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INNOVATE

Policy recommendations: how to boost one-stop-shops for integrated home energy renovation in the EU?

Energies Demain

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about **INNOVATE**

Integrated solutions for the ambitious energy refurbishment of priVATE housing

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Summary

The format of one-stop shops is only outlined rather than defined in the Energy Performance Building Directive[1] as "accessible and transparent advisory tools and assistance instruments", playing the role of a "trusted third party" and aggregating housing renovation projects.

In theory, meeting the objective of making available to consumers at a single point of contact all the information and advice needed to make energy retrofits simple and straightforward, requires **provision of a design** of the **energy renovation** and a tailor-made **financial plan**, coordination of **the renovation process** on behalf of the homeowner, provision of, or easing of access to **affordable financing** and finally, monitoring of **energy consumption** after the completion of the retrofit project.

Thus, one-stop shops should remedy defects in the retrofit project offering that causes them to be seen and experienced as complex and risky by most consumers. A consensus has existed for several years on the identification of these shortcomings, but it is not easy to specify what should and could be an effective one-stop shop activity, that would be commensurate with the political stakes and objectives of the transition to a low-carbon housing. **The Innovate Project sheds light on the difficulties experienced on the ground in setting up and maintaining such one-stop shops.**

How can energy-retrofit one-stop shops for housing be defined?

In the real world, one-stop shops do not correspond to a standardised service offer / service path, neither are one-stop shops defined by energy savings thresholds or by technical criteria to be met for the implementation of renovations.

The offer of consultancy to guide households and help them to overcome their concerns about carrying out a renovation, appears to be only one important, and often minimised, element in a chain of conditions necessary to remove powerful constraints. The different links in this chain include, notably, the regulatory and incentive mechanisms implemented by the public sector, interface role with local installers, quality control of the work, and access to appropriate financing for households and condominiums. **The effectiveness of one-stop shops ultimately depends on their incorporation into a chain, including the various instruments provided for in the European directives on Energy Efficiency.**

- ✓ Energy Performance Certificates (EPCs) should be improved to be more reliable and to better support the decision-making process of homeowners regarding retrofitting their home, and should eventually be upgraded to be incorporated in building renovations passports. If one-stop shops introduce homeowners to the usage of building renovations passports when advising them on the retrofit measures to be implemented for their home, this tool can be very useful to local and national authorities as a source of updated data and a monitoring tool for public policies in favour of housing improvement. Coordinating the development of one-stop shops and passports is therefore a way to improve their efficiency and reduce their costs, at the same time as improving public authority information systems.
- ✓ One-stop shops would also be instrumental in effectively implementing energy efficiency standards and mandatory energy improvement, leveraging on local connections with installers.
- ✓ As they play several key roles in ensuring a high-quality chain for renovations, they should contribute to the implementation of national frameworks of retrofit quality control checks.
- ✓ The eco-conditionality of subsidies and other public incentive schemes should also be linked to one-stop-shops, making it possible to establish the credibility of the quality of retrofits under a single public brand.

1 https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/energy-performance-buildings-directive_en

- ✓ Energy Efficiency Obligation Schemes (EEOS) have very contrasting advantages and disadvantages, depending on the way they are implemented.

  When energy efficiency certificates are issued for individual measures, they present many drawbacks. EEOS may also be used to finance services of public interest, including one-stop shops. While this means of using EE certificates is more consistent with the objective of transforming the energy service market, the downside remains that this resource is not guaranteed in the long term.

- ✓ Citizen Energy Communities (CEC, defined by Directive (EU) 2019/944 (recast Electricity Directive) could act as one-stop shops, consistently with their objective to provide environmental, economic or social community benefits to their community, and thus foster adoption of building automation and monitoring of technical building systems at the same time as they advise citizens on energy efficiency measures for their home.

Therefore, the economic model of one-stop shop is yet to be stabilized.

Since households' willingness to pay for advice in advance of retrofits is very low and the implementation of one-stop shops involves the coordination of many skills and requires significant resources, **most one-stop-shops projects are characterized by an intervention by the public sector.**

There is a need to clarify the criteria and conditions for public sector intervention in this market of energy-efficient retrofits, in order to make it viable and attractive to the private sector, while limiting windfall effects.

The majority of communities focus on the role of "raising awareness" of citizens, and coordination activities, which is consistent with the European definition of social services of general interest (SSGI).

A few examples of one-stop shops interventions on “all inclusive” courses of service, including the provision of financing, can be found among Innovate participants and also in France, particularly with the third-party financing companies. In this case, OSS operators supported by local authorities are players in the market, as Service of General Economic Interest (SGEI). **The perception that compliance with the organizational rules of a SGEI is therefore more complex than setting up an info desk or coordinating local players, is a first important obstacle to these “all inclusive” type of one-stop shops.**

The term "one-stop shop" used in the EPBD should therefore be clarified in view of the challenges of integrating them into public policies for energy retrofits: either by reserving the term "one-stop shop" for advisors in contact with the public, or using this term to mean the set of actions to be established at different scales and under the coordination of States and local authorities (*it is this second option we take*).

Developing one-stop shops as local coordination of the EPBD's public policy instruments and facilitators of the financing of housing energy efficient renovations

This means layering the organisation of networked one-stop shops in order to improve their efficiency.

- ✓ First-level advice, when households are still uncertain about undertaking a renovation, should be centralised to minimise the costs, with decision-making tools that can be consulted online;
- ✓ This centralized platform can direct consumers to local one-stop shops when they ask for personalized advice. Examples of such “hubs” easing citizen access to a sustainable habitat can be found in many European cities. They make use of public co-management to bring together public administration, associations, professionals… so that all the information about the home improvement services on offer in the city area can be found as well as training and help provided in building, renovating and saving resources in their home
- ✓ Once individuals or homeowner associations have matured their project, they may be directed to “All-inclusive one-stop shop” services. In view of the level of resources required and the volumes of activity to be achieved for this type of service, and in particular if it includes an offer of direct financing, these integrated offers should be organised on the scale of regions or large urban areas.
- ✓ Training, communication, designing and implementing IT tools should be coordinated by Regions or State agencies, or could be set-up as a Service centre for One-stop-shops, to ease the coordination with public incentive schemes, and make all players converge towards coherent technical references.

One-stop shops should focus on the type of renovations that are consistent with the EU's objectives of reaching a carbon-neutral economy by 2050.

To adapt communication to the different targets and focus on the purposes of households undertaking renovations, the primacy of return on investment in guiding public policies should be questioned: the effectiveness of public policies could also, or alternatively, be assessed according to the leverage effect of public policies on private investment.

- ✓ In this regard, one-stop shops considered as services of general economic interest (SGEI), should be evaluated on their success in maximizing the interest and capability of individuals and homeowners associations to undertake their own energy-efficient renovation projects.

  Public policies in favour of energy efficiency must adapt to the wide variety of dwellings and incentives for renovations must be adapted to the context in which the decision to carry out the work is taken and in which the costs and benefits of this investment are understood. A core responsibility of one-stop shops 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.

- ✓ The development of one-stop shops would be more robust if it could rely on a 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.

  If governments and local authorities wish to make these protective, and therefore demanding measures, generally available while democratising them, their cost must be at least partially covered by resources under public control. In particular, it reduces the risk to exclude from this process renovations carried out in stages.

  Defining eligibility criteria for one-stop shop organisations to access a stable collective funding should be based on the EU directive project on taxonomy, on which the European parliament and the European council reached a compromise in December 2019.

- ✓ **One-stop shops, as originators of housing renovations in line with EU environmental transition, should take responsibility to specify renovation measures adapted to each type of building**.

  While the taxonomy is ambitious in integrating climate change adaptation and other environmental objectives regarding climate change mitigation criteria, it considers an alignment on national thermal regulations in a uniform manner, which is not adequate. It is a matter of considering the significant disparities associated with housing typologies and avoiding failure to take advantage of those cases where the energy gain potential can be much greater, thus compensating for the more difficult cases.

  As such, one-stop shops are perfect examples of the “enabling activities” on which the taxonomy regulation puts much emphasis.

Public incentives should encourage efficient renovation

- ✓ A key recommendation regarding public incentives (including incentives financed via EEOS) is to avoid spreading them over any unitary measures and instead earmarking them for the most efficient renovations
- ✓ The award of incentives should be subjected to a compliance check by the one-stop-shops. This is a mean to overcome the lack of information amongst households as one the main obstacle to energy-efficient renovations. In addition, in territories where building renovation passports are available, it would also allow one-stop shops to introduce this tool to households. Also, interaction with one-stop shops is important in achieving an optimum advantage from aids to low-income households.
- ✓ Amongst measures aimed at reducing the cost of energy renovations for households, it would be appropriate to consider at European Union level applying the same reduced rate of VAT to retrofit and also to consultancy

and support services of one-stop shops. Extending the application of the same reduced rate of VAT to the fees billed by ESCOs would also have a beneficial effect on their activity.

- ✓ Tax incentives for energy renovations related to real estate transactions are far from being widely implemented; yet they would give a degree of materiality to the "green value" argument.

Expanding the range of financing for energy-efficient refurbishments

As banks have an interest in directing their financing towards sustainable spending, they can be important prescribers of efficient renovations.

In addition, the effort to broaden the supply of financing is aimed at not excluding anyone from the green housing market and not forcing households with modest incomes, or who have recently taken on debt to buy their home, or who do not have easy access to loan insurance, to spend heavily on energy. For the community, the stake is to prevent the risk of these households becoming vulnerable.

Broadening the supply of financing involves adapting loans: by avoiding cash flow mismatches at the time of construction, by lengthening the repayment period to shorten maturities, by taking into account energy savings and home equity to assess the household's ability to repay, and by strengthening the supply of collective loans to homeowner associations in collective housing.

In return for one or other of these adaptations, which require banks to take more risk and retool their organisations, the option that often seems the most obvious is to offer them guarantees. But these schemes have been little used.

Some countries have also 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).

And new financing schemes are emerging as an alternative to the offer made to banks to adapt their offering of loans for renovations. They aim to bundle individual refurbishment loans and refinance them via asset-backed bonds, based on an improvement of loans recovery rate via local taxes or via energy bills, to attract investors.

One-stop shops may optimize the management of the various risks related to the financing of energy renovations which are usually borne by the building owner and not really taken into consideration.

This ultimately reduces risks also borne by lenders and investors. In addition, publicly supervised one-stop-shops, which could attest to the compliance of the retrofit measures carried out with the taxonomy criteria used to classify "green" assets, are likely to be of interest to financial players.

Linking European financing schemes and one-stop shop

We suggest that efforts by Regions and local authorities and their partners to implement one-stop shops, be taken into consideration when linking the huge sources of funding announced to achieve climate transition, to their implementation on the ground, for the energy-efficient retrofits of the private housing stock.

One-stop shops could be made to fit with carbon finance schemes where public guarantees are based on a value of Carbon Emissions saved, allowing the creation of a new class of carbon remediation assets, commodified by Low Carbon Certificates that are made tradeable. These certificates should, in order of priority, finance the system maintenance in order to replenish the guarantee fund, and cover the cost of the one-stop shops and complementary actions necessary for the take-off of energy-efficient renovations: training of installers; advisers; communication programmes, etc.

This proposal is consistent with the situation created by the Covid19 pandemic

To tackle with the situation faced by households with precarious s jobs and/or hit by a loss of income, preventing them from taking additional credit to renovate their homes, an extra financing offer is not, of course, an appropriate solution. In contrast to carbon tax schemes, which represent a penalty to be paid by the emitter, Low Carbon Certificates specifically oriented towards energy renovations, make it possible to reward these investments, smoothing out the efforts required for the low-carbon transition.

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1 Introduction: simplifying home energy retrofits is a popular idea

The updated Energy Performance of Buildings Directive (2018)[2] requires EU Member States to set out long-term renovation strategies (Article 2a), to decarbonise the building sector by 2050. To support this, the proposed 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".

The European Commission has highlighted the initial experiences of these "One Stop Shops" as a tool designed at the regional/local level to create a new offer to homeowners and homeowners associations, that allows them to take on all the complexities and difficulties of coordinating global renovations. Thus, they bring together supply and demand for efficiency projects, playing the role of a "trusted third party" and aggregating housing renovation projects.

However, format of one-stop shops is only outlined rather than defined in the EPBD[3]. The content of this service is barely mentioned, and, while local authorities are encouraged to intervene and promote them, as they bring potential benefits not only for homeowners, but also for local contractors (through new business) and wider society (lower CO_2 emissions)[4], the status of one-stop shops with regard to state aid is not specified.

The Innovate Project sheds light on the difficulties experienced on the ground in setting up and maintaining one-stop shops, in the way that they are intended to address gaps in the renovation market and in the access of homeowners to funding.

A consensus has existed for several years on the identification of these shortcomings, but it is not easy to specify what should and could be an effective one-stop shop activity, that would be commensurate with the political stakes and objectives of the transition to a low-carbon housing.

The idea that one-stop shops should indeed make energy retrofits simple and straightforward is quite attractive. To succeed, one-stop shops should respond to a "need for support" from homeowners, and remedy defects in the retrofit project offer that causes them to be seen and experienced as complex and risky by most consumers.

A large proportion of homeowner objections are due to the risks of contractor failure on the supply side. Indeed, in all European countries, renovation work is carried out by craftsmen and very small enterprises, informally managed. The number of companies able to cope with multi-task packages represents barely more than 5 to 7% of the construction workforce.

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2 Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency. See: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.156.01.0075.01.ENG

3 Three occurrences of "one-stop shop" may be found in the EPBD directive:
in Recital (16) Financial mechanisms, incentives and the mobilisation of financial institutions for energy efficiency renovations in buildings should have a central role in national long-term renovation strategies and be actively promoted by Member States. Such measures should include encouraging energy efficient mortgages for certified energy efficient building renovations, promoting investments for public authorities in an energy efficient building stock, for example by public-private partnerships or optional energy performance contracts, reducing the perceived risk of the investments, providing accessible and transparent advisory tools and assistance instruments such as one-stop- shops that provide integrated energy renovation services, as well as implementing other measures and initiatives such as those referred to in the Commission's Smart Finance for Smart Buildings Initiative.
Article (2) […]
Point 3. "To support the mobilisation of investments into the renovation needed to achieve the goals referred to in paragraph 1, Member States shall facilitate access to appropriate mechanisms for: […] (e) accessible and transparent advisory tools, such as one-stop-shops for consumers and energy advisory services, on relevant energy efficiency renovations and financing instruments.
Article (10) Member States shall [….] provide the information through accessible and transparent advisory tools such as renovation advice and one-stop-shops.'

4 Policy Learning Platform on Low-carbon economy - Policy brief: Energy efficiency in private households See : https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/policy_briefs/2019_02_10_PolicyBrief_OSS.pdf

The offer of consultancy to guide households and help them to overcome their concerns about carrying out a renovation, appears to be only one important, and often minimised, element in a chain of conditions necessary to remove these powerful constraints. The different links in this chain include, notably, the regulatory and incentive mechanisms implemented by the public sector, quality control of the work, and access to appropriate financing for households and condominiums.

The definition and effectiveness of one-stop shops ultimately depends on their incorporation into this chain.

2 How can energy-retrofit one-stop shops for housing be defined?

2.1 Ensuring the coordination and quality control of home retrofits are the main challenge for one-stop shops meeting the expectations homeowners

That said, existing trades: construction brokers, architects, project managers etc, cover only a small part of the potential demand for coordination and quality.

These actors in the commercial sector adapt their activities according to their ability to generate added value, under specific 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 among very small enterprises, most of whom are managed informally and limited to specific retrofit tasks.

In contrast, one-stop shops are specifically intended to address these market failures, which are particularly acute for energy retrofits, and to develop this market with a view to improving the overall energy efficiency rating of housing.

How can this be done?

The answer to this question is not found in a single business model.

In theory, 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 **provision of a design** of the **energy renovation** and a tailor-made **financial plan**, coordination of **the renovation process** on behalf of the homeowner, provision of, or easing of access to **affordable financing** and finally, monitoring of **energy consumption** after the completion of the retrofit project.

But in the real world, 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 partners distinguished 4 business models, from a narrow to a very wide range of service:

- 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 convenient 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.

Some countries such as the Netherlands, Germany, Denmark, Lithuania, etc. have opted to set up networks of approved independent experts, whose intervention is obligatory in order to benefit from subsidies. They focus on the technical diagnosis stage and the conformity control stage, once the work has been carried out.

The final stage of monitoring consumption after the retrofit has been completed, is essential in order to demonstrate the impact of the service in terms of energy savings. But is often omitted by professionals who are mainly interested in getting work commissioned.

Also included in the scope of one-stop-shop offer, are the financing of the work and insurance products that cover the design and execution of the work.

Neither are one-stop shops defined by energy savings thresholds or by technical criteria to be met for the implementation of renovations.

Indeed, the offer of coordination cannot be limited to efficiency renovations which are too uncommon to have an impact commensurate with EU climate objectives. And, from consumers standpoint, energy savings are rarely enough to justify a renovation. **Therefore, one-stop shops must start with the objectives and needs of homeowners in order to make them consider energy efficiency measures, and have to adapt their range of service with step-by-step renovations. This is tricky because the lower the value of the retrofit project, the more difficult it is to charge an advisory fee.**

2.2 Synergies between one-stop shops and installers and construction professionals

One-stop-shops can also play a useful interface role with local VSEs in the building industry, who are the main prescribers of energy-efficient retrofits. These professionals, who master skills in EE measures and are still too few in number, may have high expectations from one-stop shops. Conversely, for one-stop shops, the best vectors to promote energy-efficient renovations, are these professionals, motivated by the prospect of distinguishing themselves from their competitors by their qualifications and reputation. This is how one-stop shops could overcome the reluctance of consumers to cope with an unreliable offer for energy retrofits.

One-stop-shops thus leverage efforts of local authorities, national agencies for energy efficiency and professional federations, etc., which are generally involved in the organisation and financing of vocational training designed to reinforce skills in the implementation of energy efficiency measures, at the initial and continuing training stages.

They can offer to professionals taking these training and qualification paths a concrete perspective of increasing their access to a solvent and more profitable demand, thanks to the skills they acquired to master energy-efficient retrofits. Overwise, VSEs, will keep on devoting little time and resources to training, as they are constrained by a low level of profitability.

2.3 One-stop shop projects are also facing an unstable institutional environment in many EU countries

The set of European Directives on energy efficiency (the Directive 2018/844 of the European Parliament and of the Council of 30 May 2018, amending the Directive 2010/31/EU on the energy performance of buildings and the Directive 2012/27/EU on energy efficiency), requires States and Regions to develop a range of measures to promote EE, including: 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 distributors, tax incentives or subsidies for households in precarious situations, awareness-raising campaigns, the obligation to use independent certifiers ...

One-stop-shops can be instrumental in implementing this range of instruments; conversely, these instruments may have a direct impact on the activities of one-stop shops.

The main recommendations for public policy makers to foster one-stop shops relate, therefore, to paying close attention to the coordination of the development of one-stop shops with other instruments of the EPBD to be designed and regulated at Member States level.

We offer below concrete examples of such interactions between one-stop shops and other public policy instruments:

2.3.1 From energy performance certificates (EPCs) to building renovation passports and digital logbooks of housing maintenance

Through its use in most real estate transactions, the Energy Performance Certificate (EPC) is certainly the tool introduced by the Energy Efficiency Directive that is most familiar to the general public. It has helped to disseminate the performance scale of the energy labels, which owners are concerned about when selling or renting out their homes.

However, the Buildings Performance Institute Europe (BPIE) [5] makes a mixed assessment of the implementation of EPCs:

> *« The implementation of Energy Performance Certificates (EPCs), which were introduced with the aim of making the energy performance of individual buildings more transparent, varies significantly across Member States in terms of scope and information available, with limited market penetration or acceptance by the users due to low reliability and lack of user-friendliness. The required recommendations for measures improving energy performance are mostly scarce, too general or non-existent in most national EPC versions. »*

Experiences of OSS in co-ordinating the different steps of the advisory process show the importance of adjusting this type of developments to avoid overlaps that increase their processes timeline and costs.

The objective of the European Commission and the Member States is to develop the EPCs in order to achieve a better level of reliability and conformity, and also to better support the decision-making process of homeowners about retrofitting their home.

If the EPC comes with recommendations about energy controls of retrofit measures, then the distinction with the audit to be carried out by the one-stop shop should be drawn up in sufficient detail to avoid confusion between these instruments for the general public. Or, on the other hand, the EPC should be designed so that it can be directly used by the one-stop shop advisors to offer retrofit programmes to households.

Experiences of OSS in co-ordinating the different steps of the advisory process show the importance of adjusting this type of developments to avoid overlaps that increase their processes timeline and costs.

Building renovation passports are, in principle, a further development of the EPC, to make it better adapted to the main obstacles to carrying out effective retrofits: it is a digital logbook allowing owners to collect all the information on the building and equipment, making easier its monitoring and maintenance and making it possible to draw up an energy renovation "road map" needed to reach the building energy efficiency target.

Building renovation passports are still in the development phase, with the most advanced examples being carried out by the Flanders Region as a public service, and France, where the obligation to eventually make general the Building Energy Passport, is set to 2021 for new built and 2025 for existing buildings[6].

Indeed, introducing a renovation passport seems particularly difficult for the existing housing stock, where a market-based business model raises many difficulties:

- a lack of willingness to pay for the service from individual home owners, given the indirect and non-immediate nature of the end use value linked to the collection of data: Indeed, they would only find it useful when they have to justify the condition of their housing to rent or sell it;
- the cross-cutting nature of the underlying database, which makes it unsuitable for targeting the most receptive audiences;
- if the passport is incorporated in another service (e.g. transmission by energy suppliers of consumption data to their customers) or via an intermediary service (e.g. retrofit brokers), administrative controls of compliance of the private

5 http://bpie.eu/publication/renovation-passports/

6 See also the H2020 project ibroad : https://ibroad-project.eu/about/national-implementation/

offer of passports with the regulations and easy transfer from one provider to another will have to be set-up so that the provision of a passport can be made compulsory when housing is transferred.

The management of a database and IT system supporting the building renovation passport is therefore very dependent on the impetus provided by national and local authorities and it can indeed be integrated into publicly managed and funded observatories of the building stock.

If one-stop shops introduce homeowners to the use of building renovation passports when advising them on the retrofit measures to be implemented for their home, this tool could be very useful to local and national authorities as a source of up-to-date data and a monitoring tool for public policies in promoting housing improvement. Building renovation passport can then find its economic model by improving the reliability and enhancing public authority information systems, while enabling them to make operating savings by avoiding the need to collect partial and scattered data on a case-by-case basis.

Building renovation passport usage and one-stop shop prescriptions should be aligned to encourage private homeowners to implement staged refurbishments.

Providing and maintaining building renovation passports should be considered to be within the scope of services of general economic interest (SGEI)

2.3.2 Evolution of energy efficiency standards and the requirements to carry out energy improvement work

According to the Directive on the energy efficiency of buildings, thermal regulations applicable to new and existing buildings and to building elements must be set by Member States at achieving an optimal level. The evolution of the thermal regulations thus makes it obligatory to comply with increasing energy performance requirements when carrying out works, which should, of course, have a knock-on effect on the practices of professionals.

However, in the single-family home segment, to be effective and actually implemented, the evolution of thermal regulations must realistically take into account the capacity of installers to know and anticipate changes in thermal regulations and adapt to them, and also take into consideration means to carry out conformity controls of retrofit works.

Several examples show the relevance of building a community of professionals around one-stop shops, leveraging - proximity and local connections. One-stop shops can play a training role and be part of continuing education courses co-financed by local authorities.

2.3.3 Quality signs, labels, certifications, etc. must be reinforced and made available to individual homeowners

The conceptual framework of retrofit quality control checks is available and could be, in principle, applied in a standardised and homogeneous way at a European level.

However, consumers are faced with a profusion "quality emblems", which can be displayed by manufacturers, retailers and trade associations.

Unification of labelling, under the aegis of the public authorities involves setting up organisations, in the form of associations or non-profit companies, to perform the public interest task of labelling efficient renovations. These bodies bring together stakeholders to not only define at national level the characteristics of Nearly Zero-energy Buildings (NZEBs) and the technical criteria to be met to carry out complete or phased renovations. What is more, they should define the responsibilities and qualifications of stakeholders and codes of conduct that also cover commercial practices and after-sales service, to improve the consistency of energy objectives and consumer-perceived quality criteria.

The example of the Trust Mark in the UK is an interesting example of this.

One-stop shops should themselves contribute to and be subject to quality-check and labelling schemes, to be organised on a national scale.

Indeed, they play several key roles in ensuring a high-quality chain for renovations: at the stages of assessing the building; advising on the measures to be carried out; choosing companies and coordinating the renovations; taking delivery of the work; and monitoring energy consumption.

2.3.4 Eco-conditionality

The eco-conditionality of subsidies and other public incentive schemes should also be linked to this type of comprehensive scheme, making it possible to establish the credibility of the quality of retrofits under a public brand.

If eco-conditionality is accompanied by sufficiently rigorous controls on the execution of the works, it is also a powerful means of developing the professional renovation sector.

Conversely, control procedures which are to lax are counterproductive: in that they fuel aggressive commercial practices and multiply counter-examples of faulty installations, as well as blurring all institutional communication about the benefits to consumers of having energy-saving measures carried out.

2.3.5 Energy Efficiency Obligation Schemes (EEOS) are a flexible but ambiguous financing tool

The EE Directive[7] provides that Member States may set up and impose Energy Efficiency Obligation Schemes to energy companies, based on their energy sales volumes. This mechanism makes it possible to create certificates reflecting energy efficiency actions. These certificates are securities that can be traded and form an over-the-counter market.

There are more than fifteen such schemes in Europe, all with very different characteristics.

Evaluations of these schemes are generally mixed.

The most intrinsic criticisms of the EEOS schemes are:

- On one hand, they lead to an increase in energy price to end-users since the purchase of EE Certificates is passed on by distributors to maintain their margin.
- On the other hand, the definition of the EE action and their "value" in saved kwh.year does not easily allow an ex-post verification of whether this corresponds to reality, even though the EEOS is supposed to lead the energy distributors to generate the most effective EE actions in terms of cost of saved kwh.year.

Moreover, depending on the organisation of the EEOS implemented by States, they can have highly contrasting advantages and disadvantages.

- When EE Certificates are issued for individual EE measures :
    - A straightforward way of collecting EE Certificates is to offer consumers premiums when they buy efficient equipment or they carry out retrofit measures that entitle them to EE Certificates.
    - From the point of view of one-stop shops and installers, these premiums tend to increase the uncertainty about the "fair price" of these measures/equipment, and the instability of the price of EE Certificates can undermine their offers.
    - Renovations involving several coordinated EE measures are crowded out because it is easier to generate EE Certificates for single measures.
    - EE Certificates corresponding to refurbishments carried out by individual homeowners can easily give rise to fraud (it is therefore important for States to anticipate appropriate management costs of EEOS).

7 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, Article 7

- Some countries, such as France, tend to use part of the EEOS scheme to finance services of public interest, or calls for innovation projects, as a substitute for budgetary funds. In this case, the price of the EE Certificates is fixed, and the contractors are directly subject to administrative checks.

  For example, a €200 million EE certificate programme is currently being implemented in France, to co-finance with Regions the network of local one-stop shops from 2021 to 2023. This should bring a 400 million € funding, which is likely to give a boost to initiatives supported by local authorities within a nationally coordinated framework.

  However, the downside remains that this resource is not guaranteed in the long term. This is why we recommend a financing scheme that is more sustainably enshrined in the State' s public systems.

2.3.6 Incorporating innovation and new technologies to integrate renewable energy production and to adapt the operation of buildings to the needs of the occupants and the grid

The EPBD directive recommends that innovation and new technologies be incorporated in the process of improving buildings, as it offers new opportunities for energy savings, by providing consumers with more accurate information about their consumption patterns, and by enabling the system operator to manage the grid more effectively, as well as providing new services such as the charging of electric vehicles.

This objective can be related to the setting-up of Citizen Energy Communities (CEC) defined by Directive (EU) 2019/944 (recast Electricity Directive). CEC are based on a cooperative model and their primary purpose is to provide environmental, economic or social community benefits to its members or to the local area where it operates, engaging in energy generation, distribution, supply consumption, aggregation, energy storage, energy efficiency services, charging services for electric vehicles and providing other energy services.

As such, CECs may foster adoption of building automation and monitoring of technical building systems to provide cost-effective and significant energy savings for consumers.

Citizen Energy Communities should also be directly motivated to address local issues of energy poverty, education and investment in local infrastructure, and they may act as, or be in close cooperation with, one-stop shops.

2.4 The economic model of one-stop-shops is yet to be stabilised

The inventory of good practices carried out in the framework of the Innovate project, as well as a study of the Joint Research Centre[8], show that one-stop-shops are struggling to find a sustainable economic model : they 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.

For instance, labour cost related to advisory services as experienced by the Third Party Financing Companies in France, represents about 2 000 euros per project, i.e. about 6 to 7% of the investment cost. At the same time, implementation of one-stop shops 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.

Additional resources can be sought in the form of sales linked to other services, or by charging brokerage commissions to the companies that will carry out the retrofit; some initiatives are alternatively based on a cooperative model, where

8 See : https://e3p.jrc.ec.europa.eu/publications/one-stop-shops-energy-renovations-buildings

installers pay a contribution to benefit from shared developments and resources. In doing so, these models move away from a position of independent third parties, solely at the service of the consumer.

A third way is to focus on the most important projects to justify a level of cost to the beneficiary sufficient to maintain the activity, which is in contradiction to the objective of multiplying the number of renovations.

While a few, such as Better Home in Denmark, are developed as a commercial business, **most one-stop-shops projects are characterized by an intervention by the public sector. However, here too, there is a multiplicity of modalities for these public interventions.**

Public intervention means either subsidies (directed towards homeowners or the one-stop-shop service), or local authorities setting-up the business as a public or public-private company, or calling for a project to set up a public service delegation… And one could question the legitimacy of local/regional authorities creating or participating in the resourcing of one-stop shops.

Facing this variety of practical and situational responses, we see that behind the search for a definition of one-stop shops, lies another need. The need to clarify the criteria and conditions for public sector intervention in this market of energy-efficient retrofits, in order to make it viable and attractive to the private sector, while limiting windfall effects.

2.5 Local authority interventions in one-stop shops

The impetus of local authorities obviously depends on their ambition and political willingness to endorse EU and national low-carbon objectives, and their perception of market failures, and the ability of commercial actors to correct them.

- **Local authority intervention must fall within the framework of the State aid regime and domestic competition legislation.**

As a matter of fact, the majority of communities focus on **the role of "raising awareness" of citizens, and coordination activities. In such cases, this is undoubtfully considered as consistent with the European Union definition of Social Services of General Interest[9] (SSGI)**. Indeed, it is within the area of responsibility of public authorities to guide citizens to reduce their energy consumption and improve building quality.

A few examples of one-stop shops intervention on "all inclusive" basis of service, including the provision of financing, can be found among Innovate Consortium participants and also in France, particularly with the third-party financing companies.

In this case, perception that compliance with state aid, public procurement, and domestic regulations regarding organizational rules of services of general economic interest (SGEI) **is then more complex than setting up an info desk or coordinating local players, is a first important obstacle to these "all inclusive" type of one-stop shops service that** local authorities would be willing to set-up, as new players in the market.

We recommend the implementation of support for the leaders one-stop shops project at the national level, to clarify the options of local authorities that are compatible with state aid regulation, regarding:

9 See: document ref. SWD(2013) 53 final/2: http://ec.europa.eu/competition/state_aid/overview/new_guide_eu_rules_procurement_en.pdf. This guide states at point 28: "*When a public authority provides information and advice to citizens within its area of responsibility, does it engage in an economic activity within the meaning of the competition rules?*" that: "The provision of general information by public authorities (at national, regional or local level) concerning the way in which the competent bodies apply the rules under their responsibility is inextricably linked to the exercise of their public authority. This activity is not regarded as economic within the meaning of the competition rules."

- compliance with the organisational conditions of SSGI/SGEI, concerning:
  - subsidies paid to associations or other non-for-profit organisations, according to the de minimis threshold, or as a **compensation for public service obligation** (which must then be defined in order to give rise to a proportionate compensation),
  - or public procurement procedure and public service delegation involving open competition
- conditions regarding the constitution of an economic operator of general interest, based on the analysis of market failures that this operator will have to overcome.

Indeed, guidance and legal certainty are key factors favouring local initiatives.

- **The term "one-stop shop" used in the EPBD should be defined in view of the challenges of integrating them into public policies for energy retrofits**

The European institutions may have two options:

- Reserving the term "one-stop shop" for advisors in contact with the public, locally;
- Or use the term "one-stop-shop" as a synecdoche (i.e. referring to a whole by one of its parts) meaning the set of actions to be established at different scales and under the coordination of States and local authorities.

This clarification of terminology is important to make public policy issues clearer and to facilitate dialogue between European project holders.

In this report, we have chosen to use the term "one-stop-shop" to refer to the whole set of actions to be established at different levels and under the coordination of the States and public authorities.

3 Developing One-stop shops as local coordination of the EPBD's public policy instruments and facilitators of the financing of housing energy efficient renovations

3.1 layering the organisation of networked one-stop shops in order to improve their efficiency

The design and combination at national and regional/local level of the instruments provided for in the European directives is proving testing in practice, as they have to be finely tuned to the specific difficulties and levers for each different segment of demand and the scattered supply of EE retrofits.

The strengthening of one-stop shop initiatives may also require a re-engineering of public financing of the various networks of actors who contribute to the public information undertaking to raise awareness of energy efficiency.

- Free first-level advice, the primary purpose of which is to inform consumers at a stage when the renovation project is still very ill-defined with regard to the improvement of buildings, in terms of energy efficiency, but also building accessibility, production of renewable energies etc, should be centralised to make it possible to minimise the costs, with decision-making tools that can be consulted online; This centralized platform can direct consumers to local one-stop shops when they ask for personalized advice.
- Local authorities should support local initiatives to stimulate demand from private individuals, encourage professionals to increase their skills in EE implementation measures and bring local public policies related to housing (with reference to fuel poverty reduction, access to housing, access to rights, preservation of building architecture, etc.) to better interact with each other.

Examples of such "hubs" easing citizen access to a sustainable habitat can be found in many European cities. These public facilities make use of public co-management to bring together public administration, association, professionals… so that all the information about the home improvement services on offer in the city area can be found as well as training and help provided in building, renovating and saving resources in their home.

- Once individuals or homeowner associations have developed their project, they could be directed to "All-inclusive one-stop shop" services[10]

  In view of the level of resources required and the volumes of activity to be achieved for this type of service, and in particular if it includes an offer of direct financing, these integrated offers should be organised on the scale of regions or large urban areas.

- Training, communication, designing and implementing IT tools should be coordinated by Regions or State agencies, or could be set-up as a Service centre for One-stop-shops. This should ease the coordination between one-stop shops and public incentive schemes and make these resources available to all the players to compel them converge towards coherent technical reference systems.

3.2 One-stop shops should focus on the type of renovations that are consistent with the EU's objectives of reaching a carbon-neutral economy by 2050.

3.2.1 Adapting communication to the different targets and focussing on households motivations to undertake renovations.

Examining the primacy of return on investment to guide public policies

The apparent self-evident criterion of return on investment for renovations does not readily appeal to the private housing stock: the many preconceptions regarding the calculation of this cost-effectiveness are counterproductive, and in most cases, the expectation of an ROI is not a factor for homeowners. This type of calculation plays no part in the multiple benefits expected by households from the retrofit.

The need to make an inventory of cost-effective renovation approaches, as enshrined in the EPBD, should be put into perspective.

The effectiveness of public policies could also, or alternatively, be assessed according to the leverage effect of public policies on private investment, which is, in the case of private housing stock the fact that households are more likely to devote more resources to more efficient renovations.

In this regard, one-stop shops considered as services of general economic interest (SGEI) should be evaluated on their success in stimulating renovations, maximizing the interest and capability of individuals and homeowner associations to undertake their own energy-efficient renovation projects.

The macro-economic objective of one-stop shops could also be stated as follows: to optimise the cost, to be borne by the community, of energy savings and reduced CO_2 emissions through the renovation of the private housing stock.

Public policies in favour of energy efficiency must adapt to the wide variety of dwellings

Incentives for renovations must be adapted to the context in which the decision to carry out the work is taken and in which the costs and benefits of this investment are understood: this context varies enormously between individual

10 They may also be directed to qualified installers and architects, if they don't need specific assistance in coordination their project.

homeowners, where decision making is an individual process, and for homeowners associations, where the complexity of collective decision making is an initial barrier that needs specific skills and knowhow.

This primary level of segmentation must be refined according to local issues (such as the level of tension in the real estate market), housing typology (housing estates from the 60s and 70s, old housing, etc.), sociological criteria (the residential history of households, revenues, age etc.) and more finely drawn psychological criteria.

This local context-specific adaptation of marketing is a core responsibility of one-stop shops; public policies should encourage one-stop shops to develop new ways to reach different audiences and to build partnerships with different professionals who are likely to prescribe renovations in each segment.

- Public policy issues facing individual homeowners: influencing household motivation and capacity to carry out work

  For individual homeowners, improving their comfort is a key point, but other strong motivations have to be taken into consideration: investment in housing can also mean self-managed renovation, while elderly people are more sensitive to disturbance during the retrofit…

  Advocacy efforts should focus on opportunities where households are particularly inspired by a renovation project, which is the case when acquiring a new home, when they will also be likely to be able to finance the retrofit on a long-term basis with home loans.

- Public policy issues facing collective homeowner associations: Facilitating the Collective Decision-Making Process

  In condominiums, the quality of governance is an essential characteristic to be taken into account. Numerous European studies and projects have identified specific obstacles to energy renovation projects in the context of condominiums:

  - Lack of visibility of the work carried out and still to be scheduled for new buyers
  - Importance of dealing with the financing plan at the individual level, upstream of the collective decision-making process to start work ;
  - Time limits for implementing projects over 4 to 5 years, which must be taken into account when setting the deadlines for incentive schemes;

  Facing these particularly thorny obstacles, adjustments to the legislation may be necessary to improve the governance of co-ownerships such as:

  - Generalize multi-year maintenance plans
  - Make it mandatory for co-owners to make a contribution to a “retrofit and maintenance” fund that retained by the homeowner association, when co-owners sell their apartment.

  One-stop shop services dedicated to condominiums have emerged in several European capitals and major cities and have offered to network their service processes thanks to the **European structural funds and the European H2020 programme**[11].

- Public policy issues facing the rental sector: unravelling complex situations across individual and collective housing

  The "split incentive" among landlords and tenants is a concern for public-policy makers: investment in energy retrofit is likely to reduce the tenant's energy costs but cannot always lead to an increase in rent that would allow the landlord to recoup the investment.

11 See Ace-retrofiting EU project : https://energy-cities.eu/project/ace-retrofitting/

But the level of rent depends mostly on the local market. In areas where the housing market is tight, landlords have the opportunity to charge high rents even for energy-intensive dwellings.

As a matter of fact, on a European scale, rented accommodation is the most energy-intensive. Policies must therefore use incentives, but also compulsory measures:

- specifically target landlords through property taxation;
- legislative obligations can be introduced to ensure that dwellings meet criteria of habitability, with penalties for infringements (such as rental permits with progressively stricter minimum thermal performance obligations and financial or fiscal penalties (on rental income) that are also progressive).
- in certain areas, local authorities may also apply rent ceilings for energy-intensive housing.
- a bonus/penalty may be applied to the rental income according to the performance of the dwelling in relation to a regulatory reference system.

However, the impact of these measures is also closely dependent on the local rental market context and means of control, and acting on the incentives of landlords is as important as compulsory measures.

One-stop shops can help lessors on issues that are just as important to them as the nominal financial return on rents: avoiding having to devote time to the management of the retrofit, answering the desire to maintain and enhance the value of their properties, or reducing tenant turnover and the risk of non-payment.

One-stop shops can also highlight civic and moral arguments against the proven risks to the wellbeing of occupants of housing in poor condition. One-stop shops may also draw the attention of tenants to problematic situations and to promote their participation in maintenance and improvement work.

- Perception of the asset value of housing is also conducive to renovations.

The green value corresponds to the additional value of a property linked to its energy performance, which is an interesting argument for promoting renovations. Green value can also be seen in a defensive way: the fact that energy renovation slows down the depreciation of real estate capital.

Green value arguments are complementary to the arguments for comfort and tangible benefits for the occupants:

- it affects the value of the real estate asset and therefore makes it possible to reach landlords;
- the recognition of this green value can be an important financial lever if it is taken into account by banks and insurance companies that contribute to the financing of real estate assets.

But for this green value to emerge, there needs to be a balance between supply and demand in the real estate market, so that prices fully reflect the characteristics of housing.

In addition, information on the energy performance of dwellings must be known so that it can be valued by the market, which raises the crucial question of the reliability of Energy Performance Certificates that should allow the "labelling of dwellings" according to their performance.

- Public policies issues facing vulnerable groups

As part of the Clean Energy Package for all Europeans, the EC launched the European Observatory on Fuel Poverty in 2018. Articles available on this platform recall that there is no unambiguous definition of fuel poverty and that it is not limited to housing...

The prism of access to energy to define public policies that aim to reduce the number of people in precarious situations, or to remedy these situations, can lead to an inadequate prioritisation of public measures.

Social support centred on individual situations should consider the challenge of carrying out a home retrofit among other priorities: return to a sufficiently remunerative job, access to family allowances, access to health care, etc.

This means coordinating social action and the offer of energy retrofit one-stop shops at the local level. This individual support, both social and technical, should make it possible to detect situations of substandard housing, to help tenants and also advise and guide landlords before considering coercive measures.

3.2.2 Defining eligibility criteria for one-stop shop organisations to access a stable funding from the public sector

The EU directive project on taxonomy, on which the European parliament and the European council reached a compromise in December 2019, aims at setting a common language between investors, issuers, project promoters and policy makers in order to assess whether investments are meeting robust environmental standards and are consistent with the Paris Agreement on Climate Change.

The taxonomy is establishing a framework to set performance criteria consistent with Europe's commitment to net zero carbon emissions by 2050 and resilience to climate change, across almost all economic activities. Acknowledging that buildings are effectively the largest energy consuming sector in the EU, the Technical Expert Group (TEG) that worked out the taxonomy, has set mitigation and adaptation criteria for building renovations, considered as comprehensive and for individual measures and professional services related to building improvements.

One-stop shops of public interest should aim at aligning individual renovation projects with the taxonomy performance criteria.

- **A mixed method of financing one-stop shops would be conducive to their development as services of general economic interest (SGEI)**

The process required to demonstrate synchronisation with the taxonomy criteria for renovations and acquisitions, inevitably results in additional costs in comparison to business-as-usual practices, as recognized by the Technical Expert Group. "These additional implementation costs can be considered as proportionate to the goal of improving the energy performance and decarbonising the building stock, and as a way to foster significant positive social and economic impacts:

- reduced energy bills and improve indoor air quality and thermal comfort, with direct benefits in terms of occupants' health and available income.
- economic impact will also stem from increased demand for service providers and skilled construction workers, thus creating employment and upskilling opportunities"

This is especially true in the private housing sector where there is virtually no due diligence when the owners themselves take charge of the renovation project.

If governments and local authorities wish to make these protective, and therefore demanding measures, generally available while democratising them, their cost must be at least partially covered by resources under public control. In particular, this reduces the risk that renovations carried out in stages will be excluded from this process.

At this time, one-stop-shops services in the development phase may be financed through calls for projects. For example H2020 and LIFE programmes provide project development assistance for one-stop shops. But this funding only last for 3 years and would need to be rolled over.

Indeed, one-stop shops need a more sustainable funding, to compensate for the reluctance to pay for the awareness / counselling / orientation phase by individuals, as beneficiaries of the service, which is a key obstacle to growing one-stop shop as profitable businesses.

This must be made consistent with a definition of a public service obligation avoiding competition distortion, discrimination and barriers to new entry.

Rather than compensating the public service obligation with subsidies, which will not save one-stop shops from stop/start effects caused by changes in local policies, the development of one-stop shops would be more robust if it could rely on a 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.

The assessment of proportionate compensation for public service obligations[12] aims at setting a stable level of income over a multiannual period to cover development investments and part of the operating costs of one-stop shops.

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 one-stop shops 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".

- **One-stop shops should work towards a guarantee of the quality of energy retrofits**

One-stop shops could work towards a scheme providing a quality and compliance guarantee for energy-efficient renovations.

This would not necessarily involve an energy performance guarantee as homeowners and professionals are mainly interested in a guarantee that the renovation has been carried out according to the *best available standards*. From the consumer standpoint, the quality of renovation is a priority, especially as the expected energy efficiency increases the complexity and cost of the renovation.

This quality guarantee would be valued by consumers and would improve their willingness to pay for the full one-stop shop service as it allows them to hedge against long-term consequences of poorly performed renovations[13].

As energy performance is not a deciding factor for consumers, but is indeed a key concern for financiers and local authorities, the scheme would also provide for after-renovation energy monitoring so as to provide reliable data that would allow robust statistical evaluation of the scheme's impact on climate change mitigation.

This is not yet implemented by any one-stop shop yet but the *Sociétés de Tiers-financement* in France are considering to set up such an offer in collaboration with insurance sector so as to strengthen their positioning as trusted advisors[14].

3.2.3 Positioning One-stop shops as originators of housing renovations in line with EU environmental transition

- **Refer to European taxonomy to qualify efficient renovations**

The current agreement on taxonomy stipulates that in order to be considered as making a substantial contribution to climate change mitigation, a renovation must comply with the requirements set out in national regulations that transcribe the EPBD. As an alternative, the Taxonomy foresees that the renovation should achieve primary energy saving of 30%, determined according to a thermal calculation.

This criterion applies mainly to buildings of more than 1,000 m², leaving aside individual housing, which will be mainly covered by the criteria applicable to individual EE measures. In this case, for these individual measures, the taxonomy also refers to the application of the regulations of each Member State.

12 We refer to "public service obligations" with regard to European legislation on state aid, public procurement and the internal market.

13 An informative examples of such a quality guarantee consists in the Cavity Insulation Guaranty Agency (CIGA) in the UK, a major player which has issued, since its incorporation in 1995 as a non-profit organization, nearly 6 million twenty-five year guarantees for cavity wall insulation, covering almost a quarter of housing stock.

14 See ORFEE project, laureate of EU H2020 programme in 2020.

While these criteria of the taxonomy relating to impacts on climate change mitigation are only moderately demanding, the approach is more ambitious in terms of integrating other environmental objectives: not only climate change mitigation, but also climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling, pollution control and prevention, and protection and restoration of natural ecosystems, which are subject to a set of combined criteria that have to be met.

Referring to the taxonomy to qualify the renovations creates, in any case, a fit with a common European framework, which will have a decisive impact on directing the financing offer towards sustainable investments. Technical screening criteria will be regularly reviewed to ensure consistency with the EU's climate change and environmental objectives by a Platform on Sustainable Finance, to be established by the European Commission.

While remaining consistent with the zero-carbon trajectory in 2050

The TEG recognizes that it is adhering to national regulation criteria because of the imperative to substantially increase the annual rate of renovations that include energy measures (initially, the TEG had, for example, advocated an energy saving level of 50% for renovations), and, nevertheless recognises that these requirements do not represent a consistent level of ambition from one country to another.

As a matter of fact, in several European countries, for example in France, the requirements of thermal regulation for energy efficiency single measures are not set today at performance levels sufficient to be compatible with the zero-carbon in 2050 trajectory. In addition, it is important that the treatment of airtightness, thermal bridges and the management of the risks of causing building pathologies are taken into account when carrying out these unitary measures so that the renovations achieve the expected level of performance.

It would be unfortunate if the infrastructure for monitoring compliance of renovations in the housing sector were limited to these inadequate criteria for climate change mitigation in a uniform manner. This would not be in line with the principle of the taxonomy to reduce emissions and improve energy efficiency with the best solutions and practices used today.

On the contrary, the definition of methodological frameworks adapted to each type of building in order to specify renovation measures is essential. It is a matter of considering the significant disparities associated with these typologies and avoiding failure to take advantage of those cases where the energy gain potential can be much greater, thus compensating for the more difficult cases.

The one-stop shops adapted to local conditions make it possible to provide individual homeowners with a precise and specific understanding of the local challenges of building improvement. As such, one-stop shops are perfect examples of the "enabling activities" on which the taxonomy regulation puts much emphasis.

One-stop shops should be assigned to define the most suitable solutions to optimize the renovation program best suited to each residential building.

3.3 Public incentives should encourage efficient renovation

The diversity of incentives is to some extent justified by the varied situations of homeowners, but it is a delicate problem to assemble them into measures adapted to the different targets. Some of these measures may have effects contrary to climate objectives. Moreover, they are frequently criticized for being complex and daunting to consumers. The very fact of adapting these aids over time is in itself a negative factor since it requires the actors to adapt and promotes a wait-and-see attitude.

Two proposals make it possible to monitor the compliance with the eco-conditionality criteria for such incentives and to improve their influence on the energy performance of the works:

- Subjecting the award of incentives to a compliance check by the one-stop-shop service is a mean to overcome the lack of information amongst households as one the main obstacle to energy-efficient renovations.

- In territories where building renovation passports are available, it would also allow one-stop shops to introduce this tool to households and show them how to use it to coordinate and schedule relevant measures (the collection of supporting documents to obtain grants being one of the many components of building renovation passports).

These proposals are consistent with a key recommendation regarding public incentives (including incentives financed via EEOS): avoid spreading them over any unitary measures and instead earmarking them for the most efficient renovations.

We review the pros and cons of measures that may (a) aim to reduce the cost of the work or (b) impact the value of the dwelling that will be realised when it is rented out or transferred.

Following this review, we address the issue of extending the financing of renovations: **loans are also an appropriate support to simplify the subsidies from the point of view of eligible households, while having a direct impact on their recurrent expenses** (c).

Measures aimed at reducing the cost of energy renovations for households

VAT at a reduced rate

Pros	Cons
• Limits the tendency to resort to casual work in the renovation sector • Compared to tax credit, the reduction in VAT rate is collected by the consumer as soon as the measures are paid for.	• differentiated VAT rates (for energy efficiency work vs. the rest of the work) must be avoided as they are a source of error and insecurity for installers and consumers

The European Union's harmonised VAT rules allow countries to apply reduced rates to the supply of goods and services, which are exhaustively listed in Annex III of the VAT Directive (Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax). The list includes *'the supply, construction, renovation and alteration of housing supplied as part of social policy (10)' and 'the renovation and repair of private dwellings, excluding materials which form a significant part of the value of the supply (10a*)'. In contrast, consultancy services are not mentioned.

A reduced rate of VAT is therefore not applicable to consultancy services, which contributes to the increased cost of these services compared to the implementation of measures.

It would be appropriate to consider at European Union level applying the same rate of VAT to retrofit and to consultancy and support services aimed at improving the energy efficiency of housing.

Extending the application of the same reduced rate of VAT to the fees billed by ESCOs would also have a beneficial effect on their activity.

Premiums for energy retrofit measures

Pros	Cons
• Incentives can encourage retrofit measures designated as carrying out work and can have a boost effect when combined with state or local authority communication campaigns (but conversely, when the amount of premium is lowered, it has a wait and see effect).	• The incentives granted for unitary work do not encourage the carrying out of the work • They generally lead to an increase in the price of the measures concerned (absorption of the subsidy by companies and suppliers) • They intensify aggressive business practices by companies that use these premiums as a selling point

The hidden cost of premiums to the public sector is potentially significant in terms of loss of confidence if premiums are not accompanied by controls on business practices and the quality of implementation of the work.

All in all, premiums are not the most sustainable incentives, and should be earmarked for the most efficient refurbishments.

- Tax credits

Pros	Cons
• The tax credit, like premiums, can be earmarked for specific measures, subject to designations and certifications. • Tax credits are popular fiscal measures.	• The tax credit is collected by homeowners after the payments to the installer. This limits the ability of households with little savings to benefit from the tax credit and it tends to make it a fiscal optimisation for the wealthiest households.

Tax credits have the same drawbacks as premiums and in addition do not help to finance the retrofit, since they collected after the investment has been made, unless homeowners are able to obtain a credit on affordable terms, against the tax credit as receivables.

- Aids to low-income households

In addition to remarks regarding how to address public policy issues facing vulnerable groups, it has to be stressed that income limit based on family composition regarding eligibility for aids, creates a divide that may seems inequitable to households with incomes just above this limit. In condominiums, this threshold effect increases the difficulties in getting a renovation project adopted.

Interaction with one-stop shops is important in reaching an optimum : instead of determining the retrofit project in order to maximize the value of subsidies and minimize the amount to be borne by beneficiary households, one-stop shops methodology should target a technical optimum determined according to the households' actual financing capacity.

- **Tax incentives for energy renovations related to real estate transactions**

The principle of bonus/penalty could be applied to rentals but also to real estate sales registration fees for owners who have carried out retrofits (as seller), or are committing themselves to carry out such retrofit (as buyer), in accordance with a target of energy performance.

These measures are far from being widely implemented (it is at the project stage in France). But such bonuses/penalties applied on real estate transactions would have the advantage of giving a degree of materiality to the "green value" argument, at the stage when the decision to carry out work is taken, such green value becoming concrete when the dwelling is eventually sold.

3.4 Expanding the range of financing for energy-efficient refurbishments

As banks have an interest in directing their financing towards sustainable spending, they are important prescribers of efficient renovations.

In addition, the effort to broaden the supply of financing is aimed at not excluding anyone from the green housing market and not forcing households with modest incomes, or who have recently taken on debt to buy their home, or who do not have easy access to loan insurance, to spend heavily on energy. **For the community, the stake is to prevent the risk of these households becoming vulnerable.**

3.4.1 A financing offer for all?

The expectations that local authorities and renovation professionals express to the banks are to adapt the technical characteristics of the loans to make them affordable to a larger number of people.

The specific features needed to adapt loans include :

- **Pre-financing down payments:** to avoiding cash flow problems during the renovation works, when grants and loans are disbursed only on proof of completion of the work, resulting in households facing a cash shortage, which may jeopardize the completion of the renovation.
- **Lengthening, free of charge, the maturity of loans**: there is a limit to the amount of monthly repayment beyond which middle-class households have difficulty in financing a new project. Therefore, the repayment period is a decisive criterion for adapting the financing offer to energy-efficient renovations.
- **Take energy savings into account to assess repayment capacity**

  In the case of works that are intended to improve energy efficiency, taking energy savings into account when assessing the ability of households to repay a new loan is generally not acceptable to banks.

  The objections put forward are, on the one hand, that the energy savings argument can indeed be used by unscrupulous sellers and be reduced to commercial claims and, on the other hand, the uncertainty surrounding the "rebound effect": households can use part of the savings to increase their energy consumption. As a result, the expected energy savings may be much lower than anticipated.

  This rebound effect is difficult to assess; studies, generally carried out on small samples, give orders of magnitude of 10 to 40%, and it is often noted that this effect particularly is found amongst inhabitants of dwellings whose initial energy performance was poor, which had led them to restrict their consumption in the first place. But isn't it primarily, in this case, a methodological shortcoming in estimating the level of post-renovation consumption? It is easy to imagine such a situation so as to predict that these households would take advantage of the opportunity to increase the level of their heating.

  The One-Stop-Shops that include financing for the work in their offer tailor the energy saving forecasts for households in a situation of restricted consumption.

  In the context of an offer where consumption is effectively monitored, taking these energy savings into account when drawing up the financing plan for the renovation is a trade-off between an increase in the household's fixed costs (reimbursement of the financing) and a reduction in the heating budget, which results in less exposure to the increase in energy costs.
- **Taking into account home equity to secure loan repayment**

  Expanding the financing supply based on the prospect of selling the home to pay off the loan puts the lender at risk of financial loss if the sale takes time and the property value declines.

  This financing modality is primarily addressed to aging households that have specific difficulties in obtaining loans. In fact, bank loans are most often subject to an obligation to take out insurance against death and disability, precisely in order to avoid banks having to take this risk.

  In Anglo-Saxon and Nordic countries, where home equity loans are more common than in Latin countries, their proportion does not exceed 2-3 per cent of outstanding housing loans.

  For the elderly and their families, this is a broader project than just the question of financing works: enabling these people to stay in their own homes, but also to cope later with a transfer to a care home for dependent people and to facilitate the transfer of their assets. Taking into account the bond between generations and the transfer of estates which it entails, covering the risk on the residual value of the loan in the event of sale or death of the borrowers cannot be contemplated without the participation of professionals to provide guidance on inheritance issues.
- **Expanding the availability of financing for condominium renovations**

  In co-ownership associations, most co-owners use individual loans to finance work on the collective parts.

There are also collective loans for co-ownership which are a solution for co-owners who have difficulty accessing bank loans: in particular the elderly or those with chronic health problems.

However, the supply of collective co-ownership financing is weak or non-existent in most countries.

Offering guarantees to banks

In return for one or other of these adaptations, which require banks to take more risk and retool their organisations, the option that often seems the most obvious is to offer them guarantees.

Numerous guarantee projects have been studied by development banks and local authorities to encourage network banks to develop their range of financing dedicated to efficient renovation of private housing. However, these schemes have been little used, even when they were combined with technical assistance to finance the training and adaptation of banking network organisations.

These projects undoubtedly do not fully take into account the objectives and constraints on the banks. Indeed, banks' credit policy is not set independently from their sales and marketing strategy.

Regulated loans offering adapted to energy-efficient retrofits

While most regulated loans (i.e. loans with features laid down by law or public regulation, and which incorporate a concessionary element), are intended to facilitate access to property ownership to low-income households, some countries have designed specific regulated loans for energy retrofits.

These loans can have quite varied terms and conditions that can be adapted to different targets. Indeed, the concessional component of these loans may relate to their duration, the level of interest rates (e.g. zero rate) or even a reduction in the principal repayment.

Pros	Cons
• If the work subsidy is spread over the loan repayment period (in the form of a reduction in the repayment schedule) : - This avoids the inflationary effect of the aid received when purchasing equipment / carrying out the work. - It should be noted that if the loan - whether regulated or not - is tied to the renovation measures, the lender's intervention makes it possible to limit fraud by imposing controls against the payments to contractors. - This limits the amount of subsidy actually paid out in the event of early repayment of the loan (which may become mandatory in the event of a sale). • Regulated loans may include social and/or energy efficiency criteria • The duration of the loan facilitates the implementation of consumption monitoring and therefore the collection of data on the efficiency of the lending scheme over the long term.	• More complex infrastructure to incorporate the subsidy into the loan than to disburse the subsidy in one go (without bank intervention) • If it is an interest-rate subsidy: fixing a rate (e.g. a zero rate), could result in an increase in the cost of the subsidy if interbank rates rise. • Banks may be reluctant to distribute this type of loan if they consider that they would incur too many risks and processing costs related to the control of the eligibility of the work and that their remuneration is not sufficient. • Banks are also reluctant to change their risk selection policy to distribute regulated loans..

Among regulated loans schemes, KfW-Effizienzhaus in Germany is an example of a successful strategy of integrating a long-term loan offer with the different key items of one-stop shops:

- A clear and stable framework for regulation, performance-linked investment subsidies and information. The financing scheme is available subject to chartered expert advice and installation.
- A national brand Effizienzhaus (EH), which guides the supply and demand of works. This brand is now a label of energy performance, particularly recognized in real estate transactions.
- The direct subsidies associated with the programme, increase in line with the post-construction energy consumption target.
- Regulated loans drive the incentive: these soft loans from KfW are distributed through the banking networks. KfW does not interfere in the bank-client relationship, nor does it influence the commercial positioning or the assessment of creditworthiness. Nor does it intervene in the management of the loans. The banks are not involved in the quality-control and compliance of renovations or in the granting and administration of the subsidies.
- The mandatory validation of the work programme by an approved independent expert.

A new financing scheme trend

New financing schemes are emerging as an alternative to the proposals made to banks to adapt their offering of loans for renovations.

- In the Netherlands, the *Stichting Nationaal Energiebespaarfonds* (National Energy Saving Fund Foundation/NEF) was established in 2014 by the Ministry of the Interior and Kingdom Relations as a foundation (*Stichting*), with Provinces and certain municipalities, to offer to homeowners loans for energy-saving measures. In 2017, its scope of financing was extended to Homeowners Associations (HOAs). The NEF, which is based on solvency criteria identical to those of the banking sector, would now like to shift its offer towards households with the most modest resources.

  The NEF has reached a size of 250 M€ loans granted in 2018 and has the means to issue 600 M € loans.

- In France, third-party financing companies are regional initiatives corresponding to the “all-inclusive OSS” model, acting as an aggregator of individual renovations and loans.

  They have been set up at a time when a regulated zero-interest loan and a guarantee fund dedicated to low-income households were ignored by the banks because they were considered complex and not profitable.

  While national schemes are being simplified, STFs represent a complementary approach but of limited size and a requirement to be more consolidated. They present the advantage of being organised to manage all types of risk, including counterparty risk on the least solvent households (first-time home owners, already in debt, low-income households) and condominiums, in the form of affected loans, which has the advantage of reassuring installers regarding the collection of their bills.

  While the counterparty risk on the borrower, whether an individual owner or an association of co-owners, is usually monitored by banks through standard lending criteria, including the ratio of "repayment charges/recurring income", the third-party financing companies take energy savings into consideration to assess the repayment capacity.

- Improving the loans recovery rate via local taxes[15] or via energy bills[16] to attract investors.

15 See euroPACE https://www.europace2020.eu/

16 See : Renonbill https://storage.googleapis.com/renonbill-website.appspot.com/image/multimedia/29_01_2020_17_06/05678%20RenOnBill%20concertina%20leaflet_pages.pdf

These mechanisms, widely used in North America, are the subject of projects funded by the H2020 programme. They aim to bundle individual refurbishment loans and refinance them via asset-backed bonds.
The very aim of attachment of the loan to the property, is to make claims on individual owners benefit from a priority collection mechanism, compared to personal loans, in order to attract investors. Similarly, On-bill financing draws on utility bills to repay the retrofit loan.
These financing instruments thus tend to be repaid in priority unlike unsecured loans.

However, these mechanisms should not overshadow the importance of taking into account households' repayment ability at the time of investment in order to avoid leading to situations of over-indebtedness.

- **Issues and challenges demonstrated by financing offers dedicated to housing refurbishments**

The following table summarizes the criteria for adapting financing schemes dedicated to energy retrofits, resulting from public initiatives, to improve access to financing for energy retrofits :

Method of financing	Examples
• Targeting homeowners associations	• Third-party financing companies • The NEF • Regulated loans such as Eco-PTZ in France
• Targeting low-income homeowners	• Third-party financing companies • Regulated loans such as Eco-PTZ in France with a dedicated guarantee fund.
• Pre-financing advance payments to installers	• Third-party financing companies • the NEF
• Repayment over 15 years	• EffizienzHaus loans • The NEF for most efficient renovations • Third-party financing companies
• Subsidised interest rates	• Regulated loans such as Eco-PTZ in France • EffizienzHaus loans
• Taking energy savings into consideration to assess the repayment capacity	• Third-party financing companies
• Bearing residual value risk	• Bank loans are usually covered by mutual guarantee and insurance policies • Third-party financing companies

The diversity of the characteristics of these schemes is striking ; comparing these schemes is a delicate exercise, as most of them are recently created, except for KfW Effizienshaus which stands out in terms of financing volumes (more than 73 billion euros invested over the past 12 years[17]).

3.4.2 Using One-stop-shops to de-risk projects

One-stop shops may optimize the management of the various risks related to the financing of energy renovations.

Usually, when a private individual or a condominium undertakes a renovation and finances it with a loan, the bank carries a risk: that of a default by the borrower. But the other risks are usually borne by the building owner and not really taken

17 IWU & Franhofer IFAM 2018

into consideration. One-stop shops allow the retrofit projects to be " derisked " for homeowners, which ultimately reduces risks also borne by lenders and investors:

Risks	Risk Allocation for Bank Loans	Risk allocation in case of involvement by "All-inclusive" and "ESCO like" one-stop shops
• Project costs and timelines overruns	• This risk is not taken by the bank	• The one-stop shop is involved in selecting the contractors and then monitoring the progress of the worksite
• Lack of quality and performance	• This risk is not taken by the bank • The client should normally take out insurance and ensure that the contractors are also covered.	• The one-stop shop controls the insurance policies • It provides a post-construction follow-up, and it can help the project owner to activate the insurance policies.
• Residual asset value less than the debt	• This risk is not taken by the bank • In the event of default by the borrower, this risk is assumed by the insurance company or guarantor.	• The one-stop shop takes on this risk if offering a direct financing, or can have it covered by insurance or guarantor.

3.4.3 Allowing banks to apply environmental labels to construction loans

The real estate financing industry must adapt to public authority inclination to direct financing towards ecological transition, as set out in the European taxonomy. Banks need to objectify their CSR policy, as well as to mitigate their exposure to the risk of depreciation of their loan portfolios due to climate change and changes in building regulations.

Both banks and regulators need to rely on data to assess the "green" status of their assets. However, the obstacles to obtaining such data include the unreliability of energy performance certificates (EPCs), the scarcity of data on the actual energy performance of dwellings and measures of the gap between theoretical and actual performance. Not only do banks have no direct control over these difficulties, but most banks do not have an infrastructure in place to collect and analyse such data, for their own loan portfolios.

One-stop shops can enable banks to improve their assessment of the investment in retrofits and their impact on the evolution of household expenses. Publicly supervised one-stop-shops, which can attest to the compliance of the retrofit measures carried out with the taxonomy criteria used to classify "green" assets, are therefore likely to be of interest to financial players.

4 Linking European financing schemes and one-stop shop

Strengthening the leverage of funding at European and national level

Within the European Green Deal, the InvestEU programme, as single budgetary guarantee of the EU, is aiming to leverage 279 billion euros of public and private financing over the 2021-27 period.

We suggest that efforts by Regions and local authorities and their partners to implement one-stop shops, which are at the heart of the scenarios and recommendations presented in this report, be taken into consideration to link the huge sources of funding announced to achieve climate transition, to their implementation on the ground, for the energy-efficient retrofits of the private housing stock.

Using carbon finance as a basis

The "Climate Finance Initiative to achieve Paris Agreement and strengthen sustainable development"[18], and other proposals issued for instance by France Stratégie[19] offer a comprehensive system, comprising:

- a public 'Mutual Guarantee Fund for Low Carbon Investment'. This guarantee mechanism is based on a Value per Tonne of Carbon Emissions saved (VTCE) trajectory.

  This value is fundamentally the result of a political agreement, and should give a predictable medium- to long-term signal to all actors. This value applies to all projects allowing for carbon reduction across all economy sectors; It is to be updated regularly (every three to five years).

- the organisation of Third Party Expertise, independent from project holders (i.e. in the case of home energy retrofits: the homeowners) and of financial partners, which must work on the basis of common principles for the evaluation of reduced carbon emissions, in order to be able to reliably certify that projects make a real contribution to development, economic growth and emission reductions.

  Applied to housing refurbishment, this Third Party Expertise establishing the selection and standardisation of projects to reduce transaction costs could stem from one-stop shops networks[20] which would play the role of Project aggregators.

  It should be backed by peer-reviewed scientific information, in order to establish an environmental gain from renovations, on statistical basis, adaptively to the imprecise knowledge of their individual performance. It would then allow for bundling projects differentiated by geography, types of buildings and renovations

- A 'new asset class' of Carbon Remediation Assets established by explicitly assigning the VTCE to the projects. These Carbon Remediation Assets, are commodified by Low Carbon Certificates that are made tradeable.

  These certificates should, in order of priority, finance the system maintenance in order to replenish the guarantee fund, and to cover the cost of the one-stop shops broad scope of "SGEI"-type of activities, including actions necessary for the take-off of the energy-efficient renovations: training of installers; advisers; communication programmes; and management of monitoring.

- Emission reductions certification: an independent body ensures the control and monitoring of low-carbon projects. This control body issues Low Carbon Certificates (LCC) to projects based on the emission reductions actually achieved. The LCCs are the material support for the carbon assets created by the scheme.

- Back-up of monetary institution: according to the geographical scope, national central bank, European central bank (or IMF) announces that it is ready to refinance the low-carbon loans issued by the banks up to the value of the LCCs that represent the emission reductions achieved by the projects.

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18 See : http://www2.centre-cired.fr/Actualites/article/A-climate-finance-initiative-to-achieve-the-Paris-Agreement-and-strengthen?lang=fr.
Indeed, the barriers to investing in housing renovation 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 on top of the perception of high counterparty risk on the least creditworthy households.

19 See : Une proposition pour financer l'investissement bas carbone en Europe https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/bat_notes_danalyse_n24_francais_12_mars_17h_45.pdf

20 The Technical expert group of the taxonomy stated that " Compared to other economic activities, the operation of individual buildings has unique characteristics, which means the performance of different assets cannot easily be compared. Due to climatic differences across regions, buildings in different locations have different energy needs for heating, air conditioning and lighting, and therefore different potential to contribute to climate change mitigation. Furthermore, the nature of the existing building stock varies significantly from country to country, and even from region to region, due to differences in design, construction techniques and building age."

This comprehensive system can be based on paragraph 108 of the Paris Agreement Decision and Article 2 of that Agreement, which specifies the need to align financial flows with the objectives of the Agreement.

○ This proposal is consistent with the situation created by the Covid19 pandemic

To tackle with the situation faced by households with precarious jobs and/or hit by a loss of income, preventing them from taking additional credit to renovate their homes, an extra financing offer is not, of course, an appropriate solution.

The creation of Low Carbone Certificates would be in accordance with measures presently contemplated at European and Member State level, to provide a safety net for all citizens to cope with a drop in revenues, via monetary measures. Indeed, the available part of the carbon value, once the expenses needed to sustain the scheme are covered, could be Low Carbon Certificates given to homeowners as a tradable asset.

The issuance of these financial assets is directly related to the verification of the completion of the renovations and their compliance. It could be transferred when owners sell their property or used to help repay their loan.

These certificates, collateral for real wealth production (emission allowances and financed assets) would also be accepted by central banks when they refinance banks or acquire carbon bonds issued in return for the securitisation of credits. These certificates thus become assets insured by society as a whole, ultimately recorded in the balance sheet of central banks.

In contrast to carbon tax schemes, which represent a penalty to be paid by the emitter, Low Carbon Certificates specifically oriented towards energy renovations**, makes it possible to reward these investments and only gradually penalises carbon-intensive capital. It is more politically acceptable because it allows smoothing out the efforts required for the low-carbon transition.**

In France, a report issued by an independent commission[21] recommended: "any action that today makes it possible to reduce emissions and that costs less than 250 euros per tonne of CO_2 makes sense for the community and must therefore be undertaken" to achieve carbon neutrality by 2050 and to meet the climate challenges of the Paris Agreement.

This gives an idea of the impact of carbon certificates applied, for example, to the energy-efficient renovation of single-family homes. In France, average renovations undertaken by third-party financing companies represent an investment of around 30 to 32 k€ and generate savings of around 60% (i.e. 120 kWh.m².year and 32 kCO_2.m².year). The value of 250 € which equates to a ton of CO_2 avoided (over a 20 year period and discounted at 4% p.a.) represents a resource of around 11 to 12 k€, i.e. more than a third of the investment.

However, attention must be paid to setting up the one-stop shops and Low Carbon Certificates accreditation processes beforehand to ensure that these investments have the expected impact in terms of reduced emissions and contribute to other environmental objectives.

21 « La valeur de l'action pour le climat Une valeur tutélaire du carbone pour évaluer les investissements et les politiques publiques » - Février 2019 https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs-2019-rapport-la-valeur-de-laction-pour-le-climat_0.pdf

5 Recommendations

At European Union level:

The term "one-stop shop" used in the EPBD should be defined in view of the challenges of integrating them into public policies for energy retrofits. The European institutions may have two options:

- Reserving the term "one-stop shop" for advisors in contact with the public, locally;
- Or use the term "one-stop-shop" as a synecdoche (i.e. referring to a whole by one of its parts) meaning the set of actions to be established at different scales and under the coordination of States and local authorities.

This clarification of terminology is important to make public policy issues clearer and to facilitate dialogue between European project holders.

The need to make an inventory of cost-effective renovation approaches, as enshrined in the EPBD, should be put into perspective: effectiveness of such public policies could also, or alternatively, be assessed according to the leverage effect of public policies on private investment.

The macro-economic objective of one-stop shops could be stated as follows: "to optimise the cost, borne by the community, of energy savings and reduced CO_2 emissions through the renovation of the private housing stock."

Encouraging efficient renovations with public incentives:

- consider at European Union level applying the same rate of VAT to retrofit and to consultancy and support services aimed at improving the energy efficiency of housing…
- …and extending the same reduced rate of VAT to the fees billed by ESCOs

Linking European financing schemes and one-stop shop

- Efforts by Regions and local authorities and their partners to implement one-stop shops, should be taken into consideration when linking the huge sources of funding announced to achieve climate transition, to their implementation on the ground, for the energy-efficient retrofits of the private housing stock.

- Referring to the taxonomy to qualify the renovations creates a fit with a common European framework, which will have a decisive impact on directing the financing offer towards sustainable investments.

  However, as regards most of the housing stock, criteria of the taxonomy relating to impacts on climate change mitigation refer to national thermal regulation for energy efficiency single measures, which are not set today at performance levels sufficient to be compatible with the zero-carbon in 2050 trajectory.

  Infrastructure for monitoring compliance of renovations in the housing sector should not be limited to these inadequate criteria for climate change mitigation, in a uniform manner. This would not be in line with the principle of the taxonomy to reduce emissions and improve energy efficiency with the best solutions and practices used today.

  On the contrary, the definition of methodological frameworks adapted to each type of building in order to specify renovation measures is essential. It is a matter of considering the significant disparities associated with these typologies and avoiding failure to take advantage of those cases where the energy gain potential can be much greater, thus compensating for the more difficult cases.

- The taxonomy-compliance of housing refurbishments should be based on one-stop shops involvement to define the most suitable solutions to optimize the renovation program, best suited to each residential building.

- Consider public guarantee mechanism based on the value of carbon emissions saved, as provided for in Paris Agreement to foster financing of energy-efficient renovations.

  Attention must be paid to setting up the one-stop shops and Low Carbon Certificates accreditation processes beforehand to ensure that these investments have the expected impact in terms of reduced emissions and contribute to other environmental objectives

  Low Carbon Certificates specifically oriented towards energy renovations, makes it possible to reward these investments, smoothing out the efforts required for the low-carbon transition.

At member state level:

Implementing support for one-stop shops project leaders at the national level,

- to clarify the options of local authorities that are compatible with state aid regulation. Indeed, guidance and legal certainty are key-factors to favour local initiatives.
- encourage one-stop shops to develop new ways to reach different audiences and to build partnerships with different professionals who are likely to prescribe renovations in each segment.

Defining eligibility criteria for one-stop shop organisations to access a stable funding from the public sector

- Defining eligibility criteria for one-stop shop organisations to access a stable collective funding should be based on the EU directive project on taxonomy, on which the European parliament and the European council reached a compromise in December 2019.

Expanding the range of financing for energy-efficient refurbishments, using one-stop shops to de-risk projects

One-stop shops may optimize the management of the various risks related to the financing of energy renovations. De-risking retrofit projects for homeowners, ultimately reduces risks also borne by lenders and investors.

Public authorities should foster the capacity of one-stop shops attest to the compliance of the retrofit measures carried out with the taxonomy criteria used to classify "green" assets.

can enable banks to improve their assessment of the investment in retrofits and their impact on the evolution of household expenses. Publicly supervised one-stop-shops, which can, are therefore likely to be of interest to financial players.

6 Acronyms

BPIE: Buildings Performance Institute Europe

CEC: Citizen Energy Communities

CSR: Corporate social responsibility

EC: European Commission

Eco-PTZ: Eco-Prêt à taux zéro (France)

EE: energy efficiency

EEOS: Energy Efficiency Obligation Schemes

EH: EffizienzHaus (Germany)

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

NEF: National Energy Saving Fund (the Netherlands)

OSS: One-stop shops

ROI: Return on investment

SGEI: Service of General Economic Interest

SSGI: social services of general interest

TEG: Technical Expert Group

VAT : Value Added Tax

VSE : very small enterprises

VTCE: Value per Tonne of Carbon Emissions saved

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