keep up with commitments made.

Sub-section: Data

Data play an important role in informed investment and sustainability decision-making as it is the key component for informed back-casting exercises. Having good quality data could make the difference between meeting or not meeting the strategic objectives. The better the data quality, the more confidence organisations can have when making decisions. This diminishes risks in investments and increases the overall efficiency of stock. Furthermore, it can help valuers to reflect market value and to assess the general performance of an entire portfolio. It supports to assess the investment scope, financial performance indicators and sustainability aspects of the housing providers' renovation programmes.

Section D: INTERNAL MANAGEMENT

Sub-section: Plans

The best project results can be achieved if an organisation integrates their plans in a completely horizontal and vertical structure that aligns the organisation´s strategies, departmental policies and operational plans.

Chapter 12 B.6: Recommendations to housing providers

REVALUE has three important messages to bring to European housing providers:

Ensure to instruct valuers to consider energy efficiency and its potential impact on housing value in valuation reports

Valuers confirmed that they act in accordance with client instructions and in compliance with professional regulatory codes. The codes have recently been revised and give greater guidance and encouragement to valuers to consider sustainability data where available. When a valuer is instructed, there are often no specific instructions formulated by clients in relation to attention for reporting on EPC or other energy data. The agreed fee between a valuer and its client is normally insufficient to support detailed investigations regarding energy data. Because market evidence suggests that there is no big impact on value in relation to energy efficiency, clients are not prepared to agree higher fees for valuers to provide this additional information. However, banks are beginning to ask for comments on corporate social responsibility (including energy efficiency).

Valuers prepare investment valuations using discounted cash flow (DCF) techniques when acting for rental housing portfolio owners. The data made available by housing providers (to valuers) may include specific energy data which can be factored into the cash flow analysis. However, valuers found hardly any evidence of cost reductions resulting from energy efficiency interventions and hence did not alter the net cash flows for the client although there might be cost savings enjoyed by the tenants who pay the energy bill. In such cases, the only impact on value is a potentially reduced investment risk. Finally, it was noted that where rental caps are legally imposed, energy efficiency improvements can only be included in the calculations through adjustments in the discount rates (lower risk premium) or through cost savings in maintenance or lower voids (REVALUE, D2.4).

Enhance the collection of energy performance data in addition to the EPC

For meaningful analysis of the relation between a building´s energy efficiency in relation to its value, the availability of quality data is key. This includes for example EPC, building component information on heating systems, wall insulation, windows, etc. When working with affordable housing providers from 4 different countries, a picture emerged of scattered databases, with often incomplete or unreliable data sets – and practical difficulties of extracting data. Housing providers and valuers cannot rely on such data.

Develop a long-term business strategy to optimise energy efficiency; this may enhance value and will ensure tenants' well-being, satisfaction and retention.

Most strategic energy efficiency plans of housing associations currently run for 1-2 budget cycles only, with aspirational explorations on the longer-term vision. The strategic plans normally include sustainability ambitions and energy poverty as drivers for investments. Energy efficiency interventions are often labelled social or impact investments. Quantified decision-making frameworks have frequently not yet been fully developed. Investment programmes based on back-casting scenarios are typically not available. Future value and risk are not considered main drivers for investments. Elements of corporate social responsibility are the current key driver for investments. Strategy driven back-casting exercises developed by the REVALUE project showed positive response on a strategic level, increasing confidence in feasibility studies and renewed willingness to invest.

Chapter 13 Annex I A Interviewed organisations

List of interviewed organisations

All interviews have been transcribed and stored in the archives of the REVALUE project. In order to keep opinions and information anonymous we have prevented any type of quotations. The information used in the report is extracted from all available material and is intended to give a balanced view of the collected information; however, no individual views are ascribed to any organisation. We have chosen to make this Deliverable public so it can be used by others in the context of research and development projects. The information in this document is based on the information gathered and, although we have sought to choose representative organisations we cannot guarantee that other stakeholders have the same view or opinion.

Housing Providers interviewed (in alphabetical order by and within country)

SKB	Sweden
Svenska Bostader	Sweden
Broadland	United Kingdom
Clarion	United Kingdom
Grainger	United Kingdom
One Manchester	United Kingdom
Places for People	United Kingdom
Resonance	United Kingdom
De Alliantie	The Netherlands
Vesteda	The Netherlands
Wonen Breburg	The Netherlands
Ymere	The Netherlands

Chapter 14 Annex I B Questions semi-structured interviews and cover letter

Questionnaire for property owners

Dear …..,

Undertaking Energy Efficient Retrofits in Residential Rented Stock in Europe

Thank you for agreeing to be interviewed as part of a Research Project that is being undertaken by a consortium including the RICS and Savills with the aid of EU Horizon 2020 funding. Further details of the project can be found at http://revalue-project.eu/

The overall purpose of the research is to investigate how the benefits of energy efficiency retrofitting of residential rented stock in selected European countries can be quantified and used to incentivise or/and facilitate upgrade projects which will contribute to the reduction of carbon emissions and enhance the health and wellbeing of occupants.

We are conducting statistical analysis of a wide range of data from case studies of social housing portfolios to evaluate whether schemes have produced a dividend In terms of added market value, but to support this we are undertaking a series of interviews and focus groups with investment owners, funders and key industry bodies in each country in order to gain a deeper understanding both as to the decision making process prior to investment in retrofits and into the evaluation of benefits.

I am attaching a copy of the largely open-ended questions that we wish to explore with you. Whilst we appreciate that not every interviewee will be able to contribute to every question, in the interests of transparency, we are circulating all questions to all parties.

We anticipate that the interview will last for between 30 - 45 minutes. Following the interview, we will write to you with a summary of the discussion with you but please accept our assurance that you will not have any comments directly attributed to you as the data will be collated and used anonymously. We would however be grateful if you would consent to your name or/and affiliation being included as part of our reporting process to the European Commission.

If there is any further information you require before the interview or if you need to alter any of the arrangements please do not hesitate to contact me at sarahlsayce@gmail.com or Fiona Haggett at fhaggett@rics.org as she is coordinating the RICS input to the project.

Yours sincerely

Professor Sarah Sayce

Advisor to RICS on the ReValue Project

Undertaking Energy Efficient Retrofits in Residential Rented Stock in Europe

We would like to explore the following key issues with you; we acknowledge that your experience may lead you to have expertise in only some of the areas and we confirm anonymity.

About your Organisation and your Portfolio

1. In what country do you hold stock?
2. What is your role in the organisation: asset manager/ director/ financial manager/ other
3. Approximately how many units do you own and/or manage?
4. How is this split between tenure(s) (market rent/intermediate/affordable/supported living?
5. Do you have a current building programme?
   - If you do, what is your main source of funding?

   (e.g. own funds; through disposals; corporate borrowing; asset level borrowing; government grant)

   - If yes, what energy efficient measures (other than to comply with regulation) do you include when building new properties? And what other sustainability features (if you any) do you incorporate?
6. Do you adopt PassivHaus techniques/standards?

   Routinely/sometimes/seldom/never
7. On what basis is your portfolio valued? (Red Book; IVS; other) and how frequently?

   - If it is valued for book purposes, do you find a variation between book value and sales value if/when you sell stock?

   - If yes, can you explain why?

The Data you hold on your Stock

8. What is the age profile of the stock in % terms?

   (pre-1939; 1940 – 1960; 1961- 1980; 1980 – 2000; post 2000)
9. Do you hold regularly updated condition surveys of your stock? Is this done in-house or outsourced?
10. In general terms what are the chief deficiencies/defects within your property holdings?

    (energy inefficient; poor heating systems; damp; poor configuration; outdated kitchens/bathrooms, etc.)
11. Do you hold EPCs or other energy certificates for your stock?

The Decision to Upgrade: motivation and the business case

12. What is your usual planned improvement cycle?

    (5 years' 10? 20? Etc.)
13. What approach to you take towards upgrading stock?

    - Is it through a planned process of investment?

    - And do you look at holistic upgrades or specific?

    (e.g. kitchen; energy? heating etc. roof renewal, window replacements, etc.)
14. What might prompt you to do improvements 'out of cycle'?

    (e.g. tenant void; legislative change; etc.)
15. Who identifies which stock to upgrade and how does this process get initiated through your company?
16. How important is the tenants' costs, health and wellbeing and overall experience to you in determining the retrofit spend?

    (paramount/ important but must fit the finance model/compliance is the key driver/asset value is more important/ etc)
17. How do you build up a business case for retrofits (existing properties) /energy efficient feature inclusions (new build)? Please indicate and rank

    ROCE

    - Addition to the rental line

- Anticipated value adds (if so, how quantified)
- Tenants' health and well being
- Risk reduction (including reduction in tenant default and tenant retention)
- A matter of ESG (Environmental, Social and corporate Governance)
- Future proofing against legislation/regulation

18. Does the tenure mix of the property affect energy efficiency decision making?
    - I.e. if property is market rented, affordable, intermediate, social rented, sheltered, supported how does this affect your energy efficiency decisions?
    - If so, how?
    - Are the investment criteria different?
19. How do you fund your improvements?
    Corporate funds, through sales, borrowing, grants, etc.
20. Does the level of improvement impact the funding you can gain?
    - How do you reconcile cost saving benefits to tenants v benefits to property owners?

The Decision to Upgrade: process and technical issues

21. How do you identify which stock to improve in terms of energy efficiency?
    - All as a matter of principle
    - Those with vulnerable tenants etc?
    - The worst first?
    - Most cost effective?
    - Certain property types?
    - Depends on planned 'hold' period?
22. Are there any energy efficiency measures that are easier and more cost effective to implement?
23. In your experience what are the most effective energy upgrade measures?
    (insulation; window renewal; new heating systems; lighting improvements; other)
    - To what extent is this dependent on the building type/age?
24. Is knowledge of technology and its track record an issue?
25. Do you seek to move to 'green' electricity as part of retrofitting?
26. Where, for example PassivHaus technology is used in multi tenanted properties, is it possible to differentiate between varying energy requirements of different tenants?
27. Do you introduce smart metering as standard?
28. Are there any energy efficient measures that tenants particularly like or dislike/ find difficult to use?
29. How do you deal with the 'reluctant tenant' when you wish to upgrade?

Monitoring the Results of Investment Projects

30. How do you evaluate the results of building retrofits?
    - Over what period do you expect payback?
31. Do you/can you monitor tenants' energy bills?
    - Do energy efficiency retrofits lead to measurable reductions?
32. Do you find that improvements achieve planned levels?
    - If not, why is this?
    (i.e. is there a performance gap?)
33. Have you experienced the following as a result of retrofits?
    (e.g. lower voids and bad debts? Reduced management costs? Greater tenant retention?)
34. Do you monitor tenant satisfaction?

- And have such retrofits improved satisfaction?

35. Have energy improvements led to positive impacts on your company performance?

Future Plans and General views

36. If you have any stock which is not let at market value – are there rental caps?
    - If so how are these impacting on your ability to invest?
37. In the future, are you likely to increase your stock holding?
    - If so, by building or purchase?
38. What is likely to be your minimum specification requirement?
    (statutory compliance/ above/ zero carbon)
39. What are your views on building passports?
40. What information would you find useful to receive within a valuation report in respect of energy efficiency?
    (e.g. summary of portfolio EPC ratings if available)
41. What do you see the government role as in promoting energy efficiency in residential property? (enabler; regulator; financier)
42. What do you think should be the role played by valuers?
    - Should they provide market-based evidence only? Or technical or strategic advice – both? Neither?
43. Do the valuation professional bodies take a strong enough lead in ensuring energy efficiency is reflected in valuation advice?
44. If you were to give advice to policy makers to aid energy efficient upgrades to your stock, what would it be?
45. Is there anything else you would wish to share with us?

Chapter 15 Annex II A Questionnaire

The questionnaire can be accessed from:

https://forms.zohopublic.eu/baxcompany/form/HousingProvidersEEinvestmentplanning2/formperma/HLfkEwIDpgmyzh-abq0vHD6Y4Jy514s4sW6l0_D2PCY