

How to boost one-stop-shops for integrated home energy renovation in the EU?

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Abstract

Among the set of public policy measures recommended by the European Energy Performance Building Directive, One-stop-shops for housing energy-efficient renovations (OSS) are outlined as “accessible and transparent advisory tools”, playing the role of a “trusted third party” and “aggregating housing renovation projects”.

The aim of this concept of one-stop shops is to make available information and advice to consumers at a single point of contact and to make energy retrofits simple and straightforward, which requires provision of pre-renovation energy and building inspection audit, a design of the energy renovation and a tailor-made financial plan, coordination of the renovation process, provision of, or easing of access to affordable financing and finally, monitoring of energy consumption. However, the existing one-stop shops do not correspond to a standardised service offer, neither to energy savings thresholds, technical criteria, or quality of renovation specifications. As homeowners do not particularly prioritise energy efficiency when they want to improve their homes, and their willingness to pay for advice is low, in advance of retrofits, most of one-stop shops need a support from the public sector.

We draw on the experience of the Innovate Project funded by EU H2020 programme and of the Third-Party Financing Companies set-up in France to suggest that one-stop-shops be established as services of general interest (SGI). A national fa-

cilitating framework, defining conditions for the public service obligations imbedded in the SGI and providing guidance with implementation conditions adapted to local markets, are key factors in helping local authorities favour OSS initiatives and make the marketing of energy-efficient retrofits viable and attractive to the private sector, while limiting windfall effects.

The envisaged revision of the Energy Performance of Buildings Directive is an opportunity to set stricter energy efficiency criteria for housing renovation. One-stop-shops, defined as services of general interest, would be a key measure to implement them on the ground in a way that is adapted to local conditions. Furthermore, One-stop shops for energy-efficient renovations could be instrumental in easing the financing of renovations: helping banks to assess the compliance of housing renovations with the energy efficiency and other investment sustainability criteria and broadening the financing offer as experienced by Third-Party Financing Companies in France. The extension of financing could be achieved, in particular for households in fuel poverty, through the issuance of low-carbon, low-energy financial assets dedicated to energy renovation, for which the one-stop shops would ensure the completion of the renovation works and their compliance with quality and performance controls.

Introduction

Public intervention in the housing renovation market is mainly justified by its impact on reducing energy consumption and greenhouse gas emissions. As the gap between the number and intensity of energy retrofits taking place and the targets set by the European Union and Member States widens every year, the Renovation Wave initiative [1] aims to leverage massive invest-

ments in this sector as part of the post-COVID-19 crisis stimulus. However, in most European countries, existing policies have so far failed to increase the number and level of energy efficiency of housing retrofits consistently with the collective challenges, in particular the achievement of the 0-carbon emission by 2050 target.

The several market studies carried out on the motivations and fears of households concerning the renovation of their homes [2–7] converge towards some well-established findings [8,9]. They shed lights on the tensions between the individual approach to renovations and the collective issues that justify public intervention. Firstly, limiting the renovation project to its energy impact does not reflect the motivations or expectations of individual owners. Moreover, the collective stakes are multiple and potentially conflicting: reduction of GHGs and dependence on hydrocarbon imports, adaptation of housing to social objectives and to households' expectations (improving living conditions, home care for the elderly, favouring social cohesion ...) may lead to different investment priorities [9].

The characteristics of the renovation offer are also a limiting factor to energy-efficient renovations. First, one of the main obstacles to renovation is that homeowners have little knowledge of the energy saving potential of renovating their homes, even though they could benefit in terms of savings and quality of life [2,10]. Second, undertaking renovation work is a complex project, with an inhibiting element of uncertainty, as the quality of the result depends on the proper execution of the work and can only be appreciated once the work is completed [11,12]. Finally, individuals cannot draw on previous experience of renovation, as such work is usually only carried out once during the occupation of a dwelling. These circumstances create a situation of asymmetry of information between the homeowner and the professional on renovation issues, which makes it difficult for the homeowner to engage [2,5,6,10,13,14].

In addition to these obstacles, there is the question of financing [5,8,13,15], which too often blocks households despite their motivation, and the difficulty of obtaining reliable information on the possibilities of aid available to individuals.

The idea that one-stop shops (OSS) could solve all these complexities and, indeed, make energy retrofits simple and straightforward, is quite attractive [16]. To succeed, one-stop shops should respond to a “need for support” from homeowners, and tackle the drawbacks of the retrofit projects, making them complex and risky for most consumers.

These one-stop shops are mentioned in the updated Energy Performance of Buildings Directive (EPBD) 2018/844/EU [17] as one of the public policy instruments to be deployed by the Member States to support the upgrading of residential and non-residential buildings, to create a highly energy efficient and decarbonised building stock by 2050. The national long-term renovation strategies should feature “financial mechanisms, incentives and the mobilisation of financial institutions for energy efficiency renovations in buildings,” and provision of “accessible and transparent advisory tools and assistance instruments such as **one-stop shops**”. However, the format of one-stop shops is only outlined rather than defined in the EPBD¹ and the content of this service is barely mentioned.

The European Commission has devoted resources to their development. “Integrated home renovation services” has been a topic of the H2020 funding programme for research and innovation, in order to set a general framework to support experimentation, leaving a lot of room for interpretation by proposers. Awarded projects are deemed to ‘optimise the services required alongside the renovation process, improve trust and awareness of homeowners towards such services, reduce renovation costs and time on-site through standardised approaches, mainstream innovative technical solutions adapted to the local context, help improve their legal and regulatory environment, and improve financing conditions for energy renovation’. In the context of the Green Deal action Plan, the European Commission called for a Renovation Wave [1]. The Commission Staff working document detailing the Renovation Wave contents stresses the importance of building renovation to achieve the climate goals of the European Union (EU), as well as to remedy key issues such as energy provision security, employment, health impact and social cohesion. It also showcases forerunner examples of one-stop shop such as Ile de France Energies and Hauts-de-France PASS Renovation as good practices to follow.

This paper is based on experience of INNOVATE² Project (funded by the European Horizon 2020 programme), which gathered 13 organisations (municipalities, regions, energy agencies, private companies and installers' cooperatives) from 11 European areas between 2017 and 2020, to develop and roll out integrated energy renovation packages for homeowners of single-family houses and condominiums. We relied on the analysis of non-academic “grey” literature published by EU-funded projects, which was carried out in the framework of the INNOVATE project.

This paper also builds on the ongoing ORFEE project³, which is also funded by the H2020 programme, which aims at optimising the financing of Third-party Financing Companies in France by the. Among the Third-Party Financing Companies developed by seven regions and large cities in France, as aggregators of individual renovations, four can provide long-term loans taking energy savings into consideration to assess the repayment capacity of borrowers. Therefore, the experience of French Third-party Financing Companies also provides lessons on facilitating the financing of renovations.

Findings

WHAT DIFFERENTIATES OSS FROM OTHER CONSULTING ACTIVITIES DEDICATED TO BUILDING RENOVATION

The INNOVATE project focused on defining the business models of one-stop shops, which meant identifying what differentiates them from players already positioned on the renovation advice market [18]. Existing trades such as construction brokers, architects, project managers etc, are bringing answers to the potential demand for coordination and quality of renovations. These private sector actors adapt their activities according to their ability to generate added value, under specific

1. Three occurrences of “one-stop-shop” may be found in the EPBD directive.

2. <http://www.financingbuildingrenovation.eu/>

3. <https://orfee-project.com/>

market conditions. They do not seek, nor are able, to address shortfalls related to the low level of consumer awareness or to the fragmentation of the retrofit offer.

In contrast, one-stop shops are specifically intended to address the acute energy renovation market failures, and to develop this market with a view to improving the overall energy efficiency rating of housing. For instance, the final stage of monitoring, after the retrofit has been completed, is essential to demonstrate the impact of the service in terms of energy and cost savings but is often omitted by professionals who are mainly interested in getting work commissioned.

OSS OFFER A RANGE OF GRADUATED SERVICES

However, it is not easy to specify what should and could be an effective advisory activity dedicated to energy-efficient renovations that would be commensurate with the political stakes and objectives of the transition to a low-energy housing.

Meeting the objective of making available to consumers, at a single point of contact, all the information and advice needed for dealing with an energy renovation project, requires many steps: **pre-renovation inspection** of the building and **energy audit**, provision of a **design of the energy renovation**, a tailor-made **financial plan**, **coordination** of the renovation process, provision of, or easing of, access of homeowners to **affordable financing** and finally, **monitoring of energy consumption** after the completion of the retrofit project [19]. INNOVATE and other European projects show that one-stop shops do not correspond to a standardised service offer/service path and not all one-stop shops provide this full service. For instance, INNOVATE project partners distinguished 4 business models, from a narrow to a very wide range of service [18]:

- The “Facilitation one-stop shops” that raise awareness of consumers on energy efficiency and generate demand providing initial advice to households on their project;
- The “Coordination one-stop shops” that coordinate market actors, namely auditors, installers and aim at being a marketplace, gathering information and contacts for the convenience of homeowners;
- The “All-inclusive one-stop shops” that offer a full-service package, including design of the retrofit tasks and selection of the installers; acting as a banking intermediary or providing direct financing; and taking responsibility for the compliance of the renovation;
- And the “ESCO-type one-stop shop”, which in addition is paid through energy savings that are guaranteed (this model is only very rarely applied to the private housing segment. It is proposed for instance by France Stratégie (but is not yet implemented [20]).

Third-party financing companies set up in France are examples of ‘all-inclusive’ OSS. The scope and organisation of these activities depend on local political decisions to overcome the shortcomings of the renovation market by developing a technical and financial package geared towards energy renovation:

- Ile de France Energie⁴ (formerly Energies POSIT’IF), AR-TEE⁵ (Agence Régionale pour la Rénovation Énergétique de la Nouvelle Aquitaine), OKTAVE⁶ in the Grand Est region, were created in the form of Société d’Economie Mixte (public-private companies). Bordeaux Métropole Energies⁷ (BME), which is the holding company of the Régaz Bordeaux group (gas distribution and energy services), has the same company status, and Centre – Val de Loire Region has also chosen this status for the third-party financing operator created in 2020.
- Hauts-de-France Pass Rénovation was created as a public establishment (therefore legally integrated into the Regional Council)
- And the Occitanie Region has created the Third Party Financing activity of the Regional Energy and Climate Agency (AREC⁸) as a company wholly owned by Local Authorities (*Société Publique Locale – SPL*).

All third-party financing companies aim at easing the financing. While OKTAVE is limited to bank intermediation, the other Third-Party financing Company can provide long-term credits for the renovation, as they benefit of a specific legal status vis à vis the French banking regulation body.

CONNECTING ADVICE, EXECUTION OF RENOVATION AND QUALITY/ PERFORMANCE CONTROL?

The offer of consultancy to guide households and help them to overcome their concerns about carrying out a renovation is a means of removing powerful constraints, which are largely due to the low reliability of the supply side contractors. Indeed, in all European countries, renovation works are carried out by craftsmen and very small enterprises, which represent the vast majority of offer. They often lack management competency and have no ability to coordinate renovation works to Nearly Zero Energy (NZEB) level [19].

This also raises a need for quality and compliance checks. Some countries such as the Netherlands, Germany, Denmark, Lithuania, etc. have opted to set up networks of approved independent experts, whose intervention is obligatory to benefit from subsidies. They focus on the technical diagnosis stage and the conformity control stage once the renovation work has been carried out. In contrast, the one-stop-shop concept is based on a single point of contact throughout the customer’s journey, including the acceptance of renovation works and the monitoring of consumption.

EASING THE FINANCING OF RENOVATIONS

The standard bank loan offer represents a limit to the ability of households to undertake an energy efficient renovation [23], as it represents an investment ranging from €25,000 for a flat to €40,000 to €60,000 for an individual house (according to data collected in France through various surveys and consistent

4. <https://www.iledefranceenergies.fr/>

5. <https://www.artee.fr/>

6. <https://www.oktave.fr/>

7. <https://www.facirenov.fr>

8. <https://www.arec-occitanie.fr/renovoccitanie-le-service-public-regional-de-la-renovation-energetique.html>

with returns from Third-Party Financing Companies [25, 26, 27], which is generally insufficient for banks to agree to finance it with a long-term home loan, but too high to be easily repaid with a personal loan, the duration of which is generally limited to 7 to 10 years. It is only in the event of renovations linking to an acquisition that individuals can finance them in the long term, or if they are able to extend an existing mortgage.

The aim of extending the range of financing is to avoid excluding from the green housing market households with low incomes, or who have recently taken on debt to buy their home, or who do not have easy access to loan insurance, and to enable them to spend less on energy. For the community, the challenge is to prevent the risk of precariousness for these households.

Some countries have designed specific regulated loans for energy retrofits (i.e. loans with features laid down by law or public regulation, and which incorporate a concessionary element), such as KfW-Effizienzhaus in Germany [24,28]. The important criterion for making the loan accessible is its duration to allow for a reduction in repayment instalments. In Germany, Effizienzhaus loans have repayment periods of up to 30 years whereas in France, EcoPTZ zero-interest loan is limited to 15 years.

The most advanced third-party financing companies set up in France also meet this challenge with a direct financing offer integrated with their typical “Integrated Home Renovation” offer. Firstly, they can offer direct loans with repayment terms longer than 15 years, depending on the useful life of the financed renovation, thanks to the long-term credit lines provided by the European Investment Bank. On the other hand, third-party financing companies design the financing in such a way as to make it as easy as possible to carry out the renovation without overburdening the household’s ability to repay. They take into account the assessment of energy savings to evaluate the repayment capacity of the households, as this is done under their control. They are also directly involved in the design and implementation of the renovation. Finally, by also providing post-renovation monitoring, Third Party Financing Companies allow households to better control their energy consumption. Third-party financing is therefore suitable for households that have difficulties in accessing banking services: condominiums, elderly households, people with chronic health problems who cannot take out life insurance (systematically required by banks for home loans).

Indeed, for banks, the provision of finance is not an end in itself, but a means of attracting and retaining a selected clientele with a view to cross selling more profitable services and products. They are therefore not motivated by the distribution of finance, which is time-consuming and riskier. Whereas Third-Party Financing Companies, which are developed by the Regions and large cities to encourage renovations, take into consideration the trade-off between the social and energy benefits and the credit risk that they assume without externalising it, for example by agreeing to wait for the sale of the dwelling to be repaid.

ECONOMIC MODEL OF ONE-STOP SHOPS RELIES ON PUBLIC SUPPORT

Existing one-stop shops are neither defined by energy savings thresholds nor by technical criteria to be met for the implementation of renovations.

One-stop shops must indeed consider the objectives and needs of homeowners, which are not motivated primarily by

energy efficiency improvement in most cases, in order to make them add-up energy efficiency measures to their initial project. They also have to adapt their range of service with step-by-step renovations so as to steer these projects towards more stringent energy efficiency targets. They cannot limit their offer of coordination to comprehensive renovations, which are too few to have an impact commensurate with EU climate objectives.

This is tricky from a business model point of view: because the lower the value of the retrofit project, the more difficult it is to charge a coordination/advisory fee. This is also tricky with regards to climate mitigation and energy efficiency objective compliance because it raises the need for a methodology to define and achieve an “optimal” level of performance (from a technical and economic point of view) for each stage of renovation and each building. This optimum may not be related only to renovation cost, as presented by the EPBD, as it should take into account the hidden cost of not renovating (and degrading further the building) and the non-monetary benefits of renovating [26].

The inventory of good practices carried out in the framework of the INNOVATE project, as well as a study of the Joint Research Centre [30], show that one-stop-shops need to find additional resources in addition to charging their services to the final beneficiaries: individual owners and co-ownership syndicates. In fact, although there is a clear need for educational efforts and assistance in making decisions about the work to be done, this is the service offer for which households’ willingness to pay is the lowest.

The remuneration models of the existing economic players are adapted to the limited willingness of consumers to pay for advice upstream of renovations: for example, architects concentrate on multi-family housing or the top end of the market so that the cost of their services represents a percentage of less than 5 or 6 % of the renovation; brokers are paid by installers based on the generation of qualified leads and energy service companies may cross-sell energy supply or other services. In the absence of public incentives, it cannot be expected from economic players to offer services oriented towards energy efficiency objectives that do not correspond to consumers’ demand.

Public sector intervention is therefore necessary to cover the costs of EE-oriented advice and supervision. It is most often seen in the form of subsidies or use of Energy Efficiency Obligation Schemes (EEOS).

The Third-Party Financing Companies in France show the magnitude of labour cost related to advisory services [25]: about 2,000 euros per project, i.e. about 6 % to 7 % of the investment cost. At the same time, implementation of OSS involves the coordination of many skills and requires significant resources: development and marketing skills, technical abilities in building physics and handling thermal performance models, etc. It needs, as well, investment in robust IT tools supporting these processes, training etc. In addition, the activity is capital-intensive due to the long duration of retrofit projects end-to-end.

Discussion and proposals for a supportive framework for OSS

To sustain OSS projects over time and make them viable, it is necessary to clarify the criteria and conditions for public sector intervention in this market of energy-efficient retrofits.

THE CONCEPT OF ONE-STOP SHOPS SHOULD BE CLARIFIED WITH REFERENCE TO THE SERVICES OF GENERAL INTEREST FRAMEWORK

In the context of EU competition law, services of general interest (SGIs) are defined as economic activities and non-economic services that Member States' public authorities, at national, regional or local level, classify as being of general interest and therefore subject to specific public service obligations (PSOs).

On the one hand, there are **social services of general interest** (SSGI), which are non-economic services provided directly to people in need of assistance, care, training, counselling, empowerment, and which play a role in prevention and social cohesion. Examples include retirement homes, long-term care, adult education and childcare services. And on the other hand, the **Services of General Economic Interest** (SGEIs) which are "economic activities which deliver outcomes in the overall public good that would not be supplied (or would be supplied under different conditions in terms of objective quality, safety, affordability, equal treatment or universal access) by the market without public intervention" [31]. Typical examples of SGEIs can be found in transport networks, postal services, waste collection...

In the field of OSS activities, the notion of Social Service of General Interest (SSGI) applies well to the 'Facilitation' and 'Coordination' models described in the previous section. 'Awareness-raising', first-level information for citizens and local players coordination activities are in line with the definition of SSGI. It is indeed the responsibility of public authorities to guide citizens to reduce their energy consumption and improve the quality of buildings.

On the other hand, the 'all-inclusive' and 'ESCO' types of OSS are economic activities; this must lead to local authorities wanting to set up such OSS as new players in the market, to comply with state aid, public procurement, and national regulations, which is much more challenging than setting up an information office or coordinating local players.

The impetus of local authorities obviously depends on their ambition and political willingness to endorse EU and national goals related to energy and climate objectives, their perception of market failures, and the ability of commercial actors to adapt to them. As a matter of fact, most communities focus on the OSS role of "raising awareness" of citizens, and coordination activities, which is consistent with the European Union definition of Social Services of General Interest (SSGI). Their route towards 'all-inclusive' OSS would be easier with guidance and legal certainty. It requires first clarifying the term 'one-stop shop' used in the EPBD and transposed in national regulations and incentive schemes.

In the remainder of this paper, we refer to the 'all-inclusive model' of OSS under the term '**Integrated Home Renovation Service**' (IHRS) to avoid using the overly generic term one-stop shop.

STABILIZING THE FUNDING OF INTEGRATED HOME RENOVATION SERVICE

Rather than compensating the public service obligation with subsidies, which are subject to stop/start effects caused by changes in local policies, the development of IHRS would be more robust if it relies on a nationwide and stable funding mechanism organised by the public sector, that would be accessible to all market players (public, public-private and private), provided that they lead to the realisation of retrofits compliant

with the EU carbon neutrality by 2050 objective as well as other environmental targets.

It is advisable to clarify the content of services that fall under an SGEI, based on the analysis of market failures and in a way that is compatible with the rules on State aid. Local authorities also need benchmarks to assess the amount of compensation proportionate to public service obligations to cover development investments and part of the operating costs of Integrated Home Renovation Service and setting a stable level of income over a multiannual period, avoiding competition distortion, discrimination, and barriers to new entry.

This compensation may be adjusted at local level, so that advisory and support services meet social objectives, and is then taken into account when selecting the operators of the Integrated Home Renovation Service according to qualitative criteria, and according to the level of invoicing of the service to the beneficiaries. These operators may be involved in the framework of public contracts, or concessive type contracts, or may be developed by local authorities "in house" or through public-private companies.

Such clarification would also help Regions to use European structural funds to finance Integrated Home Renovation Services, once they are framed consistently with state aid regime.

At present, France is moving towards financing the advisory and support services of the Integrated Home Renovation Service through an energy efficiency obligation scheme (EEOS) ('*Certificats d'économie d'énergie*'). This is an interesting development as until now French EEOS tends to favour the most cost-effective EE measures, i.e., short-term, low-cost measures, rather than those with a higher initial cost and a more lasting impact. It highlights a shift from the objective maximising the leverage of EE certificates to improving their additionality and effectiveness through the advisory and monitoring activities of the Integrated Home Renovation Service. However, this evolution is still in its early development and the French EEOS lacks stability.

LINKING THE INTEGRATED HOME RENOVATION SERVICE TO OTHER PUBLIC POLICY INSTRUMENTS REQUIRED BY THE EPBD AND LOCAL PRIORITIES

The design of national policies should take into consideration the role of IHRS for an effective implementation on the ground of the range of measures that the EPB Directive 2018/844 [15] requires States and Regions to develop. It includes the evolution of thermal regulations, the progressive obligation to carry out energy renovations, energy efficiency obligation schemes based on action quotas to save energy imposed on energy suppliers, tax incentives or subsidies for households in precarious situations, awareness-raising campaigns, and the obligation to use independent certifiers.

For instance, IHRS can introduce homeowners to the use of building renovations passports when advising them on the retrofit measures to be implemented for their home. Indeed, building renovation passports is also a source of updated data and a monitoring tool for public policies in favour of housing improvement [41]. IHRS can develop communities of professionals as part of continuing education courses, co-financed by local authorities so as to contribute to effective and actually implemented evolution of thermal regulations [34]. They can contribute to the implementation of national frameworks of retrofit quality control checks and eco-conditionality of subsi-

dies, making it possible to establish the credibility of the quality of renovations under a single public brand.

Different ways of defining the content of the IHRS can be devised locally. In addition, it is important that these services are coordinated by the local authorities with their actions in terms of urban planning and development, as well as their social objectives (territorial equitability). This calls for numerous experiments in the field, designed by the local authorities on the basis of the national framework defining and financing the IHRS.

Today, the EPBD considers cost-effectiveness of energy efficiency measures as the guiding principle for public policies. However, this seemingly obvious criterion does not easily apply to private housing renovations. Calculation methods used to evaluate payback times are often erroneous and counterproductive, and do not consider the multiple benefits expected by households from their investment in improving their home. Furthermore, they do not consider the social and environmental cost of non-renovation.

The revision of the EPBD should be an opportunity to move away from this cost-effectiveness criterion and instead promote the integration of energy efficiency into the assessment of investment sustainability.

It means adapting public policies in favour of energy efficiency to the wide variety of dwellings and adapting incentives to the context in which the decision-making process to carry out the work and how the costs and benefits of this investment are understood.

A core responsibility of IHRS is to refine segmentation according to local issues (level of tension in the real-estate market), housing typology, sociological criteria (the residential history of households, revenues, age etc.) and more finely drawn psychological criteria, and build partnerships with different professionals who are likely to prescribe renovations in each segment.

FINANCING THE PRIVATE HOUSING ENERGY-EFFICIENT RENOVATION WORKS

The IHRS implemented locally, may establish a direct link between the completion of renovation works and their compliance with quality and performance checks and the tagging of the financing instruments.

In their present credit offering, Banks are not given to distinguishing energy renovation works from other types of homeowner projects, because this does not correspond to a specific funding request from individual borrowers or professional prescribers. However, the real-estate finance industry needs to accommodate the shift in financing towards the green transition. Banks need to objectify their CSR (corporate social responsibility) policy, as well as to mitigate their exposure to the risk of depreciation of their loan portfolios due to climate change and the strengthening building regulations. As banks have an interest in directing their financing towards sustainable investment, they can be important prescribers of efficient renovations.

The IHRS, as initiators of housing renovation for environmental transition, can fulfil this emerging demand by taking responsibility for specifying the appropriate renovation measures for each building.

IHRS would also be the backbone of new financing schemes that are emerging as an alternative to the banks' loan offer-

ing for renovations, such as Property Assessed Clean Energy (PACE) and On-Bill financing [33,34]. They aim at bundling individual refurbishment loans and refinancing them via asset-backed bonds, based on an improvement of loans recovery rates via local taxes or via energy bills, to attract investors.

In this respect, the experience of third-party financing companies in France, gathered in the framework of the ORFEE project, is a source of information and data on the credit risk associated with financing integrated with the renovation offer.

STRENGTHENING THE LEVERAGE OF IHRS FUNDING AT EUROPEAN AND NATIONAL LEVEL

Within the European Green Deal, the InvestEU programme [36], as single budgetary guarantee of the EU, is aiming to leverage €280 billion of public and private financing over the 2021–27 period. We suggest that IHRS efforts in orienting housing renovations towards energy efficiency and sustainability criteria be linked to these huge sources of funding announced to achieve climate transition.

The IHRS would also be consistent with proposals to focus money creation on low-carbon assets and projects to boost the economy [21, 38, 39].

In contrast to carbon quotas or tax schemes, which represent a penalty to be paid by the emitter, these low-carbon, low-energy schemes makes it possible to 'reward' these investments and allows smoothing out of the efforts required for the low-carbon transition. Indeed, the barriers to investing in building renovation, and especially in the housing segment, are not so different from those observed for directing finance to low-carbon projects in developing countries: higher up-front capital costs, longer duration, uncertain carbon prices, and scaling risks of new technology, is foremost in the perception of high counterparty risk on the least creditworthy households.

It can complement mandatory mechanisms such as carbon quotas, which must be set at a much lower level to be acceptable to all economic players and make them more acceptable from a political standpoint. If we take as a reference the value of "Social Value of Mitigation Activity", recommended by an independent commission [40] to evaluate the State's investment projects in France, namely: "any action that today makes it possible to reduce emissions and that costs less than 250 euros per tonne of CO₂ makes sense for the community and should therefore be undertaken by the State to achieve carbon neutrality by 2050 and to meet the climate challenges of the Paris Agreement". The value of €250 for a ton of CO₂ emission avoided – that the aforementioned report recommended to take into consideration for French State investments by 2030 – if applied to average individual housing renovations undertaken by Third-Party Financing Companies in France, which represent an investment of around €42,000 for individual housing and generate savings of around 55 % (i.e. about 160 kWh.m².year and 35 kCO₂.m².year), would represent a resource of around €15,000 per renovation, i.e. about 1/3 of the average investment.

The low carbon – low energy financial assets could be implemented in priority to help households with a limited ability to finance home improvement.

In comparison, the Energy Saving Certificates that are implemented in France, currently represent around €1,900 in average for renovations undertaken by Third-Party financing Companies, i.e. only 20 % of the potential resource of low carbon/low

energy financial assets. To increase Energy Saving Certificates price fivefold would lead to a very significant increase in the cost of energy, which would risk reinforcing the strong protest movement of the “Gilets Jaunes” that was triggered by the decision to increase the carbon tax in 2018. This is how this tax has remained at the level of €44.60/tCO₂ for 3 years, whereas it was supposed to reach €56 in 2020 and €100 in 2030.

ORFEE project and an applied research project⁹ by *Centre international de recherche sur l'environnement et le développement* (CIRED) and financed by ADEME is underway with the contribution of Energies Demain, to assess the adaptation to housing energy renovation to a comprehensive scheme to direct investment towards low-carbon assets and projects such as presented in the “Climate Finance Initiative to achieve Paris Agreement and strengthen sustainable development” report [21].

Conclusions

As part of the European Green Deal, the European Commission's ‘Renovation wave’ strategy contains regulatory, financing and enabling measures to reach the goal of at least doubling the annual energy renovation rate of buildings by 2030.

If governments and local authorities want Integrated Home Renovation Services to protect consumers while democratising energy-efficient housing renovations, their cost must be at least partially covered by resources under public control. This reduces the risk that renovations carried out in stages cannot reach energy-efficiency targets.

The envisaged revision of EPBD would be an opportunity to clarify the concepts of One-Stop Shops and Integrated Home Renovation Service and link them to Public Service Obligations embedded in the definition of Services of General Interest already well established by the EU regulation regarding competition and State aid. Through increased guidance about the application of state aid regulation and the valuation of public service obligations for ‘all inclusive’ type of OSS, local authorities and regions would also be encouraged to use European structural funds to promote these services. These steps are necessary to implement financing schemes adapted to the fragmented nature of housing renovation market.

Glossary

CEC	Citizen Energy Communities
CSR	Corporate social responsibility
EC	European Commission
EE	energy efficiency
EEOS	Energy Efficiency Obligation Schemes
EPBD	Energy Performance Building Directive
EPC	Energy Performance Certificates
ESCO	Energy Service Company
EU	European Union
IMF	International Monetary Fund
IT	Information Technology
KfW	Kreditanstalt für Wiederaufbau (Germany)
LCC	Low Carbon Certificates

OSS	One-stop shops
ROI	Return on investment
SGEI	Service of General Economic Interest
SSGI	social services of general interest
TEG	Technical Expert Group
VSE	very small enterprises
VTCE	Value per Tonne of Carbon Emissions saved

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