

Plan for retrofitting housing by 2050



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CHAPTER 1: INTRODUCTION

In the UK, Parity projects offer homeowners personalized services for their energy renovation projects. Through the Retrofit Works initiative, Parity projects coordinate the work of suppliers (SMEs) and ambassadors such as social workers and associations to facilitate the connection with customers in the context of renovation works. SMEs can participate in training sessions on technical issues (materials, technologies, methods for effective renovations, etc.), on contact with customers (how to adopt, how to consider the specific demands of more vulnerable customers or more demanding, etc.). For building professionals, Parity projects provide support in their administrative procedures and offer a quality guarantee (Elsharkawy & Rutherford, 2015). To the owners, they provide all the necessary information so that the labourer can be released from the sales aspect and concentrate on their core business. Retrofitting Housing Work has created a position of “Renovation Coordinator”: a person with general knowledge about each stage of the renovation, who coordinates the renovation project and the work between the various stakeholders. In place of large, very intensive projects, this initiative allows contractors and suppliers to have a consistent workflow.

The ambition of the Clean Growth Strategy is to launch decarbonization of all sectors of the economy until 2050. For heavy industry (20% of emissions), London will tighten the energy efficiency standards and restart a program to support geological CO2 capture and storage (CCS). A fund with 100 million pounds is planned and that is to keep being invested until 2045. This remains uncertain considering the cost of installation of CSC industrial size (1 billion, at least). The UK Government plans to renovate one million homes

per year with an aim to limit the carbon emissions and build houses that are zero carbon until 2050 (Sunikka-Blank & Galvin, 2016). By expanding the scope of the Energy Company Bond, the UK equivalent of energy saving certificates, administration hopes to reduce energy consumption (and therefore carbon emissions) by 1 million homes a year. That will generate £ 3. 6bn worth of work each year, says the government. Also, 1. 2 million boilers will have to be modernized or changed every year. Another fund, worth £ 4. 5bn this time, will be dedicated to financing wood-fired boilers and heating networks (Gupta et. al, 2015). To accelerate the thermal renovation of homes, the government is also considering modulation of the registration fees for housing sales based on their energy performance.

The building sector accounts for around 40% of the primary energy consumed in the UK. UK homes use on average £3. 4 billion worth of electricity every single year, with the nation usage being around 3, 940kWh per home. (Anon, 2019) This constrained expenditure is highly exposed to rising energy prices, whose long term trend is a continuously increasing and several elements suggest that it should accelerate in the UK in the coming years (at least +4 to 5% / year) (Sdei et. al, 2015). As a result, the expense of energy is weighing more on the purchasing power of households.

However, it is possible to reduce the energy consumption of the order of 10% to 30% by behavioral actions and minor investments and of the order of 60% to 80% with global renovations that affect both building envelope and heating equipment (Fylan et. al, 2016). Paradoxically, the pace of Energy renovations of buildings remains quite slow in the UK compared to other Europeans countries, which reflects a low perception of the stakes by English

citizens. One of the main explanations lies in the perception of a price of energy under control with the peculiarities of the English energy model. This biased perception cannot last, given multiple factors that converge towards a mechanical and important price increase the price of different energies.

1. Background of the Study

In the UK, the energy prices must be assumed politically because it is better a 5% increase per year announced in the long term than a rise brutal prices when we face the wall of the reconstruction of the English Energy Model. This assumed price evolution will facilitate the mobilization of actors for the control of energy, by promoting investment planning and increased profitability energy efficiency projects. In the current context, the natural rhythm of thermal renovations that can be evaluated between 200, 000 and 400, 000 per year all renovations, leads to a period of 25 to 50 years for renovate 10 million UK homes (Wilkinson & Feitosa, 2015). The challenge of energy renovation buildings, therefore, lies in the pace of energy renovations that need to be accelerated, while by encouraging quality renovations. This requires mobilizing and accompanying factors, and finance operations. For the first time since the beginning of the industrial era, the price of energy is likely to grow more sustainably with the GDP in developed countries, with the result that the share of energy increase substantially in the household budget at constant energy efficiency level.

The European objectives of the Climate Energy Package which provide for a 20% improvement in energy efficiency by 2030, which the UK has translated into its National Action Plan for Energy Efficiency Report. The new European

directive on efficiency recently adopted other objectives and obligations with EU member states to take into account. The objectives are thus numerous, but they sometimes lack coherence, and the declensions are still too diffuse. For example, it is difficult to link standards and the global consumption targets for 2040. By way of illustration, some of the existing scenarios, although very ambitious, are currently significantly below the target of -38% energy and -50% in 2018 set by English Law (Hargreaves et. al, 2017). Similarly, the goal of renovating the whole tertiary sector before 2050 seems so ambitious that it can seem unattainable, except to make marginal renovations totally insufficient compared long-term goals. The readjustment of the targets set for 2050, probably on the downside, a counterpart of setting ambitious but coherent targets, spread between 2020 and 2050, would be a measure capable of giving the visibility needed by the actors in the energy sector.

The next deadlines are the transposition of the European Directive or the law of energy programming that will follow the debate on the energy transition must be of program setting the orientations of the energy policy of UK. The opportunity to clarify and make consistent objectives, with a translation precise operational in particular, it is essential that a precise work can be done to identify the energy market of English real estate heritage and planning renovation operations. It must make it possible to achieve coherent objectives in the short, medium and long term, expressed on the housing stock and the flow of renovations from the level of energy consumption reduction and carbon reduction that the sector building must reach to be consistent with the long-term English objectives (2050), it determines a level

of energy consumption and emissions to be achieved in order to the housing stock. Then, in order to achieve these objectives in terms of energy and retrofitting housing plan until 2050, it will be necessary to determine the pace to be achieved in the number of annual renovations (Hodson & Marvin, 2015). Beyond this planning work, specific action tools are indispensable in distinguishing types of assets, including housing, the private service sector, and the public service sector.

1. 2The rationale of the Study

The UK government has decided to set up 150, 000 jobs for the future, including intervention includes sustainable development. Whereas renovation is a priority for the future of the country, as future jobs also promote energy renovation. These jobs of the future will have to be part of a proactively “ ambassadors of energy efficiency”, and will have to approach the homes at home, especially households living in energy-intensive housing. To ensure the successful completion of these procedures, high-quality pre-service training on technical aspects but also financial, or knowledge of the sectors, will have to be given to young people to mobilize for this program. It will have to allow the “ ambassadors of energy efficiency” to answer the usual questions, then direct their contacts to the points of single professionals in the sector.

However, this study has deemed important as it will intend to shed light on the planning for retrofitting housing in the UK by 2050. In this sense, this study will promote a better living program and prevent entry into energy poverty. Today, in the UK, the sector of energy renovation is very

insufficiently prepared to a look at the goals of renovation volumes.

Specialized craftsmen capable of integrating an energy renovation covering several aspects of housing (multi-lot renovation) are not too many (Hodson & Marvin, 2017). It is necessary to help the building sectors (construction, equipment manufacturers, etc.), artisans or large companies, builders or operators, to work together from the beginning of the projects, to emerging comprehensive offers tailored to different segments of the market (individual houses, collective housing, condominiums, etc.).

1. 3Purpose of the Study

Several actions are necessary to support the sectors which mainly involved in the 2050 Plan for Retrofitting housing in the UK. To promote research and development, but also structuring organization and capitalization of the sector, the Public Investment Bank, in its role the financing of enterprises, will have to devote special resources to the financing of sector companies. To continue the professionalization policy by means of labels, it is necessary for the UK Government and policymakers to support this initiative in order to contribute to this viable cause. In the UK, the housing stock consists of about 32 million dwellings and breaks down in 4 million energy-intensive homes, 7 million homes close to good consumption standards and 17 million homes that, without being very energy efficient, deserve to be renovated.

Therefore, the core purpose of this study is to support the 2050 plan of retrofitting housing in the UK. Throughout the study, different professionals from different sectors should be involved with an aim to contribute to the results and findings of this study. The accompaniment of the sector is an

important stake in the ambition of energy renovation of the buildings until 2050 as it conditions both the ability to do so but also the creation of hundreds of thousands of jobs, and the ability to national project know-how to support a green environment. When consciousness exists, it is often difficult to properly use equipment control of energy expenditure available. We propose to mobilize energy companies to mobilize consumers through their bills. The deployment of smart meters, the emergence of new technologies and the internet should facilitate awareness in the next two decades. Without wait for the deployment of these technologies, means can facilitate awareness. Thus, as in some parts of the United Kingdom, energy companies could have the obligation to give indications of consumption compared to a simple benchmark, based, for example, on a consumption level in identical dwellings in the same district (Eames et. al, 2017). A simple approach, based on some key parameters (area, floor, etc.) and materialized by “ smileys” would allow households to realize that their housing consumes more than the average.

1. 4 Aims & Objectives of the Study

The core aim of this study is to make the UK a green State, where every house that builds in the future intervals must have retrofitting characteristics. In order to do so, the researcher of this study intends to explore or support the 2050 Plan for Retrofitting housing in the UK. The propose to maintain this program as spearheading the treatment of precariousness with the objective of reaching a rate of 50, 000 homes/year in 2017. The amount of this financing can be evaluated between £200 and

£400 million depending on the price of CO2 allowances on the European market.

This study has three main objectives;

- To support the plan for retrofitting housing by 2050 mainly in the UK.
- To support the past researchers who conduct studies to help in fulfilling the aim of retrofitting housing plan in the UK until 2050.
- To propose recommendations that help in achieving the objectives of retrofitting housing plan by 2050.

CHAPTER 2: LITERATURE REVIEW

2. 1 Introduction

As part of the European INNOVATE project, Parity projects aims to create a one-stop shop that will offer tools to enable homeowners to carry out rapid assessments themselves and direct them to the professionals and products most relevant to their projects. As on this side of the Channel, the policy of clean environment through retrofitting housing by 2050 will essentially help the UK in making green environment (Brown, 2018). The other initiatives took by UK Government such as banned the commercialization of the new thermal vehicle in 2040, the kingdom will support, for 1 billion pounds, the acquisition of electric or hybrid vehicles. Highways stations will be equipped with charging stations. On electricity, the last coal-fired power plants will definitively extinguish their fires in 2025. In principle, the year when the first reactor of the Hinkley Point C nuclear power plant, built by EDF, will inject its first megawatt-hours (MWh) into the network. By budgeting £557m to finance future renewable power plant contracts, London estimates that it will

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be able to constrain 10 gigawatts (GW) of marine wind capacity over the next decade (Gholami et. al, 2017).

While in most of the world, the discussion is focused on avoiding global warming, the city of London is already thinking of the inevitable: how to learn to live with it. To this end, the UK's capital city is launching an innovative climate change adaptation program – the first of its kind in the world. The project is being developed and must go through two phases of consultation – one in the city assembly, another in public order, in which any citizen can criticize. Only after that will it be implemented. The goal is to prepare the UK for the changes that will come, even if every effort is made to contain global warming. “ I always say that climate change is for life, not just for Christmas,” jokes Alex Nickson, manager of water strategy and adaptation to climate change in London (Zahiri & Elsharkawy, 2017). “ The changes we are seeing now are the result of the last 50 years of industrial activity, and the carbon we put into the atmosphere is there for a hundred years, and even if we stopped issuing now, we would still have to deal with the transformations that are taking place.”

The work involves, at first, studies to analyze how much global warming will transform the UK and it is no small thing. By 2050, the hottest summer recorded in history in the UK in 2003 will be in the summers' average. Later in time, it will have been comparatively one of the coldest. That is, London will be a much warmer city in the future. Some projections show that the British capital will have, in 2050, a climate similar to that of a city north of Portugal – something unthinkable for UKers nowadays. Events such as “ extreme weather conditions” will also become more common today (Gooding <https://assignbuster.com/plan-for-retrofitting-housing-by-2050/>

& Gul, 2016). From the impact studies done so far, some concerns stand out. The biggest one, in principle, would be the change in the living standard of UK Citizens. Although London is not glued to the British coast, there is a great river that cuts the city, the Thames, besides several other tributaries and, it seems, the water flow in the Thames will peak 40% higher than today, when the year is 2080.

2. 2 Benefits for UK Households in adopting the plan of Retrofitting Housing by 2050

The UK is one of the world's top States, has decided to adopt a plan to stay alive. By 2050, the city will be completely green, with zero emissions of polluting gases. The measure may sound radical for a short period of time, but it is no longer a matter of choice as 9, 000 people already die annually due to health problems caused by air pollution. To achieve the goal, drastically reducing the use of cars in the UK and investing in sustainable buildings are part of the plan such as Retrofitting Housing Plan by 2050. In 2015, the World Health Organisation (WHO) released a report pointing out that the number of older people in the world should double by 2050 (Teli et. al, 2016). In the UK, however, it will almost triple: if today the percentage of people over 60 is 12 %, by 2050, should reach 30%. As the elderly population increases, cities need to adapt and become more integrated, secure and accessible (De Laurentis et. al, 2017). One place that has become an example to be followed in this regard is Manchester, in the United Kingdom, which currently occupies the fifth place in the ranking of the best places to grow old.

One of the largest English cities, Manchester develops strategies focused on valuing the elderly. This means that they are heard, and their opinions are taken into account by public power. Every six weeks, a Senior Citizens Committee meets to discuss plans and public policies, through a strategy called “ Manchester Friend of the Elderly (Sdei et. al, 2015).” In addition, a Senior Citizens Forum is organized twice a year in which senior citizens act as intermediaries in policy decisions. These events also help to stimulate the socialization of this part of the population. With a representative number of elderly people, the UK seeks to value the experiences and knowledge of those over 60 years old, as well as their ability to consume, invest, generate employment and stimulate the economy. In several establishments, for example, the “ age-friendly” seal was implanted (Wilkinson & Feitosa, 2015). The idea is to encourage these places to provide comfort and dignity for older people by offering chairs so that they can wait for the sitting, water, and bathroom.

Several world capitals are announcing measures to reduce pollutant emissions and London in England does not want to be left out. This week, the city’s mayor, Sadiq Khan, has announced a major initiative to reduce the gaseous pollutants to zero completely in the next three decades. Currently, the public transportation system is already electric and the idea is to proceed with this strategy. Getting more people to choose this type of displacement will be one of the biggest goals of the London plan (Eames et. al, 2017). Management, in addition to encouraging the use of public transportation, wants the population to use more bicycles and walking as alternatives to travel. The plan is to reduce the number of trips by three

million a day. The “ Transport Strategy” document formulated to be fulfilled in the long term establishes that taxis and rental vehicles will reach zero rates until 2033, already buses by 2037 and other vehicles by 2040 (Brown, 2018). The first goal, the center of London should be zero emission until 2025. From there, the program will be expanded by the rest of the city by 2050. The biggest obstacle’s being faced by the UK will be to ensure the necessary infrastructure for projects to be taken off the paper. One of the resolutions that are already being adopted is the Retrofitting Housing by 2050.

2. 3 Major Initiatives to fulfill Retrofitting Housing Plan by 2050

In fulfilling the 2050 plan of Retrofitting Housing, this will require measures to educate citizens to adapt to new environmental legislation. In addition, households and commercial establishments, for the most part, do not have individual meters of water consumption – making it difficult for citizens to encourage the economy. On account of all this, today southeastern England is already considered under “ water stress”. With global warming, this will worsen. In order to adapt to the new reality, it will be necessary to reform the pipelines and place meters in up to 90% of housing and commercial units (Gholami et. al, 2017). A third major theme raised by the adaptation strategy concerns hot flashes. They should become more frequent and, if nothing is done, they can kill older people with more intensity that has happened in recent years. To solve the problem, it will be necessary to implement a series of modifications in the way the buildings are constructed in the UK. UK Policymakers need to minimize the need for artificial refrigeration systems – or, if citizens need to use methods that do not emit large amounts of carbon

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in the atmosphere – and adapt old buildings to optimize temperature control in their interiors.

There is also the idea of creating more parks in the central part of the London City, to cool it down as asphalt absorbs a lot of heat, making the more urbanized areas much warmer than the green areas. The London city hall is hesitant to give value to the effort to adapt to global warming (Teli et. al, 2016). As the project is still under development, and some of its actions overlap with other local government activities, it is not possible to put a price tag. But by the end of 2020, the first estimates must come up. In any case, the retrofitting housing plan by 2050 needs to be fulfilled if the UK has to support the green environment. As this project is innovative and is drawing the attention of the international community as well. Cities like Tokyo, New York, and Amsterdam are consulting the UK Government to possibly develop similar activities (Hodson & Marvin, 2015).

It is also important to create a refinancing tool that can direct liquidity towards energy efficiency, and lowering financing costs by mobilizing resources extrabudgetary to the energy providers whether subsidized loans or innovative arrangements such as third-party investment. Experience shows that it is not enough to give banks the possibility of distributing a particular product for them to do and that the operations are actually financed (Hargreaves et. al, 2017). The Sustainable Housing Development initiative has the advantage of being fairly direct leverage on the decision of households. However, it has several disadvantages that of being expensive for the state budget (2. 5 billion in 2015, £845 million in 2018), to favor sometimes arbitrary technology, to provide funding only once the

expenditure has been incurred and to be used mainly by wealthy households (Gooding & Gul, 2016). In addition, hanging at a zero rate may prove costly for the state if the conditions refinancing banks are evolving. Eligibility criteria for Eco-Friendly environment are also set by the UK State and aim at the building of the houses with retrofitting measures. Energy Saving Certificates, even if they have not been conceived as a tool for financing, have been able to provide additional financing for certain operations, rather renovation of social housing or tertiary buildings.

2. 4 Conclusion

This chapter highlights the main themes upon which the entire study goes further. As the previous example shows that all parameters are to be considered to facilitate financing for energy renovations. It also reinforces the idea that several elements are not taken into account in economic reasoning based solely on future savings energy. The “ green value” cannot be integrated into the immediate reasoning in the measure where it releases financing resources only on the sale of housing and therefore does not impact the reasoning of households who must complete retrofitting housing plan by 2050.

In anticipation of a possible exit (Brexit obliges) of thermal power plants from the EU quota market (the ETS), London is preparing for the introduction of a carbon floor price. The scheme and the target price should be announced when the draft budget in 2021 will be published. At the same time, nearly £1bn will be made available to finance research in the field of retrofitting housing plan by 2050. Encouraging UK Government’s goal of

planting 11 million trees (including 3 million around Manchester and London) over the next two decades, Theresa May's government is also planning to store carbon through greater use of wood, particularly in the housing and construction sector (Zahiri & Elsharkawy, 2017). Decarbonisation, the British government stresses, will be profitable in every way. The low-carbon business volume is expected to grow by 11% per year between 2015 and 2030. Albion expects to be able to export £60 to £170bn worth of green products and services each year.

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