CITIZEE
CITIZEN FINANCING for ENERGY EFFICIENCY

CFs4EE Financing Scheme Pilot Projects Evaluation and Action Plan report

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CitizEE

Scaling up Public Energy Efficiency Investments via Standardising Citizen Financing Schemes

www.citizee.eu

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PU = Public

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DISCLAIMER

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1. CFS4EE FINANCING SCHEMES EVALUATION METHODOLOGY

1.1. Introduction

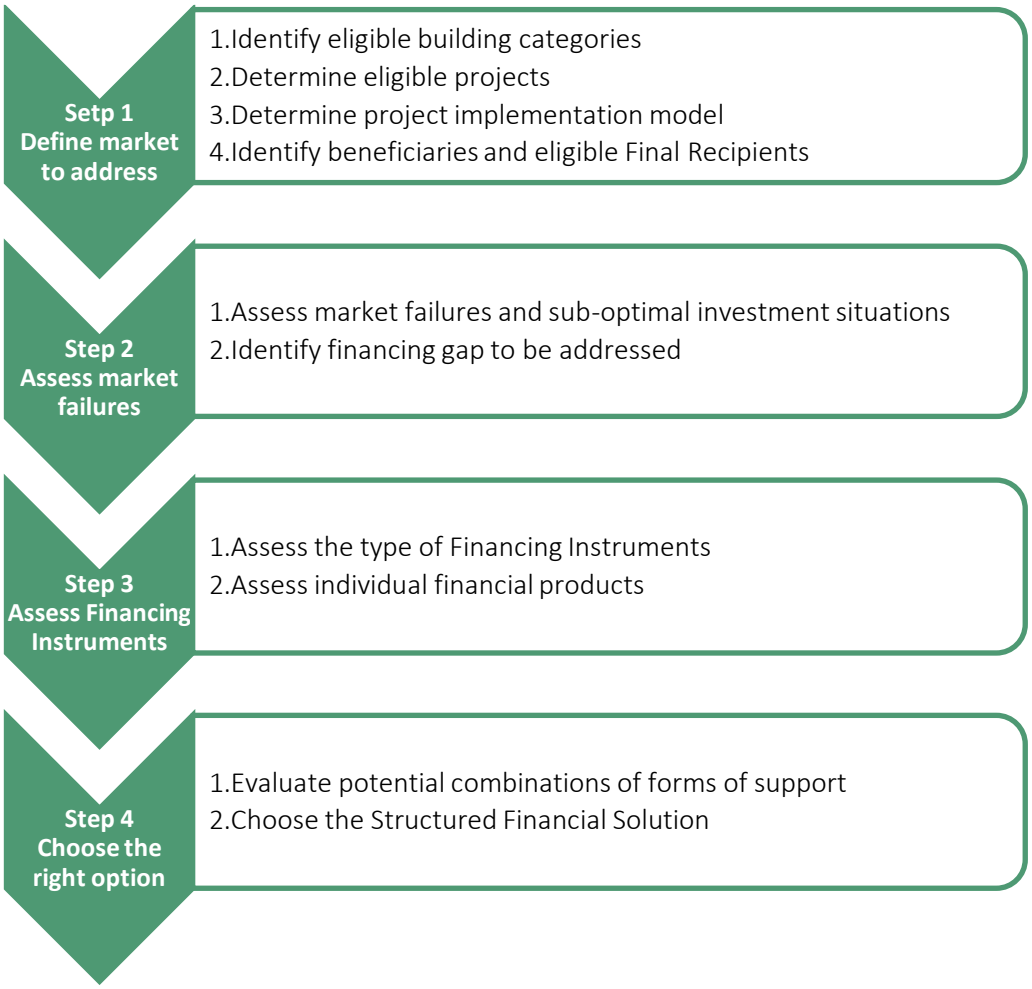
Under the Citizee project, Energinvest has developed a guidance document aiming at helping CitizEE Pilot Regions to select a suitable Public Financing Instrument (PFI) to be set-up to support the development of their CFs4EE Financing Scheme for Energy Efficient Buildings. (For further information please see also *Map of Structured Financial Solutions for CFs4EE Financing Scheme* to be found on the project webpage https://www.citizee.eu/results/).

Using the guidance document, the CitizEE Pilot Regions were invited to fill-in a respective template to evaluate and select on appropriate financing solutions. The structure and content of the template correspond to the four key steps addressed in the report (see also Figure 1).

1.2. Key steps addressed by the guide

The following figure presents the key steps CitizEE Pilot Regions should follow when evaluating and selecting the Structured Financial Solution that could best meet their needs.

Figure 1. Roadmap/process to evaluate the CFs4EE Financing Scheme



1.3. Define the market to address

Following the roadmap developed in the report *Map of Structured Financial Solutions for CFs4EE Financing Scheme*, the first key step starts with defining the target market, which the CitizEE Pilot Regions intend to address under their

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CFs4EE Financing Scheme. In case they intend to address more than one market segment within their scheme, one table per market segment should be filled out.

Market to address	
Criteria	**Description**
Eligible building categories	Detail here the eligible building categories you intend to cover by your investment program. If already available, give a first estimate of the total market volume that could be addressed by your investment program (e.g. number of buildings, number of square meters).
Eligible projects	Detail here the eligible projects that will be covered by your investment program. If already available, give a first estimate of the volume of projects you want to cover in your investment program (e.g. number of projects, number of buildings, number of square meters and volume of investment per project/buildings/square meters).
Project implementation model	Define here the implementation model (EPC, ESC, SBC) you intend to use within your investment program. If more than one implementation model is to be used, detail for which type of building categories and/or eligible beneficiaries/final recipients you intend to use them.
Eligible Beneficiaries and Final Recipients	Detail here the eligible beneficiaries (who can benefit from the scheme) of the CFs4EE Financing Scheme and identify the eligible final recipients (who can be financed by the scheme). If already available, give a first estimate of the volume of beneficiaries and final recipients you intend to cover in your investment program. Specify, if you intend to work with ESCOs and if your scheme is to support ESCO financing, EPC financing or ESC financing.

1.4. Assess market failures and financing gaps for the targeted market

Following the guidelines developed in the report "Map of Structured Financial Solutions", the second step foresees that CitizEE Pilot Regions assess the market failures and sub-optimal situations to identify financing gaps that are of existence in the targeted market they intend to address with their CFs4EE Financing Scheme. In case they intend to address more than one market segment within their scheme, one table per market segment should be filled-out.

High (perceived) risks	
Answer the following questions to evaluate to what extent the private sector avoids investments due to high real or perceived risks of project failures?	
Performance & technical risks of the projects	Does exposure to performance and technical risks limit the access to financing and particularly to ESCO/ESCoop financing? Explain to what extent is this is an issue when financing projects?
Low creditworthiness of the Final Recipients	Do Final Recipients have difficulties accessing appropriate funding due to their poor creditworthiness? Explain to what extent this is an issue when financing projects?
Lack of financing offering	Is there a lack of financing offering for Energy Efficiency projects due to high risk perception on the lender's side? Explain to what extent this is an issue when financing projects?
Limited access to (long-term) capital	
Answer the following questions to evaluate to what extent Final Recipients with bankable projects have a limited access to commercial finance?	

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Limited balance sheet/borrowing capacity	Do beneficiaries and final recipients of your investment program face limited balance sheet/borrowing capacity? Are there (well-developed) existing off-balance sheet financing options on the market? Are those existing financing options sufficient to meet the needs of your investment program? Explain to what extent this is an issue when financing projects?
Limited access to commercial finance	Is there a limited access to finance for Energy Efficiency projects on the commercial debt financing market? What are the main reasons for this limited access? A lack of appropriate commercial debt financing products for EE projects? High interest rates for commercial debt financing of EE projects? Short loan tenors for commercial debt financing of EE projects? Explain to what extent this is an issue when financing projects?
High transaction costs	Do transaction costs (to prepare, to finance, to execute) limit market development or growth? For which market player? Explain to what extent this is an issue when financing projects?
Limited financial viability	
Answer the following questions to evaluate to what extent the profitability of the projects is not aligned with the market offer?	
High upfront costs affecting the profitability	Does the initial investment of the projects make the profitability negative or too low to attract lenders to your investment program? Explain to what extent high upfront costs affecting the profitability is an issue when financing projects?
Tenor not suited to long payback periods of projects	Are market loan tenors too short to make the projects of your investment program affordable? Explain to what extent tenor not suited to long payback period of projects is an issue when financing projects?
High financing costs affecting the profitability	Are the market interest rates too high to make the projects of your investment program affordable? Explain how and to what extent high financing costs affecting the profitability is an issue when financing projects?
Lack of commercial finance/liquidity	Is there a lack of liquidity on the commercial debt financing market, among private lenders such as commercial banks limiting their offer of financing for the type of projects covered in your investment program? Explain to what extent this is an issue when financing projects?
Gap analysis conclusion	
Draw a first conclusion of the financing gaps to be addressed with your CFs4EE Financing Scheme.	
Gap due to high (perceived) risks	Is there a financing gap due to high (perceived) risks on the targeted market segment? To what extent is this the main issue preventing the realization of your investment program?
Gap due to limited access to (long-term) capital	Is there a financing gap due to limited access to (long-term) capital on the targeted market segment? To what extent is this the main issue preventing the realization of your investment program?
Viability gap	Is there a viability gap on the targeted market segment? To what extent is this the main issue preventing the realization of your investment program?

1.5. Assess Financing Instruments depending on the gaps to be addressed

1.5.1. Suitable level of financing support depending on the gaps to be addressed

Based on the financing value pyramid structure developed in the *Map of Structured Financial Solutions* and depending on the gap to be addressed, the CitizEE Pilot Regions are to evaluate which level of financial support is

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appropriate to cover the needs of the Final Recipients. In case the Pilot Regions intend to address more than one market segment within their scheme, one table per market segment should be filled-out.

Level of support to cover the existing gaps	
Answer the following questions to evaluate which level of financial support is appropriate?	
Risks	Should the financing instrument help reduce or remove risks? If so, for what type of risk and for which final recipients? Detail the objectives and expected outcomes of the support.
Finance	Should the financing instrument help provide or increase the supply of finance? If so, for what type of financial product and for which final recipients? Detail the objectives and expected outcomes of the support.
Debt Service	Should the financing instrument help reduce the debt burden? If so, what should be the type of support and for which final recipients? Detail the objectives and expected outcomes of the support.
Asset	Should the financing instrument help reduce the borrowing base and/or increase the profitability of the project? If so, what should be the type of grant support and for which final recipients? Detail the objectives and expected outcomes of the support.

1.5.2. Suitable financing products depending on the gaps to be addressed

Depending on the gaps to be addressed with their CFs4EE Financing Scheme, CitizEE Pilot Regions are to describe the suitable financing products that should be offered to the final recipients. For each financing product, a detailed statement on the objectives and expected outcomes of the product is requested.

Level of support to cover the existing gaps	
Answer the following questions to evaluate which level of financial support is appropriate.	
Guarantees	Should the financing instrument offer guarantees? If so, for what type of risk and for which final recipients? Detail the objectives and expected outcomes of the support.
Loans	Should the financing instrument offer loans? If so, for what type of loans and for which final recipients? Detail the objectives and expected outcomes of the support.
Quasi-equity	Should the financing instrument offer subordinated loans? If so, for which final recipients? Detail the objectives and expected outcomes of the support.
Equity	Should the financing instrument offer equity? If so, for which final recipients? Detail the objectives and expected outcomes of the support.
Interest rate or guarantee fees subsidies	Should the financing instrument offer interest rate or guarantee fees subsidies? If so, for which final recipients? Detail the objectives and expected outcomes of the support.
Grants	Should the financing instrument offer grants? If so, what type of grants and for which final recipients? Detail the objectives and expected outcomes of the support.

1.5.3. Suitable financing distribution channel to answer the needs of the final recipients depending on the gaps to be addressed

Depending on the gaps to be addressed with their CFs4EE Financing Scheme, CitizEE Pilot Regions are to evaluate which financing distribution channel (between a fund structure or a financial intermediary such as a commercial bank) is best suited to meet the needs of the final recipients and cover the gaps.

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Financing distribution channel: Key success factors & SWOT analysis		
Comparative analysis	**Fund structure as distribution channel**	**Financial intermediary as distribution channel**
Market coverage capacity Provide details on the capacity of the channel to cover the targeted market		
Crowd in capacity Provide details on the capacity of the channel to crowd in public and private financing		
Ease/speed of implementation Provide details on the ability of the channel in terms of ease/speed of implementation		
Scalability Provide details on the scalability of the channel to grow the business (Low, Moderate, High)		
SWOT analysis	**Funds structure as distribution channel**	**Financial intermediary as distribution channel**
Strengths	• Strength 1 • Strength 2	• Strength 1 • Strength 2
Opportunities	• Opportunity 1 • Opportunity 2	• Opportunity 1 • Opportunity 2
Weaknesses	• Weakness 1 • Weakness 2	• Weakness 1 • Weakness 2
Threats	• Threat 1 • Threat 2	• Threat 1 • Threat 2

Financing distribution channel: conclusion and choice
Provide a 5 to 10-line conclusion on the SWOT analysis and explain the reasons for your choice of the financing distribution channel.

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1.6. Choose the right option

Following the guidelines developed in the *report Map of Structured Financial Solutions*, the last key step asks CitizEE Pilot Regions to assess the proposed Structured Financial Solutions to identify the most suitable one to be set-up as their CFs4EE Financing Scheme. The description of the chosen Structured Financial Solution should be filled-in in the following table.

Description of the Financing Instrument/Investment Platform	
Choice of the Structured Financial Solution	Provide a 5 to 10-line conclusion on the chosen Structured Financial Solution and explain the reasons for your choice. If your Financial Instrument/Investment Platform model is not covered by the eight Structured Financial Solutions, please provide details of the model.
Addressable financing gaps	Detail the financing gaps you intend to address with the Financial Instrument/Investment Platform.
Type of financing products to be offered to the Final Recipients	Detail the financing products to be offered to the final recipients.
Structure of the Financial Instrument	Detail the structure of the Financial Instrument/Investment Platform.
Aims of the Financial Instrument	Detail the objectives of the Financial Instrument/Investment Platform.
Advantages/outcomes expected	Detail the advantages and outcomes expected.
Platform sponsors	Identify the potential or already engaged platform sponsors to set up your Financial Instrument/Investment Platform and describe their roles and functions. If already available, provide details on the expected volume of funding per sponsor.
Platform manager	Detail who will oversee the platform management and provide details on the roles and functions. If already available, provide details on the expected volume of funding from the platform manager.
Platform co-investors	Detail who are the expected co-investors at the platform level and provide details on their roles and functions. If already available, provide details on the expected volume of funding per co-investor.
Program Authority	Detail who will oversee the Investment program. If already available, provide details on the expected volume of investment.
Program Delivery Unit	Detail who will oversee the execution of the Investment program. If already available, provide details on the project delivery process you intend to apply.
Project level co-investors	Detail the advantages and outcomes expected.
Projects Beneficiaries	Detail here the eligible beneficiaries (who can benefit from the financial instrument). If already available, give a first estimate of the volume of beneficiaries you intend to cover in your investment program.
Eligible projects	Detail here the eligible projects that will be covered by your investment program. If already available, give a first estimate of the volume of projects you want to cover in

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	your investment program (e.g. number of projects, number of buildings, number of square meters and volume of investment per project/buildings/square meters).
Final Recipients	Detail here the eligible final recipients (who can be financed by the financial instrument). If already available, give a first estimate of the volume of beneficiaries you intend to cover in your investment program.
Expected number of Final Recipients	If already available, give a first estimate of the expected number of final recipients you intend to cover in your investment program.
Expected amount available to the Final Recipients	If already available, give a first estimate of the expected amount of finance available to final recipients you intend to cover in your investment program.
Citizen Funding leverage	Detail here how your Financing Instrument/Investment Platform will leverage citizen funding. If already available, give a first estimate of the expected amount of finance to be leveraged through citizen funding.

1.7. Actions to undertake by CitizEE Pilot Countries/Regions

In addition to the above listed steps, the CitizEE project foresees that CitizEE Pilot Regions review the actions listed below serving as an operative plan that incorporates the technical, financial and operative aspects to set-up and operate the Investment Platforms and CFs4EE Financing Scheme. The CitizEE Pilot Regions are free to complete the action list if required.

N°	Action	Results and comments
1.	Identify and organize consultation(s) with National or regional Managing Authorities (MAs) in charge of ESIF funds (especially European Regional Development Fund and Cohesion Fund). • Validate if they have planned FIs in the next 2021-2027 ESIF framework Operational Program (OP). • Validate if ESIF co-financing through IPs is part of the National or Regional Operational Program and for which appropriate fund (ERDF or Cohesion Fund). • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Provide details on the results
2.	Identify and organize consultation(s) with NPBIs in charge of EFSI funds. • Validate if IPs are part of their focus.	Provide details on the results

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N°	Action	Results and comments
	• Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	
3.	Identify and organize consultation(s) with National or Regional government departments in charge of EU Funds (national co-financing): • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Provide details on the results
4.	Review Stakeholders Working Group List (SWG) in order to further identify potential co-investors willing to address IPs.	Provide details on the results
5.	Identify and organize consultation(s) with key identified potential co-investors: • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Provide details on the results
6.	Organize consultation with EIB/EIAH: • Validate conditions & procedures for advisory support from EIAH. • Get commitment within the Stakeholders Working Group (SWG).	Provide details on the results
7.		

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2. CFS4EE FINANCING SCHEME EVALUATION- VEB (BELGIUM)

2.1. The market to address

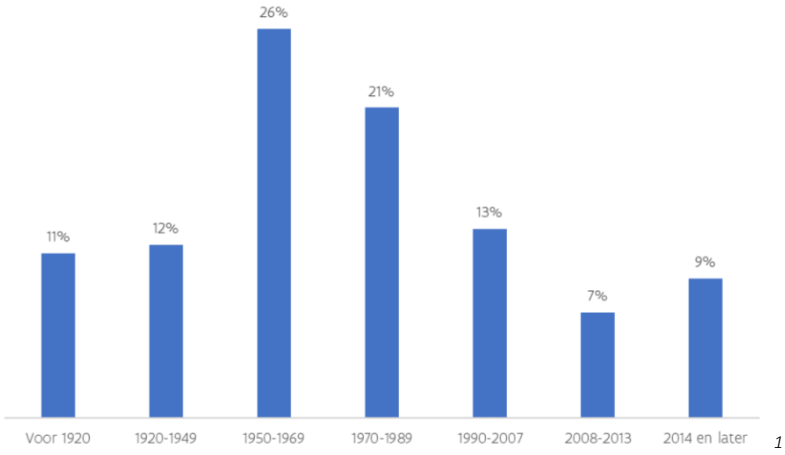
Market to address

Eligible building categories

The investment scheme will focus on school buildings. In total there are approximately 17.995 school buildings in Flanders. There is no exclusion regarding type of school buildings (in grades, education type, funding,…). Regarding ownership, there are different situations (but all are included in the scope):

- 100% subsidized school buildings Flemish level (Financed by GO!) 'Gemeenschapsonderwijs' (25.34% of students)
- <100% subsidized school buildings local authorities' level (co-financing AGION) 'Officieel Gesubsidieerd Onderwijs (15.26% of students)
- <100% subsidized school buildings (co-financing AGION) 'Vrij Gesubsidieerd Onderwijs' (59.40% of students)

Half of the educational buildings in Flanders are 50 years or older:



[1]

The size of our CitizEE proposal in terms of buildings can be summarized as follows:

	2022	2023	2024	2025	Total
Amount of buildings	75	100	125	125	425
Amount of Tenders	6	8	10	10	35
Size / site to renovate (in 1000 m²)	150	200	250	250	850

Eligible projects

The scheme will primarily focus on 'Comprehensive Energy Refurbishment' and NZEB Energy Refurbishment in line with the Flemish long-term renovation and climate strategy. It includes integrated energy conservation measures on the building envelope and the technical building systems in order to achieve very high energy performance levels. However, depending on the real estate strategy of the building stock, various levels of 'intensity' in renovations can occur. In some cases, when the building is labelled to be demolished after e.g. 10 years, only limited measures of energy refurbishment will be implemented. The aim is to define the right level of ambition

[1] Source: Conceptnota Masterplan Scholenbouw 2.0, July 2020.

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and a right level of clustering in order to deploy cost-effective investments. Within a cluster to be procured, different levels of ambition can occur.

The following scheme gives an estimate of the possible investment. The scheme will start with several pilots in 2021 to scale up in the following years. However, the estimations are strongly dependent on political approval.

Duration	**2021-2025**
number of projects	35
number of buildings	425
number of square meters	850.000
investment per square meters	300
Total investment	255 million €

Project implementation model

The implementation model will be primarily the Energy Performance Contracting model. However, due to the objective to deconsolidate a part of the investment, we will distinguish 'pure EPC assets' from other energetic and non-energetic measures. Depending on each individual case, the latter will have the lion's share in terms of CAPEX.

Within a single EPC contract, the investment will be divided in the following categories:

- EPC, financed by the ESCO, e.g. relighting, PV and heating optimisation (mainly re-commissioning)
- EPC, financed by the school, e.g. ventilation, building envelope and insulation
- Non-energy efficiency measures, financed by the school

Schools can choose for an additional maintenance contract for the second and third category.

Eligible Beneficiaries and Final Recipients

The final beneficiaries and recipients of the scheme will be the schools, who will be financially responsible for most of the investment needs.

2.2. Market failures and financing gaps for the targeted market

High (perceived) risks

Performance & technical risks of the projects

In general, the exposure to performance and technical risks don't limit the access of financing for ESCO's. Recent developments in the Energy Efficiency sector in Belgium have shown the emergence of forfaiting loan facilities, whereby an ESCO refinances its debt by selling the future receivables from its EPC assets to a bank. In addition, the Flemish promotional bank (PMV) has a programme in which they invest in ESCO through equity.

Low creditworthiness of the Final Recipients

Most schools do not have difficulties accessing appropriate funding. Financing costs are considerably low. However, this does not mean they have the financial means to do so because of scarcity of resources to pay back and other priorities (more resources needed for personnel).

- A large majority of the school building are owned by a non-profit organization or a local authority (AGION), but still receive 50% or more of its resources from public accounts. In these schools investments are split between the owner (30 à 40%) and the subsidies (60 à 70%). However, the Flemish government offers a loan guarantee in case the school takes out a loan from a bank.
- The rest of the school buildings are publicly owned. Due to the high creditworthiness of public entities, the school can borrow at advantageous rates.

Lack of financing offering

There is currently no lack of financing on the market for Energy Efficiency projects in the public sector. Banks are gaining experience in these investments, resulting in a lowered risk perception. Both school building owners can

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receive a loan (preferably a Flemish soft loan, to be installed/increased via the CitizEE scheme) as the ESCO's. The part of 'pure subsidies' will be dependent on a political decision of the public budget and/or European sources.

In our experience with other projects, we see that the ESCO's are able to access quite cheap financing on the market. Recent procurement processes have led to a ESCO financing costs around 2%.

Limited access to (long-term) capital

Limited balance sheet/borrowing capacity

The Flemish government (and therefore, the subsidized entities such as the school building owners) is confronted with limited capacity to finance on-balance sheet due to limited internal funds (equity), budgetary priorities and the ESA regulation.

Firstly, the current structural resources cannot simply be used for energy-saving measures, given the urgency of comfort, safety and capacity problems in many school buildings that are being tackled with these resources. In order to cluster this into a strategy in which natural renovation moments are used to combine 'quick fixes' with in-depth measures, additional funding must be available.

Secondly, although the ESA rules concerning EPC have been slightly relaxed, in practice it appears that only the least risky measures, such as relighting, PV and control optimizations, can comply with these rules. If avoided operational or maintenance costs are included in the calculation of the saved energy costs, the investments are included in the client's balance sheet. The cost savings deriving from the investment should be equal or more than the total ESCO-remuneration. Consequently, in-depth measures cannot be reported off-balance due to their high payback times. In fact, the 'bankability' is not the major issue, but the difficult business case of in-depth renovations.

Limited access to commercial finance

There is no limited access to finance on commercial debt for solid EPC project in Flanders with a contract duration below or equal to 20 years. Even though the 20 years' duration is an assumption as no examples of this exist yet. Furthermore, some banks are only starting with financing EE, installing forfaiting mechanisms etc., so a lot will depend on pilot cases in the near future. Due to the increased demand and track record of EPC's, we expect a further elaboration of financial possibilities offered by commercial banks.

In the envisaged scheme, the ESCO financing would only be subject to lowest risk part of the investment (this is a logic result of the deconsolidation criteria to be applied). Therefore, we proactively prevent this barrier.

High transaction costs

The project development within the procurement phase ('facilitators') has a perceived high cost for the building owner. Cost drivers are external studies (such as condition surveys NEN2767) and time intensive processes (many workshops, meetings, back-and-forward communication on the tendering documents, legal reviews, M&V planning, …). The tendering processes are more extensive and have a perceived higher up-front cost, while they are often more advantageous when compared to the fragmented tendering costs in the separate based contracting model. The biggest difference is the fact that a combination of measures will be procured at once, including a performance guarantee, that should be monitored over the contract duration.

Depending on the need to combine output- and input oriented segments in the tender (linked to the issue of deconsolidation and dividing the investments into EPC and NON-EPC assets plus non-energetic measures), costs will be even higher than nowadays. This can result in a negative perception and severe barrier. The individual building owners will not have the financial means to cover their higher up-front transaction costs.

A trade-off exists between higher up-front costs in the facilitation phase (condition surveys and detailed audits) and higher risk compensation from the ECSO's side. If the ESCO has not sufficient information to develop its offer: they will build upon assumption and calculate a risk-margin. Or they can invest profoundly in detailed calculations but will also want to cover these costs in the few cases they actually get awarded. If every ESCO has to do this separately, the transaction costs in general will be higher. In any case: the building owner pays. The facilitator should be thoughtful of these elements to procure in a most cost-efficient way.

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Within the actual tendering phase, the bidding ESCOs/ESCoops, are also facing high pre-investment development and transaction costs partially due to the small size of projects, lack of standardization and long and expensive sales cycle. This barrier prevents ESCOs/ESCoops from investing their own resources in projects, which in turn lowers the capacity of banks to invest in these projects. Furthermore, also ESCoops do not exist at this moment (ESCO's integrating direct citizen cooperation or engaging in a consortium with e.g. REScoops). Quite some 'investment' should be made towards establishing cooperation agreements on accountability, governance, etc. to practically organize the citizen participation-side.

The global transaction costs remain an issue in the sector.

Building up a pipeline of projects over the next four years is needed to give ESCOs the investment security they need to scale up.

Limited financial viability

High upfront costs affecting the profitability

Yes, high up-front costs affect the profitability. The business case itself is the biggest risk. The high up-front costs derive from following elements:

- In-depth renovations to NZEB levels require very high upfront costs (by average 300 €/ sq. meter and this results in a very long or sometimes non-existing payback time.)
- The savings pay off less in school buildings, because they are not used optimal (not in weekends, holidays, …). This gives a low auto consumption for PV.
- The cost savings from the kWh reduction are not sufficient because the energy prices are very low. Furthermore, the taxes weigh more heavily on electricity and not on natural gas, which does not create an incentive for electrification (enabling 100 % RES). A price on CO2 emissions would be helpful.
- PV installation ranging between 10-40 kWp are not supported due to recent policy decisions, undermining the business case for schools even further. No progress is being made on energy communities to further balance demand and control.
- The difficult business case and payback times + 20 years makes public funding inevitable. Nowadays, there is structural underfinancing with a ratio 1:7 (calculated by Gemeenschapsonderwijs).
- The non-adapted grant schemes, supporting profitable EE measures: makes the cash flow for school directories unequal when comparing grant scheme >< EPC : the two should be combined. The scheme should be an integrated model, making use of the available public funds, increasing a tranche with soft loans and invest privately in the most profitable part of the investment (to be deconsolidated).

Background:

Previously, EPC contracts targeted 20-28% of energy savings. It depended on the 'cost-neutral equilibrium'. Building owners were attracted to the model under the promise that they did not have to invest themselves, and that they would receive a renovated and maintained building in a cost-neutral way. In fact, this was never really realistic in the first place: high maintenance costs were not taking into account and only a 'simplistic' narrative of investment in energy saving measures versus lowered energy bills sold the deals. We want to change this narrative and say clearly: "Yes, you'll have to invest. Reaching the energy targets is an investment and qualitative maintenance is more expensive then what you're used to. It's about cost efficiency instead of cost neutrality."

The upfront costs are calculated with the view of the 2050 energy targets. The maintenance costs are viewed in line with the creation of residual value. These long-term perspectives create higher upfront investments for now, but in the end also a higher cost efficiency of realizing climate goals, as e.g. less lock-in effects have happened. When it comes to investing in energy efficiency, this has not been a priority at all for the education sector. The only way for some measures to happen was subsidized. However, it turns out that also the grant schemes have a short-term perspective (not distinguishing low hanging fruit versus in-depth measures for 2050 targets preventing lock-in's). Combined with a structural underfunding (and high debt level of the country), this results in a 'muddling-through' scenario instead of implementing a proper real estate strategy.

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Every analysis confirms: if we do not foresee additional financing solutions, we won't reach the climate targets in our educational buildings.

Tenor not suited to long payback periods of projects

This is a major issue. Especially as we aim to tackle deep refurbishment/NZEB: we estimate that less than half of the investment will be paid back by the cost savings during the contract duration (currently estimated at 20 years).

The long (or non-existent-) payback times cause the greatest risk to access financing when renovating in-depth. The NZEB building levels envisaged in this project have a payback time of 50 year or longer. This is not bankable.

The scheme envisaged will therefore need to look a combination of financing sources: ESCO financing for the 'profitable' part of the investment, a long-term soft loan (or similar) for the other energy measures (to be paid back over 20 years, instead of (current mechanism of 15 years) and subsidies for the non-energetic measures (obviously they do not have to be paid back).

The building owners suffer from a significant lack of funding and use the scarce resources therefore only for the most urgent needs (co2-reduction is therefore not the focus, but safety, comfort, accessibility, … are).

High financing costs affecting the profitability

This is not/less an issue.

The financing costs are mainly driven by the credit worthiness/risk assessment of the two contractors: the building owner and the ESCO. The ESCO because its performance is subject to 100% of the technical risks. Depending on contract to contract the financial risk is taken by the ESCO or the building owner. In our sector, the latter is always a public entity -> resulting in lower financial costs. The standard EPC contract is known by several financial institutions, so banks tend to make an effort in financing them (at least that's what they say…).

Some general conclusions:

- Public building owners will always have cheaper financing then private ESCO's. Therefore, we stimulate public financing as far as possible. Only the part of the investment that can be deconsolidated is worthwhile to finance privately.
- The ESCO's do not have to take the assets on their balance sheet and can adopt a forfeiting scheme. This is slightly more expensive than a normal loan. Banks could not give us the concrete factoring price list.
- The financing costs for a normal loan to ESCO's with a standard EPC contract (no SPV project financing) are quite low already (+- 2%).

Lack of commercial finance/liquidity

No, not at all. When you have a proper EPC contract, commercial finance in terms of loans is available. There is a lack of proper projects, not of financing.

Regarding Equity, An example can be found with the ESCO instrument of PMV: it is direct product to finance ESCO's, but to date, only a small portion is used.

Gap analysis conclusion

Gap due to high (perceived) risks

There is no financing gap, as ESCO's can access commercial financing when having proper EPC contracts awarded.

Gap due to limited access to (long-term) capital

We estimate that there is no limited access for the ESCO to obtain financing. The ESCO can finance its part on 20 years (however, not a lot of examples exist…), as it will be always a small part (less than 33% and even only 10 % by average) of the total investment in the current estimations.

There is a gap for schools: There should be a soft loan for 20 years on public financing conditions (close to zero financing cost). This should be via direct on-lending.

This in combination with re-directed grants should eliminate the gap.

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Viability gap
The Viability gap exists on the public funding side: the high upfront investment, limited loan possibilities plus no adapted grant schemes prevents the right investment from happening. Concretely, we estimate an average renovation cost of 300€/ sq. meter to reach K-peil 40: which is the rate of insulation enabling electrification (via heat pumps). Based on data from our Flemish certificate system, the education building stock of will need between 14-18.5 billion € to become climate neutral. 2.5-4.5 billion will be needed for renovation and 11.5-14 billion will be new buildings. Current resources (for both capex and opex expenditures) add up to 230 million euro annually (as mentioned above, privately owned schools will always take on complementary guaranteed loans: estimated value of 128 million €). Gemeenschapsonderwijs (GO!) calculated that they need yearly 350 million euro to renovate the building stock to the 2050-targets, with the first 5 years an increase to 415 million €/year to get started with the worst performing buildings. (One thing that is not taken into account in the above analysis is the entire discussion on new DFBM-constructions, which perhaps could expect an additional public investment. We will analyse whether the in-depth EPC of the CitizEE project could be a performance based DBFM, an in that sense access more funding). Also, the capex means can obviously not be solely invested in energy retrofits. More tangible and urgent investment in terms of accessibility (wheel chairs), safety and comfort are higher prioritized.

2.3. Financing Instruments depending on the gaps to be addressed

2.3.1. Suitable level of financing support depending on the gaps to be addressed

Level of support to cover the existing gaps
Risks
The financial instrument should not help to overcome a risk for ESCO's to access financing as the risk perception will be quite low. This is due to the fact that the ESCO-part of the investment will be the least 'risky' (e.g. the most certain business case). The ESCO does receive the responsibility to maintain the energy performance, therefore the financial institutions will normally trust the realization of the services to be performed by the ESCO.
Finance
Yes: in terms of loans to the school directories. We calculated a first investment program with a size of 255 million €. A volume of 102 million € should be provided via a soft loan (based on the current energy loan) but elaborated in terms of payback time and size. Nowadays only 500.000 € can be borrowed on a 15 years' time frame. This will clearly not be sufficient. (good news: there is willingness to adapt this scheme to fit in the CitizEE model).
Debt Service
The debt burden of the Belgian state should be reduced by a smaller impact on the public account, whereas investing more (via deconsolidated ESCO financing). Concretely, within the 255 million € proposal: 51 million € should become deconsolidated. We always aim at an average of 20% of the investment to be deconsolidated. This will however depend on project to project and mainly be based on the profitability of the energy saving measures. This is a remarkable new element in our public investment history to procure a partly deconsolidated investment. This is subject to many conversations with INR, the statistical office within our National Bank in charge of Eurostat reporting and interpretation of investments. The debt burden from the ESCo could be (partly removed) via existing forfaiting facilities offered by banks.
Asset
Yes: in terms of Grants to the school directories. We calculated a first investment program with a size of 255 million €., 102 million € should come from grants. These are partly reallocated grants, and partly new grants (mainly in the context of GO!). The political discussions are on-going and will decide to what extent this ambition is realistic.

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Grants will also be needed to cover the up-front technical assistance costs to develop and procure the projects. Grants will furthermore be needed to compensate the least profitable tranches of the investment (often, there is no payback effect at all).

2.3.2. Suitable financing products depending on the gaps to be addressed

Level of support to cover the existing gaps
Guarantees
We discussed this with PMV, but there is no need for additional guarantees when the soft loan ('Energielening') can be elaborated. This will always be cheaper than EIB or Flemish guaranteed loans.
Loans
Yes, a long-term soft loan (elaborated by Energielening) on 20 years. In total, we envisage 102 million euro for the coming 4 years. The loan will be between the Flemish government and the School Directorate.
Quasi-equity
No, an alternative exists already within the PMV ESCO Financing instrument.
Equity
No, as above, ESCO's can be supported via PMV.
Interest rate or guarantee fees subsidies
When we are able to realise the elaborated 'Energielening', no interest fees subsidies will be necessary. When it turns out that this elaboration will not be possible: it could be an interesting instrument to support the loan tranche.
Grants
Yes, we estimate the need of 204 million euro consolidated public financing, of which 102 million comes from grants (mainly via re-allocating existing grants and subsidy schemes) and 102 million comes from the elaborated energy loan (Energielening, proposal for soft loan). We would like to investigate the possibilities of ERDF- support for the additional grant element regarding the upfront investment and for the technical assistance needs to procure the in-depth EPC's (see table below: 5.13 million €).

This is the general picture:

year	2022	2023	2024	2025	TOTAL
Amount of buildings	75	100	125	125	425
Amount of Tenders	6	8	10	10	35
TA costs	€ 937.500	€ 1.250.000	€ 1.562.500	€ 1.562.500	€5.312.500
EUR-investment (*)	**45**	**60**	**75**	**75**	**255**
Private financing (*) (deconsolidated)	**9**	**12**	**15**	**15**	**51**
ESCO	6	8	10	10	34
Citizen participation	3	4	5	5	17
Public financing (*) (consolidated)	**36**	**8**	**60**	**60**	**204**
Energy loan-Elaborated	18	24	30	30	102
Grants	18	24	30	30	102

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(*) in million €

2.3.3. Suitable financing distribution channel to answer the needs of the final recipients depending on the gaps to be addressed

Financing distribution channel: Key success factors & SWOT analysis		
Comparative analysis	**Fund structure as distribution channel**	**Financial intermediary as distribution channel**
Market coverage capacity	We currently believe that there will be no need of a separate legal entity to be established. The increased funding (grants) would be channelled to the education umbrella organizations (cfr. AGION, Gemeenschapsonderwijs). For AGION in the end the final beneficiaries are the individual school buildings. As GO! Owns their own part of the building stock, the resources will remain there.	N.a.
Crowd in capacity	As these are the legal existing channels, there would be sufficient capacity to 'crowd-in'.	N.a.
Ease/speed of implementation	This depends on the political decision making. Minister Weyts will have to decide whether the elaboration of the Energy Loan and reallocation of existing funding is allowed. Afterwards, it will depend on the availability of resources: from the Flemish budget and from the European side (perhaps as part of the green deal / recovery plans). To date, no information could be given on the use of ERDF.	N.a.
Scalability	HIGH. The aim is to test and validate a model that could also be used in other sectors, e.g. health care.	N.a.
SWOT analysis	**Funds structure as distribution channel**	**Financial intermediary as distribution channel**
Strengths	N.a.	N.a.
Opportunities	N.a.	N.a.
Weaknesses	N.a.	N.a.
Threats	N.a.	N.a.

Financing distribution channel: conclusion and choice

The financing model envisages 3 main components:

- A targeted credit line (on-lending) from the Flemish budget in the format of an elaborated energy loan with a capacity of 0% interest rate loans on 20 years with a ceiling of e.g. 3.5 million €/clustered tender (appr. 12 school buildings). 102 million € in total, over 4 years and 35 tenders.

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Reason behind: this is the part of investment with a payback effect (insulation, joinery, …) but without the possibility of deconsolidating. Therefore: this financing should be public (it will be on-balance anyway) and as cheap as possible.

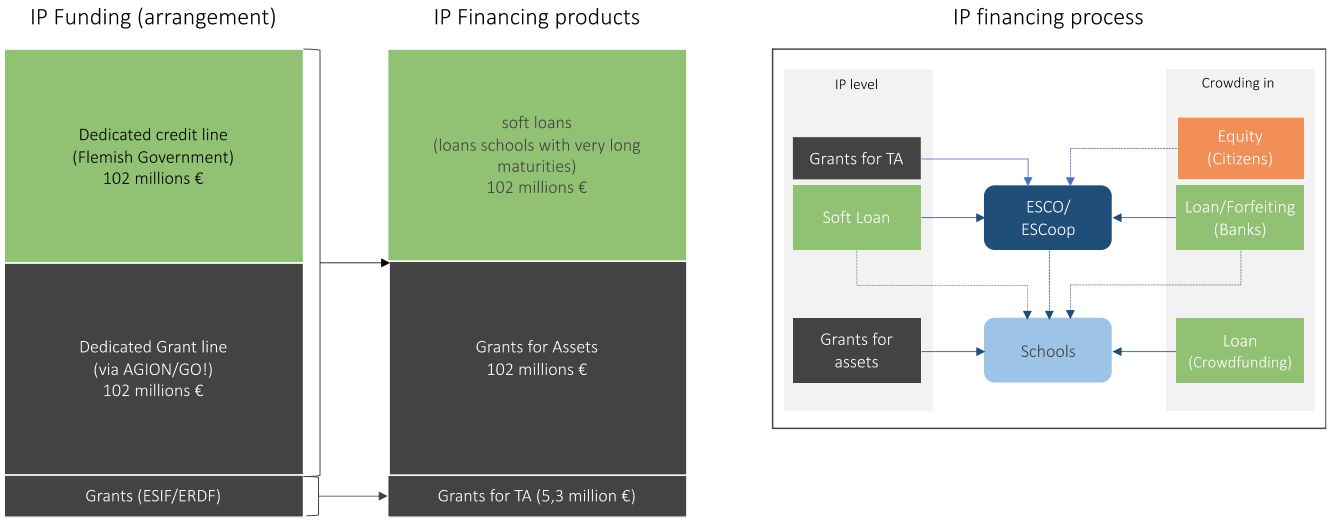
- A grant component consisting of re-allocation of existing grants and adding additional grants (depending on political negotiations). 102 million € in total, over 4 years and 35 tenders.
  Reason behind: a big part of the investment will have no payback effect 20 years, so no business case at all. Therefore, the only way of combining the efforts (tendering costs) is via including the non-energetic measures in a subsidized manner.
- A privately financed and deconsolidated ESCO-tranche. 51 million € in total, over 4 years and 35 tenders.
  Reason behind: this part of the investment is profitable and the deconsolidation rules can be applied. Therefore, more expensive financing (and profit margin for the ESCO's) is justifiable.

2.4. Investment Platform option

Description of the Financing Instrument/Investment Platform

Choice of the Structured Financial Solution

None of the eight model matches our approach: embedding a financial solution for financing in-depth EPC's via a combination of reallocated grants, elaborated soft loan and deconsolidated EPC financing incl. citizen participation. Specific model adopted, without intervention of EFSI (see description below).



Addressable financing gaps

Addressing the viability gap:

- Because of the high upfront investment needs for NZEB renovations plus the fact that other priorities (without energy / cost savings) need to be tackled simultaneously: require a substantial (40%) grants component. This can be partly via additional grants and partly via re-allocation of existing grants.
- The existing soft loan mechanism is not sufficient in terms of lending capacity and repayment period.

Addressing the financing gap:

- Because of the Belgian debt ratio: investments should have the least possible impact on the public balance sheet in order to pass political approval. Therefore, the model solution seeks off-balance third party financing by the ESCO.
- A big threshold remains in the phase of facilitating/tendering the projects when individual school owners should pay the entire amount. TA grant support would be needed in order to not jeopardize the take off of this model.

Type of financing products to be offered to the Final Recipients

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Final recipients are mainly the school directorates ('Inrichtende Machten'). They will receive a grant element and a soft loan. VEB, acting as market facilitator, could channel the grant for technical assistance (facilitation/tendering costs) towards private EPC facilitators.

Structure of the Financial Instrument

Access to combination of financing sources because of integrated financing solution. The technical assistance for the standardized tenders is a very important element of the solution.

The financing model envisages 3 main components:

- A targeted credit line from the Flemish budget in the format of an elaborated energy loan with a capacity of 0% interest rate loans on 20 years with a ceiling of 3.5 million €/clustered tender (appr. 12 school buildings). 102 million € in total, over 4 years and 35 tenders.
  Reason behind: this is the part of investment with a payback effect (insulation, joinery, …) but without the possibility of deconsolidating. Therefore: this financing should be public (it will be on-balance anyway) and as cheap as possible.
- A grant component consisting of re-allocation of existing grants and adding additional grants (depending on political negotiations). 102 million € in total, over 4 years and 35 tenders.
  Reason behind: a big part of the investment will have no payback effect 20 years, so no business case at all. Therefore, the only way of combining the efforts (tendering costs) is via including the non-energetic measures in a subsidized manner.
- A privately financed and deconsolidated ESCO-tranche. 51 million € in total, over 4 years and 35 tenders.
  Reason behind: this part of the investment is profitable and the deconsolidation rules can be applied. Therefore, more expensive financing (and profit margin for the ESCO's) is justifiable.

Aims of the Financial Instrument

Investment platform aims to further develop EPC market and to promote deep refurbishment of schools financed partially off-balance of public accounts.

Advantages/outcomes expected

35 tenders for 425 buildings in total for the first 4 years. Resulting in € 255 mio of investment of which 204 € mio will be on balance sheet and 51 € mio will be off balance sheet (ESCO +citizen participation). We are aiming at starting in the first year with a small amount of well-thought pilots, in order to roll-out the model in the education sector the years after. The aim is furthermore to translate the added values of this model towards other sectors in the Flemish public building stock (culture, health care, sport facilities,…).

Platform sponsors

The Flemish Government, initiated by the cabinet of Minister Weyts: 102 € mio of energy loan and 102 € mio of grants. The latter should be mainly a re-allocation of existing subsidies for AGION. GO! Needs pure additional funding, but this will be very hard to achieve. Therefore, European funding (e.g. ERDF) will be needed, both for the Assets as for the TA. The Flemish managing Authority for ESIF (VLAIO) has been requested to become platform sponsor, however, no formal agreement has been given as the negotiations on the OP's are on-going.

Platform manager

We intend to work with the existing structures:

- GO! Is owner of its building stock and will be final beneficiary. Agion channels the public resources towards the subsidized education buildings and will therefore also play a pivotal role.
- VEB wants to support on the technical side, using existing and new framework agreements to cooperate with private sector actors.

The Flemish government will however overarching decide on which resources will go to which end-beneficiaries. Respectively AGION and GO! Will be the main decision makers.

Platform co-investors

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Co-investors at the platform level are the Flemish government with two lines of funding (dedicated credit line, existing Agion subsidy line, GO! Subsidy and potential additional subsidies) and the Flemish ESIF Managing Authority (VLAIO) with one line of funding (TA Grants).

Program Authority

Cabinet of Minister Weyts.

Program Delivery Unit

1. Starting Phase

There are some differences between the delivery process for AGION and for GO!, especially in the early stages. GO! Decides on its own buildings, so there will be a direct decision taken from their board. AGION has a long-term waiting list (of 13 years and longer) for in-depth works extension of capacity in schools. A year before a building owner is finally in the position to receive a grant (60-70% of the CAPEX) they receive an invitation to update their dossier. In our CitizEE proposal: that is the moment in time to suggest applying the CitizEE model. This phase ends with a signed cooperation agreement between the building owner and the PDU.

2. Procurement Strategy

In the actual first phase (both GO! And AGION) the Program Delivery Unit (here after PDU) defines a 'Masterplan-Light'; which includes: real estate strategy, envisage ambition (linked to real estate choices: how long will the building still exist), the right scale (cluster size or individual), the expectations in terms of main components (energy savings, additional measures, water savings, maintenance and comfort levels). We will work output oriented as far as possible and in general for all performances that will be monitored in a guarantee phase: energy, water, residual value. Some elements will be input driven, but these are the non-energetic elements (purely structural works / aesthetic works at the building, or playground).

This phase ends with a determined scope of the project (minimum energy savings, minimum CO2-savings, obliged measures to be implemented (due to rules/norms), comfort and maintenance SLA's). Besides a first estimation of TCO – Total Cost of Ownership will be done.

3. Detailed tender preparation

PDU will define the output specifications, baseline, M&V-plan, detailed description of SLA's, … . detailed audits (e.g. NEN2767) will be executed, as well as detailed audits for the non-energetic measures (as there will be no performance guarantees, it creates less transaction costs as these preparations are done at once and send out in the awarding phase to all potential ESCO's).

This phase ends with a detailed preparation of selection and awarding guides, approved by AGION/GO!.

4. Tender procedure

Two-step procedure with negotiation. Awarding will be subject to approval GO!/AGION.

5. Follow-up phase

Both in the implementation and the guarantee phase, the PDU will provide technical assistance to follow-up the contractual agreements. TERRA should enable dynamic M&V follow-up and re-baselining / including non-routine corrections when needed. The cost of this TA should be kept at a minimum, thanks to installed software.

The PDU will be coordinated by VEB, but will make use of existing and new framework contracts for study and facilitation assignments.

VEB has already framework contracts such as:

- Energy audits and condition surveys
- 'SUW' (Studie, uitvoering en Werfopvolging'): study work, implementation follow-up.
- EPC facilitation

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Project level co-investors

When a project is procured: the co-investment of the ESCO will become part of the awarding phase. The more the ESCO can realize in a deconsolidated way: the more points he wins for that criterium. Actually, the ESCO will focus on the highest returns in energy savings with the least maintenance costs in that category. In the other categories: the ESCO will still receive as much flexibility as possible to make its offer as cost efficient (evaluated on TCO) as possible. Only a small part will be obliged, with maximum investments.

ESCO financing will in the end only result in 10% of the investment by average and will need to include direct citizen participation. The latter will be an awarding criteria. The way how ESCO's realise it, will be up to them. We expect consortia between traditional ESCO's and RESCoops (Renewable Energy Source cooperatives), because these structures exist. In fact, 17 REScoops in Flanders alone represent 75.000 of citizen -shareholders. No need, in other words, to reinvent the wheel.

Projects Beneficiaries

We would like to start asap the first pilots for tenders in order to convince more schools to enter the programme. This should be one pilot at least for GO! (to be decided in their board very soon) and one case of the waiting list of AGION. However, no decisions are being made yet. In total we want to tender 35 EPC dossiers, which will be clusters of school building (425 in total) . discussions are on-going.

Eligible projects

	2022	2023	2024	2025	Total
Amount of buildings	75	100	125	125	425
Amount of Tenders	6	8	10	10	35
Size / site to renovate (in 1000 m²)	150	200	250	250	850

Final Recipients

We want to renovate 424 buildings in 4 years: starting slowly with pilots and then increasing the scale-up. These buildings will be from various owners:

- AGION -> Privately owned buildings and buildings from local and provincial authorities-> depending on the waiting list dossiers
- GO! -> publicly owned buildings

Expected number of Final Recipients

See above.

Expected amount available to the Final Recipients

255 million €

Citizen Funding leverage

We aim at 50 % citizen participation from the ESCO-financing tranche of the investment. This will be probably for the part of PV and sometimes relighting. It will be leveraged by making it an important awarding criteria.

It is absolutely important for our CitizEE model to succeed to build capacities and networks within/between ESCO's and RESCoops. This will start in September 2020 via workshops. Besides, also smaller scale EPC's with citizen participation in local authorities will be tested in order to have a learning curve for our CitizEE model.

2.5. Actions to undertake by CitizEE Pilot Countries/Regions

N°	Action	Results and comments
1.	Identify and organize consultation(s) with National or regional Managing Authorities (MAs) in charge	The first meeting with the Managing Authority (VLAIO) took place but no concrete engagements could be given: political

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N°	Action	Results and comments
	of ESIF funds (especially European Regional Development Fund and Cohesion Fund). • Validate if they have planned FIs in the next 2021-2027 ESIF framework Operational Program (OP). • Validate if ESIF co-financing through IPs is part of the National or Regional Operational Program and for which appropriate fund (ERDF or Cohesion Fund). • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	negotiations are ongoing. We have followed-up twice and will continue to do so. It is certain that energy efficiency will be part of the OP, a sectoral focus on education buildings 'is an option', but participation in a fund was not likely to happen. There is more experience/willingness to organize project calls. The CitizEE programme is being presented and discussed several times with all defined important stakeholders (mainly AGION, GO!, PMV, INR). The first reports are being shared with the Flemish Energy Agency (VEA), the Department for environment and the financial department. The different relevant cabinets (energy, finance and education) are aware of the CitizEE programme. However, no political decision could be made so far. In September, the budget for 2021 will be finalized, which is a next milestone. In the political document of Minister Weyts (Scholenbouw 2.0) the combined financing model for EPC as subject of the CitizEE programme is mentioned to be investigated. Conclusion: it's 'on the radar' but not yet decided.
2.	Identify and organize consultation(s) with NPBIs in charge of EFSI funds. • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Many meetings took place with PMV, who is also very much aware of InvestEU and its guarantee procedures. However, as it turned out there is currently no financial barrier to be overcome in the first years for the limited investment programme of 255 million. As explained in the viability gap: this is only 7% of the renovation needs. When the Energy Loan could be elaborated & the existing grants could increase/be re-allocated: the financial hurdle is currently met for the starting phase. On-lending would always be cheaper financing than the solutions PMV/EIB could bring. The ESCO's are quite confident to access sufficient capital at commercial rates. We agreed with PMV that we would cooperate on capacity building for ESCOs to support them in their financial challenges. This because there is a win-win to learn: PMV wants to learn which financial obstacles ESCO's are facing, especially starting ESCO's. These starting ESCO's do not have financing in their core of expertise, and do not know which formulas to attract. VEB has quite some contacts on both the financial as the ESCO side and wants to bring them together in an event (or webinar, corona-proof). PMV will be a presenter and active listener to follow-up with the individual ESCO's. In a parallel effort: the networks should be brought together for the citizen participation side.
3.	Identify and organize consultation(s) with National or Regional government departments in charge of EU Funds (national co-financing): • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	This is planned for September 2020.

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N°	Action	Results and comments
4.	Review Stakeholders Working Group List (SWG) in order to further identify potential co-investors willing to address IPs.	No entirely new Stakeholders were added to the list, but the focus slightly changed. The main stakeholders AGION and GO! Should be in the drivers' seat for political discussions (planned Sept). Whereas in the first phase we took a lot of ownership to get things started, it is clear that now AGION and GO! Should take over that position. We will continue to support on a technical, legal and executive level.
5.	Identify and organize consultation(s) with key identified potential co-investors: • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	N.a.
6.	Organize consultation with EIB/EIAH: • Validate conditions & procedures for advisory support from EIAH. • Get commitment within the Stakeholders Working Group (SWG).	N.a. yet.

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3. CFS4EE FINANCING SCHEME EVALUATION – GOPARITY (PORTUGAL)

3.1. Market to address

Market to address

Eligible building categories

Main target category will be non-residential buildings.

- Public buildings
- Social buildings (IPSS)
- Commercial buildings (SMEs).

Complementary category on residential buildings

- Condominiums
- Social housing

Public buildings with main focus on municipalities will be a priority. Social solidarity entities and SMEs will also be core, as they have been lagging behind in terms of access to finance to implement EE measures. Complementary on the public buildings but residential is social housing. On the residential private sector, condominiums will be complementary. On the condominiums side to explore mitigations measures for them to access finance; also, to accompany the recently launched new model of energy communities where we believe condominiums will play a relevant part (waiting for the first projects to come out to the market as the legislation is very recent).

Data on the number of service buildings in Portugal is very scarce. The energy certification database, which covers only a part of the total of existing buildings, at the date of July 2018, it had registered 109,792 certificates referring to service buildings. Of these, 6,738 corresponded to large service buildings (over 500 sqm) and 103,054 to small buildings (of which 98,649 without air conditioning systems). The energy performance for large service buildings shows that only 7% of certified buildings are very efficient (A+ or A class). When comparing the energy performance of public and private non-residential buildings, it is the public sector that presents the worst performance, accounting for about 57% of the park with an energy class equal to or less than class C, against 38% of the private sector.

According to the national strategy for building refurbishment (ELPRE), nowadays in public discussion, for the non-residential sector, public typologies were defined as priority, which are understood to be those with the worst energy performance, but also those with direct contact with more vulnerable populations: Education, Health, Sports and Other Administration services. This means that the estimated percentage of the park to be renewed in these segments should be 50% by 2030, 75% by 2040 and 100% in 2050, corresponding to a very demanding annual renewal rate of 5% in the first decade and 2.5% in the rest.

Also, according to the ELPRE, with regard to the investment required by 2050 to implement the improvement measures packages that operate in terms of the energy efficiency of existing buildings, a total of 33,414 M € will be needed for the non-residential building stock. Considering the savings in energy purchases, it is estimated that, after 30 years, there is a financial return on investment of 108,547 M € in non-residential buildings.

	2030	2040	2050	Total [M€2020]
Residencial [M€2020]	26.760	42.441	40.877	110.078
Non-Residencial [M€2020]	18.500	13.968	945	33.414
Total [M€2020]	45.261	56.409	41.822	143.492

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Citizee is collaborating with BundleUP, an H2020 supported program that works as a technical assistance mechanism to bring investment ready energy efficiency projects in Portugal, mainly focused on municipalities. BundleUP has the experience and the capability to support a pipeline of projects for Citizee investment platform.

For the project, indicative serviceable available market volume for Public and Social buildings totalizes more than 300M€ in investment. This preliminary estimate is based on a pipeline sample of 17 projects of BundleUP and extrapolated for the rest of the country (indicative 1800 buildings based on average area of 700 sqm, representing 1.300.000 square meters based on average investment of 254€ per sqm; to validate and fine tune ahead with more detailed information).

Eligible projects

Indicative eligible projects targeting at least a 20% reduction in energy consumption and focused on Single Energy measures. Complementary, to explore also Light and Comprehensive Energy Refurbishment projects. Examples, not exhaustive:

- RES power and thermal energy generation
- Indoor Lighting LED
- Public lighting system optimization
- AVAC
- Improvements to heat sources and distribution systems
- Thermal insulation
- Other energy end-use applications including energy management control systems, power factor correction measures, air compressors and fuel switching

For the project, indicative serviceable available market volume for Public and Social buildings totalizes more than 300M€. This preliminary estimate is based on a pipeline sample of 17 projects of BundleUP and extrapolated for the rest of the country (indicative 1800 buildings based on average area of 700 sqm, representing 1.300.000 square meters based on average investment of 254€ per sqm; to validate and fine tune ahead with more detailed information.

Project implementation model

To use different implementation models according to the type of projects and final beneficiaries/recipients. Focused on SBC but complementing with EPC and ESC models when applicable. Depending on the type of intervention, different mix of project implementation models might apply to the same beneficiary (ex. ESC/EPC model for the PV/lightning part; SBC for thermal insulation)

SBC – Public and private entities, namely municipalities, hospitals, universities, social institutions, SMEs, condominiums and others.

EPC and ESC – mainly through ESCO with final beneficiaries being public and private entities, namely municipalities, hospitals, universities, social institutions, SMEs, condominiums and others. PV and lightning systems are more probable to be implemented on this model.

Eligible Beneficiaries and Final Recipients

Eligible beneficiaries: Public and private entities, namely municipalities, hospitals, universities, social institutions, SMEs, condominiums and residents.

Eligible recipients: Public and private entities, namely municipalities, hospitals, universities, social institutions, SMEs, condominiums. The concept is that the mechanism will be only accessible to legal entities, notwithstanding a direct impact on residents as beneficiaries when referring to public entities as final recipients for social housing or condominiums for residential housing.

We intend to work with ESCOs and support ESCO financing in the form of loans or equity. We also intend to work with EPC/ESC financing when directly funding the final beneficiary (to clarify, ESCO financing when ESCO assumes the investment on EPC/ESC projects; EPC/ESC financing when the final beneficiary assumes the investment).

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3.2. Market failures and financing gaps for the targeted market

High (perceived) risks
Performance & technical risks of the projects
Yes, to some extent. Performance and technical perceived risks (or lack of knowledge in how to measure it in a consistent way) might be an issue in access to finance, especially when referring to retail banking and when we start entering in longer maturities. Also, on retail banking, lack of internal expertise for approach this kind of risk ultimately leads to pure risk analysis on the recipient balance sheet. Some external initiatives are being developed, namely insurance schemes, to help deleverage risk and give more certainty to future cash flows of these projects. One example in Portugal is the pilot project GoSafe, an insurance scheme mainly directed to SMEs projects.
Low creditworthiness of the Final Recipients
Yes. In the sense risk procedures in the banking system tightened after the last financial crisis and the sector is still on deleveraging mode, especially for SMEs (backbone of the Portuguese economy). Covid19 crisis will have an adverse effect, with general expected deterioration of the creditworthiness of the economy. So, we can see low creditworthiness of target final recipients on the SME side, mainly because of their balance sheet size and, as referred, difficulties of retail banking to look at lending on a mini project finance model. On the public side creditworthiness is not an issue, but limitations on debt ratios limit the capacity for new debt. For this reason, typically, public institutions will only invest alongside ESI funds.
Lack of financing offering
Yes, there's a lack of innovative and tailor-made funding solutions. Specific credit lines on retail banks for this area are limited, not because of higher perceived risk, but because it has not been a priority. Typically, energy efficiency savings are included in more general asset backed investment plans (ex. general refurbishment of a building for real estate promotion) or separate energy efficiency measures with short paybacks and mature and simple technical models (ex. lightning or PV for self-consumption) are funded through general banking funding lines and with a typical credit risk focus on the beneficiary. One relevant example is BPI Bank, which launched a couple of years ago a partnership with EIB for an energy efficiency credit line, still operating. The success/impact has been mixed, probably because of lack of visibility and in the end credit risk analysis on the beneficiary side. https://www.bancobpi.pt/en/corporate/financing/credit-lines/bpi/eib-energy-efficiency-line Other relevant line available at commercial banking is IFRRU, also cofounded by EIB, directed to overall rehabilitation of buildings aged 30 years or more and rehabilitation of abandoned industrial spaces or units. https://ifrru.ihru.pt/documents/20126/35997/Folheto_IFRRU2020_Ingles.pdf/e5ea5011-c22d-5cbe-11d5-1931596fa36e?t=1556286108745 Also, as identified on the ELPRE (national strategy for building refurbishment), there is already a set of active financing products in place to support the rehabilitation of buildings in Portugal, while promoting the adoption of energy efficiency measures. However, of this set of policies in force with a view to mobilizing investments for energy rehabilitation, some of them are defined with a short time horizon (until 2023) and limited funding. As such, it becomes necessary to establish a strategy for mobilizing public and private investments and access to a medium and long-term financing mechanism, guaranteeing the profitability of the measures and support mechanisms in order to achieve the objectives proposed in ELPRE. Some of the main actions on the new national strategy for building refurbishment are on this area, namely: • Creation of flexible financing platforms that allow beneficiaries to share risks and make better use of public funds

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• Creation of creative forms of financing through the incorporation of new concepts of financial innovation such as crowdfunding (collaborative financing) and blockchain.

Limited access to (long-term) capital

Limited balance sheet/borrowing capacity

Yes, to some extent. Although a relevant effort to financial deleverage at the public level has been done in the last couple years, debt is still high and Covid19 crisis will stop that trend. At the state central level indebtedness capacity is very low, but on the local state level (municipalities) its more diverse and when exists depends on the priorities of the local government and the political cycle. Although national KPIs are in place for energy efficiency measures on buildings, public sector lags way behind.

On the private sector, specifically SMEs, traditionally debt is the main source of funding, considering our capital markets is small and other sources of equity funding are scarce. So, with high debt to equity ratios, a limited balance sheet borrowing capacity exists in general. These kinds of projects should be viewed by retail banking as mini project finance projects, but we understand transaction costs might be high when talking of SMEs segment

There are some well-developed existing off-balance sheet financing options on the market for energy efficiency measures, but mainly focused on the traditional lightning and PV self-consumption areas, where shorter paybacks and higher IRRs are common, and with low risk counterparts.

Limited access to commercial finance

Yes. As referred, one relevant example is BPI Bank, which launched a couple of years ago a partnership with EIB for an energy efficiency credit line, still operating. Although maturities can go up to 20 years with competitive interest rates, the success has been mixed, probably because of lack of visibility and conservative credit risk analysis on the entity side.

https://www.bancobpi.pt/en/corporate/financing/credit-lines/bpi/eib-energy-efficiency-line

But in general, there's a lack of innovative and tailor made retail banking solutions for this area, and obviously a risk averse approach that limits seriously the access of the core bone of the economy: SMEs and other organizations.

High transaction costs

Yes, to some extent:

- Prepare: not relevant for single measures, but more relevant when we are talking about a multiapproach (envelope). On the public sector we consider in general this is not an issue for central administration, bigger municipalities or others integrated in energy agencies, but this might be an issue for stand-alone smaller municipalities. On the private sector, not an issue for ESCOs but an issue for SMEs and other small organizations.
- Finance: as referred, might be an issue for retail banking. This kind of projects should be approached as mini project finance, but transaction costs might be high when we are talking of smaller projects.
- Execute: not a relevant issue.
- Grants for technical assistance would be important to mitigate these costs. In general, a different market approach would be necessary to create a general/standardized framework for this area, as well as to educate the market. This is also a general concern of ELPRE
- Technical assistance support continues to be a necessary way of mitigating this issue. Note that on our approach we are collaborating with BundleUP, a supported H2020 project that aims to assist a pipeline of EE projects to make them investment ready.

Limited financial viability

High upfront costs affecting the profitability

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No. From a first analysis of an indicative potential pipeline, the average profitability is in general market competitive. But, more ambitious programs in terms of energy savings, like NZEB energy refurbishment and paybacks above 15 years, only with grants will be possible to reach financial viability.
Tenor not suited to long payback periods of projects
No. Typically market loan tenors go up to 10 years, but in some specific retail banking line, like BPI, can go up to 20 years. The issue is more the lack of innovative and tailor-made solutions, as well as broader access from final beneficiaries (with new risk mitigation measures or/and risk appetite schemes).
High financing costs affecting the profitability
Considering the very low interest rate environment for the last couple of years and foreseeable future, market interest rates are not an issue when we look at retail banking.
Lack of commercial finance/liquidity
There's no lack of liquidity on the commercial debt financing market, but more like a risk aversion in general to SMEs, that traditionally have higher debt to equity ratios and more difficult to increase debt on pure balance sheet analysis. Retail banking is also averse to other organizations, like social institutions (IPSS).
Gap analysis conclusion
Gap due to high (perceived) risks
Yes, in general when we look at the current market, there's a perceived higher risk on retail banking but, as referred, for lack of expertise. This should be looked like mini project finance, but because we are targeting the middle market transactions costs are high. But for our investment program this will not be an issue. We are also partnering with BundleUP, an H2020 program that works as a technical assistance scheme to bring more investment ready EE projects to the market.
Gap due to limited access to (long-term) capital
Yes, there's limited access to long term funding. There are exceptions, like the referred BPI line, that can go to maturities up to 20 years, but there's a general lack of long-term, innovative and tailor-made solutions (less risk averse, more project finance approach and more volume).
Viability gap
No. The first approach on an indicative pipeline indicates there's on average no viability gap. In general projects have competitive paybacks and IRR.

3.3. Financing Instruments depending on the gaps to be addressed

3.3.1. Suitable level of financing support depending on the gaps to be addressed

Level of support to cover the existing gaps
Risks
Yes. Risk sharing agreements on the investment platform side and to help bring on board private investors. (ex. first loss piece)
Finance
Yes. Indicative, but mainly focused on 3 instruments: • Loans with longer maturities on a project/bundle base (project holders as final beneficiaries). • Guarantees for SMEs/ESCOs and condominiums to complement their ability to bring on board retail banking finance.

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• Equity for ESCOs, in order to increase their project development capacity
Debt Service
No. The first approach on an indicative pipeline indicates there's on average no viability gap. In general projects have competitive paybacks and IRR.
Asset
No. The first approach on an indicative pipeline indicates there's on average no viability gap. In general projects have competitive paybacks and IRR.

3.3.2. Suitable financing products depending on the gaps to be addressed

Level of support to cover the existing gaps
Guarantees
Yes, for: • SMEs • Condominiums • ESCOs • Social entities
Loans
Yes. Loans with longer maturities, starting 10 and up to 20 years. Final recipients: • Municipalities & other public entities • Social entities • ESCOs • SMEs. • Condominiums
Quasi-equity
Not an option for now. (see below)
Equity
Yes. ESCO as final recipient and in order to accelerate growth and capacity to fund more projects. ESCO market in Portugal with some big players and relevant number of SMEs working on the field. Traditionally big player with access to finance/equity in the market, but SMEs need support at this stage to help their growth, so equity solutions can be a complementary mechanism to support the growth and dynamics of the market, as well as competitive solutions for final beneficiaries/recipients.
Interest rate or guarantee fees subsidies
Not an option at this stage.
Grants
Yes, grants would be necessary for technical assistance in the project development phase to the building owners. As referred, we are partnering with BundleUP, but complementary TA will be necessary to help boost the pipeline of projects outside of this partnership.

3.3.3. Suitable financing distribution channel to answer the needs of the final recipients depending on the gaps to be addressed

Financing distribution channel: Key success factors & SWOT analysis

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Comparative analysis	Fund structure as distribution channel	Financial intermediary as distribution channel
Market coverage capacity	A fund structure will have to work on more lean distribution channels, like the online and partnerships with local ESCOs.	A commercial bank with a relevant branch network has a geographic market coverage that's difficult to match by other players.
Crowd in capacity	A fund has the flexibility and capacity to blend multiple funding sources from public and private origin and coinvest alongside others, like for example crowdfunding.	Financial intermediary has no incentives or immediate interest in crowd in private financing, considering their deposit basis is their traditional funding source. Eventually crowd in public financing, which is already made through NPBs and other multilateral institutions like EIB.
Ease/speed of implementation	If associated with a sponsor with experience on the investment fund sector, implementation might be easy as soon as the framework is elaborated, and funding sources assured. On the other hand, Legal procedures for the implementation and authorization of the fund, as well as a proper risk analysis framework/structure might be factors that might delay the launch of the scheme.	On the implementation side it would be easy, as soon as the financial intermediary shows interest on a specific funding line for this purpose. On the banking side, considering they have already a relevant structure in place and that if necessary, can reach all the needs and will be quicker to implement.
Scalability	Moderate potential of growth with the same structure. (bottle neck on the fund capacity to analyse/process operations above a certain level without reinforcement of the structure)	High potential of growth. If successful, the structure behind a commercial bank can scale rapidly.
SWOT analysis	**Funds structure as distribution channel**	**Financial intermediary as distribution channel**
Strengths	• Focused on energy efficiency • Common language with ESCOs	• Geographic coverage • Scalability
Opportunities	• Release locked potential	• Release locked potential
Weaknesses	• Scalability	• Dispersion
Threats	• N.a.	• Risk of lack of internal visibility/priority
Financing distribution channel: conclusion and choice		
Our approach to the fund structure has to do with flexibility and an oriented goal for energy efficiency. We believe the flexibility of a fund structure in blending different funding sources, as well as the capability to focus on a specific area of activity are key for the choice. Also, we believe in the increasing attractiveness of energy efficiency models for buildings and on the need to streamline an offer for private investors. ESCOs will be a relevant partner to make it happen and the core of the distribution channel (direct or indirect), so we believe alignment of goals and tailor-made funding models for this sector (guarantees, loans or equity) are best achieved with this model.		

3.4. Investment Platform option

Description of the Financing Instrument/Investment Platform
Choice of the Structured Financial Solution

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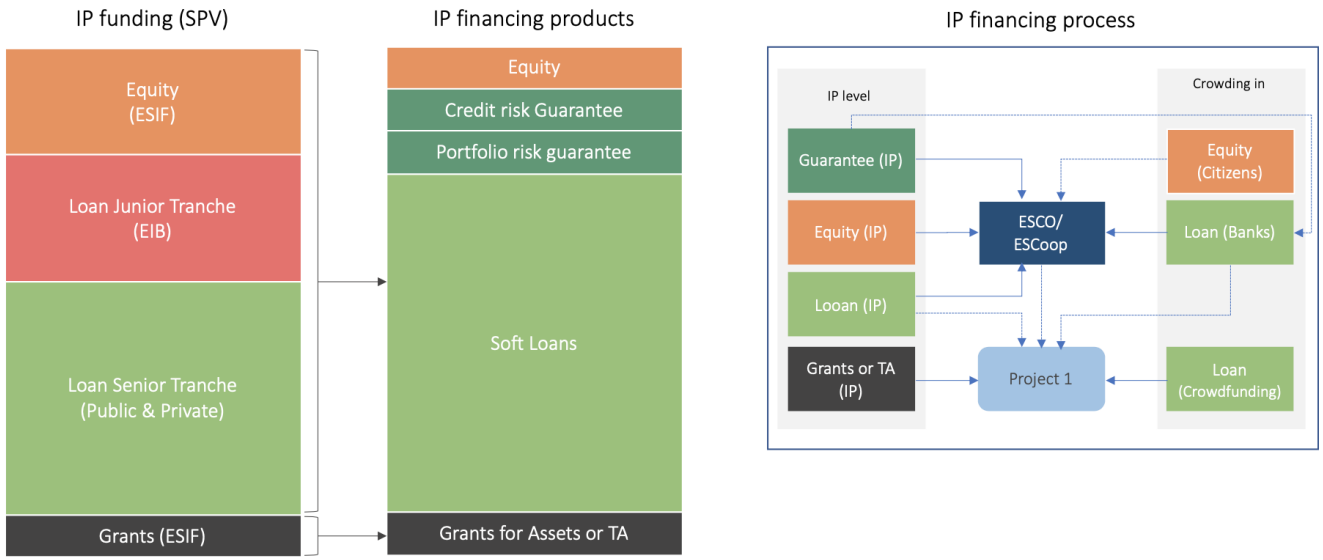
Model 7. We believe this is the one that fits on the main indicative goals defined for the investment platform: a) loans with bigger maturities to ESCOs, SMEs and Midcaps, Social entities, Municipalities and other public entities and condos; b) equity for ESCOs to further boost project investment capacity; c) guarantees to condos and ESCOs, to help them access traditional funding.

Indicative model:



Addressable financing gaps

The main financing gaps being addressed are:

- Access to finance (via more volume and higher risk appetite)
- Limited on-balance sheet financing capacity (via ESCOs)
- Limited debt capacity on public

Type of financing products to be offered to the Final Recipients

- Loans (up to 20 years tenors)
- Guarantees to ESCOs and condos
- Equity (to ESCOs)

Structure of the Financial Instrument

To detail further ahead.

Aims of the Financial Instrument

Investment platform aims to unlock the potential of investment in energy efficiency in buildings, filling the financial and viability gaps necessary for them to become competitive for private investors.

Advantages/outcomes expected

To accelerate more private investment for energy efficiency in buildings and create best practices.

Platform sponsors

GROW CAPITAL (contacts ongoing)

CORE CAPITAL (contacts ongoing)

Platform manager

GROW CAPITAL (contacts ongoing)

CORE CAPITAL (contacts ongoing)

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Platform co-investors
IFD (contacts ongoing)
Program Authority
To detail further ahead.
Program Delivery Unit
To detail further ahead.
Project level co-investors
Co investors will have their risk mitigated by diversification of funding sources, as well as complementary support like grants and others.
Projects Beneficiaries
Final beneficiaries would be the typically the building owners, thorough on balance or off-balance sheet funding (ESCOs). On public residential buildings and condominiums, the final beneficiaries would be the tenants.
Eligible projects
Indicative eligible projects targeting at least a 20% reduction in energy consumption and focused on Single Energy measures. Complementary, to explore also Light and Comprehensive Energy Refurbishment projects. Public and commercial buildings, as well as residential buildings when related to public entities or condominiums.
Final Recipients
Indicative final recipients: • SMEs • Social entities (IPSSs) • Municipalities and other public entities • ESCOs • Condos
Expected number of Final Recipients
Based on a first estimate of the estimated total market of 300M€, indicative capture of 10% or 30M€ of finance available to cover the investment program. With an average investment of 178k€, estimation of more than 180 final recipients.
Expected amount available to the Final Recipients
Based on a first estimate of the estimated total market of 300M€, indicative capture of 10% or 30M€ of finance available to cover the investment program.
Citizen Funding leverage
Citizen funding will be reached through a partnership for co-investment of a crowdlending platform alongside with the investment platform. We expect to mobilize in this crowding in leg a further 10M€ investment amount.

3.5. Actions to undertake

N°	Action	Results and comments
1.	Identify and organize consultation(s) with National or regional Managing Authorities (MAs) in charge of ESIF funds (especially European Regional Development Fund and Cohesion Fund).	Ongoing.

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N°	Action	Results and comments
	• Validate if they have planned FIs in the next 2021-2027 ESIF framework Operational Program (OP). • Validate if ESIF co-financing through IPs is part of the National or Regional Operational Program and for which appropriate fund (ERDF or Cohesion Fund). • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	
2.	Identify and organize consultation(s) with NPBIs in charge of EFSI funds. • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Contacted IFD (NPBI) – with no conditions to be a sponsor but available to further develop opportunity to be an IP co-investor.
3.	Identify and organize consultation(s) with National or Regional government departments in charge of EU Funds (national co-financing): • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Ongoing.
4.	Review Stakeholders Working Group List (SWG) in order to further identify potential co-investors willing to address IPs.	Ongoing.
5.	Identify and organize consultation(s) with key identified potential co-investors: • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Ongoing.
6.	Organize consultation with EIB/EIAH: • Validate conditions & procedures for advisory support from EIAH.	Ongoing.

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N°	Action	Results and comments
	• Get commitment within the Stakeholders Working Group (SWG).	

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4. CFS4EE FINANCING SCHEME EVALUATION – VIPA (LITHUANIA)

4.1. Market to address

Market to address
Eligible building categories
Investment strategy aims to provide a suitable financial instrument for Prosumers in Lithuanian Market. Prosumers are persons or legal entities (companies) as well as public sector, who generate electricity from renewable energy sources only for their own energy needs. However, investment platform will be focusing on Prosumers as natural persons. Since Lithuania approved remote prosumers model, households can produce and use electricity for their own needs at different locations, using net metering principle. The goal is till 2030 to have 500.000 prosumers, who have power plant in their house, multi apartment buildings roofs or have a part of the remote power plant, which is built by project developers.
Eligible projects
Prosumers can generate energy from any renewable source (wind, hydro, biogas, solar, geothermal, biomass etc.) However, investment program will focus on solar power plants. In an ex ante assessment was stated, that one house use in average 2.750 kWh energy per year. To cover this electricity need, prosumer must install in average 2.75 kW capacity of solar power plant. Estimated instalment costs for 1 kW capacity of solar power plant are 914 EUR. The numbers of projects and households depend on attracting capital and the volume of investments.
Project implementation model
The investment platform will provide loans to Prosumers through financial intermediaries (for instance Crowdfunding platform operators). Financial intermediaries will be responsible for project implementation and will assure project technical and performance risk.
Eligible Beneficiaries and Final Recipients
Final recipients of the CFs4EE financing scheme will be prosumers – natural persons (citizens) and legal entities (companies), who will generate electricity from renewable energy sources for their own energy need. The covered volume of final beneficiaries of the investment program depends on the into investment platform attracted and for this investment strategy dedicated amount of capital.

4.2. Market failures and financing gaps for the targeted market

High (perceived) risks
Performance & technical risks of the projects
Project developers are responsible for solar plant installation and maintenance. They are assuring all project technical and performance risks. Therefore, final recipient (prosumer) has no risks related to the performance and technical issues. However, project developers (companies) are in most cases too small and have limited access to finance. This implicates, that they cannot provide any partial sell options or financing to prosumers.
Low creditworthiness of the Final Recipients
For prosumers (legal entities) creditworthiness is not the main hurdle to be funded. Generating electricity from renewable energy sources is not the core business activity. Therefore, lack of information or interest is the key issue for not becoming a prosumer. For prosumers (natural persons) the main hurdle is the high financing price, which is related to creditworthiness and lack of collateral.
Lack of financing offering

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Banks' lending is the only financing source so far for prosumers. There are no other financing offering or alternative funding on the Lithuanian market.
Limited access to (long-term) capital
Limited balance sheet/borrowing capacity
Final recipients of our investment program have no borrowing limitation or restricted capacity of funding. Therefore, there is no need for off balance financing options to prosumers.
Limited access to commercial finance
Limited access to commercial finance is determined by several reasons. The first issue is a project long payback period. In average payback takes from 8 to 12 years. For this long-term investment banks require sufficient collateral. Secondly, technical equipment of the solar power plant each year lose value in comparison to new or upcoming technologies as well as innovative solutions. All these risks are included in the final financing price to prosumers. Commercial banks provide loans with interest rates from 8 up to 20 percent.
High transaction costs
Installation and implementation of solar power plants are standardized projects with low transaction costs.
Limited financial viability
High upfront costs affecting the profitability
Profitability of the project depends on electricity market price over the operating period. Rising electricity prices implicate shorter investment payback. However, project costs are divided into preparation, installation, and technical costs. While preparation and installation costs stay on the same level, technological development reduces costs. Photovoltaic (PV) module price per Watt decreased in the last 25 years over 5 times as well as PV module efficiency increased in the last 25 years more than 3 times. These tendencies have positive impact on project profitability.
Tenor not suited to long payback periods of projects
Financial sector provides funding for this kind of project with tenor up to 6 years, meanwhile averaged payback period is from 8 up to 12 years. That is why prosumers cannot cover all project investments costs with the loan and they need to partly finance it with their own finance.
High financing costs affecting the profitability
Interest rates are from 8 up to 20 percent for such loans. In some cases, it could be funded up to 20 percent. Well to mention, that the financing price depends on many factors – risk assessment, collateral issues, term, equity part, loan extent etc. However, high financing costs affect negative the profitability of the projects.
Lack of commercial finance/liquidity
There was not identification of lack of commercial finance or liquidity. However, financing conditions are not affordable for the prosumers. High interest rates, short loan terms, requested collateral and other risk mitigation elements have a negative impact on the prosumers market in Lithuania.
Gap analysis conclusion

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Gap due to high (perceived) risks
Lithuania sat a goal – till 2030 to have 500.000 prosumers. That means 30% of electricity users should be able partly or fully generate electricity from renewable energy sources such as a solar power plant for their needs. Identified market gap till 2030 – 1.187 million EUR. The main reason for this market gap is conservative risk assessment, which applies to prosumers.
Gap due to limited access to (long-term) capital
Potential prosumers have limited access to finance because they have restricted extent of private equity as well as risk mitigation elements. The second issue is that the payback period is longer than the loan tenor. These inefficiencies lead to long – term capital limitation.
Viability gap
Prosumer market projects' viability could be increased by external effects such as rising of electricity price, decreasing solar power plants' instalment costs, growing efficiency of the PV modules, etc. However, decreasing funding costs, will lead to more viability of prosumer projects.

4.3. Financing Instruments depending on the gaps to be addressed

4.3.1. Suitable level of financing support depending on the gaps to be addressed

Level of support to cover the existing gaps
Risks
To foster Lithuanian prosumer market, financial instrument should cover more risks (like loss given default) or be able to mitigate as well as better estimate project risks.
Finance
The financial instrument (loans) should open the access to long term funding. This funding option will unlock the prosumers market in general, which might have a positive impact on the financing supply side. On the other hand, this will boost technological development and increase efficiency.
Debt Service
No, the financial instrument has no influence on debt service.
Asset
Financial instrument has marginal impact on the project viability. Lower financing costs shorten the payback period for the prosumers.

4.3.2. Suitable financing products depending on the gaps to be addressed

Level of support to cover the existing gaps
Guarantees
Guarantees are mostly used to finance financially viable projects with limited extent of collateral. This financial instrument can serve as a risk mitigation element to encourage banks to lend for prosumers. However, guarantees are tending to rise the financial cost for prosumers. Secondly, the execution of financial instrument might take some extra time. These are the main reasons why the guarantees were declined.
Loans
Loans are the most popular and widely used financial instruments to foster similar project pipeline. This financial instrument seems to be the best option for a project with such a long payback period. Secondly, loans can be set

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and applied faster on the market than any other financial instrument. Loans through financial intermediaries such as crowdfunding platforms, seem to be a capable financial instrument to attract additional funding.
Quasi-equity
Subordinated debt is an unsecured loan that ranks below other loans or securities. Subordinate debt is riskier than an unsubordinated financial instrument. Quasi – equity is a perfect funding source to mitigate project risks and attract additional capital. However, this funding instrument is not suitable for individual prosumers, because usually they are small scale projects with one financing source.
Equity
Equity linked financial instruments are not suitable for the small-scale projects. Most likely this financial instrument has complex preparation and long duration of implementation.
Interest rate or guarantee fees subsidies
Interest rate subsidies are out of consideration because it does not mitigate the project risk, which is the main issue why banks are not providing loans for prosumer projects. The same applies to guarantee fees subsidies.
Grants
Grants were out of consideration, because it has no revolving effect, it provides financing for the smaller number of projects and it is not in line for supporting viable projects on the market. However, Lithuanian prosumers can apply for each year available subsidy to install solar power plants.

4.3.3. Suitable financing distribution channel to answer the needs of the final recipients depending on the gaps to be addressed

Financing distribution channel: Key success factors & SWOT analysis		
Comparative analysis	**Fund structure as distribution channel**	**Financial intermediary as distribution channel**
Market coverage capacity	The goal is till 2030 to have 500.000 Prosumers and to cover 1.187 million EUR financial gap. If the investment platform collects 35 million EUR, it will provide financing for around 14.0000 ((35.000.000/ (2,75*914)) Prosumers. The market gap would be covered by 3 presents.	Financial intermediaries have better developed distribution channel, eventually well-functioning marketing campaigns, more employees and can faster deliver the same result. Secondly, the result might be even higher if the financial intermediaries attract additional funding. However, financing price for prosumers via financial intermediaries will be higher and less attractive.
Crowd in capacity	The established investment platform has 10 million EUR private equity, which was attracted from private investor. European Investment Bank (EIB) landed to the investment platform 12.5 million EUR. Additional 12.5 million loan from EBRD is still under negotiation process. In this case the borrowed money is seen as public financing.	In cooperation with financial intermediaries (crowdfunding platforms) investment platform can attract funding from private investors (citizens) or from investors as legal entities.
Ease/speed of implementation	Investment platform has already developed an investment strategy for prosumers market and funded one project developer.	The speed of implementation depends on preparation level of financial intermediaries. Till now there was a strong willingness from the side of crowdfunding

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		platforms to participate in such cooperation.
Scalability	Scalability of the channel to grow the business is moderate.	Scalability is high.
SWOT analysis	**Funds structure as distribution channel**	**Financial intermediary as distribution channel**
Strengths	• Speed of implementation • Capability to take more risks	• Higher scalability • Attraction of more funding
Opportunities	• Attraction of private and debt capital • Extending investment strategies	• Involvement of citizens • Reducing transaction costs
Weaknesses	• Low project pipeline • Low awareness on the market	• Higher funding price for recipients
Threats	• Sinking electricity price • Other financing sources	• Sinking electricity price • Other financing sources

Financing distribution channel: conclusion and choice
Investment platform seeks the cooperation with crowdfunding and peer – to – peer lending platforms. To provide loans for prosumers (individuals) investment platforms must cooperate with peer to peer lending platforms, because these legal entities are licensed to fund natural persons. However, the Lithuanian Law of credit does not allow legal entities (investment platform) to invest or cooperate in one or other form with peer – to peer platforms. Therefore, to finance prosumers (legal entities) the cooperation with crowdfunding platforms are legal and wanted. Distribution channel of financial intermediaries allows not only to boost project pipeline, but also to attract more funding from private investors.

4.4. Choose the right option

Description of the Financing Instrument/Investment Platform
Choice of the Structured Financial Solution
The investment platform was structured as limited partnership with contribution of 10 million EUR from a private investor (limited partnership). European Investment Bank (EIB) landed to the investment platform 12.5 million EUR. Additional 12.5 million loan from EBRD is still under negotiation process. In this case the borrowed money is seen as public financing. The portfolio aims to finance prosumers and renewable project developers with concessional loans, which have extended terms and reduced collaterals. The cooperation with financial intermediaries shall bring their own credit line contribution and foster the distribution channel as well as project pipeline.
Addressable financing gaps
Limited access to commercial finance. Tenor not suited to long payback period. Long payback period and low profitability.
Type of financing products to be offered to the Final Recipients
Concessional loans with extended tenor, reduced collateral and covering up to 80 present of investment volume.

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Structure of the Financial Instrument
Investment Platform will have 10 million EUR private equity and 25 million debt equity borrowed from international financing institutions such as EIB and EBRD.
Aims of the Financial Instrument
To provide soft loans at preferential conditions to prosumers or project developers.
Advantages/outcomes expected
Financial scheme will contribute to the growth of prosumer market in Lithuania. If the investment platform collects 35 million EUR, it will provide financing for around 14.0000 ((35.000.000/ (2,75*914)) Prosumers. The market gap would be covered by 3 presents. Additional market coverage depends on investment scope of crowdfunding platform.
Platform sponsors
European Investment bank and European bank for Reconstruction and Development with their senior loans.
Platform manager
VIPA acts as a general partner – attracting private and debt capital, setting up investment strategies, searching for new investment opportunities and implementing financial instruments.
Platform co-investors
Private investor (energy distributor) invested 10 million EUR. Function/ interest – financial return, energy savings, avoiding state aid and direct investment restriction as well as avoiding administrative costs. Debt capital provider – EIB and EBRD by landing each 12.5 million EUR. Function/ interest – reaching energy efficiency goals set by EC, supporting energy efficiency initiative at EU level, ensuring leverage effect, and generating profit.
Program Authority
VIPA under supervision of Ministries of Energy and Finance as well as National Bank of Republic of Lithuania.
Program Delivery Unit
Financial partnership unit – responsible for implementation of financial product. Investment and development unit – research for new investment strategies and cooperation options as well as attract additional funding.
Project level co-investors
Crowdfunding platforms will provide credit lines to prosumers (legal entities) Possibly Peer to peer lending platforms if the Law of credit will be changed
Projects Beneficiaries
Prosumers – legal entities and natural persons, as well as project developers. The scope is to provide financial support to around 14.0000 prosumers. Project beneficiaries can also be project developers.
Eligible projects
It is estimated that one house uses in average 2.750 kWh energy per year. To cover this electricity need, prosumer must install in average 2.75 kW capacity of solar power plant. Estimated instalment costs for 1 kW capacity of solar power plant are 914 EUR. The numbers of projects and households depends on attracting capital and the volume of investments. But with 35 million EUR capital it is possible to cover around 14.000 projects.
Final Recipients

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Prosumers – individuals and legal entities, who generate electricity from renewable energy sources only for their own energy need.
Expected number of Final Recipients
Prosumers – legal entities and natural persons, as well as project developers. The scope is to provide financial support to around 14.0000 prosumers.
Expected amount available to the Final Recipients
The maximum amount of finance dedicated to final recipients is 35 million EUR. Additionally, cooperation partners (crowdfunding platforms) will provide their credit lines for final recipients.
Citizen Funding leverage
Until now the amount of finance to be leveraged through citizen funding is unknown.

4.5. Actions to undertake by CitizEE Pilot Countries/Regions

N°	Action	Results and comments
1.	Identify and organize consultation(s) with National or regional Managing Authorities (MAs) in charge of ESIF funds (especially European Regional Development Fund and Cohesion Fund). • Validate if they have planned FIs in the next 2021-2027 ESIF framework Operational Program (OP). • Validate if ESIF co-financing through IPs is part of the National or Regional Operational Program and for which appropriate fund (ERDF or Cohesion Fund). • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Done.
2.	Identify and organize consultation(s) with NPBIs in charge of EFSI funds. • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Done.
3.	Identify and organize consultation(s) with National or Regional government departments in charge of EU Funds (national co-financing): • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP.	Done.

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N°	Action	Results and comments
	• Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	
4.	Review Stakeholders Working Group List (SWG) in order to further identify potential co-investors willing to address IPs.	Done.
5.	Identify and organize consultation(s) with key identified potential co-investors: • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Done.
6.	Organize consultation with EIB/EIAH: • Validate conditions & procedures for advisory support from EIAH. • Get commitment within the Stakeholders Working Group (SWG).	Done.

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5. CFS4EE FINANCING SCHEME EVALUATION – REGEA (CROATIA)

5.1. Market to address

Market to address
Eligible building categories
Public buildings are the building category (i.e. market segment) planned to be targeted, while buildings include all building types. The CFs4EE Financing Scheme will primarily focus on buildings with energy performance rating D or below, with the basic idea that such buildings are more financially feasible for the planned project implementation model described below.
Eligible projects

The investment program will focus on the following types of projects (implementation models indicated):
• NZEB energy retrofit (EPC, EPC+);
• Integral retrofit of buildings (EPC++), i.e.
• energy efficiency measures;
  ○ renewable energy sources measures;
  ○ measures not related to sustainable energy, like interior refurbishment, enhancement of building construction regarding security/safety;
• Energy supply from renewables (ESC), including prosumers.

Project implementation model
Under the investment program the Energy Performance Contracting (EPC) and Energy Supply Contracting (ESC) models are planned to be used. The Separate Based Contractor (SBC) model is not in principle excluded but it would be possible only in combination with the previous two models. For the first two types of projects (described under eligible projects) the dominant model is expected to be the EPC, which might be combined with ESC and SBC models for different energy efficiency and/or renewable energy measures in case of complex and comprehensive refurbishment. For instance, works that are linked to Energy Conservation Measures will be specified as EPC or ESC depending the nature of the measures while non energetic works to the building will be specified as SBC since the implementation of non-energetic measures cannot be covered by energy savings. For the third type of project the ESC model will be used.
Eligible Beneficiaries and Final Recipients
Eligible beneficiaries are public building owners, i.e.: • local authorities, • regional authorities • national level. *Eligible final recipients are ESCOs, energy supply companies and various forms of citizen engagement models (ex. energy cooperatives, crowdfunding/crowd investing projects).* *The estimated covered volume of final beneficiaries/recipients include more than 1000 beneficiaries (building and apartment owners) and more than 10 final recipients.*

5.2. Market failures and financing gaps for the targeted market

High (perceived) risks
Performance & technical risks of the projects

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Exposure to performance and technical risks limits the access to financing in particular to ESCO financing since those risks are perceived to be quite high and there is still no sound data on performance of EPC projects in Croatia. This leads to lenders requesting high equity and high collateral which reduces ESCO potential for development and financing of EPC projects. Also, this causes EPC projects to be more expensive, which reduces the benefits of energy savings to final beneficiaries and in some cases even makes EPC projects not feasible (compared to traditional models).

Low creditworthiness of the Final Recipients

Low creditworthiness of final recipients as well as low creditworthiness of final beneficiaries plays a substantial role in overall risk assessment of projects. In EPC model, when ESCOs finance projects, debt burdens their balance sheet which affects their creditworthiness. Financial instruments that can take on the debt from ESCOs balance sheet (e.g. like forfaiting) can improve their balance sheet which enables them to take on more EPC projects. In small ESCO market like Croatia this prevents existing ESCOs to prepare and develop more projects than they can at the moment.

Lack of financing offering

On the market there is a number of financial instruments dedicated for energy efficiency projects. The problem lies with the fact that they are mostly structured as standard credit lines for building/apartment owners. There is evident lack of financing offering when it comes to financing EPC models since there are risk of payment from the customer side together with technical and performance risks from ESCOs side (alongside missing national programs/financial instruments dedicated for blended projects – grants from operational program combined with EPC) . On one hand this leads to public authorities being reluctant to engage in EPC (as EU funds cannot be utilized) and on the other hand this leads to number of problems for ESCOs since banks are looking for high collateral, the risk premiums are high. All of this makes EPC models not feasible or not optimal when compared to traditional SBC models where building owners take on credit and refurbish the building on their own.

Limited access to (long-term) capital

Limited balance sheet/borrowing capacity

Both beneficiaries and final recipients face limited balance sheet/borrowing capacity. From beneficiaries' side this is mostly the case in situations where building owners and final beneficiaries are public authorities. Limitations/regulations on amount of debt for public authorities, in many cases limits them in entering projects since they are already on the maximum level of debt or are planning to finance some other infrastructure needs and cannot reduce their balances in order to do so. In these cases, EPC model provides a way on how to refurbish buildings and pay those cost through energy savings (without limiting their balance sheets). On the other hand, ESCOs that take on a few bigger EPC contracts which are contracted like of balance sheet projects for building owners, also face problems with their balance sheets being overburdened with debt. This prevents ESCOs to take more projects.

In Croatia, in the sector of public lighting, standardized EPC documentation was developed, and projects were procured as of balance sheet investments. In the building sector only, few projects were realized through the EPC model and this is due to the fact that insufficient amounts of EU funds were dedicated as grants that can be combined with EPC. This led to the fact that most of the building owners realizes projects through traditional models since it proved to be the only way they could utilize grants. This discriminatory decision needs to be addressed in future programming period in order for EPC model to become dominant. Also, there is a need of development of standardized national ECP documentation that would be structured in accordance to EUROSTAT guidelines and that would include mechanisms for blending EU funds with private capital.

Financing instruments like forfaiting are also needed to free balance sheets of existing ESCO`s so they could enter new EPC projects.

Limited access to commercial finance

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There are several different commercial financial institutions that offer debt financing of energy efficiency projects. Most of them are structured as classical credit lines intended just for energy efficiency measures. Since they aim at building owners, credit lines are not suitable for ESCOs nor they are structured that way. Finance instruments that are available for ESCOs are most often offered with short loan tenors which then have an influence on the feasibility of the EPC model (in projects where 15+ years is needed in order for project to be financed out of energy savings).

Short loan tenors are also a problem for traditional SBC models since they are mostly structured as 10 year loans (or 15 at may) where in real life situations payback periods on energy efficiency measures are most often 15 to 20 years or even longer.

High transaction costs

EPC models are quite complex in relation to standard model of contracting (SBC type). To prepare a project for EPC contracting a detailed analysis of energy performance of existing buildings needs to be provided in order for ESCOs to see how consumers/tenants energy regime and to see how and to what extent can they reduce energy consumption. Also, EPC contracts can be quite complex and clauses dealing with risks, requirements, and all other issues in regard to performance monitoring and verification and responsibility for poor energy performance need to be specified in detail. This requires technical, legal, and financial consultancy on behalf of final beneficiary so they could tender the project and/or perform due diligence of ESCOs offer.

Financial institutions also have high costs in revision and due diligence of these kind of projects since they rely on calculating and appraising technical and performance risk which they cannot perform on their own/inhouse. This leads to outside help and additional technical and legal consultation on their side and higher costs.

Standardized EPC documentation could help finance institutions, lower their due diligence costs and raise confidence in EPC projects. Grants for technical assistance dealing with these issues would help boost the EPC market in general (for private and public sector).

Limited financial viability

High upfront costs affecting the profitability

Regarding energy efficiency projects, there are a lot of measures that have too long payback periods (period needed to return investment from energy savings). This has an influence on the feasibility of EPC projects either through projects not being able to repay themselves from energy savings or not being able to present attractive profitability for investors.

Upfront costs also have an influence on the profitability of projects since EPC models are much more complex than traditional once. From detailed energy audits, technical analysis, legal and financial fees for project due diligence, upfront costs can be quite high especially in cases of smaller EPC projects (EPCs with small capital expenditure). Standardization of documentation and processes in the EPC project development could lower these costs significantly but there would still be a need for grants in TA for smaller EPC projects to be profitable.

Tenor not suited to long payback periods of projects

In Croatia market loan tenors are too small to make the planned measures in some of the buildings targeted by the investment program affordable. Small loan tenors thus make some of the projects not feasible and they should be longer to assure that projects are profitable and that cashflows are positive throughout project. Short tenors mean high monthly/yearly annuities that has negative influence on net cashflow of the project.

High financing costs affecting the profitability

EPC projects are perceived to be riskier than traditional models because they have performance linked to payment. This has influence on interest rates in financing of EPC models which then has influence on profitability of those models. Lower costs of finance would make EPC models more attractive and more profitable to final beneficiaries as well as for ESCO`s.

Lack of commercial finance/liquidity

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In Croatia there is no evidence of lack of liquidity on market but just lack of dedicated financial instruments for EPC model.
Gap analysis conclusion
Gap due to high (perceived) risks
In Croatia there is a gap due to high (perceived) risks and this has an influence on developing and financing projects based on EPC model where financiers turn to investments and projects which are perceived as more conservative (SBC models).
Gap due to limited access to (long-term) capital
For EPC models in Croatia there is limited access to long term capital and that has influence on feasibility and profitability of EPC model.
Viability gap
In Croatia there is a significant viability gap on EPC market in the building sector. Most comprehensive measures in energy efficiency have to long payback periods as well as nZEB (and Green Deal) have payback periods of 30 or 40 years making them inadequate for EPC model where investments should be payed of from energy savings. This fact in combination with the issue of refurbishment of buildings needed in order to provide user safety causes significant viability gap on the EPC market. There is a need for grants in assets to make EPC model feasible. Those grants should be dedicated for blending (combining) with private capital for EPCs to become feasible.

5.3. Financing Instruments depending on the gaps to be addressed

5.3.1. Suitable level of financing support depending on the gaps to be addressed

Level of support to cover the existing gaps
Risks
Financial instruments mainly need to reduce risks of • ESCO`s performance (ESCOs -financing institutions (debt financiers)) • final beneficiaries' ability to pay on time (ESCO`s and forfaiting institutions/financiers) These financial instruments should lower the interest rates and make financing cheaper as well as reduce equity to debt ratio in EPC projects which will help ESCO`s in financing their bids.
Finance
Financing instruments in form of long tenor loans (15+ tenors) with interest rates that are attractive (result of other financing instruments e.g. guarantees) for EPC projects should help increase the supply of long-term finance for ESCO`s which would lead to EPC projects becoming feasible and more profitable.
Debt Service
Since EPC model is mostly used (in public sector) for realization of energy efficiency refurbishment as an "off balance sheet" structured investment for final beneficiaries, financial instruments should help ESCOs clear their balance sheets, so they are able to invest in another EPC project. Forfaiting would be effective model to do so. This would help boost the potential EPC market. Together with performance guarantees and guarantees for final beneficiaries' payment on time, as result forfaiting schemes should also have lower interest rates.
Asset
Financing instrument that is needed should increase profitability of projects and in some cases reduce the borrowing base. Grants would be needed for technical assistance during the project development phase where final beneficiary would be building owners. This is the case for lowering upfront costs.

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In the case of assets, grants would be needed in projects where payback periods would be to long for feasible EPC projects (e.g. buildings that are cultural heritage, deep renovations etc.) to reduce payback periods to acceptable length.

5.3.2. Suitable financing products depending on the gaps to be addressed

Level of support to cover the existing gaps
Guarantees
Guarantees for on time payment of EPC fee – for ESCO`s would help ESCO`s attract more favourable finance. Also, these types of guarantees should enable lower interest in forfaiting schemes. Guarantees for technical and performance risk to commercial financiers would lower the interest rates and make EPC model more profitable as well as provide lower equity to debt ratio which would make ESCO`s able to enter more EPC projects.
Loans
Financing instrument in form of long tenor loans (15+ tenors) with interest rates that are attractive (result of other financing instruments e.g. guarantees) for EPC projects is needed and should help increase supply of long-term finance for ESCO`s which would lead to EPC projects becoming feasible and more profitable.
Quasi-equity
Subordinated loans would help reduce risk for senior debt holders (e.g. commercial banks). Together with guarantees they would reduce risks significantly and would make EPC projects attractive to long term finance from commercial banks. Final recipients would be the ESCO`s.
Equity
In case of other financial instruments, financing of Equity wouldn't be needed in the first step. As market matures and more projects are realized ESCO`s will need financing of equity to continue to develop new projects.
Interest rate or guarantee fees subsidies
Financing instruments should offer guarantee fees subsidies rather than interest rate subsidies. This should provide more leverage on commercial debt (assuming that guarantee fund would attract more commercial finance with less funds).
Grants
Grants would be needed for technical assistance during the project development phase where final beneficiary would be building owners (TA for PDA). Also, grants would be needed in cases where payback periods would be to long for feasible EPC project (e.g. buildings that are cultural heritage, deep retrofits etc.).

5.3.3. Suitable financing distribution channel to answer the needs of the final recipients depending on the gaps to be addressed

Financing distribution channel: Key success factors & SWOT analysis		
Comparative analysis	**Fund structure as distribution channel**	**Financial intermediary as distribution channel**
Market coverage capacity	Since the EPC market is relatively small right now, funds would be able to cover all market needs in the future of 5 to 7 years.	Similar as fund structure Financial intermediary would probably be able to cover most of market needs in the future of 5 to 7 years.

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Crowd in capacity	Funds could raise financing on international markets and would aim mostly on private finance, but public finance would also be targeted. Fund would help develop projects and provide necessary guarantees as well as initial capital and then, after the project would enter the operating period, forfaiting schemes from financial intermediaries that rely only on private finance would step in.	Funds could be raised from private investors and institutional banks and investors. Public financing would probably be lower than in fund structure.
Ease/speed of implementation	Implementation of fund would take some time since it relies on ESIF and EFSI funds that are still to be programmed for the 2021-2027 period.	The implementation would be somewhat easier than the Fund since it relies on financial intermediaries that are already established and could develop schemes easier with less administration included in the whole process.
Scalability	High potential of scalability and growth of business. Fund would enable the EPC market to develop and attract new potential projects.	High to moderate potential of growth.
SWOT analysis	**Funds structure as distribution channel**	**Financial intermediary as distribution channel**
Strengths	• Focused on program with more potential to raise public finance • Political aspects will need to be more emphasized	• Less administration in setting up program • Defined processes in distributing finance (know how)
Opportunities	• To further develop the EPC and ESC market	• To further develop the EPC and ESC market
Weaknesses	• Newly developed structure with different stakeholders • Longer time needed to set up Fund	• Potential to raise public funds
Threats	• Raised funds not sufficient • Private capital not interested in forfaiting	• Lack of capacity of financial intermediary in all fields;

Financing distribution channel: conclusion and choice

Fund structure as distribution channel seems to be more appropriate to further develop the EPC market. Reasons lie mostly in the fact that designated Fund would be structured specifically to address problems with the EPC model in the building sector and would be able to address problems as they arise more effectively. Private capital would be mostly focused on forfaiting schemes once projects are developed and in operational phase. This would mean that projects have shown their performance records and the implementation risks and technical risks have mostly been resolved. Finance raised from forfaiting would go back in the fund creating a revolving scheme which then has potential of growth.

Fund structure (Government/ Ministry of regional development and EU funds (MRDEUF) and Ministry of Finance)

Financial intermediary (HBOR/HAMAG-BICRO and other commercial banks contracted under HBOR)

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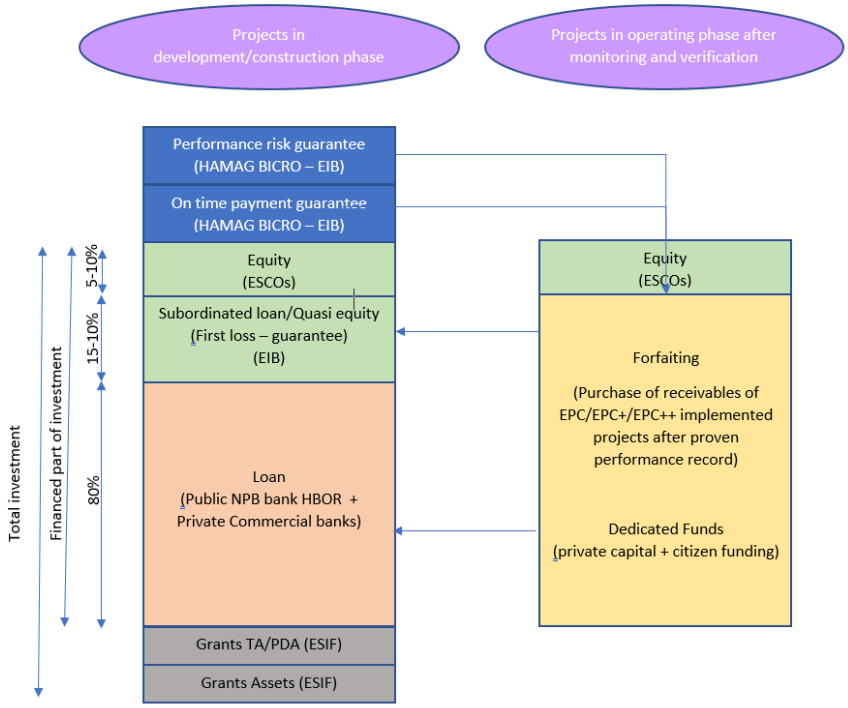
5.4. Investment Platform option

Description of the Financing Instrument/Investment Platform

Choice of the Structured Financial Solution

Model 5. Of Structured Financial Solutions as described in the Map of Structured Financial Solutions for CFs4EE Financing Schemes seems to be most appropriate since it covers the majority of the gaps during the project development that need to be addressed in order for EPC investment program to further develop (as off balance sheet investment for building owners). In addition to instruments described by model 5. grants for assets would be needed in situations where measures would not be repayable solely from energy savings. Also, the program would target not just refurbishment of buildings in energy efficiency sense but also other measures (e.g. improvement in relation to earthquake and fire safety, quality of living) would be included. Those measures would be monitored separately from measures strictly related to energy efficiency and structured as on balance investments oppose to once related to energy efficiency. Regarding guarantees, a financial instrument in form of guarantee for on time payment of final beneficiaries would help reduce this risks and result in forfaiting schemes with lower interest rates which would clear ESCO`s balance and enable ESCO`s to develop new EPC projects while maintaining similar (or same) financing cost of EPC project.



Addressable financing gaps

The technical and performance risks in relation to the EPC model would be addressed by this fund since performance risk guarantees would be available. This would help set up forfaiting scheme's since they would only take on risk of on time payment of final beneficiaries which would also be leveraged by financial instrument in form of guarantees for on time payment. Also, by setting up loans, raising initial financing for ESCO`s would be easier and projects could be developed much faster than when financed by commercial banks though their standard credit lines.

Type of financing products to be offered to the Final Recipients

Final recipients (ESCO`s) would have access to guarantees as well as loans and equity. This would help raise finance to develop and realize EPC projects. After initial operating phase, forfaiting schemes would free funds that could be used again for development of new EPC projects.

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Structure of the Financial Instrument
Guarantees – technical and performance risk guarantees as well as guarantees for on time payment of final beneficiaries. HAMAG-BICRO would provide guarantees to ESCO`s (EFSI) HBOR/EIB loans – First loss guarantees in form of subordinated loans (EFSI) HBOR- low interest, high tenor Loans (ESIF) Grants – Ministry of finance & Ministry of regional development and EU funds (ESIF)
Aims of the Financial Instrument
Investment platform aims to further develop EPC market and to promote energy refurbishment of buildings financed out of energy savings especially in situations where grants for energy efficiency refurbishment to final beneficiaries would be significantly lower and where final beneficiaries are unable to take on more debt.
Advantages/outcomes expected
Investment platform would be focused on comprehensive and nZEB refurbishment of buildings but would also include measure aimed at quality of living and health and safety. Since large proportion of measures would be financed out of energy savings through the EPC model investment platform would offer attractive and favourable financing model to building owners (final beneficiaries) which should lead to more buildings being refurbished.
Platform sponsors
POTENTIAL SPONSORS HBOR/EIB - financing of first loss guarantee (EFSI) HAMG-BICRO – intermediary - performance risk guarantee (ESIF) HBOR (and commercial banks) – Loans for ESCO`s ESIF- MRDEUF – grants for assets and TA Forfaiting – private finance/Funds
Platform manager
HBOR - as senior creditor and national development bank it is reasonable for HBOR to be the platform manager and to control and oversee all processes. HBOR would fund EPC projects during the initial development and construction phase. Funds received through forfaiting scheme would be used to finance new projects (revolving scheme).
Platform co-investors
EIB – would coinvest in platform in form of First loss guarantees Commercial banks - would coinvest together with HBOR in order to raise more finance EFSI – to fund guarantee funds
Program Authority
MRDEUF as ministry in charge of EU funds would be natural authority of the program
Program Delivery Unit
To be defined by MRDEUF.
Project level co-investors
ESCOs and energy supply companies through commercial banks. Citizens through crowdfunding/crowd investing model.
Projects Beneficiaries

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Final beneficiaries would be the building owners who would benefit from more favourable EPC models which were not feasible or were not favourable before development of investment platform.
Eligible projects
All buildings (private and public) are eligible for funding. Only condition should be comprehensive energy efficiency (EE) and renewable energy sources (RES) as Green Deal minimum standard alongside other non-energy related measures with potential of at least 50% achieved energy savings.
Final Recipients
Final recipients would be the ESCO`s since they are investors in EPC model. Financial instruments would help them raise more finance under more favourable conditions making more EPC projects feasible and profitable.
Expected number of Final Recipients
Not available currently. It is assumed that several new ESCO`s would be developed in order to satisfy market needs once the platform is developed.
Expected amount available to the Final Recipients
At least 90% to 95% of capital investment needs to be financed through investment the platform for ESCO`s to be able to develop new EPC projects and not get over invested. 70% should be the minimum for senior debt loans while 20% should be available as a first loss guarantee (in form of guarantee, subordinated loan or equity). Grants needed for TA and for Assets need to be assessed on project to project basis since they will vary from case to case. Intention should be to make more energy efficiency projects feasible using EPC model oppose to traditional once. In TA, ESIF funds could be used to standardize project documentation (Detailed energy audit methodology, EPC contract documentation, minimal technical requirements etc.) which would help uniform the market and lower due diligence costs of EPC projects.
Citizen Funding leverage
Citizen funding could be raised in forfaiting schemes (special dedicated EE investment funds) where they could finance projects that have reached maturity phase and proved performance levels.

5.5. Actions to undertake by CitizEE Pilot Countries/Regions

N°	Action	Results and comments
1.	Identify and organize consultation(s) with National or regional Managing Authorities (MAs) in charge of ESIF funds (especially European Regional Development Fund and Cohesion Fund). • Validate if they have planned FIs in the next 2021-2027 ESIF framework Operational Program (OP). • Validate if ESIF co-financing through IPs is part of the National or Regional Operational Program and for which appropriate fund (ERDF or Cohesion Fund). • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP.	Notes: Program for 2021-2027 period is still not developed and adopted Coordinated action towards Managing authority (MRDEUF) as a consultation process to influence 2021-2027 MFF programming for Croatia and FI representation. Crosscheck the possibility for a decentralized approach of implementation (specifically important for Zagreb post-earthquake recovery) through decentralized schemes like Integrated territorial investments. Include also intermediary bodies (ITI IB).

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N°	Action	Results and comments
	• Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	
2.	Identify and organize consultation(s) with NPBIs in charge of EFSI funds. • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Ongoing.
3.	Identify and organize consultation(s) with National or Regional government departments in charge of EU Funds (national co-financing): • Validate if IPs are part of their focus. • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Ongoing.
4.	Review Stakeholders Working Group List (SWG) in order to further identify potential co-investors willing to address IPs.	Ongoing.
5.	Identify and organize consultation(s) with key identified potential co-investors: • Validate potential and conditions to integrate CitizEE project in the scope/willingness to co-sponsor the IP. • Validate working methodology and proposed Master Plan. • Get commitment within the Stakeholders Working Group (SWG).	Ongoing.
6.	Organize consultation with EIB/EIAH: • Validate conditions & procedures for advisory support from EIAH. • Get commitment within the Stakeholders Working Group (SWG).	Ongoing.

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