



SMALLER CITIES' ACCESS TO EXTERNAL FINANCE

PRACTICAL CHALLENGES AND SOLUTIONS FOR CLEAN ENERGY PROJECTS

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1

INTRODUCTION

The aim of this study is to identify practical challenges of and solutions to smaller cities accessing external finance.

External finance only holds a small percentage of cities' overall investment finance across the EU. According to the 2017 Investment Survey of the European Investment Bank (EIB), it only represents 18% of municipalities' investment finance, including National Promotional Banks (NPB). Overall, municipalities resort mainly to own resources. Yet, many investments are economically viable and thus well-suited for external finance. Moreover, commercial bank loans interest rates are relatively low as compared to previous years. So, what hin-

Photo: [Suce sur Erdre, France](http://www.suce-sur-erdre.fr)

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<http://www.suce-sur-erdre.fr/citoyennete/vie-municipale/developpement-durable/>

ders smaller municipalities to access commercial bank loans, funds and other types of external financing?

Scope of this study

Only cities and municipalities with 100 000 inhabitants or less are within scope of the report. Smaller cities face additional practical challenges vis-a-vis larger ones. Fewer people work in administrations and overhead budget is more limited. This makes it harder to put project finance into practice via commercial loans and other financial instruments. Fewer people have experience and time to develop, finance and manage energy projects. Relying on in-house know-how and experience is often a challenge.

Another overarching problem is the average project size. It is generally easier to attract external finance, if projects reach a minimum investment size. In cities with less than 100 000 inhabitants, projects are generally smaller and it is more difficult to bundle projects into bankable investment portfolios than in larger cities.

The purpose of this study is not to identify new financial instruments, terms and conditions of loans or financial institutional agreements. For example, we do not discuss in greater detail better commercial bank interest rate or own equity conditions to incentivize more investments by smaller administrations. Rather, we want to understand why smaller cities do not approach external finance even though it makes economically sense. Which problems do the people working in local administrations face on a daily basis? Why are many smaller cities reluctant to approach and conclude deals with banks, funds, cooperatives and other financial intermediaries?

Financing costs are of course an important driver in the decision-making process of local administrations. Some EU Member States are more constrained than others. This important topic will not be explored in greater detail as part of this study. The focus lies on practical challenges that need to be solved irrespective of the underlying interest rate level at commercial banks in respective countries. The findings are

thus complementary to financial reasons that may delay or deter investment decisions.

As a matter of comparability, the study limits its scope to revenue-generating investments in clean energy projects with investment horizons of 3 to 10 years. Projects include LED lighting, energy-efficient building renovations, PV solar roofs, local grid upgrades, combined heat and power units and other technologies. Investment sizes by project are typically below €500 000.

Many projects provide a clear investment case with quantifiable capital expenditures (CAPEX), operational expenditures (OPEX) and predictable regular returns. Yet, often investments are delayed due to other reasons, which are explored in greater details. Our focus on a particular type of investment provides more room to assess practical challenges in greater depths. Problems and learnings are often not unique to these particular kinds of investments. Hence, lessons may also apply to other type of investments in smaller cities.

Often smaller cities also face budget prioritization problems, particular for energy-efficiency projects. Budgets of smaller cities are often subject to constraints. Replacing broken infrastructure may for example be more urgent than renovating infrastructure that is still functional but energy-inefficient. Difficulties in setting priorities are not part of this study. The focus lies on accessing external finance once priorities are set.

To identify effective solutions, it is also necessary to understand hesitations of external financiers of financing investment projects in smaller cities. This study draws on interviews with fund managers, banks, cooperatives and crowdfunding. NPB are not part of the analyses as it requires a bespoke analyses of the underlying national and regional framework per country.

Our Sources

The content predominantly draws upon two main sources of information; existing studies and literature and interviews.

Literature

A review of the most relevant existing studies and literature informs each section. Reliance on previous research, survey and initiatives proved to be most cost- and time-efficient. Prior to conducting interviews with small cities, a detailed assessment of the literature has been undertaken, enabling the formulation of relevant and specific questions in the follow-up interviews. The appendix details the list of references.

Interviews

Conversations with people working in small cities, financial institutions and associations deepened the understanding of why small cities may have problems accessing external finance. The findings are explained via a few case studies and feed into the findings of each section. Initially, a minimum of three interviews was proposed in the proposal. Yet, since the interviews proved to be very insightful more than 9 interviews were undertaken. Interviews took place via phone. Each phone conversation is transcribed. Prior and after each interview additional information was exchanged via email.

The sample of 9 interviews covers 6 countries. Thus, it does not provide a representative view of problems encountered in all EU Member States. Yet, the approach allowed us to go more into depth. We spent up to 2,5 hours interviewing people that have encountered a number of practical challenges. Often, similar problems were mentioned by different interview partners. Moreover, follow-up research and questions complemented the understanding of the problems and solutions at hand.

Type	Name	Country	Interview partner
City	Lorient	France	Pierre Crepeaux, Service Environnement
City	Sucé-sur-Erdre	France	Pierre Lecureuil, Conseiller Délégué à la Transition Energétique
Association	The Climate Group	EU	Toby Morgan, LED Program Manager
Association	ASEW	Germany	Stefan Schulze-Sturm, Leiter Büro Brüssel Forschungsprojekte
City	Oostende	Belgium	Bart van Camp, Directeur EOS
Cooperative	Zelena Energetska Zadruga	Croatia	Robert Pasicko, Project Developer for Community Energy at ZEZ and Expert for Alternative Finance and Low Carbon Development at UNDP
Cooperative	Som Energia	Spain	Gijsbert Huijink, former Manager Som Energia
Bank	EIB	EU	Gerry Muscat, Head of Division Urban Development Division, Projects Directorate
Fund	Serimus S.A.	Luxemburg	Frédéric Brodach, Managing Partner

Our Approach

The study applies a bottom-up approach. Our starting point are insights from conversations with people that work in smaller cities, associations and financial companies. Understanding their daily practical challenges lays the groundwork. Subsequently, we learn from positive examples. It was encouraging to see that often individual people put practicable, cost-efficient solutions in place to access external finance. Drawing on their experience, hands-on recommendations are formulated, aiming to assist other local administrations facing similar problems.

To provide a coherent view of the underlying challenges and practical solutions the report looks at both sides of the market; supply- and demand. Chapter 2 explores challenges and solutions of the demand side; smaller cities. Chapter 3 takes a deeper look at the supply side; external financiers.

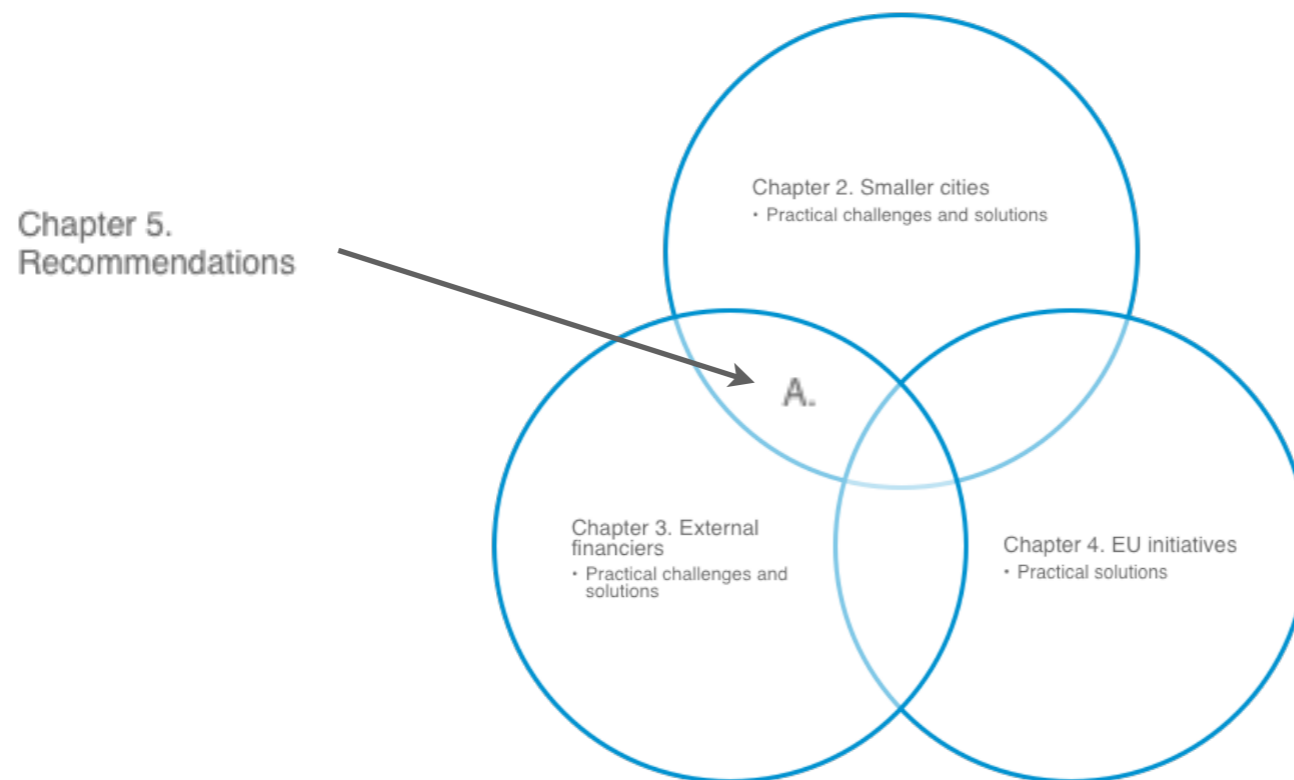
Solutions to one side of the market often benefits the other one as well. For example, enabling smaller cities to evaluate technical and economic viability of an investment project by better use of standard protocols also lowers due diligence costs of external financiers, increasing the likelihood of deal closure.

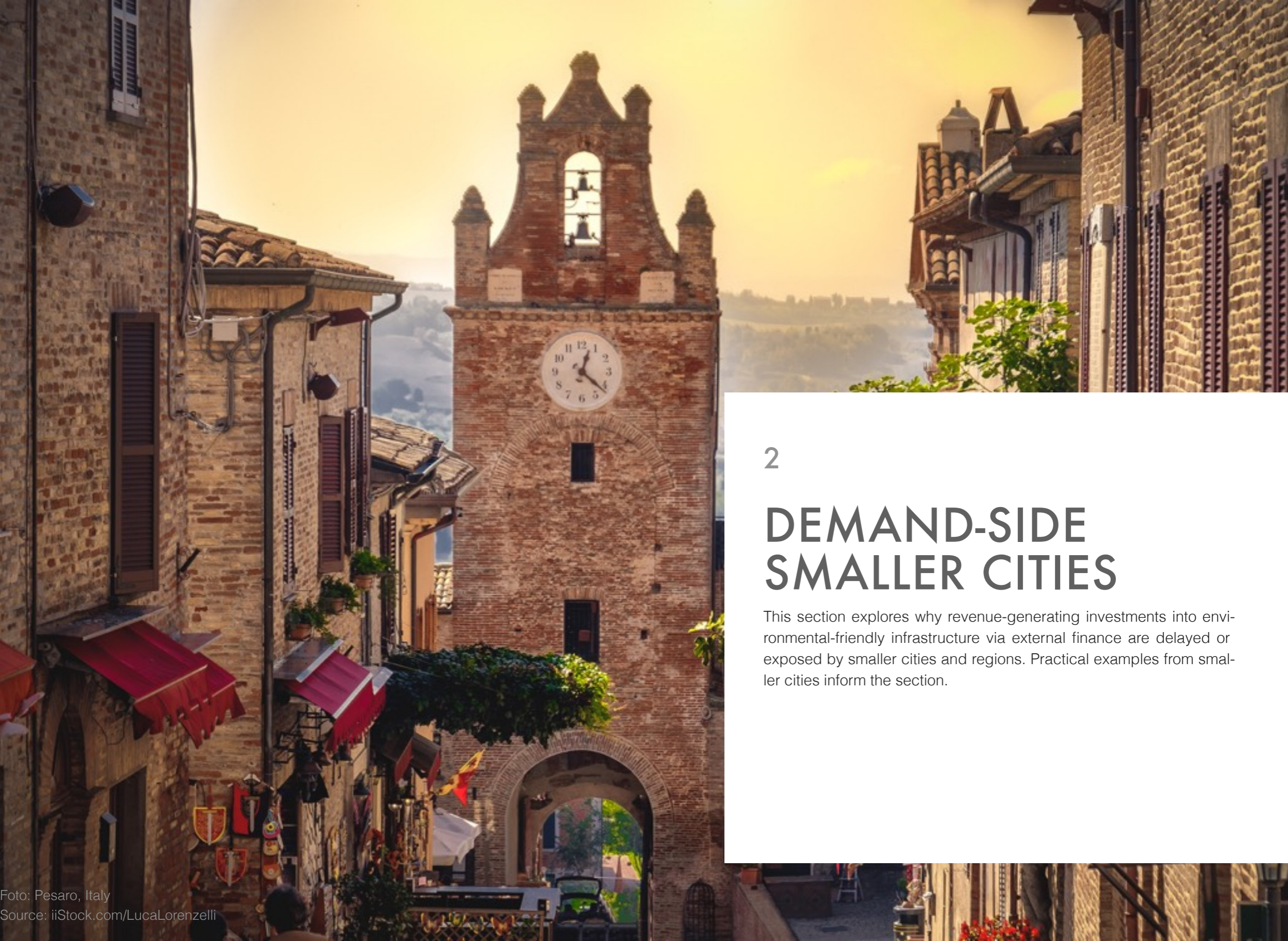
Subsequently, chapter 4 examines several EU-funded programmes, initiatives and projects for clean energy projects. The two guiding questions in the context are;

1. Which practical problem does the initiative address?
2. Do smaller cities benefit from the initiative?

The approach enables us to firstly identify the main practical challenges faced by local administration and financiers that deter or delay profitable investments. In addition, practical solutions show ways to overcome the challenges. Complementary to the analyses, it is assessed which EU initiatives already address practical challenges of smaller cities. This feeds into the formulation of tangible recommendations, illustrated by the intersection area A in the graphic below.

Solutions and recommendations are not a one-size-fits-all. Yet, possibly several smaller cities could find help in getting project finance off the ground. There is a large potential for energy-efficient building renovations, LED street and indoor lighting, renewable generation and other clean energy technology deployment in small municipalities. The earlier such viable energy projects are financed, the earlier they can save energy, the higher the environmental and socio-economic impact.





2

DEMAND-SIDE SMALLER CITIES

This section explores why revenue-generating investments into environmental-friendly infrastructure via external finance are delayed or exposed by smaller cities and regions. Practical examples from smaller cities inform the section.



2.1. PRACTICAL CHALLENGES OF SMALLER CITIES

When assessing the underlying reasons why the percentage of external finance is relatively low in comparison to other sources of finance, it is worthwhile to take a closer look at practical challenges faced by smaller cities.

An identification of three stages in the process of accessing external finance makes sense in this context.

1. **Pre-financing phase.** Prior to contacting banks and other external financial institutions, smaller cities must make sure to have a project ready for finance. This phase can take considerable time, particularly for smaller cities. Responsibilities

and ownerships must be established. I.e. which party will be the loan participant, the city, a subcontractor or a Special Purpose Vehicle (SPV). Evaluating which projects are best suited as investments and bundling of projects into portfolios are also part of this phase.

2. **Financing phase.** Once, the project is set up to approach external financiers, smaller cities submit information to launch the due diligence process. Negotiations about terms and conditions of the financing begin. The time varies between several weeks to months.

Special Purpose Vehicle (SPV)

A special purpose vehicle is a subsidiary company with its standalone balance sheet and legal status. In energy project finance, its operations are often limited to the acquisition and financing of specific assets. The purpose is to isolate financial risks and returns.

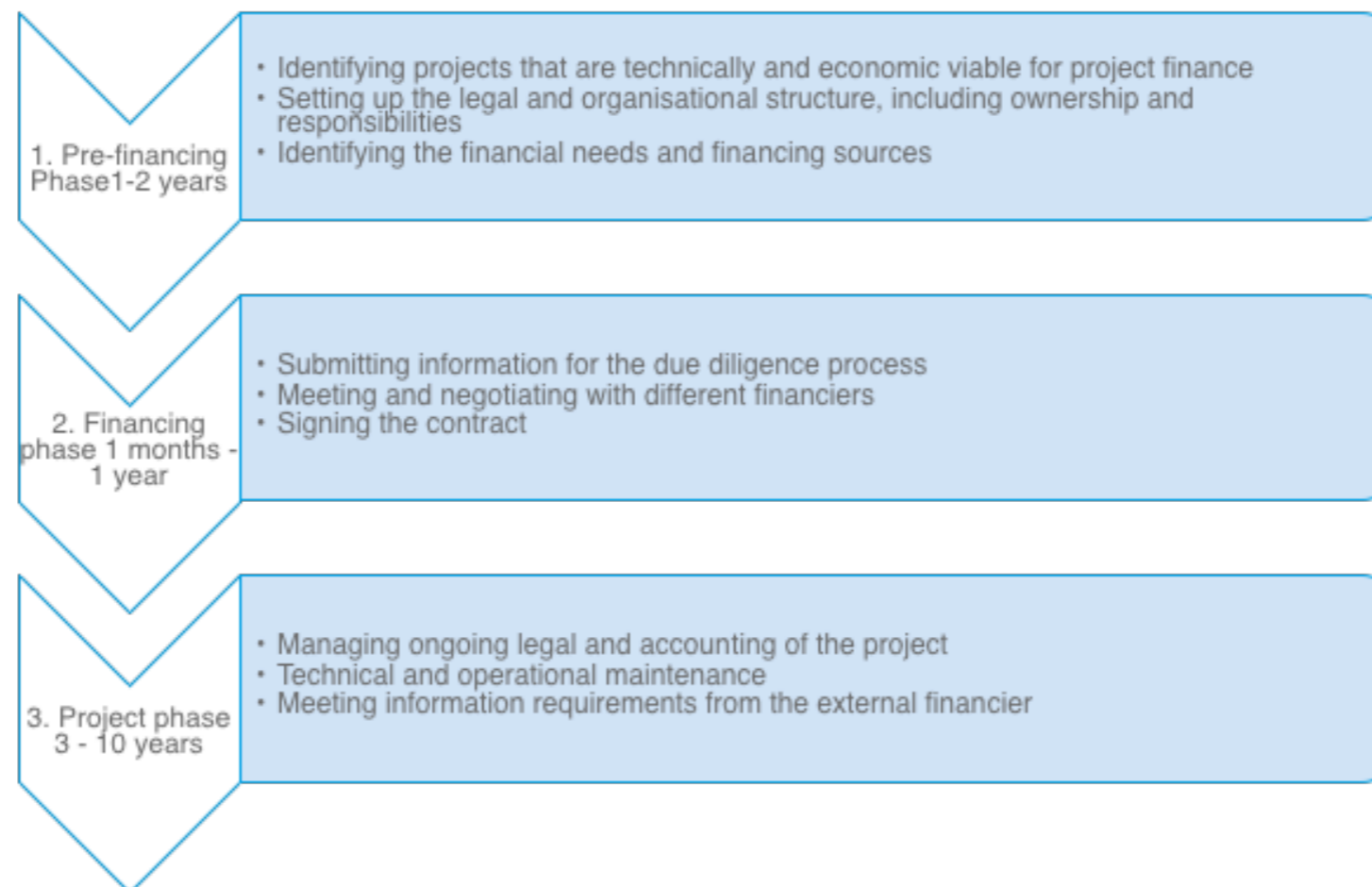
3. **Project phase.** After finalization of the financing deal, the cities must manage the project. Firstly, the expenditure is managed; i.e. technical equipment bought, external and internal staff paid. Even upon completion of the project, there is still ongoing work. Next to technical maintenance, time and efforts must be assigned to managing the project until the financing is fully paid back. For example, every year the costs and income of a particular project must be monitored to meet requirements from banks, funds and other financiers amongst others. If the project is financed via a SPV, annual accounts must be published.

Interviewees repeatedly mentioned several type of practical challenges, mostly of administrative, limited in-house know-how or legal nature. For each phase, we specify the type of challenges in greater detail.

External literature often focusses on the type of financial instrument, terms and conditions of the financing and financial intermediaries. Yet, prior to approaching banks and

other external financiers, certain legal and organizational structures must be in place. Conditions required by external financiers are often derived from the private sector or large cities.

For local administrations with small overhead budget and few specialised staff members, there are many tumbling stones. They must set time and budget aside to get projects ready, collect relevant signatures, consult about the right project set up etc. This can take years. Another important element in the discussion is the aftermath of the investment. I.e. a loan must be paid back over several years. Assigning people responsible for all tasks relating to the financing of a project may pose legal and budget risks to smaller cities. Governments and priorities change in local governments, yet contractual agreements remain in place.



2.1.1. PRE-FINANCING PHASE

During this phase several challenges constrain smaller cities. Getting a project ready for finance often requires a lot of one-time sunk investment in terms of time and efforts. When the cities are smaller, they are less likely to repeat projects and thus benefit from the investment.

Limited know-how

Few people work in smaller cities, often on several topics. Overhead budget is limited. To access external finance existing staff must often take on additional tasks or extra staff must be hired.

Pre-evaluation of projects.

Project most suitable for investments must meet certain technical and economic criteria. For example, certain solar roof tops may have better power generation estimates than others due to their location. Without prior knowledge, it may be difficult to undertake such an analysis on a cost-efficient basis. Particularly when a city and related project portfolios are small, costs of acquiring the know-how are higher. Moreover, fewer staff are specialized in local municipalities. Assessing which projects are best suited for external finance is often not their main activity.

Project management and use of tools.

Managing a project that seeks external finance requires a specific skill set. It involves strategies and tasks like working with external consultants and contractors, setting up and managing detailed Gantt Charts or making optimal use of external tools to evaluate the technical and economic suitability. The skillset is often applicable to different types of projects, not only energy projects. Experience of staff members can reduce the time and costs of managing a project notably. However, the overall need to such a skillset also defines whether it is worthwhile investing in it. If only a few projects are suitable for external finance, a local administration may decide that it is not worthwhile to hire or train personal on the specific requirements of the job.

For example, managing energy projects often require technical data from smart metering or power inverters. Collecting the data, assessing it on an online dashboard and

feeding it into the project finance excel sheet may take few hours each week once it is properly set up and used. Here, usage is the most decisive time and cost factor. If people have done it before and have set up efficient data collection and communication channels, time and efforts can be reduced to a fraction. Otherwise, it may still be necessary to talk on a regular basis to technical maintenance staff in particular buildings and sites, exchange excel sheets via email and aggregate them manually into an overview sheet.

The higher overall need for energy data collection and analyses, the more likely it is to have in-house expertise in an administration. A larger city with a large energy demand, usage and production is for example more likely to invest in tools and train staff. Many smaller cities reported budget constraints to set up such systems, making it overall more difficult to manage projects efficiently.

Administrative challenges

Project management.

Project finance of energy projects requires commitment over a period of several years. The first phase of getting projects ready can be particularly time-consuming. In some case studies, it took over 18 months to pre-select the right projects, set up the legal structure and get the financing plan ready.

For example, in Oostende the € 1.8 Mio housing renovation took one staff 1/3 of its time over 18 months. In this particular case, pre-knowledge and experience already existed. A follow-up project is in planning. Costs associated to the pre-financing phase are expected to be notably reduced since know-how exists and the legal set up can be repeated. When no know-how exists internally, it is even more difficult to get projects ready in time.

Similarly, the Croatian cooperative ZEZ worked on technical and economic elements of the project for almost one year. The financing part was subsequently concluded in only 10 days, a fraction of the time allocated to setting up the project.

The Climate Group also reported that upfront administrative costs can be prohibitive for smaller cities. The additional time in getting projects ready for external financiers over other type of financing is a decisive factor. Smaller municipalities not only compare the terms and conditions of the best type of financing, but also additional legal requirements and type of internal approvals.

Approval processes.

In local governments, few staff members must make sure the most important and urgent duties are fully met before launching new initiatives. Getting internal approvals to allocate staff to energy project finance is thus often a longer process.

Many energy projects may pay back their investments in a few years and save costs the years after. Yet, smaller administrations must set aside time and money to set up the projects. The budget is traded off-against other tasks. Several interviewees reported that many smaller cities first want to repair infrastructure that is broken before they replace old infrastructure with more energy-efficient one. For example, old lighting or heating systems are still functional. Hence, it is often not deemed as urgent to replace them.

Initiatives must be led by particular individuals. In most case studies of smaller cities that implemented external financing for energy projects, individuals were particularly encouraged to get projects started. However, even they faced many administrative hurdles in getting internal approvals to dedicate their time on energy project finance vis-à-vis other tasks.

Example of similar projects are very important. To speed up the approval process, it helps to refer to an example in the same or neighbouring city. If no energy project has been financed externally, it takes more time to get all necessary internal agreements in place.

Bundling projects to reach a critical minimum project size.

External financiers often require a minimum project size. Fewer projects meet the criteria in smaller cities. In Sucé-sur-Erdre, a French municipality of approximately 7 000 inhabitants, costs of public LED lighting upgrades approximate for example € 100 000. Return on investment is particularly high for Public LED lighting. Payback time is often less than 3 years, even for smaller projects. Yet, many projects in smaller municipalities never seek a loan or other type of external financing. Similarly, investments into energy-efficient public building renovations and PV roofs on public buildings are often below € 500 000. Hence, they do not meet minimum investment criteria of many external financiers. Projects in Lorient's sustainable energy portfolio are often also considered too small for bank loans.

Bundling of projects can enable cities to reach critical project sizes. To pool projects, they need to be similar in terms of risks, sources of revenues, type of technology, loan participant and/or legal contracts. In our case studies, different types of projects were bundled. One example includes a housing renovation with different type of tech-

nological improvements like heating or LED lighting but the same contracting agreement and one tenant providing regular rental income. Another project was a portfolio of PV solar roofs on houses owned by the same municipality. For external financiers, it is preferable to have one legal counterparty. This implies that the smaller city must get internal agreements in place to structure it accordingly. The city of Lorient reported for example that one loan per project would be faster to implement. Setting up a portfolio takes time and efforts.

An SPV is a good vehicle to manage a portfolio of projects. Yet, defining the ownerships and setting up the right underlying contracts that govern a portfolio of projects can be time-consuming. Approvals from different people may be necessary within the local government. Moreover, whenever changes are made, the statutes of the company must be changed.

Bundling of similar projects amongst neighbouring smaller cities is another option to reach a larger project size. Yet, there are also numerous practical stumbling rocks. One case study in Germany revealed for instance that a portfolio of clean energy projects from neighbouring smaller cities was never put forward because the cities could not agree amongst each other, which collaterals were provided by which cities. Other case studies in France showed that smaller cities were reluctant to share the accounting and legal fees associated to managing an SPV. Moreover, there must be a good fit of priorities and timing.

Some cities may have simply less time available than others or more budget constraints. Another smaller city stated that they learnt so much from their own project that they could set up and implement projects much more cost- and time-efficient for other local governments in their region via an SPV. Yet there was no financial incentive. They already had limited resources for their own staff and cannot work for additional hours for free.

Setting up a Special Purpose Vehicle (SPV).

Incorporating an SPV enables the project owner to separately manage all costs and income related to the project. It is a subsidiary company with its standalone balance sheet and legal status. For smaller cities, the set up is particularly useful all capital and operational expenditures and revenues are clearly assigned to a particular project. Financial risks and returns are thus better separated from smaller cities' ongoing activities.

Many external financial institutions prefer such a set up as it benefits transparency and accountability. Yet, somebody needs to incorporate the SPV. It must be defined who is the Managing Director of the company, who sits in the board of directors and the legal statues must be set up. When smaller cities are involved the people may change over the duration of the project lifespan. Yet, specific people are accountable for the proper functioning of the company.

Before a city can incorporate a company that is fully or partly owned by the city, they also must check regulatory and legal criteria. For example, any upcoming regulatory changes whether debt ceilings may also apply to subsidiaries of cities.

Administrative work related to incorporating and managing an SPV is repetitive. The larger the city the more likely it is that such work has been already done and in-house know-how exists. However, for small local governments, it can be a larger time and cost burden.

In Lorient, the city set up 2 SPV for the management of a clean energy investment: one private/public mainly capitalized by Lorient Agglomeration and another 100% public mainly capitalized by the city of Lorient among 17 other shareholders. Yet, managing the administration is a challenge to the small city. There were also negotiations at a regional level to combine project finance of similar type of projects in an SPV. Yet, it was challenging to find agreements on the cost and time allocation.

Setting up a project that outlasts the time of an administration.

Revenue-generating energy projects take several years to fully pay back. Investments are made in year 0, returns only realized the years after. The year the investment is undertaken existing staff and government face many challenges. Moreover, there is a lot of administrative work related to getting the project ready for finance. Later administrations may benefit from their work. This time delay poses negative incentives to smaller administrations. Uncertainty over future responsibilities and government thus make it less likely that financial contracts with third parties are prepared and closed.

Legal challenges

Smaller cities and municipalities are often bound to regulatory and legal conditions that make it more difficult to approach external finance.

Debt ceiling.

Local and regional authorities are subject to debt ceilings. If they borrow money, debt appears on the balance sheet. Therefore, a smaller city must prioritize investments. The economic viability of a particular investment is not the only criterion. Urgency, importance and political agenda also come interplay. Revenue-generating investments into carbon reducing infrastructure are thus often reprioritized.

Various implementation options allow smaller cities to exclude such debt from the public sector debt. For example, EPC may create an option to exclude the debt from smaller cities' balance sheets. EPC can create expenditure for a public entity at inception as well as liabilities or debt. The expenditure and the related debt can be recorded either on or off government balance sheet. In case infrastructure expenditure is recorded off public balance sheet, only regular payments like EPC fee linked to energy savings impact the debt. The costs are spread over the EPC duration. Capital expenditures at inception have no impact on debt. The use of EPC thus allows smaller cities to comply with debt thresholds under certain circumstances.

Legal set up of the project.

An investment project often involves different stakeholders, i.e. the owner of the building, the service provider, the loan participant, the user of the energy savings or consumer of production. For each technology and ownership models, legal specificities may differ.

A smaller city has fewer staff and less experience than larger administrations. It is much harder to draw upon in-house resources to set up and assess legal agreements. Prior to approaching external investors, the legal set up and all underlying con-

Energy Performance Contracting (EPC)

EPC is a mechanism to finance energy efficiency. An external Energy Service Company (ESCO) implements a project to achieve energy savings. The stream of income from the energy cost savings repays costs of the project.

tractual agreements must, however, be in place. Thus, it can be a burden for smaller cities to launch a project in the first place.

For example, the city of Oostende reported that they initially wanted to put an Energy Performance Contract (EPC) in place. However, reviewing and amending the 200-pages standard contracts was considered too time-consuming. Moreover, the contract was derived from larger more complex projects, accounting for eventualities that did not apply to the particular project. Yet, it was unavoidable to carefully assess which subparagraphs were relevant in the particular case. This created not only additional administrative work but also uncertainty in the local government. In the end, they found another more suitable solutions. Another problem often reported was that many templates and standard contracts were not available in the national language and did not apply to the national or regional circumstances.

Collaterals or own equity requirements.

Many banks, funds and type of other external financiers require minimum criteria prior to investing into a project. Depending on the type of investment, underlying loan participant and type of financial instrument, criteria vary. For example, collaterals and own equity requirements are commonly requested for bank loans.

We will not discuss the particular conditions and requirements in greater details as part of this study. Yet, it is important to bear in mind that it can be very time-consuming to find regulatory and legal approvals in smaller municipalities in this regard. Some case studies reported that agreements were delayed for several months because it was difficult to get approvals for collaterals. As previously mentioned, agreements upon the provision of collaterals may also hinder the pooling of projects.

Third party tendering.

Under certain conditions, a contract may be subject to public tendering. The process is again more time-consuming and cost-intensive. Each contract and legal set up must be carefully assessed to make sure all obligations are met. When approaching external financing, tendering processes are for example at times a requirement. Here, the cost-benefit of the additional administrative time versus the financial benefit of the subsidy must be weighted off each other.

2.1.2. FINANCING PHASE

Know-how challenges

Experience in working with and contacts to external financial institutions.

To find the right financial project partner, most smaller cities firstly inquiry their existing network and contacts. Here, experience from individual staff members can be very effective. Bart van Camp in Oostende, Belgium had for example pre-existing experience in the private financial sector. It also matters, if neighbouring smaller cities and regions have previously contacted certain parties. In Benelux where more than one third of all investments are financed via external sources,¹ it is easier to find and share positive experience. People can for example introduce other local administrative employer to bank employers that previously financed similar projects.

Some financiers and associations reported that many smaller administrations do not even approach them because they are not aware of them or have personal reservations. When nobody in a team ever worked with a bank, fund or other external financial partner, it is more difficult to see the benefits. For many employers in local governments, it is much easier to speak to a person in a local or regional bank than with a fund manager located in another country. They can meet in person and explain their project by reference to similar projects in the region.

Language barriers may also play a role. Working language in most funds is English. Providing all documents in English and negotiating complex project matters may be extra work for people working across the EU in smaller administrations.

Administrative challenges

Negotiating with external financiers and comparing offers.

Ideally, different suitable external financiers would be consulted and the best offer compared on a rational basis. Yet, this required that staff members already know which external financiers to approach in which order.

Even with in-house experience, it still takes considerable time and efforts to find the right counterparty, particularly for smaller cities. For example, when looking for a bank

loan it includes meetings with different banks and negotiations about the terms and conditions. Collaterals and minimum equity requirements are often part of the deal. Thus, internal documents must be prepared and relevant signatures collected. Moreover, the underlying criterion, i.e. the provision of a collateral, may lower the associated interest rate. To negotiate the best terms and conditions, takes good insights and at times legwork.

Seeking subsidies and other co-financing.

Many projects are not solely financed by one financial counterparty or one financial instrument. Each city must carefully check for example, if subsidies may apply. They may improve the terms of the deal negotiated with an external financier. Often, they don't apply for the whole part of the project. Co-financing via equity, a bank loan or other sources is required. Identifying the right subsidy and filling in all the paper work takes time.

For example, in Oostende, the city considered applying for the Belfius and EIB Smart Cities & Sustainable Development programme.² Yet, the subsidy was only applicable to approximately one third of the total investment sum. Nevertheless, it would have taken considerable time to meet all formal requirements. A regional advisor's opinion was that the project was too small for the associated administrative burden.

Legal challenges

Legal proof-reading of the agreement.

A lawyer must carefully assess any contracts between a smaller city and an external financier prior to signature.

As previously discussed, prior to approaching a bank, fund or other financial counterparty, the main legal structure shall be in place. It encompasses a clear definition of the loan participant, the contractual agreements between all stakeholders and others. Yet, during negotiations additional legal challenges may arise. I.e. a bank may offer lower interest rates, when collaterals are provided. A smaller city may decide to renegotiate the terms by putting additional collaterals in place. Moreover, when signing an agreement with a private external financial party, additional regulatory requirements like mitigating anti-money laundering may apply.

2.1.3. PROJECT PHASE

Know-how challenges

Experience in project management.

Managing a project over time benefits from experience and in-house know-how. Regular tasks and activities can be done more cost-efficient and risks mitigated. For example, an assessment of the financial benefits of energy-efficient installations requires regular data input about energy usage. An efficient analysis of the data saves a lot of time. As previously explained, trained staff and optimal usage of external tool like energy dashboards can save related staff hours. Yet, smaller local governments have limited resources to invest in such trainings and tools.

Administrative challenges

Managing the project over time.

During the life-span of a project regular legal, accounting and administrative costs occur. Legal obligations are in place when financing projects via external parties. If an SPV is for example incorporated for the purpose of the project finance, each year annual accounts must be published. These regular costs and responsibilities prevail over several years. Personal of a local government thus must commit to the costs and time.

In the interviews, several smaller cities and associations mentioned that smaller cities are particularly risk-adverse for project finances due to the risk of not having enough staff that can fulfill the duties over a predefined period of several years. The tasks prevail even after changes in government or priorities. Overhead costs and general staff count are smaller than in larger cities. When bundling projects amongst different project owners or even different cities, these tasks must be clearly allocated and agreed upon in a contract.

Legal challenges

Changes in legal ownership and people's responsibilities.

The financed party is obliged to meet its legal requirements over several years irrespective of changes in local government or priorities. This poses some challenges to smaller administrations.

For example, if a SPV is incorporated for the purpose of managing a project finance, a managing director is assigned. In many countries, a notary must change the articles of association if there is a change in Managing Director or ownership of the SPV.

2.1.4. SUMMARY PRACTICAL CHALLENGES SMALLER CITIES

Smaller cities with small overhead and staff count face many challenges to access external finance for energy project finance. As detailed in the figure below, prior to approaching banks and other external financiers, there are already several practical challenges. Many practical challenges are not unique to revenue-generating energy projects but apply to other types of projects as well.

	Pre- financing Phase	Financing Phase	Project Phase
Know-how	Pre-evaluation of projects know-how	Experience in working with and contacts to external financial institutions.	Experience in project management.
	Project management and use of tools.		
Admin	Project management	Negotiating with external financiers and comparing offers.	Managing the project over time.
	Approval processes.	Seeking subsidies and other co-financing.	
	Bundling projects to reach a critical minimum project size.		
	Setting up a Special Purpose Vehicle (SPV).		
Legal	Debt ceiling.	Legal proof-reading of the agreement	Changes in legal ownership and people's responsibilities.
	Legal set up of the project.		
	Collaterals or own equity requirements.		
	Third party tendering.		

Oostende, Belgium Case Study 1



Photo: Oostende, Belgium
Source: iStock/SL_Photography

Oostende Case Study

EOS – Energiehuis Oostende is a small company, fully owned by the city of Oostende. Its mission is to reduce energy costs and greenhouse emissions in the Flemish city. Activities span from investment projects, advisory to citizen and SMEs on energy savings, group purchasing of green energy, small energy loans to thermography. As a 100% subsidiary of the city of Oostende, it closely aligns its activities with the needs and requirements of the city. The composition of its board of directors include the local government of Oostende. Yet, the independent company structure allows for fast decision-making within the small team of 6 people.³ Oostende is a city of 71 000 inhabitants located in Belgium.

The company is also part of the EU project Triple A Interreg, co-financed by the European Regional Development Fund. Its aim is to raise awareness and secures access to low-carbon technologies to homeowners.⁴

Bart Van Camp, Director at EOS Oostende, gave an interview via phone.

What type of project is it?

The project concerns energy-efficient housing renovation of 8 public buildings that include the city council building, a library and two large sport complexes. These buildings had the largest potential for energy usage improvements. Technological upgrades included new heating and air conditioning, solar panel roofs, smart metering and LED lighting amongst others. Total investment costs were € 1.8 Mio.

The commercial bank provided 100% of the funding via a loan. The loan participant was EOS. No standalone SPV was launched for the project finance.

Which challenges did the city face?

Administrative and Know How

The city of Oostende has limited time and in-house expertise to evaluate which projects are most suitable for energy renovations, to initiate the technical and economic evaluation of the feasibility of projects and assess the most efficient contractual and

The EOS Oostende Team.

Source:

<http://www.eos-oostende.be/over-ons>



A commercial bank loan was preferred over an EIB/Belfius loan.

operational set up. Therefore, it asked EOS to set up, initiate and implement the project.

When deciding on the best set up it was also important to evaluate if a tendering process was required. Depending on the type of contract and parties involved, costs may outweigh benefits for the smaller city.

Legal

The debt ratio limits the amount the city of Oostende can borrow from a bank. The balance sheet of the city cannot exceed certain benchmarks. Approvals for debt financing of the CAPEX investments of the project were thus difficult to obtain.

Time

The project lasts over a duration of 10 years. Over this time period, technical maintenance must be guaranteed. Moreover, project management, legal and administrative costs occur over the whole duration of the project.

What was the solution?

Administrative

Responsibility of technical maintenance were in the hands of EOS until the project was built. Then, the city took over technical maintenance of the installations. Prior to the renovations, there had been already staff assigned to these tasks. Man-hours were similar to lower after the renovations. Hence, there were no budget constraints for the city. EOS covers non-technical ongoing work over the 10-year duration of the project like project management, financing, legal and administrative tasks. Overall, these costs are estimated to be relatively low.

As a matter of efficiency, EOS is planning to take over all technical and non-technical ongoing maintenance costs for the follow-up project. This should reduce overall costs to the city even further. EOS can rely on existing know-how and learnings.

Know-how

Existing technical and project management experience in the EOS team helped implement the project in a time- and cost-efficient manner.

Thanks to his professional background as an auditor and financial analyst in the private sector, Bart Van Camp has experience in negotiating terms and conditions with commercial banks and setting up financial structures.

A second project is planned for 2019. Encompassing 15 additional public buildings, will be energy-efficient in Oostende upon completion of the project. Many lessons will be applied to this project. A commercial bank loan is again the preferred financing option. The set-up is similar in terms of ownership and legal contracts. The overall administrative costs are estimated much lower, particular for the planning phase since the same model can be applied as previously.

Time

In July 2015, EOS launched this project. End of 2016 the financing was agreed upon. The actual rollout of the project lasted 4 to 5 months in 2017. Overall admin costs were below budget. The split up of the time was as follows:

Standard EPC contracts were deemed too long and complex to review. Thus, a shorter legal contract was set up.

- For 1,5 years, one staff member at EOS worked approximately 33% of its time on setting the project up, technically, legally and financially.
- During the rollout phase, one EOS staff member worked halftime for 4-5 months on the project.
- Ongoing administrative work include less than 7 days each year.

For the follow-up project planned for 2019, staff time at the phase prior to rollout is expected to be significantly lower as many tasks are similar. I.e. previous contracts can be used as templates; terms of the commercial bank loan can be used as a basis for negotiation, staff knows exactly how much time is needed for which tasks and plan accordingly, agreements from the city of Oostende are faster.

Interestingly, the particular ownership model via EOS also makes the project finance less dependent on political decisions and changes in government. The project will be in place for 10 years no matter which party wins next regional election. There is no significant budget cut in the year of the CAPEX, recouped by financial returns in later years. Annuity payments and the ownership model ensure a budget-neutrality over time. Thus, it matters less when next elections take place.

Financial

Financially, 100% of the project is financed via a commercial bank loan with an underlying interest rate of 1.11%. Payback time is 10 years with annuity payments of the interests and principal. As such, financing payments can be closely aligned to underlying cost savings, providing predictable cashflow for EOS. The financing encompasses not only the technical but also management, legal and administrative costs. Final costs were lower than initial estimates of approximately € 2 Mio.

According to the commercial bank, the financial ratios of EOS were not good enough to qualify for a loan in the range of € 1.8 Mio. Therefore, they required a warranty of the city of Oostende. The city of Oostende is the main tenant, paying the rents over the 10-year duration of the loan. To ensure that payments are made a warranty was required from the city.

Prior to signing the deal with another commercial bank, EOS compared terms of conditions of different commercial banks including Belfius. The choice of the commercial bank was based on objective criteria.

In the financing process, EOS also inquired the Belfius and EIB Smart Cities & Sustainable Development programme. The financing was applicable to approximately € 660 000 of the total investment. The interest rate could have been lowered for this amount, if Oostende would have applied for the support scheme. However, the conditions of Belfius were already inferior to the one of another commercial bank. Interest rates were higher. The financial benefit of the subsidy was thus not high enough to compensate for the additional administrative costs.

The additional administrative work to fill in the papers to apply for the funding was considered too time-consuming. Moreover, only particular type of technologies were eligible for financial support and particular contractual agreements were required. It made more sense to invest time and efforts in comparing market-based rates from different

EOS – Energiehuis Oostende is a small company, fully owned by the city of Oostende, aiming at lower energy costs and greenhouse emissions.

commercial banks and optimizing the project management. EOS also consulted a regional advisor on whether it makes sense to apply for the support scheme. Their feedback was that the Belfius and EIB Smart Cities & Sustainable Development programme made more sense for larger projects.

Legal

To circumvent the debt ratio limitations, EOS borrowed the money from the commercial bank. The city of Oostende rents the equipment. Since energy savings equate rental prices, it is budget-neutral for the city. Thus, the balance sheet of the city is not affected and it complies with rules related to the debt ratio.

Overall the question arises whether rules governing debt ratios shall be applied in the same fashion to revenue-generating investments. In year 1, the budget of a city is constrained, yet over a predefined period of time, costs are reimbursed at a profit. Thus, it is even cost-efficient in a mid- and long-run, lowering a city's budget expenditure.

Legally, an EPC was very complex and difficult to understand for the smaller city. It took considerable time to fully comprehend the 200-pages plus standard document. Moreover, legal advisors were sought to explain it. Overall, the city of Oostende decided to use another contractual arrangement than EPC via EOS. The contracts and responsibilities were simpler and more applicable to the needs to Oostende. EPC account for many potential scenarios that were not applicable to Oostende. In this particular case, there was also a trusted relationship between EOS and the city of Oostende. Hence, less time and efforts were invested to construct a complex legal arrangement that encompasses various eventualities. Thus, the process was faster and more cost-effective.

To guarantee financial predictability, an international neutral protocol was applied to correct for weather changes. This provides transparency and additional predictability. Here, international standards help smaller cities in working more cost-efficient. **Oostende Case Study**

EOS – Energiehuis Oostende is a small company, fully owned by the city of Oostende. Its mission is to reduce energy costs and greenhouse emissions in the Flemish city. Activities span from investment projects, advisory to citizen and SMEs on energy savings, group purchasing of green energy, small energy loans to thermography. As a 100% subsidiary of the city of Oostende, it closely aligns its activities with the needs and requirements of the city. The composition of its board of directors include the local government of Oostende. Yet, the independent company structure allows for fast decision-making within the small team of 6 people.³



Photo: Lorient, France
Source: iStock.com/dennisvdw

2.2. PRACTICAL SOLUTIONS TO SMALLER CITIES

Smaller local governments and associations already implemented a number of initiatives to overcome practical problems of smaller administrations when accessing external finance. Lessons are valuable as they may show how simple or more elaborate measures can address challenges deterring a timely implementation of clean energy projects.

Talking to several people working in and with local administrations, we learnt that thanks to the motivation of individual staff member a lot has been already accomplished. Many smaller cities already found new practical ways to overcome existing problems, enabling external financing of energy projects. The section highlights positive examples and lessons that may help other smaller cities.

2.2.1 PRE-FINANCING PHASE

Limited know-how

Outsourcing pre-evaluation of projects to regional experts.

In Oostende, an independent company EOS, fully owned by the city, manages the whole life-cycle of energy project finance. Outsourcing the evaluation of projects to third party as in the case of Oostende can speed up the whole process as less time is needed to learn about new technologies and associated risks. This is particularly relevant for smaller cities as the number of bankable projects is limited. Hence, less know-how can be accumulated internally.

Peer-to-peer learning from other cities.

The Climate Group reported that the most effective initiatives were peer-to-peer learning. Workshops and consultation groups help smaller cities to ask direct questions to other cities and stakeholders. The Climate Group's Poland workshop was for example very helpful as country-specific messaging and benefits were highlighted. Similarly, ASEW stated that examples of other cities and Stadtwerke in neighbouring cities are most effective in convincing local municipalities to implement energy-efficiency projects.

Administrative challenges

Cooperating via regional agencies, associations and NGOs to reduce project management costs.

Experience notably reduces overall time and costs associated to project management and the use of tools. Several smaller cities said that they are keen on helping other cities in their regions to benefit from their learnings. Often the time and costs of setting up a follow-up project are significantly smaller. Yet, there is little financial incentive to provide the advisory on a free basis to other cities.

Replication of the model is possible in a cost- and time-efficient manner. Set-up costs are lower due to economies of scale, i.e. contracts and feasibility studies can be replicated to some extent.

The case study in Croatia shows, for example that it can be very efficient to team up with regional agencies and other partners. The Croatian Green Energy Cooperative Zelena Energetska Zadruga (ZEZ) developed and helped finance the project together with partners from the city of Križevci, Regional Energy Agency North, Greenpeace Croatia, Solvis and ACT Group. At Križevci, additional solar roofs are in planning. Other smaller cities in the region, Pazin, Pleternica or Velika Gorica, already expressed interest in a similar financing scheme for solar roofs. Explaining the costs, efforts, benefits and process by a tangible example of a city nearby makes it easier to speed up the approval process.

Moreover, ZEZ is an active member of Rescoop.eu, the European federation of energy cooperatives, which is part of several EU Horizon2020 and IEE projects⁵, as well as Energy Cities⁶ in Croatia. The UNDP also assisted in the set-up of the cooperative. Members of the team behind the project thus had good experience in disseminating learnings and lessons. Budget allocation also plays a pivotal role. Some staff

costs were absorbed by the UNDP, REScoop, EU-funded projects like REScoop and other parties.

Another positive example is the municipality of Rubi in Spain. For many years, they have pioneered in implementing efficient and renewable energy solutions.⁷ The city has even partnered with UPC BarcelonaTech (Polytechnic University of Barcelona) to develop a model of sustainable energy management in urban scale, applicable to industry, retailers and domestic environment and citizens.⁸ The person who was responsible in Rubi, Angel Ruiz, now shares his experience and know-how via the organization Ecooo.

In Lorient, France is also potential to share best practise amongst neighbouring municipalities. To date, the city of Lorient is already in dialogue with neighbouring cities and municipalities to share its learnings from recent clean energy project finance in the framework of « cit'ergie », the French european energy awards, for instance.

Estimating all admin costs and setting up a roadmap for project management using benchmarks.

An important lesson is that all administrative costs related to getting a project ready must be well included in the total project finance plan. Then, it is possible to manage projects in time and achieve the intended results. Otherwise, the risk is too high particularly for smaller administrations. In Oostende, all costs were estimated and part of the total project planning.

Moreover, a roadmap and admin costs can be benchmarked to other projects. Here, it makes sense to learn from others. The project Ecooo-Local is a great example of acknowledging daily problems in smaller administrations.⁹ The project includes a roadmap so that municipalities, regardless of their size or geographical location can start up the process of launching and financing environmentally-friendly projects. Problems like how to assess and communicate economic savings are explicitly addressed. To date, projects are launched across Spain including the Canary Islands, Valencia, Euskadi, Andalusia and Aragon.¹⁰

Optimal usage of tools via templates and international protocols.

International standards can reduce the workload of smaller cities. I.e. to enhance financial predictability, an international neutral protocol was applied to correct for weather changes in Oostende. This provides transparency and enhances predictability.

For energy-efficiency projects, the Climate Group outlined the usefulness of tools like the Investor Confidence Project. By standardizing the documentation and measurement of energy efficiency projects for the building, industry, district heating and street lighting markets, its ICP's Investor Ready Energy Efficiency™ (IREE™) is an international certification on best practices, the right professionals and third-party validation. It is a viable source to project owners in assessing the economic and environmental feasibility of a project. The project has received funding from Horizon2020.

Another tool effectively used by cities in the USA is the Outdoor Lighting Accelerator Tool Kit. It is online available free of charge. It saves cities time and efforts in preparing documents to apply for municipal bonding, investor owned utility programmes, third party financing or a combination of the three. Financial analyses tools in Excel provides the ability to perform detailed, relatively complex analysis of the costs and benefits of different types of outdoor lighting projects. Components of each analysis are capital costs net of rebates, present value of annual electricity costs and present value of annual maintenance costs; for base and retrofit cases. Default values and maintenance variables improve the usability of the tool. An environmental impact assessment is also part of the output of the tool.¹¹

Approval processes simplification by outsourcing to a subsidiary.

A for-profit company with clear objectives fully owned by a smaller city like EOS Oostende can speed up internal approval processes. A small team makes daily decisions at EOS Oostende. Overall budget and priorities are subject to the oversight of a board that represents the city.

In Germany, often local and regional utilities so-called Stadtwerke are often fully or partly owned by cities. This enables the companies to manage certain operations more efficiently, reducing internal approval time. Often cooperation and co-ownership models between Stadtwerke exist. Setting up a portfolio of projects or jointly financing one larger energy project is thus easier. Yet, setting such an ownership model in the first place is not an easy and quick process.

The example of Oostende shows that smaller company structures may already be efficient for the purpose of getting projects faster initiated, financed and implemented. Setting up a smaller company of less than 10 staff members with no strategic assets like a power generation unit is a feasible option even for smaller cities.

Providing additional benefits to local communities and citizen.

Products like cooperative shares and crowdfunding loans enable citizen living in proximity to energy projects to benefit financially from the investment. To smaller cities there are additional benefits besides access to finance when accessing these forms of financing, i.e.:

- Citizen take an active role in the financing part of local projects. Thus, they not only benefit from better communal infrastructure but also from financial returns. Financial gains are not paid to banks but to people living in cities, using the infrastructure.
- Cities get positive marketing and press from cooperative and crowdfunding campaigns. The time the financing campaign is launched, it is promoted on local media, social media and via local meetings. Thus, citizen learn immediately, what the cities does and how it works. Even when the project is not finished during the legislative period of the government, citizen understand clearly which government launched the initiative.
- There are many positive learning effects. For example, bettervest financed two combined heat and power installations and a local grid installation at a school in Berlin, Germany via crowdfunding.¹² The total sum of € 600 000 was gathered in two crowdfunding rounds. Information sessions were provided at the school. Thus, pupils and teachers not only learnt how energy-efficiency saves the environment but also makes financial sense. When putting your own savings into an investment project, people generally engage at a deeper level with the underlying risks and benefits of a project. The learning effect is more profound as in general information sessions.

The Citizenergy platform features ongoing clean energy crowdfunding and cooperative campaigns across the EU. To find a cooperative or crowdfunding company suitable for your project, it is a good starting point.¹³ Often, borrowing costs via cooperatives or crowdfunding are higher than via banks. Additional benefits must be weighted against alternative sources of financing.

Setting up a Special Purpose Vehicle (SPV) for multiple projects.

Interview partners in France, Germany and Croatia revealed that smaller cities contemplate about using one SPV structure to finance multiple projects. I.e. in Croatia, the PV project finance is set up under an SPV structure ensures that CAPEX, OPEX and returns are transparently managed and respective responsibilities clearly assigned. There are considerations of bundling several smaller projects under one SPV to

reduce the one-off set-up and ongoing annual accounting and management costs. Future projects may be under the same umbrella to save set-up and management costs.

Energy Performance Contracting (EPC)

Certain ownership models make project finance less dependent on political decisions and changes in government. Contracting arrangements are well-suited for energy project finance. As in the case of Oostende, the project will be in place for years no matter which party wins next regional election.

In Križevci, Croatia, the 30-kW rooftop photovoltaic installation primarily covers own power consumption of the building. Surplus is fed into the grid at pre-defined purchase prices. The owner of the building leases the PV installation from the cooperative, which buys, owns and maintains the hardware. Thus, regular payments and responsibilities from the smaller cities are limited. In addition, annual budget calculations are predictable.

The bettervest crowd campaign of €600 000 financed energy-efficiency renovations at a school in Berlin, Germany. The loan participant is the contracting partner. It is responsible for technical and operational maintenance over the project duration. Other tasks include the provision of financial reports and audits amongst others. Even though Berlin is a larger city, it would have been unlikely that the project was financed in the same time without the use of a contracting model. The project size is too small to reach out to banks and other sources of external finance. And, more importantly, there is limited capacity and know-how internally to structure a project finance deal, find legal agreements between all parties, maintain the project technically and operationally and seek external finance. Thus, the use of a contractor was a viable solution to finance and implement the project.

Legal challenges

EPC to circumvent debt ceiling.

Contracting arrangements like in the case of Oostende or Križevci ensure that there is no significant budget cut in the year of the CAPEX investment, recouped by financial returns in later years. Annuity payments and the ownership model provides budget-neutrality over time. Thus, debt ceilings are not reached.

In the case of Oostende, EOS borrowed the money from the bank. The city rented the equipment. It is not per se necessary that the contracting partner is a subsidiary of the city. It can also be an independent party or a cooperative as in the case of Križevci. Regulatory uncertainty exists whether fully-or partly-owned subsidiaries of cities will be also subject to debt ceilings in the future.

Simplify standard legal contracts to meet needs.

Standard legal agreement like EPC can help smaller cities reduce related legal costs. However, additional work is needed to scrutinize if the complexity of the contract is necessary. In Oostende, they preferred a simpler contractual framework that applied better to the needs. Standard EPC contracts account for several potential scenarios not relevant to Oostende. In this particular case, there was also a trusted relationship between EOS and the city of Oostende. The legal arrangement omitted unlikely eventualities, lowering legal fees.

2.2.2. FINANCING PHASE

Know-how challenges

Intermediary contacts to financiers.

Reservations in speaking to a fund, bank or other financial institutions are difficult to overcome if there is no in-house experience. The set-up of the Belfius/EIB scheme as explained in chapter 4 makes it easier to consider external finance for smaller cities in the first place. Local proximity also matters. Finding an intermediary contact like UNDP in Croatia helps to reach out.

Administrative challenges

Combine subsidies and external finance.

The Belfius/EIB scheme is a good example where it is easier for smaller cities to combine funding schemes. Thus less time is needed to research and negotiate the terms and conditions, application process and legal implications.

2.2.3. PROJECT PHASE

Administrative challenges

Keeping the technical and operational management in one hand.

The case of Oostende showed that it made sense to bundle responsibilities of technical maintenance and administrative follow-up work in the hands of an independent party. Data aggregation plays a pivotal role in this regard. In public buildings, responsibilities for technical maintenance is often split amongst different people. Follow-up administrative work of project finance are lower when such roles are redefined.

Optimal use of protocols and standards

The use of protocols and standards in monitoring and documenting energy savings and production is a great source of time-savings. External financiers may require regular data and information. As explained in greater detail in chapter 4, the use of standard protocols and methods like the Investor Confidence Protocol or EFIG Underwriting Toolkit enable borrowers to anticipate and plan information requests from financiers. As a result, related work is more predictable and less time-intensive.

2.2.4. SUMMARY PRACTICAL SOLUTIONS SMALLER CITIES

Several interview partners found effective measures to address practical challenges. As detailed in the table below, most solutions concern the pre-financing phase. Collaboration and the use of tools can help lowering admin costs. Certain ownership models can mitigate concerns about debt ceilings and speed up approval processes.

Section 5 will pick up on the findings and formulate detailed recommendations.

	Pre- financing Phase	Financing Phase	Project Phase
Know-how	Outsourcing pre-evaluation of projects of regional experts	Intermediary contacts to external financiers	
	Peer-to-peer learning from other cities		
Admin	Cooperating via regional agencies, associations and NGOs to reduce project management costs	Combine subsidies and external finance	Keeping the technical and operational management in one hand.
	Estimating all admin costs and setting up a roadmap using benchmarks		Optimal use of protocols and standards
	Optimal usage of tools via templates and international protocols		
	Approval processes simplification by outsourcing to a subsidiary		
	Providing additional benefits to local communities and citizen		
Legal	Setting up an SPV for multiple projects		
	Contracting to circumvent debt ceilings		
	Simplify standard legal contracts to meet needs		



3

SUPPLY SIDE EXTERNAL FINANCIERS

This section takes a closer look at the supply side, external financiers. Drawing on interviews and external literature, people reported a number of practical challenges when they work with local administrations. By understanding their problems in greater detail, it is easier to find solutions that work for both sides of the market.

External finance only hold a small percentage of cities' overall investment finance across the EU. According to the 2017 Investment Survey of the European Investment Bank (EIB), external finance only re-



External finance only represents 18% of investment finance of cities and municipalities in the EU (2017 EIB survey)

presents 18% of investment finance of cities and municipalities across the EU.¹⁴ In Benelux, the share of external finance is over 40% whilst countries in Central Europe, South East Europe, the Baltics and Poland report less than 10%.¹⁵ The survey does not differentiate between smaller and larger cities. The percentage is likely to be even lower for smaller cities because it is more difficult for smaller cities to meet certain investment criteria like minimum project sizes.

The split into different categories by the EIB survey reveals further details on the type of financial institutions. Banks other than National Promotional Banks (NPB) represent around 47% out of the total share of external finance across the EU, follo-

wed by National Promotional Banks (NPB) with 30%. International financial institutions and capital markets total in combination approximately 10%, other sources 13%. Again, there are large differences across the EU. I.e. commercial banks account for less than 10% in Italy and more than 60% in France. The categories capital markets and other sources are not defined in further detail.¹⁶

This section analyzes responses of people working in funds, banks, cooperatives and crowdfunding companies. The focus lies on common practical challenges when working with smaller cities. Firstly, it provides a brief overview of the main challenges, followed by a discussion of possible solutions.

National Promotional Banks (NPB)

National promotional banks and institutions (NPBIs) are legal entities carrying out financial, development and promotional activities on a professional basis which are given a mandate by a Member State at central, regional or local level. Source: <https://www.eib.org/en/about/partners/npbis/index.htm>



Photo: Luxembourg

Source: iStock/fuchs-photography

3.1. PRACTICAL CHALLENGES OF EXTERNAL FINANCIERS

From the perspective of an external financial institution, project finance includes essentially three phases.

1. **Pre-financing phase.** Origination is an essential part of this phase. Banks, funds and other financial institutions follow different routes for energy-efficiency and renewable projects; i.e. ESCOs, hardware producers, energy consultants. Existing contacts and clients with follow-up projects save time in the process. Prior to the underwriting process, financiers typically perform light due diligence to identify if it makes sense to pursue the investment project. Receiving a full set

of information lowers related admin time and efforts notably. Such information may include an energy assessment with cost savings vis-a-vis the status quo or energy production estimates, cash-flow models over time, risk scenario estimates, benchmarks, external credit worthiness assessment of the borrowers, guarantees, financial performance of the borrower over time, purchasing agreements and others. Readiness for finance is an important cost factor to financial institutions. Some external financiers like cooperatives also provide technical assistance to get projects ready for finance.

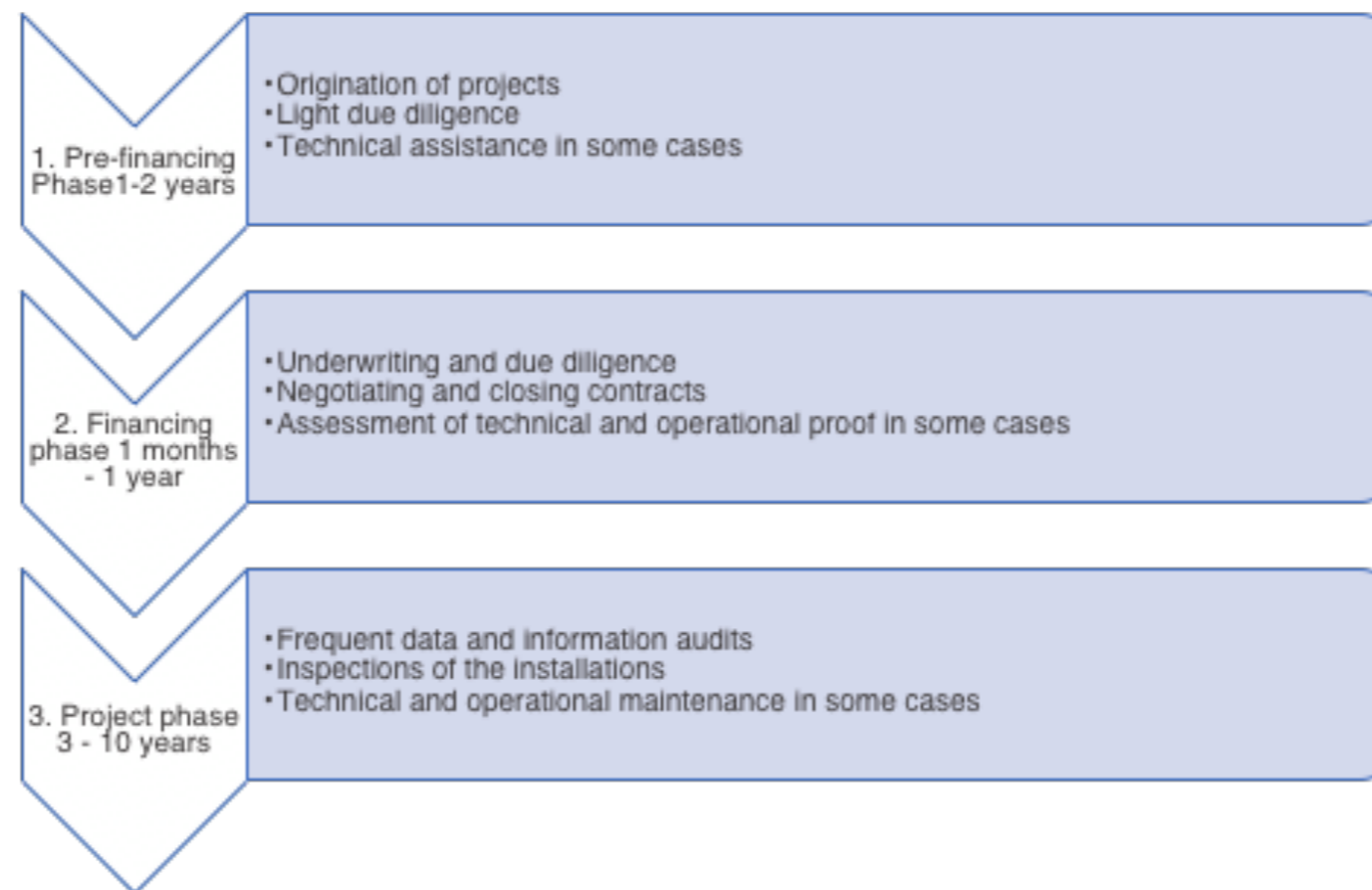
Energy Service Company (ESCO)

ESCO is a business providing an array of energy solutions; from design, management, maintenance and installation to financing. In energy efficiency projects, ESCOs often assist in financing by provision of a savings guarantee. Their remuneration is then often directly tied to the energy savings.

2. **Financing phase.** Once a financial institution receives a complete and coherent set of information on the investment project, it can launch an extensive due diligence and underwriting process. This involves a thorough analyses of the underlying terms and conditions; i.e. do the interest rates adequately cover the underlying risks, are collaterals or own equity quota provided, are regular financing cost payments guaranteed via rental agreements, what is the underlying default risk of the borrowing party. The phase may take a few weeks up to several months, depending on the risk profile of the project and party seeking finance. Repeat borrowers and types of projects require less time. Contract negotiations on the particular terms of the financing take subsequently place. Here, renegotiations on the interest rates, collaterals or other topics may prolong the process. Some external financiers require technical and operational proof prior to the full payment. This may include power converter data proving that the hardware is connected to the grid or proof of hardware orders.

3. **Project phase.** Once a financial deal is closed, the financier must ensure that financial projections are met. Depending on the type of financial institutions and contractual agreement, data requirements and reporting frequency vary. Regular maintenance of all operations guarantee that technological installations work properly. Inspections can ensure that milestones are met and reporting is accurate. Some financial partners like cooperatives may take full ownership of operational and technical maintenance.

The main source of information are interviews with people that have financed or tried to finance smaller cities' renewable and energy-efficiency projects. All these companies operate for profit. Thus, they must manage their underlying costs efficiently to stay in business. Interviewees often compared the time and efforts of working with smaller local administrations with other project owners. Here, projects from SMEs, industrials or large corporate companies were often used as benchmarks.



3.2.1. PRE-FINANCING PHASE

Know-how

Reaching out to smaller cities.

To banks, fund managers and other external financiers, it can be more time-consuming to originate projects located in smaller cities. A regional presence and network is often important to learn about investment projects. SMEs are also more likely to contact financiers proactively than local municipalities.

Administrative challenges

Effective communication.

Several interviewees reported that it takes longer to conclude an agreement with local governments than with SMEs or industrials. More meetings are needed and delays more likely. Follow-up meetings, calls and emails after first contact take time and efforts. The longer the time delay between first contact and final deal closure, the higher is typically the costs. Some interviewees stated that pre-financing negotiations with SMEs for similar energy projects take a few months whilst negotiations with smaller cities can last up to two years. Investing many months and even years of resources into a potential project that is not financed in the end bears risks of high sunk costs. Workshops and meetings have costs for both parties in terms of time, preparation and follow-up work. External financiers cannot provide such information sessions at a free basis unless it is likely to close a deal in a timely manner. Funds, cooperatives and crowdfunding companies reported the similar challenges. When a project is not finalized in the end, no returns have been materialized. Thus, high sunk costs must be absorbed by other activities of the financial company.

Long and uncertain approval processes.

At times, clear responsibility and availability of time of the staff pose practical problems. Changes in staff and long approval processes can delay decisions and lower chances of finding an agreement.

Minimum project size.

Minimum project size is an exclusion criterion to many banks and funds. Investment projects below €5 Mio are difficult to manage at a cost-efficient basis. Underlying origi-

nation, due diligence costs and ongoing project management costs are too high. Thus, projects initiated by smaller cities are often deemed as not bankable. Bundling of projects is a possibility to overcome the problem. Cooperatives and crowdfunding can finance smaller project sizes.

Legal challenges

Regulatory requirements.

External financiers are also subject to bespoke regulatory requirements and internal protocols. As thus, they have limited flexibility in adjusting their terms, requirements and financial products to meet the particular needs of smaller cities.

3.2.2. FINANCING PHASE

Administrative challenges

Due diligence process.

External financial institutions have bespoke due diligence processes. Receiving a full set of complete and coherent information from the party seeking finance enables a fast and efficient process.

Here, it is of high value if the party seeking finance has good experience in providing the information in a comprehensive manner. For example, it helps if the cashflow model of the underlying financing project clearly shows all CAPEX, OPEX, returns, underlying assumptions and risk scenarios. Assumptions shall be supported by evidence, third party independent reports and/or adequate benchmarks. Documentation of the project owner and its underlying credit rating must be provided, alongside all underlying contractual arrangements amongst others. To smaller cities and municipalities, the due diligence processes may be new. Thus, more time is needed to receive the required information.

Contract negotiations.

Meeting in person to negotiate a deal is often very important. Staff of smaller cities may have reservations to travel far for meetings with banks, funds or other parties. Thus, it is more difficult for many external financiers to negotiate and conclude deals with smaller cities.

3.2.3. PROJECT PHASE

Administrative challenges

Unmet information requirements.

For ongoing projects, information requirements from external financiers may pose challenges to smaller cities. For example, at funds and banks borrowers need to provide regular updates on technical, financial and operational metrics. Smaller cities pose higher risks of unmet information requests than other type of project owners.

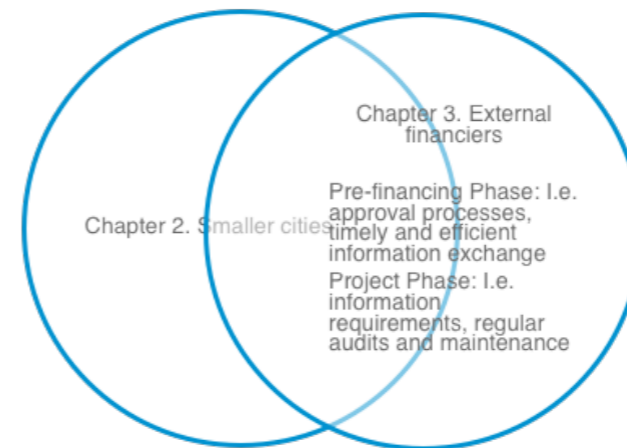
Regular audits and maintenance.

Banks, funds and other financial institutions require regular financial, technical and operational audits. Such information must be guaranteed over the time of the financing. For example, a loan for a PV roof may have a maturity of 5 years with annuity payments. For 5 years, audits may ask for data on kWh, technical maintenance costs, regulatory benefits and other information. Technical and operational maintenance must be at high standards. In smaller administrations, personal and responsibilities may change during the time, posing a risk to external financiers.

3.2.4. SUMMARY PRACTICAL CHALLENGES EXTERNAL FINANCIERS

The study finds that the pre-financing phase is particularly challenging to external financiers. Sunk investments into origination and light due diligence may not be recouped by closure of investment deals. Smaller cities elevate the risk as approval processes are longer than in SMEs. The origination and due diligence process is often also more time-intensive. Unmet data requirements during the project phase poses additional risks.

The findings show similarities to demand-side problems. Challenges in the pre-financing phase are particularly high in smaller cities. Solving problems of smaller cities in getting projects ready for finance thus also benefit external financiers. This includes amongst others leaner approval processes, better project management and better audits during the project life-cycle.



	Pre- financing Phase	Financing Phase	Project Phase
Know-how	Reaching out to smaller cities.	.	
Admin	Effective communication. Long and uncertain approval processes.	Due diligence process. Contract negotiations.	Unmet information requirements. Regular audits and maintenance.
Legal	Minimum project size. Regulatory requirements.		

Križevci, Croatia Case Study 2



Within ten days, the cooperative raised funding for a PV roof in Križevci, Croatia.

Križevci, Croatia Case Study

The case study concerns the 30-kW photovoltaic installation on an administrative building in Križevci, Croatia. The small city partnered with the energy cooperative Zelena Energetska Zadruga (ZEZ) and other parties to finance and implement the project.¹⁷

The interview took place with Robert Pasicko who held the positions of Project Developer for Community Energy at ZEZ and Expert for Alternative Finance and Low Carbon Development at UNDP.

The solar installation is located in Križevci, a city of approximately 21 000 inhabitants in Croatia.

What type of project is it?

The 30-kW rooftop photovoltaic installation primarily covers own power consumption. Surplus is fed into the grid at pre-defined purchase prices. The owner of the building leases the PV installation from the cooperative, which buys, owns and maintains the hardware.

This was the first Croatian project primarily financed by citizen. Within ten days, 53 small investors invested into the project via micro-loans model. In return, they receive annual interest rates of 4.5% over a period of 10 years. Returns are based on the underlying electricity production. Average investment size was €500, in a range from €130 to €1300.

Which challenges did the city face?

Administrative

The city had limited preexisting knowledge and experience to set up, evaluate and finance a solar roof. For example, there were few experts that could evaluate which roofs were better suited for PV installations and which projects were financially most profitable.

Few staff have enough time to learn about the underlying technical, regulatory, legal and financial set up. Moreover, the ongoing management and running of a SPV required dedicated time and know-how. It is very hard to free personal for such activities.

Financial

In Croatia, access to finance is subject to underlying national conditions. Commercial bank loans are typically in the range of 6%-8%. Moreover, depending on the size of the loan and project type, the bank may require securities or guarantees.

Legal

The size of the total bank loan of cities is capped for cities in Croatia. Quotas are linked to the annual budget of a city. This implies that cities cannot qualify as loan participants for particular projects when the CAPEX is too high vis-à-vis the cities' annual budget.

Time

Time-investments are significant vis-à-vis the size of the project. It encompasses various elements, i.e. the economic feasibility of a project, building up a business case, setting up contractual agreements, getting internal approval for the budget, negotiating budget priorities, meeting with financial parties, negotiating terms with financial partners etc. Moreover, the project duration is 10 years. Yet, legislative tenure is shorter. Hence, the ownership of the project and ongoing work must be guaranteed, which poses a risk to smaller administrations.

What was the solution?

Administrative

The Croatian Green Energy Cooperative Zelena Energetska Zadruga (ZEZ) developed and helped finance the project together with partners from the city of Križevci, Regional Energy Agency North, Greenpeace Croatia, Solvis and ACT Group.

The project finance is set up under an SPV structure to make sure CAPEX, OPEX and returns are transparently managed and management responsibilities clearly assigned.

A conference brought together 20 representatives of cities from Croatia and the region. The photo of the participants is at the Technology Park in Križevci on the roof where the first solar panels were installed.

Photo: Križevci, Croatia

Source:<http://www.zez.coop/crowdfundin-g-za-suncanu-energiju-u-gradovima-model-koji-treba-replicirati-dalje/>

Know-how

The Croatian Green Energy Cooperative Zelena Energetska Zadruga (ZEZ) was established in 2013 as part of the project "Development of Energy Cooperatives in Croatia" implemented by the United Nations Development Program (UNDP). Upon completion of the project, ZEZ continues to operate independently as an umbrella organization for energy cooperatives in Croatia.

Teaming up with partners such as Regional Energy Agency North, Greenpeace Croatia, Solvis and ACT Group enabled the project to draw upon other know-how and resources.

Time

For almost one year, ZEZ worked on technical and economic elements of the project. Subsequently, it prepared and launched the crowd-funding campaign. The financing campaign was concluded in 10 days due to a high interest from citizen.

The involvement of different project owners and responsibilities also had a positive effect on getting things done in time. For example, by seeking advice from other cooperatives via the Rescoop network, it could be benchmarked how long the set-up peri-



Close cooperation with the REScoop network, UNDP and other partners helped implement and finance the project.

od shall take approximately. The ACT Group, a group of social enterprises, drew experience from public and private sectors.

Financial

The citizen-led financing was concluded within 10 days, raising €30 000. 53 small investors, based on micro-loans model. Within ten days, 53 small investors invested into the project via micro-loans model. In return, they receive annual interest rates of 4.5% over a period of 10 years. Returns are based on the underlying electricity production. Average investment size was €500, in a range from €130 to €1300.

Legal

ZEZ bought and owned the PV installation. Subsequently, the hardware is leased to the owner of the building. The city is a partner and co-investor in the project.¹⁸

How can other smaller cities learn from it?

At Križevci, additional solar roofs are in planning. Other smaller cities in the region, Pazin, Pleternica or Velika Gorica, already expressed interest in a similar financing scheme for solar roofs. Explaining the costs, efforts, benefits and process by a tangible example of a city nearby makes it easier to convince other smaller cities.

Replication of the model is possible in a cost- and time-efficient manner. Set-up costs are reduced due to economies of scale, i.e. contracts and feasibility studies can be replicated. Moreover, there are considerations of bundling several smaller projects under one SPV to reduce the one-off set-up and ongoing annual accounting and management costs.

One advantage of this particular case is that many parties involved operate nationally. Thus, they have direct contacts beyond the city of Križevci. Moreover, ZEZ is an active member of Rescoop.eu, the European federation of energy cooperatives, which is part of several EU Horizon2020 and IEE projects¹⁹, as well as Energy Cities²⁰ in Croatia. Moreover, the UNDP was instrumental in the set-up of the cooperative. Members of the team behind the project thus had good experience in disseminating learnings and lessons amongst other cities. Moreover, people are willing and encouraged to help other smaller cities to put other projects into practice.

A half-day conference brought together 20 representatives of cities from Croatia and the region, aiming to replicate the model across Croatia.



Photo: Zwierzyniec, Poland
Source: iStock/woyzeck

3.2. PRACTICAL SOLUTIONS TO EXTERNAL FINANCIERS

Both sides, demand and supply, emphasized administrative challenges in the pre-financing phase. Smaller cities must invest considerable time and efforts in getting projects ready for finance i.e. by setting up a project portfolio with all legal, administrative and operational aspects. Financiers bear the risk of investing too much time into projects that are not bankable. Nevertheless, examples show that seeking loans from a bank or other financiers can be done in a timely manner once an investment project is properly set up. Other practical challenges related to the financing and post-financing phase like enhanced information requirements must be also addressed to foster an uptake of external finance for smaller cities' clean energy projects.

The focus of this subsection lies on solutions implemented by smaller cities. At times, references to EU-funded support schemes are made. A detailed discussion of the schemes is presented in the subsequent chapter.

3.2.1. PRE-FINANCING PHASE

Know-how challenges

Sharing know-how and making use of services from associations.

The federation of renewable energy cooperatives REScoop unites forces of 1,250 European energy cooperatives together.²¹ The federation is part of several EU-funded projects including ECCO, CITYinvest, PV Financing, REScoop 20 20 20, Community Power, WISE Power, Clean Energy for EU Islands, REScoop Plus, FLEXcoop, WiseGRID and REScoop MECISE.²² Amongst its services, the cooperative provides training sessions on practical tasks like financial reporting, project related audits and collaborations with municipalities.

Moreover, information is shared via basecamp, an online collaboration tool where specific questions can be asked and information uploaded. Working with local municipalities poses many specific challenges. The services from REScoop enable cooperatives across the EU to learn from examples and find workable solutions.

Administrative challenges

Finding projects via online portals and associations.

Several EU-financed initiatives encourage matchmaking between financiers and smaller cities.

An example of a matchmaking portal that account for the needs of financiers include for example the Investor Confidence Project.²³ Companies that finance energy efficiency projects can list their profile, financial product, terms and conditions of financing, average project size and more details on their website. They are subsequently invited to information sessions and matchmaking is facilitated. Thus, it is easier for staff to learn about investment opportunities and quickly assess if they are meeting their investment criteria. This is an excellent example of addressing the needs of financiers in a structured and efficient manner. A large benefit is also that it is not limited to traditional financial institutions, i.e. banks. Funds, crowdfunding and other parties are part of it. For example, most portals assume that all external financiers prefer larger deals with minimum investment sizes above several € millions. Yet, crowdfunding and cooperatives finance smaller project sizes below € 500 000. The portal accounts for the fact.

Via REScoop, cooperatives can learn about specific needs of local municipalities. Currently, REScoop is for example working on a financial facilitation service that will foster an international collaboration between energy co-ops and at the same time allow them to scale-up the size of individual investments. For example, cooperative with excess supply of funding may be able to support cooperatives with excess demand of projects. Thus, finding and providing finance to smaller municipalities could be easier.²⁴

The European Investment Project Portal (EIPP) is another example to find viable investment projects. It gathers projects in energy efficiency, transport, healthcare, rene-

wable energy, broadband infrastructure or in financing SMEs. Energy projects listed on the website mainly concern piloting and start-up phases. Fewer project finance of smaller cities are listed. Yet it could be used as a first start.²⁵

Sharing experience across a company.

Thanks to the Belfius/EIB programme²⁶, Belfius can gather experience in working with smaller municipalities across the country. Thus, people working in individual branches can ask colleagues about particular problems encountered when working with smaller municipalities. Practical solutions can be applied to more than 1 loan participant, lowering overall sunk costs in setting up an agreement. Moreover, it is easier to reach out and find projects in smaller municipalities as examples exist and general information can be shared via their website and other communication channels.

Letter of Intent (LoI) early in the negotiation process.

A financial company may introduce an LoI early in the negotiations prior to an in-depth due diligence process. This often triggers a decision at an earlier stage, signaling whether it is worthwhile spending more time on the project or not. For smaller cities it is particularly useful as no-deal criteria can be identified by both parties early on.

Bundling projects into performance portfolios via the use of protocols.

Standardized protocols like the ICP's Investor Ready Energy Efficiency™ can reduce due diligence costs of investors, facilitating easier access to finance.²⁷ Other benefits are easier aggregation of projects since standards are similarly certified, enabling bundling of projects into performance portfolios. Moreover, such protocols make it easier to benchmark projects at a cost-efficient basis. As a result, due diligence costs are lower for external financiers, making it easier for certain type of project portfolios to find finance.

Letter of Intent (LoI)

LoI represents an interim agreement that summarizes the main points of a proposed deal. Normally, it does not constitute a definitive contract but signifies a genuine interest in reaching the final agreement subject to due diligence, additional information, or fulfillment of certain conditions. The language used in writing a LoI is of vital importance, and determines whether it is only an expression of intent or an enforceable undertaking.

3.2.2. FINANCING PHASE

Administrative challenges

Involving citizen in the investment process.

In Križevci Croatia, the citizen-led financing was concluded within 10 days. 53 small investors, based on micro-loans model. Of course, this case study is particular to the Croatian circumstances. Cities located in other EU Member States stated that citizen-led financing terms and conditions were too high vis-à-vis commercial bank loans. Yet, it is worthwhile mentioning that bank loans are not the only type of external finance. Other options exist.

Combining subsidies and regular financial instruments.

The Belfius/EIB Smart Cities & Sustainable Development programme enables smaller cities to combine loans and EIB funding. Thus, less coordination and paperwork between the financial parties is required. It makes it easier to negotiate and close deals.

3.2.3. SUMMARY PRACTICAL SOLUTIONS FROM CASE STUDIES EXTERNAL FINANCIERS

As shown in the table below, several practical solutions exist. Bundling of projects into performance portfolios via the use of protocols like the Investor Confidence Project can lower due diligence costs. Combination of ancillary services like advisory on subsidies like the EIB/Belfius scheme enables better reach to smaller cities. The use of existing regional networks, associations and portals is at times also helpful to find viable investment projects. Solutions are complementary to findings from those in the previous section 2.

	Pre- financing Phase	Financing Phase	Project Phase
Know-how	Sharing know-how and making use of services from associations.	.	
Admin	Finding projects via online portals and associations.	Involving citizen in the investment process.	
	Sharing experience across a network.	Combining subsidies and regular financial instruments.	
	LoI early in the negotiation process.		
	Bundling projects into performance portfolios via the use of protocols.		



4

EXISTING EU INITIATIVES

A number of initiatives, programmes and EU-financed projects are already in place to effectively assist local municipalities in accessing external finance. Prior to the formulation of recommendation, we thus inquire a number of existing initiatives. Guiding questions in this context are:

1. Which practical problem does the initiative address?
2. Do smaller cities benefit from the initiative?



Photo: Amarante, Portugal
Source: iStock/venemama

4.1. EXISTING EU INITIATIVES FOR ENERGY PROJECT FINANCE

According to the European Commission, around € 100 B is needed per year to meet the EU's 2020 energy efficiency objectives. The rollout of renewables and other clean energy projects requires further funding. In consequence, several EU support schemes and initiatives exist.²⁸ A preselection of initiatives that directly or indirectly address practical challenges related to accessing external finance for energy projects has been made. Any formulation of recommendations in section 5 is complementary to existing schemes tailored to the needs of smaller cities and their practical problems in accessing external finance

The Belfius/EIB 'Smart Cities & Sustainable Development' financing programme

In 2014, Belfius and the EIB launched the Smart Cities & Sustainable Development programme.²⁹ The programme intended to make € 400 Mio available to local authorities in Belgium for the implementation of smart and sustainable projects with a focus

on mobility, urban development and/or energy efficiency. The aim of the programme is to reduce borrowing costs for municipalities, Public Social Action Centres and inter-municipalities. The EIB and Belfius are each providing half of the funds. The EIB loan to the Smart Cities is an intermediate loan, i.e. that the Bank makes its loan to another bank which in turn lends to someone else. The municipality must take a loan from Belfius. It subsequently can receive a subsidy on the interest rate from the EIB.

Which practical problem does the programme address?

The programme not only reduces interest charges of bank loans, which is beneficial to both the municipality's finances and its inhabitants. It also lowers several administrative challenges encountered by smaller municipalities during the financing phase of a project.

Negotiating with external financiers and comparing offers.

Local administrations have a contact person at Belfius to inform on the underlying financing scheme. Belfius branches are in proximity, lowering legwork costs. On its website, it is also possible to research similar projects in smaller cities.³⁰ People working in small administrations can contact a person at Belfius and ask about the specific loan.

A thorough comparison cannot be substituted by the programme. Smaller cities still need to reach out, contact, negotiate with other commercial banks to compare the offer. Moreover, the subsidy cannot be combined with loans from other banks. Yet, the first step of considering external finance and contacting a bank is made easier thanks to the programme.

Nevertheless, there is still a trade-off between underlying administrative work and financial benefits. Cities like Oostende reported that the incremental monetary benefit of a lower Belfius/EIB interest rate was too small to offset underlying admin work. Applying to the programme takes time and efforts. Out of total project size of € 1,8 Mio approximately 1/3 was eligible for the Belfius/EIB programme. The difference between the net Belfius/EIB interest rate and the interest rate of a commercial bank was not significant enough. In Oostende's view, the programme made more sense for larger projects. Yet, Oostende already had pre-existing in-house expertise and experience in seeking and comparing commercial bank loans. Thus, reservations in accessing external finance were already lower as compared to other small local municipalities.

The example of Silly,³¹ a city with less than 8 000 inhabitants, illustrates how smaller projects and cities benefit from the programme. Two projects received support from the programme in Silly, reducing the interest rate of the two loans. A redevelopment of a parking area into a sports complex, totalling 257 891 out of which 113 193 were covered by regional subsidies, € 39 698 self-financed and € 105 000 financed via the Belfius/EIB loan. The second project included the installation of 42 PV panels on a municipal school. The costs of € 33 432 were borne in full by the city. It was covered by a second separate loan from Belfius/EIB.³²

Seeking subsidies and other co-financing.

The combination of a commercial loan and EIB funding lower related research and administrative work. Applying for the subsidy still requires work. Yet, the details are well understood by Belfius, which makes the process faster.

Getting projects ready for finance phase.

Even though the programme predominantly becomes effective at the financing phase of an energy project, it also lowers practical problems encountered by smaller cities when getting projects ready for finance.

Over time, Belfius gained technical and financial expertise to understand and manage energy projects of smaller municipalities. The bespoke investment environment in Benelux is well-understood. Drawing on its experience, Belfius can work more effectively for repeat projects. Translating the financial, technical and operational risks into terms and conditions of investment projects becomes thus more effective over time. Hence, smaller cities must also invest less time and efforts in getting projects ready for finance.

Do smaller cities benefit from the programme?

The result from the Belfius/EIB programme shows that it also reaches smaller communities. A number of smaller cities received funding via the programme. Examples of other smaller cities that benefitted from the programme include a pedestrian/cycling zone along the river of Meuse in Dinant and near-zero-energy public buildings in Schelle, Bierbeek and Gembloux and a filling station for cleaner fuel in Harelbek.³³

In the first project, 62 projects benefitted for a total of € 400 Mio Resources made available per project were thus above €6 Mio. Another € 400 Mio for the programme was provided through the second programme," Smart cities, Climate action and circular economy" in late 2016. The programme covers energy performance, mobility and urban development, water, waste and e-government. In the second programme, 40 projects already benefitted for a total amount of 240 Mio. Again, benefits per project were around €6 Mio.³⁴

The Belfius/EIB funding only concerns part of the total project size. Own resources must be added. Moreover, not all parts of a project may be eligible to the programme. For example, a housing renovation may consist of different energy-efficient measures out of which not all technologies are part of the programme. Total financial needs of the projects financed under the programme are thus likely to be higher than € 6 Mio on average. Further research is required to assess in how far the programme helps in pooling projects efficiently to reach critical investment sizes.

The Belfius/EIB programme was effective, even in smaller cities. Besides the financial benefits of lower interest rate, a number of practical problems were solved. I.e. it is easier for local administrations to make first contact and finalize a loan agreement with a bank. Moreover, thanks to Belfius' experience and know-how, translating legal,

technical and financial risks of smaller cities' projects into bankable loan agreements becomes more effective over time. Thus, less time must be invested by smaller cities in getting projects ready for finance.

The purpose of the programme is to connect small communities with sources of European funding they might not otherwise have the resources to access. Francis Hayen, who heads the programme, sees potential that other European countries could also perform this intermediary function for small municipalities, if they teamed up with the EIB and implemented the same approach.

European Local Energy Assistance (ELENA)

ELENA is a joint initiative by the European Investment Bank (EIB) and the European Commission.³⁵ Established in 2009 under the Intelligent Energy-Europe (IEE II) Programme, it is currently financed under the Horizon 2020 Programme.³⁶ The initiative aims at supporting public and private project promoters to prepare and develop large-scale investment programmes to achieve and go beyond EU's objectives on energy and climate policy. In the public sector, ELENA aims to help cities mobilise investments and implement their sustainable energy action plans. Eligible projects are selected by the EIB and submitted to the European Commission for approval.

To apply for ELENA, the promoter must have identified a substantial investment programme in one of the following areas the energy efficiency and distributed renewable energy as well as urban transport and mobility in urban/suburban agglomerations and other densely populated areas.

Which practical problem does the programme address?

ELENA provides grants for a set of specific eligible costs for project development and management. Eligible costs can amongst others include hiring of technical, financial and legal experts, creation of project manager positions and feasibility studies. From the ongoing ELENA projects, there are many examples where external experts are hired as a part of project development process: Efficiency for Berlin Properties³⁷, Towards a Sustainable 2020 Campus Rotterdam³⁸ and Progetto 3L in Padova³⁹. The study "Unlocking investment in cities: ELENA-EIB technical assistance facility" by Energy Cities states that one of the advantages of the ELENA funding is that it creates an opportunity to develop more innovative and ambitious investment programmes thanks to the possibility of financing a team working full-time on the development of

large investment programme. One of the recommendations from the study is that the ELENA grant should primarily be dedicated to capacity-building within the municipality and limit the use of consultants to specialist areas.⁴⁰

Do smaller cities benefit from the programme?

The size of the investment programme must typically be over € 30 Mio over a period of 3-4 years. However, smaller projects can be supported when they are integrated into larger investment programmes.⁴¹ For energy related investment programmes, the total investment programme costs to be supported must be at least 20 times the amount of the ELENA contribution.

For smaller cities, it is challenging to create an investment programme over € 30 Mio. This is evident from the type of cities that received funding to date. The list of completed projects reported by the EIB predominantly shows larger cities, such as London, Madrid, Ljubljana, Brussels, Paris, Barcelona, Malmö, Bristol and Milan.^{42 43} Examples of smaller cities are rare. Cities of less than 100 000 inhabitants include the municipality of Sittard-Geelen, Beek and Stein (Netherlands).⁴⁴

EIB states that smaller projects can be supported if they are integrated into larger investment programmes. However, this will require collaboration with other parties, pooling of projects and other practical challenges that are time-consuming for small administrations.

The related admin process may also deter smaller cities from applying for ELENA funds. The applicant must fill in a 14-page form with extensive details on the planned investment programme. Some of the formal criteria for application are:⁴⁵

- Eligible applicant (public and private project promoters) from eligible country (Member States of the EU or country associated to the H2020 programme)
- Eligibility of planned investment programme
- Potential bankability (one or several lenders are willing to finance project) of investment programme

Financial and technical capacity of applicant to complete investment programme

This requires both financial and technical expertise. For smaller cities with limited staff for developing investment programmes, the application process for ELENA appears challenging.

The KfW-ELENA is an exception. The facility offers an approach in order to mobilize sustainable investments of small and medium sized municipalities.⁴⁶ KfW ELENA consists of the ELENA grant and global loans to local participating financial intermediaries (PFIs) in order to target smaller investments (volume up to € 50 Mio). The participating final beneficiaries, local or regional authorities or other public bodies within the IEE, for the ELENA grant apply to the ELENA grants directly via Partnering Financial Intermediaries. The collaboration partners are BPCE, ERSTE Bank, KommuneKredit, Cassa depositi e prestiti and Bak Handlowy w Warszawie.

Project Development Assistance (PDA)

Project Development Assistance (PDA) is available for public and private project promoters under “Secure, Clean and Efficient Energy” in the Horizon 2020 programme.⁴⁷ The focus is on small and medium sized energy investments from €7,5 Mio up to € 50 Mio.

Which practical problem does the programme address?

PDA will support building technical, economic and legal expertise needed for project development that should lead to the launch of concrete investments with a focus on capturing untapped high energy efficiency potentials.

Do smaller cities benefit from the programme?

Most cities or regions receiving funding from PDA have more than 100 000 inhabitants. Yet, there are a few examples of cities with less than 100 000 inhabitants including: Solrød (Denmark), South Østerdal (Norway) and Hengelo (Netherlands).⁴⁸

For smaller cities, achieving funding from PDA through “Secure, Clean and Efficient Energy” under Horizon 2020, seems more realistic than achieving ELENA funding. However, if a city has smaller projects than 7,5 million EUR, funding from PDA is not applicable. Eligible project size is thus a deterrence for many smaller cities.

Joint Assistance to Support Projects in European Regions (JASPERS)

JASPERS is a technical assistance partnership between the European Commission, EIB and EBRD. It provides independent advice to projects that are co-financed by two EU Structural and Investment Funds, namely the European Regional Development Fund and Cohesion Fund. Its purpose is to improve the quality and implementation of projects.⁴⁹

Which practical problem does the programme address?

JASPERS can assist authorities with strategic planning, project preparation, capacity building, as well as quality review of project proposals. Its assistance is relevant in the pre-financing and implementation phase. For example, it may include the identification of EU grants, independent quality reviews, capacity building as well as implementation support. JASPERS assistance is free of charge for local authorities and promoters. Energy and Solid Waste is one in five sectors in which JASPERS can provide expertise.

Do smaller cities benefit from the programme?

Major infrastructure projects, such as roads, water, urban transport, waste and energy predominantly benefit from JASPAR. The project size may be a challenge to smaller cities, and JASPERS might not be the most appropriate solution to smaller cities' energy projects. JASPERS focus on large projects with total costs exceeding € 50 Mio for environmental projects.⁵⁰

EU Urban Agenda Toolbox

EIB and CoR collaborate on a range of Urban Agenda initiatives to share knowledge and best practice with local and regional decision makers. One joint initiative from EIB and the EU Committee of the Regions (CoR) to share best practices amongst investments in cities is the EU Urban Agenda Toolbox. The aim is to improve access to funds and assist in the use of existing funds more effectively.⁵¹

Which practical problem does the programme address?

The toolbox provides examples of successful projects funded by EIB or CoR. One example is the intermediate loan from EIB to Belfius to fund half of the Belgian bank's "Smart Cities and Sustainable Development" programme. The programme connects small communities with sources of European funding they might not otherwise have resources to access. It thus reduces researching costs for smaller cities.

Do smaller cities benefit from the programme?

The tool is readily available for smaller cities. They can inform themselves at a more cost-efficient basis.

The Investor Confidence Project

The Investor Confidence Project is an Horizon2020 project, which standardizes the documentation and measurement of energy efficiency projects for the building, industry, district heating and street lighting markets. Its ICP's Investor Ready Energy Efficiency™ (IREE™) is an international certification on best practices, the right professionals and third-party validation.⁵²

Which practical problem does the programme address?

It is viable source to project owners in assessing the economic and environmental feasibility of a project. Moreover, due diligence costs of investors are reduced, facilitating easier access to finance. Other benefits are easier aggregation of projects since standards are similarly certified, making it easier to bundle projects into performance portfolios. As a result, access to finance is easier and more cost-efficient for project owners.

Do smaller cities benefit from the programme?

Smaller cities benefit as illustrated in greater detail in Chapter 2.2 standardized documentation and measurement of energy efficiency projects enhances chances for accessing external finance. Assessing the economic and environmental feasibility of a project is more cost-efficient. Moreover, due diligence costs of external financial institutions are lowered.

Integrated Territorial Investment

Integrated Territorial Investment (ITI) is a tool to implement territorial strategies in an integrated way.⁵³ The key elements of an ITI are: a designated territory and an integrated territorial development strategy, a package of actions to be implemented and governance arrangements to manage the ITI. Any geographical area with particular territorial features can be subject of an ITI, and ITI can also deliver integrated actions in detached geographical units with similar characteristics within a region. It is essential to develop a cross-sectoral integrated strategy designed in a way that actions can build on synergies produced by coordinated implementation.

ITI can draw on different funds, not only in the form of grants, but also financial instruments. The implementation of ITI or some of the tasks of implementation and management can be delegated by the Managing Authority to intermediate (public) bodies, regional development bodies or NGOs. The form and degree of how the ITI delegation is managed, may vary from the administrative arrangements of the Member state or region.

The total allocated funding to ITI is € 13,8 B. 85 % of this amount, €11.8 billion, is funded under the ERDF. The study "Integrated territorial and urban strategies: how are ESIF adding value in 2014-2020?" states that almost 80 percent of ITI funding for Sustainable Urban Development (SUD) is concentrated in nine Member states and 28 % in Poland alone.

Which practical problem does the programme address?

Bundling projects of neighbouring regions into bankable project portfolios is one of the main advantages. Moreover, the implementation and management can be outsourced to an intermediate, solving many practical problems encountered by smaller municipalities.

Do smaller cities benefit from the programme?

Yes, many smaller cities with less than 100 000 already benefitted from the programmes. The following case study discusses the implementation in particular regions in Portugal, Poland and Italy. The administrative hurdles and solutions are discussed by example of particular smaller municipalities.

Integrated Territorial Investment in Portugal, Italy and Poland Case Study 3



Photo: Acona, Italy
Source: [iStock.com/eddygaleotti](https://www.istock.com/eddygaleotti)

Tâmega e Sousa is a recent example of the use of ITI in Portugal. The region is constituted by 11 municipalities with a population of 432 915.

Portugal

Portugal was the sixth country in 2017 benefiting the most from the EU bank's support as a percentage of GDP. 18,9% of EIB Group activity in Portugal was dedicated to climate change action in 2017, with a focus on sustainable economic growth and upgrading water infrastructure. The Portugal 2020 Partnership Agreement between Portugal and the European Commission encompasses four thematic Operational Programmes (Competitiveness and Internationalisation, Social Inclusion and Employment, Human Capital and Resource Efficiency and Sustainability) and seven regional Operational Programmes (OPs). The partnership agreement covers five funds: the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF).⁵⁴

IFFRU

Instrumento Financeiro para a Reabilitação e Revitalização Urbana (IFFRU) 2020 is a financial instrument that shall support investments in urban rehabilitation in the whole Portuguese territory under the Portugal 2020 EU Partnership Agreement. IFFRU 2020 also supports energy efficiency measures complementary to urban rehabilitation interventions. IFFRU includes investments in energy-efficiency measures, as part of the renovation of buildings that will contribute to reducing pollutant emissions and climate mitigation.⁵⁵

The financial products provided are loans, with maturities up to 20 years and interest rates below market rates, and guarantees for projects that do not have sufficient guarantee. To apply for a loan, the applicant must obtain a municipality opinion, energy certificate and request for financing from financial entity. Both private and public entities can apply. IFFRU 2020 is amongst others financed by EIB, European Structural and Investment Funds (ESIF) and European Regional Development and Cohesion Fund.⁵⁶ Applications for IFFRU should be submitted directly to the one of the selected banks: BPI, Santander and Millennium BCP.⁵⁷

ITI

ITI will be implemented in Portugal through Pacts for the Territorial Cohesion and Development in each NUTS III of Portugal mainland. Tâmega e Sousa is a recent example of the use of ITI in Portugal. The region is constituted by 11 municipalities with a population of 432 915 (2011). The strategy with a planning horizon for 2030 is to contribute to exploring the potential of inter-municipality with a scope relating to modernisation and reorganisation of territorial governance, protection of environmental quality and natural heritage, enhancement of innovation and economic competitiveness and promotion of social inclusion, quality of life and territorial cohesion. Interventions are to be co-financed from ERDF, ESF, CF and EAFRD. The contributing OPs are Norte ROP (providing ERDF and ESF co-funding), the national Resource Efficiency and Sustainability (SEUR) OP (CF), the Social Inclusion and Employment (ISE) OP (ESF) and the Rural Development Programme (RDP) for the mainland (EAFRD). The total contracted ESIF funding amounts to EUR 66 million EUR. The 11 municipalities have been deeply involved in the preparation of the strategy. The main responsibilities of the inter-municipal association are drafting the strategy and evaluating projects. A specific technical assistance structure will be created within the inter-municipal association's internal structure specifically for the purpose of performing functions related to the implementation of the strategy. One of the key challenges for the implementation of the strategy is that the municipality mayors considered the financial allocation to be insufficient.

In Italy, Pesaro and Faro both cities with less than 100 000 inhabitants have integrated an urban system in the Marche region alongside more than 20 other small municipalities.

In 2009, Almada established the “Almada Less Carbon Climate Fund”, with the aim of reducing Almada’s carbon footprint. The fund was updated to a revolving fund in 2016, thanks to the city’s participation in the EU-funded INFINITE Solutions project. The fund size is €500 000 (2016).⁵⁸

Italy

Italy has conducted several ITI projects on energy efficiency in smaller regions. The study “The implementation of the Integrated Territorial Investments by Member States” by Council of European Municipalities and Regions from 2015, states that Italy highlighted the lack of recognition by the European Commission for ITIs when they were not for urban areas.⁵⁹

ITI Pesaro and Faro

European Regional Development Funds (ERDF) provided €7,35 Mio to support sustainable urban mobility actions in Marche for the period 2014-2020. Municipality of Pesaro has 93 000 inhabitants, whilst the municipality of Faro has 61 000 inhabitants. Pesaro and Faro have along with more than twenty small municipalities integrated an urban system in the Marche region. The ITI has been chosen as the instrument for urban development, combining ERDF and ESF within Article 7. At the beginning of 2016, three strategies were selected for funding: Ancona, Ascoli Piceno and ITI Pesaro Faro. The ITI strategy Pesaro Faro is funded with €9 Mio, in which 80 % comes from ERDF and ESF and 20 % from municipality. Main objectives under the ITI are: enhancement of entrepreneurial initiative and innovation, active and open place to interchanges, energy efficient and “carbon free” community and accessibility of services. Both Pesaro and Faro will act as intermediate bodies responsible for the management and implementation of the strategy.⁶⁰

ITI Sardinia

The Sardinian region has implemented strategies for sustainable urban development in the main cities (Cagliari, Sassari and Olbia) through ITI tools. The Sardinian case study shows that Sardinia focused on deprived neighbourhoods, combining investments from ERDF and ESF. The case study of Sardinia uncovered that there was a lack of coordination among national, regional and local levels, and that the regional government and cities did not have adequate administrative capacity to manage the processes. The study also demonstrated that ITIs offer a more effective territorial dialogue between different stakeholders. However, the administrative capacity through which local strategies and actions are implemented is a key factor.⁶¹

ITI Matera

Matera is one of two provincial capitals in Basilicata. According to the study, the ITI for Matera has not yet been approved. The ITI will draw on resources from a number of priorities from the ERDF 2014-20 ROP Basilicata; RTDI, Digital Agenda, Competitiveness, Energy and urban mobility and environmental protection and efficient use of resources. The allocation from the ERDF ROP for the ITI Matera is €37 Mio, of which half is represented by EU contribution.⁶²

Many smaller Polish municipalities participated in the programme. Amongst others, 22 municipalities in the Walbrzych agglomeration.

Poland

Poland is one of the countries in EU who has prioritized the use of ITI strategy in development projects, where energy is one of the key focus areas. In Poland, the decision on whether to use ITI on SUD strategies was taken by the central government.⁶³ Target cities are the capitals of all of the 16 regions, making the Functional Urban Area (FUA) approach compulsory. The ITI is an institutionalised partnership led by the core city, managed within the Regional Operational Programmes (ROP).⁶⁴

ITI Lublin

Lublin has 340 000 inhabitants (62,6 % of Lublin functional area). The functional area consists of 16 municipalities with 548 500 inhabitants.⁶⁵ Total amount allocated for the ITI is €105 Mio. The Lublin ITI is financed from the national allocation under Article 7, while all the non-SUD ITIs in Poland are financed from the ROP. The primary objective is to improve social, economic and territorial cohesion within the Lublin Functional Area. Carbon efficiency and sustainable development are included in the development goals. The ITI office of Lublin was set up in April 2015 with a team of 10 persons in two units; ESF, technical assistance and ERDF, Strategy & Monitoring.⁶⁶

City and local authorities in the FUA are working together on the ITI and are trying to use the cooperation for the development of the whole area. The largest challenge for the strategy design was to prepare a diagnosis of socio-economic characteristics of the FUA. Another challenge was to ensure strategic choice of non-competitive projects to be realised from the ITI funds, amongst others because of different interests, needs and expectations of the FUA partners. A third challenge is the administrative capacity, as the ITI office in Lublin was brand new in 2016. However, to ensure capacity building, the IB and the regional MA built a very good relationship, cooperating on a daily basis.

ITI Lowe Silesia Province

Low Silesia Province in Poland has entrusted the Wroclaw agglomeration with establishing a key ITI strategy, as the agglomeration is home to 30% of the province's inhabitants. Wroclaw Agglomeration has created an inclusive partnership with its key stakeholders through its ITI strategy. Funding available (ERDF) is 300 million EUR for 2014-2020 covering 15 local administrative districts of the Wroclaw agglomeration. Key investment areas are: low-emission economy (81 million EUR), transport (42 million EUR) and entrepreneurship development (41 million EUR).

ITI Walbrzych

The Walbrzych Agglomeration is one of the seven ITIs in Poland which are not located around regional capitals. The strategy covers 22 municipalities in South-West Poland. The strategy consists of four main objectives: dynamic economy and innovative entrepreneurship, an attractive environment to live and work, efficient and effective infrastructure and active community. The Walbrzych Agglomeration is the only intermediate body in Poland with full responsibility for implementing the whole ITI process.⁶⁷

The EIP-SCC Marketplace Matchmaking

The European Innovation Partnership on Smart Cities and Communities (EIP-SCC) is a platform that aims to bring together cities, industries, SMEs, investors, researchers and other smart city actors. The undertaking is supported by the European Commission. The EIP-SCC has set up six Action Clusters to assemble partners committed to work on issues related to smart cities. The aim of the Action Cluster is to share knowledge and expertise with peers.⁶⁸

One important tool is the Action Clusters is the EIP-SCC Matchmaking Marketplace. This is an online platform, launched in May 2018, which connects cities and the private sector with financiers around specific project discussions. The platform is encouraging smart city projects in fields such as energy efficiency, smart mobility and integrated infrastructures. The EIP-SCC also organises regular coordinated meetings between those who submit projects and the financiers.

Which practical problem does the programme address?

The platform facilitates urban project promoters and financiers to connect online. The platform is easy to access for both sides. According to the application instructions, it should not take more than 10 minutes to complete the “Project Submission Form” online. The platform is a way for smaller cities to access finance for smaller energy projects.

Do smaller cities benefit from the programme?

The tool is readily available for smaller cities. This platform is easily accessible for project promoters from smaller cities. There is no project size limit on the EIP-SCC Marketplace website. For smaller administrations with limited resources and know-how, the application process online seems easily accessible and reasonable.

EIP-SCC Business Models, Finance and Procurement

EIP-SCC provides many different guides and tools. The Business Model Action Cluster aims to establish dialogue, identify and remove the obstacles for the development of a smart cities market. The cluster wants to gather and share information on business models, financing opportunities and procurement methods. The cluster has developed two different tools:

1. Funding Guide: The tool provides information about European funding opportunities for the enhancement and development of smart sustainable solutions for cities and regions.
2. Business Models Repository: The tool provides structured and detailed information on business models for projects developing smart city solutions. The aim is to support project development and replicability of projects.⁶⁹

Which practical problem does the programme address?

The Funding guide and Business Models Repository both provide practical and important information to smaller cities seeking information on project management or funding opportunities. The Funding guide can help smaller cities to find the right kind of funding for their project. This can save them time on research for funding. The Business Models Repository provides examples of how other cities have set up their energy projects.

Do smaller cities benefit from the programme?

Smaller cities can benefit from the Business Model Action Cluster’s tools both to navigate in the field of finding the right type of funding, but also access information on smart city solutions and learning points from other cities. A downside of the Business Models Repository is that there are no examples of projects in cities with a population of less than 100 000 inhabitants.

DEEP

The De-Risking Energy Efficiency Platform (DEEP) is an open-source database with an aim to provide detailed analysis and evidence on the performance of energy efficiency investments to support the assessment of the benefits and financial risks. The platform is open to public and private financial institutions, industry representatives and sector experts.

The platform is provided by Energy Efficiency Financial Institutions Group (EEFIG). The EEFIG was established in 2013 by the European Commission Directorate-General for Energy (DG Energy) and United Nations Environment Program Finance Initiative (UNEP FI).⁷⁰

Which practical problem does the programme address?

The DEEP platform provides an opportunity to monitor energy efficiency investments performance and benchmarking. This information can decrease the due diligence and transaction costs for financial institutions, and can also provide better risk assessments. It also provides better information on energy efficiency details for smaller cities to benchmark their energy projects.

Do smaller cities benefit from the programme?

Smaller cities can access the DEEP platform and contribute with information from their own projects as well as receiving information on other energy efficiency projects. It also connects the smaller cities' data to investors.

EEFIG – Underwriting toolkit

Another tool provided by the EEFIG is the Underwriting toolkit, which is designed to assist financial institutions to scale up their deployment of capital into energy efficiency. Although the toolkit is primarily aimed at private providers of finance, the principles described within the toolkit equally apply to public bodies deploying capital into energy efficiency, even if capital is being deployed at below market rates or in the form of grants. In addition, the toolkit aims to assist project developers to develop projects that are more in line with the requirements of financial institutions. The toolkit is extensive and provides practical examples.⁷¹

Which practical problem does the programme address?

The Underwriting toolkit will provide financial institutions with a framework for evaluating energy efficiency investment, making them more confident in evaluating value and risk of the energy investment. This will reduce the due diligence costs for investors. There is also a benefit for the project developers seeking to attract investors, because energy efficiency projects can be developed in a way that better addresses the needs of financial institutions. Furthermore, the project life cycle part of the toolkit provides information on the whole project life cycle, which can be important information for the pre-financing phase, on how to develop a viable energy project.

Do smaller cities benefit from the programme?

Smaller cities can make use of the toolkit and develop their energy efficiency projects to be more attractable to external financiers. The toolkit is quite extensive and sometimes technical, so there it demands some time to navigate through. However, it is positive that cities have a toolkit available that can help them create a project that attracts investors.

4.2. MAPPING EU INITIATIVES

Many existing EU initiatives directly or indirectly solve a number of legal, admin and know-how problems. Programmes like the Urban Agenda Toolbox share best practices amongst investments in cities, assisting in the use of existing funds. Others like the EIP-SCC Matchmaking Marketplace connect cities with financiers and organises regular coordinated meetings between those who submit projects and the financiers.

Indirect benefits from existing programmes like the EIB/Belfius Programme are also substantial. Thanks to the programme it is easier for smaller cities to reach out and compare commercial bank loans for energy project finance. ITI also brings forward a wide array of solutions to smaller cities' project financing. Bundling of project portfolios amongst neighbouring municipalities facilitates better access to finance. Other benefits include delegation of the managing authority to intermediate bodies, regional development bodies or NGOs.

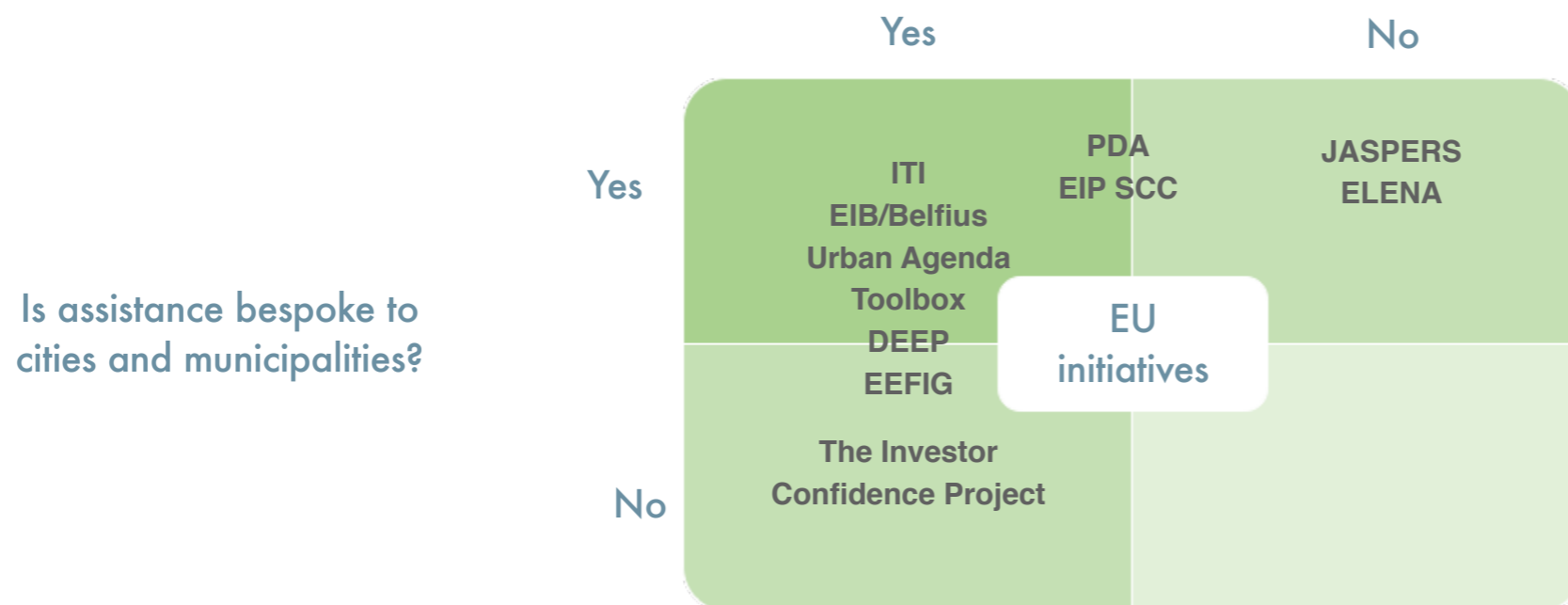
Some initiatives are better suited for the needs of smaller cities than others. The figure below maps the analysed initiatives along two questions:

1. Are minimum investment size criteria low enough for projects in smaller cities?
2. Is assistance bespoke to cities and municipalities?

Programmes like ELENA and JASPERS provide many practical solutions to cities seeking finance for energy projects. Unfortunately, the focus on larger project sizes may exclude smaller cities from benefitting. JASPERS focus lies on larger projects with total costs exceeding EUR 50 million. The investment size must typically be above €30 Mio to benefit from ELENA. As a result, few cities with less than 100 000 inhabitants are part of the programmes. Even though smaller cities don't necessarily have the resources to apply for funding and to carry through a large project under ELENA, the cities can nevertheless learn from the energy projects that received support through ELENA. To benefit from PDA, projects must be at least € 7,5 Mio.

Tools like EEFIG, DEEP and the Investor Confidence Project provide practical guidance to developers, SMEs and public bodies seeking external finance for clean energy projects. For example, the EEFIG Underwriting toolkit assist project developers to set up and manage projects that are more in line with the requirements of financial institutions. The toolkit is not tailored to the circumstances of smaller cities. Yet, it may serve as a good starting point to develop toolkits particular to the needs of smaller cities.

Are minimum investment size criteria low enough for projects in smaller cities?





5

CONCLUSION

Clean energy projects located in smaller cities and municipalities are often economically viable, providing a positive return on investment. Still, many investments are deterred or delayed.

The question arises why few smaller cities across the EU seek external finance for revenue-generating energy projects. Our study finds that the underlying investment terms and conditions are not the only reasons. Local administrations also face practical challenges in accessing external finance. Here, the study differentiated between three phases: pre-financing, financing and project phase.

Particularly, time and efforts related to the pre-financing period often deters or delays projects. Getting projects ready for finance is particularly challenging. Few people work in local administrations. Making time and budget available in setting projects up can be difficult. Moreover, projects are smaller and fewer repetitions possible in smaller than in larger cities, which can limit in-house know-how.

Similarly, external financiers often found it more cumbersome to find and negotiate deals with smaller cities vis-a-vis SMEs or larger cities. Until a bankable deal is ready for the due diligence process can take considerable time and efforts. Thus, better and more effective management in the pre-financing part would benefit smaller cities and external financiers alike. The study took a closer look at many daily problems encountered by the local staff in smaller municipalities and in financing companies alike to identify which practical challenges must be overcome.

The financing phase poses also a number of practical problems. For example, people working in smaller cities may not have direct contacts working at banks, funds or other institutions. Thus, getting into contact and meeting may be difficult. Moreover, legal advice is needed to review contracts. Experience is very important in the context.

Management of projects after financing may also pose a challenge to smaller cities. For example, banks, funds and other external financial institutions may request regular audited data on energy usage or production. Here, small local administrations often lack experience. Moreover, the duration of local administrations may not coincide

with the lifespan of a project. Thus, responsibilities of staff must be clearly assigned and guaranteed in the aftermath of CAPEX investments. Again, solving practical problems of smaller administrations also benefits external financiers. A mitigation of operational and technical risks makes investments more attractive to external financing.

Moreover, many EU-funded programmes, initiatives and projects for clean energy projects already exist. Many solve practical problems like bundling projects across smaller municipalities. However, few smaller cities benefit due to the minimum project size criteria and lengthy application processes.

Yet, many positive example workable solutions exist. To enable learning and formulate recommendations, practical solutions are mapped to each type of know-how, administrative or legal challenge. The table below provides a complete overview of the practical challenges identified in each of the three phase; pre-financing, financing and project life-cycle, from a smaller city point of view. Practical solutions from interview, case studies and existing EU initiatives are mapped to each challenge.

Pre-Financing Phase

	Practical Challenges	Practical Solutions	Relevant EU Initiatives	Relevant Case Studies
Know-how	Pre-evaluation of projects.	Outsourcing pre-evaluation of projects to regional experts. Peer-to-peer learning from other cities.		Case Study 1 and 2.
	Project management and use of tools.	Peer-to-peer learning from other cities.	ITI. Urban Agenda Toolbox. DEEP. The Investor Confidence Project. EEFIG. EIB/Belfius. EIP SCC. ELENA. PDA. JASPERS.	Case Studies 1, 2 and 3.
Admin	Project management.	Cooperating via regional agencies, associations and NGOs to reduce project management costs. Estimating all admin costs and setting up a roadmap using benchmarks. Optimal use of templates and online-tools.	DEEP. The Investor Confidence Project. ITI.	Case Studies 1, 2 and 3.
	Approval processes.	Approval processes simplification by outsourcing to a subsidiary. Providing additional benefits to citizen. Lol early in the negotiation process.	ITI.	Case Studies 1 and 3.
	Bundling projects to reach a critical minimum project size.	Bundling projects into performance portfolios via the use of protocols.	ITI. The Investor Confidence Project.	Case Study 3.
	Setting up a Special Purpose Vehicle (SPV).	Setting up an SPV for multiple projects.		Case Study 2.
Legal	Debt ceiling.	Contracting to circumvent debt ceilings.		Case Studies 1 and 2.
	Legal set up of the project.	Simplify standard legal contracts to meet needs.		Case Studies 1, 2 and 3.
	Collaterals or own equity requirements.			Case Studies 1,2 and 3.
	Third party tendering.			Case Studies 1.

Financing Phase

Know-how	Experience in working with and contacts to external financial institutions.	Intermediary contacts to external financiers.	EIB/Belfius. EIP SCC	Case Studies 1,2 and 3.
Admin	Negotiating with external financiers and comparing offers.		ITI. Urban Agenda Toolbox. DEEP. The Investor Confidence Project. EEFIG. EIB/Belfius. EIP SCC. ELENA. PDA. JASPERS.	Case Studies 1.
	Seeking subsidies and other co-financing.	Combine subsidies and external finance.	ITI. Urban Agenda Toolbox. DEEP. The Investor Confidence Project. EEFIG. EIB/Belfius. EIP SCC. ELENA. PDA. JASPERS.	Case Studies 1 and 3.
Legal	Legal proof-reading of the agreement.			Case Studies 1.

Project Phase

Know-how	Experience in project management.			Case Studies 1, 2 and 3.
Admin	Managing the project over time.	Keeping the technical and operational management in one hand. Optimal use of standards and protocols.	The Investor Confidence Project. EEFIG.	Case Studies 1 and 2.
Legal	Changes in legal ownership and people's responsibilities.	Contracting model.		Case Studies 1 and 2.



Foto: Lublin, Poland

Source: iStock.com/MichalLudwiczak

5.1. RECOMMENDATIONS

Our recommendations are indented to be hands-on and tailored to the needs of small municipalities. Feedback from interview partners and research of existing literature feeds into two types of recommendations: tools and technical assistance. Our suggestion is to firstly apply a few recommendations on a smaller scale, track the outcome, adjust and then reapply.

Our interviews gave examples of energy projects typically in the size €500 000 to €2 Mio that were externally financed. Learnings may help other cities to implement similar solutions. Even if only 10 or 20 smaller cities sought better assistance, the environmental, socio-economic and financial impact could already be noticeable. Insights may also apply to other projects than revenue-generating energy projects.

Tools

Managing the project lifecycle

When managing the project lifecycle, tools and templates on roadmaps and Gantt charts can help local governments estimate all costs and time efforts related to specific tasks. The Energy Efficiency Financial Institutions Group provides, for example a good illustration of the project lifecycle from the perspective of a developer and a financial institution. A structured approach leads to a set of information that makes it easier for a bank or other financial institution to make an investment decision.

A structured project life cycle can help smaller cities and external financial institutions alike. Many admin tasks are bespoke to smaller cities. For example, internal approval processes require time, debt ceiling requirements must be evaluated. The output of such a tool could be a precise calculation of overall management costs and estimated time. Knowing the underlying time and admin costs can help smaller administrati-

ons in managing and planning projects better. Benchmarking the associated costs can be aligned to best practise examples from the public and private sector. Regional and national conditions should inform the benchmarks to be accurate. Knowing exactly how much time and efforts it may take to get projects ready for external finance, enables better planning, speed up internal approval processes and mitigate risks.

Such a template should be also aligned to the needs of external financiers. Information requirements can be gathered at an earlier stage in a waterfall approach, enabling external financiers to quickly assess if projects fit their investment criteria. Moreover, the risks of uncertain approval processes within smaller cities and mismanagement are mitigated.

Assessing the financial return of a project.

In the US, cities have online access to Excel tools like [The Outdoor Lighting Accelerator Tool Kit](#) free of charge. The tool enables a detailed analysis of the costs and benefits of different types of outdoor lighting projects. Such tools can be provided for specific type of clean energy projects. Often priorities as regards investment decisions delay certain project finance. Such a tool can enable cities to make more informed and faster decisions.

A combination of different type of financing can be added to the tools to estimate and compare the financing costs. This could enable smaller cities to quickly compare different type of financing. In the private sector, return on equity can for example can influence decisions regarding acceptable leverage ratios and financing costs. Such decisions are more complex for smaller cities. Clean energy projects often return

CAPEX over time and provide financial benefits after repayment. For smaller cities, a tool estimating the net present value in a standard manner can assist in planning budget and finding internal and external approval. This includes a more informed decision and negotiation about debt ceilings.

Protocols and standard documentation

The use of protocols and standards in documenting energy savings and production have several advantages. It reduces due diligence costs, makes aggregation of projects easier and lowers risks of mismanagement amongst others. Protocols like the [Investor Confidence Project](#) facilitate better financing for energy efficiency projects by increasing confidence in energy efficiency as a demand-side resource.

A number of protocols and standards already exist. As a practical step, it could be advised to research the most common type of energy projects of smaller cities and prepare a list of the best protocols and standards, together with a practical user guidance.

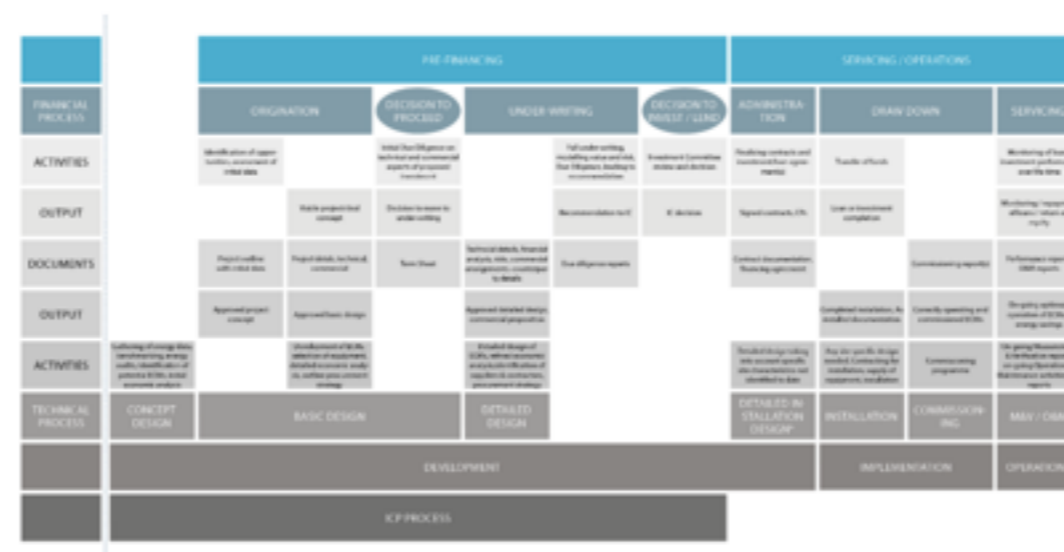
One-stop-shop

To date, a large variety of recommendations, protocols, guidance, case studies and other information already exists. Horizon 2020 projects alone gathered valuable insights and know-how on clean energy finance. Yet, it is unfortunately still time-consuming and difficult to research and find relevant information. The EU Urban Agenda Toolbox is a great tool. Possibly, the tool can be adjusted or copied for the needs of smaller cities in accessing external finance.

The Project Life Cycle, Energy Efficiency Financial Institutions Group

Source:

<https://valueandrisk.eefig.eu/lifecycle>



A general website bears the risk of being too general to be useful. Yet, a specific website may be limited in its reach. A static website with uploaded pdfs is often inefficient, particularly without regular assessment and adjustment of user data. It is unlikely that people will find and use the website.

One approach could be to create websites tailor-made to type of technologies, featuring all online tools, examples, subsidies and most importantly direct local contact numbers. A chat or online email form is a plus but should be only implemented if a person can answer in time. Our suggestion is firstly create one website with complete information for a particular type of investment project in one region. Then, test and adjust the content and even more importantly the display of information. Afterwards, other types of technologies or other regions can be added. The underlying IT costs can be lower at the beginning as no real-time calculations or complex backend structure is required and traffic is relatively low.

Nowadays, the creation of websites is relatively easy and cost-efficient. Yet, improving usability and usefulness is a challenge. A common approach is to firstly develop a Minimum Viable Product (MVP). Then, test and adjust the content.

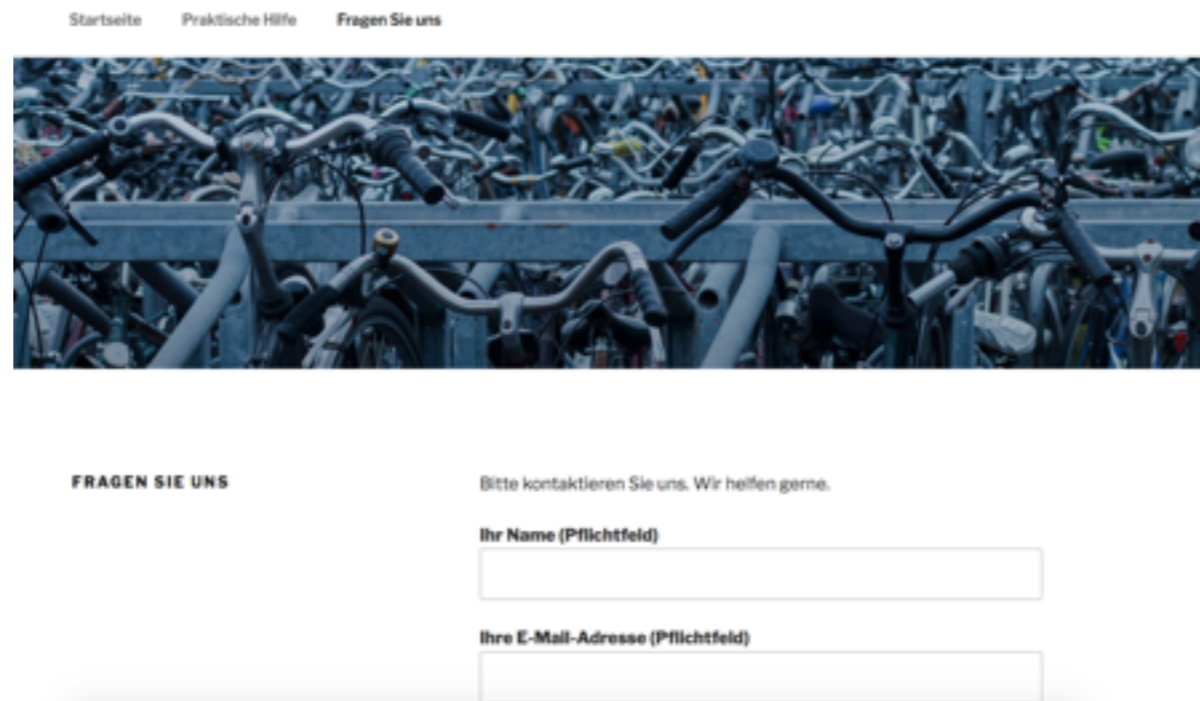
For this study, we created a very simple Wordpress-hosted website under the domain smartcityfinance.com. Its aim is to test the effectiveness of certain information and assessing its regional and demographic reach. One of the main output is an email list of people that voluntarily register under the messaging field. Our approach is agile, involving several subsequent steps.

1. The regional focus is Germany. Thus, the language, keywords and content is in German. The only and most important call to action is a contact form. We tested if local cities search for particular keywords when seeking finance for energy projects.
2. Subsequently, content and keywords of the website were changed to analyse changes in traffic and changes in contact form entries. Interesting findings are that few contacts are submitted from smaller cities. Moreover, terms of specific subsidies and technologies are more effective.
3. Next step is to test key messages and insights from this study. The target audience is defined as people working in local communities on environmental topics. Thus, we may use another language and test resonance for questions people may google. We may define a specific geographic area.
4. If any personal meetings with smaller cities would take place after the study, our suggestion is to integrate a questions & answers section to the website. Collect additional questions from smaller cities, provide direct answers, links to helpful guides and websites.
5. Subsequently, we suggest to integrate one online tool for a particular type of investment project in one region or precise set of information on subsidies or direct contacts. Ideally, cooperate with existing local agencies that already have a good reach. Cross-refer and complement their set of information. A good example is the Austrian website Dachgold.net. The consulting on industrial PV installations laun-

Test Website

Source:

<http://smartcityfinance.com/>



The screenshot shows the top navigation bar of the website with links for 'Startseite', 'Praktische Hilfe', and 'Fragen Sie uns'. Below the navigation is a large image of a bicycle rack filled with bicycles. Underneath the image is a contact form titled 'FRAGEN SIE UNS'. The form includes the text 'Bitte kontaktieren Sie uns. Wir helfen gerne.' and two input fields: 'Ihr Name (Pflichtfeld)' and 'Ihre E-Mail-Adresse (Pflichtfeld)'.

ched its activities with one person and a free online calculation tool of all investment costs per kWh. In addition, related specific blog articles were published on popular specific websites and in journals. Nowadays the [tool](#) is further developed and priced.

6. Then, add more information to provide a complete view on information needed. If successful, expand to other types of investment projects or regions.

We do not see the development of such a one-stop-shop online tool as a standalone product in the beginning. It would be complementary to personal meetings since functional requirements must be closely aligned to user's needs.

Other online media

Whenever any online portal is created, the use of newsletter, online collaboration tools, e-magazines and other online tools can be useful.

[Belfius](#) approach in featuring case studies, journals and relevant case studies bespoke to the financing needs of municipalities in Benelux is a positive example. Staff in smaller cities can pick up the phone and find a direct contact partner at Belfius to discuss their particular projects.

Another approach is to make use of online collaboration tools like basecamp. One of the services of REScoop is to ask specific questions, share information and work jointly on tasks via basecamp. Any cooperative around the EU can ask a question to another cooperative via the tool. Online collaboration tools are also widespread across other sectors. Here, one party must, however, moderate and control the content and usage. It could be done at regional levels by agencies or federations.

Many smaller cities and municipalities have websites, often even with online portals for their citizen. We would strongly recommend a format that is user-friendly and close to the type of formats used to date by smaller cities. Additional logins are for example always a hassle, particularly when the service is only used infrequently. If Excel is the most common format, any tools and guidance shall be in the same format, easy to download and copy paste.

The underlying format of this report is already in Apple iBooks. Hence, creating an ebook would only be a question of a few hours. Then, it can be viewed on devices like tablets or smartphones. Yet, few people read long reports on tablets or in general nowadays. Thus, it makes more sense to extract key messages for the relevant audi-

ence, i.e. smaller cities. It may include a questions and answers section. All challenges encountered in this study could be extracted and paired with solutions from examples and existing EU initiatives. Ideally, direct contact numbers, tools or websites are prompted afterwards. This could save time when looking for answers and be more user-friendly than pdfs.

Gather insights from more cities

We suggest to complement the findings on challenges and solutions with insights from other cities. In our experience, general emails had little results. We thus spoke to direct or indirect contacts. Yet, if the format is distributed in any type of format, we would recommend to include a link where additional questions can be asked, examples added or solutions proposed. An inexpensive way is for example a link to a google online form.

Workshops and meetings

Workshops are a good way to share information about best practise examples and solutions. Insights from several interviewees revealed that regional gatherings are most effective. Examples from neighbouring cities are most valuable in the context. A relevant question is at which stage information shall be shared. Our recommendation is to help cities that are already looking for finance and searching for solutions.

Many Horizon 2020 projects have already organized workshops. Moreover, there are several EU-wide conferences on related topics during the year. Any additional workshop shall be complementary and bespoke. Possibly, a side event during a larger conference makes sense to lower traveling costs and time for participants.

Interviewees said that they would benefit from bespoke information sessions like legal set up of energy contracting for public housing renovations or setting up and managing an SPV across municipalities. Some also stated that they would be happy to share their experience amongst local municipalities nearby. For example, local municipalities must often meet similar national and regional legal requirements. Thus, if one city already set up a legal energy contracting frameworks, other cities would benefit from a meeting to share the insights. Alternatively, it would save legal costs and time to develop the knowledge in-house. There are direct opportunity costs.

Our recommendation is to test interest prior to organizing a workshop or meeting by asking potential participants to submit questions upfront and answering questions

afterwards. It helps to track how effective a meeting was in solving problems and how actively people participated. If the feedback is negative, the format should be adjusted.

Technical assistance

Project management

In several interviews, we learnt that smaller cities which gained experience are keen on helping other cities and municipalities in their regions. Often the time and costs of setting up a follow-up project are significant smaller since knowledge has been gathered. Yet, there is no financial incentive to provide the advisory on a free basis to other cities. Following services may be outsourced:

- Screen and evaluate which projects are technically and economically suitable for project finance
- Pool projects together via a SPV or other means
- Evaluate the best legal set up, which does not constrain smaller cities' budgets and provides predictable annual payments and returns
- Set up contracts that are easier to understand and fit for the purpose. Evaluate for example, which parts of standard EPC contracts are really necessary and helpful to the particular circumstance of a smaller city.

Insights from a project management tool as proposed earlier could estimate the underlying management costs and time. Hence, the advisory service could be benchmarked.

Regulations, financial systems and stakeholders are often specific to regions and countries. Thus, local agencies can be effective. Firstly, it is recommendable to look at existing regional agencies that already provide such services like the Vlaams Energiebedrijf in Belgium, Ecooo-Local in Spain or ASEW in Germany. Then, see which particular services are most valuable in overcoming the practical challenges. Technical assistance could be defined to support to these agencies. Each time, we would recommend to define the output in terms of actual projects being financed. The timing and implementation can be tracked and compared.

Outsourcing always bears the risk of losing in-house know-how and skills. In energy project finance, repeat projects provide good learning effects. If many repeat projects exist, developing the skills in-house could thus be better. Yet, investment cases for

some smaller cities may not be as frequent, hence the sunk costs of setting up a project could be too high.

The process of applying for such assistance must be tailor-made to the needs of smaller cities. The time and efforts shall be proportionate to the underlying benefits. Successful existing EU programmes like ELENA show that technical assistance are effective in improving project development and management. However, the application process is often too cumbersome for smaller cities.

Legal assistance

Often, legal costs and uncertainty demotivates smaller cities from accessing external finance. Three type of assistance could be effective in this context:

1. **Templates.** Standard templates could reduce legal fees. Existing legal templates like EPC could serve as a starting point. To be effective, standard legal documents should be tailor-made to circumstances of smaller cities in particular regions. Third-party tendering may, for example, be subject to particular national or regional regulatory constraints. Thus, follow-up work is needed to simplify and adjust existing templates.
2. **Legal roles and responsibilities.** A clear definition of roles and responsibilities in particular legal set ups like contracting can help mitigate risks. Here, the legal set up, external financing and type of project matter.
3. **Assistance.** At times, simple costs like notary fees for the incorporation of an SPV can delay or deter investments. As such, we recommend bespoke legal assistance for specific tasks like legal proof-reading, notary costs related to setting up an SPV and others.



Photo: Oostende, Belgium
Source: iStock.com/Erik_V.

APPENDIX

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