



PROSPECT

Peer Powered Cities and Regions

Innovative financing of public buildings and street lighting

Overview of the PROSPECT project

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1. About PROSPECT | who we are



Key questions:

- How can public authorities **carry out simple energy interventions** to secure investments for joint sustainable initiatives?
- What can public authorities **learn from successful and less successful projects and initiatives** and about planning and design phase to accessing funds, developing financing schemes or better access to finance?

Info:

- Horizon 2020 RIA June 2017 – May 2020, Contract number: H2020-EE-09-2016-2017/752126
- **Legal coordinator:** Institute for Housing and Urban Development Studies BV – IHS
- **Scientific coordinator:** Institute for European Energy and Climate Policy Stichting – IEECP
- 8 other partners, from total 8 countries



Develop and execute a complete peer to peer learning programme

- 5 annual peer to peer learning modules planned and delivered
- 50-60 single or multi-peer self-assessment per year
- Accreditation scheme developed and applied for new peers in each learning module

Create effective and productive peer to peer groups

- Matching of 5 peer to peer Module groups with 10-15 members per year
- Participation of minimum required number (10) of peers per Module
- 3 site visits from peers per Module per year

Build partnerships

- Paired engagements per module per year could lead to at least 20% rate of building partnerships within the learning programme. Online networking within and outside the city/regions networks through online activities and web-platform could lead to 20% rate of online partnerships

Identify and set up proper replication mechanism

- Number of national peer networks
- 20% rate of Replication of learning programme from individual participants to their organizations
- 20% rate of Replication of learning programme from participants to other local or regional authorities in the same country of participating organizations

Types of projects for public buildings with innovative financing



Action	CO2-saving potential	Estimated costs for municipality	Cost-benefit ratio	Implementation time frame	Target group	Key actors
Energy management for municipal buildings	Medium	Savings above expenses	Very high	2-3 years	Municipality	Municipality, External experts
Energy saving contracting	High	Very little to none or negative cost	High	1 year, contract will last for 7-20 years	Municipality	Municipality and ESCO (contractor)
Improvement of municipal indoor lighting	High	Medium	High	1 month	Municipality	Municipality and ESCOs specialising in lighting
Energy check for municipal buildings	Medium	1000 euros (average per building)	High	1 month	Municipality	Municipality, Energy expert
Building standards in new construction of municipal buildings	Medium	About 10-15% higher than conventional buildings	Medium	1-2 years	Municipality	Municipality, External experts
Building standards in refurbishment of municipal buildings	Medium	About 10-15% higher than conventional buildings	Medium	1-2 years	Municipality	Municipality, External experts
Implementation of renewable energy sources at municipal buildings	Medium	<10 cents /kWh	Medium	3 months	Municipality	Municipality, External experts

Adapted from the [SEAP ALPS Project](#)

2. Sources of innovative financing



- ▶ Link to [quick reference guide](#) for all financing opportunities for local climate and energy actions from the Covenant of Mayors. The guide shows who the beneficiaries are, the participating countries, the focus areas, type of funding, managing structure and coordination, and further information.
- ▶ We found successful examples of innovative financing for public buildings in lighting through three schemes:

Financial Schemes for public buildings and public lighting:	
Energy Performance Contracting (EPC)	Energy Performance Contracting (EPC) is a method to implement energy efficiency projects, by which an ESCO (Energy Services Company) acts as a unique contractor and assures all of the steps of a project, from audit through installation up to operations and maintenance. The ESCO delivers a performance guarantee on the energy savings and takes responsibility for the end result. The EPC contract is the contractual agreement by which the output-drive results are agreed upon.
Crowdfunding	A crowd-funding involves an open call, mostly through the internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights.
Revolving Fund	A fund established to finance a continuing cycle of investments through initial amounts received from its shareholders, creditors or donors and later on through amounts received from reimbursements of provided funding or loans to projects. These recovered funds become available for further reinvestment in other projects under similar scope (e.g. revolving funds for sustainable energy will use the loans recovered funds to finance new sustainable energy projects.

Learning Program Steps

Step 1 : Getting Started

Online Orientation Session

Step 2 : Working Together

Online Learning Plan Development & Peer Learning Activities

Step 3 : Meeting Up

Physical Visit and Peer Learning Activities

Step 4 : Moving Forward

Online Transferability Assessment & Evaluation - Feedback



- ❖ Modules handbook
- ❖ Basic content prepared by PROSPECT about the main innovative financing schemes under each module.



3. Innovative financing for public buildings



Best practices – public buildings



► Cases were chosen through desktop research and with highest ‘demand’

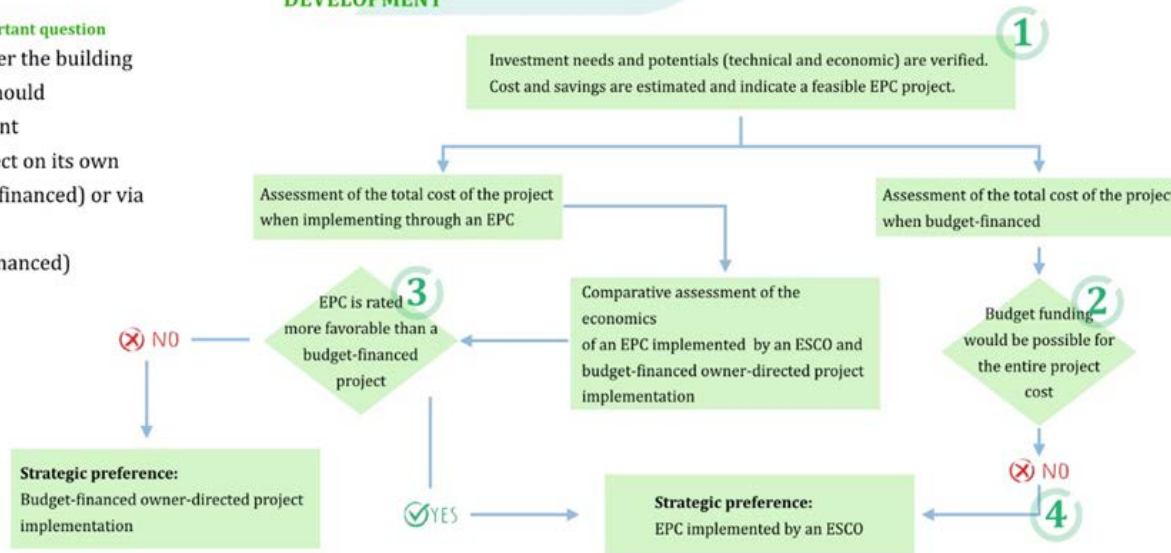
Financing Scheme	City/Region	Best Practice	Source of funds
EPC	Umeå (SE)	Creative financing for energy renovation	Private Sector Institutions and Investors + Own Local budget
	Rotterdam (NL)	Rotterdam Green Buildings	European Funding Programmes (INTERREG NEW) + Own Local budget (City of Rotterdam invested EUR 1 million)
	Greater London Authority, England and Wales (UK)	RE:FIT	Project Development Assistance (ELENA) EUR 2,884,680 (LDN) EUR 2 228 227 (Wales) + Own Local budget (Greater London Authority GBP 270 000 (approx. EUR 307 000)+ Other public authorities' building owners + public financial institutions and funds as Public Works Loan Board, Salix or London EE Fund
	Flemish Region (BE)	Regional Energy Services Company Vlaams Energiebedrijf – VEB	Own Local budget (Flemish Region, Flemish investment company & VEB)
	Paris (FR)	Refurbishment of municipal schools via EPC (ELENA project)	Project development Assistance: ELENA EIB + Own Local budget + ESCO (public-private cooperation)
Third Party Financing – EPC	Ljubljana (SL)	(Energetska Obnova Ljubljane (EOL)	Project Development Assistance (ELENA) + Own Local budget +Private Investments (bank consortium)
Revolving funds	Stuttgart (DE)	Stuttgart's Internal Contracting scheme (Infinite Solutions)	Own Local budget (municipality)
	Águeda (PT)	Águeda's Internal Contracting scheme (Infinite Solutions)	Own Local budget (municipality)
	Koprivnica (HR)	Koprivnica Fund	Own Local budget (Municipality + Regional Authorities)
	Province of Liège (BE)	Renowatt	Own Local budget + Private Sector Institutions and Investors + Financial Institutions Instruments (EEEE – Technical Assistance EUR)

Development of an EPC – public buildings



Most important question is whether the building owner should implement the project on its own (budget-financed) or via an EPC (ESCO-financed)

STRATEGY DEVELOPMENT



Source: EnPC – INTRANS (2015)

- For different business models of an EPC project, a decision tree for public buildings, incentives and barriers and much more, check EnPC – [INTRANS](#)
- Learn more about the EPC Code of Conduct from [TRANSPARENSE](#)
- See [GIZ report](#) on assessing framework conditions for energy service companies in developing and emerging countries

Related projects – public buildings



CombineS: Combing energy services with subsidy schemes to finance EE in Central Europe

EFFI: Efficient implementation of energy services in SME

EnPC Intrans: Capacity building on energy performance contracting

ENTRANZES: Policies to enforce the transition to nearly zero energy buildings in the EU-27

EUROCONTRACT: European platform for the promotion of energy performance contracting

EPC_PLUS: Energy performance contracting plus

TRANSPARENSE: Increasing transparency of energy services markets

Example: EPC with private sector



- Location: Umea, Sweden/ Project: Creative financing for energy renovation

Results

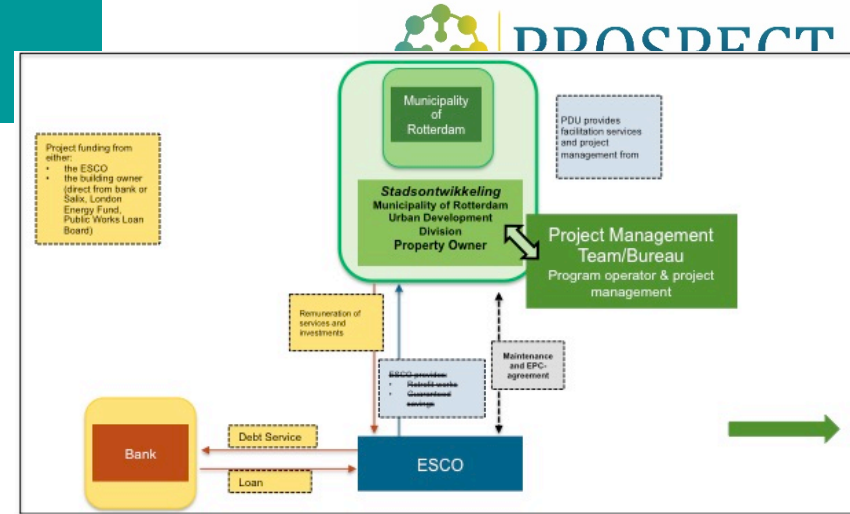
- This is Sweden's largest energy performance contract (EPC) project, combining private investment from Siemens with public funds.
- 130 properties were retrofitted (425,000 m2 floor area, 50%+ of total area of municipally owned buildings) over 8 years from 2008-2016. Consistently exceeding its targets, the total investment of EUR 15.2 million has resulted in an annual saving of EUR 1 million from an energy reduction of 20%, along with a decrease in CO2 emissions by 5,800 tons/year and a number of other, smaller benefits.
- This project has been chosen due to its ambitious scale, its recent completion and the highly beneficial ratio of investment/return for the municipality.

References:

- http://www.covenantofmayors.eu/IMG/pdf/CovenantOfMayors_BestPracticePublication_web.pdf#page=7
- <http://www.umea.se/download/18.65c1214d14f38ac155364e34/1446109851846/01.+Climate+change+Mitigation+and+Adaptation.pdf>

Example: Local budget with public funds

- Location: Rotterdam, the Netherlands
- Project: Rotterdam Green Buildings



Results

- This project combines European structural investment funds (ESIF), municipal investment, and energy service company (ESCO) funding. It has already achieved scale-up from its pilot phase.
- The pilot, focused on public swimming pools, raised an investment of EUR 2.6 million, 10% from equity provided by the ESCO, 90% from bank loans to the ESCO. It resulted in improved energy efficiency of 34%, and savings on gas, electricity, heating and water of 43%, 56%, 35%, 9% respectively, representing a CO2 emissions decrease of nearly 2,000 tons. Additionally, there was a saving of 15% in maintenance costs, and in seven of the nine pools the water quality actually improved too.

References:

- <http://www.cityinvest.eu/content/rotterdam-green-buildings-0>

Example: Local budget and banks



- Scheme: Third party financing – EPC
- Location: Ljubljana, Slovenia
- Project: Energetska Obnova Ljubljane (EOL)
- Sources of funds: Project Development Assistance (ELENA) + Own Local budget +Private Investments (bank consortium)

Results

- With a total cost of EUR 1,498,400, 90% supplied by ELENA, this project mobilized investment of EUR 50,700,000. The replication potential is considered high, notably the use of ESCOs for energy efficiency and renewable energy products. The largest project of its kind in Slovenia, it may become the model for similar projects in the country. To achieve economies of scale, several tenders have been organized for groups of similar buildings, or buildings looking to implement the same green technologies. It has resulted in total energy savings of 79 GWh per year, achieving a 24,593 tons annual reduction of CO₂.

References:

- <http://www.eib.org/attachments/documents/elena-completed-eol-en.pdf>
- http://www.transparence.eu/tmce/Gradiva/7-the_energy_retrofit_programme_by-_loose.pdf

4. Innovative financing for street lighting



Best practices – public lighting



- ▶ All best cases in lighting were financed through EPC. Most of the projects were implemented in the frame of the project “Streetlight-EPC”, funded by the Intelligent Energy Europe Programme

City/Region	Best Practice	Source of funds
Municipality of Gunskirchen, Upper Austria (AT)	Refurbishment of street lighting system to energy-efficient LED technology	ESCO and own Regional budget (subsidies of regional contracting programme)
Municipality of Dírná, Aouth Bohemia, Czech Republic (CZ)	Small project: Renovation of public lighting on the main square	Own local budget and local government subsidy
Municipality of Kostrena, North-West Croatia (HR)	Replacement of street lighting and improvements to parts of the infrastructure (e.g. pole replacement and repair, relocation of the measuring points, implementation of a street lighting monitoring system).	National Fund and the Environmental Protection and Energy Efficiency Fund
Kilkenny City, Carlow Kilkenny County (IE)	Improvement of the lighting standard and energy efficiency of the street lighting system via EPRP (Energy Performance Related Payment), a type of EPC model	Own regional budget through a grant from the Sustainable Energy Authority of Ireland (regional contracting programme) + ESCO
Province of Teramo (IT)	Management of street lighting installations through private companies and ESCOs	Project Development Assistance: IEE and Third party financing (ESCO)
Municipality Demir Kapija, Macedonia (MK)	Reconstruction and expansion of the existing street lighting system (urban and non-urban)	ESCO (a supplier and equipment provider from the private sector)
Municipality Gdańsk-Zaspa – Park JP II, Pomerania (PL)	Energy Saving Lighting of Pomerania	Own regional budget and the Voivod Fund for Environmental Protection and Water Management in Gdańsk
Kalmar, Southeast Sweden (SE)	Lighting renovation of pedestrian and bicycle tunnels with Life Cycle Costs (LCC) calculation	Own Local Budget and ESCOs

Recommendations for implementing EPC for public lighting



Here are some recommendations for implementing EPC projects from the STREETLIGHT EPC Project:

- Good technical project preparation is key. EPC is a long-lasting partnership – the right approach in project preparation is therefore key for the success of the project
- LED: offers choice, requires knowing your needs. LED solutions are proven technologies that are suitable for very small and very large projects and that permit high-energy savings at high lighting comfort levels.
- Better projects through EPC. If the right approach is taken, EPC supports solutions with higher level technical quality than would have otherwise been chosen.
- Small is (also) beautiful. In order to profit from European financing mechanisms, projects need multiple-million level investments. Also, in principle, specific transaction costs in relation to savings decrease with the project size, making more projects economically viable.

Related projects – public lighting



Streetlight-EPC: Creating demand and supply for EPC street lighting refurbishment projects in 9 regions in Europe by setting up regional EPC facilitation services

PARIDE: Province of Teramo (Italy) provides technical assistance to accelerate the implementation of tangible investments on energy efficiency in the street lighting sector

DYNAMIC Light: Towards, dynamic, intelligent and energy efficient public lighting

TRANSPARENSE: Increasing Transparency of Energy service markets

EnPC Intrans: Capacity building on energy performance contracting

Toolbox and materials:

- [Guide to Streetlight Refurbishment with Energy performance Contracting](#)
- [Checklist for Streetlight Refurbishment with Energy performance contracting](#)
- [Quick check lighting refurbishments: hall](#)
- [Quick check lighting refurbishment: outdoor parking](#)
- [Policy recommendations from the STREETLIGHT EPC Project](#)

5. How to join the Learning programme

- For people working in European cities, municipalities, regions or their agencies
- Either join as mentor or mentee
- Choose among the five modules:
 - Public buildings
 - Street lighting
 - Private buildings
 - Transport
 - Cross-sectoral

- The next campaign will be in June and July 2018.
- Visit www.h2020prospect.eu and learn more!
- Follow us: [#h2020prospect](https://twitter.com/h2020prospect)

Thank you!

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