

ASSESSMENT OF POLICY FRAMEWORK IN CE PARTNER COUNTRIES FOR INTRODUCTION OF NEW FINANCING SCHEMES

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The eCentral project summary

Addressing poor energy performances of public buildings is at the core of EU's Energy Efficiency Directive and Energy Performance Building Directive but also one of growing financial issues in Central European countries. To address that eCentral project will support key stakeholders to realize benefits of newly implemented building standard - nearly zero energy building (nZEB). eCentral project will prove that nZEB approach, although innovative, is optimal and cost-effective solution for renovation and construction of public buildings. Project aims to capitalise on results of previous and ongoing EU initiatives. Austria has a proven track record with nZEB renovation projects and will be leading other implementing partners (CRO, SLO, HUN) by example. Transnational cooperation will be used to receive maximum international visibility of selected pilot actions. Main outputs of the project are:

- energy performance certificate (EPC) Tool for public authorities
- deployment and promotion of innovative financing schemes
- training programme and project development assistance for nZEB projects
- building renovation strategies for selected regions
- state of the art pilot nZEB public buildings in selected regions
- established cooperation with scientific institutions and other nZEB initiatives

Transnational Assessment and Support Group, formed from project experts and scientific institutions will act as a support team and provide quality checks of each output. EPC Tool will be developed and used by public sector decision makers and project developers beyond eCentral project lifetime. Trained energy efficiency teams within the regional government will serve as a backbone for conducting future nZEB projects. The European Academy of Bolzano (EURAC), one of the leading centres of expertise on energy efficiency in the Central Europe region, will focus on policy analysis and dissemination of eCentral project results.

About this document

This document is part of workpackage T1, named D.T1.5.2 Assessment of policy framework in CE partner countries for introduction of new financing schemes and is a complimentary document to D.T1.5.1 Analysis of innovative financing schemes for deep renovation of public buildings.

The document gives an overview and status of policy frameworks for use of innovative financing schemes (public private partnership, energy performance contracting and crowdfunding) for nZEB projects in 2018. As a two-stage deliverable, this report provides an assessment at the beginning of the project and at its end, in order to compare the progress made in this field. The following countries have been analyzed by the ASG members of the consortium:

- Croatia by REGEA
- Slovenia by KSENA
- Hungary by Energiaklub
- Austria by EAST
- Italy by EURAC

Key findings from this document will be tested during pilot actions in three target regions and used for wider promotion of innovative financing schemes during later stages of the project.



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A. Report summary

Poor energy performances of public buildings as well as growing financial issues are at the core of the European Energy Efficiency Directive and Energy Performance Building Directive. The eCentral project supports key stakeholders to realize benefits of nearly zero energy buildings, using innovative financing schemes such as public private partnership (PPP), energy performance contracting (EPC) and crowdfunding (CF). To demonstrate viability of these models they will be tested in form of pilot actions which will focus on (re)construction of public buildings in three Central European target countries: Croatia, Hungary and Slovenia. These countries generally represent less developed markets in the context of innovative financial models which makes them an ideal ground for testing technical, legal and financial aspects of nearly zero energy building (re)constructions. Austria and Italy, on the other hand, are seen as mature financial markets whose success stories in this segment could be used for replication in Croatia, Hungary and Slovenia. However, findings in this report have shown that public nZEB projects in all eCentral countries in 2018 face certain difficulties when it comes to use of innovative financial models.

Croatia has a comprehensive and well-arranged legal framework for the public private partnership model. PPPs have had a particularly important role in the development of large infrastructure projects and the provision of quality public services in the transportation sector. This has not translated to the buildings sector considering that this model has not been used for energy renovation in the past ten years. In 2018 several public lighting projects have been realized through PPP marking a positive change of trends after a number of inactive years for the PPP market. Energy performance contracting market has followed the same path and low energy prices have considerably hindered the feasibility of energy renovation projects. Crowdfunding has been a sparsely used financing mechanism, usually for smaller sustainable energy projects in the public sector due to the lack of professional crowdfunding platforms, undefined legal framework and low awareness of citizens and project developers about this funding mechanism. Still, in late 2018 a new P2P micro lending platform for sustainable energy projects has been announced which could make significant positive changes on the market.

In Hungary, the lack of proper PPP regulation and supporting institutions resulted in a complete stop of PPP projects after the market boom in the early 2000s. PPP was seen as an opportunity to close out a funding gap, but inadequate financial and risk assessment resulted in a large number of financially unviable projects which resulted in government intervention through subsidies to keep these projects running and general mistrust towards both the PPP model and private investors. The EPC model followed a similar path as the PPP as the market shrunk due to bad EPC projects in the past period, low energy prices and economic recession. The new Eurostat guidance has helped in revival of the EPC market but the lack of dedicated financial instruments for ESCOs (primarily guarantee instruments and loans) are still significantly hindering market development. Crowdfunding is still a new financial mechanism in Hungary as there is only one platform and no dedicated national crowdfunding legislation in place. Public authorities can use a donation-based model while equity model is prohibited by law to non-financial institutions.

Slovenian PPP market has been legally set up from 2007 but has seen only moderate development due to small size of public projects which are unattractive to private investors. Other challenges derive from the lack of knowledge regarding PPP, which often lead to poorly prepared and conducted projects. The draft law on public-private partnership which will be up-to-date and in line with new EU directives is still in preparation. Energy efficiency investments in deep renovation of public buildings are mostly financed from the European Structural and Investment Funds (ESIF), using financial instruments and EPC, which has enabled adequate leverage factor to EU funds and public funding from the Republic of Slovenia.



This national ESCO funding scheme has revived the energy renovation market but recent changes in the structure of the scheme in which energy distributors have to provide their own funding for the project have significantly reduced interest in EPC model. On the other hand, crowdfunding model has only been tested by private sector project developers while no significant public sector projects in the field of energy efficiency have been recorded yet. National legislation which directly regulates crowdfunding in Slovenia does not yet exist and only one platform is active at the moment which results in a very passive crowdfunding market.

PPP model is well used in Austria, especially in larger cities (e.g. Vienna) and for major projects (e.g. infrastructure, public buildings). This is the case even though no explicit legislation regarding PPPs and concessions exists and no dedicated financial instruments for PPP projects are currently available. Complicated legal requirements and consultancy costs make PPP projects more expensive and less attractive for smaller municipalities which have rarely used this model for energy renovations of buildings so far. Although there is a large number of reliable ESCOs on the market the EPC model faces similar market barriers for wider uptake as the PPP, such as: the lack of know how in tender procedures and high specific project preparation costs which require bundling of smaller projects. Financial instruments for ESCOs are available only in certain Austrian states and not on the national level. The Austrian crowdfunding market changed rapidly over the last years and experienced a strong uptake of models in 2015 with the introduction of the Alternative Financing Act and its amendment in 2018, which simplified the regulation again. Nevertheless, some barriers and challenges were identified for a wider application of crowdfunding in Austria and public authorities have limitations for using of this mechanism.

Italian PPP market has steadily developed since 2000 due to well-structured legal framework but has not reached same investment levels as the French and English PPP markets, which are the leading ones in Europe. Large public projects have predominantly used this model although almost half of Italian municipalities have also had experience with PPP projects. High preparation costs, complex regulatory system and decision on risk distribution between public and private partner are some of the typical market issues for PPP projects. EPC on the other hand is not regulated by national legislation, but only through European regulations, partially integrated by the national energy agency (ENEA). A large number of ESCOs exists on the market and the EPC model is based on real energy savings that has to be measured and verified which makes these projects much safer for public contractors. In the building sector, crowdfunding is an innovative method to collect money and support the construction works for new and existing buildings. Being the first country in the world to enact a comprehensive regulation for the collection of capital through equity crowdfunding platforms the market is showing significant yearly growth. Although the number of crowdfunding platforms and campaigns is constantly growing public authorities rarely use this model for renovation of public buildings because of existing legal constraints and unfamiliarity with this model.

Due to the increasing complications when it comes to use public money, municipalities must find new and creative ways to fulfil their public obligations (providing infrastructure and public services). The budgets of the municipalities are limited by regulations and regulations on national and European level (Maastricht duty). Additionally, the public debt burdens increased strongly in recent years in most eCentral countries and for these issues, financial models such as public private partnerships, energy performance contracting, and crowdfunding appear as attractive alternatives, providing fresh capital and (possible) public off-balance sheet investments. A more extensive and comprehensive overview of markets for these models has been given in the following chapters.

B. Country overviews

1. Croatia

1.1. Public-Private Partnership

1.1.1. Legal, regulatory and administrative framework

The basic framework and goals of public-private partnerships (PPPs) are set out in the Strategic Framework for the Development of Public-Private Partnerships in the Republic of Croatia. The Strategic Framework includes clear guidelines concerning the scope, principles and goals in the application of the PPP models in the Republic of Croatia and concerning issues relevant for their implementation. The Strategic Framework also promotes respecting the positive role of social partnership and dialogue with all interested parties concerning issues relevant for the successful implementation of PPPs in the Republic of Croatia. The Strategic Framework notes that the application of various forms of PPPs should be conditional on:

- better value for money;
- long-term budgetary sustainability and acceptable fiscal risks;
- readiness of the private sector to participate in a PPP (i.e. fiscal profitability of the investment).

Public-private partnership in the Republic of Croatia is regulated by the Public Private Partnership Act (OG 152/14) and the accompanying Regulation on implementation of Public Private Partnership Projects (OG 88/12), Concessions Act (OG 143/12) and the Public Procurement Act (OG 90/11 and OG 83/13) relating to the procedures for awarding the public procurement contracts and concessions contracts. The PPP Act regulates:

- procedures for the preparation, nomination and acceptance of PPP projects;
- rights and obligations of public-private partners;
- establishment and competencies of the PPP Agency.

PPP model is used for the realisation of infrastructural projects, primarily those relating to transport, energy and urban infrastructure, preservation of the environment, and the realisation of other projects, in line with the needs of Croatian citizens and other social entities, i.e. public interest in the charge of the competent public authority.

Three public institutions have a central role in the implementation of the PPP framework:

- The Ministry of Economy, Entrepreneurship and Crafts;
- The Ministry of Finance;
- Agency for Investments and Competitiveness (AIK).

The Ministry of Economy, Entrepreneurship and Crafts is in charge of the overall development and implementation of the PPP policy on national level and laws on public procurement. The Ministry of Finance evaluates and grants approval of potential PPP projects regarding their compliance with the budget projections and plans, fiscal risks and constraints regulated by special regulations, as well as the financial and fiscal sustainability of the project proposal. In this sense, the Agency for Investments and Competitiveness (hereinafter: AIK) and the Ministry of Finance, as the central bodies competent for the

application of the PPP models in the Republic of Croatia form a functional unit. AIK's role also consists of developing a standardised approach in terms of the procedures of proposing and selecting PPP projects, drawing-up tender documents, contract forms, manuals, guides and performing a comprehensive and regular audit of the entire process of implementation of PPPs. When evaluating justifiability of the PPP model, AIK's assessment focuses on the set of criteria relating primarily to the allocation of risks and responsibilities between the public and private partners, as well as feasibility and the value for money of the project.

Rights and obligations of the parties to a PPP project have to be regulated either through the underlying acts of a joint-venture company, in the case of institutional PPPs, or through a PPP contract in the case of contractual PPPs. The term of such a contract should be between five and forty years, allowing for the possibility of renewal at the end of the contractual period.

Public bodies are the only ones authorised to propose the implementation of a PPP project and each PPP cycle (Figure 1) starts with a project proposal which has to be sent to AIK for prior approval. PPP project proposal has to contain at least Public Sector Comparator (PSC), Draft of a PPP contract and other documentations. Before initiating the procedure for the selection of a private partner, the public body must also obtain consent from the Ministry of Finance to the final draft of the PPP contract. The Ministry of Finance shall grant the prior consent with regard to compatibility of estimated direct financial liabilities of the public body with budgetary plans and projections while AIK approves a PPP project proposal if it fulfils prescribed criteria for the approval of PPP project proposals only after acquisition of a prior consent from the Ministry of Finance. A public body may initiate the public procurement procedure for the selection of private partner only after PPP project proposal is approved. The final version of the concluded PPP contract must be submitted to AIK, which keeps a public Register of all PPP contracts entered into in Croatia in accordance with the Ordinance on the Establishment and Maintenance of the Register of PPP Contracts ("the PPP Register"). If the PPP project proposal is incomplete, AIK warns the public body by issuing a Conclusion and requesting for remedy, warning on legal consequences if it fails to do so. If the public body fails to file supplement to documentation within the proposed period, AIK dismisses the PPP project proposal.

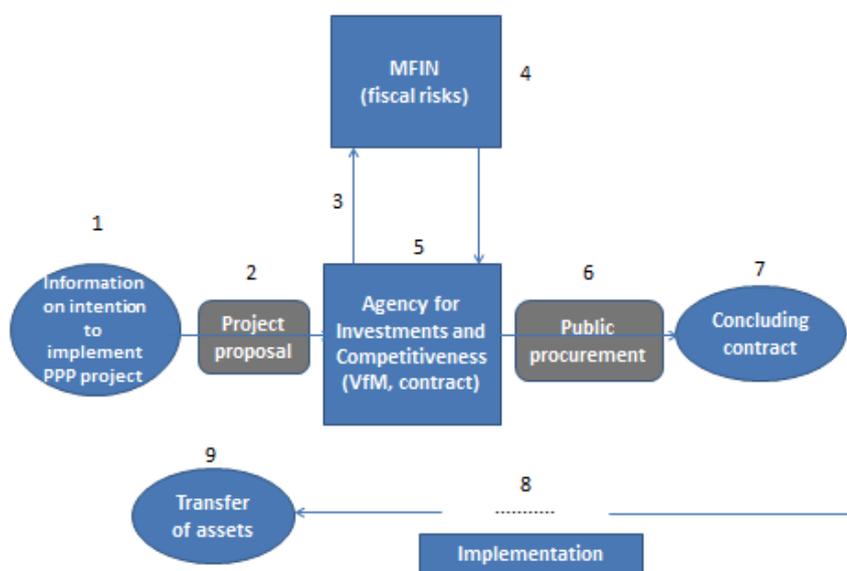


Figure 1 The PPP Cycle in Croatia

Source: Agency for Investments and Competitiveness



The period of exploitation or project implementation is starting after entering into force of the PPP contract (usually after financial close). The private partner transfers the PPP infrastructure (e.g. public building) to the public partner after contract termination without compensation. The maximum contracted period may be beyond the 40-year limit if the PPP project is based on a concession and applicable sectorial law prescribes that a related concession may be awarded for more than 40 years.

1.1.2. Market assessment

First PPP projects in Croatia had been contracted well before the complete PPP legal framework was put in place. The Istrian “Y” highway is considered the first PPP project in Croatia, signed back in 1995 with the financial closing for over EUR 500 million which was completed in 1997. Between 1998 and 2005, only three PPP transactions reached financial close, albeit projects of a relatively large size (average CAPEX about EUR 265 million). These transactions were the:

- Istrian Motorway Phase 1a (Croatia) in 1998, EUR 199 million CAPEX
- Zagreb Sewerage plant (Croatia) in 2001, EUR 300 million CAPEX
- Istrian Motorway Phase 1b (Croatia) in 2003, EUR 296 million CAPEX

The following decade was quite turbulent for the PPP market with changes in the legislative frameworks that resulted in dramatic fluctuations in numbers of signed PPP contracts and corresponding investment volumes (Figure 2).

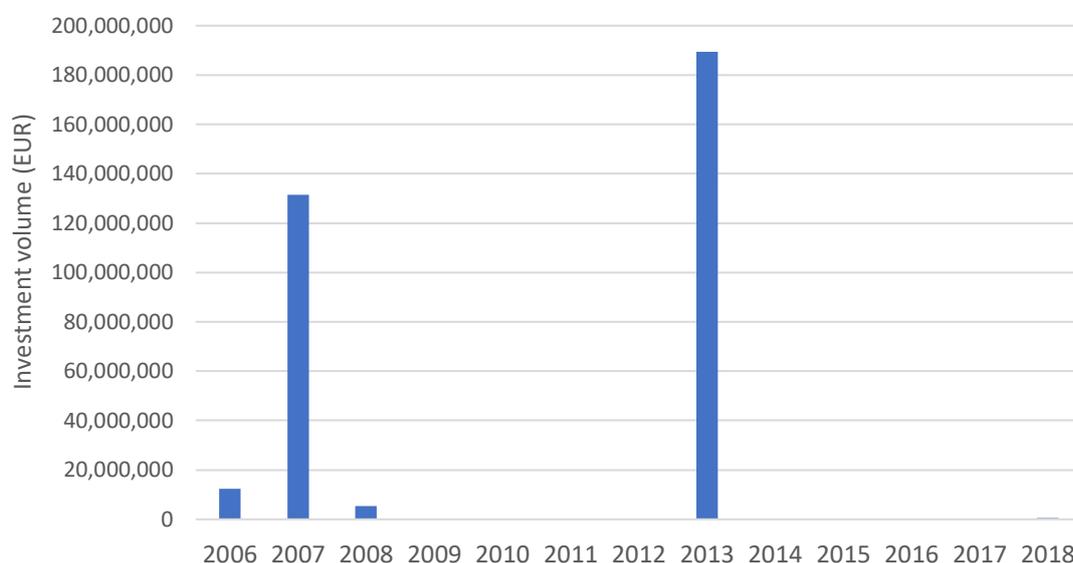


Figure 2 Investment volume of approved public-private projects in Croatia

Source: Registry of public-private partnership contract

2006 started promisingly by the signature of the first set of small authority-pay contracts in Croatia. The average CAPEX of the projects making up this subnational programme of schools and public buildings stood at only EUR 4.3 million.



2007 saw a significant increase in PPP activity when the number and aggregate value of closed transactions reached a high in 2007, despite a modest average project size (approximately EUR 50 million CAPEX). The main transactions were two user-pay transport projects:

- Zagreb to Macelj Motorway;
- Central Bus Station in Osijek.

Other transactions that closed in 2007 were the completion of the Croatian programme of local authority-pay projects in the educational sector and two sports facilities, also in Croatia. The global economic and financial crises dramatically affected infrastructure investment in the Region from 2008. Following a four-year period during which no project reached financial close, partly due to complicated PPP approval procedures which came with the new Public-Private Partnership Act, market activity resumed in 2013. The most significant transactions closed over recent years was the airport concession in Zagreb at a CAPEX of EUR 190 million. Croatia's PPP market is reaching new levels of maturity with a substantial project pipeline currently being developed. From 2013, 9 PPP projects have been approved with total CAPEX value of EUR 261 million.

Transport has been the most important sector by far (Figure 3), with two projects with an aggregate CAPEX of EUR 1.54 billion, representing over 60% of the total PPP market by value over the reference period (2006-2018). PPP model has been sparingly used for energy efficiency projects, such as modernization of public lighting (0.24%) and renovation of public buildings (0.35%). However, it has been commonly used as a business model for construction and extension of schools (26.77%) and sports utility facilities (12.08%).

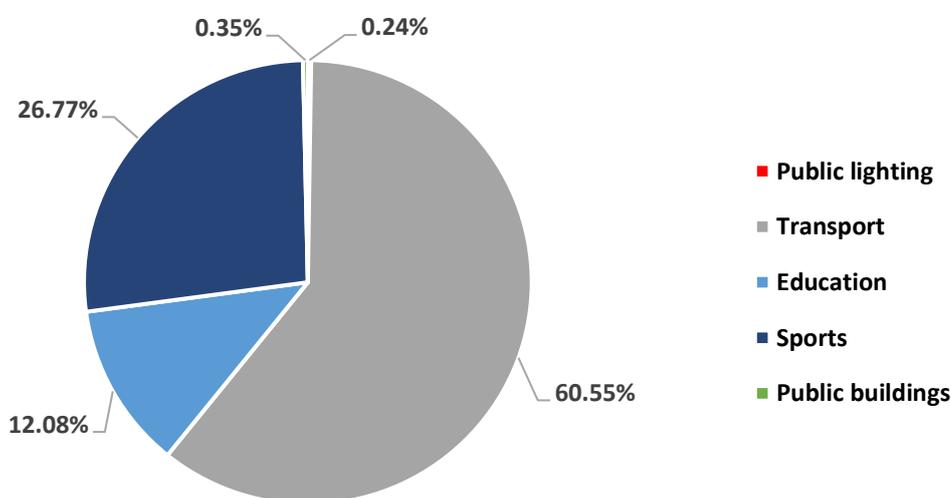


Figure 3 Approved public-private projects in Croatia by sector

Source: Registry of public-private partnership contract

Most PPP projects in Croatia so far have been implemented through PFI (Private Finance Initiative) and concession models, mainly in sectors such as education, healthcare, public administration, environment, culture, and sports. In recent years, public authorities have started to use contractual PPP models for energy efficiency projects that include a full range of services (e.g. design, build, finance, operation and maintenance of the street lighting systems).



Croatian government and other public sector institutions have become highly interested and supportive in implementing PPP projects in Croatia because the need for public facilities and infrastructural projects in Croatia is huge but the abilities to finance those projects are highly limited. PPP model seems to be the answer to some of the problems, giving the possibility of realisation of projects that would surely be on hold waiting for better times in financial situation of the country. Barriers which hinder the development of PPP market are three-fold.

Lack of affordable capital, risk sharing instruments and technical assistance for preparation of potential projects for public authorities are currently the main obstacles that hinder a wider uptake of PPP model. Domestic banks have very limited experience in financing PPPs either through corporate or project financing. Zagrebačka Banka and Erste & Steiermarkische Bank-Croatia are some of the banks that have contributed to the financing of PPP projects to date. Large PPP transactions have been financed almost exclusively by foreign banks and International Financial Institutions, such as EBRD, EIB, IFC and KfW. Combining European Structural and Investment Funds (ESIF) with private financing resources in a PPP structure is recommended on the level of the European investment policy. The Agency for Innovation and Competitiveness, in consultation with relevant EU institutions, has proposed the procedure for combining PPP with ESI Funds which was approved by the Managing Authority. Blending can be attractive from an ESI Funds perspective as the use of a PPP structure may bring additional disciplines in the deployment of funds and improve value for money (VfM).

Limited public sector capacity to manage the combination of grant funding and PPP preparation and procurement processes appears to be the single most important barrier. Also, the supply of specialist PPP advisory services in Croatia is still relatively under-developed. For large infrastructure projects, contracting authorities, project sponsors and financiers have tended to rely on international advisory companies with a local presence.

Another important issue is the lack of capable contractors, facility managers and operators in Croatia. To date, the large PPP contracts have been granted to consortia led by foreign international companies such as Bouygues, Hochtief or Strabag. Most domestic companies have no, or very limited, experience in long-term contracting and whole-life project management. However, in a few cases, domestic companies have been partners in consortia led by foreign companies (e.g. Viadukt, a Croatian company, for the Zagreb Airport project). Meteor Grupa, Tehnika, IGH, Konstruktor and Dalekovod (all from Croatia) are among the few other domestic companies directly currently involved in, admittedly smaller, PPP projects. (EIB EPEC - European PPP Expertise Centre, 2014) (Restaura Project Consortium, 2016)

1.1.3. Conclusions and Recommendations

In the past ten years Republic of Croatia has made a significant improvement of the legislative framework giving institutional assurance to the investors interested in implementation of PPP projects, which contributes to the overall attractiveness of Croatian investments in public infrastructure projects. Main market barriers can be solved with introduction of dedicated financial instruments for PPPs, technical assistance or grant funding for PPP preparation costs and of introduction of constant education about PPP for project developers, financial institutions and private investors.

PPP models which could be used for deep renovations and construction of public nZEB buildings include a wide range of contractual (PFI) models that involve some kind of a combination of DBFMT (Design-Build-Finance-Maintain-Transfer) services.

1.2. Energy Performance Contracting

1.2.1. Legal, regulatory and administrative framework

Energy performance contracts in the public sector offer a practical solution to make public buildings and other public infrastructures more energy efficient, as the initial investment can be covered by a private partner and repaid by guaranteed energy savings. However, frequently this type of contract simultaneously contains elements of a rental, service, lease, purchase or loan agreement, making its recording complex. The procedure of implementation of energy services in the public sector in Croatia is regulated by the following legal acts:

- Act on Energy Efficiency (OG 127/14);
- Regulation on contracting and implementation of energy services in the public sector (OG 11/15).

The purpose of this legal framework is to ensure that implementation of measures to improve energy efficiency in public buildings is carried out with no additional spending of owners'/users' budgetary resources. The Act on Energy Efficiency defines energy services as the implementation of energy efficiency projects and other related activities based on energy performance contract with a guarantee which in referent conditions leads to verifiable and measurable or estimated energy efficiency improvement and/or energy and water savings. Regulation on contracting and implementation of energy services in the public sector, additionally, prescribes full standards and complete rules that are implementing the methods for contracting energy services in the public sector and content of the energy service contracts which are governing the rights and obligations of the provider and the client's energy services and a way for monitoring over the implementation of energy services in order to offer a sustainable energy use and fair practice for the public sector.

Ordinance on the methodology for monitoring, measurement and verification of energy savings (71/15) defines a methodology for proper reporting on achieved savings for buildings owned by the public sector, including a web application (SMiV - System for monitoring, measurement and verification of energy savings) where the reporting is done.

Eurostat, the Statistical Office of the European Commission, published a guidance note on the recording of energy performance contracts in government accounts which applies to EPCs in Croatia as well. EPCs where the energy efficiency is obtained through energy management measures, without any investment in equipment addition or renewal, are treated as simple service or maintenance contracts. In case where the energy service provider guarantees future energy savings whose financial value is equal or higher than the service fee paid by the public sector client then this contract is not considered as an increase of clients (public) debt. For an EPC to be recorded off government balance sheet, the EPC contractor must be considered as the economic owner of the assets installed, which means that it will have to be the entity incurring most of the risks and benefitting from most of the rewards related to the EPC contract. In case the asset is recorded off government balance sheet, the impact on government deficit will be limited to the regular payments (the EPC fee, linked to the energy savings) undertaken by government to the EPC provider, which are spread over the duration of the contract. Moreover, no debt impact will be recorded at inception.

1.2.2. Market assessment

Energy performance contracting, although an important concept in the financing of energy efficiency projects has had a variable success over the years in Croatia. The European Commission estimated the market for ESCO services in Croatia to be between EUR 40-80 million by 2020.



The EPC Market in Croatia is currently still in the early stages of development. The slowly developing supply side of the market is facing a large potential demand for the energy rehabilitation of public buildings in the country. The public building stock in Croatia comprises of 80,196 buildings with 13.8 million m² of floor space. Almost two thirds (53,911) of these buildings, which form 45% (6.2 million m²) of the total floor space, were built before 1980 and now urgently need to be refurbished following the energy efficiency standards set in national legislation.

First phase of the development of the ESCO market in Croatia was marked by the dominance of the national ESCO company - HEP ESCO (owned by the utility company HEP), as part of the first National Programme for energy efficiency in 2003. Until 2011 HEP ESCO modernized public lighting for 10 Croatian cities and retrofitted approximately 100 public buildings worth about EUR 15 million. Investment per project has typically been in the range from EUR 0.13 to 1.3 million, most of them in the form of energy service contracts with fixed payments. Calculated pay-back periods were in the range of 5-10 years. By 2010 only two ESCOs were registered on the market but in recent years an up pace in activities, with regards to market participants, can be noticed. This can be contributed to the implementation of national Programme for energy renovation of buildings of the public sector from 2014 to 2015 (with a following programme from 2016 to 2020) which had a positive impact on the overall ESCO market. 21 EPCs were signed over 2014-2016 for 68 buildings for a total contracted value of EUR 125 million. The Programme is implemented in the following 5 stages: introduction of a public-sector building into the Programme, preparation of tender documentation, public procurement procedure, implementation (through an ESCO company) and monitoring of programme results. The implementation of the Programme is administered by the national Agency for Transaction and Mediation in Immovable Properties (APN) through Energy Performance Contracting and co-financed by the Environmental Protection and Energy Efficiency Fund (EPEEF). EPEEF provided funds for co-financing the implementation of the Energy Renovation Programme for Public Sector Buildings of Croatia for the period 2014-2015, by granting financial assistance in the total amount of up to EUR 26 million or 40% of eligible costs. In the new edition of the Programme the grant co-financing is planned to be allocated from the European Structural and Investment Funds.

However, it is important to point out that almost all of these projects were not pure EPC type projects in the sense that payment is based on a fixed level of energy savings which was defined at the time of contract signature based on project documentation. In other words, energy savings are not verified and monitored during the term of the contract and no savings guarantees were offered. In the last few years there has been a sharp decrease of projects implemented by HEP ESCO due to the lack of savings guarantee and the effective regulation of the Croatian Government which limited borrowing by companies owned by the state. Also, the changes proposed by Eurostat which clarify the circumstances in which EPC contracts can be recorded off government balance sheets dismissed the notion that these contracts are not considered as an increase of public debt. For an EPC to be recorded off government balance sheet, the EPC contractor must be considered as the economic owner of the assets installed, which means that it will have to be the entity incurring most of the risks and benefitting from most of the rewards related to the EPC contract, which was not the case in most EPC contracts in Croatia.

In that regard, a new EIB ELENA funded project NEWLIGHT which promoted the use of EPC and Public-Private-Partnership models for modernization of public infrastructure managed to introduce standardized EPC contracts in accordance with Eurostat's Guidance Note on the recording of Energy Performance Contracts in government accounts. The overall investment value of EPC contracts within the NEWLIGHT projects is estimated at EUR 10 million with first contracts to be signed in 2018.

EPC exists in a wide variety of models with Energy Supply Contracting (ESC) as a variant which focuses on the efficient supply of energy.



The ESC is a service primarily used in the commercial and industrial sectors but was also be used in the public sector in large energy consumers such as schools, hospitals and retirement homes. Examples of implemented pilot projects include an installation of biomass heating systems in a school in the city of Duga Resa and in the City of Karlovac's chamber of trades and crafts.

Croatian financial market, in general, can be considered as stable but conservative and risk averse in terms of alternative investments and financial products. Financial institutions perceive EPC based projects as complex transactions that require longer than usual (financing) approval procedures bearing higher than usual transaction costs. Financial institutions are very much interested in entering EPC market, as one of perceived future markets, but under the assumption of introduction tangible risk mitigation tools and higher standardization at international level. These would bring transaction costs down and compensate the risk prevailing at the moment. (Energy Institute Hrvoje Požar, 2016)

Dedicated financial instruments for EPC projects are currently non-existent. ESIF grant based schemes have been predominantly used by project developers as well as soft loans approved by the Croatian Bank for Reconstruction and Development (HBOR). However, some progress has recently been made with introduction of specialized ESIF financial instruments for SMEs and public lighting projects.

Aside from the HEP ESCO company and some 15 active ESCOs a number of small start-ups, characterized as "sleepers", can be found on the market, waiting for the market to fully open up.

Aside from public buildings and lighting, industry is being highlighted by the EPC providers as the most lucrative sector. Main barriers for development of the ESCO market include the lacking support from the government in form of adequate regulation and subsidies, mistrust from the market, complexity of the concept coupled with the lack of information and high cost of capital for ESCOs.

Key barriers that hinder the development of Croatian ESCO market include lack of favourable financing instruments (loans, guarantees), low energy prices that negatively affect cost-effectiveness of energy efficiency projects, lack of knowledge and trust from project developers and financial institutions.

1.2.3. Conclusions and Recommendations

Accession to the EU in 2013 significantly improved the national legislative framework regarding energy services and Eurostat's notice on energy performance contracts cleared up the confusion about treatment of EPCs in public accounting systems. With legal barriers not hindering the ESCO market anymore, several important issues remain to be solved: lack of adequate financing for ESCOs (high interest rates, no risk sharing facilities), grant dependant project developers, low quality of technical/energy related information about buildings due to poorly performed energy audits and monitoring of energy consumption, low energy prices. Several larger ESCOs are already present at the market and more are awaiting better financing conditions to enter the market.

EPC models which could be used for deep (nZEB) renovations of public buildings include EPC Plus contracts which would have to foresee down-payments for a part of the public building owner's up-front costs (reduction of the investment cost of the ESCO). This down-payments could be made in form of a grant and would be necessary pre-requisite as pay-back periods for deep renovations are longer than lighter energy efficiency projects (adequate for EPC light or basic models). (Project EESI 2020, 2017)



1.3. Crowdfunding

1.3.1. Legal, regulatory and administrative framework

Croatia has so far not made any specific laws to either forbid or further regulate certain models of crowdfunding (donation, rewarding, lending and investing models) but decided to review each model within existing legislation and analyse in which way it should be applied to crowdfunding. Therefore, each crowdfunding model has to tackle with different parts of Croatian legislation.

- **Crowddonating** - Legal qualification of this type of crowdfunding is rather easy since donation and gift are synonyms (Friganović, 2011) and donation can be therefore qualified as a gift contract that is regulated in the Croatian Law on Obligations. Categorisation as donation is very important from the perspective of tax law, for the person receiving the donation as much as for the donor. According to article 6, 7 and 13 of the Law Concerning the Financing of Units of Local Government and Regional Self-Government, individuals and legal entities that in the Republic of Croatia receive money as a gift, need to pay 5% of the donated sum as taxes. According to Croatian Income Tax Act money donated through Croatian internet platforms could be used in certain cases in order to deduct taxes to be paid, resulting in an additional motivation for donors to participate in crowdfunded campaigns.
- **Crowdrewarding** - If a reward is of symbolic and not significant financial value it is treated as a gift and crowd-donating principles apply. If the reward is of financial the contract should be classified as a sale purchase agreement that is regulated by articles 376-473 of Croatian Law on Obligations.
- **Crowdlending** - The relationship that is created between the borrower and the lender in this type of crowdfunding can be categorized as a loan contract that is regulated in articles 499-508 of the Law on Obligations. Since the crowdlending platform acts merely as an intermediary, it is not to be treated as a party to the contract (Crnić, 2012) or as a credit institution that would require approval from Croatian National Bank according to article 56 of the Credit Institutions Act. Article 508 of the Law on Obligations regulates a loan with a purpose in a way that in case the purpose of the loan has been determined in the loan contract, the lender can terminate the contract if the borrower uses the money for another purpose. Money paid via crowdlending platforms is not secured by the deposit insurance system run by State Agency for Deposit Insurance and Bank Resolution under Deposit Insurance Act.
- **Crowdinvesting** - This model is possible in form of investing in exchange for shares in a joint-stock company, private limited liability company, for stake in a cooperative or in an exchange for a “silent” partnership stake in the profit of the fund-seekers company. If the future business of the crowdfunded company is organized as a joint-stock or limited liability company in which every investor that participated in the crowdfunding campaign will receive stock/share in return, one needs to consider the provisions of the Croatian Commercial Companies Act that regulate joint-stock and limited liability companies. Silent partnerships present a model which is much more appropriate for crowdinvesting since its contract is not subject to a particular form and it does not require the personal presence of an investor.

Because crowdfunding represents a source of financing in which the main actors (project owner, crowdfunding platform and individuals from the crowd) often do not come from same countries, in case of a dispute, it is often a challenge to determine the jurisdiction and applicable law. (Đurđenić, 2017)

So far, there have been no indications that crowdfunding will receive any kind of special legal regulations soon.



1.3.2. Market assessment

Croatian fundraisers prefer to seek funding on foreign crowdfunding platforms (Indiegogo and Kickstarter) 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 (Figure 4).

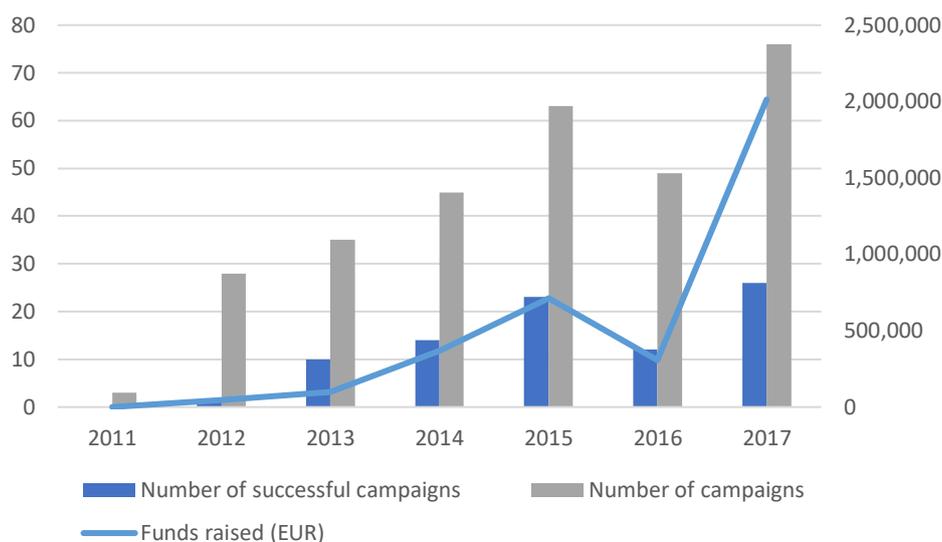


Figure 4 Investment volume of Croatian crowdfunding campaigns

Source: Registry of public-private partnership contract

Reward and donation-based models are the only models that have been used for sustainable energy campaigns on two domestic platforms (Croinvest and Croenergy) which have been set up by two non-profit institutions (Centre for Social Innovation and Sustainable Development and North-West Croatia Regional Energy Agency). The platforms charge no additional fees for campaign developers and their primary role is to support projects with low financial profitability and high economic benefits for local communities. Platform operators check credibility and viability of each project before the campaign can be set up and assist with development and promotion of campaigns. Until 2018, six donation and reward-based campaigns which raised EUR 60,000 have been successfully completed on the Croenergy platform (energy renovation of a kindergartens, schools and installation of energy efficient equipment).

Funderbeam SEE is a crowdfunding platform for startups that investors can use to trade their shares on immediately after the initial investment phase, as if those were companies listed on the stock exchange. This model is possible due to an innovative system based on the Bitcoin technology. Zagreb Stock Exchange has a 20% stake in the company, which is based in Tallinn (Estonia). The first companies started trading in 2017 and so far around EUR 6 million were raised until mid-2018. Initially, Funderbeam SEE will focus on companies from Croatia, Slovenia and Serbia but will eventually expand its operations to the wider region. Funderbeam checks the investors' identities, examines the expertise of the leading investors and looks at the quality of the startups' business plans as well as their willingness to communicate with the investors and their readiness for sudden growth. Funderbeam SEE uses Funderbeam's business model, meaning that an Estonia-based special-purpose vehicle (SPV) was founded for the purpose of financing. The SPV represents the company's only owner, appearing on behalf of all the investors.



The reasons for this include low expenses and no red tape. Moreover, that way startups do not have dozens or hundreds of investors but just one, the lead investor, who is also the SPV CEO. At the same time, after creating their investor profiles, both the lead and the small investors have at all times control over their entire portfolio, in all the startups that they have invested in via Funderbeam. The minimum investment for each individual small investor in a company amounts to EUR 100. Creating investor profiles for investors is free of charge. This innovative capital accumulation system and trading platform boasts another special feature: trading requires no intermediaries or brokers, and the investors pay the 1% transaction fee only if they actually profit from a transaction. So far, only one campaign from the energy sector was present at the Funderbeam SEE platform. A Croatian start-up company called Include managed to raise EUR 270,000 for development and production of high-quality smart solar powered street benches

In 2018 another ground-breaking initiative was commenced by the Green Energy Cooperative (ZEZ). A fundraising campaign for construction of a 30 kW municipal solar power plant worth EUR 27,000 represents the first application of a P2P micro lending model in Croatia and funds for this pilot investment were raised within two weeks of its launch. ZEZ representatives stated that citizens were willing to invest twice as much as needed and due to the overwhelming success of the first campaign similar projects will be launched by the end of the year.

1.3.3. Conclusions and Recommendations

Crowdfunding has so far been sparingly used as a funding mechanism for energy efficiency and renewable energy projects in Croatia. Lack of professional crowdfunding platforms coupled with a deficient legal framework and very low awareness levels among citizens has hindered the development of the crowdfunding scene in Croatia.

Crowdfunding models which could be used for deep (nZEB) renovations of public buildings include donation and reward models, while lending model could be implemented indirectly through energy cooperatives.

2. Hungary

The content of this analysis is based on these sources:

- results of in-depth interviews with relevant stakeholders;
- market knowledge of Energiaklub and eCentral project’s Assessment and Support Group;
- desk-top research and national literature (publications and studies, legislation documents, etc.).

At present, Hungary does not have favourable administrative conditions, nor specific plans for promoting and encouraging innovative funding possibilities, however the law on energy efficiency (LVII./2015) appraises financial framework and incentives among the policy instruments to be implemented in order to meet national (and EU) goals for energy savings. Despite this fact, the Government does not encourage these financing schemes. As the survey conducted in the eCentral project among local municipalities also shows, most public investors have no specific knowledge and capacity to implement such projects:

Only 7.5% of the respondents used EPC service contracts, and only one municipality (out of 53) reported to have used PPP construction to finance renovations. With regards to the innovative financing solutions, availability of sufficient knowledge of the local government to implement them was asked in the survey as well. The chart below illustrates the answers received:

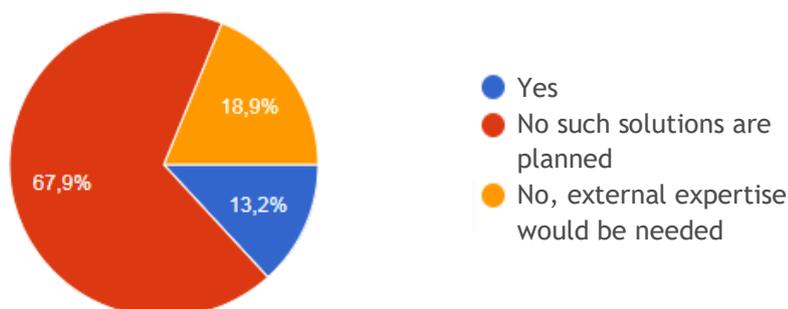


Figure 5 Availability of sufficient knowledge of the local government to implement EPC, PPP, CF projects

Source: Energiaklub

Respondents did not refuse these solutions, but only 13% has proper internal knowledge to use them. According to the respondents, barriers and difficulties of EPC, PPP and CF constructions are:

- lack of sufficient knowledge and/or capacity (66%);
- lack of trust in these constructions (21%);
- lack of standardized procedures and templates (21%);
- lack of ESCO companies with adequate financial capacity and results achieved on the market (9%);
- lack of national regulation (4%).

A representative survey made by WWF among Hungarian Municipalities¹ in 2017, had similar results regarding the used resources for energy efficiency refurbishments, Figure 6.

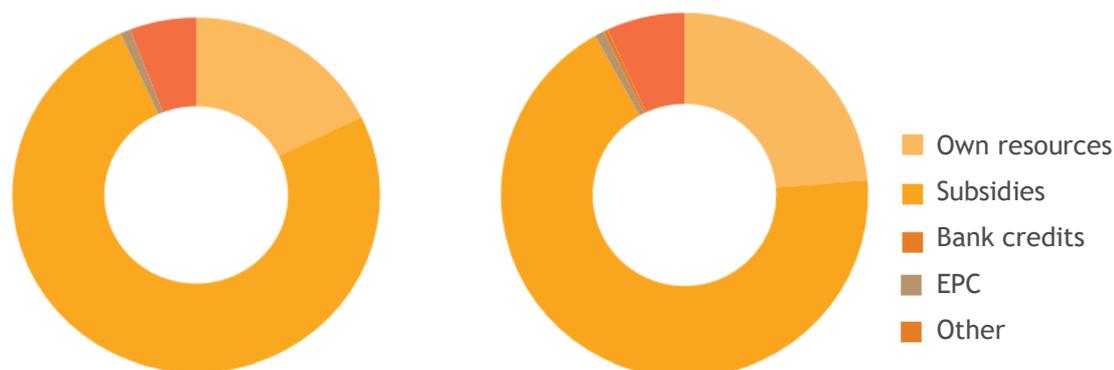


Figure 6 Financing energy efficiency measures implemented by local municipalities in the last 10 years: insulation on the left, modernization of heating system on the right. Source: WWF Hungary ²

The relevant law (LVII./2015 on energy efficiency) also declares, that information on energy efficiency and energy saving methods as well as on the financial and legal framework for energy efficiency and energy users should be provided electronically through a regularly updated website. This should enable energy efficiency service providers and financial service organizations to provide energy consumers with information on their energy efficiency services. The webpage³ is functioning from the end of 2015, maintained by Hungarian Energy and Public Utility Regulatory Authority, but information on service providers are lacking, only financial possibilities such as national subsidies or subsidized credits are presented.

Because of the re-nationalisation of schools (previously owned and operated by local and county governments), the local governments have lost interest in energy efficiency or RES investments in school buildings which have big saving potentials and would be ideal for energy efficiency projects.

2.1. Public-Private Partnership

2.1.1. Legal, regulatory and administrative framework

The Hungarian government does not support PPP investments presently, neither regulation on PPP models is in force nor supporting institutions are available; however, a PPP law was planned to be launched around 2005. Shortly, there is no complex PPP legislation in Hungary, nor a contract template proposed for PPP projects.

¹ WWF Hungary: Heating and energy efficiency: Status report on local municipalities and settlements: http://wwf.hu/media/file/1511533746_Futes_es_energhatekonysag_WWFHU_jelentes.pdf

² WWF Hungary: Heating and energy efficiency: Status report on local municipalities and settlements: http://wwf.hu/media/file/1511533746_Futes_es_energhatekonysag_WWFHU_jelentes.pdf

³ <http://enhat.mekh.hu/>



Previously, it was forbidden to sell municipal property for private stakeholders, but the 2005 Act XCII. Law allowed the transfer of individual trusteeship rights to the private sector. As local governments generally carry out certain public tasks through outsourcing them, this amendment of the law fostered to entrust private investors with a larger number of public service tasks than ever before.

To carry out a PPP project, the law on the public procurements (CXLIII/2015) has to be applied, and, in some cases, the law on concessions (XVI/1995). As a PPP project is usually rather complex, it is not always clear whether it is regarded as a service or as a construction investment, and hence, which rules apply for the project.

In Hungary, PPPs are usually procured through a negotiated procedure so that the contracting authority can adjust to the bidders' requests and specify the requirements more accurately.

PPP is a kind of concession, so if the state or local authority assigns the right to exercise the activities listed, the PPP investment must be developed according to the rules of the concession.

PPP Inter-departmental Commission has been in operation from 2003 to 2009.

The governmental decree 94/2018 assigns the Minister responsible for Managing National Assets with 'the development tasks related to the cultural, infrastructure and sport projects implemented in the framework of a PPP investment, as well as with the management of these PPP contracts including all the tasks arising from the rights and obligations of the State defined in these PPP contracts.'

Although the central institutional control was realized, appropriate social control and understanding of PPP projects was not ensured.

2.1.2. Market assessment

Similarly, to international trends, the concept of PPP has emerged in Hungary in the early 2000s. The first PPP construction was signed by the Budapest Sportarena contract. Since 2004, PPP investments have grown to a significant extent until the early 2010s.

It has to be noted, though, that, based on the strict interpretation of the PPP concept, the solutions applied in Hungary cannot really be considered as real PPPs. The main driving force behind PPP projects was to fill financing gaps. For the public actors, the value of the projects was that they received a quality service in the short term, with affordable funding; the sophisticated risk sharing of PPP was hardly realized. The government lacked the appropriate methodological knowledge and business management approach that would be needed for a conscious and proper management of this financial tool.⁴

The expected public-private cooperation has not been realized in Hungarian PPP projects, the constructions have evolved over time or state interventions have taken place before the end of the term.

Between 2003 and 2006, 133 PPP projects were contracted at national level, with a duration of 18-27 years and an NPV of app. 2,35 billion EUR. The net present value of PPP investments decided in 2007 exceeded 2,2 billion EUR, representing 2.4% of gross domestic product.⁵ Afterwards, the Hungarian PPP market drastically declined into recession due to numerous factors. Local public authorities needed a subsidy of app. 45 million EUR in 2012 for the operation of 35 PPP projects, mainly in the education sector. In 2015 negotiations on the replacement of unfavourable PPP projects were carried out, by the end of 2016, contract

⁴ KOZMA Miklós: PPP in Hungary; Vezetéstudomány, XLVII. ÉVF. 2016. 2. SZÁM, pp19.-/ ISSN 0133-0179; http://unipub.lib.uni-corvinus.hu/2276/1/VT_2016n2p19.pdf

⁵ CSONKA Zsuzsa: PPP investments in Hungary through the case study of the M6 motorway, Budapest, 2011



on the triggering of 12 PPP projects with a value of 90 million EUR was signed, with a result of 43 million EUR gain. This process has continued in 2017 as well.

PPP constructions were used mainly at national level: in the field of higher education and sport infrastructure developments and large infrastructure projects (e.g. motorways).

Disadvantageous cases led to mistrust towards PPP projects, the lack of proper regulation and supporting institutions resulted in a nearly dead PPP market.

At local level, some typical forms of PPP are in use: management and operating agreements (e.g. for waste disposal) and leasing contracts but regarding nZEB refurbishments more complex models would be needed, e.g. Build Operate Transfer (BOT) and DBO (design-build-operate).

There are no dedicated financial instruments (e.g. bank loans, state support etc.) specialized for PPPs.

2.1.3. Conclusions and Recommendations

Many years of work would be needed in Hungary to achieve significant improvements in the PPP market in the field of building refurbishment projects. Without governmental engagement, however, this process cannot start.

The most imminent market challenges/barriers that must be overcome for wider application of PPP are:

- lack of trust;
- lack of legal and institutional background;
- lack of good examples;
- lack of reliable, robust private partners;
- capacity and knowledge gaps within the public sector.

Some other details presented under 2.2.3. are also valid for PPP constructions.

2.2. Energy Performance Contracting

2.2.1. Legal, regulatory and administrative framework

EPC/ESCO construction is the most known financing form after subsidies and bank loans in Hungary. Law on energy efficiency (LXII./2015) defines energy performance contracting and energy service companies:

- energy performance contract: a contract concluded between the energy user and the energy efficiency service provider, which is monitored throughout its lifetime and under which energy efficiency services provided are offset correlated to an agreed level of the energy efficiency improvement's performance or other energy efficiency criteria;
- energy service companies: an enterprise providing energy efficiency services or other energy efficiency improvement measures to the final user's facility or premises; where energy efficiency services means the provision of physical benefits or goods on a contractual basis, including the operation, maintenance and control required to provide the service, if such service is included in this contract, arising from the combination of energy and energy-efficient technology or action and leading to proven verified, measurable or estimated energy efficiency improvements or to primary energy savings.

The law engages public authorities to conclude for energy efficiency services in writing and to observe the rules of related Governance decree (122./2015) on the minimum contents of such contracts, e.g:

- description of the energy efficiency service subject to the contract and the ancillary service to be provided for its implementation and their costs; and the requirement of their fulfilment;
- guaranteed savings to be realized;
- the legal consequences applicable in the event of breaching a contract, in particular the legal consequences applicable to the failure to meet the guaranteed savings;
- the provision applicable to the eventuality of the contract performance conditions in respect of the amount of guaranteed savings;
- provisions for systematic measurement of savings achieved with energy efficiency services, for reference times of measurements and for monitoring;
- provisions for sharing the monetary value of the savings achieved between the parties.

General information on the conclusion of energy efficiency-based contract, the description of contents of the contracts is available on the Energy Efficiency website where a contract template can also be downloaded. Available at: <http://enhat.mekh.hu/index.php/esco-konstrukcio/>

Unfortunately, the EP contract template is very general, although a joint supporting document gives further information and support to create the content of the contract.

A Green Bank was announced in early 2015, with functions including ESCO financing, among many others such as developing energy efficiency and renewable energy financing products, taking part in the effective use of domestic and EU reimbursable and non-reimbursable resources. Instead of this Bank, National Energy Management JSC. has been set up, with the intention of becoming a catalyst of EE investments with several financial products. However, this has remained only a plan, mostly because of financial reasons. In 2017, the ownership and management structure have been changed, but nowadays it seems that this ESCO with public background can extend its activities: adequate administrative and financial conditions are available, and the level of trust towards them has increased.

As a recent policy development, it must be mentioned that the European Commission, together with the European Statistical Office (Eurostat), has removed a major obstacle to energy efficiency contracts and related energy investments in the autumn of 2017: new guidelines for Eurostat can significantly increase the number of public institutions that will be able to conclude EPC-type agreements since the new rules make it possible to book the implemented investments in the bookkeeping of ESCOs (carrying the financial and economic risk and the benefit of the investment occurs through its better operation) instead of the public authority. Therefore, the budget deficit of the public sector doesn't raise (as this was the greatest risk of the previous guidance and deficiency in public sector is strictly regulated in Hungary).

2.2.2. Market assessment

The once (from 1990 till ca. 2008) flourishing Hungarian ESCO market has declined into recession due to numerous factors: the possibilities narrowed, market volume shrank and the number of ESCO companies decreased from 20-30 to 6-8 by 2018. There is a double cause for ESCO investment in Hungary. First, lower energy prices on the global market have been carefully restored to energy saving savings. The other is that there is a mistrust of the ESCO market players on the market due to often unfavourable contracts for customers.



The Transparens⁶ project financed by the Intelligent Europe programme was implemented from 2013 to 2015, with the cooperation of 20 European countries, among others in Hungary. The goal of the Transparens project was to increase the transparency and trustworthiness of Energy Performance Contracting (EPC) markets in Europe. Transparens focused on the major characteristics of the EPC projects in individual countries. One of its main outputs was a Code of Conduct for the implementation of EPC projects and its 20 national versions in the participating countries. The Code of Conduct defines the fundamental principles for the preparation and implementation of EPC projects. Compliance with the Codes of Conduct serves as a guarantee of the quality of EPC projects implemented. EPC providers signing the Code of Conduct undertake to make their EPC projects in line with the Code of Ethics. This means a voluntary commitment that is not legally binding. Individual Codes of Conduct were directly tested on specific pilot projects in all participating countries, at the same time contributing to the promotion of good practice principles both on the side of ESCOs and clients.

Nevertheless, there was little prospect of ESCOs at local government level before 2017, until the TOP (Territorial and Settlement Operational Programme) grants have been distributed. But from nowadays more innovative financial solutions will be necessary, as the budget of EU Funds allocated to Hungary is expected to decrease by 20-25% in the next programming period (2021-2028). The remaining ESCO activities occur mainly in private companies, as there are several other barriers in front of public EPC contracting (see below).

The Energy Efficiency Directive created some market potential for ESCOs: 1600 large companies have to prepare energy audits. These audits provide a pool of potential energy efficiency projects - many of them likely to be ESCO-financed. The government has set up a public ESCO in 2014, National Energy Management Zrt. (the entrance of a public ESCO can either distort the competitive market or be beneficial via enhancing knowledge and trust). NEG Zrt. has been reformed in 2017, its webpage is currently unavailable, but hopefully after the first year of start-up activities it can become a significant stakeholder in the Hungarian ESCO market.

Main ESCOs in Hungary in 2018:

- Energy Hungary Energetikai Zrt. - www.energy-hungary.hu - signed the Code of Conduct, active in EPC projects for business sector;
- GREP Zrt. (Green Public Lighting Zrt) - www.grepzrt.eu - signed the Code of Conduct, specialized in public lightning EPC projects;
- Cothec Ltd. - www.cothec.hu - signed the Code of Conduct;
- EnergoSys Zrt. - www.energосys.eu - signed the Code of Conduct specialized in residential EPC projects;
- National Energy Management Zrt. - www.negzrt.hu (under construction) - public ESCO focusing on PAs with complex services;
- EON Hungary - starting up in the ESCO market.

Most popular projects for EPC in the public sector are those for modernizing the public lightning systems, there are several implemented projects in Hungary.

Currently there are no dedicated financial instruments available for ESCOs.

⁶ <http://www.transparens.eu/uk/uk-home/uk-welcome-to-transparens-project>

2.2.3. Conclusions and Recommendations

The most imminent market challenges/barriers (e.g. legal, financial) that must be overcome for wider application of EPC/ESC have been identified by several EU-funded projects.

To do list of INTERREG Feedschools project for encouraging innovative financing schemes:

- To raise awareness for alternative financing methods (i.e. ESCO);
- To present best practices for municipalities for innovative financing.

Transparens project has formulated recommendations⁷ as well to boost the EPC market in Hungary such as:

- Improvement of trust in policy-making, reducing erratic policy changes;
- Improvement of expert consultations and involvement of stakeholders;
- Promotion of building refurbishment, including adaptation of green public procurement in the public sector;
- More ambitious adoption of relevant EU directives;
- Improvement of business partnerships through code of conduct, establishment of a representative body/association, information dissemination, standardized documents;
- Development and promotion of financial products that are previously discussed with potentially interested clients;
- Improvement of creditability of clients and ESCOs, or dedicated treatment of EPC clients in the case of ESCO products of banks;
- Changing the management and design of state grants: intensity should decrease to maximum 25-30% of the total eligible costs, complex projects should be given preference, strong monitoring element should be introduced;
- Establishment of a guarantee fund is a better alternative or a necessary additional element to non-refundable state grants.

However, the recommendations and the underlying analysis of Transparens project on the Hungarian ESCO market were developed in 2015, they can be considered relevant nowadays as well, as no significant changes occurred, except for the one regarding the code of conduct and the establishment of a representative body/association, which were implemented during the project.

Some other factors are also obstructive, e.g. policies and messages that hinder energy efficiency (reduction of energy prices). Besides, the restrictions of the public procurement process need to be applied for EPC services, which prohibits to act as an auditor and ESCO regarding the same project, however the best would be to have one partner for the whole process - this could raise trust as well.

The applicability of EPC/ESC model for carrying out deep (nZEB) renovations of public buildings is often limited due to ESCOs' expectations towards a short (2-8 years) of payback time. However, there are some fields where this construction works properly, eg. heating system reconstruction and modernization of lightning systems.

⁷ Boza-Kiss, B. 2015. D2.5 Country Report on Recommendations for Action for Development of EPC Markets - Hungary (Transparens project). Gödöllő, Hungary: GreenDependent Institute. <http://www.transparens.eu/hu/epc-piac/magyar-epc-piac>

Nowadays when energy service companies start to enter to the ESCO market, projects with several buildings - and so a greater volume of consumption - should also have potentials for ESCO financing. ESCO model could be also applicable for projects supplemented partly with the own budget of public authority.

2.3. Crowdfunding

2.3.1. Legal, regulatory and administrative framework

There is no dedicated national crowdfunding legislation in Hungary. Law on civil, non-profit organisations (CLXXV./2011), and the one on personal income tax (CXVII./1995) regulate the rules of donation. In general, donation for non-profit organisations is an asset or service provided without remuneration for the purposes set out in the constitution of the civil organization. Regarding local public authorities (LPA), the related law (CLXXXIX/2011) doesn't list donation as a possible income for local public authorities, although it mentions 'other special income', under which donation can be classified. Thus, local public authorities can open a bank account, and collect money for a given purpose. Besides, LPAs or certain institutions under their management have usually a non-profit foundation that can also start a crowdfunding campaign.

Crowdfunding of equity - crowd-investing and crowd-lending projects (e.g. RES developments) are quasi prohibited by financial regulations and laws, as only dedicated and registered banks and financial institutions are allowed to gather and reallocate money. Basically, there are 2 options to implement such projects: one is to fund a project company in which there are financial institutions involved, and they are registered by the National Bank. Any changes - which could occur frequently - should be signed to the National Bank, which is too complicated. The other option is to ask for the position and permission of the National Bank, explaining the background and the objectives of the project, hoping for the positive answer. We do not have data on how many requests have been approved, however, Energiaklub tried it once and has been rejected.

In 2012, the Self-Regulatory Board of Fundraising Organizations (SRBFO) was established (it has now 32 members) and the Code of Ethics for Fundraising Organizations (CE) was also elaborated. Signing organisations are labelled this way as 'Ethical' Fundraising Organisations. Members of the SRBFO pay yearly dues and monitoring fee.

Only NGOs are allowed to join the SRBFO, on volunteer basis. Civil organisations intending to join the Board need to sign Introductory Declaration of Intent, to pay mentioned fees and to provide information on the fulfilment of the CE criteria. If there are some shortcomings in the accomplishment of compliance criteria, the Control Unit will give feedback to the organization to provide completion, to upload the documents concerned, and assistance with the preparation of the documents concerned and with provision of templates.

Members of the Board are monitored each year. During the monitoring, the Control Committee will examine whether the member organization fulfils the criteria of the Code of Ethics, in particular the publication or updating of information (transparency).

If the monitoring procedure detects shortcomings in a member organization, the Control Unit requests a completion or amendment from the member organization in that regard. If the deficiency is not implemented within the set deadline, the defect is presented to the Ethics Committee by the Control Committee, which will decide on the consequences.

2.3.2. Market assessment

The main online crowdfunding platform in Hungary is www.adjukossze.hu, maintained and supported by the Non-profit Information and Knowledge Centre Foundation (NIOK). This platform and joint services are available only for non-profit, civil (NG) organisations since 2013, and realized more than 1,5 million EUR donation through its operation. Four out of five years of its operation, support of adjukössze team was obligatory when using the platform, which consists of:

- pre-assessment of the organisation and the planned project;
- general training on CF;
- project-specific workshop;
- support of the whole campaign.

Average project size on this platform is around 1000 EUR.

The www.gofund.me.com is also used by some Hungarian stakeholders. There are some other platforms as well, but without any support, therefore with very weak results. Donation platform on Facebook is not yet available in Hungary.

Donation platforms can help make the technical realization easier, however it is important to mention though, that the real success of a local crowdfunding campaign lies mainly in its content, and the message and goal that citizens can relate to. A clear on-line (sub)page with donating possibilities is crucial, though.

According to statistics, the willingness to donate in Hungary is good in international comparison. Average donation is 20-25 EUR nowadays (slowly raising). Only donation-based crowdfunding is common in the public sector of Hungary, mostly implemented locally, without specific platforms. Reward crowdfunding is also present, but equity and lending models are not in use due to inadequate regulation.

Interesting case and maybe an example to follow is the one of Municipality of Budapest 9th District, where Ferencvárosi Community Foundations⁸ was funded (as first community foundation in Hungary) in 2010, with the following aims: local fundraising, local fund distribution and community building. This organisation is very active and has a lot of successful CF projects.

2.3.3. Conclusions and Recommendations

CF can optimally complete LPAs' own funds or funds from other resources (match-funding). We think that mainly public buildings with community functions, such as cultural and educational buildings, or buildings that are very characteristic for a town (historic places, heritages), are ideal for such a campaign, where there is a big pool of affected citizens.

Main barriers of implementing CF campaigns by LPAs can be:

- lack of trust towards the LPA;
- lack of special communication knowledge or dedicated and enthusiastic group for the campaign;
- lack of capacities for maintaining interests during the whole campaign;
- the widespread attitude, that public building refurbishments are in the responsibility of the (local) governments.

⁸ <http://ferencvarosi.kozossegialapitvany.hu/english/>

The main steps that should be overcome for wider application of crowdfunding among LPAs are a toolkit for LPAs supporting CF campaigns and pilot projects with wide dissemination activities.

3. Slovenia

3.1. Public-Private Partnership

3.1.1. Legal, regulatory and administrative framework

Public-private partnership in Slovenia is regulated by a Public-Private Partnership Act (Zakon o javno-zasebnem partnerstvu; ZJZP), that came in to effect with 7.3.2007. This Act regulates the purpose and principles of private investment in public projects and/or of public co-financing of private projects that are in the public interest, the methods of encouraging public-private partnership and the institutions concerned with its encouragement and development, the conditions, procedure for creation and the forms and methods of operating public-private partnerships, the special features of works and service concessions and of public-private equity partnerships, the transformation of public companies, the system of law that applies to resolving disputes arising from public private partnerships and the jurisdiction of the courts and arbitration services to decide on disputes arising from such relationships.

This Act serves to transpose into Slovenian law the substance of points 3 and 4 of Article 1 and Articles 17, 23, 29, 48 and 56 - 65 of Directive 2004/18/EC of the European Parliament and the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts (OJ L 134 of 30 April 2004, p. 114) and Commission Directive 2005/51/EC of 7 September 2005 amending Annex XX to Directive 2004/17/EC and Annex VIII to Directive 2004/18/EC of the European Parliament and the Council on public procurement (OJ L 257 of 1 October 2005, p. 127).

Key institution that regulates PPP in Slovenia is Sector for Public-Private Partnership and Public Procurement System ("Sektor za javno-zasebno partnerstvo in sistem javnega naročanja") operating under Ministry of Finance. The main task of the mentioned sector is to develop, monitor, and help in the implementation of PPPs in Slovenia. In this capacity, the PPP sectors publishes manuals for operating PPPs, formulates expert proposals for amendments to regulations and the adoption of other measures that might improve practices and eliminate problems, and performs other tasks provided by the PPP Act.

Other relevant acts are:

- Services of General Economic Interest Act ((Uradni list RS, št. 32/93, 30/98 - ZZLPP0, 127/06 - ZJZP, 38/10 - ZUKN in 57/11 - ORZGJS40);
- Public Finance Act (Uradni list RS, št. 11/11 - uradno prečiščeno besedilo, 14/13 - popr., 101/13, 55/15 - ZFisP, 96/15 - ZIPRS1617 in 13/18));
- Institutes Act (Zakon o zavodih Uradni list RS, št. 12/91, 8/96, 36/00 - ZPDZC in 127/06 - ZJZP).

Ministry of Finance presented new draft Public-Private Partnership Act in 2017. The draft presented was prepared upon changes on EU level. In February 2014, the European Parliament and the Council of the European Union adopted the new public procurement directives, namely Directive 2014/24/EU on public procurement and Directive 2014/25/EU on the procurement of entities operating in the water, energy, transport and postal services sectors.



EU member states were obligated to implement new directives into their national legislations by April 18th 2016, which was not done by Slovenia. The timeline for accepting new Public-Private Act still remains uncertain.

3.1.2. Market assessment

According to the Report prepared by the Ministry of Finance from 2009, the situation of PPP implemented project was very negative. The main reason was connected with a large number of municipalities that were financially too weak to participate in PPP projects and the fact that undersized projects did not stimulate enough investment interest from the private sector. Second possible reason was that role of structural EU funds was very minor and not seen at all; although EU regulations were attempting to change this. The third reason for underdevelopment of PPPs in Slovenia was the Public sector lacking knowledge on implementing and managing PPP projects. This was common to all the countries that were at its earlier stages of PPP development. The fourth and final reason was that the organisational unit (of Ministry of Finance) responsible for PPPs acted too passively and, as a public partner, it did not give enough stimulation for the private partner to get involved in PPPs. However, according to the PPP knowledge lab (knowledge to innovate for smarter public-private partnerships) in the 2012 Infrascope the Slovenia's overall PPP performance was ranked high (<https://pppknowledgelab.org/countries/slovenia>). As of 2012, most PPP infrastructure projects have been awarded at the local level by the Municipalities, which are the drivers of PPPs in different fields - social housing, child day care, waste management, sports infrastructure, cultural buildings, parking garages, public lighting, photovoltaic, sports infrastructure, smart cities technologies, ICT, road maintenance, public transport services, etc. Due to economic crisis and higher state debt there are increasing debates among politicians in terms of (re)building infrastructure using PPPs. However, on the other hand, the business environment is still rather discouraging at the moment.

Until recently, local self-government's share of public expenditure has been relatively low compared to the other European countries. Municipalities in Slovenia played a relatively limited role. Local government expenditure was slightly above 5% of GDP. Besides, a destructive blow has presented the New Financing of Municipalities Act that entered into force on 1st January 2007 and has had a very negative effect on the many municipalities. In order to partially compensate for the negative effects of the New Financing of Municipalities Act and needs for the investment have represented additional motivation for use of PPP in some municipalities (like Municipality of Ljubljana, Municipality of Maribor etc.).

There are no special financial instruments for PPPs in Slovenia. In some cases, public partner can receive higher co-financing rate from EU and national funds if private partner is included in the project. For example: in call for tender for co-financing energy renovation of public buildings, issued by Ministry of Infrastructure, co-financing rate was 20 % higher for projects with private partners.

3.1.3. Conclusions and Recommendations

The biggest challenge still derives from the lack of knowledge regarding PPP, which often leads to poorly prepared and guided projects. There are no manuals for operating public private partnerships. Although the current law is very exact on all the procedures to form public private partnerships and although there is also a law on public procurement, the above-mentioned law does not cover all the possible types of public private partnerships (e.g. agency, service contracts, profit sharing contracts, etc. The draft law on public-private partnership that is more exact, up-to-date and in line with new EU directives is still in preparation.

The most common use of PPP model is with projects for new constructions of public buildings (like kindergartens, sports halls, schools, etc). This model is widely used across Slovenia.

Since 2016 PPP in connection with EPC was formulated in a specific mechanism for deep renovation of public buildings. In some cases, nZEB standard can be achieved through this PPP-EPC model. (Restaura Project Consortium, 2016)

3.2. Energy Performance Contracting

3.2.1. Legal, regulatory and administrative framework

There is no binding legislation in place that promotes EPC. There is, however, an important legal document in development called Guidelines for the conduction of energy efficiency measures in public sector buildings. The draft outlines the budgetary, legal and implementation aspects of EPC in public buildings in Slovenia. The document is being coordinated between the Ministry of Infrastructure, local decision makers, energy agencies, engineers and other experts. It has not yet been finalized.

Otherwise, the main legislation that indirectly outlines the implementation of EPC includes:

- The Energy Act (Energetski zakon, EZ-1, Official Journal of the Republic of Slovenia - OJ RS, No 17/14, 81/15) transposes a number of EU directives concerning electricity and gas markets, energy efficiency (Directive 2012/27/EU) and renewable energy sources. This Act lays down the principles of energy policy, energy market operation rules, manners and forms of providing public services in the energy sector, principles and measures for achieving a secure energy supply, for increasing energy efficiency and energy saving and for increasing the use of energy generated from renewable energy sources, and lays down the conditions for the operation of energy installations, regulates the responsibilities, organisation and tasks of the Energy Agency and the competences of other authorities operating under the Act.
- Public-Private Partnership Act (Zakon o javno-zasebnem partnerstvu /ZJZP/, OJ RS, No. 127/06): main legal framework for the implementation of EPC in public sector.
- Public Procurement Act (Zakon o javnem naročanju /ZJN-3/, OJ RS, No. 91/2015: regulates some PPP EPC models

In the Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014-2020, the Republic of Slovenia has adopted a decision, in line with the Directive 2012/27/EU, that by the end of the programming period, in the year 2023, 1.8 million m² of useful area in the public sector will undergo energy renovation. To fulfil the target set, yearly investment needs in the period 2016 - 2023 are at the level between EUR 51 million and EUR 53 million, resulting in the total investment of EUR 415 million (including VAT) in the period. Energy efficiency investments in deep renovation of public buildings will be financed from the European Structural and Investment Funds (ESIF) - Cohesion Fund, using financial instruments and EPC, which will enable adequate leverage factor to EU funds and public funding from the Republic of Slovenia.

3.2.2. Market assessment

Figures on the number of EPC projects implemented in the last decade are not publicly available. It is estimated that in the last years (2014-2016) up to 5 projects per year were implemented. In the years 2012-2014 around 30 EPC projects were implemented.

A stimulating support environment for the development of energy performance contracting has been planned in previous documents; however, the energy performance contracting projects have mostly not been implemented. The energy performance contracting market therefore continues to be poorly developed, with only a number of providers present.

Estimated average size of projects in the years from 2012 to 2014 was:

- average investment: 821,000 EUR;
- average guaranteed savings: 25%;
- average contract duration: 13 years.

In the framework of OP ECP it is planned to ensure exemplary role of public bodies' buildings and to accelerate take-off of the EPC as a key mechanism by provision of EUR 115 million of Cohesion grants, EUR 50 million of EU funds in a loan facility (through Slovenian Investment Bank - SID bank loan fund financial engineering), and EUR 20.3 million out from the central government budget. In total, EUR 185.3 million of financial support will be available for energy renovation in the public sector, providing 40% grant financing for eligible projects. The first National OP ECP Call for Tenders has been announced in 2016.

The SID Bank is presently setting up a loan programme (100 million EUR) for investments in municipalities' infrastructure, including public buildings energy renovation, energy efficient public lighting and other EE measures.

There are several public support schemes for EE related measures, administered by the Eco Fund and financial service provided by the Slovene Export and Development Bank (SID Bank).

Mainly it is the building owner who has to apply for the related grants or soft loans. In the framework of the previous energy savings obligation scheme (2012-2014) the obligated parties i.e. energy distributors or retail energy sales companies managed grant financing and made it available to ESCOs for financing EPC projects. This approach resulted in temporally significant uptake of the EPC market. However, this scheme was redesigned and now obligated parties i.e. energy distributors or retail energy sales companies have to provide their own capital to achieve energy savings and consequently the range of support to EPC projects dropped significantly.

3.2.3. Conclusions and Recommendations

The national energy legislative and regulatory framework is still, despite recent improvements at operational level (guidelines, instructions, handbooks), not directly addressing or supporting the EPC which often leads to judicial activism. The ESCOs providing EPC have developed their "own know-how" how to avoid grey areas. General solutions were presented to the relevant ministries which unofficially agree with them, but the implementation risk remains high due to possible ambivalent interpretation of the relevant legislation.

The EPC in public sector is performed in the framework of the Public Private Partnership Act and in line with Public Procurement Act, both introducing high level of complexity into the EPC implementation process and consequently increasing costs and time requirements. Due to lack of specific knowledge and scarce human resources available in the sector, there is a permanent need for competent advice in terms of legislation and regulation. At the moment, only a limited range of external consulting is provided by few local energy agencies and sometimes by ESCOs, slowing down the market development and legally jeopardising some EPC projects and their economic efficiency respectively. Obligatory energy bookkeeping in the public bodies' buildings at the national and local level is implemented very slowly resulting in missing specific indicators for EPC public procurement, including life cycle cost evaluation, and for M&V of EPC projects performed, in terms of energy savings achieved and cost-effectiveness of services provided.

Therefore, a legally binding national EPC procurement guideline clarifying procedures in depth and step by step is lacking.

Combination of PPP and EPC model seem to be most effective in nZEB renovation. Due to high investment costs compared to energy saving potential, nZEB renovations are not so attractive for ESCO companies, thus combination with PPP, where public partner would pay a concession fee to private partner, could possibly attract private investors. In this case private partner should bare majority of risks, receive all energy savings plus concession fee to cover investment costs. (Staničić, n.a.)

3.3. Crowdfunding

3.3.1. Legal, regulatory and administrative framework

Slovenia does not have a proper legislation that would regulate crowdfunding. Existing EU laws allow individual countries to implement national legislation for crowdfunding projects that are worth less than 5 million EU, which leads to the lack of transparency and inefficiency of crowdfunding processes. Crowdfunding in Slovenia has not been directly regulated and is for now related to 17 existing laws, mostly linked to contractual or investment law.

There is no institution, that would legally regulate crowdfunding in Slovenia. For now, institution that is considered relative for crowdfunding projects is Securities Market Agency, which is a legal entity of public law. Its basic mission is to maintain a safe, transparent and efficient market in financial instruments. Crowdfunding projects are also under control of Financial Administration of the Republic of Slovenia (under Ministry of Finance).

There are several institutes and initiatives in Slovenia, among them ZMAG Institute, which actively strives to reform the laws that would be friendlier to young entrepreneurs and would encourage the development of a small economy and regulate financing models such as crowdfunding. In the early years of crowdfunding Slovenia Coworking and Slovenia Crowdfunding initiatives were also established. All the above-mentioned initiatives are trying to prepare Slovenia for three possibilities of crowdfunding (donations/reward crowdfunding, loan crowdfunding and equity crowdfunding). Initiatives also greatly contributed to creation of first Slovenian crowdfunding platform Adrifund, which is a platform for donations/reward crowdfunding.

3.3.2. Market assessment

In the year 2017 start-ups in Slovenia have launched 60 campaigns across three crowdfunding platforms (Indiegogo, Kickstarter and AdriaFund). The number of successful campaigns was 21, which is 35% success rate. Altogether start-ups have raised 743,500 EUR in the year 2017. 14,500 people have supported and donated for campaigns in 2017. The number of launched campaigns has decreased compared to previous years, but on the contrary, campaigns seem to be better prepared and thought-through. The most common crowdfunding model that Slovenian start-ups use is a reward crowdfunding.

3.3.3. Conclusions and Recommendations

The biggest obstacle is of course the lack of legislation in this area. Because specific national legislation directly regulating this area in Slovenia does not yet exist, this can lead to an unintentional violation of legislation. A big obstacle is also the complicated administration, which makes money collection far from a simple process. Often there is a lack of proper counselling and legal support.



In Slovenia Kickstarter is the most popular among crowdfunding platforms, but for many Slovenes and entrepreneurs from other countries a major obstacle seems to be, that participation in Kickstarter is only possible for citizens of selected countries, in this case many Slovenians have to register their companies in foreign countries, which leads to additional costs. Crowdfunding for Slovenian entrepreneurs who apply their projects to foreign platforms is quite expensive, because when the funds are transferred to Slovenia, the final cost can be up to 26%.

Crowdfunding is also a subject of heavy taxation. In all EU countries it is a subject to value added tax, income tax and profit tax. In Slovenia, crowdfunding projects under existing legislation are taxed 22%, which makes us especially uncompetitive in comparison with other countries.

This area is still very much unexplored. The problem of course derives from having no actual legislation on this matter and no new mechanisms. In crowdfunding projects municipalities and cooperatives are not allowed by the law to be a member, which makes those kinds of projects very complex and have to be supported by a very good communication campaign to be successful. In donations model there is no payback option and there is only a “soft“ obligation to give the savings for certain purposes.

4. Austria

4.1. Public-Private Partnership

4.1.1. Legal, regulatory and administrative framework

In Austria, there is no explicit legislation regarding PPPs and concessions, whereas currently are no plans to pass such legislation. The contractual frame for PPP is based on general civil and commercial law and procurement of PPP must usually follow the Federal procurement act.

The Federal Procurement Act (FPA) is influencing public procurement and contracts. “Classic” public contracting authorities covered by the Federal Procurement Act (FPA) are the State, local and regional authorities and public companies. In addition, there are less strict rules for utilities in the field energy, transport, water and postal services. (Theiss, 2010)

According to Austrian law, public companies are companies which are:

- at least 50% owned by public authorities;
- or controlled by public authorities;
- or underlie the Court of Auditors (Kunz, 2015).

Nevertheless, this Federal Act does not apply, when services, orders, etc. are carried out by a private partner on behalf of a public body when:

- the public body has the same supervision/control rights for the partner as for a public department - control criteria:
 - > can be indicated by proving that the public body holds the assets of the contracting company;
 - > public contractor has the possibility to influence strategic objectives and important operation decisions of the contracting company;

- and the effort is mainly done for the public contractor - materiality principle:
 - > contracting company is mainly operating on behalf of the public body.

However, individual assessments are usually recommended. (Mickel & Pointner, 2014)

According to (Theiss, 2010) Federal Public Procurement rules which are applicable to PPP are:

- PPPs are not explicitly recognized by Austrian law and therefore usually classified as service or work concessions;
- EC fundamentals (equality and transparency) and principle of non-discrimination must be applied for awarding service concessions;
- If the Federal Procurement Act (FPA) applies (see exceptions above), a service concession shall be awarded through a competitive procedure:
 - > Public contracting authority will be obliged to publish a tender notice and invite bidders;
- For work concessions only certain provisions apply such as:
 - > Minimum deadlines, provisions regulating prequalification and tender documents, contracting rules, etc.);
 - > FPA leaves choice of procedure for awarding a work concession mainly to contracting authority, but generally requires a publication;
 - > Work concessionaires are obliged to put any work contracts for third parties out for tender (also private concessionaires must follow certain rules when awarding subcontracts).

Structure of concession contracts:

- Austrian law does not foresee any mandatory elements to be used in a concession contract; lack of common approach for concession contracts;
- Contract stipulations are set by the good moral's clause (section 879 of Austrian General Civic Code) - this may be relevant in terms of contractual risk allocation, liability caps and termination clauses.

In general, it must be mentioned that under Austrian civil law, a contract for the performance of a continuing obligation may at any time be terminated for good cause, even if the list of termination events under the concession contract is exhaustive. (Theiss, 2010)

The content and further rules of the Federal Public Procurement Law is explained more detailed in the next chapter.

4.1.2. Market assessment

In general, it must be said that there is no joint Austrian database for PPP projects, which significantly complicates a status quo analysis of the market in terms of "number/size of previous projects and types of implemented PPP models".

Nevertheless, the Austrian Administration tries to facilitate PPP since the early 2000s and there is already some literature available which tries to summarize current trends and reviews already implemented PPP projects. Main sources for these market analyses are "WIFO" - the Austrian institute of economic research and reports of the Federal Audit office.



The most recent analysis of general trends in the Austrian PPP sector was done in 2010 by conducting surveys among the nine federal states of Austria and all cities. Objective of the survey was to summarize the amount of implemented PPP project and their success as well as an assessment of the attractiveness of these models among public authorities. The survey was implemented by (Puwein & Weingärtler, 2008) and the results are described below.

At the level of Federal states of Austria, only Upper Austria and Carinthia participated whereas Upper Austria claimed that they hadn't implemented any major PPPs since 1st January 2000. Upper Austria implemented one PPP project between 1997 and 2000. A private partner was engaged to build a street ("Umfahrungsstraße Ebelsberg", 5.4km long). Although the project costs were underspent (-4.5%), the Federal Audit offices criticises the project's implementation. The project is refinanced by a fixed charge and subsidies paid by the city of Linz. Since the private partner was responsible for the financing, he needed a bank loan which appeared to be more expensive since public authorities usually get better conditions from banks. Potential tax benefits for the Federal State of Upper Austria have no impact on a macroeconomic level. In general, the Federal Audit Office was not satisfied with the financial implementation - it occurred to be adverse for the public partner, who also carries the main financial risk. (Puwein & Weingärtler, 2008)

Federal State of Carinthia indicated that they adopted 7 major PPP projects since the early 2000s. Important decision factors for PPP were that they expected a faster project implementation and spread of the investment costs over a longer period of time. Implemented projects in Carinthia according to this survey from the years 2000-2008 were:

Table 1 Overview PPP projects in Carinthia - 2000-2008

<i>Construction of administration building</i>	<i>€ 2.37 million</i>
<i>Measurement facility for air quality control</i>	<i>€ 802,000</i>
<i>Two vocational training buildings</i>	<i>€ 1.32 million</i>
<i>Road construction office</i>	<i>€ 23 million</i>
<i>Fleet management</i>	<i>€ 1,6 million</i>
<i>IT-outsourcing</i>	<i>No estimations</i>
<i>Construction of hospital</i>	<i>Cancelled - uneconomic project</i>

All projects were implemented through the leasing model. One monetary benefit occurred right in the beginning of the implementation phase: the Federal State of Carinthia is not entitled to deduct input tax. However, according to the Austrian tax law construction works etc. are usually imposed with a tax of 20% VAT whereas leasing services have only 10% VAT. Although this can be a benefit for the state's budget, from a macroeconomic perspective it is not a major advantage since the federal government of Austria loses tax incomes. In general, the Federal State of Carinthia evaluated the PPP projects as valuable.

The survey which was sent out to the Austrian cities (257) covered PPP projects in the fields of buildings, infrastructure (transport, IT...) over € >1 million and environmental services (water supply, waste water, waste disposal, etc.). 41 (16%) cities answered the survey whereby **17 cities already implemented 25 PPP projects** (according to the above written definition). The results of the survey are summarized below (Federal State of Carinthia, 41 cities):

- 53% have a high interest in implementing PPP models;
- 6 out of 41 actively reject PPP models;



- Main motivation for implementing PPP is that public partners expect efficiency advantages, private know how and a faster project implementation;
- Major obstacles are the high effort for of public partners in the preparation phase, which must be compensated with efficiency advantages during the PPP implementation. This can be a major obstacle for smaller cities since efficiency advantages can only be reached at a certain project volume. In addition, legal requirements appear complicated.

In addition to this survey, the Austrian Audit Office and the Audit Offices of the Federal States evaluate public investments on a regular basis. During the literature research it appeared that PPP projects on this administrative level (federal and state) are mainly carried out for infrastructure projects such as road constructions and rail tracks (exceptions in Federal State of Carinthia, see table above), based on the concession model. Through the evaluations of these projects the audit offices found disadvantages for public partners on a repeated basis. Usually, the public partners lost important supervision rights of the private partners, which resulted in a lack of transparency. Additionally, the financing of the projects appeared to be more expensive since private partners usually get worse loan conditions. (Rechnungshof, 2016) (Rechnungshof, 2018)

Nevertheless, PPP is well used in Austria. The capital city of Austria, Vienna founded in 2017 a new section in their building management department, which is focused on PPP building projects in Vienna. Currently they are working on 10 major PPP buildings, which shall be finished between 2018-2023. (Younion, 2017)

Currently, there are no dedicated financial instruments for PPP projects available. The Federal State of Upper Austria is the only one which provides funding for Energy performance contracting (see chapter 4.2.2).

4.1.3. Conclusions and Recommendations

The most mentioned advantages and barriers/challenges according to literature research are summarized in the table below (literature sources: (Winroither & Kary, 2015), (Puwein & Weingärtler, 2008))

Table 2 Overview of advantages, disadvantages of PPP in Austria

Advantages	Barriers/challenges
Risk allocation	Complex PPP tender processes
Use of know-how of private partners	No explicit legal definition for PPP projects in Austrian procurement law → complicates PPP tender process
Renegotiations possible (no legal tender restrictions for private partners compared to public ones)	Detailed legal know how needed in procurement law, contract law, competition law and tax law → compliance must be ensured
Life-cycle oriented project development	Lack of know how causes higher transaction costs (costs for consulting, legal expertise, etc.)
Investments can be considered as off-balance sheet and the Maastricht Treaty met	Austrian Audit Office experienced lack of control rights for public partners → lack of transparency
	PPP projects appeared to be more expensive over the project's lifetime compared to conventional procurement

Based on Austrian experiences it can be stated that the biggest barriers for wider PPP uptake are the legal requirements. The PPP project must be in line with the Austrian procurement law, contract law, tax law and European competition law. This requires a deep know how in the public authorities, which is a major barrier, especially for smaller municipalities. Lack of know how in PPP tender process may result in higher project costs, lower quality, extended implementation time and delays of the project.

In general, there are also some recommendations for the implementation of PPP models for Austrian cities and municipalities. (Biwald, Hödl, & Raicher, 2015) summarized the most common fields of municipal investments in Austria and their adequacy for the PPP model. The results are shown in the table below. Nevertheless, individual project evaluations must be carried out before conducting PPP projects. Unfortunately, the before mentioned authors didn't evaluate the applicability of PPP model for making deep renovation and construction of public nZEBs.

Table 3: Recommendations for different PPP models in Austria

Type of investment	Recommended PPP model	Requirements for PPP	Off-balance sheet if...
Waste water management	Operating model	<ul style="list-style-type: none"> grid in need of renovation, supply of new areas necessary Investment sum >€ 10Mio. 	Operation with market-determined activity
Water management			
School building, kindergarden	Leasing	<ul style="list-style-type: none"> Unencumbered property connected to public streets Structural delimited building 	Contract based on "operate and lease" model
Administration building			
Sports hall	Operating or leasing model	<ul style="list-style-type: none"> Possibility for alternative utilization 	Contract based on "operate and lease" model or at least 50% of annual turnover are made by private partner
Event center			
Street lights	Contracting	<ul style="list-style-type: none"> Street lights in need of renovation Potential for energy savings 	Risk of price fluctuation carries contractor
Streets	Not recommended		

PPP models for making nZEB renovations can be a good financing option, depending on the building and the project volume. In Austria it appeared to happen that the PPP model causes higher transaction costs (costs for consulting, legal expertise, etc.) and that the total investment costs were likely to be higher compared to traditional procurement. Before implementing PPP all other possible financing alternatives shall be investigated. A "soft" form of PPP is energy performance contracting, where the private partner takes over a small part of the renovation process (e.g. change of heating system). This financing scheme is described in the next chapter.

4.2. Energy Performance Contracting

4.2.1. Legal, regulatory and administrative framework

As already mentioned in the chapter before, in the public sector, the procurement procedure must be in compliance with the national public procurement legislation (based on the EU Public Sector Directive 2004/18/EC). The EPC contract is complex and usually includes all three types of public contracts:

- Public supply contracts, Public works contracts and Public service contracts (Szomolanyiova & Sochor, 2013)

In Austria, EPC itself is not directly regulated, but the Federal Public Procurement Law (Bundesvergabegesetz) sets the legal framework for PPP and EPC. This mainly influences the procurement procedure (tender process). The law defines contract types, tender procedures, money thresholds, deadlines, content of tender documents, announcements, exclusions, selections and other necessary regulations in 351 paragraphs. Exceptions from the law were already mentioned in the chapter before. Since this law is quite comprehensive, this deliverable will only provide a summary on paragraphs, which affect EPCs.

The Austrian contract types are construction contracts, delivery contracts (purchase, lease, rent..) , service contracts, building permit contracts and service permit contracts. In general, the law distinguishes between seven different tender process types:

1. Open proceed and closed proceed (with/without announcement);
2. Negotiation procedure (with/without announcement);
3. Framework Agreement;
4. Dynamic procurement;
5. Competition process/competitive dialogue;
6. Direct award (with/without announcement).

For Energy Performance Contracting, the first two types are the traditional procurement ways. Direct awarding is also possible, if the defined thresholds are not exceeded.

According to the law, tender documents must follow some principles:

- Timely announcement of tender (if applicable):
 - > Requirements of demanded services must be specified - two ways of performance specification: constructive specification or functional specification;
- Tender documents must allow comparability of offers of different bidders;
- Clear announcement of contracting authority;
- Description of necessary documents (e.g. evidence for technical competence of bidder);
- Selection procedure and how the contract is awarded (BundesvergabeGesetz, 2006).

In general, the negotiation procedure may appear more adequate as tender type for public energy performance contracting. Nevertheless, the following main rule must be considered, otherwise this procedure may not be applied and an open or closed proceed (or other procurement types) must be used: Public bodies are allowed to implement the negotiation procedure for contracts if “ the demanded performance is naturally or due to its implementation connected with major, unpredictable risk, which means that a prior pricing system is not adequate”. (in German: “(...) es sich um Leistungen handelt, die ihrer Natur nach oder wegen der mit der Leistungserbringung verbundenen Risiken eine vorherige globale Preisgestaltung nicht zulassen.“) This means, that the demanded performance is not standardized and that there is enough negotiation freedom for at least 50% of the total project volume (at least >50% of the demanded performance is functionally described in the tender.)

Based on the Austrian legal requirements, (Bleyl-Androschin & Schinnerl, 2012) summarized three possible contract types for energy performance contracting in Austria with public parties. They are compiled in the following summary (Table 4).

Table 4 Summary of common EPC models and legal requirements in Austria (based on (Bleyl-Androschin & Schinnerl, 2012)

	General contracting model ¹⁾	General planning model ²⁾	“Refurbishment light” model ³⁾
Description	Building owner has one contract partner, who is responsible for implementation	Building owner specifies requirements for building renovation; general planner optimises owner’s requirements and takes over implementation	Smaller building measures can be implemented, main focus on energy services
Performance specification	<u>Functional</u> specifications for technical, financial, organisational and regulatory requirements of building owner (building measures and energy services)	<u>Constructive</u> specification for building measures, <u>Functional</u> specification for energy services	<u>Constructive or functional</u> specifications
Measures (contracting content)	Building measures (>50% of total project volume) and energy services	Building measures (>50% of total project volume) and energy services	Building measures (<50% of total project volume) and energy services
Tender process	Direct award may be possible (contracting volume thresholds) Negotiation procedure	Direct award may be possible (contracting volume thresholds) Building measures: traditional procurement Energy services: negotiation procedure	Direct award may be possible (contracting volume thresholds) >50% of requirements defined as functional specification → negotiation procedure <50% of requirements as constructive specification → traditional procurement
Planning/project optimisation	General contractor	General planner	ESCO
Implementation	General contractor	Construction company/ESCO	ESCO
<p>1) internal or external project coordinator of building owner defines functional specification, is responsible for tender process and choses general contractor based on the tender criteria</p> <p>2) Building owner commissions general planner. Both are responsible for tender process - general planner optimises requirements of building owner and coordinates the tender process as well as the implementation with chosen contractors</p> <p>3) internal or external project coordinator of building owner defines functional or constructive specification, is responsible for tender process and choses contractor based on the tender criteria</p>			

Which model the public partner (building owner) choses depends on the contracting volume and the internal know how of the public partner. In general, the whole procurement process for EPC including project development, tender process and negotiation until the implementation phase take 24-38 weeks (compliance with regulatory deadlines, etc.).

Main legal requirement for the contracting partner is, that he has a comprehensive business licence, depending on contracting type. For example, if the contracting partner is meant to be main contracting partner (general contractor, in charge of implementing building measures and energy services), he must be allowed to implement construction works, building services (heating and ventilation system, water installations, electricians, etc.). (Bleyl-Androschin & Schinnerl, 2012)

4.2.2. Market assessment

Unfortunately, the Austrian market situation for the uptake of energy performance contracting is not very well documented. There is an Austrian wide advocacy group named “DECA Dienstleister Energieeffizienz und Contracting Austria”, which was founded in 2004 and transformed to an officially registered association

in 2013. (DECA, 2013) Currently the association has 36 members from the energy sector. This association did a survey among their members in 2010, asking for the current market situation. The figures below show the EPC projects which were implemented by DECA members from 2005-2010. Updated numbers are currently not available. (Bayer, Auer, & Amann, 2013)

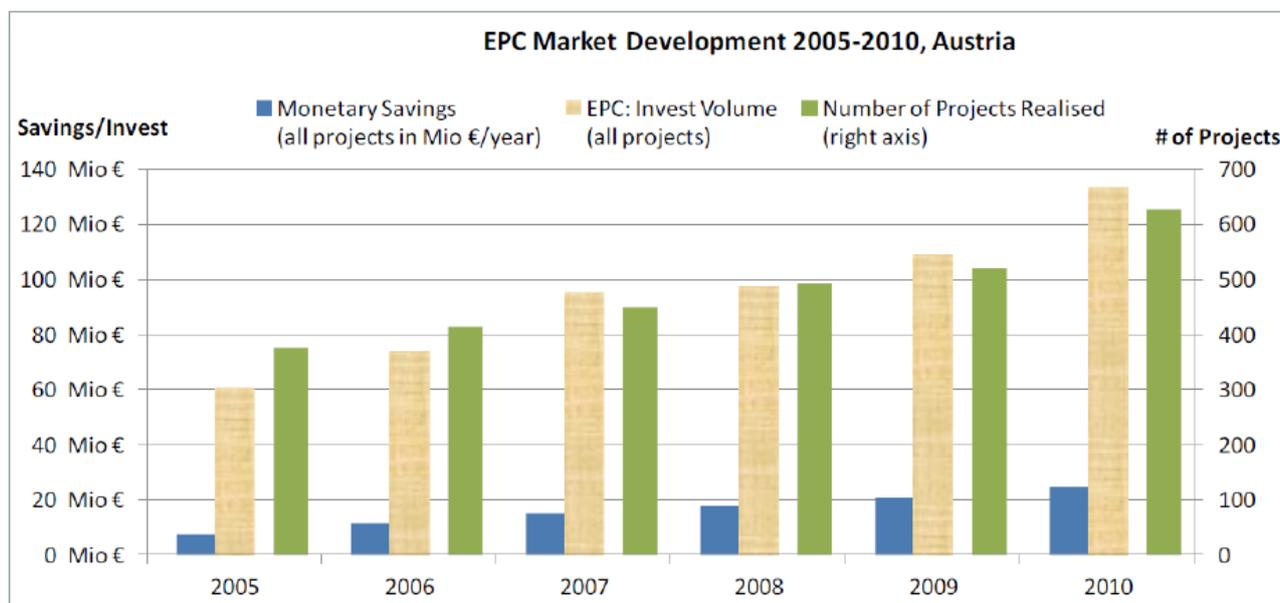


Figure 7 EPC market development 2005-2010, numbers provided by DECA members (Bayer, Auer, & Amann, 2013)

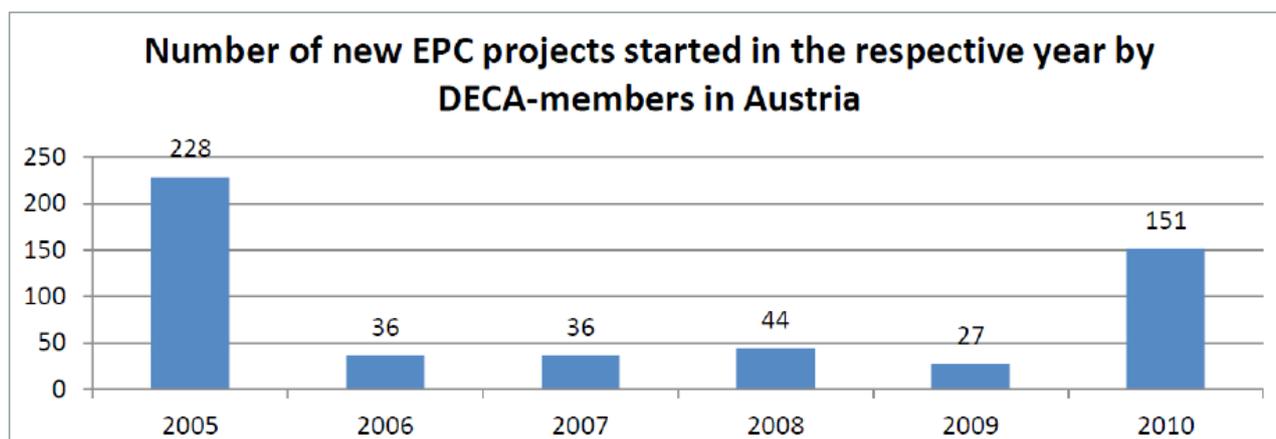


Figure 8 EPC market development 2005-2010, numbers provided by DECA members (Bayer, Auer, & Amann, 2013)

Another data source on the national level comes from the Federal Ministry for economy. Since 1997 a focus is set on energy contracting - which resulted in a successful project called “Bundescontracting”. This project covers contracts between national, public departments and special companies which are responsible for implementing energy savings over 10 years contracting time. Contracting partners are the Federal Government of Austria (principal), the contract supplier (EPC companies) and private limited company BIG (federal buildings company, 100% owned by the Federal Government of Austria, founded in 1992 for



managing and constructing the majority of public buildings). The first pilot energy contracting model was implemented in 1997.

- The facts and figures of actual arrangements are based on the following (status of January 2018):
- 246 buildings with annual energy costs of about € 15.7 million;
- Goal for annual energy cost savings: € 3.1 million;
- Average savings, guaranteed by contractor: 20%;
- Annual CO₂ savings: 11,780 tons.

Implemented measures range from optimization of building technologies, change of pump systems and electric devices as well as lightning to LEDs, monitoring, operational management and user behavior workshops. (Ministry for Digitalization and Economy, 2018)

Currently, there is only one direct funding line for EPC available - this funding line was introduced by Federal State of Upper Austria to increase the energy efficiency and use of renewables. Eligible costs for funding are planning and investment costs for installations which increase the energy efficiency and for renewable energy generation. The project implementation must be in Upper Austria. Following maximum funding rates apply, depending on contracting time and type of contracting:

Table 5 Framework of contracting funding in Upper Austria

Contracting duration in years	Performance contracting [%]	Plant contracting [%]
2	16	11
3	19	13
4	22	15
5	25	17
6	28	19
7	31	21
8	34	23
9	37	25
10	40	27

The maximum funding amount is €75,000. Applicants for funding can be companies, associations, confessional institutions and public entities (except federal governmental entities). The funding programme applies for the years 2016 until 2020. (Amt der Oö. Landesregierung, 2018)

Indirect funding of contracting investments is also possible by Federal funding lines. Environmental funding lines for companies cover different fields such as building renovations, energy efficient plants, renewable energy production, e-mobility, clean air, etc. In the framework of these funding lines, contracting parties can apply for funding. Funding applicant can be the contractor or the contracting client, depending on which balance sheet the investment is on. If municipalities wish to apply for such a funding line in the course of a contracting process, they have to meet certain requirements.



Funding for municipalities as applicant is only possible for renewable energy supply measures (environmental friendly heating systems..) and energy saving measures (LED lightning, building renovation, new energy efficient buildings). In addition, the maximum achievable funding rate is lower than for companies. (KPC - Kommunalkredit Public Consult, 2018)

4.2.3. Conclusions and Recommendations

Since EPC is a type of PPP, the advantages and market barriers are similar (see Table 2: Overview advantages, disadvantages of PPP in Austria). A lack of know how in tender procedures were found as major barrier for wider EPC uptake, especially for small municipalities. Advantages of EPC are that there are already many specialised companies in this field, which are competent partners for public authorities. On the webpage www.contracting-portal.at is a list with specialised companies in this field, which are grouped according to their type of experience (residential buildings, industry, public buildings, energy performance contracting or plant contracting...).

Especially for smaller municipalities EPC can have relatively high specific project preparation costs. In this case, EPC experts recommend bundling projects in groups of 5-20 buildings. This allows lower specific preparation and maintenance costs for the contractor. It is also comfortable for the building owner to have only one cooperation partner during the next 5-10 years.

In the authors opinion, the applicability of EPC for public nZEB renovation is very good. There is a long Austrian tradition of implementing EPC, also by the Federal Government. In addition, several companies are specialized in energy performance contracts which encourages an effective implementation.

4.3. Crowdfunding

4.3.1. Legal, regulatory and administrative framework

The first approach of regulating crowdfunding in Austria was done in September 2015 (Alternative Financing Law). Since then, small and medium companies have been allowed to collect money via “lending based crowdfunding” and “equity based crowdfunding”. The other forms with no monetary rewards (donation based and reward based (goods, pre-sales..)) are not affected.

In 2018, this law was revised and newly adopted in August 2018. Since then, every Austrian legal entity is allowed to collect money in a lending-based or equity-based version. Until now, implementation of lending-based or equity-based crowdfunding in the public sector (e.g. municipality or municipal company is emitter..) is still not clarified. Since donation and reward based crowdfunding forms are not affected by the Austrian crowdfunding law, this should be allowed to be carried out by all public bodies.

Following rules apply to in Austria:

- Emitter (collector of money):
 - Natural or legal person, which operates a company:
 - > Before the amendment 2018 of the law, only companies which are classified as SME (micro, small and medium sized enterprise) according to the L 124/36 recommendation of the European Commission were allowed to implement crowdfunding;
 - > Since 01.08.2018 these limitations are invalid;

- Obligation to inform possible investors about the project; emission volume:
 - > €100.000-€ 1,5 million: simple information sheet with relevant hard facts;
 - > new thresholds since 01.08.2018: €250.000-€ 2 million;
 - > €1,5 million - € 5 million: simple capital market prospectus (“vereinfachter Kapitalmarktprospekt”) according to Austrian Financial Market Authority;
 - > new thresholds since 01.08.2018: €2 million - € 5 million;
 - > €5 million: full capital market prospectus (“Kapitalmarktprospekt”) according to Austrian Financial Market Authority, including emitter’s data about assets and liabilities, profit and losses, future development, rights and permissions, etc. (FMA, n/a) This prospectus causes a lot of effort and needs expertise to fulfil the legal requirements
- Emitters are not allowed to collect more than € 5 million in seven years, minus already repaid investments - if they exceed this level emitters must develop a full capital market prospectus;
- Emitters have to inform their investors on a periodical basis e.g. publishing the annual accounts;
- If requested crowdfunding level is not reached, e.g. € 50.000, the money must be paid back to the investors;
- Private (non-professional) investors are allowed to invest max. € 5.000 per project and year. There is no restriction for professional investors or legal persons:
 - Private investors are allowed to invest more than €5.000 per year if private investors can proof that they invest not more than twice as much as their annual net income and not more than 10% of the investor’s full financial asset;
- The execution of this law is done by district authorities. (Wirtschaftskammer Österreich, 2018) (Alternativfinanzierungsgesetz - AltFG, 2018)

4.3.2. Market assessment

The Austrian crowdfunding market is very well documented. Currently, 23 Austrian crowdfunding platforms generate money for projects. The used crowdfunding types are donation-based, reward-based, crowdfunding and crowdlending as well as mixed forms. The currently operating Austrian platforms are displayed in the picture below. In addition, several Austrians invest in CF projects which are promoted by international platforms such as Kickstarter, etc.

Austrian activities in the crowdfunding sector continuously grew in the past years. The first Austrian crowdfunding project was implemented in 2012. Since then until the end of 2017, a cumulated investment volume of more than €65 million was reached. In total, about the figure below shows the development of the Austrian crowdfunding market, based on the analysis of crowdfunding market research platform “Crowdcircus”. As it is shown, the majority of the implemented CF projects is based on investing or lending. As example, only 10% of the CF volume in 2017 was generated by donations or for rewards.

For these two types of funding, CF experts recommend focussing on international platforms, which have bigger networks with possible investors.

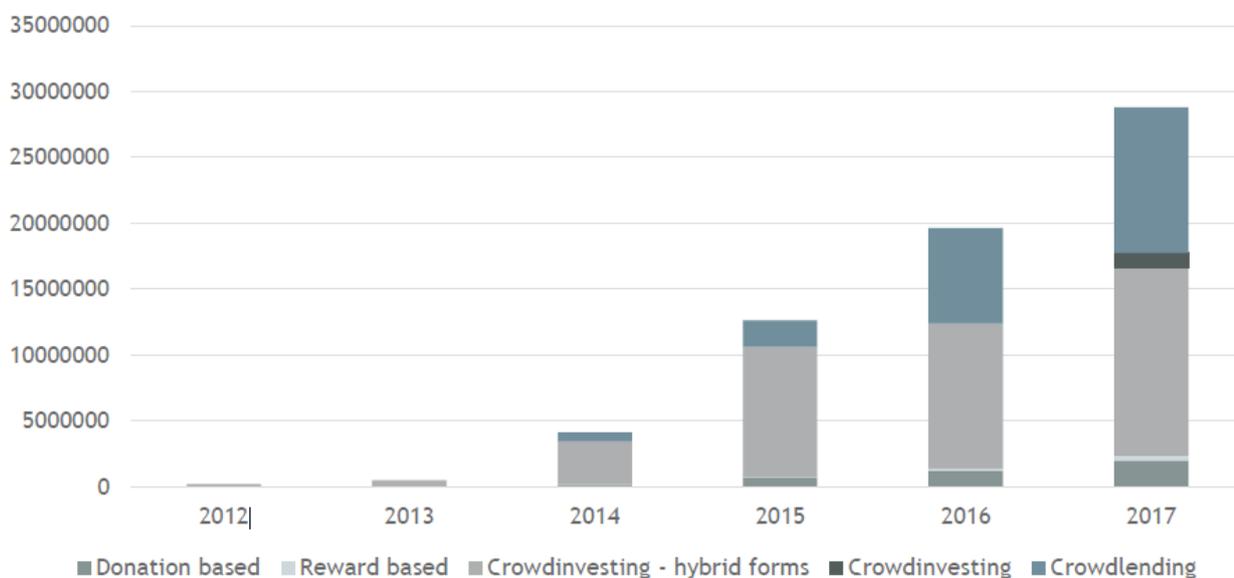


Figure 9 Crowdfunding market development in Austria (CrowdCircus, 2018). Source: data processing by EAST based on data from "Datenquelle: CrowdCircus"⁹

Five biggest crowdfunding projects in 2017 are shown below (Table 6).

Table 6 Overview - five biggest CF projects in 2017 (CrowdCircus, 2018) Source: "Datenquelle: CrowdCircus"¹⁰

Project	Platform	Type	Category	#investors	Volume €
COOEE alpin hotels	Conda	Touristic centre	Hybrid crowdfunding	417	1.201.000
Ökostrom AG	Conda	Energy company	Crowdfunding	452	1.110.000
Brigittenuer Lände 42, 1200 Vienna	Rendity	Buidling	Lending based (bonds)	222	800.000
Giesinger Bräu	Conda	Beer production	Hybrid crowdfunding	842	777.000
Amalientraße 1, Vienna	Homerocket	Building	Lending based (bonds)	415	700.000

A special trend in recent years was to use CF for financing construction of buildings. In 2017 about € 14 million were generated through five specialised platforms: dagobertinvest, Homerocket, Rendity, Immofunding and REVAL. The financed building types are mainly private residential buildings or office buildings. An example for an Austrian, crowdfunded public building was not found.

⁹ <https://crowdcircus.com/news/oesterreichische-crowdfunding-plattformen-verbuchten-2017-rekordjahr> and made the figure.

¹⁰ <https://crowdcircus.com/news/oesterreichische-crowdfunding-plattformen-verbuchten-2017-rekordjahr> and made the figure.

4.3.3. Conclusions and Recommendations

The Austrian crowdfunding market changed rapidly over the last years and experienced a strong uptake of CF models in 2015 with the introduction of the Alternative Financing Act and its amendment in 2018, which simplified the regulation again (higher thresholds, elimination of regulation that only SMEs are allowed to collect money....). Nevertheless, some barriers and challenges were identified for a wider application of crowdfunding in Austria (Table 7).

Table 7 Identified challenges for the Austrian crowdfunding uptake

Challenge/barrier	Impact	Countermeasures
Investment threshold for private investors of €5.000 per year (legal definition)	May be an investment barrier for private persons, complicates high private participation (high number of private investors needed)	Increase financing thresholds
Crowdfunding is a risky form of investment	Reluctance/scepticism on both sides: private investors and possible emitters	Transparent information about risks and money flows
Lack of knowledge in public institutions	Advantages of crowdfunding for public institutions are not clear, lack of legal know-how for crowdfunding (especially in smaller municipalities with less infrastructure..)	Create successful Austrian public role models/showcases (e.g. supported with federal funding)
Risk of image loss through failed public projects	Failed crowdfunding projects (private investors lost all their money) result in a trust loss in public institutions	Very detailed and clear risk evaluation and planning of public CF project minimizes failure risk
No European wide standard regulation	Complicates cross-European investments	Develop minimum European regulation

The applicability of different CF forms for financing public nZEB renovations is shown below (Table 8). The rating is: 1= high applicability, 5=low applicability. It must be admitted that the rating was done by the Austrian eCentral-project team. It is a very subjective evaluation.

Table 8 Applicability of CF models for public nZEB renovation

Type	Rating	Justification
Reward based	1	Can be a good option for collecting a share of necessary investment volume - non-monetary rewards such as name boards on the building's façade etc. can be a good motivation for public
Donation based	3	Questionable: people may be hard to motivate to donate for the state since they're already paying taxes - good marketing/background story necessary
Crowdfunding	4-5	Investors acquire equity and relatively high return of investment - public entities usually get cheaper credits from traditional banks (lower interest rates), gradual privatization through equity share → advantages for public entities not really clear
Crowdlending	4-5	Investors expect relatively high return of investment - public entities usually get cheaper credits from traditional banks (lower interest rates), gradual privatization through equity share → advantages for public entities not really clear

Since public buildings usually don't produce any saleable products or services, income from the building itself can be very difficult to generate. This complicates the applicability of CF forms like crowdfunding and crowdlending, since a certain monetary return of investment is expected by the private investors. One possible solution can be the integration of a PV-system in the building's concept through different energy sale models. As example, the whole building renovation is financed by the public institution itself but the PV-system on the roof is financed through crowdlending. Following energy sale structures are available:

1. PV system is installed as full feed-in plant □ all produced electricity is feed into the grid and sold to a certain price to the energy supplier. Rewards are paid as interests to private investors.
2. PV system is installed as common grid connected system but the public building can consume the produced electricity □ produced electricity is sold to building owner for a certain price, which usually generates a higher revenue for the PV plant owner (feed-in tariffs are quite low in these times..)

If the above-mentioned models are applicable depends on the country-specific regulation. In Austria, the first model is already implemented since many years (called "public participation model"), the second model is possible by law since last autumn 2017 ("Ökostromnovelle 2017 samt gemeinschaftliche Energieerzeugungsanlagen"). For the first time, private energy producers (in fact every person with its own PV system on the roof, which could not be classified as professional, commercial energy supplier) are allowed to sell their surplus energy to other consumers and not only to ESCOS.

All four forms of crowdfunding have in common, that the image loss risk for public entities is relatively high. Since crowdfunding is a quite risky form of investment for investors (they can lose up to 100% of investment sum, if project went wrong), public project must ensure that the failure risk is as low as possible. Failed public projects, at which investors (private persons....) lose all their money can cause major trust troubles for public institutions and should be avoided.

4.4. Controlling of Federal Budgetary Management in Austria

The Austrian Federal Audit Office controls the annual public expenses and revenues of about € 600 billion. Aim of these evaluations is the efficiency of work of the Federal State and the allocation of public money and risk allocation. Based on these evaluations, the auditors prepare reports with recommendations, quality issues, savings and possible additional revenues. The results of the audits are published and used in the parliament for adoption of the budget prepared by the Federal Government. (Österreichisches Parlament, 2018)

Alternative financing schemes such as the three ones described in this report may include several risks for the public party. During the evaluations, the auditors of the Federal Audit Office try to concentrate on key risks, which are especially relevant for the public. Content of the examination of a project can be:

- Are there clear goals for the planned privatization of public services? Are the goals realistic in terms of performance and monetary revenues? Is there a clear service specification?
- PPP last usually for a long time. Did the project partners consider possibly happening policy changes?
- Was there enough public know-how in the conception phase of the project? What is the database for the planned project? Clear indication of demand?
- Were demographic development and other important planning factors considered?
- Was the PPP model compared to conventional procurement?
- Are the legal requirements and regulations during the conception, implementation and operation phase clarified? (project financing, procurement, tax regulations, etc.)

During the examination, the auditor usually sets the focus on the question, if the chosen alternative financing model was adequate to fulfil public goals with the project implementation (more efficiency over the project's lifetime, use of private know-how, fair risk allocation, short-term relieve of public budget). (Bauer, 2014)

5. Italy

5.1. Public-Private Partnership

5.1.1. Legal, regulatory and administrative framework

In Italy, the actual definition of Public-Private Partnership is the result of a regulatory evolution, originated by the first introduction of the project financing scheme, Law n. 109/1994, named “Merloni”, where Art. 37-bis introduced the eligibility of a private subject (called “promoter”) to realise a public work through a granting system. The agreement between subjects crossed 3 phases: the proposal presentation by the promoter (art. 37-bis), the evaluation by the public authority (art. 37-ter) and the public tender, based on the promoted project, to define the subject designated to construct the public work (art. 37-quater).

Over the years, the legislative evolution has deepened the scheme in 3 phases¹¹:

- the starting approach (until 2007) corresponds to Italian Law “Merloni-quater” and the innovation introduced by the PPP scheme applied on public works;
- the second phase (2008-2011) has witnessed legislative adjustments and diversification of procedural and operative processes;
- the third phase (2012-2016), characterized by definition of financial and incentivizing regulations, to support the PPP scheme during the period of economic recession and credit crunch.

The Legislative Decree 163/2006, adopted as implementation of EU directives 2004/17/EC and 2004/18/EC, defines, in the art. 3 paragraph 15 term, Public-Private Partnership (PPP) as “*complex of forms of public-private collaboration in which the respective resources and skills are integrated for the creation and management of works of public interest*”. This definition includes several cooperation models between public and private actors, determined by the following main factors:

- In the concession scheme the incomes are originated by the services selling, in PPP scheme the incomes derive from the rent guaranteed by the public authority or the grantor;
- In the concession scheme, operation and financial risks are burdened to the concessionaire; in PPP scheme financial and operation risks are as well burdened to the concessionaire, but depend on the “availability” of the work: the rent can be re-defined according to the variation of terms and conditions of operability of the service;
- In the concession scheme, the tender can be launched on the basis of a technical and economic prefeasibility study; in PPP scheme the tender can be launched only on the basis of a final design.

The Code of Public Contracts, Legislative Decree n. 50 of 18 April 2016 that actuates the Directive 2014/24/EU on public procurement¹², defines in article 3 letter “eee” the PPP as “contract for pecuniary interest stipulated in writing by which one or more contracting authorities confer on one or more economic operators for a given period depending on the duration of the amortization of the investment or on the modalities of financing fixed, a set of activities consisting of the construction, transformation, maintenance and operational management of a work in exchange for its availability, or its economic exploitation, or the

¹¹ <http://www.senato.it/service/PDF/PDFServer/BGT/01068955.pdf>

¹² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024&from=EN>

provision of a service related to the use of the work, with the assumption of risk according to methods identified in the contract by the operator...”.

The National Anti-Corruption Authority (Autorità nazionale anticorruzione, ANAC) published Guidelines n.9 for the application of the Legislative Decree n. 50 of 18th April 2016, on the “*Monitoring of contracting authorities on the activity of the economic operator in private public partnership contracts*” approved by Resolution n. 318 of 28th March 2018. The guidelines define how contracting authorities can check on the economic operator activities and in particular the permanence of the pre-defined risks with respect to each private partner.

The National Observatory of Public-Private Partnership promoted by the Department for Planning and Economic Policy Coordination (Dipartimento per la programmazione e il coordinamento della politica economica, DIPE) (<http://www.infoppp.it/homepage.aspx>), managed by CRESME Europa Servizi, monitors the PPP market and supports public and private institutions, owners and building experts to improve their knowledge on PPP processes and to use this approach to finance public utility works. The website gathers data information and documentations on past PPP tenders.

The PPP is applied in case public administrations aim to commit to a private partner the implementation of a project for the realization of public works or utility, and/or management of related services within long-term cooperation. The PPP is a means to improve the quality of construction of the public structures and service management.

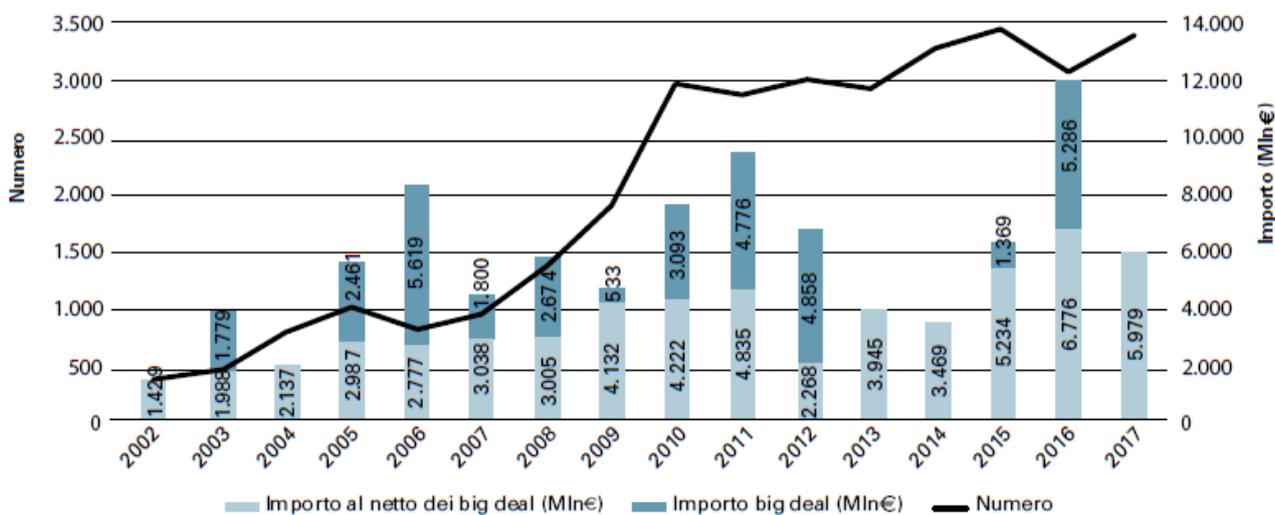
As defined at European level, PPP is developed mainly through two scheme typologies:

- The “Contractual partnership”, based on contractual obligations, in which one or more tasks are entrusted to a private partner;
- Institutional partnership usually applied for the management of public services at local level (e.g. water supply or waste collection services).

5.1.2. Market assessment

The adoption of PPP scheme started in 2002 thanks to the legislation reform and approval of “Merloni” law (law n. 166, of 1st August of 2002).

The Italian PPP market between 2002 and 2017 has achieved the number of 31.865 of public procurements that represent the 8,8% of the all public procurements published, with an economic investment of 93 Milliard of Euro about the 21% of the all public procurements investment. Starting from 2006, conjunctly with the new Legislative Decree 163 and the economic crisis years, the number of PPP tenders increased (black line) and the global amount investments (in blue rectangles) decreased a year later, in 2007. The trend between 2007-2016 is characterized by a growing number of PPP tenders, despite a reduced budget for works after 2012, probably due to the financial crisis of private investors, Figure 10. (iFEL, 2018)



Big deal: PPP di importo superiore ai 500 milioni di euro.

Figure 10 Number and financing investment (Mln€) of PPP tenders published between 2002-2017.

Source: Data processing IFEL and Cresme Europa Servizi based on infoppp.it data, different years. (iFEL, 2018)

Figure 12 reports results presented in the “La dimensione comunale del Partenariato Pubblico Privato. Edizione 2017” (iFEL report) about PPP market trend, including number of initiatives and money invested, in relation to the three legislative periods defined by legislative changes and variations of the national regulations (as seen in 5.1.1). A general remark is that the number of PPP tenders has increased (black line) together with the investments (Mln€ invested in blue rectangles). Between 2002-2016, the number of registered PPP is approximately to 29.000 tenders, for a total amount of investment of about 90 billion euro.

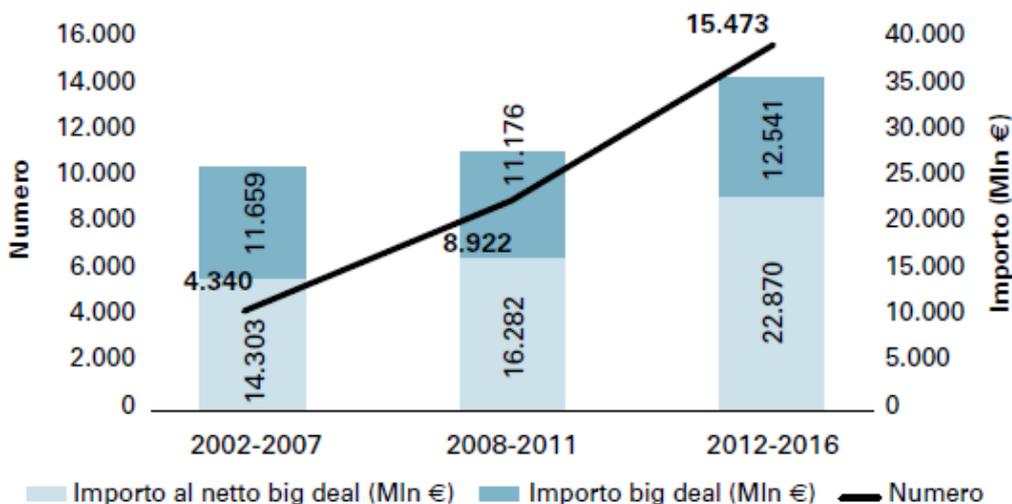


Figure 11 Italian PPP market, tenders published during the three periods of legislative reformed

Source: data processing IFEL and Cresme Europa Servizi, based on infoppp.it data, different year. (iFEL, La dimensione comunale del Partenariato Pubblico e Privato, Edizione 2017)

Figure 12 reports the number of PPP tenders published during the three periods from Italian municipalities and other costumers, together with the related investments. 50% of Italian Municipalities have used the PPP process at least once time, but unfortunately, the number of tenders awarded is less than 8000, about 27% of the total. (iFEL, La dimensione comunale del Partenariato Pubblico e Privato, Edizione 2017)

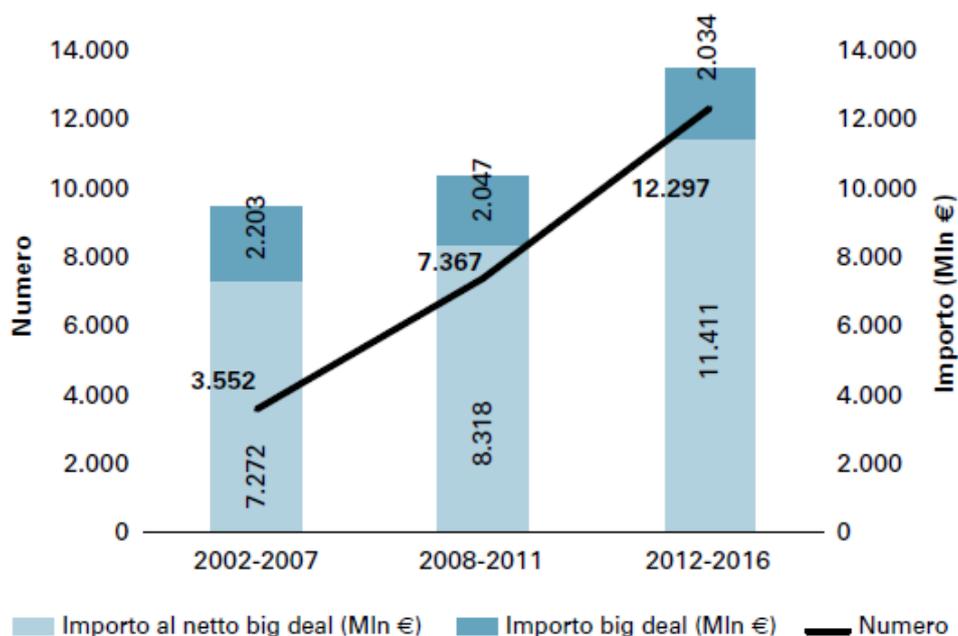


Figure 12 Italian PPP market, tenders published during the three periods of legislative reformed from Municipalities (blue dark rectangles and continues black line) and other costumers (light blue rectangles and dots line). Source: data processing IFEL and Cresme Europa Servizi, based on infoppp.it data, different year. (iFEL, La dimensione comunale del Partenariato Pubblico e Privato, Edizione 2017)

In Italy the 27% of PPP published is awarded, Table 9.

Table 9 Percentage of PPP awarded over the all PPP published.

Year	PPP published		PPP awarded		Percentage of PPP awarded over PPP published	PPP market of sustainable construction		Percentage of sustainable PPP over PPP published
	Number	Investment (Mln€)	Number	Investment (Mln€)	%	Number	Investment (Mln €)	%
2002	332	1.429	94	690	28%	222	861	67%
2003	514	3.767	138	2.160	27%	317	1.228	62%
2004	802	2.137	229	960	29%	465	1.725	58%
2005	968	5.448	371	5.340	38%	422	1.766	44%
2006	785	8.396	254	3.177	32%	391	1.919	50%

2007	949	4.838	320	5.574	34%	545	1.527	57%
2008	1.290	5.679	514	2.762	40%	800	1.390	62%
2009	1.849	4.766	612	6.511	33%	1.185	1.780	64%
2010	2.986	7.315	752	5.869	25%	1.606	1.393	54%
2011	2.779	9.611	896	6.452	32%	1.779	2.515	64%
2012	3.013	7.127	765	4.207	25%	1.938	1.621	64%
2013	2.843	3.945	812	3.245	29%	2.084	2.100	73%
2014	3.064	3.469	756	7.684	25%			
2015	3.302	6.604	656	2.836	20%			
2016	3.092	12.062	629	7.152	20%			
2017	3.297	5.979	727	5.373	22%			
TOT. 2002/2017	31.865	92.572	8.525	69.992	27%	11.754	19.825	
<i>Source: Data processing IFEL and Cresme Europa Servizi based on infopp.it data, different years. (IFEL, La dimensione comunale del Partenariato Pubblico Privato. Seconda edizione - 2018, 2018)</i>					<i>Source: Data processing EURAC based on www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013".</i>			

At the Italian level, some PPP typologies (contractual and institutional partnership) are ruled by Code of Public Contracts. The most common are:

- Grating of public works (concessione di lavori pubblici)
- Services concession (concessione di servizi)
- Financing leasing (locazione finanziaria)
- Others contracts like: sponsorship (sponsorizzazione), availability contract (contratto di disponibilità), promoter of urbanization works or tourist settlements; concession for the valorisation of real estate for economic purposes; management of local public services of economic importance and realization of the public works necessary for their correct execution; management of local public services without economic relevance and realization of the public works necessary for their correct execution; design and implementation of transformation operations

The National Observatory has identified 18 different sectors where PPP process is commonly used: 13 of these form the “sustainable construction market” (as defined in “*Unioncamere - “Il Partenariato Pubblico Privato e l’edilizia sostenibile in Italia nel 2013” report*), and include: cultural heritage, multi-purpose centers, cemeteries, trade and crafts, management, sports facilities, parking, reorganization of urban areas, health, education and social time free, tourism, other residential and non-residential projects (CRESME Europa Servizi, 2013). The National Observatory on PPP, in 2002-2013 period, has counted 11.754 tenders with an amount of 19.823 Million of euro. The PPP trend increases in the years, Figure 13.

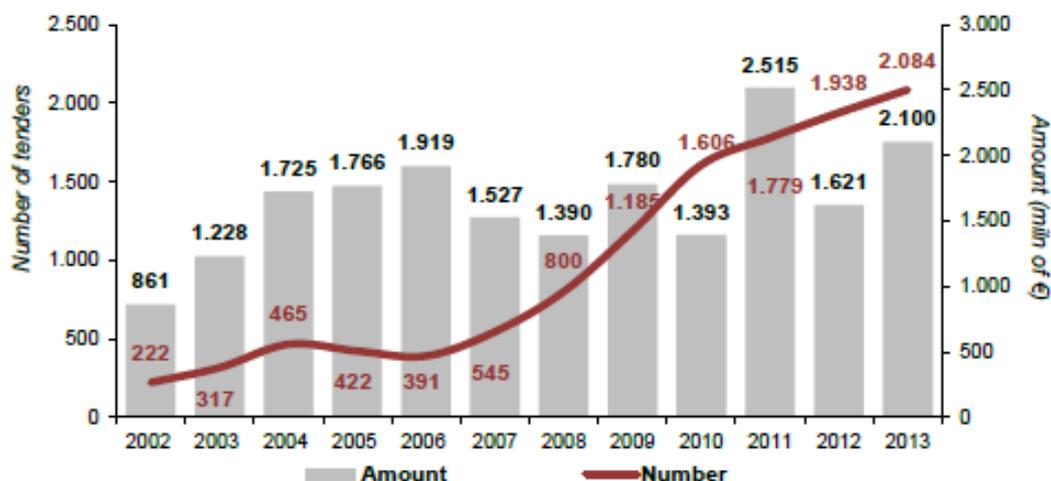


Figure 13 PPP market of sustainable construction - The evolution of the 2002-2013 tenders

Source: "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013".
www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. (CRESME Europa Servizi, 2013)

In 2013, the PPP market of sustainable construction represented 72% of the total number of operations, with a 45% of the total money amount invested that achieves the 52% of operations number and 41% of the total money amount invested by the public works market, Figure 14.



Figure 14 Public sustainable building market in Italy - Percentage of construction on the total market, year 2013.
Source: "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013".
www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. (CRESME Europa Servizi, 2013)

The PPP market of public sustainable construction represents, between 2002-2013, the 8% of the public initiatives, Figure 15.

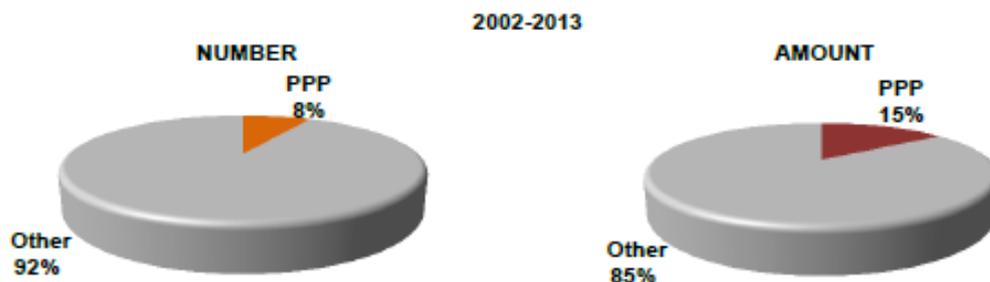


Figure 15 Public sustainable building market in Italy - Contract tenders by contract form - Total 2002-2013

Source: "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013".
www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. (CRESME Europa Servizi, 2013)

The sustainable construction sector, where PPP is the most used process to finance new or renovation works is "sport facilities" with 3928 tenders (one third of the total reference tenders for sustainable construction), while the highest expenditure sector is the "health care" with 6.7 billion of euro (one third of the total amount).

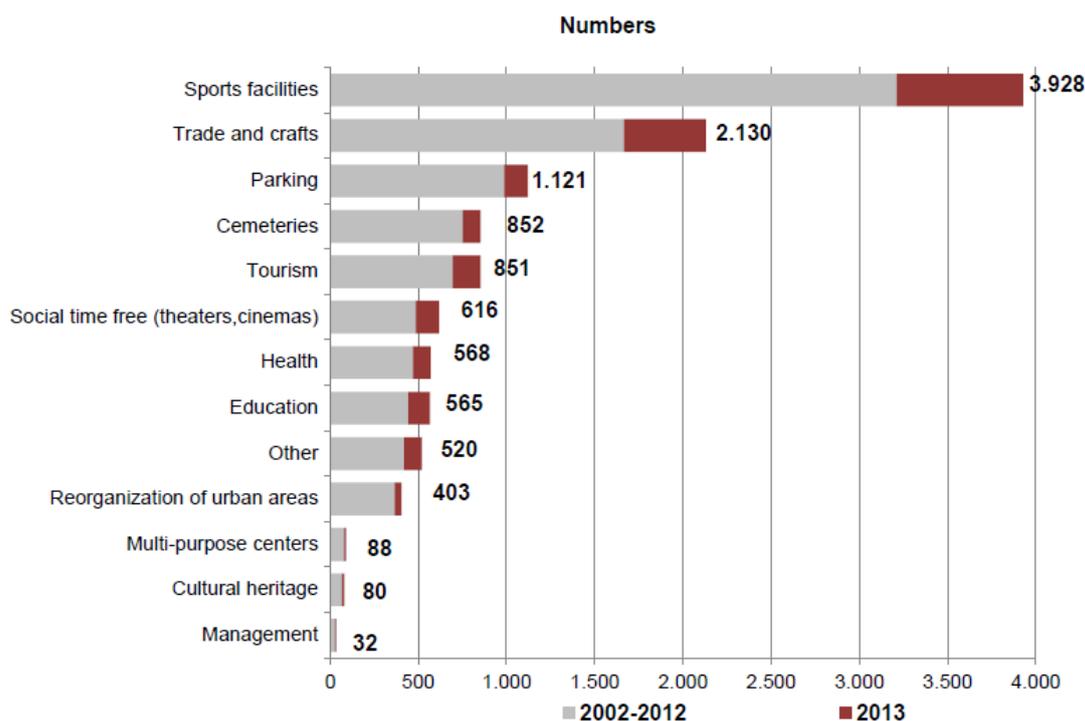


Figure 16 PPP sustainable construction market in Italy - Numbers of tenders by sector of activity - 2002-2012 and 2013. Source: "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013".
www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. (CRESME Europa Servizi, 2013)

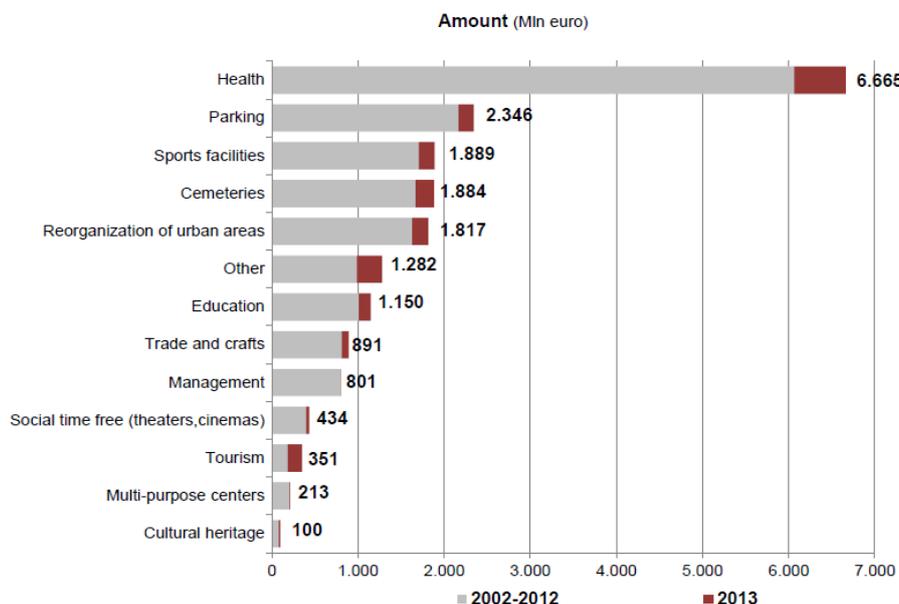


Figure 17 PPP sustainable construction market in Italy - Tenders amount by sector of activity - 2002-2012 and 2013. Source: "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013". www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. (CRESME Europa Servizi, 2013)

With regard to public authorities, Municipalities are the main customers with over 80% of the demand and over 50% of the market, Figure 18.

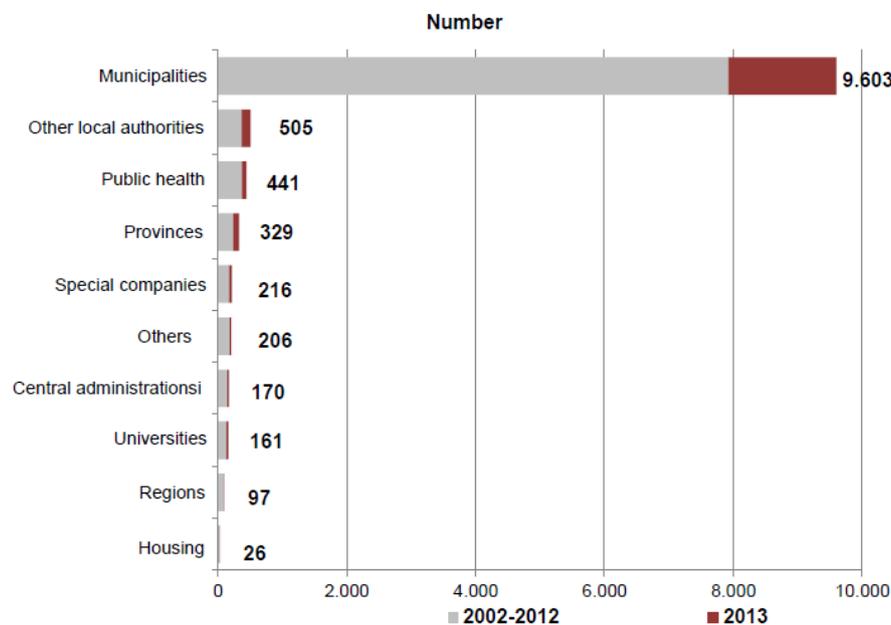


Figure 18 PPP sustainable construction market in Italy - Calls for tenders by Customers - Total 2002-2012 and 2013. Source: "Unioncamere - "Il Partenariato Pubblico Privato e l'edilizia sostenibile in Italia nel 2013". www.infopieffe.it promosso da Unioncamere, Dipe-Utfp e Ance e realizzato dal CRESME. (CRESME Europa Servizi, 2013)



Furthermore, another result highlights that in the period between 2002-2013, 50% of the market is located in the North of Italy. (CRESME Europa Servizi, 2013)

Guidelines n.9 for the application of the Legislative Decree n. 50 of 18th April 2016¹³, on the “Monitoring of contracting authorities on the activity of the economic operator in private public partnership contracts” published by National Anti-Corruption Authority (Autorità nazionale anticorruzione ANAC) and approved by Resolution n. 318 of 28th March 2018. The guidelines consist of two parts containing the analysis and allocation of risks (the first) and monitoring of the economic operator's activity (the second).

The Department for Planning and Coordination of Economic Policy (DIPE) supports public authorities in the implementation of PPP approach for public utility works.

The National Observatory of Public-Private Partnership promoted by the Department for Planning and Economic Policy Coordination (Dipartimento per la programmazione e il coordinamento della politica economica, DIPE; www.programmazioneeconomica.gov.it/tag/ppp/; www.infoppp.it/homepage.aspx), managed by CRESME Europa Servizi, monitors the PPP market and supports public and private institutions, owners and building experts to improve their knowledge on PPP processes and to use this approach to finance public utility works. In the website, there are available data information and documentations on passed PPP tenders. In 2016, DIPE supported 24 public authorities, between municipalities (50% of the demands), local health agencies, central administrations and provinces. In most cases, the assistance provided aimed at obtaining support for the drafting of feasibility projects, evaluation of proposals / offers during the tender, and contracts negotiation. In order to improve the PPP knowledge of public administrations, the DIPE promoted several conferences and seminars during 2016.¹⁴ (Il Dipartimento per la programmazione e il coordinamento della politica economica (DIPE), 2017)

At the end, although PPP financing scheme results a strategic way to finance improvements and maintain public infrastructures and services in function also in period with limited availability of public money. In order to improve the PPP usability are been identified critical points that limit the PPP implementation its feasibility, (iFEL, La dimensione comunale del Partenariato Pubblico e Privato, Edizione 2017), (P. Marasco, M. Tranquilli, D. Berta, A. Ferracuti, D. Valerio, A. Topo), such as:

- Complexity of the regulatory framework;
- Low technical capacity of public administrations during the elaboration of public tenders and in the definition of project proposal needs. Inadequate financial frameworks and feasibility studies. Difficulty in the management and relation with the private partners, lack of standardization process and models to use;
- Risks and responsibilities awarding. High difficulty to share the risks and interests between public and private parts, during all the investment process, both in positive and negative case of result achievement;
- PPP variation or cancellation, often related to political changes;
- Uncertainty about the times, excessive times for contract awarding and financial closing.

¹³ http://www.anticorruzione.it/portal/rest/jcr/repository/collaboration/Digital%20Assets/anacdocs/Attivita/Atti/Delibere/2018/LINEE%20GUIDA_n_9_Del-318_018.pdf

¹⁴ <https://www.fasi.biz/it/notizie/studi-e-opinioni/18061-ppp-il-supporto-del-dipe-alle-pubbliche-amministrazioni.html#>

5.1.3. Conclusions and Recommendations

In Italy, the last updates came from the introduction of the Guidelines n.9 for the application of the Legislative Decree n. 50 of 18th April 2016, on the “Monitoring of contracting authorities on the activity of the economic operator in private public partnership contracts”. The guidelines aim to avoid that the risks and responsibilities move from public to private parts, during all the investment process and to facilitate the checking process of the economic operator activities.

PPP market, based on the data available from the National Observatory for Public Private Partnership, results in the period 2002-2013 a very common method used from public administrators to finance public utility works, with 19363 PPP tenders realized with an amount of 73.4 billion.

It is assumed that in the next years, the use of PPP tenders should increase, both for the continuous support offered to public authorities from National Observatory and for the increased knowledge acquired by public administrations. Furthermore, the Guidelines n.9, approved by Resolution n. 318 of 28th March 2018, support in active way public authorities during the activities check of the economic operators, guaranteeing the permanence risks at respectively private partners, as defined in the contracts.

5.2. Energy Performance Contracting

5.2.1. Legal, regulatory and administrative framework

The energy performance contract is an innovative financing scheme elaborated to support the energy renovation processes taking advantages of energy performance improvements. The goal of this approach links the technologic innovations on energy efficiency and the minimum energy performance requirements as defined by law. This financing method involves private partners (ESCO) in the public tenders' procedures.

At European level the EPC is defined in the Directive 2012/27/EU (replaced the Directive 2006/32/EC) as “contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, **verified and monitored** during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings.” EPC projects may also include additional services related to efficient energy supply.

In particular, Annex XIII of Directive 2012/27/EC reports minimum requirements that should be defined in the energy performance contracts. The goal target of the directive is the building energy performance optimization through a unique contract composed of three objectives:

1. Renovation of the energy performance of the building and thermal systems;
2. Suppling of the energy carriers;
3. Ordinary and extraordinary maintenance of the thermal systems.

At Italian level, the legislative decree 115/08 “Implementation of Directive 2006/32/EC on energy end-use efficiency and energy services and repeal of Directive 93/76/EEC” introduced in the article 2:

- “Energy performance contract” (contratti di rendimento energetico) as contractual agreement between the beneficiary and the supplier concerning an energy efficiency improvement measure, in which the payments for investments are made on the energy efficiency improvement level and are defined in the contract.



Furthermore, the same article also defines:

- ESCo as “a natural or legal person providing energy services or other measures to improve the energy efficiency of the installations or in the user's properties and, doing so, accepts a certain amount of financial risk. The payment of the services provided is based, totally or partially, on the improvement of the energy efficiency achieved and on the achievement of the other established performance criteria”.
- TTF as “third-party financing’ means a contractual arrangement with a third part, in addition to the energy provider and the beneficiary of the energy efficiency improvement measure, which provides the capital for the investment and charges the beneficiary with a fee equal to part of the energy saving achieved. The third party can be an ESCO”.

Legislative decree n. 102/2014 “Attuazione della direttiva 2012/27/UE sull'efficienza energetica, che modifica le direttive 2009/125/CE e 2010/30/UE e abroga le direttive 2004/8/CE e 2006/32/CE” defines a set of actions to improve the energy efficiency in all sectors in order to achieve the national energy saving target in 2020, as required:

- An energy renovation of 3% minimum of the covered roof area of the public buildings;
- Public tenders in all sectors following the “Minimum environmental criteria (CAM);
- Energy diagnosis and energy management systems for big enterprises;
- Energy diagnoses must be conducted by energy service companies (ESS), energy management experts (EGE) or energy auditors, after the 2016 they need to be certified according to UNI CEI 11352 (ESCO), UNI CEI 11339 (EGE) standards or by certified energy auditors according to technical standards to be developed;
- Ministry of Economic Development establishes the “National Fund for Energy Efficiency”, to finance the energy efficiency measures, also through the ESCOs, and/or other forms of public-private partnerships.¹⁵

The last updates on law regulations on EPCs is the legislative decree 141/2016 that modifies the legislative decree 102/2014 implementing of Directive 2012/27/EU on energy efficiency, reporting:

- “**performance contract (EPC)** is a contractual agreement between the beneficiary or the person exercising the power of negotiation and the supplier of **an energy efficiency improvement measure, verified and monitored** throughout the duration of the contract, where the investments (works, supplies or services) realized are paid according to the level of energy efficiency improvement established by contract or other agreed energy performance criteria, such as financial savings”.

UNI CEI 11352: 2014 (integration of the Annex XIII of the Directive 2012/27/EU) standard defines the requirements for companies that provide energy services (ESCO). An ESCO certified against this standard is able to offer contracts to guarantee results to its customers. The ESCO is remunerated based on the savings achieved (Third-party financing). Annex B reports the minimum requirements for the EPC. The attention to the efficient use of energy is growing: from the D.M. March 7, 2012 which provides for compliance with the UNI CEI 11352 Standard for Energy Services companies that operate with Public Administrations, up to Legislative Decree 102/2014 which provides for the mandatory certification UNI CEI 11352 for the ESCO that

¹⁵ <http://www.poloenergia.com/news/news-pte/20-news-efficienza/114-news-decreto-102-2014#.W8WcJfZoSUK>

offer the diagnostic service energy efficiency and obtaining Energy Efficiency Certificates for the savings achieved in the civil and industrial sectors¹⁶.

The ENEA (national agency for the new technologies, energy and sustainable economic development) has published “*Guidelines on energy performance contract*” following the legislative Decree n. 102 of 2014. The guidelines aim to support public authorities to elaborate the EPCs. (G. Fasano, G. Centi, M. G. Landi, F. Margiotta, Settembre 2015). Unfortunately, these guidelines included the EPC requirements identified in the Annex XIII of the Directive 2012/27/EU, but no with the last information included (modified) in the Annex B of the UNI CEI 11352:2014.

On 6th March 2018, the Decree of the National fund for the Energy Efficiency (FNEE) was published. The fund has the objective to support energy efficiency investments, promote public initiatives and the participation of private companies as ESCO. The fund amount is about 150 million of euro offered by the Minister of Economic Development (MISE).

5.2.2. Market assessment

In the Italian market of the energy efficiency in 2016, there were 347 certified ESCOs, with a total amount of 9.819 workers. In 2017, these numbers grew, 75 new certified ESCO (a total of 2.476 workers) have been added. The total incomings were 3 billion of euro in 2016, and 3,4 billion of euro in 2017. (V. Chiesa, D. Chiaroni, F. Frattini, L. Casolo Ginelli, G. Besozzi, C. Pilitano, M. Bonalumi, F. Capella, D. Cavallaro, A. Di Lieto, S. Franzò, M. Guiducci, L. Manelli, V. M. Manfredi Latilla, D. Perego, A. Temporin, A. Urbati, Giugno 2018). ESCO revenues are composed of 30% of services offered like EPC and buying and selling of Energy Efficiency Certificates (TEE), and 40% on energy efficiency projects and turnkey consulting. The building energy efficiency renovation sector is driven by over 1 Million of implementation of energy measures during the 2014-2016, by the national tax financing scheme that supported some energy retrofitting measure implementation, as with a range over of 50% windows substitutions or with a range of 20% the heating generations substitutions (V. Chiesa, D. Chiaroni, F. Frattini, L. Casolo Ginelli, G. Besozzi, C. Pilitano, M. Bonalumi, F. Capella, D. Cavallaro, A. Di Lieto, S. Franzò, M. Guiducci, L. Manelli, V. M. Manfredi Latilla, D. Perego, A. Temporin, A. Urbati, Giugno 2018).

In Italy, an investigation made in 2014 from Italian Federation for rational use of Energy (FIRE) identified some common barriers that reduced the utilization of FTT (financing through third parties) and EPC, as:

- Lack of knowledge of public authorities in these innovative financing schemes;
- Limited financial and human resources;
- Difficulty in preparing the tender documents;
- Lack of energy management systems and complexity of energy management in particular on roles and functions;
- Political changes, that often tend to favour interventions with medium-low return time rather than identifying medium-long term strategies.

¹⁶ <https://www.esco.one/en/notizie/first-periodic-checking-maintenance-uni-cei-11352-2014-certification/>



5.2.3. Conclusions and Recommendations

Currently, EPCs are not rules by a national law in Italy, but only through European regulations, partially integrated by ENEA (national agency for the new technologies, energy and sustainable economic development) in the “*Guidelines on energy performance contract*”. The guidelines are in line with the national legislative Decree n. 102 of 2014 that implements the Directive 2012/27/EU (Annex XIII), but not updated with the last integration defined in the Annex B of UNI CEI 11352:2014.

The EPC model is based on real energy saving that will be measured and verified. This is the innovative aspect required and included by law, to guarantee the investment.

At international level, there is a protocol called “*International Performance Measurement and Verification Protocol (IPMVP)*” developed in the USA in 1995. Since 2004, the IPMVP protocols is developed and published by EVO (Efficiency Valuation Organization) a non-profit organization whose products and services help people engineer and invest in energy efficiency projects worldwide (<https://evo-world.org>). At national level, FIRE (Federazione Italiana per l’uso Razionale dell’Energia, <http://fire-italia.org/ipmvp/>) is the Italian partner of EVO. FIRE supports the dissemination of the IPMVP protocol, translates it, organizes trainings and certifies experts.

The IMPVP protocol proposed a procedure to estimate the energy savings, that cannot be measured, because saving represents the absence of consumption/demand. The comparison of before and after energy consumption or demand should be made on a consistent basis, using the following general M&V equation:

$$\text{Savings} = (\text{Baseline Period Energy} - \text{Reporting Period Energy}) \pm \text{Adjustments}$$

The IPMVP aims to:

- increase certainty, reliability, and level of savings;
- reduce transaction costs by providing an international, industry consensus-based approach and methodologies;
- reduce financing costs by providing a project with a Measurement and Verification Plan (M&V Plan)¹⁷ standardisation, thereby allowing project bundling and pooled project financing¹⁸.

The EU H2020 guarantEE¹⁹ project aims to develop innovative financing schemes based on Energy Performance Contracting (EPC) procedures that should be used by public authorities to implement the necessary Energy Saving Measures (ESM) taking advantages from private capitals. Within the project, several documents, best practices and also an “Online Pre-Check for Energy Performance Contracting” tool²⁰, both translated in several languages, are being developed and available on the guarantee website (<https://guarantee-project.eu/>).

5.3. Crowdfunding

5.3.1. Legal, regulatory and administrative framework

In July 2013, Italy was the first country in the world to enact comprehensive regulation for the collection of capital through equity crowdfunding authorised online portals.

¹⁷ https://en.wikipedia.org/wiki/Measurement_and_Verification

¹⁸ https://en.wikipedia.org/wiki/International_performance_measurement_and_verification_protocol

¹⁹ <https://guarantee-project.eu/>

²⁰ <https://www.epccheck.eu/it/index>

On the way of the Jobs Act adopted in the USA in the 2011, and in order to go over to the economic crisis of these years the Italy decided to invest in innovative business innovations, processes and ideas, as:

- Simplification of the enrolment procedures in the “business register”, with lower annual costs;
- Labour reform and works contracts (with “Renzi government”)
- Introduction of exceptions to the bankruptcy law
- Introduction of a specific regulations for innovative start-ups, Legislative Decree 179/2012, successively modified by the Law 221/2012
- Definition of incentives to finance innovative new start-up.

Reward crowdfunding

It consists in a financing model that permits to pre-sell or pre-order a product or a service.

In Italy, there are three different categories of reward crowdfunding:

- **Donation**, also regulated by civil code. In this case a reward (not in money and with a lower value of the investment) can be given after the donation. For donation with high value a notarial deed is necessary²¹
- **Pre-selling** of the products or service, rules by the Civil Code. It defines the *e-commerce*, a future trade of the final product or service, to which the VAT is applied and an invoice emitted
- **Royalty**, when a monetary reward is offered and it consists in the sharing of the profits or revenues associated to the investment, but without title of property or repayment of capital. This model is ruled by the regulations on association in participation (norme sull'associazione in partecipazione), (art. 2549 of the Civil Code), declaring that “who finances also takes part to the profits (or loss) generated”. Each financier receives some “royalties” in relation to the value of the investment. In this case VAT tax applies.²²

Equity crowdfunding

It consists of capital collection direct on the web through the subscription of participative titles of the capital of a company (start-ups or small and medium companies) with an economic return.

In 2012, the possibility to use the crowdfunding as innovative financing scheme, exclusively for “innovative start-up”, was introduced in the Italian country by the legislative decree n. 179 (art. 25-32) about “Urgent measures for the growth of the country”, successively converted in the Law 221/2012, called “Crescita bis/Crescita 2.0”. In particular, article 30 introduced innovative dispositions for the Finance Code (Consolidated Law on Finance, Legislative Decree 24 February 1998, n. 58 called “TUF”) related to the equity crowdfunding: “(i) paragraph 5-novies of art. 1, which defines what an equity crowdfunding portal is, (ii) art. 50-quinquies, which defines and regulates the activity of portal operators, and (iii) art. 100-ter, which regulates the public offers of financial instruments conducted through the portals.”

²¹ <https://www.crowd-funding.cloud/it/reward-233.asp>

²² <https://www.crowd-funding.cloud/it/royalty-243.asp>

One year later, in 2013, CONSOB²³ (Commissione Nazionale per le Società e la Borsa - Italian Companies and Exchange Commission) published a resolution n. 18592 on “Regulation on raising risk capital through online portals”.

In the 2015, the Decree n.3 of 24 January 2015, successively converted in the Law n.3 of 24 March 2015, called “Investment Compact”, enlarged the possibility to collect money online to the “innovative SME” (an innovative private category of micro, small and medium-sized enterprises) and CIUs (Collective Investment Undertakings) companies that collect investments funds and invest in innovative start-ups. According the EU directive, the professional investors can be also the “Markets in Financial Services” (Mifid), and “investors in support of innovation”, which includes business angels.

Definition of innovative SME (Dlgs.3/2015). The start-ups enterprise is innovative if it meets at least 1 of the following criteria:

- expenses in R&D (research and development) and innovation are at least 15% of either its annual costs or its turnover (the largest value is considered);
- employs highly qualified personnel (at least 1/3 PhD holders and students, or researchers, or at least 2/3 Master’s graduates);
- is the owner, depositary or licensee of a registered patent, or the owner of a registered software.

The law n.232 of 2016 called “Legge di stabilità”, successively updated by Legislative Decree n. 50 of 24 April 2017 called “Decreto Correttivo”, enlarged the applicability of collect money online to all Italian SMEs.

In Italy, there is the Italian Association Equity crowdfunding (Associazione Italiana Equity Crowdfunding, AIEC) that represents the online equity CF platforms, the supervised intermediaries who take care of online investment transactions (<http://www.equitycrowdfundingitalia.org/>).

Lending crowdfunding

Investors can lend money to individuals (consumers) or businesses over the Internet with interest and repayment of capital.

In Italy, the first lending crowdfunding operators were initially authorized to operate from the Bank of Italy as financial intermediaries, as reported in the ex-art. 106 of the “*Testo Unico Bancario*” D.Lgs 385/1993. Afterward, the Dlgs 11/2010 implemented the European Directive 2007/64/EC (Payment Service Directive). It allowed the Bank of Italy to define the regulatory framework for the lending crowdfunding platforms considered as “*payment institutions*” (ex-art. 114 septies of the “*Testo Unico Bancario*”). This decision fostered the creation of a new category of operators, also coming from non-financial sectors, active in the execution of orders of payment. As all the “*payment institutions*” they had to respect some regulations and controls.

In 2016, the Bank of Italy published the Resolution 584/2016, about regulations of subjects different from the bank who can collect money. Section IX defines “*social lending*” (lending-based crowdfunding) financed by a wide number of private lenders (small savers or institutional investors). The relation between the lender and the financed subject is ruled by Civil Code article 1813 is a loan contract.

Unfortunately, the high taxation of the incoming obtained from the *lending crowdfunding* reduces investments.

²³ <http://www.consob.it/>

Invoice trading crowdfunding

Invoice trading crowdfunding businesses allows to sell individual invoices and receive to free up cash, though an online community of investors (dedicated crowdfunding platforms). The concept takes the principle of peer-to-peer lending and applies it to invoice finance.

This business model is ruled by the Civil Code article 1260 and successively that rules the transfer operations of the credits. (Politecnico of Milan, 2017)

Tax incentives

In Italy there are Tax incentives for corporate and private investments in start-ups, both by individuals and by legal entities. This benefit, stabilised and significantly bolstered by the 2017 Budget Law (art. 1, par. 66), envisages for individuals a deduction on personal income tax (IRPEF) amounting to 30% of the amount invested, up to a maximum sum of € 1 million; for legal entities the benefit consists in a fiscal deduction on the taxable income for company tax purposes (IRAP) equal to 30% of the amount invested, up to a maximum of € 1.8 million. Until 2016, these incentives amounted to 19% for investments made by individuals and to 20% for investments made by legal entities, except the special rates, respectively amounting to 25% and 27%, reserved to investments in innovative start-ups with social goal or operating in the energy field: since 2017 the 30% flat rate applies to these special typologies as well (see Implementing Decree for 2013-2015; Implementing Decree for 2016). Starting from 2017, the incentives are conditioned to a holding period of the shareholding in the innovative start-up for a minimum of 3 years (previously, 2 years).²⁴

The already mentioned Decree-Law 3/2015 introduced three important amendments:

- innovative SMEs can now take advantage from the instrument;
- CIUs and other corporations that invest predominantly in innovative start-ups and SMEs can resort to equity crowdfunding as well, an evolution that allows for the diversification of the portfolio and decreased risk towards retail investors;
- once again waiving ordinary norms, the transfer of shares of innovative start-ups and SMEs is dematerialised, and as such related burdens are reduced, aiming for higher fluidisation of the secondary market. (Crowd Fund Port Consortium, 2017)

5.3.2. Market assessment

In 2017 the crowdfunding grew for 45% with respect to 2016, with a 150% increase in the equity crowdfunding involving 78 SMEs that have collected 11 million of euro.

Until 2017 the crowdfunding in Italy has collected 133.197.153,17 euro, and financed 15.915 projects. Only in the 2017 the budget raised amount at 41.406.243,66 euro. (Starteed, 2017)

²⁴ <http://www.altalex.com/documents/news/2017/05/09/equity-crowdfunding-e-progressiva-perdita-del-diritto-di-esclusiva-delle-start-up-e-pmi-innovative>



Figure 19 Crowdfunding: value up to date (a), in 2017 (b). Source: Data processing EURAC, based on @Starteed (Starteed, 2017)

The Crowdfunding Observatory was established in 2014 at the School of Management of the Polytechnic of Milan, with the aim of analysing and comprehensively interpreting the impact that this new form of capital, called Crowdfunding, can determine on individual companies and on the system. In 2017 in Italy there were 46 platform for donation/reward crowdfunding, 13 for equity CF, and 5 for lending CF.

Equity Crowdfunding

At the end of June 2017, CONSOB authorized 19 platform registered on the Consob register for “equity crowdfunding” in Italy. (Calenda, n.a.) 18 of these are enrolled in the “ordinary” section while one is enrolled in the “special” one.

Table 10. Authorized portal by CONSOB to propose equity crowdfunding campaigns in Italy.

Source: Crowd Investing Observatory (Politecnico of Milan, 2017) (Calenda, n.a.)

WEBSITE	OPERATOR COMPANY	AUTHORISATION DATE
Unicaseed.it	Unica SIM	Sezione speciale
Starsup.it	Starsup Srl	18/10/2013
Assitecacrowd.com	Action crowd Srl	26/2/2014
Equity.tip.ventures	The Ing Project Srl	18/6/2014
Nextequity.it	Next equity crowdfunding marche Srl	16/7/2014
Crowdfundme.it	Crowdfundme Srl	30/7/2014
Muumlab.com	Muum lab Srl	6/8/2014
Mamacrowd.com	Siamosoci Srl	6/8/2014
Fundera.it	Fundera Srl	10/9/2014



Ecomill.it	Ecomill Srl	29/10/2014
Wearestarting.it	Wearestarting Srl	16/12/2014
Equinvest.it	Equinvest Srl	14/1/2015
Investi-re.it	Baldi Finance SpA	28/1/2015
Crowd4capital.it	Roma Venture Consulting Srl	8/10/2015
Opstart.it	Opstart Srl	11/11/2015
Cofyp.com	Cofyp Srl	14/4/2016
Clubdealonline.com	Clubdeal Srl	8/3/2017
Walliance.eu	Walliance Srl	30/3/2017
Europacrowd.it	Europa HD Srl	7/6/2017

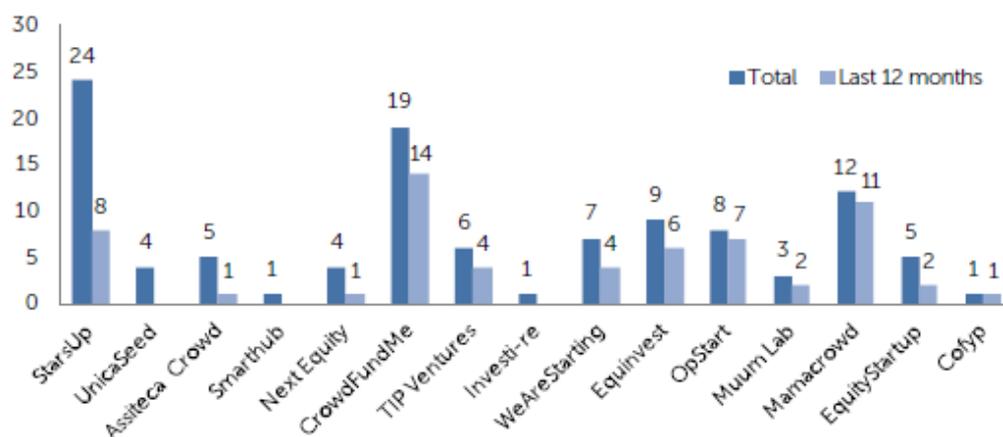
According to data collected by Milan Polytechnic, as of 30 June 2017, 109 offers had been published (60 more than on the same date in the previous year). More in detail, 100 were initiated by innovative start-ups, seven by innovative SMEs and two by investment vehicles in innovative start-ups and SMEs. 53 campaigns were successfully closed, 36 were unsuccessful, and 20 were still ongoing on the date indicated, including seven that had collected the minimum fund amount indicated as the target (Figure 20). The success rate of closed campaigns has increased considerably compared with the previous year (60%, against 50% for 2016), in line with developments in other European countries. 106 were the companies that submitted campaigns before the 30 June 2017, almost all innovative start-ups. They are active largely on social / sharing platforms (28 cases), in ICT (25 cases), in professional services (14 cases). (Calenda, n.a.)



Source: Crowd Investing Observatory (Milan Polytechnic)

Figure 20 Time-scale of equity crowdfunding campaigns in Italy by closing date. (Calenda, n.a.)

Figure 21 shows the growth of the market until 30 June 2017, with no fewer than 35 campaigns published during the first quarter of 2017.



Source: Crowd Investing Observatory (Milan Polytechnic)

Figure 21 Number of campaigns submitted by authorized equity crowdfunding portals in Italy as at 30 June 2017: total values and flows over the last 12 months. (Calenda, n.a.)

Lending crowdfunding

In the context of lending crowdfunding, investors can lend money to individuals (consumers) or businesses (businesses) over the Internet with interest and repayment of capital. The lending crowdfunding is also noted as 'peer-to-peer lending' (P2P lending).

In Italy the platform for lending CF were 9 (as of 30 June 2017). The amount collected was 88.3 million euro, 15 million for the enterprises.

Table 11 Lending crowdfunding portals in Italy in date 30/6/2017. (Politecnico of Milan, 2017)

WEBSITE	OPERATOR COMPANY	TARGET
BLender.loans	BLender Global /Lemon Way SA	Consumer
BorsadelCredito.it	Business Innovation Lab SpA / Mo.Net SpA	Business
It.lendix.com	Lendix Italia srl /Lendix SA	Business
Motusquo.it	Motusquo.it/ Lemon Way SA	Consumer
Prestacap.com (*)	iBondis Limited	Business
Prestiamoci.it	Prestiamoci SpA/ Pitupay SpA	Consumer
Smartika.it	Smartika SpA	Consumer
Soisy.it	Soisy SpA	Consumer

There are two models of lending crowdfunding business: “diffused” and “direct” (Politecnico of Milan, 2017) (as shown in Figure 22):

- Diffused model: the investors invest money in the platform. The platform decides where this money will be invested at a later stage. The investors can decide the interest rate and the risk appetite and some general data of the financed subject, as age, residence...
- Direct model: the investors decide in autonomy for who invests and in which initiative.

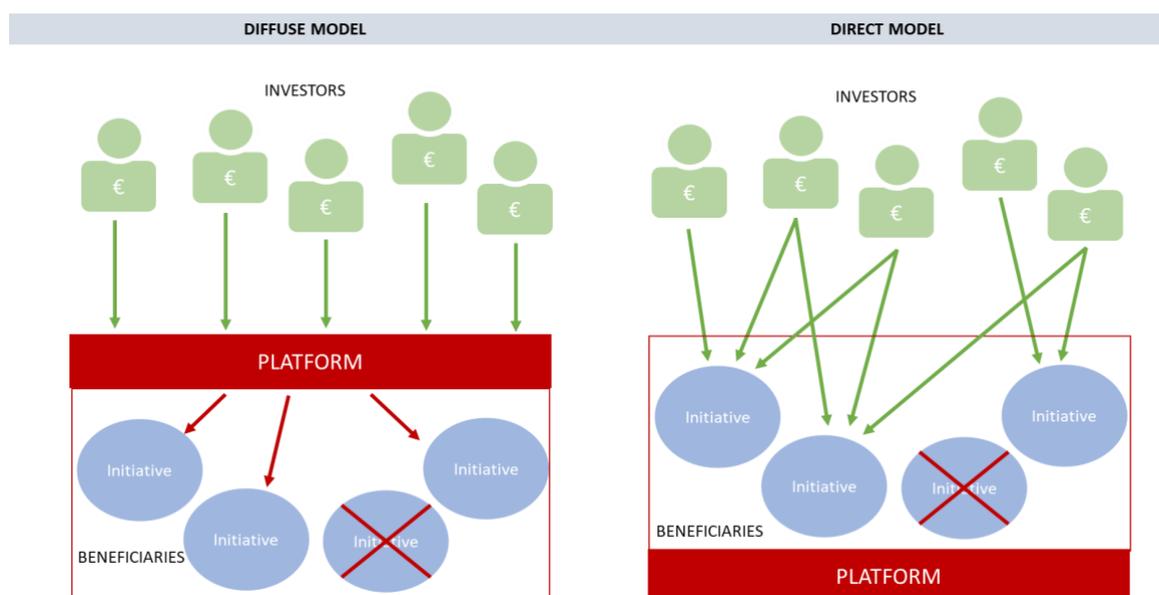


Figure 22 Lending Crowdfunding Business diffuse and direct model. Based on report (Politecnico of Milan, 2017)

Invoice trading crowdfunding

In 2017, in Italy the Invoice trading Crowdfunding has collected 88,5 Milion of euro, with more than 2000 invoices sold. 5 are the platforms of the companies who manage the invoice trading (Workinvoice, Cashinvoice, Credimi, CashMe and Crowdcity).²⁵

Crowdfunding real estate platforms

In Italy there are some real estate crowdfunding platforms (https://www.crowdfunding.cloud/it/piattaforme-di-crowdfunding-italiane-attive-143.asp?cat_type=3&cat=RealEstate) as such Concrete, House4Crowd, Housers, Italy Crowd and Walliance.

Concrete
www.concreteinvesting.com
Equity Crowdfunding
CONSOB authorization number n. 20405 del 24/04/2018 - n. 27

²⁵ <https://www.economyup.it/fintech/che-cose-linvoce-trading-il-crowdfunding-delle-fatture-che-ha-raccolto-88-milioni/>

House4Crowd
www.house4crowd.it
Equity Crowdfunding
CONSOB authorization number n. 20528 del 17/07/2018 - n. 32
Housers
www.housers.com
Social lending Crowdfunding
Italy Crowd
www.italy-crowd.com
Royalty Crowdfunding
Walliance
www.walliance.eu
Equity Crowdfunding
Registro Consob - sez. ordinaria*: n. 19939 del 30/03/2017 - n. 21

5.3.3. Conclusions and Recommendations

In the building sector, Crowdfunding is an innovative method to collect money and support the construction works for new and existing buildings. CF is a process that works in parallel with the bank. In the traditional financing process, it is necessary to have 30-40% of the all investment in cash and a number of guarantees to require a bank loan. The CF is a financing process that permits to collect this cash without using a bank.

The CF is an innovative financing scheme. It means that all the process in under development and adjustments and upgrades are welcome.

C. Conclusion

A stable and efficient financial system is vital for economic growth and creation of an investment climate which would support the energy transition towards a low-carbon community. To realize the full potential of nZEB standard, public funds will not be sufficient and innovative third-party financing and investing models such as PPP, EPC and crowdfunding will have to be unlocked at a larger scale. Positive improvements have been recorded in most target countries although differences between five markets are extremely high, mostly due to uneven development of financial markets and national policies which regulate each financing model.

Although the fundamental PPP legal and institutional frameworks required to implement public-private partnership projects are in place in most eCentral countries, these frameworks remain largely untested for nZEB projects. PPP is the most complex model for realization of primarily large projects and lack of know-how in PPP tender process has so far resulted in higher project costs, lower quality, extended implementation time and delays of projects. In Italy and Austria PPP legal framework and market are well developed, with Croatia just recently showing significant improvement after years of market inactivity.

Lack of trust that emerged from negative experiences with past PPP projects and internal know-how required for structuring of projects are currently hindering any future development of PPP contracts in Hungary and Slovenia.

The market for energy performance contracting has taken a hit with drop in energy prices which lowered the motivation and cost-effectiveness of implementation of deep energy renovations. The changes proposed by Eurostat which clarify the circumstances in which EPC contracts can be recorded off government balance sheets cleared the situation which was quite confusing at times and subject to different national interpretations. In almost all eCentral partner countries a range of support schemes for EPC projects exists but certain barriers are still present such as incomplete EPC procurement guidelines, technical assistance for project developers and quality of data from energy audits. The applicability of EPC/ESC model for making nZEB renovations of public buildings is also quite limited due to ESCOs' expectations, such as short payback time which causes ESCOs to focus on single energy efficiency measures ("low hanging fruit") and not deep renovations of buildings.

Crowdfunding is quickly evolving into a popular alternative for SMEs and developers of small public projects, especially for renewable energy projects. In more developed markets (Italy and Austria) which have a comprehensive legal regulation of crowdfunding, a large number of platforms exist which provide all types of crowdfunding models. Practical application for energy efficiency and nZEB projects in public sector is still quite rare and not yet mature, although preconditions for its development do exist. On the other hand, eCentral target countries (Croatia, Slovenia and Hungary) lack a proper legal framework for crowdfunding which severely limits its potential and development of platforms and projects in these countries. However, reward-based and donation models have already been used by both public and private sector developers due to the efforts made by non-profit institutions and a rise of overall investment volume is a sign of optimism for implementation of future nZEB projects. Crowdfunding for public nZEB projects can therefore be primarily seen as a complimentary funding source which could be combined with grants, loans or EPC models.

Although the situation with application of innovative financing mechanisms assessed in this report is not quite favorable, positive improvements in most eCentral countries should enable a wider implementation of the fore mentioned market-based instruments as the EU sets even more ambitious energy savings and renewable energy production targets.

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