Interreg CENTRAL EUROPE

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D.3.1.3 Individual gap analyses for innovative energy financing models, standards and investment procedures

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Contents

A. Introduction

The central Europe region faces a very uneven energy transition due to unbalanced economic development, distribution of technology and finance flows. Public and private buildings account for 43% of the final energy consumption in the EU and have been singled out in the European Green Deal as key drivers of energy transition. Energy efficiency investments must more than double to achieve the EU's new climate and energy targets, and it is increasingly urgent to deliver anticipated progress by 2030. The financing of the transition towards climate-neutral buildings remains a key challenge for which the EU is expecting member states to involve private investors to a much bigger extent than before.

The purpose of this document is to determine the market maturity of each Central European pilot country (Austria, Croatia, Germany, Italy, Poland) and Slovenia by assessing the financing needs of local energy project developers, availability of green investments evaluation criteria with performance tracking methodology for investors and the existence of citizen financing models. The analysis focuses on current market gaps and solutions for deep renovation of buildings (public and private), including access to finance, risk perception, viability and policy framework gaps. A stronger emphasis has been placed on innovative financing models which involve private investors and citizens. The results of this study will be presented to key stakeholders during roundtable sessions, and the results of this gap analyses, in combination and with studies will present inputs for the piloting action: development of green financing methodology, tools and financing models.

B. Country gap analysis

1. Croatia

Croatia has a stable financial sector with solid capitalisation (24.6% at the end of 2022) and improving asset quality. The sector can be considered as bank-centric and is dominated by three banks which account for almost two thirds of the market. Despite this, project developers from the energy sector (both public and private) still overly rely on public support mechanisms and the availability of traditional instruments such as one-off ESIF/RRF/national grants and not market instruments. Although a wide variety of innovative financial models are available, grants are still more attractive than other financing sources as they present non-repayable instruments and public authorities are more experienced in applying and implementing projects under this traditional format. Supply of public grant funding is not enough to meet the expected building renovation targets by 2030 which is reflected through low annual refurbishment rates of the entire building stock. (0,7% from 2014-2020 period). The overall results of the gap analysis for the wider uptake of models which use market-based instruments (Figure 1) show a number of different barriers which were investigated in detail in this document.

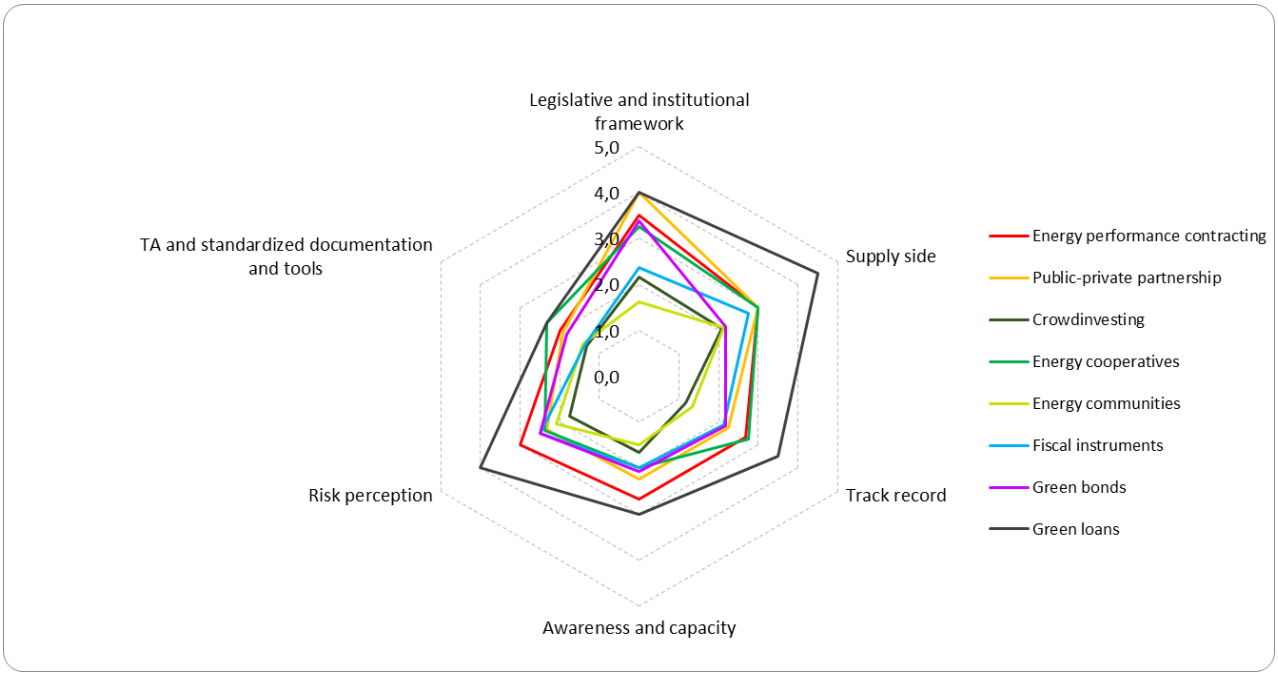

Figure 1: Market assessment of different financial instruments in Croatia through a spider diagram

The desired annual refurbishment rate for the entire building stock until 2030 ranges between 1,5% for 2024 and 3% until 2030 with total estimated costs at around EUR 10 billion. The cost-effectiveness of the deep renovation of buildings in Croatia has been additionally impacted by the seismic resistance requirements in certain regions which require even more grant funding due to increased investment costs. These requirements were taken into account during the assessment of competitivity of each financing instrument within the gap analysis.

1.1. Fiscal instruments

The Croatian fiscal system is largely centralised, with a well-developed system of public subsidies. Consequently, fiscal incentives for the implementation of energy renovation measures are quite limited. Croatia faces challenges in its fiscal decentralization system, including a fragmented territorial-administrative structure, insufficient fiscal autonomy for subnational governments, inconsistent public service standards, unbalanced revenue sources, and doubts about introducing real estate taxes. However, the trend towards decentralisation of the fiscal system is slowly and steadily happening with ideas of introducing green fiscal measures still at the very early stages.

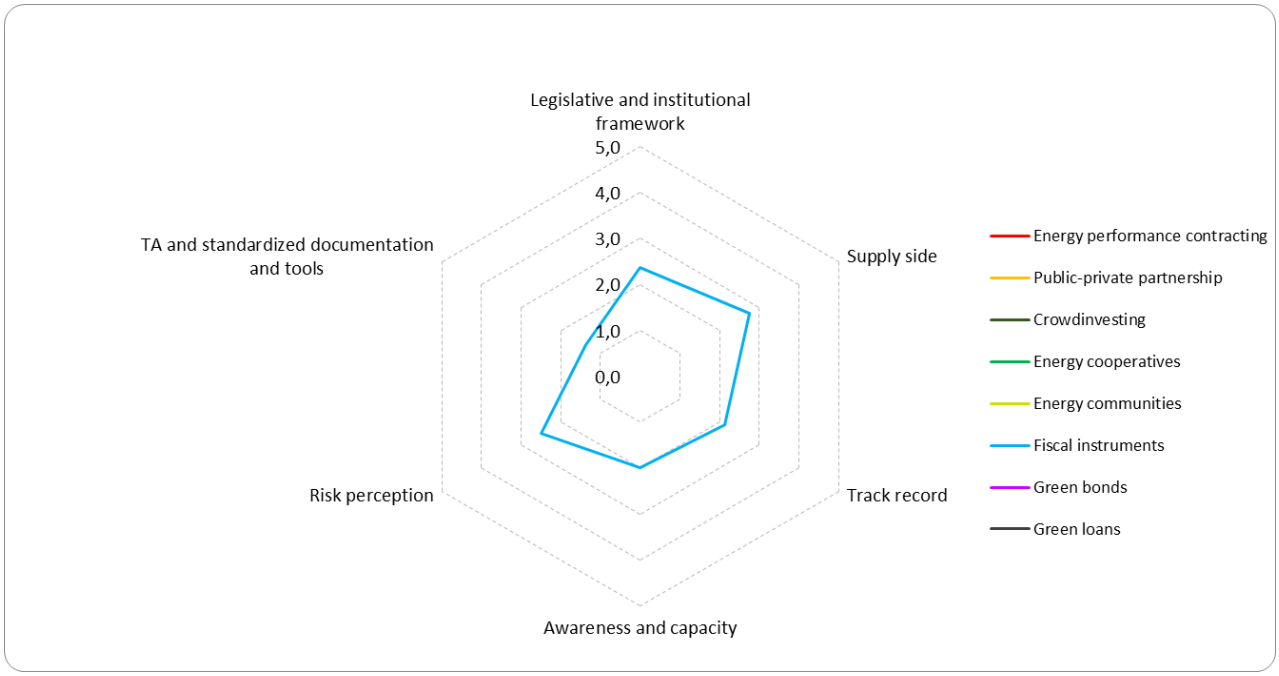

Figure 2: Fiscal instruments - assessment of the market status

Legislative and institutional framework: The fiscal system in Croatia is predominantly centralised, with insufficient number of measures for supporting energy efficiency and renewable energy projects. Currently, only the communal contribution fee can be used for supporting construction of new buildings which go beyond the minimum energy standards. However, Croatia is a fiscally stable country, meaning that the relevant legal frameworks are generally stable with no constant changes of the policies or bodies in charge.

Supply side: The general opinion among assessors is that there is a low fiscal and budgetary capacity for local authorities to implement fiscal instruments which would support energy efficiency and renewable energy projects from the private sector. The impact of fiscal measures is however considered to be solid compared to the cost of establishment for the local public authorities.

Track record: Fiscal instruments have very small track record in Croatia as there are only three cities which have introduced a different communal contribution fee for the construction of new

buildings in accordance with nZEB and passive standard. The results of these fiscal instruments were limited, partially due to the lack of promotion and small number of newly constructed buildings in these cities.

Awareness and capacity: the awareness about the existence of fiscal instruments for supporting construction of new buildings which go beyond the minimum energy standard in Croatia is very low. Consequently, there is very low capacity from local public authorities to set up and monitor the effectives of fiscal instruments in these contexts. Due to poor visibility of the instrument both private companies and individuals are very unaware of the existence of fiscal instruments for supporting construction of new energy efficient buildings.

Risk perception: The perception of risk among local public authorities is medium and most concerns are directed towards the potential loss of budget revenue from this fiscal instrument. Local authorities are also sceptical towards national fiscal regulators and of new fiscal instruments in general as financial stability of their municipal budget is the main priority.

Technical assistance and standardised documentation and tools: Technical assistance for public authorities regarding fiscal instruments for supporting energy and climate projects are practically non-existent, with very few EU funded projects which have dealt with this topic. Tools for calculations and monitoring methodology of impact of fiscal instruments in Croatia have not been made so far.

Conclusions: Fiscal instruments for supporting energy efficiency measures in private households in Croatia have been used on a very limited scale due to unavailability of taxes and fees which could be used on local and regional levels. The modest results achieved in the last 5 years can mostly be attributed to poor promotion among both local authorities who could have implemented it within their municipalities and private investors who could have used it for construction of nZEB/passive buildings. Lack of monitoring tools for implemented fiscal measures has additionally not helped as there are limited proofs for the impact of these measures. The interest from the local authorities exists but the technical assistance from experienced market facilitators is unfortunately missing.

1.2. Green and climate bonds

The Croatian capital market is rather developed but remains quite small comparatively to other EU countries. Local companies still lack financial literacy and tend to resort to traditional banking solutions to meet their capital needs. Both the stock and corporate bond markets are underdeveloped and underutilised as a financing option, and initial public offerings (IPOs) are very rare. Largest institutional investors are Pension funds (Mandatory and Voluntary pension funds) but their investment amounts are limited by law.

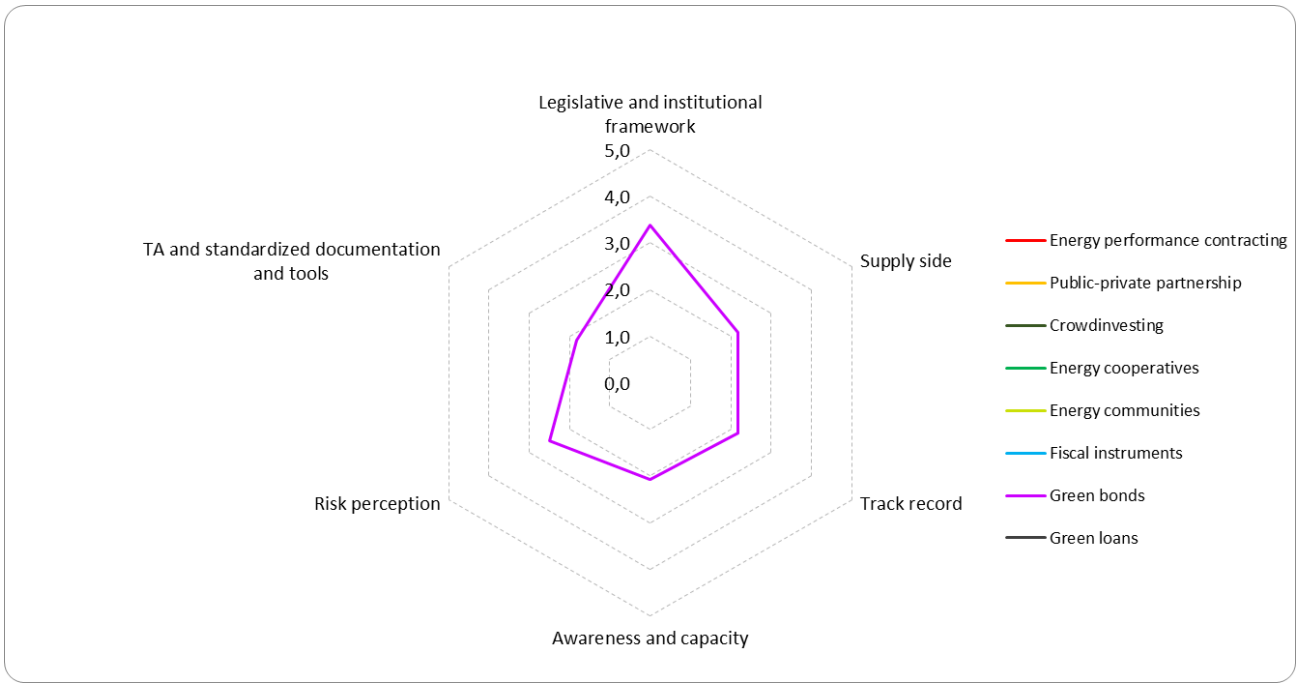

Figure 3: Green and climate bonds – assessment of the market status

Legislative and institutional framework: Croatia's legislation fully complies with EU regulations and standards in the capital markets. Green bonds are well defined, and most sectors are able to operate within this this legislation successfully. The institutional framework is highly stable, meaning that fluctuations due to legal changes do not happen often.

Supply side: Government bonds dominate Croatian bond market. The bond market is moving slowly towards a more balanced mix of public sector, quasi-government and private sector bonds. The main debt issuers in Croatia are the state itself, the state funds and agencies, and since 2002 for the first time - corporations. Development of a large pipeline of energy and climate projects is a long and complicated process for which very few institutions (both public and private) have the capacity. Green bonds are considered equally competitive when compared to traditional models such as loans and financial institutions are very much interested to participate in emissions of green and climate bonds.

Track record: No corporate or public entity has so far used green bonds for any specific investment although two companies have emitted sustainability-linked bonds in the past two years. Green bonds are still a relatively new financing mechanism and have yet not been established as a mainstream solution for funding energy efficiency measures and building renovations.

Awareness and capacity: The understanding and awareness level from public and private institutions on green bond instruments are fairly good since they represent an evolution of the existing financial instrument. The financial institutions are expectedly well trained in regarding the preparation of green bond framework and the overall issuing process. However, despite this the capacity of project developers to realise a large number of energy projects using green bonds remains low due to small or unprepared investment portfolios.

Risk perception: Risk perception is not an area of particular concern when it comes to green bods, the perception of the risks of green bonds from the public authorities and financial institutions is low. This is also the case for private investors which translates into a high willingness to invest from private investors. All of these factors ultimately mean that the cost of capital in the form of green bonds is good with especially citizens being willing to invest their savings into this form of a market instrument.

Technical assistance and standardised documentation and tools: In Croatia the technical assistance, standardised documentation, assessment tools and guidelines on how to develop the green bond framework and prospectus are practically non-existent. Grant funding for project preparation costs can be obtained from development banks (EIB, EBRD) but none from the national sources.

Conclusion: Green bonds represent a very attractive financial instrument for developers with a larger portfolio of building renovation projects in Croatia. This is reflected by a high awareness level across diverse categories of investors and a very positive risk perception from the citizens. A solid legislative and institutional framework already exists and the main issue for wider uptake of this instrument remains the lack of portfolios to meet the projected demand. The technical assistance and standardisation of documentation and tools is clearly lacking and this sort of service for both private and public developers needs to be established and promoted.

1.3. Green loans

Driven by the banking sector, green loans represent the most mature financial instrument for implementation of energy efficiency and renewable energy measures in the building sector. They either represent a primary of complementary source of financing energy renovation projects for final users and come in form of ESIF instruments or loans from commercial banks with a pre-determined set of ESG criteria which the projects have to meet. Green loans are provided by both commercial banks, the National Croatian Bank for Reconstruction and Development (HBOR) and the EBRD.

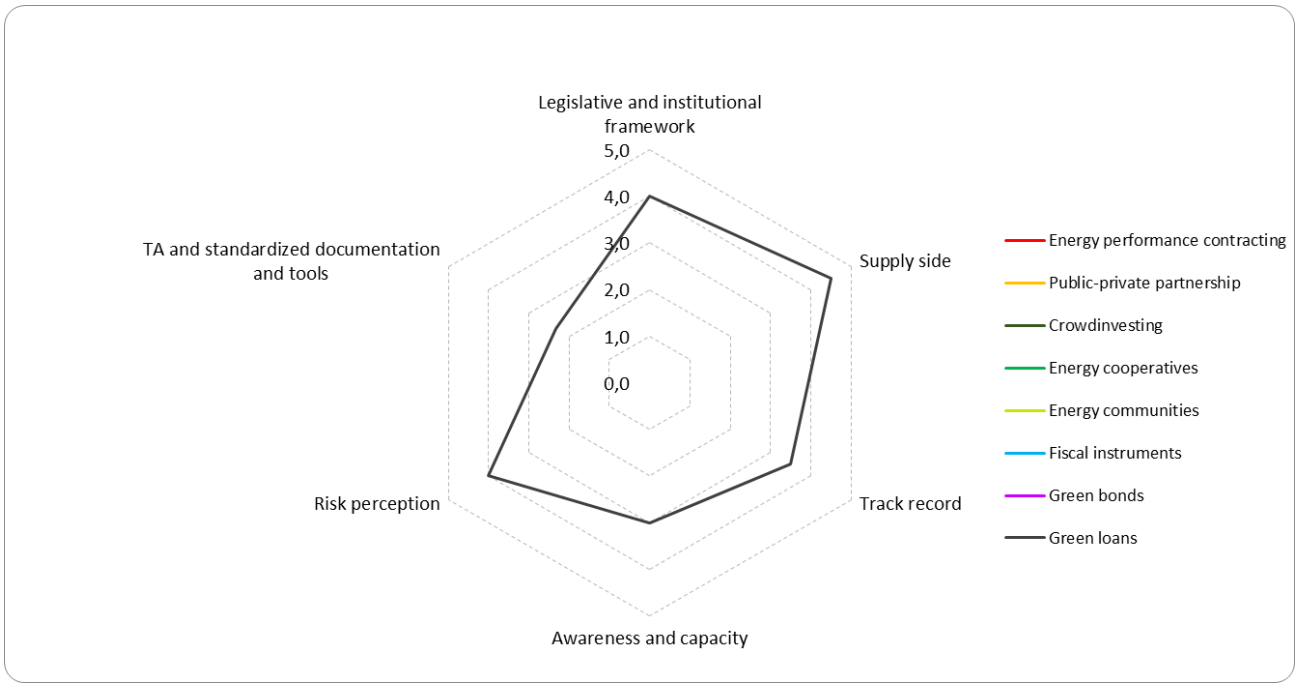

Figure 4: Green loans – assessment of the market status

Legislative and institutional framework: In Croatia the legal stability of market for green loans and ESIF financial instruments can be considered stable with the market showing consistent positive trends of new instruments being introduced. The trend of increased interest rates and cost of capital has so far not translated to green loans and financial instruments.

Supply side: All major commercial banks in Croatia have introduced their green loan programmes while HBOR, the national development bank has three green loan programmes which can be used for energy renovations of buildings. HBOR's loans are very competitive to other financial instruments while those of commercial banks are significantly lagging due to higher interest rates. However, commercial banks cooperate with HBOR and provide their loans as well through a risk sharing model. In Croatia, green loans are primarily being used as complementary funding sources as ESIF grant programmes do not fund the whole investment and green loans are used as a co-financing source.

Track record: The track record for green loans in Croatia is good, considering that the first green loan programme was introduced almost 15 years ago, and many projects of good quality have been implemented by now. Green loans have been primarily used by the private sector as public sector was able to obtain higher levels of grant funding.

Awareness and capacity: In Croatia awareness and capacity is average, with limited awareness level from public and private institutions on availability, requirements for the use of green loans and ESIF instruments and how they actually work. Financial institutions have solid know-how for establishing green loan programmes but usually do not possess adequate knowledge about assessment of buildings renovation projects.

Risk perception: Even though green loans are debt instruments they are not perceived as highly risky solutions for financing energy renovation of buildings. Specifically, this means that there is a positive risk perception of green loans and ESIF instrument from public authorities and that private investors have a fairly high willingness to use green loans as primary funding sources for their projects.

Technical assistance and standardised documentation and tools: Technical assistance and standardised documentation and tools are generally not available in any format and most project developers cannot obtain any type of free assistance with preparation for this funding source. No methodology, tools for assessment of potential projects, and guidelines on how to use green loans and ESIF instruments is currently obtainable.

Conclusion: Green loans are already an established source of funding for energy renovation of buildings in Croatia. The legislative framework is set and favourable due to the exemption rule for energy efficiency projects and the increase of the public debt and the exuberant market supply which comes from both national and commercial banks. Green loans are more competitive than other commercially available loans and they are also perceived as less risky instruments by the project developers. However, the lack of technical assistance and standardised documentation/evaluation methodology and tools is still hindering this instrument for becoming a more attractive source of funding and with better cooperation with the financing institutions could be successfully overcome.

1.4. Energy service companies (ESCO) and Public Private Partnerships (PPPs)

Croatia's first PPP and EPC projects in Croatia have been contracted well before the complete legal framework was put in place and in the last five years a dedicated law, procedures and institutions in charge have finally been put in place. In recent years, public authorities have started to use contractual PPP/EPC models for energy efficiency projects that include a full range of services (e.g., design, build, finance, operation, and maintenance of street lighting systems). PPP and EPC projects are considered off-balance sheet projects as all contracts must be in line with the EIB-Eurostat guidance. The main issue with the national legislation is that it recognizes only several contractual models as PPP models, although international practice identifies a lot more PPP agreements. After a strong start in 2007, the PPP market has become stagnant while the EPC model was primarily used for public lighting projects and much less for renovation of buildings.

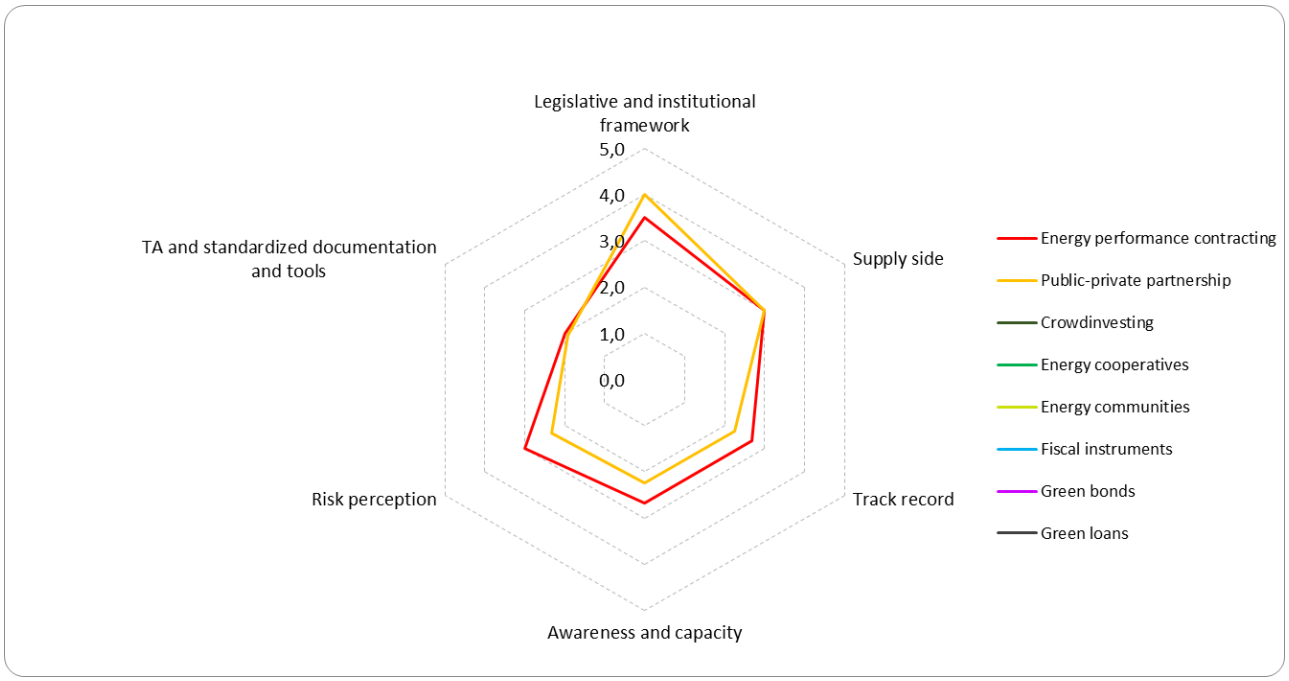

Figure 5: EPC and PPP models – assessment of the market status

Legislative and institutional framework: The legislative and institutional framework for ESCOs and PPPs is well defined, as there is legislation that defines EPCs and PPPs that both the public and private sector can use to align with existing regulations. Consequently, most types of EPC and PPP contracts are regulated for, both factors to produce a stable market that should show long-term positive trends, although the market has not responded accordingly.

Supply side: The supply of ESCOs in Croatia is not where it was expected to be with just a couple of larger ESCOs and EPC models being active on the market, thus making ESCOs less competitive than a traditional model. However, for ESCO's the key limitation is obtaining favorable financing sources and the fact that too much grant funding is available for project developers and these two instruments are difficult to combine. The availability of guaranteed schemes/factoring funds/financial instruments for ESCOs are very limited and the only national ESCO scheme which ensures ESI funding is only periodically active.

Track record: Public authorities unfortunately do not have a very positive perception of PPP/ESCO projects due to various success of previous PPP/ESCO projects in Croatia. PPP/ESCO are long-term contractual arrangements and public authorities are not always aware of different forms that PPP/ESCO can take place, including guaranteed savings models (EPC). The market share occupied by the PPP/EPC models in the overall energy renovation of buildings, is very low and under 10%.

Awareness and capacity: The awareness and capacity of ESCOs and PPPs is low in Croatia. In particular, there is a low level of awareness from of public and private institutions, and financial institutions on EPC and PPP models and how they work in the context of deep renovation of buildings. This translates to an average to low capacity from project developers to realize many EE projects using ESCO and PPP models.

Risk perception: EPC contracts should be perceived as risk-free for public authorities as they do not bear any technical or financial risks and receive guaranteed energy savings. However, strong scepticism remains due to bad track record of previous ESCO projects which were in fact not true EPC projects (they provided no guaranteed savings). However, this is slowly changing with the EIB-Eurostat guidance in place and more projects developed to be in line with it. This risk perception unfortunately leads to the cost of capital for ESCOs/PPPs being above typical market interests due to higher perceived risks from the point of view of financing institutions.

Technical assistance and standardised documentation and tools: For ESCOs and PPPs there is a very limited availability of experienced market facilitators who are able to provide technical assistance for project developers. There is no national grant funding to support project preparation costs for projects which use this model, and the only source is the EIB ELENA facility for which a formal application is needed. The only standardized EPC contract with harmonised approaches to metrics for baseline estimations of energy use as well as measurement, verification and reporting on energy savings achieved is available for modernization of public lighting while for renovation of buildings such documentation or methodology was never developed.

Conclusion: ESCOs remain a seldomly used model for energy renovation of buildings in Croatia, even with a stabile legislation in place that provides a strong starting point. The main reason for such situation is the government controlled, low energy prices which make any deep energy renovation unfeasible through an EPC model without a significant use of grant funding. This funding is rarely available for ESCOs, and their high preparation costs make them even less competitive than traditional instruments. With regards to PPPs, there is also a positive legislative environment, but the supply-side conditions are weaker, and the risk perception is even worse than with the EPC model. The lack of experience results in low awareness and capacity and is positioning PPPs less optimally relative to ESCOs.

1.5. Citizen-led initiatives – Crowdinvesting

With only several active crowdfunding platforms Croatian fundraisers prefer to seek funding on foreign platforms due to the larger number of potential investors and the enhanced chances for successful financing. However, in late 2016 a joint venture between Funderbeam platform and the Zagreb Stock Exchange marked a very positive change for the overall crowdfunding community in Croatia which was also noticed in the overall investment volume tracker. Unfortunately, with the transposition of a new EU directive and COVID-19 crisis the crowdfunding market took a big hit and there was no continuation of positive trends marked by the first crowdinvesting projects in the energy sector (ZEZ solar roof projects).

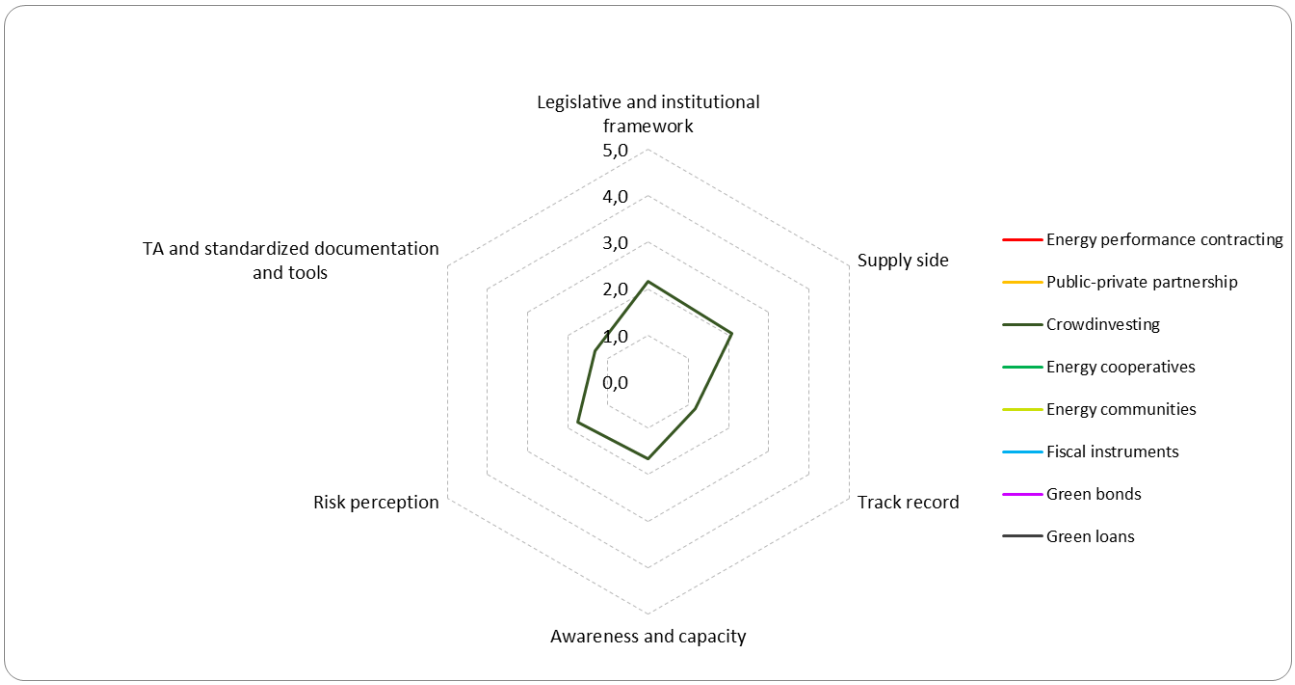

Figure 6: Crowdinvesting – assessment of the market status

Legislative and institutional framework: The quality of legislation relating to crowdinvesting in Croatia is very low, as there is no dedicated legislation in place which both defines and regulates crowdinvesting, not allowing the public sector to use the investment models at all. Developing a regulatory framework for crowdfunding service providers, ensuring operational and financial transparency, financial control, and the security of information and payments is a necessity to ensure any kind of wider market uptake of this model.

Supply side: The availability of crowdinvesting in Croatia is very limited with only a few platforms which are providing mostly donation and reward-based models. Funderbeam SEE is the only platform which operates in Croatia and offers loan and equity models. The crowd investing approach is not that competitive to traditional financing models, with more expensive and less adequate than traditional models of funding EE renovations. Aside from the Zagreb Stock Exchange financial institutions have shown very little interest to cooperate with crowdfunding/-investing platforms.

Track record: The track record for crowdinvesting is very limited with only several loan model examples with solar powerplants and a couple of crowdfunding renovation projects for the public sector. No investment models (equity, loan) have been used for the deep renovation of buildings yet.

Awareness and capacity: The awareness and capacity for crowdinvesting amongst both private and public authorities and financial institutions can be considered low. Most project developers have a very low capacity to realise small or large scale EE projects using any type of crowdinvesting or crowdfunding models.

Risk perception: The perceived level of risk is high from both public authorities and financial institutions. This leads to the cost of capital from crowd investing projects being above typical market rates.

Technical assistance and standardised documentation and tools: Market facilitators that provide technical assistance (e.g., energy/development agencies) are constantly present on the market and platform operators themselves sometimes provide TA services. Crowdfunding guidelines and methodology on how to prepare campaigns have been in circulation for a long time but grants for preparation costs of crowdfunding campaigns are unfortunately not yet available.

Conclusion: Crowdinvesting as a model is only applicable for project developers from the private sector while the public sector is prohibited from directly allowing citizens to become investors in their projects. The legislative framework is very undeveloped and very restrictive. As a result, only a couple of platforms are currently active, and none has had deep renovation of buildings in their portfolio of campaigns. Without a proven track record the interest from project developers remains low while the risk perception is higher than for the other market based financial instruments. The technical assistance us available to some extent while the materials for project developers, although available, have not been designed specifically for the energy sector.

1.6. Citizen-led initiatives – Energy cooperatives

Cooperatives traditionally played an important role in Croatian economy but were practically abandoned as a model by the late 1990s. Energy cooperatives in Croatia are facing challenges in the competitive renewable energy sources (RES) and energy efficiency (EE) project development market. Most cooperatives are still in the early stages of development and have not yet been established as significant players in the energy sector. The number of energy cooperatives has decreased due to the lack of national policies supporting their integration into the energy market. However, recent changes in energy regulation, particularly concerning energy communities, are expected to bolster the growth of energy cooperatives.

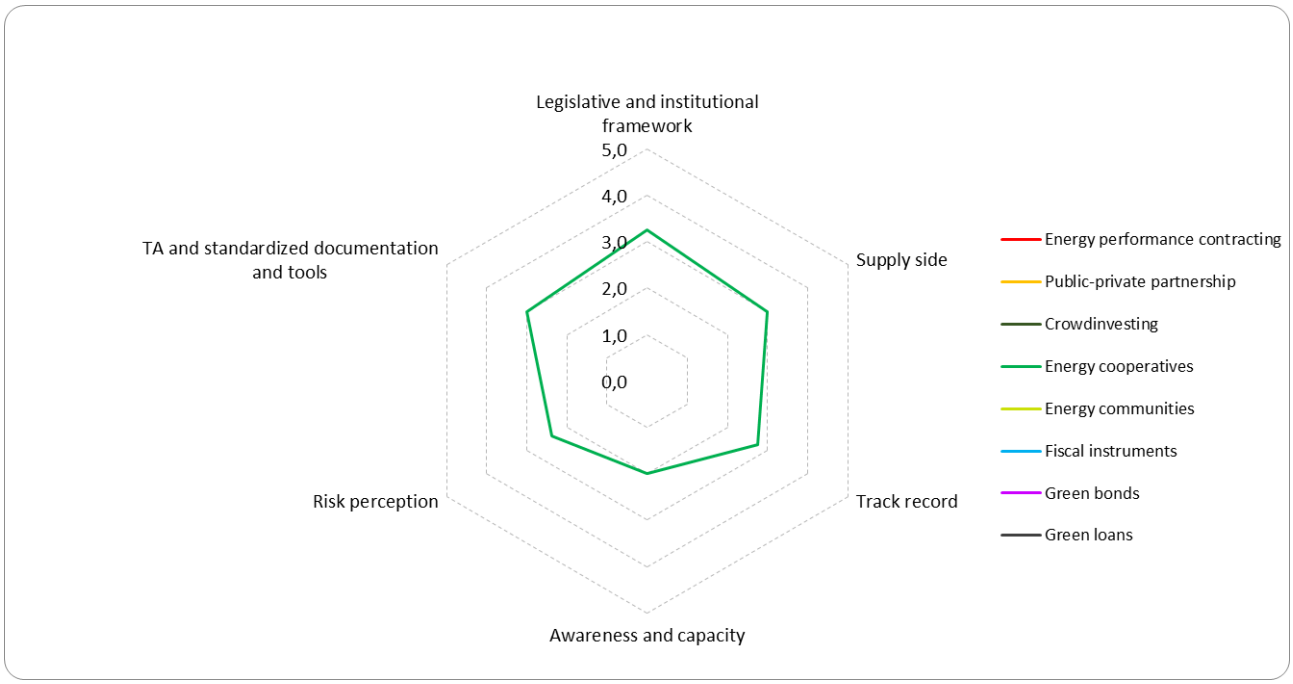

Figure 7: Energy cooperatives – assessment of the market status

Legislative and institutional framework: The legislative and institutional framework for cooperatives in general is fairly well established in Croatia. This means that the cooperative market is stable and does not fluctuate due to legal changes.

Supply side: The supply of energy cooperatives in Croatia is rather limited, with a declining number of active ones until recent trends with the energy communities started changing this. Energy cooperatives operate as energy suppliers (primarily solar energy) with some cooperatives being producers of biomass. This means that energy cooperatives are as, if not more, competitive relative to traditional companies. Alongside this, there is a high level of interest from citizens in providing financial resources and becoming members of energy cooperatives.

Track record: The track record of energy cooperatives in Croatia is good, although only small-scale projects were implemented and none were related to deep renovation of buildings (only solar power plants). The investment volume of and market share of EE/RES projects implemented by cooperatives is very low (below 5%).

Awareness and capacity: Awareness and capacity of energy cooperatives in Croatia is generally good, although the level of awareness from the public and private authorities on cooperatives in general and how they work is quite low. The citizens have limited capacities and/or support to establish energy cooperatives and implement a larger number of EE/RES projects.

Risk perception: Energy cooperatives are not perceived as particularly risky service providers in Croatia due to recent implemented projects which were quite successful. Equally, the risk perception among citizens is mixed to good with many people having had positive experiences thereby lowering the general risk perception.

Technical assistance and standardised documentation and tools: There is a good availability of market facilitators who provide technical assistance for establishing energy cooperatives, and there are some obtainable, although limited, amounts of grant funding for establishing energy cooperatives from the national ministry. Finally, there are general, and some specific, guidelines available on how to establish energy cooperatives.

Conclusion: Cooperatives are a well-known model in Croatia with an established legal framework in place. The track record of energy cooperatives, even though small, is generally positive which results in a fairly low risk perception of cooperatives. Unfortunately, wider uptake of this citizen-led model has not happened yet but with recent market changes its perspective is quite positive. Availability of technical assistance and standardised documentation is expected to additionally help with the formation of new energy cooperatives in the future.

1.7. Citizen-led initiatives – Energy Communities

Two different types of energy communities have been officially defined in Croatian legal framework: renewable energy communities (REC) and citizen energy communities (CEC). In Croatia no entities have been formally registered as Renewable Energy Communities (RECs) or Citizen Energy Communities (CECs) and there were no implemented projects until September 2023 although some positive trends have been registered. Amendments to the existing energy legislation and its associated regulatory frameworks are currently in progress and are expected to resolve at least some of the barriers for the uptake of this model.

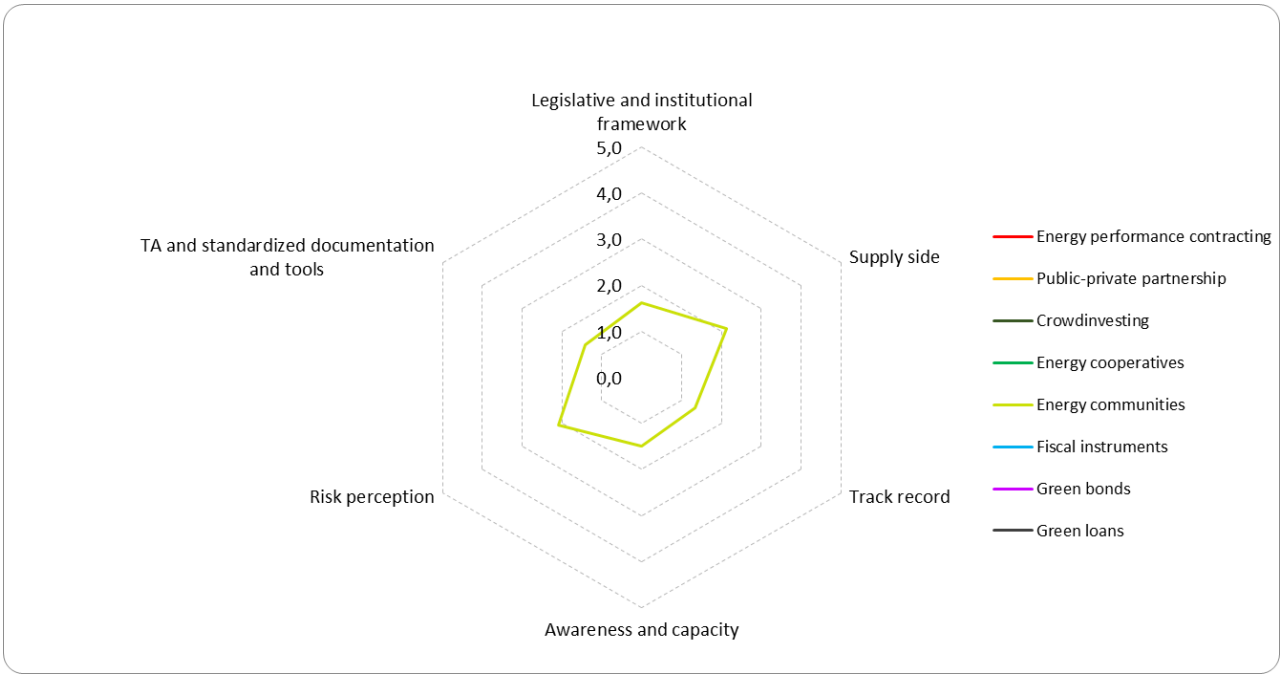

Figure 8: Energy communities – assessment of the market status

Legislative and institutional framework: In Croatia the legislative and institutional framework for energy communities is very underdeveloped with restrictions which limit the type of organisational and legal form which can become energy communities. Since there is an amendment of the relevant laws underway this situation could change dramatically in the near future.

Supply side: With regards to supply energy communities are still not comparable to traditional and alternative models due to their unavailability on the market. Solid interest from citizens, SMEs and public authorities in participating and providing financial resources for projects has been detected by the institutions which are currently piloting this model on the market.

Track record: The track record of energy communities is practically non-existent since only one renewable energy community has been established but has so far not implemented any concrete projects. Two pilot projects are currently underway, and their realization is expected in 2024.

Awareness and capacity: Awareness and capacity of public and private authorities in Croatia on energy communities and how they work is very low. Moreover, the ability of citizens, public and private authorities to establish energy cooperatives and implement a larger number of RES projects was also deemed by stakeholders to be very limited.

Risk perception: The risk perception of energy communities from public authorities and private companies and citizens is high due to unclear regulatory framework and questionable business model.

Technical assistance and standardised documentation and tools: The provision of technical assistance and standardised documents and tools is not good since the legal framework and procedures themselves are not very clear or even questionable. At present, there are no specific government-backed support programs dedicated to energy communities. The advancement and strengthening of these communities, particularly in terms of access to information and advisory services, are mainly driven by projects funded by the European Union, various international funding sources, and just several motivated market facilitators.

Conclusion: Energy communities are by far the most underdeveloped model of all analyzed ones and are currently very difficult to apply for any kind of energy project. The legal framework needs a lot of amending, including more active financial and technical support from the national level. Only then a more proactive awareness and capacity-building campaign will be needed to ensure a wider uptake of this model.

1.8. Conclusion and recommendations for potential piloting actions

A few key conclusions about financing conditions in Croatia can be drawn from the conducted gap analysis. Croatian financial market is very conservative, and the legislative framework supports traditional financial models (loans, grants and bonds). Of the eight financing approaches considered three can be considered as underdeveloped but worthy of additional exploration for

the piloting phase of the project: green/climate bonds, energy cooperatives and fiscal instruments.

Green, climate, or sustainability bonds have so far not been used in Croatia for the purpose of increasing energy efficiency or utilization of renewable energy sources on either public or private buildings. The complicated procedures, strict regulations and general unpreparedness of project developers for this instrument were the main barriers to its use. However, the market interest is very high, especially from the institutional investors but also from the citizens (as evidenced by the recently issued sovereign bonds). The pilot activity for this instrument could include assistance with the development of a prospectus and monitoring documentation required by the law and the existing (EU) green/climate/ sustainable bond standards.

Energy cooperatives have just recently shown their true attractiveness for investors on a series of small-scale solar projects but have the potential to be upscaled on a much larger level. The piloting for this citizen-led model could foresee the development of standardized documentation with evaluation tools for the assessment of the financial feasibility of potential projects.

Fiscal instruments, although currently limited at the local level to the communal fee for the construction of new, highly energy-efficient buildings can easily be implemented on a very wide scale throughout Croatia. The piloting action for this instrument could include the tool for the evaluation of the energy impact of the introduction of this fiscal measure and the supporting documentation for monitoring its effects.

List of figures