PUBLEnEf
energy efficiency policy support

Supporting PUBLic Authorities for
Implementing Energy Efficiency Policies

D5.2 Summary of materials for good practices and tools for addressing specific needs

Work Package: 5

Deliverable: 5.2

Work Package Leader: JIN

Team Leader: CEI

Authors: JIN, CEI & ENEA

Date of Delivery: January 2018

Preface

This Deliverable Report (D5.2 Summary of materials for good practices and tools for addressing specific needs) has been generated following the completion of tasks T2.1 and T2.2 from WP2, T3.1 from WP3 and partial completion of task T5.1 from the WP5. The deliverable provides a comprehensive summary of main outputs from the previous tasks with an additional value of presenting how each presented good practice and tool addresses specific needs.

Table of Contents

Organisation Name Abbreviations

JIN (Coordinator) – Stichting Joint Implementation Network, Groningen, Netherlands

ABEA – Association of Bulgarian Energy Agencies, Plovdiv, Bulgaria

AEEPM – Local Energy Agency Bucharest, Romania

ARENE – Île-de-France, Paris, France

CEI – Centre for Monitoring Business Activities in the Energy Sector and Investments, Zagreb, Croatia

CIEMAT – Research Centre for Energy, Environment and Technology, Madrid, Spain

CRES – Center for Renewable Energy Sources and Saving, Pikermi, Greece

ENEA – Italian National Agency for New Technologies, Energy, and Sustainable Economic Development, Rome, Italy

Energy Cities – Besançon, France

ESV – OÖ Energiesparverband, Linz, Austria

FEDARENE – European Federation of Agencies and Regions for Energy and the Environment, Brussels, Belgium

ISNOVA – Institute for the promotion of innovation technologies, Rome, Italy

KAPE – Polish National Energy Conservation Agency, Warsaw, Poland

TEA – Tipperary Energy Agency, Ireland

1 Introduction

PUBLENEF (Supporting Public Authorities for Implementing Energy Efficiency Policies) Work Package 5, Task 5.1 – Adapting tools and materials for energy efficiency policymaking, was completed following the finalisation of tasks from previous work packages, mostly WP2 and WP3. Additionally, the WP5 tasks were all interconnected and focused on the same data available from the previous tasks but modifying and matching it with a different perspective in order to come up with comparative results that address a whole set of energy efficiency related questions.

This Work Package was led by JIN Climate and Sustainability (JIN) with the Centre for Monitoring Business Activities in the Energy Sector and Investments (CEI) as Task 5.2 leader. The task 5.2 activities relied greatly on the ongoing work from the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), i.e. task 5.1.

The purpose of the PUBLENEF project is to help EU member states to implement useful sustainable energy policies, by showcasing examples of effective practices from other member states. The objective of this Work Package is to provide PUBLENEF partners and addressed policymakers and stakeholders with the necessary resources that cover their specific needs, both during the development of the roadmap, various events and assist in promoting general energy efficiency awareness as well as capacity building.

The main objective of this task is to make the best use of the all findings from other tasks in the project and by adapting the information showcase how gathered best practice examples and tools can help users address different energy efficiency (EE) related needs on different levels.

2 Task Management

In order to produce D5.2, this task was based on:

1) the preparation of a template for presenting good practice examples and tools;
2) gathering all the findings from previous work packages and tasks;
3) developing the evaluation criteria and
4) analysing, adapting and modifying the data to produce a comprehensive overview in a summary format.

The objective of the WP2 was to gather good practice examples, as well as needs assessments from different member states. In task 2.1. Consortium gathered 55 good practice examples out of which 20 were selected based on the SWOT analysis score. Task 2.1 resulted in a **Compilation of good practices case study reports (D2.1).** The task 2.2 identified needs for EE policy implementation and improvement at local, regional and national levels. **The compilation of needs assessment reports (D2.2)** describes the preparation of a template for the needs assessment, the gathering of 55 needs assessment responses, and the SWOT analysis of the gathered responses.

WP3, Task 3.1 classified good practises (GPs) and needs have by levels (national, regional and local) and by topics (Energy Efficiency Directive articles or area of interest of Energy Efficiency Directive. After matching the data, task 3.1 resulted in the **Report on results of matching assessment of policy needs with best practices (D3.1).**

This Deliverable Report **(D5.2 Summary of materials for good practices and tools for addressing specific needs)** consists of extended summaries of good practices and tools listing the practice/tool transferability potential details and needs the practice /tool addresses. The report is structured in two parts: the first section includes a complete overview of the good practices collected in the WP2 where in the second one, the tools collected in the WP3 are presented in the same format.

In order to improve the practical use of this report, the details related to the precise individual activities of previous work packages and tasks are not described but can be found in previously issued deliverables, available at the Public deliverables section: http://publenef-project.eu/

3 Summary of good practices addressing specific needs

The summaries compiled in the chapter 3 present the good practices and tools. Good practices are listed in the order of collection, where tools are organized by the country of origin. Both good practices and the tools are presented in the table format. Besides the short description of the best practice examples and tools, the tables also include contact information for each good practice or tool, in case additional information is needed.

Each good practice and tool summary also provides information on replicability and transferability potential which enables the user to evaluate the practical use of the practice/tool in their own context. Information on good practice/tool levels are divided into local, regional and national. In some cases, the levels are overlapping which is always indicated in order to assist the user in the process of evaluating applicability. Information on the language of the good practice/tool is presented as a guideline only, usually, it refers to the national language of the practice/tool. Often additional information is available in English as well. Transferability information mostly relates to the levels on which the good practice/tool is best suited for replication. Needs addressed section refers to specific needs or potential areas of improvement according to the articles of the Energy Efficiency Directive. The idea was that the with all the information presented the user can more easily find the good practice/tools that address their specific needs and at once get all the relevant information, either to use it as an inspiration, new insight or as a first step in future collaboration and replication of international experiences.

GP 1: Biomass District Heating – Tralee, Ireland

Implemented by: Kerry County Council

Kerry County Council developed a strategy to establish Tralee as an energy efficient self-sustaining region. Smart district heating has been identified as a central element to the county's transition to 100% renewable energy supply. The concept of a biomass district heating system is a simple one – the centralised production of heat through a network of insulated pipes, usually underground. Fuelled by locally grown and harvesting wood fuels, community biomass district heating systems are commonplace across Europe. The aim of the project was to transform the local economy through job creation, to achieve a high living standard and excellent quality of life, and build a green economy in Kerry. Efforts in the area of DH development must be focused toward the delivery of systems utilising locally sourced renewable fuel supplies, thus serving to stimulate local employment (directly, indirectly and induced). It is expected to display imported fuel and reduce CO_2, save € 1920.70 and 21000 kWh in Thermal and 2000 kWh in Electric energy.

CONTACT: Sandy McSwiney, e-mail: sandy.mcswiney@kerrycoco.ie, Tel.: +353 66 7191300
Tim McSwiney, e-mail: tim.mcswiney@kerrycoco.ie,Tel.: +353 66 7191300

LEVEL	Regional and local
LANGUAGE	English
TRANSFERABILITY	YES, at the regional and local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (Art. 4) • At the national level no comprehensive assessment has been carried out of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling (Art. 4)

GP 2: NEWLIGHT: a potential solution for up-scaling investments in Energy Efficiency and Renewables, Croatia*

Implemented by: North-West Croatia Regional Energy Agency

The NEWLIGHT Project was the first of its kind in Croatia. In the framework of art. 5 of the EED and the Strategy of Energy Development of the Republic of Croatia, REGEA started public lighting reconstruction, using environmental-friendly luminaries in order to reduce light pollution. The project main objective is the modernisation of public lighting systems in 57 Croatian cities and municipalities based in Zagreb County and Krapina-Zagorje County. Energy efficiency measures under this project are aimed at replacing luminaries by more energy-efficient technologies such as LED and installation of the power control (dimming), with the potential to achieve energy and cost savings of 60%. Auxiliary operations such as reconstruction of lighting poles and replacement of power cables were also included. With these measures, REGEA expects to modernise around 34 000 lighting points, reduce energy consumption by 19 GWh and CO_2 emissions by 5 000 tonnes, and develop an EPC/PPP market in Croatia and increase competitiveness of domestic ESCO providers.

CONTACT: Ivan Przulj, North-West Croatia Regional Energy Agency, e-mail: iprzulj@regea.org; newlight@regea.org;
Tel.: +385 1 3098 315
Website: http://www.regea.org/

LEVEL	Regional
LANGUAGE	Croatian and English
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• The government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5) • The public sector does not use energy service companies, and energy performance contracting, to finance renovations and implement plans to maintain or improve energy efficiency in the long term (Art. 5)

* same project as collected in the GP9

GP 3: Integrating 'sustainability' in all departments, Netherlands

Implemented by: Municipality of The Hague / Den Haag

The municipality of The Hague in the Netherlands has chosen to integrate sustainability, climate change, and energy policy into all aspects of the local government's activities and policies, rather than creating a large sustainability department. Sustainability policy is implemented through various units, such as the housing department and the mobility department, while the small sustainability team focuses on cross-department collaboration. By involving 'sustainability ambassadors' in The Hague's neighbourhoods, the sustainability issue is also put on the agenda among the citizens. By involving sustainability ambassadors' in The Hague's neighbourhoods, the sustainability issue is also put on the agenda among the citizens. The key objective in the end is to convert The Hague as energy neutral by 2040. For now, The Hague aims to be in line with the national and EU targets. The Hague currently also aims to serve as expertise center for municipalities in the Haaglanden conurbation region (in essence to help smaller municipalities that often only have one person responsible for sustainability).

CONTACT: Erwin Hofman of JIN Climate and Sustainability, e-mail: erwin@jin.ngo
Website: https://denhaag.raadsinformatie.nl/document/3323147/1

LEVEL	Regional and local
LANGUAGE	Dutch
TRANSFERABILITY	YES, at the regional and local level.
NEEDS ADDRESSED	• The government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5) • There are no EE policy public sector strategic goals with defined targets at the national level(Art. 3)

GP 4: Joint procurement process for purchasing bulk energy in the Zlín Region, Czech Republic

Implemented by: Energy Agency of the Zlín Region

The Energy Agency of the Zlín Region (EAZK) has been carrying out a procurement process for purchasing bulk energy for the organisations established by the Zlín Region since 2007. Through the coordinated process, considerable results have been achieved, especially concerning savings on energy bills. This action is the example of a functional model of multilevel governance, in which a region provides independent technical capacity and expertise through its own organisation (energy agency), and municipalities provide their technical and energy data suitable for monitoring and more effective energy planning on both municipal and regional level. As a directly measured impact, the model of the joint procurement for purchasing bulk energy generates considerable savings suitable for further investments to the energy efficiency or RES development on both regional and municipal level.

CONTACT: Tomáš Perutka, Energy agency of the Zlín Region, Tel.: +420 577 043 945, e-mail: tomas.perutka@eazk.cz
Website: www.eazk.cz

LEVEL	Regional and local
LANGUAGE	Czech and English
TRANSFERABILITY	YES, at the regional and local level.
NEEDS ADDRESSED	• the central government in yourcountry does not purchase energy efficient buildings, products and services (Art. 6) • the wider public sector does not purchase energy efficient buildings, products and services at national level (Art. 6) • there are no long-term energy performance contracts in place in the public sector (Art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (Art. 6)

GP 5: AGIR (Action Globale Innovante pour la Région – Innovative Global Action for the Region), France

Implemented by: Provence-Alpes-Côte-d'Azur

The programme provides technical and/or financial assistance to exemplary and innovative actions towards energy savings and renewable energy sources. It uses annual and permanent calls for projects, some of which are permanent and others sectorial. The idea is to support a large variety of initiatives stemming from many different stakeholders (public bodies, local authorities and professionals representing enterprises) by using a participatory approach. The organisation of this approach at the regional level makes it possible to obtain a global vision of local initiatives, to pool projects and thus gain more in terms of impact than the sum of individual projects. The programme was initiated to compensate for the development of the ITER nuclear energy project, with the following policy: for each euro invested in ITER, 1€ will be invested for energy efficiency and renewable energy. The second period of the programme (from 2011 onwards) was financed from the region and not from ITER but it still helped implementing and developing energy efficiency and renewable energy.

CONTACT: Valentin Lyant, e-mail: vlyant@regionpaca.fr
Website: www.regionpaca.fr

LEVEL	Regional
LANGUAGE	French and English
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5) • there is no programme for conducting energy audits in the public sector at national, regional or local level (Art. 8) • energy audits does not include both technical and financial feasibility assessments (Art. 8) • financing facilities are not established for energy efficiency improvement measures (Art. 20) • European financial institutions are not utilised for financing and technical support schemes (Art. 20) • the National Fund is not accessed and utilised by the public sector (Art. 20) • financing facilities are not established for energy efficiency improvement measures (Art. 20) • innovative financing mechanisms are not used (Art. 20) • Insufficient information on training possibilities (Art. 17) • Insufficient information on energy technologies (Art. 17) • Insufficient information on legal and administrative aspects (Art. 17) • Insufficient information on financial tools (Art. 17) • Insufficient information on technical tools (Art. 17)

	• lack of in-house expertise about energy technologies (Art. 17) • lack of in-house expertise about financial tools (Art. 17) • absence of automatic tools supporting EE measures development (Art. 17) • absence of software supporting EE measures development (Art. 17) • support organisations have insufficient competency and knowledge (Art. 17) • absence of guidelines & handbooks supporting EE measures development • inadequate information on best energy efficiency practices (Art. 17) • absence of support organisations in your territory addressing energy efficiency matters (Art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (Art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (Art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (Art. 18) • no access to model contracts for energy performance contracting (Art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (Art. 18) • no qualitative review in the framework of the National Energy Efficiency Action Plan regarding the current and future development of the energy services market has been completed (Art. 18) • no measures in place to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting (Art. 18) • the public sector doesn't use energy service companies, and energy performance contracting (Art. 18) • Insufficient in-house expertise about energy technologies (Art. 17) • Insufficient in-house expertise about financial tools (Art. 17) • Insufficient in-house expertise about technical tools (Art. 17)

GP 6: The Night Hawks project - Night Walks: off production hours site inspections i.e. energy checks, Sweden

Implemented by: Energikontor Sydost AB

Night walks are on-site energy surveys held at times when businesses are closed to the public. Energy experts conduct the survey with a view to identifying areas of energy waste within a business, in order that a bespoke action plan can be produced and implemented so as to enable direct and significant energy savings. The project has raised awareness about energy efficiency in the retail industry. Most managers and decision-makers know that reducing costs can increase profit, but they do not realise that every day that passes without energy savings costs money. Some of them (both in shops, shopping centres and retail parks) have limited interested in energy efficiency because they do not see its economic potential. Therefore, it was important to show the concrete potential savings that exist in their premises. The method of Night Walks was initiated by the Energy Agency for Southeast Sweden and has been developed and performed in collaboration between eight European partners (Sweden, Cyprus, Denmark, Italy, Latvia, France, United Kingdom). It can be adapted in small buildings and in larger premises and not just limited to the retail sector.

CONTACT: Lena Eckerberg, Project Manager Energikontor Sydost AB - Energy Agency for Southeast Sweden
Tel: +46 (0)73-440 82 75, e-mail: lena.eckerberg@energikontorsydost.se
Website: http://www.night-hawks.eu/night-walks/

LEVEL	Local
LANGUAGE	Swedish and English
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• Consumer information and empowering programme (Art. 12) • Insufficient information on training possibilities (Art. 17) • Insufficient in-house expertise about training (Art. 17)

GP 7: Crowdfunding platform project for energy efficiency, Croatia

Implemented by: North-West Croatia Regional Energy

The idea behind the project is to create a direct way for citizens to invest in infrastructure benefitting their own communities, to establish a regional crowdfunding platform specifically designed for financing energy efficiency and renewable energy projects in 2015. The North-West Croatia Regional Energy Agency (REGEA) worked together with the Centre for Social Innovations and Sustainable Development (CEDIOR), which had previous experience in the field, technical expertise in the development of crowdfunding campaigns and web solutions for CF platforms, and it is working with the University of Zagreb in order to explore the potential for introducing the crowd lending model for fundraisers from the public sector. The CF platform and the first pilot project received significant interest from the media and local supporters. One campaign was successfully completed: the pilot project in the City of Pregrada, which ended officially on 15th April 2016, raised the targeted funds of € 10.000 to complete the renovation of the "Naša radost" kindergarten, and paved the way for similar projects in Croatia. The goal of this project was to make the kindergarten the most energy efficient in North-West Croatia. The energy investments involved the complete insulation of thermal envelope (including the roof), and the savings would be used for making new RES investments (solar collectors) and for developing educational programmes.

CONTACT: Marko Miletić, dipl. ing. – project Manager in REGEA, e-mail: mmiletic@regea.org; Tel: + 385 (0)1 7775 489

Website: http://croenergy.eu/

http://regea.s-line.hr

LEVEL	Regional
LANGUAGE	Croatian
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• innovative financing mechanisms are not used (Art. 20) • insufficient own funds requirements (Art. 17) • lack of knowledge regarding existing financial tools (Art. 17)

GP 8: Energy management information system (EMIS), Croatia

Implemented by: Agencija za pravni promet i posredovanje nekretninama

EMIS is a web application for monitoring and analysis of energy and water consumption data in public sector buildings and as such provides a transparent overview and control of energy consumption in all public sector buildings that makes it an inevitable tool for Systematic Energy Management in the Public sector. Data contained in EMIS are used for many energy performance calculations, analysis and continuous overview and control of energy usage. This leads to an easier identification of potential measures of energy efficiency improvements, development of local energy efficiency improvement plans, implementation of projects that deliver energy and financial savings and at the end to monitoring and verification of achieved results. For each building of the public sector experts responsible for energy management gather and enter relevant data and information in EMIS. Once the data is in the system, EMIS application enables easy access by login from any computer with Internet access by typing your own username and password.

CONTACT: APN – Agencija za pravni promet i posredovanje nekretninama, Savska cesta 41/VI, 10000 Zagreb, Croatia, e-mail: marin.mastilica@apn.hr
Website: www.isge.hr

LEVEL	National
LANGUAGE	Croatian
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met (Art. 24) • there is no programme for monitoring energy efficiency levels at national level (Art. 5) • the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5)

GP 10: SMiV – System for Monitoring and Verification, Croatia

Implemented by: Center for Monitoring Business Activities in the Energy (CEI)

SMIV is the first Monitoring and Verification Platform developed as an online application that incorporates National Energy Efficiency Action Plans, Regional and Local Energy Efficiency Action Plans and planning instruments together with specially devised tools that allow all users to generate reports, plans and calculations of their energy savings under the same unified methodology, defined by the EU principles. Data contained in SMIV is used for many energy savings calculations, analysis and continuous oversight of achieved National energy efficiency targets. SMIV is based on the bottom-up methodology and is used on a local and national level to calculate energy savings in three main sectors: Building, Industry, and Transport. SMIV greatly simplifies the process of calculating energy efficiency savings through simple user interface were users with basic IT skills can enter data on implemented measures. The special national legislation was developed in order to implement SMIV in all relevant fields. Obligatory users of SMIV defined by these regulations are public sector, ESCO companies, and subsidy providers. During the implementation phase of the project, all users representatives received education and technical support through multiple regional workshops.

CONTACT: Center for Monitoring Business Activities in the Energy Sector, Miramarska 24, 10000 Zagreb, Croatia
e-mail: ee@cei.hr
Website: http://cei.hr www.enu.hr

LEVEL	National, regional and local
LANGUAGE	Croatian
TRANSFERABILITY	YES, at the national, regional and local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5) • national monitoring and reporting is not undertaken to demonstrate progress achieved towards national energy efficiency targets (Art. 24) • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets(Art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met (Art. 24)

GP 11: REACH – Reduce Energy Use and Change Habits, Croatia

Implemented by: Society for Sustainable Development Design (DOOR)

REACH project aims to empower energy poor households to take actions to save energy and change their habits in order to improve their living conditions and to establish energy poverty as an issue that demands tailor-made policies and measures at local, national and EU level. The aim of REACH is to contribute to energy poverty abatement at practical and structural level. Target audience were the energy poor households, local actors that can help address the energy poverty (social care/support services, local authorities, social advisors, schools, local energy providers, building manager) and local, national and EU level decision-makers. Through the project pilot actions, concrete measures have been tested and important data on energy consumption habits and living conditions have been gathered in the field. Project partners succeeded to familiarise decision-makers with energy poverty as a large scale problem which effects health and well-being of the citizens of Croatia and other countries involved in REACH project as well as the fact that decision-makers are now willing to act upon it.

CONTACT: Society for Sustainable Development Design (DOOR), Trg kralja Petra Krešimira IV, 2/II, HR - 10 000 Zagreb, Croatia, e-mail: info@door.hr
Website: www.door.hr

LEVEL	National, regional and local
LANGUAGE	Croatian
TRANSFERABILITY	YES, at the national, regional and local level.
NEEDS ADDRESSED	• Consumer information and empowering programme (Art. 12) • lack of in-house expertise about communication (Art. 12)

GP 12: Training Workshop, France

Implemented by: Grand Paris Seine Ouest

As a local actor, the territory of the "Grand Paris Seine Ouest" (GPSO) created, in conjunction with its energy division (GPSOe), a local energy agency (LEA), working with individuals, professionals and local authorities on its territory. It has put in place a local energy strategy. Since 2008 this strategy has been part of the territorial development contract signed with the State, determining the urban, economic, cultural and environmental challenges of the territory for the next 15 years. It is organised around a system of annual or three -year agreements and is financed by European, national or regional grants. The objective is to integrate the territory into national energy efficiency policies and to develop long-term relations with local elected representatives, in partnership with the regional council IDF, ARENE, and ADEME. This goal is implemented as follows: through Training session on climate, energy and energy efficiency; Technical support, awareness raising to local authorities on these themes; Management of energy; Protection and strengthening of the environment and living conditions; Renewable energies (RES); and Advice to the inhabitants through the Info point Energy.

CONTACT: Muriel LE BOULANGER, Director, Tel: 01.45.34.26.52

LEVEL	Local
LANGUAGE	French
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• Insufficient information on training possibilities (Art. 17) • Insufficient in-house expertise about training (Art. 17) • lack of mobilisation of the elected representatives (Art. 17)

GP 13: Sustainable Energy Action Plans, France

Implemented by: Plaine Commune Grand Paris

As a local player, the Plaine Commune, created on 1 January 2016 within the Grand Paris metropolis, set up a Local Energy and Climate Agency (LECA, June 2012) to assist public and private actors in their energy saving and energy rehabilitation. The LECA Intends to contribute to the preservation of natural resources, the implementation of the energy transition and climate adaptation of the Plain Commune area. Founded by local authorities and private companies, and supported by ADEME, it envisages four strategic missions: A resource centre and trusted third-party for public and private projects; Accompaniment of the condominiums in their thermal audits and their work plans; Accompaniment of the resident owners in pavilion; Preventive action against energy poverty. The main objective is to engage the ecological and social conversion of the territory of Plaine Commune, to improve the quality of life, while respecting ecological and climatic imperatives: Integrate urban ecology into all community policies and projects; Mobilise and support the actors, inhabitants and users in the ecological and social conversion of the territory; Implement actions to improve the environmental quality of life of the territory and promote cross-cutting projects.

CONTACT: Damien Dussut, Local Energy and Climate Agency, Project Manager,
e-mail: Damien.DUSSUT@Plainecommune.fr Tel: 01 48 09 40 90
Website: http://www.plainecommune.fr/plaine-commune/agenda-21/le-plan-climat-energie/#.WE_Gt9XhAdU

LEVEL	Local
LANGUAGE	French
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3)

GP 14: An energy clock integrated in a public building, France

Implemented by: Ville de Poissy

As a local actor, the Municipality of Poissy has implemented national policies through the realisation of the Agenda 21. The agenda was created between 2009 and 2011 and it took 3 years to be completely set up within the municipality and to carry out the first evaluations and improvements. Three committees have been set up to ensure its steering: 1) A policy committee, led by the municipal councillor for sustainable development, who gives the main inputs for reflection and submits its work to the steering committee; 2) A steering committee, chaired by the Mayor, who validates the work of the steering committee. It chooses the projects, determines the strategies, guides the consultations as well as the communication actions; 3) A technical committee, under the authority of the Director General of Services, responsible for validating the technical feasibility of the selected actions, proposing complementary actions and accompanying the implementation of the projects decided upon. A fourth committee called the "Partnership Committee" brings together socio-economic partners in the territory wishing to participate in the elaboration and the implementation of the Agenda 21.

CONTACT: Dominique Bulle
Website: www.ville-poissy.fr

LEVEL	Local
LANGUAGE	French
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met (Art. 24)

GP 15: Energy saving in schools Bielsko-Biala, Poland

Implemented by: The Association of Municipalities Polish Network „Energie Cités" (PNEC)

It is crucial to motivate citizens already at an early age to adopt energy efficient behaviours –especially children can then e.g. motivate their parents at home to do the same and follow what they have learnt in school. The Intelligent Energy Europe-funded EURONET 50/50 project was an initiative that aimed to unlock energy saving in schools by educating students and through them their families, in order to ensure that current and future generations consume energy responsibly. Students were encouraged to save energy through financial benefits - half of the saved amount was handed over for the purposes of the school. As the EU funding has ended, Bielsko-Biala now wants to encourage the replication of this project through firstly its contact to Polish local authorities in the PNEC network (Polish Network Energy Cities), and then subsequently through its international cooperation with 49 cities all across Europe.

CONTACT: Maria Stankiewicz, PNEC expert for Bielsko-Biala, e-mail: biuro@pnec.pl
Website: http://www.euronet50-50max.eu/en/

LEVEL	Local
LANGUAGE	Polish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• Consumer information and empowering programme (Art. 12) • Insufficient information on training possibilities (Art. 17) • Insufficient in-house expertise about training (Art. 17) • lack of in-house expertise about communication (Art. 12)

GP 16: Database for consumption of public buildings Brasov, Romania

Implemented by: Local energy agency ABMEE

Municipalities have to lead by example when it comes to energy efficient behaviour, in order to motivate all stakeholders and citizens on its territory to follow suit. If municipalities are committed to reduce their energy consumption and subsequently their climate footprint and demonstrate this effectively to their people, the likelihood increases that they can be mobilised to play their part in driving forward energy efficiency. In Brasov, the local energy agency ABMEE established between 2005 - 2014 an innovative instrument that monitors energy and water consumption in 120 municipal buildings. The data was gathered in real-time and provided on a regular basis to local decision-makers. In the same time as the monitoring, also education was undertaken by ABMEE – in cooperation with local academia – to inform municipal buildings' staff about energy efficient behaviours and how these can be easily implemented in their daily lives.

CONTACT: Camelia Rata, executive director ABMEE, e-mail: camelia.rata@abmee.ro
Website: www.abmee.ro/
http://www.managenergy.net/actors/1230

LEVEL	Local
LANGUAGE	Romanian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met (Art. 24)

GP 17: Revolving energy saving fund Litomerice, Czech Republic

Implemented by: Municipality of Litomerice Agency

With public budgets of local authorities being very strained in the Czech Republic, there is a strong need to use limited financial resources in a smart way. Before the revolving energy having fund was set-up, this was not the case. There was no strong incentive for individual city departments to engage in energy efficiency, as the money they had achieved through first energy efficiency measures –i.e. through refurbishing/insulating buildings – was sent to 100% to the municipal budget and then reallocated for various projects in the city. There was no direct "benefit" for a department to save more energy, as it could not keep a portion of the financial savings for its own projects. The Czech municipality of Litomerice has set up in 2014 a revolving energy savings fund, which uses the municipal budget as its main funding source. The money acquired through energy savings measures are redistributed in the following way: 35% allocation to municipal budget, 30% allocation to revolving energy savings fund, 30% allocation to the municipal department that implemented an energy efficiency measure and 5% allocated to a Commission fund. The fund targets energy efficiency measures in Litomerice's municipal buildings. In the starting year 2014, EUR 69000 were allocated.

CONTACT: Jaroslav Klusak, City Energy Manager, Litomerice, e-mail: Jaroslav.klusak@litomerice.cz
Website: https://www.litomerice.cz/

LEVEL	Local
LANGUAGE	Czech
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• innovative financing mechanisms are not used (Art. 20) • financing facilities are not established for energy efficiency improvement measures (Art. 20)

GP 18: The Sustainable Construction Programme in Andalusia, Spain

Implemented by: Agencia Andaluza de la Energia, Junta de Andalucía

The Sustainable Construction Programme in Andalusia is a combination of economic measures (subsidies and incentives) and other actions such as regulatory, training and fiscal, that seek, through energy saving and energy, and renewable energy, to promote the energy rehabilitation of buildings, urban rehabilitation, improve the competitiveness of companies of the construction sector, create skilled employment and reduce energy poverty. The programme is developed with the participation of companies, mostly SMEs, liaising with the Agency in the management and processing of incentives, which facilitates the administrative procedures for final users to request incentives. In total, within this Programme there are more than 8,300 collaborating partner companies throughout Andalusia. The aim of the project is achieving a low carbon economy in Andalusia and a more sustainable and environmentally respectful construction model, in line with the EU's objectives.

CONTACT: Joaquin VILLAR RODRIGUEZ, e-mail: joaquin.villar@juntadeandalucia.es
Website: https://www.agenciaandaluzadelaenergia.es/ciudadania/programa-de-impulso-la-construccion-sostenible-de-andalucia/
Agency web: https://www.agenciaandaluzadelaenergia.es/

LEVEL	Regional
LANGUAGE	Spanish and English
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• financing facilities are not established for energy efficiency improvement measures (Art. 20) • European financial institutions are not utilised for financing and technical support schemes (Art. 20) • there is no financialis no financial institution that acts as EE National Fund (Art. 20) • innovative financing mechanisms are not used (Art. 20)

GP 19: ClimAtlantic Project, Ireland

Implemented by: Carlow County Council, the South-East Regional Authority

Carlow County Council consumes approximately 8 million kWh of electricity per year to run all of its operations, equating to a total electricity bill of €1.25 M per year. To reduce the expense and carbon footprint of Carlow County Council, a pilot action was developed. It consisted of identifying and implementing energy efficiency improvement measures targeting the most energy consuming activities of Carlow County Council: water supply, wastewater treatment, building usage and public lighting. These measures included: efficient lighting retrofit, pump replacement, caretaker training, aeration comparison, control systems, equipment sizing, etc. Project partners also worked on a series of pilot demonstration actions to validate the priorities of the strategy. Based on preliminary assessments, the expected energy savings from each measure were calculated prior to commencing monitoring. These expected savings were then compared with actual energy savings recorded during the monitoring period. Carlow County Council has made a commitment to reduce its energy consumption by 3 % per annum from 2009 to 2020. The 2012 pilot measures contributed to approximately a 1.5 % reduction in energy consumption that year. The measures will continue to deliver savings as they are kept up in the following years.

CONTACT: Sheevaun Thompson, Research & Policy Officer, e-mail: sheevaun.thompson@stippcoco.ie
Website: http://www.climatlanticproject.eu/eng/index.php

LEVEL	Regional and local
LANGUAGE	English
TRANSFERABILITY	YES, at the regional and local level.
NEEDS ADDRESSED	• • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (Art. 24)

GP 20: Operational Programme "Development of the Competitiveness of the Bulgarian Economy", Bulgaria

Implemented by: Green Synergy Cluster

In accordance with its Community Strategic Guidelines, on 26 September 2007 the European Union approved a major development programme for Bulgaria for the period 2007-2013 entitled "Operational Program for the Development of Competitiveness of the Economy Bulgarian". This programme provided support for the entire national territory in the context of the Convergence objective. This operational programme is in line with the objectives of the Lisbon Agenda 2000 and the Community strategic guidelines for economic, social and territorial cohesion. In addition, the Operational Programme contributed to the achievement of the EU's horizontal objectives, namely the protection of the environment, equal opportunities and the development of the information society.

CONTACT: Stoyan Dimitrov, Chair of the Management Board, e-mail: office@greensynergycluster.eu
Tel: + 359 876 79 96 80

LEVEL	National
LANGUAGE	Bulgarian
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• Insufficient information on legal and administrative aspects (Art. 17) • Insufficient information on energy technologies (Art. 17) • Insufficient information on financial tools (Art. 17) • Insufficient information on technical tools (Art. 17) • absence of guidelines and handbooks supporting EE measures development (Art. 17) • inadequate information on best energy efficiency practices (Art. 17) • absence of support organisations in your territory addressing energy efficiency matters (Art. 17) • insufficient in-house expertise about legal and administrative aspects (Art. 17) • Insufficient in-house expertise about energy technologies (Art. 17) • Insufficient in-house expertise about financial tools (Art. 17) • Insufficient in-house expertise about technical tools (Art. 17)

GP 21: Facilitation of Energy Project Investment in Local Authorities, Ireland

Implemented by: Galway County Council

The programme offers a solution to LA struggling to gain investment in energy projects. It adds a structure to energy project assessment with performance indicators and financial models. This innovative funding solution operates such that the Energy Conservation Budget is utilised with an internal Energy Performance Contract (EPC). This is equivalent to an Internal ESCO (Energy Services Company). The ESCO provides the investment for an energy saving project, with the investment being repaid out of the reduced energy costs as a result of the energy savings made. The seed capital for the conservation budget was achieved through energy cost savings. Through the programme The LA does not lose out on the windfall gains from energy cost/efficiency savings which are often lost to the organisation as the operational budget are reduced based on the lower energy costs. This method allows the LA to continue to invest year on year in energy saving projects. Energy finance increases. As the LA approaches its 2020 target, the investment required to achieve the savings increases. In this case the fund also increases to match this requirement; Legal requirements are met – the public sector must deliver 33% energy efficiency savings by 2020.

CONTACT: Maire Ni Chionna, Senior Energy Engineer, e-mail: mnichionna@galwaycoco.ie
Tel: + 353 91 509557

LEVEL	Local
LANGUAGE	English
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• lack of clear and easily accessible information on available energy service contracts and clauses (Art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (Art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (Art. 18) • no access to model contracts for energy performance contracting (Art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (Art. 18) • no qualitative review in the framework of the National Energy Efficiency Action Plan regarding the current and future development of the energy services market has been completed (Art. 18) • no measures in place to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting (Art. 18) • the public sector does not use energy service companies and energy performance contracting (Art. 18)

GP 22: Public Sector Energy Programme, Ireland

Implemented by: Sustainable Energy Authority

In order to implement the European Union climate plan's objectives within its territory Ireland wished to set up a program to reduce the energy consumption in the public sector through measures supporting a responsible energy use. The aim is to provide innovative solutions for the implementation of projects that meet European objectives. The Program is included in Ireland's National Energy Efficiency Action Plan; it is managed in partnership with the energy agencies and the SEAI (Ireland's Sustainable Development and Energy Authority), which manages energy financing programs in Ireland. The program is built on four pillars: partnership, networking, project support and a bespoke online reporting system. This program promotes energy management and best practices to over 325 public bodies and 3,700 schools in Ireland. It has been instrumental in helping public bodies work towards the Irish government's ambitious 33 % energy efficiency target for the public sector for 2020. The programme was shortlisted in 2016 at the EU Sustainable Energy Awards, one of only nine shortlisted from over 200 nominations Europe-wide. Through the programme, Ireland's public sector made €121 million savings and avoided 418,000 tonnes of CO2 emissions in 2014.

CONTACT: Alan Ryan, E-mail: Alan.Ryan@seai.ie; Tel: + 353 1 808 2027

Website:

http://www.seai.ie/Your_Business/Public_Sector/Public_Sector_Programme/Public_Sector_Programme.html

LEVEL	National
LANGUAGE	English
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5) • there is no programme for conducting energy audits in the public sector at national, regional or local level (Art. 8) • energy audits do not include technical and financial feasibility assessments (Art. 8) • there is no quality assurance scheme in place for energy audits (Art. 8) • the recommended actions from the energy audits completed are not implemented (Art. 8) • business cases for the recommended energy actions arising from energy audits are not prepared and presented for financial approval (Art. 8) • financing facilities are not established for energy efficiency improvement measures (Art. 20) • Insufficient information on legal and administrative aspects (Art. 17) • absence of guidelines and handbooks supporting EE measures development (Art. 17) • inadequate information on best energy efficiency practices (Art. 17)

	• absence of support organisations in your territory addressing energy efficiency matters (Art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (Art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (Art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (Art. 18) • no access to model contracts for energy performance contracting (Art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (Art. 18) • no qualitative review in the framework of the National Energy Efficiency Action Plan regarding the current and future development of the energy services market has been completed (Art. 18) • no measures in place to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting (Art. 18) • the public sector does not use energy service companies, and energy performance contracting (Art. 18) • insufficient in-house expertise about legal and administrative aspects (Art. 17) • insufficient own funds requirements (Art. 17) • lack of knowledge regarding existing financial tools (Art. 17)

GP 23: PAREER Program, Spain

Implemented by: Institute for the Diversification and Energy Saving (IDAE)

The Institute for the Diversification and Energy Saving (IDAE) has extensive previous experience in managing different aid programs for energy efficiency and renewable energy. Notable are the Action Plans of the Strategy for Energy Savings and Energy Efficiency, 2004-2012, as well as incentive programs on the purchase of an efficient electric vehicle, among others. In this context, PAREER aims to encourage and promote the realisation of reforms that favour reducing emissions of carbon dioxide through energy conservation, improved energy efficiency and use of renewable energy in existing buildings regardless of their use and the legal nature of the owners. Financing aid program of actions on energy efficiency and renewable energy integration aimed at existing buildings of any use (residential, educational, health, administrative, cultural, etc.). There are four types of beneficiary actions: 1) improvement of the energy efficiency of the thermal envelope, 2) improvement of the energy efficiency of thermal installations and lighting, 3) substitution of conventional energy by biomass in thermal installations, and 4) substitution of conventional energy by geothermal energy in thermal installations.

CONTACT: Carlos García Barquero, Head of the Planning and Studies Department, Institute for the Diversification and Energy Saving (IDAE), Ministry of Energy, Tourism and Digital Agenda, Mail: cgbarquero@idae.es
Website: http://www.idae.es/index.php/id.858/relmenu.409/mod.pags/mem.detalle

LEVEL	National
LANGUAGE	Spanish
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• Insufficient in-house expertise about financial tools (Art. 17) • lack of knowledge regarding existing financial tools (Art. 17)

GP 24: Energy Saving Provincial Plan – Alicante, Spain

Implemented by: Diputación de Alicante and the Provincial Energy Agency

The province of Alicante has a strong commitment with the Covenant of Mayors for Climate and Energy European Initiative and is it recognised as Covenant Coordinator by the Commission. As such the province puts its resources and know-how at the service of signatories. 138 municipalities are currently adhered in the province of Alicante to the Covenant of Mayors and / or the Covenant of Mayors for Climate and Energy. With the objective of supporting municipalities in the implementation of the Sustainable Energy Action Plans, the province of Alicante through the Alicante Energy Agency launched this provincial Energy Saving Plan. The Provincial Energy Saving Plan is a technical / administrative tool designed by the Diputación de Alicante and the Provincial Energy Agency to assist municipalities in Energy Efficiency and Renewable Energy through investments. The main objective of this plan is the financing of the necessary investments to achieve sustainable energy use, reduced consumption and increased savings in the municipalities of the province.

CONTACT: Director of the Alicante Energy Agency: Jose Luis Nuín, e-mail: jlnuin@alicantenergia.es Tel.: 96 526 84 02

Web page: http://www.alicantenergia.es

http://www.alicantenergia.es/es/plan-provincial-de-ahorro-energetico-2016.html

Facebook: https://www.facebook.com/AguaMedioAmbienteEnergiaDiputacionAlicante

LEVEL	Local
LANGUAGE	Spanish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3)

GP 25: Energy efficiency improvement in the lighting in Mercado de Delicias, Spain

Implemented by: Valladolid Local Government

The Program improves the energy efficiency of the lighting system of the interior of Delicias Market by substituting low-efficiency lighting system by high performance LED technology lights equipped with system regulation "DALI". The installation is equipped with a lighting control system "Smart" designed under the KNX standard, allowing to regulate the lighting system in an autonomous form. This system allows to generate alarms due to intrusion, it detects movements and informs the system that it must turn on the corresponding lighting system and constant regulation: thanks to photocells, it constantly graduates the lighting levels as a function of the natural light. The expected savings were estimated at: 3.780 €, 17.200 kWh/year and 8.300 Kg CO2. The procurement was public and it was done based on the economic criteria. The funding was fully provided by the municipality. The awareness raising and communication was done using canvas banners with information for the general public (workers of the market, customers and visitors). The implementation of the project was conducted through the cooperation of a legal technician (advisor) and the energy technician.

CONTACT: Serapio García Carreras, e-mail: serapio@fermasaie.es;
Ascensión Ortega Martínez, e-mail: aortega@ava.es y scssc@ava.es

LEVEL	Local
LANGUAGE	Spanish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• the public sector does not use energy service companies, and energy performance contracting, to finance renovations and implement plans to maintain or improve energy efficiency in the long term (Art. 5) • Consumer information and empowering programme (Art. 12) • the wider public sector does not purchase energy efficient buildings, products and services at national level (Art. 6) • there are no long-term energy performance contracts in place in the public sector (Art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (Art. 6)

GP 26: PROMISE – Promoting best practices to support energy efficient consumer behaviour on European island, Spain

Implemented by: Tenerife

While the EU may be made up of 28 Member States, the number of islands within the union runs into the thousands, dotted around the seas of the North Atlantic to the Mediterranean. While climate and cultures may vary, many of the issues faced by these islands – such as achieving energy efficiency – are much the same. This is why the European PROMISE Project – launched in June 2011 and funded by the European Commission under the Intelligent Energy – Europe (IEE) programme – has promoted energy savings among households on four target islands. By sharing information and experience, energy agencies from EU members Samsø (Denmark), Rhodes (Greece) and Tenerife (Spain), along with Iceland, aimed to promote tried-and-tested methods for reducing the energy consumption of households. In the frame of this project, the energy agency from Tenerife (Agencia Insular de Energía de Tenerife) carried out an awareness campaign in the island of Tenerife that lasted 18 months targeting households and the islands' energy policy makers to promote energy efficiency behaviour among households of the island.

CONTACT: Monica Alonso, Director of the Insular Energy Agency, e-mail: malonso@agenergia.org; Tel: +34 922 747772
Website: www.agenergia.org
Project website: https://ec.europa.eu/energy/intelligent/projects/en/projects/promise

LEVEL	Local
LANGUAGE	Spanish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • Consumer information and empowering programme (Art. 12) • lack of in-house expertise about communication (Art. 12) • lack of mobilisation of the elected representatives (Art. 12)

GP 27: Project Regional Networks for the development of a Sustainable Market for Bioenergy in Europe (BioRegions), Bulgaria

Implemented by: Sredna gora

The project aims to support the creation of bioenergy regions that will provide at least one third of the heating and electricity requirements through local and sustainable sources of bioenergy, particularly solid biomass. The project aims to support the development of markets for solid biomass in the 5 target regions; stimulate investment in bioenergy projects and in the markets of local actors; inspire rural areas to follow the example of the target regions. Each region will adopt a formal Action Plan with an agenda and reference milestones to enhance their bio-energy to at least 1/3 of the energy demand for electricity and heating. In order to implement in the project, Bulgaria set up a programme to develop its bio-energy market, by creating a regional network in the SREDNA GORA region, with several partners: negotiators and producers of biomass boilers; energy auditors; biomass associations and energy agencies; national forest administration; energy service and financing company.

CONTACT: Ivan Baramski, e-mail: director.global@brezovo.bg; Tel: +359 896 610 364
Website: http://www.bioregions.eu/

LEVEL	Regional
LANGUAGE	Bulgarian
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• the potential for developing local and regional heat markets has not been taken into account (Art. 4) • the public sector does not use energy service companies, and energy performance contracting, to finance renovations and implement plans to maintain or improve energy efficiency in the long term (Art. 5) • support organisations have insufficient competency and knowledge (Art. 17)

GP 28: Passive House Regions with Renewable Energies (PassREg), Bulgaria

Implemented by: Gaborovo Municipality

Several European municipalities and regions have already committed themselves to the principles of the passive house (maximum heating and cooling requirements of 15 kWh/m²a in new buildings). The experiences of these regions, or PassREgs, have helped pave the way for other UE regions to reach the 2020 energy targets. Border regions that had implemented effective and cost-effective strategies were highlighted. The models used to promote the implementation of PassREg concepts have been adapted and applied in the emerging regions. The experiments were introduced into a set of web based solutions tools that made best practices accessible to advance the large-scale adoption of new PassErg across the U.E. The introduction of the experiences in the web tools was possible thanks to the realisation of the project BEACON, which aimed to integrate the technologies of networks virtualisation with the technologies of data centers. Applications will have an integrated interface to specify their QoS requirements.

CONTACT: Desislava Koleva, Chief Expert, Covenant Coordinator, e-mail: desislava@gabrovo.bg
Website: http://www.covenantofmayors.eu/IMG/pdf/Gabrovo_2016.pdf

LEVEL	Local
LANGUAGE	Bulgarian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4)

GP 29: iURBAN Project, Bulgaria

Implemented by: Energy Agency of Plovdiv (EAP)

The IURBAN project focuses on both energy consumption (electricity, heating, water and gas) and energy production (PV and solar thermal) for cities located in different European countries (Bulgaria, Croatia, Germany, Italy and Spain). It is part of the Horizon 2020 programme for the period 2014 - 2020. The tool "Urban Energy" should allow the creation of new models of management and production of cleaner and more efficient energy. The objective is to put in place support systems enabling local elected officials and professionals to take effective decisions as to integrate their territories in the iURBAN project's objectives. The tool will meet the growing needs of the market for cheaper and cleaner energy services. It is designed with the direct involvement of end users (local residents, energy companies and public administration). The use of information and communication technologies (ICTs) has proven pivotal. The goal is to create a more entrepreneurial ICT ecosystem, increase innovation, and help entrepreneurs to take risks and businesses to grow.

CONTACT: Narcis Avellana Tarrats, Project Coordinator, e-mail: narcis.avellana@sensingcontrol.com
Bulgarian Partners: EVN TP and EAP, EAP contact: Ina Karova, ina.karova@eap-save.eu

LEVEL	Local
LANGUAGE	Bulgarian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• insufficient information on energy technologies (Art. 17) • consumer information and empowering programme (Art. 12) • absence of automatic tools supporting EE measures development (Art. 17) • absence of softwares supporting EE measures development (Art. 17) • support organisations have insufficient competency and knowledge (Art. 17)

GP 30: RES heating plan in Rhodope Region to 2030, Bulgaria

Implemented by: Black Sea Energy Research Centre

The mail goal is effectively utilisation biomass potential in municipalities, members of Association of Rhodope Municipalities, 21 in total. The association has established an energy efficiency council with energy experts from different municipalities. The board will be responsible for the monitoring and implementation of the plan for renewable heating and cooling. It is part of regional energy planning, which supports the authorities in taking appropriate measures for the sustainable use of local energy resources. The action plan was endorsed by the Smolyan District Sustainable Energy Development Council and the Kardzhali District Energy Efficiency Council. It will be applied in other municipalities, which are not members of the Association of Rhodope Municipalities. The implementation of this plan was inspired by the work of the Black Sea Energy Research Center, which had set up seven renewable energy Action Plans in previous years. The plan was developed in collaboration with local energy companies and the national biomass association, which had already participated in other projects on the use of biomass in the same region. Communication will be carried out through information campaigns and meetings.

CONTACT: Cvetoslava Spasova, Expert energy planing, Black Sea Energy Research Centre, e-mail: cvetoslava@bsrec.bg
Tel: + 359 02 980 68 54
Website: http://www.res-hc-spread.eu/en_GB/

LEVEL	Regional
LANGUAGE	Bulgarian
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4)

GP 31: Energy and environmental management in public buildings in the City of Czestochowa, Poland

Implemented by: City of Częstochowa

One of the activities significantly improving energy efficiency in Poland is the operational programme "Energy and environmental management in public buildings of Częstochowa City". Through the realisation of this programme the City of Częstochowa contributes to achieving national strategic objectives included in the Energy Policy of Poland until 2025 and in the National Energy Efficiency Action Plan (NEEAP) transferred to the municipality level in the "Local Energy Efficiency Plan of Action for the City of Częstochowa" document. The programme is a pilot project that has been prepared according to the structure of NEEAP. Its main objective is the identification of areas in which a reduction of energy consumption is possible, with the main focus being public buildings. The aforementioned document is one of the key elements contributing to making Czestochowa "a city of efficient energy".

CONTACT: Bożena Herbuś, e-mail: bherbus@czestochowa.um.gov.pl
Tomasz Salachna, e-mail: tsalachna@czestochowa.um.gov.pl
Website: www.energiaisrodowisko.pl

LEVEL	Local
LANGUAGE	Polish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met • there is no programme for monitoring energy efficiency levels at national level (Art. 5) • the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5)

GP 32: Governance support for cogeneration installation in a public swimming pool, Italy

Implemented by: Municipality of Catania

The municipality of Catania is the owner of a public swimming pool with high level of energy consumption. The objective of the project is to reduce the energy consumption through the installation of a cogeneration plant. This good practice is one of the measures carried out by the Municipality of Catania for SEAP (Sustainable Energy Action Plan) implementation. The project is driven by the ambitious purpose: "reduce the energy consumption of a local public structure (swimming pool) through the use of an already existing an unused cogeneration plant". The realisation of this project was obtained through the cooperation of different stakeholders: Energy Agency, Local private companies and citizens led by the Municipality of Catania. The project is considered a good practice because of the following benefits: expected savings, active participation of different stakeholders (Municipality, Energy Agency, Local private companies and citizens); possible creation of new jobs. Better information exchange at local levels (local authorities), dissemination of the good practice among citizens, more attention of decision-makers on energy efficiency topics and high exportability of this practice in others municipalities in Sicilia territory and in others regions of Italy.

CONTACT: Paolo Morgante (ENEA), Direction of Catania Municipality, e-mail: paolo.morgante@enea.it
Website: http://www.comune.catania.it/

LEVEL	Local
LANGUAGE	Italian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (Art. 4)

GP 33: Energy + CNR, Italy

Implemented by: ENEA

The ENERGY + CNR project is one of the winning projects (1st place) of the Innovation Award of the National Research Council, set up in 2013 on the occasion of the celebrations for the 90th anniversary of the CNR. The project aims to improve the energy management service of the CNR with the participation of employees. The main topics are the Technological Actions (consumption monitoring, energy audits, and data collection, and analysis on buildings and plants) and the Behavioural Actions (in order to stimulate more awareness on energy efficiency topics). About the technological aspect, the project provides tools to improve monitoring of energy consumption of the CNR utilities and facilitate the collection of energy data of buildings, plants, laboratories, and facilities. This information is essential to perform energy audits of utilities and to prepare an energy efficiency implementation plan. CNR creates a dedicated platform for consumption monitoring and the collection of energy data. In addition, from the behavioural side, the project encourages active participation in energy saving through good individual behaviour.

CONTACT: e-mail: vicenzo.dellesite@cnr.it
Website: www.energia.cnr.it/

LEVEL	National
LANGUAGE	Italian
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met (Art. 24) • insufficient information on energy technologies (Art. 17) • consumer information and empowering programme (Art. 12)

GP 34: LOCALES (Local Energy Saving), Italy

Implemented by: ENEA

Kyoto Club is a non-profit organisation founded in February 1999. Its members are business companies, associations and local municipalities and governments engaged in reaching the greenhouse gas reduction targets set by the Kyoto Protocol, by the EU ones for 2030 and by the December 2015 Paris Agreement. The LOCALES (Local Energy Saving) is an energy service created by Kyoto Club, with the contribution of Cariplo Foundation in 2015. LOCALES offers a diagnosis, on a statistical basis, of the energy expenditure of municipalities up to 250,000 inhabitants by using data from the SIOPE System of State Accounting. How does it work specifically LOCALES? Cities send Kyoto Club an online request for registration to the service. After completing the procedures, Cities may choose the year for which want to see their energy consumption (available for year 2013 and 2014), and obtained a series of graphs relating to that year divided by category. The main objectives are the identification of the municipality energy consumption for a specific year and the estimation of possible future saving in the short period.

CONTACT: Mr Pinardi, e-mail: i.pinardi@lyotoclub.org
Website: https://www.kyotoclub.org/progetti/locales

LEVEL	Local
LANGUAGE	Italian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	individual public bodies are not aware of their progress towards their energy efficiency targets (Art. 24) • there are no implications to the public sector where targets are not being met (Art. 24) • insufficient information on energy technologies (Art. 17) • consumer information and empowering programme (Art. 12)

GP 35: Upper Austria Contracting Programme – Success through facilitation, Austria

Implemented by: Region of Upper Austria – OÖ Energiesparverband

The EPC programme was launched in 1998 and is (with some improvements) still in operation. This continuation is very important as market development takes time. Establishing an EPC market requires a long-term approach and intensive communication in order to establish trust in the contracting model. The programme is considered a strategic element in the regional energy strategy. Its development, implementation and management result from the cooperation between the regional government of Upper Austria and the regional energy agency (ESV). The success of this programme has strongly depended on the combination of awareness raising information and advice (facilitation service) and financial support measures. Alone in the period of 2010-2017, 136 projects were implemented: 102 energy performance contracting projects and 34 renewable energy supply contracting projects (mostly to finance and operate biomass heating installations in public and commercial buildings).

CONTACT: OÖ Energiesparverband, e-mail: office@esv.or.at

Website: www.esv.or.at

LEVEL	Regional
LANGUAGE	German
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• financing facilities are not established for energy efficiency improvement measures (Art. 20) • European financial institutions are not utilised for financing and technical support schemes (Art. 20) • the National Fund isn't accessed and utilized by the public sector (Art. 20) • there is no financialis no financial institution that acts as EE National Fund (Art. 20) • innovative financing mechanisms are not used (Art. 20) • lack of clear and easily accessible information on available energy service contracts and clauses (Art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (Art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (Art. 18) • no access to model contracts for energy performance contracting (Art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (Art. 18) • no qualitative review in the framework of the National Energy Efficiency Action Plan regarding the current and future development of the energy services market has been completed (Art. 18) • no measures in place to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting (Art. 18) • the public sector does not use energy service companies, and energy performance contracting (Art. 18) • insufficient own funds requirements (Art. 17) • lack of knowledge regarding existing financial tools (Art. 17)

GP 36: Installation of renewable energy systems in the public and residential buildings, Poland

Implemented by: City of Niepołomice

Swiss-Polish Cooperation Programme is a non-refundable foreign aid granted by Switzerland to Poland as one of the new EU member states, in order to reduce economic and social disparities existing between Poland and more developed EU countries, and to reduce the differences on the Polish territory–between urban centers and structurally underdeveloped regions. The result of the project is to save the electricity and thermal energy, increase of the energy produced from renewable sources and reduction of carbon dioxide. It will be achieved by installation of solar systems for residential buildings and energy efficiency improvement of public buildings through deep thermal modernisation with use of heat pumps and photovoltaic. The main objective of the project is improving the health and living conditions of the people in the region: improving the environment, especially with respect to air quality in the region.

CONTACT: Stanisław Nowacki, e-mail: st.nowacki@gmail.com
Website: www.niepolomicesolary.eu

LEVEL	Regional
LANGUAGE	Polish
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4)

GP 37: Thermal Modernisation and Refurbishment Fund, Poland

Implemented by: National Economy Bank (BGK) with the aid of housing cooperatives and housing communities

Thermal Modernisation is usually highly profitable, however, it initially requires incurring significant costs, which is why many building owners may not implement thermo-modernisation actions without financial assistance. The system is intended to facilitate the financing of thermal modernisations in order to decrease energy consumption and the costs of heating in buildings, as well as provide domestic hot water (hot tap water). The Thermal Modernisation and Refurbishment Fund was created by the National Economy Bank. The Fund is a nationwide initiative targeting housing cooperatives, housing communities, private individuals and local governments. Its main goal is providing financial aid for investors engaged in thermo-modernisation and renovation initiatives as well as providing financial indemnifications for residential building owners. The Fund offers three types of assistance, namely the thermo-modernisation incentive, the renovation incentive, and the indemnification incentive. The amount of the funding received is equivalent to 20% of the loan used for the realisation of the thermos-modernisation initiative from personal funds. Originally, the program was to be implemented in 50 thousand buildings within 10 years and deliver significant energy savings.

CONTACT: bgk@bgk.pl

Website: https://www.bgk.pl/samorzady/fundusze-i-programy/fundusz-termomodernizacji-i-remontow/

LEVEL	National
LANGUAGE	Polish
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• No comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling has been completed at national level (Art. 4) • innovative financing mechanisms are not used (Art. 20) • Insufficient in-house expertise about financial tools (Art. 17) • insufficient own funds requirements (Art. 17) • lack of knowledge regarding existing financial tools (Art. 17)

GP 38: Removal of the low-stack emission in Miechow – the KAWKA project, Poland

Implemented by: Miechow Municipality

In an attempt to implement energy efficient solutions the Miechow municipality applied for funding to the National Fund for Environmental Protection and Water Management. The funding was meant to aid the municipality in their actions for environmental protection included in the "Removal of the low-stack emission in the Miechow Municipality" programme (KAWKA Incentive Program). In two stages, the project tries removing low-stack emission through supporting the energy efficiency development and the development of the distributed renewable energy sources. The "Removal of low-stack emission in the municipality of Miechow" programme (KAWKA) involves the replacement of old heating sources with new ecological heating solutions in both public and residential building and housing communities. The project is therefore targeted both at local authorities and individuals living in the local housing communities. The main goals of the project include increasing energy efficiency, reducing greenhouse gas emissions and decreasing the use of hazardous combustion products in the Miechow municipality.

CONTACT: Katarzyna Chmielewska, The Municipality and City of Miechow, Tel: 41 383 00 40 ext.53
Website: http://www.miechow.eu/miasto-i-gmina/poprawa-jakosci-powietrza/

LEVEL	Local
LANGUAGE	Polish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4) • financing facilities are not established for energy efficiency improvement measures (Art. 20)

GP 39: Sustainability in integrated development, Netherlands

Implemented by: Municipality of Zuidhorn

The municipality of Zuidhorn applies an integrated development model for the redevelopment of the Zuidhorn railway station area, along with the development of a new park-and-ride facility. Sustainable technologies are integrated, and in cooperation with consultants and research institutes, as much as possible new innovative technologies are implemented and tested in the area. The focus within the programme is not only on direct results (such as the development of the park-and-ride facility), but also on the development and testing of new approaches and technologies. By collaborating with knowledge institutes, and facilitating this testing in a public place, innovations can be brought forward. Energy savings and renewable energy generation are only long-term goals. The project aims to integrate several innovative technologies in the programme. One of the key aspects is 'piëzo' (piezoelectricity), as part of a research project with Tauw consultancy and the University of Groningen. In this technology, movements (vibrations) of pedestrians and vehicles are transformed into energy, used for instance for street lighting. The key short to medium-term goals are the development of the local/regional knowledge-based economy, and the application of innovative technologies in public.

CONTACT: Based on information by Leon Teeuw, policy advisor sustainability of the municipality of Zuidhorn. Interviewed for the PUBLENEF project by Erwin Hofman of JIN Climate and Sustainability, e-mail: erwin@jin.ngo

Website: http://www.zuidhorn.nl/bestuur-en-organisatie/transferium-zuidhorn_3529/

LEVEL	Local
LANGUAGE	Dutch
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4)

GP 40: Public Sector ISO50001 Support Programme, Ireland

Implemented by: Sustainable Energy Authority

Ireland has been able to benefit from these funds and has put in place a unique support program specifically developed for the public sector to drive best practice in energy management. It has been instrumental in helping public bodies work towards the Irish government's ambitious 33 % energy efficiency target for the public sector for 2020. The main objective of the programme is to deliver on the national public sector EE targets to the territory through an energy management system in public sector organisations. It is managed in partnership with the Galway County Council, the energy agencies and the SEAI (Sustainable Energy Authority of Ireland), which administers energy financing programs in Ireland. SEAI supports professionals wishing to acquire the skills needed to lead an organisation towards international best practice in energy management systems through ISO 50001 Certification. The support programme helps organisations to develop an effective certification framework, avoiding organisational and cultural blocks and costly investment mistakes. The support includes a combination of interactive training sessions and exercises to facilitate understanding, delivered by experienced energy management auditors. Ultimately, organisations will have in-depth practical knowledge of the application of energy management systems across a wide range of sectors.

CONTACT: Alan Ryan, E-mail: Alan.Ryan@seai.ie; Tel: + 353 1 808 2027
Website: https://www.seai.ie/Your_Business/Public_Sector/ISO50001-Support-Programme-No-2.pdf

LEVEL	National
LANGUAGE	English
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • there is no programme for monitoring energy efficiency levels at national level (Art. 5) • the central government in your country doesn't purchase energy efficient buildings, products and services (Art. 6) • there is no programme for conducting energy audits in the public sector at national, regional or local level (Art. 8) • energy audits do not include technical and financial feasibility assessments (Art. 8) • there is no quality assurance scheme in place for energy audits (Art. 8) • the recommended actions from the energy audits completed are not implemented (Art. 8) • business cases for the recommended energy actions arising from energy audits are not prepared and presented for financial approval (Art. 8)

GP 41: Energy retrofitting of Public Buildings, Attiki, Greece

Implemented by: Municipality of Likovrisi-Pefki

The implementation of the "Exoikonomo" program is in the main part of the national energy strategy in the framework of planning and promotion of energy efficiency actions. Two phases (call for proposals) have been realised: Exoikonomo I & II. In the above framework, the Municipality of Likovrisi-Pefki implemented two projects for improving the energy efficiency in four (4) buildings: Energy retrofitting of two (2) public schools and of the centre for protection of elderly people in Pefki have been implemented within the EXOIKONOMO I framework while similar works in one (1) more public school in Likovrisi were supported by the EXOIKONOMO II programme. Both projects included the following technical interventions: thermal insulation in all buildings of the 3 public schools and the centre for protection of elderly people, replacement of window frames with energy efficient ones and improvement of electromechanical equipment (BMS, LED lamps, etc.). The two projects were implemented at the same time and were concluded by Feb 2016.

CONTACT: Vassiliki Amenta, e-mail: b.amenta@likovrisipefki.gr
Website: www.exoikonomopefki.gr

LEVEL	Local
LANGUAGE	Greek
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5)

GP 42: Upper Austria Homes – Energy Advice Service to households, Austria

Implemented by: Region of Upper Austria – OÖ Energiesparverband

The Upper Austrian Energy Agency provides energy advice services on energy efficiency and renewables to households. ESV ensures quality control, continuous training of the advisers and commercial independence of the advice (that it is not linked to the sales of a product/service). Free advice is given by telephone, e-mail, in the advisory office, at advisory sessions held regularly in public buildings in the region, or in the home. It covers energy efficiency and renewables, ranging from simple questions to details of renovation or construction. Homeowners applying for a building subsidy in general come to the energy agency first, enabling the agency to explain the minimum energy efficiency levels they must achieve and to encourage them to aim for higher levels, eligible for higher subsidy. The energy agency is the first point of contact, and manages a network of trained advisers, who are paid on a fee basis as sub-contractors. Many are self-employed or work for small engineering companies. In total, around 10,000 clients are advised in detail every year (excluding short phone calls), several thousand of which are face-to-face.

CONTACT: Christine Öhlinger / Anja Gahleitner, Landstraße 45, A-4020 Linz, Austria,
e-mail: christine.oehlinger@esv.or.at; office@esv.or.at
Website: www.esv.or.at

LEVEL	Regional
LANGUAGE	German
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4) • financing facilities are not established for energy efficiency improvement measures (Art. 20)

GP 43: Differentiated waste collection, Sustainable mobility, Italy

Implemented by: Castelbuono Municipality

Castelbuono is a Zero Waste town of 10.000 inhabitants in Sicily, Italy, which has managed to develop an innovative system to marry sustainability, social work, and economics. The mayor decided to link the recovery of a traditional donkey-breed from Sicily – called Ragusa – with the challenges of the waste collection in narrow streets and the social work. Castelbuono mayor decided to use the donkeys to activate the door-to-door separate collection. On one hand it makes donkeys useful so that recovering this breed stops being a cost to become an asset, on the other hand it becomes a way to reintroduce socially excluded people (with mental or addiction problems) thanks to using contact with animals as a therapy (onotherapy) and finally it turns waste collection into a tourist attraction and an education tool. Main objectives are expected savings of 7.000 € per year, 47.000 Kwh, 12.600 kg of C02, balanced accounts in waste collection and treatment, less expenses in subsidies to socially excluded people and very high rates of integration to society, recovering an important part of local culture and creation of a tourist attraction at zero cost.

CONTACT: Major of Castelbuono Domenico Prisinzano (ENEA), e-mail: sindaco@comune.castelbuono.pa.it
domenico.prisinzano@enea.it
Website: http://93.94.88.173/castelbuono/hh/index.php
http://93.94.88.173/castelbuono/zf/index.php/servizi-aggiuntivi/index/index/idtesto/20010

LEVEL	Local
LANGUAGE	Italian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3)

GP 44: Promotional packs on energy efficiency in the Lesser Poland Voivodship, Poland

Implemented by: Lesser Poland Voivodship

Numerous initiatives for increasing awareness about energy efficiency are held yearly in Poland. In 2016 the voivodship of Lesser Poland organised a campaign aimed at raising consumers' awareness of energy efficient solutions and their benefits. As part of the ongoing efforts for increasing energy efficiency in Poland, the Lesser Poland Voivodship introduced the promotional pack on energy efficiency campaign. The main goal of the project was promoting energy saving solutions. Throughout the campaign, they handed out promotional packs on energy efficiency to the local consumers. Each promotional pack contained two LED light bulbs, a radiator reflector screen, a faucet aerator for the sink or bathroom, a shower flow regulator, and an informational brochure. The effort was aimed at promoting individual energy efficiency in residential households. As predicted the project increased social awareness promoting energy efficiency and energy savings. The residents responded very favourably to the educational campaign and appreciated being provided with materials allowing them to implement simple energy-efficient solutions in their households.

CONTACT: Piotr Lyczko, e-mail: Piotr.Lyczko@umwm.pl

LEVEL	Regional
LANGUAGE	Polish
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• Consumer information and empowering programme (Art. 12) • innovative financing mechanisms are not used (Art. 20)

GP 45: Life IP "Implementation of Air Quality Plan for the Lesser Poland Region – the Lesser Poland Voivodship in a healthy atmosphere, Poland

Implemented by: Lesser Region

The LIFE programme finances innovative ideas concerned with environmental protection in Europe, including integrated projects, which have become the fundamental element of widespread strategies for environmental protection. The project coordinated by the Lesser Poland Voivodship engages 62 partners. Its main goal is the implementation of solutions aimed at increasing air quality which were proposed in the Program for Air Protection for the Lesser Poland Voivodship. The main goal of the LIFE IP project is the implementation of the assumptions of the air quality plan for the Lesser Poland Voivodship. The projects is the first of its kind in Poland, making it one of the few countries engaged in such an initiative. Integrated projects are still a new practice even in Europe. In Poland the implementation of air quality plans is at a negligible level. The LIFE project challenges the main barriers opposing the implementation of remedial actions possibly leading to increased resident awareness and air quality.

CONTACT: Piotr Lyczko, e-mail: Piotr.Lyczko@umwm.pl
Website: http://powietrze.malopolska.pl/life/

LEVEL	Regional
LANGUAGE	Polish
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• Insufficient information on training possibilities (Art. 17)

GP 46: Reduce the use of energy carriers (especially in the area of heat) and promote an integrated approach to energy efficiency, Poland

Implemented by: City of Słupsk

On June 28, 2016, the City of Słupsk as the Project Leader signed a grant agreement with the Marshal of the Pomeranian Voivodeship for the implementation of the partnership project "Improving the energy efficiency of the Functional Area of the City of Słupsk through the thermo-modernisation of buildings". The project was a part of the Integrated Territorial Agreement for the Słupsk Urban Functional Area. The result of the partnership project will be the thermal modernisation of 49 public utilities located in Slupsk city 22 buildings, City of Ustka 2, Kobylnica Municipality 11, Slupsk 2, Damnica 4, Dębnica Kaszubska 5 and Słupski County 3. The scope of works envisaged within the project includes wall and roof insulation, replacement of window and door joinery, modernisation of the c.o. installation, RES installations and replacement of lighting for energy saving. The aim of the thermo-modernisation works is primarily to reduce the demand for heat energy in the public sector by 57.14%, reduce the annual energy consumption by 10,144 887.78 kWh / year and reduce the gas emissions by 3 013.55 tons (CO2 equivalent), increase the thermal insulation, reduce the costs of heating and hot water supply and increase the use of renewable energy (solar collectors, photovoltaics and heat pumps).

CONTACT: Agnieszka Jasik, Paweł Krzemieo: tel. +48 59 8488304

LEVEL	Local
LANGUAGE	Polish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4) • Consumer information and empowering programme (Art. 12)

GP 47: Establishing a team responsible for the implementation and monitoring of the “Low carbon economy plan ”, Poland

Implemented by: City of Opole

The team was created to realise the requirements of implementing the Low carbon economy plan and ensuring a correct delivery date, as well as monitoring of the plan’s implementation. The team began its work in May 2016 and was created through an ordinance of the City’s Presidents. Creating a team that has a specific goal in common, which is what it strives to achieve, makes the team members more involved and interested in the initiative. Thanks to the cooperation and involvement of the team members, many pro-ecological initiatives and investments will be realised. The realisation of the tasks included in the low carbon economy plan will result in: a significant reduction in greenhouse gas emissions, decreased final energy consumption via improving energy efficiency, increasing the share of renewable energy sources in total energy use, and improving air quality within the city’s area. The results will be observed in the next 4 years.

CONTACT: Amelia Rydz, e-mail: amelia.rydz@um.opole.pl or osr@um.opole.pl
Website: www.ople.pl/ekologia

LEVEL	Local
LANGUAGE	Polish
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (Art. 24)

GP 48: Marathon 2020 – Community of Bucharest District 1 – First Pillar, Romania

Implemented by: City of Bucharest

Marathon 2020 – Community of Bucharest District 1 is planned to be the first energy efficient community in Romania by 2020. In the period 2004 - 2011 District 1 Bucharest Municipality expects to develop a large scale intervention on all 140 buildings administrated by the Local authority. Actions include 37 schools, 27 kinder gardens, 28 high schools, 4 hospitals, 23 social services buildings and 21 administrative buildings. Energy audits will be performed for all public buildings. Large scale renovation of all public buildings are included with boiler revisions and connecting them to the municipal centralised distribution system or exchanging boilers with more efficient heat installations; improvement of the thermal insulation of buildings and other building refurbishment. Project includes final energy audits and consumption monitoring. Expected results are the increased comfort and standard while decreasing energy consumption by 30%. In order to achieve the objectives, Municipality established Energy Efficiency Agency in 2007 with energy experts delivering support also for other municipalities. The AEEPM will be responsible for monitoring and implementation of the Plan. This type of energy planning supports authorities in taking adequate measures for sustainable utilisation of local resources.

CONTACT: Razvan Munteanu, Primaria Sector 1 Bucuresti, e-mail: razvan.munteanu@primarias1.ro ;
Tel: +40 21 319 1013
Website: http://www.primariasector1.ro

LEVEL	Local
LANGUAGE	Romanian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4) • the government has no programme in place to carry out energy efficient renovations on at least 3% of the buildings they own and occupy by floor area (Art. 5) • there is no programme for conducting energy audits in the public sector at national, regional or local level (Art. 8) • energy audits do not include technical and financial feasibility assessments (Art. 8)

GP 49: Marathon 2020 – Community of Bucharest District 1 – Second Pillar, Romania

Implemented by: City of Bucharest

Marathon 2020 – Community of Bucharest District 1 is planned to be the first energy efficient community in Romania by 2020. The Second pillar of the project includes large scale application of buildings renovation in residential private own buildings – TRP 1 and TRP 2 (Thermal Rehabilitation Program). In period 2009 - 2016 the District 1 Bucharest Municipality developed a large scale intervention on all residential privately owned multifamily apartment buildings. 850 buildings in total were upgraded from class G to B or A class. The result is the most extended renovation program on buildings in Romania with inside comfort increasing and decreasing energy consumption by 50% target. Approximately 80,000 apartments were renovated. In order to achieve the objectives, Municipality established Energy Efficiency Agency in 2007 with energy experts delivering support also for other municipalities.

CONTACT: Razvan Munteanu, Primaria Sector 1 Bucuresti, e-mail: razvan.munteanu@primarias1.ro ;
Tel: +40 21 319 1013
Website: http://www.primariasector1.ro
http://www.eib.org/infocentre/press/releases/all/2011/2011-141-eur-125-million-for-more-energy-efficient-residential-buildings-in-bucharest.htm

LEVEL	Local
LANGUAGE	Romanian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels(Art. 4) • financing facilities are not established for energy efficiency improvement measures (Art. 20)

GP 50: Law 121/2014 referring to Energy Efficiency, Romania

Implemented by: City of Bucharest

The scope of the project was improving the national legislative framework in Romania in order to offer a good basis for European Energy Efficiency policy implementation. The starting point was the National Round Table organised by AEEPM with IEE Meshartility project on September 2013 referring to energy data exchange with local authority for energy planning. After October 2013 the EE Directive transposition the Parliamentary Energy Commissions invited all major stakeholders to contribute in debates and commission's work. The draft of the law was promoted to Parliament on January 2014. In August 2014 the final version of the 121/201 EE Law was published and entered in to force. Meshartility (http://www.meshartility.eu) project helped starting the transposition process. Parliamentary Energy Commissions organised Working Group and all major stakeholders contributed. The result is the most accurate transposition of EE Directive in to National Legislative framework. The national legislative framework offered a good basis for implementation of the energy planning and supporting authorities to take adequate measures for sustainable utilisation of local resources.

CONTACT: Corneliu Radulescu, Energy Efficiency Director, ANRE, e-mail: cornel.radulescu@anre.ro ;
Tel: 0040 21 327 8118
Website: http://www.anre.ro

LEVEL	National
LANGUAGE	Romanian
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • no EE policy public sector operational goals with defined programme to deliver them (Art. 3) • no energy modelling of future public sector energy trends has been undertaken at national level (Art. 3)

GP 51: Leading by example – The public buildings of the regional government of Upper Austria, Austria

Implemented by: Region of Upper Austria – OÖ Energiesparverband

Public buildings are a key element for achieving regional energy goals and can serve to set a positive example for citizens and businesses. According to the motto "leading by example", the region of Upper Austria implemented a comprehensive and ambitious approach to increasing energy efficiency and renewable energy in its own buildings. Already two decades ago, standardised energy monitoring for all public buildings was put in place. The data generated permits to closely follow energy consumption and costs, identify saving potentials and prioritise measures of action. The regional government is committed to reaching the energy goals that have been set in the regional energy strategy. Among others, these include reducing energy-related greenhouse gas emissions by at least 25 % by 2030 and 70 % by 2050 and increasing energy efficiency by at least 1.5 % per year. It also strives to set a positive example for other public bodies, companies and citizens. The initiative is based on a comprehensive "energy accounting and monitoring system". Set up in 90ies by the buildings department of the regional government, it has since become an integrated part of standard everyday facility management tasks. The programme was developed gradually and refined over time.

CONTACT: OÖ Energiesparverband, e-mail: office@esv.or.at
Website: www.esv.or.at

LEVEL	Regional
LANGUAGE	German
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• there is no programme for conducting energy audits in the public sector at national, regional or local level (Art. 8) • energy audits do not include technical and financial feasibility assessments (Art. 8) • there is no quality assurance scheme in place for energy audits (Art. 8) • the recommended actions from the energy audits completed are not implemented (Art. 8) • business cases for the recommended energy actions arising from energy audits are not prepared and presented for financial approval (Art. 8)

GP 52: Energy advice for businesses to help reach energy goals, Austria

Implemented by: Region of Upper Austria – OÖ Energiesparverband

Upper Austria plays a leading role in the clean energy transition. Increasing energy efficiency in companies not only supports achieving regional energy goals, but also helps sustain Upper Austria's striving economy. While attractive subsidy programmes for investments in energy efficiency and renewable energy systems are available in the region, the support and guidance by energy consultants has shown to be a key element in helping companies identify their energy saving potentials, assess options and move towards actual project implementation. Since 2002, The Energy Agency of Upper Austria (ESV) runs an energy audit and advice programme for businesses. Through this programme, product independent advice on issues relating to energy efficiency and renewable energy systems is available for businesses from all sectors. Around 100-150 businesses are advised each year. The service is seen as an important measure for progressing with the clean energy transition and achieving energy goals. It is estimated, and recognised in Austrian energy efficiency regulation, that energy audit and advice services for companies trigger energy savings of around 2.8 % of the related energy demand. These savings occur, among others, due to increased awareness and concrete implementation of measures.

CONTACT: OÖ Energiesparverband, e-mail: office@esv.or.at
Website: www.esv.or.at

LEVEL	Regional
LANGUAGE	German
TRANSFERABILITY	YES, at the regional level.
NEEDS ADDRESSED	• there is no programme for conducting energy audits in the public sector at national, regional or local level (Art. 8) • energy audits do not include technical and financial feasibility assessments (Art. 8) • there is no quality assurance scheme in place for energy audits (Art. 8) • the recommended actions from the energy audits completed are not implemented (Art. 8) • business cases for the recommended energy actions arising from energy audits are not prepared and presented for financial approval (Art. 8)

GP 53: Creation and management of the Energy Desk of the municipality of Messina, Italy

Implemented by: Municipality of Messina

Messina 'Energy Desk' is a permanent office addressed to citizens to disseminate and promote information on technologies for energy efficiency. The creation of the Energy Desk is one of the actions foreseen by the Sustainable Energy Action Plan (SEAP) of the Municipality of Messina. However, the municipality has wanted and created an energy desk with a large involvement of the main socio-economic actors of the territory. The partners of the Messina Energy Desk include both public bodies and market stakeholders. The participants come from different sectors and the cooperation between them is highly multidisciplinary. The main objectives include: 1) responses to the needs and energy issues arisen from the territory; 2) development of technical/regulatory criteria on the use of renewable energy technologies; 3) guidelines of the renovation/energy efficiency in the building sector; 4) providing information to operators and companies for planning and interventions in the field of building energy efficiency; 5) Development and update of the website of Energy Desk 6) Participation and active promotion in workshops and semi-annual seminars on themes of energy efficiency public and private building and 7) Dissemination of results and good practices at national, regional and local level.

CONTACT: Paolo Morgante (Enea), Representative of Messina Municipality
e-mail: vito.leotta@comune.messina.it (Municipality of Messina) paolo.morgante@enea.it
Website: http://www.comunemessina.gov.it/

LEVEL	Local
LANGUAGE	Italian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• Insufficient information on legal and administrative aspects (Art. 17) • Insufficient information on training possibilities (Art. 17) • Insufficient information on financial tools (Art. 17) • Insufficient information on technical tools (Art. 17) • lack of in-house expertise about energy technologies (Art. 17) • lack of in-house expertise about financial tools (Art. 17) • absence of automatic tools supporting EE measures development (Art. 17) • absence of software supporting EE measures development (Art. 17) • absence of guidelines and handbooks supporting EE measures development (Art. 17) • inadequate information on best energy efficiency practices (Art. 17) • absence of support organisations in your territory addressing energy efficiency matters (Art. 17) • support organisations have insufficient competency and knowledge (Art. 17) • insufficient in-house expertise about legal and administrative aspects (Art. 17) • Insufficient in-house expertise about energy technologies (Art. 17) • Insufficient in-house expertise about financial tools (Art. 17) • Insufficient in-house expertise about technical tools (Art. 17)

GP 54: Developing Alba Iulia Sustainable Energy Action Plan (SEAP), Romania

Implemented by: Alba Iulia

The Sustainable Energy Action Plan (SEAP), conducted together with Alba Local Energy Agency and integrated in the "Development Strategy Alba Iulia" developed in 2005, is the key document defining the energy policies of local government for the next 10 years in order to reduce CO_2 emissions throughout the city. This plan includes a number of measures in the short and medium term aimed to increase the energy efficiency of public buildings, a rational use of energy in homes and buildings in the tertiary sector, a sustainable urban transport system, the modernisation of public lighting system and to produce a significant part of renewable energy required. This strategy aims at Integrating the municipality into Covenant of Mayors initiative, providing a methodology to track and develop energy efficiency at municipal levels in different sectors; developing a document that will represent a baseline of energy consumptions, CO_2 emissions and proposed measures to reduce them by 24% and improving the lives of citizens.

CONTACT: Florin Andronescu, Director of ALEA, e-mail: florin@alea.ro
Website: www.alea.ro

LEVEL	Local
LANGUAGE	Romanian
TRANSFERABILITY	YES, at the local level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3)

GP 55: Marathon 2020 – Community of Bucharest District 1 to be the first energy efficient community in Romania by 2020, Romania

Implemented by: Agency for Energy Efficiency and Environment Protection

The promoter of this project is the Municipality of Sector 1 Bucharest and the final beneficiaries are the residents of Bucharest. The project will help Romania to meet its commitments related to improving energy efficiency, particularly to reach the EU 2020 target. The project is expected to reduce the buildings' energy consumption by around 50% and the total energy saved will amount to approximately 190 GWh per year once the programme is fully implemented. This project, endorsed politically and accepted by communities, represents the most ambitious SEAP in Romania, envisaging actions at very large scale. The plan includes studies for energy consumption, heating and cooling demand, the potential for utilisation of RES sources and financing sources with clear targets and objectives. Four main pillars are: Energy Efficiency on public buildings (140 units); Energy Efficiency on residential, privately owned buildings – 850 units [developed in two phases, TRP 1 and TRP 2 (Thermal Rehabilitation Program)]; Stakeholders motivation and mobilisation and Innovative financing The District 1 Bucharest Municipality established an Energy Efficiency Agency (2007) with energy experts delivering support in other municipalities too.

CONTACT: Razvan Munteanu, e-mail: razvan.munteanu@primarias1.ro; Tel: +40213191060
Website: http://www.primariasector1.ro

LEVEL	National
LANGUAGE	Romanian
TRANSFERABILITY	YES, at the national level.
NEEDS ADDRESSED	• no EE policy public sector strategic goals with defined targets at national level (Art. 3) • there is no programme for monitoring energy efficiency levels at national level (Art. 5) • financing facilities are not established for energy efficiency improvement measures (Art.20)

4 Summary of tools for addressing specific needs

4.1 Tools from the Netherlands & Belgium

Energiebenchmark gemeentelijk vastgoed, Netherlands

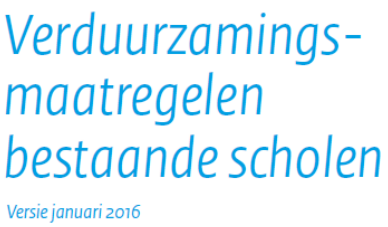
The 'energiebenchmark gemeentelijk vastgoed' (energy benchmark for municipal real estate) aims to provide insights in the energy use of municipality-owned buildings, in order to facilitate the strategic steering of policy on the basis of sustainability criteria. The benchmark allows to test and account for the sustainability policy of the municipality. By being able to compare energy use of municipal buildings (e.g. offices, sports centres, and swimming pools) to that in other municipalities, they are better able to improve the sustainability.

CONTACT: bbn adviseurs (info@bbn.nl)

DETAILED INFO: www.rvo.nl/sites/default/files/2016/05/infographic%20energiebenchmark%20maatschappelijk%20vastgoed.pdf

LEVEL	Local, regional, national
LANGUAGE	Dutch
ADAPTABILITY	HIGH. The system of benchmarking is easily applicable in all sectors and all countries.
TRANSFERABILITY	YES. The system of benchmarking is easily applicable in all sectors and all countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Verduurzamingsmaatregelen bestaande scholen, Netherlands



The publication 'Verduurzamingsmaatregelen voor bestaande scholen' contains a list of potential measures to increase the sustainability of school buildings. It includes measures on for example behaviour, O&M, insulation, heating and cooling, lighting, etc. For each measure in the list there is infomration on its effects (energy use, air quality, temperature, noise, and light), the payback times, and whether it is an 'officially recognised measure for energy saving'.

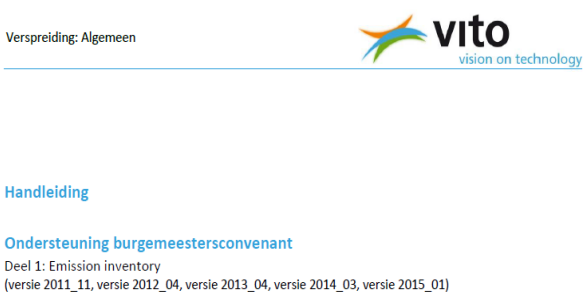
CONTACT: RVO Netherlands Enterprise Agency (www.rvo.nl)
DETAILED INFO: www.infomil.nl/onderwerpen/duurzaamheid-energie/energiebesparing/praktijkvoorbeelden/onderwijsinstelling/bestaande-scholen/

LEVEL	Local
LANGUAGE	Dutch
ADAPTABILITY	HIGH. It is a simple list of options to be used for energy savings in school buildings, i.e. both by schools themselves and by municipalities that own school buildings.
TRANSFERABILITY	YES. It is a simple list of options to be used for energy savings in school buildings, that can be used in other countries as well.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Verlichtingsvisie Amsterdam (Plan), Netherlands

Gemeente Amsterdam	The municipality of Amsterdam has started to develop a 'public lighting vision' to combat light pollution and unnecessary light, and at the same time save energy. The 'plan of action' for this light vision provides many useful ideas for a light vision for Amsterdam and beyond. The main aspect is to characterise specific 'lighting typologies', where guiding principles are set for different types of environments (e.g. shopping streets, pre-war residential streets, transport hubs, etc.). These typologies thus guide in which way lighting can be installed that saves energy and at the same time contributes to e.g. social safety.
CONTACT:	Dienst Infrastructuur, Verkeer en Vervoer, Hans Akkerman (openbareverlichting@rws.nl)
DETAILED INFO:	https://www.infomil.nl/publish/.../plan_van_aanpak_verlichtingsvisie_versie_5_1.pdf
LEVEL	Local, regional, national
LANGUAGE	Dutch
ADAPTABILITY	LOW. n/a
TRANSFERABILITY	YES. The concept of the lighting vision can be applied elsewhere. In the end, the typologies need to be customised for specific situations.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Handleiding / Tool Ondersteuning burgemeestersconvenant: inventory, Belgium



"VITO and the Flemish Ministry of Environment, Nature, and Energy (LNE) have developed a tool that support municipalities in establishing their 'baseline emission inventory' (BEI) or 'monitoring emission inventory' (MEI), as defined for the Sustainable Energy Action Plan (SEAP), by the Covenant of Mayors. The tool focuses on the emission sources that are required to be reported under the Covenant as well as a few optional emission sources that may be relevant (agriculture, industry, and electricity production).
In general, the tool helps to calculate CO2 emissions per sector based on activities and emission factors. The calculation tool has been created in Excel. There is a related tool on measures for the SEAP."

CONTACT: Dipartimento dell'ambiente, natura ed energia (beleid@lne.vlaanderen.be)
DETAILED INFO: www.burgemeestersconvenant.be/nulmetingen

LEVEL	Local, regional, national
LANGUAGE	Dutch
ADAPTABILITY	LOW. The tool has been specifically created for municipalities.
TRANSFERABILITY	YES. The tool could be also applied in other regions and countries. The tool includes pre-entered data on the Flanders situation, but this can be adapted.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • lack of in-house expertise about technical tools (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Duurzaamheidsmeter Wijken (DZM Wijken), Belgium

The Duurzaamheidsmeter Wijken (DZM Wijken, Sustainability Meter for Neighborhoods) is a tool created by the Flemish government to support the planning, design, and implementation of a new sustainable (residential) neighborhood, and measure its sustainability. The tool can be used by the local government or a project developed.

The DZM Wijken helps to objectively assess the sustainability of a neighborhood. In essence it is a collection of criteria and indicators, using an Excel file, supplemented by an extensive guidebook. Based on the guidance, all indicators can be scored, which leads to an overall score for the sustainability of the neighborhood.

The indicators focus on 8 themes: quality control; social sustainability; mobility; physical environment; nature and nature development; water; materials and waste; and energy.

In addition to the full DZM Wijken, there is also a Quickscan Duurzame Wijken. This quickscan does not provide an explicit score for sustainability, but it provides a quick indication based on a simpler procedure.

CONTACT: Nancy Matthys (nancy.matthys@dar.vlaanderen.be)

DETAILED INFO: www.do.vlaanderen.be/bestanden-duurzaamheidsmeter-wijken

LEVEL	Local
LANGUAGE	Dutch
ADAPTABILITY	HIGH. Many of the indicators can be used for other purposes as well. The total guidance could, in addition to use for residential neighbourhoods, also be used (with some adaptations0 for e.g. an industrial park or a transit-oriented development. .
TRANSFERABILITY	YES. Although developed for Flanders, it can also be used in other regions or countries. In addition to translation, some reconsideration of indicators and scoring may be needed (for example in other countries the importance of cycling infrastructure may be scored differently).
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

4.2 Tools from Bulgaria & Hungary

Municipal energy consumption calculator, Bulgaria

ЕНЕРГИЙНА АГЕНЦИЯ ПЛОВДИВ / ENERGY AGENCY OF PLOVDIV save • agency	The calculator for municipal energy consumption developed by Energy Agency of Plovdiv is a software tool, based on Excel, to support local authorities in calculation of total municipal energy consumption and energy costs. This tool gives opportunity to separate energy consumption: - by sectors- public sector, public administration, transport, industry, agriculture sector, health and social care, households, tourism; - by energy sources and monetary value.
CONTACT: vladimir.valkov@eap-save.eu DETAILED INFO: Energy Agency of Plovdiv	
LEVEL	Local, regional, national
LANGUAGE	Bulgarian
ADAPTABILITY	HIGH. The tool is highly adaptable to other countries only by replacing the costs of energy sources for different fuels.
TRANSFERABILITY	YES. The tool is software-based so its operative functions are fixed. Only emission costs of energy sources need to be carefully reviewed when being applied to new member states.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Long-range Energy Alternatives Planning System (LEAP), Bulgaria

LEAP (Long-range Energy Alternatives Planning System)- software tool for energy policy analysis and climate change mitigation assessment. LEAP is an integrated, scenario-based modeling tool that can be used to track energy consumption, production and resource extraction in all sectors of an economy.

Possibility to create interpolations, step functions and various trend forecasts by entering data directly into LEAP, by importing or creating a link to an Excel spreadsheet. Ability to automatically generate results as standard energy balance reports, follow the standard format employed by the IEA and most national energy planning agencies. Sankey diagrams for visualisation the energy balance flows for modelling area.

CONTACT: Dr. Charlie Heaps (charlie.heaps@sei-us.org)

DETAILED INFO: www.energycommunity.org/

LEVEL	Local, regional, national
LANGUAGE	English, French, Spanish, Portuguese and Chinese
ADAPTABILITY	HIGH. The tools is highly adaptable to other countries. LEAP has been adopted by thousands of organisations in more than 190 countries worldwide. Its users include government agencies, academics, non-governmental organisations, consulting companies, and energy utilities. It has been used at many different scales ranging from cities and states to national, regional and global applications. LEAP and its associated training materials are already available in English, French, Spanish, Portuguese and Chinese with many additional translations currently under development by volunteers.
TRANSFERABILITY	YES. The SEI Energy Modeling team has created a set of national level "starter" data sets for LEAP. These data sets compile international data together in a consistent manner as a starting point from which developing country analysts can subsequently develop their own more detailed analyses. They are designed to combine historical energy balance data provided by the IEA with various other data sources such as emission factors from the IPCC, population projections from the United Nations, development indicators from the World Bank, non-energy sector GHG sources and sinks from the World Resources Institute and energy resource data from the World Energy Council.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Guideline on energy efficiency management in industrial enterprises, Bulgaria

	The guideline can be used by energy managers, specialists from large companies and industrial systems having obligations under the EEA, SME to increase their EE. The guideline gives instructions how to collecting and analyzing information on energy consumption; practical actions for building, monitoring and improvement of energy management systems; implementation of measures to increase the EE of major groups of energy consumers; creation of system for energy monitoring. The guideline include a good practices in each of the areas, publications and sources of information, requirements and procedures for introduction of the international standard on energy management BS EN ISO 50001.
CONTACT:	Tsvetomira Kulevska (kulevska@seea.government.bg)
DETAILED INFO:	http://whitecertificates.bg/%D0%BE%D0%B1%D1%83%D1%87%D0%B5%D0%BD%D0%B8%D0%B5/%D0%BE%D0%B1%D1%83%D1%87%D0%B5%D0%BD%D0%B8%D1%8F/
LEVEL	Local, regional, national
LANGUAGE	Bulgarian
ADAPTABILITY	HIGH. This guideline can be used from wide range of energy experts and auditors.
TRANSFERABILITY	NO. This guideline is dedicated to support implementation of Bulgarian energy efficiency targets. It's based on EU Directives, but in the frames of National legislation.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme for conducting energy audits in the public sector at national regional or local level (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting energy efficiencymeasures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

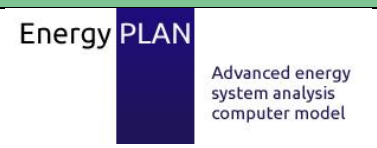
CO_2 calculator, Bulgaria

The CO2 calculator developed by EAP is a software tool to support local authorities in translating the types of fuel used by the local authorities into energy and CO2 units. It covers hard and liquid fuels. Its emission factors are based on the national requirements and are periodically updated.

CONTACT: Ina Karova (ina.karova@eap-save.eu)
DETAILED INFO: http://co2.eap-save.eu/

LEVEL	Local, regional, national
LANGUAGE	Bulgarian
ADAPTABILITY	HIGH. The tool is highly adaptable to other countries only by replacing the emission factors used for different fuels. The adjustment of the conversion rates could be made.
TRANSFERABILITY	YES. The tool is software-based so its operative functions are fixed. Only emission factors need to be carefully reviewed when being applied to new member states.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

EnergyPLAN, Bulgaria



The EnergyPLAN model is an input/output computer model for Energy Systems Analysis. It simulates the operation of national energy systems on an hourly basis, including the electricity, heating, cooling, industry and transport sectors. The main purpose is to assist the design of national energy planning strategies on the basis of technical and economic analyses. General inputs are demands, RES, energy plant capacities, costs and a optional different regulation strategies emphasising import/export and excess electricity production. Outputs are energy balances and resulting annual productions, fuel consumption, import/exports and total costs including income from the exchange of electricity. The EnergyPLAN software is free to download, considers the three primary sectors of any national energy system, which includes electricity, heat and transport sectors.

CONTACT: energyplanmodel@gmail.com

DETAILED INFO: www.energyplan.eu/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH.
TRANSFERABILITY	YES. The EnergyPLAN software is free to download, considers the three primary sectors of any national energy system, which includes electricity, heat and transport sectors. One of the most accessible methods of creating flexibility is the integration of the electricity, heat and transport sectors using technologies such as combined heat and power (CHP) plants, heat pumps, electric vehicles, and hydrogen. Therefore, for certain objectives, this can be an essential issue for a study.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Accelerating the renovation of the Bulgarian building stock, Bulgaria

The long-term roadmap for development of the Bulgarian renovation programme for residential buildings. Following the implementation of the programme's first phase, the analysis argues for a shift in focus towards achieving higher energy classes, reduction of public subsidy in a measured and manageable manner. Several scenarios to 2030 were modelled and reducing subsidies to around 75% is possible. The funding could reach more citizens, improving their homes and quality of life. In order to facilitate increased financial contributions from homeowners need to be developed simple and attractive financing mechanisms, accompanied by other measures: awareness-raising campaigns, building capacity, simplified procedures and measures.

In order to explore various policy options, a team of experts made use of the well-established Invert/EE-Lab model of the Vienna University of Technology. This was supported by further analysis and presentations of results on the characteristics of the building stock. With all this information, expertise and technical background, it was possible to simulate the effects of different economic scenarios, both to 2020 and to 2030. The variables that were modelled are: Future Energy Prices, Renovation levels, Subsidy Levels, Other factors (collectively, "Soft Measures"), Co-Benefits. Internal Temperature.

Based on numerous combinations of the exploited variables, 14 scenarios for renovation covering all types of residential building (individual houses and apartment blocks) were compiled and analysed.

CONTACT: Zdravko Genchev (zgenchev@eneffect.bg)

DETAILED INFO: http://bpie.eu/publication/accelerating-the-renovation-of-the-bulgarian-building-stock/

LEVEL	Local, regional, national
LANGUAGE	Bulgarian, English
ADAPTABILITY	HIGH. The scenarios can be used by policy makers to for planning the future activities.
TRANSFERABILITY	YES. In order to explore various policy options, a team of experts made use of the well-established Invert/EE-Lab model of the Vienna University of Technology. This was supported by further analysis and presentations of results on the characteristics of the building stock. With all this information, expertise and technical background, it was possible to simulate the effects of different economic scenarios, both to 2020 and to 2030. The variables that were modelled are: Future Energy Prices, Renovation levels, Subsidy Levels, Other factors (collectively, "Soft Measures"), Co-Benefits. Internal Temperature. These scenarios can be used by policy makers to for planning the future activities.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technology (art. 17) • insufficient information on financial tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

ENSI-EAB (Energy Auditing of Buildings), Bulgaria

	ENSI-EAB (Energy Auditing of Buildings) software is a tool for calculating the energy performance of buildings. The software is suitable for energy auditing of new and existing buildings and for building certification but requiring a license. The EAB Software is calculating the total, annual energy use of the building, divided into seven budget items: Heating, Ventilation (heating), Domestic hot water, Cooling, Fans & pumps, Lighting, Various equipment. When performing calculations, each building can be modelled in detail, and alternative solutions and measures simulated.
CONTACT: ensi@ensi.no DETAILED INFO: www.ensi.no/	
LEVEL	Local, regional, national
LANGUAGE	English, Bulgarian
ADAPTABILITY	HIGH. ENSI has successfully managed and implemented a number of programmes and projects in 35 different countries.
TRANSFERABILITY	YES. The clients are governmental organisations, non-governmental organisations, universities, public utilities and enterprises and private companies as well as international financial institutions. Most of the ENSI Software and Tools are generic and can be used for most types of projects in any country. The energy calculation Software is prepared to be adjusted to include for instance local climatic data and reference values according to national regulations and standards. The Software is prepared for easy translation into new languages.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

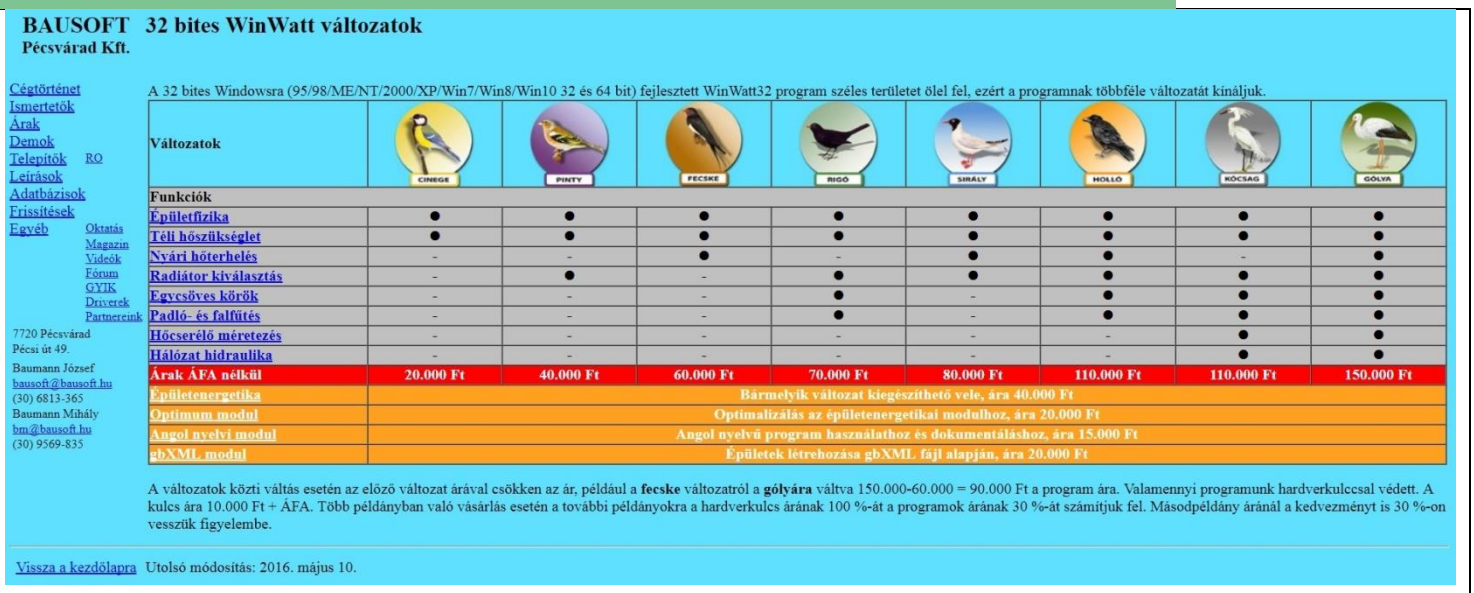
11 energy-saving assessment methodologies, Bulgaria

11 energy-saving assessment methodologies are used to assess the amount of energy saved as a result of the implementation of specific energy efficiency measures. They include a mechanism to allocate energy savings to each year of the lifetime of the measure concerned.
The methodologies take a 'bottom up' approach. This enables the energy saved to be determined by measuring and/or calculating energy consumption before and after implementation of the measures concerned, having made standardised adjustments based on the impact of the specific climate conditions on energy use. The energy savings are calculated and measured in kgoe or kWh.

CONTACT: Tsvetomira Kulevska (kulevska@seea.government.bg)
DETAILED INFO: www.seea.government.bg/documents/Metodiki_02.2013.pdf
http://seea.government.bg/documents/Evaluation_Metodiki.xls

LEVEL	Local, regional, national
LANGUAGE	Bulgarian
ADAPTABILITY	HIGH. The methodologies and calculation tool are free of charge, can be used of wide range of specialists.
TRANSFERABILITY	NO. Energy efficiency targers are different for the different countries. Also the emissions factors are different.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme for conducting energy audits in the public sector at national regional or local level (art. 8) • there is no quality assurance scheme in place for energy audits (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

WinWatt software, Hungary



BAUSOFT 32 bites WinWatt változatok
Pécsvárad Kft.

Cégtörténet
Ismertetők
Árak
Demok
Telepítők RO
Leírások
Adatbázisok
Frissítések
Egyéb Oktatás, Magazin, Videók, Fórum, GYIK, Driverek, Partnereink

7720 Pécsvárad
Pécsi út 49.
Baumann József
bausoft@bausoft.hu
(30) 6813-365
Baumann Mihály
bm@bausoft.hu
(30) 9569-835

A 32 bites Windowsra (95/98/ME/NT/2000/XP/Win7/Win8/Win10 32 és 64 bit) fejlesztett WinWatt32 program széles területet ölel fel, ezért a programnak többféle változatát kínáljuk.

Változatok	CINEGE	PINTY	FECSKE	RIGÓ	SIRÁLY	HOLLÓ	KÓCSAG	GÓLYA
Funkciók								
Épületfizika	●	●	●	●	●	●	●	●
Téli hőszükséglet	●	●	●	●	●	●	●	●
Nyári hőterhelés	-	-	●	-	●	●	-	●
Radiátor kiválasztás	-	●	-	●	●	●	●	●
Egycsöves körök	-	-	-	●	-	●	●	●
Padló- és falfűtés	-	-	-	●	-	●	●	●
Hőcserélő méretezés	-	-	-	-	-	-	●	●
Hálózat hidraulika	-	-	-	-	-	-	●	●
Árak ÁFA nélkül	20.000 Ft	40.000 Ft	60.000 Ft	70.000 Ft	80.000 Ft	110.000 Ft	110.000 Ft	150.000 Ft
Épületenergetika	Bármelyik változat kiegészíthető vele, ára 40.000 Ft							
Optimum modul	Optimalizálás az épületenergetikai modulhoz, ára 20.000 Ft							
Angol nyelvi modul	Angol nyelvű program használathoz és dokumentáláshoz, ára 15.000 Ft							
gbXML modul	Épületek létrehozása gbXML fájl alapján, ára 20.000 Ft							

A változatok közti váltás esetén az előző változat árával csökken az ár, például a **fecske** változatról a **gólyára** váltva 150.000-60.000 = 90.000 Ft a program ára. Valamennyi programunk hardverkulccsal védett. A kulcs ára 10.000 Ft + ÁFA. Több példányban való vásárlás esetén a további példányokra a hardverkulcs árának 100 %-át a programok árának 30 %-át számítjuk fel. Másodpéldány áránál a kedvezményt is 30 %-on vesszük figyelembe.

Vissza a kezdőlapra Utolsó módosítás: 2016. május 10.

WinWatt software can be used for Energy audits. The software is specifically designed according to the Hungarian regulations. The description is only in Hungarian. With a language extension the program may manage in English, and the calculations documentation is done in English too.

The main modules are: Building physics calculations, Heating heat demand, Summer heat load, Radiator Selection, Single-tube heaters, Sizing of underfloor heating, Heat exchanger dimensioning, Network hydraulics building energy; Optimum module; English language module; gbXML scanning module; CHM-BAU32 Chimney scaling program; SunArch Clock Editor Editor; Heat exchanger scaling program; A wire mesh scaling program; SO-bau insulation selector; GasNet32 Gas network scaling program; WaterNet32 Water Sizing Scale Program; Air traffic calculating program

CONTACT: József Baumann (bausoft@bausoft.hu)

DETAILED INFO: www.bausoft.hu/ww32.htm

LEVEL	Local, regional, national
LANGUAGE	Hungarian, English
ADAPTABILITY	LOW. Specifically designed according to the Hungarian regulations
TRANSFERABILITY	NO.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Energy calculator, Hungary

On- line calculator - Tool for energy audit with possibility to calculate payback period. The calculator is on Hungarian language, according to the Hungarian energy efficiency targets. You can input the type, size and material of the building, heating system, lighting, heating system, annual energy and water consumption and other parameters to calculate the payback period for investment in new equipment.

CONTACT: milena.agopyan@eap-save.eu

DETAILED INFO: www.emergia.hu/calcuditor.php

LEVEL	Local, regional,, national
LANGUAGE	Hungarian
ADAPTABILITY	LOW. The calculator is on hungarian language, according to the Hungarian energy efficiency targets.
TRANSFERABILITY	NO.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Handbook Energy Audit in SMEs, Hungary

The Handbook is conceived as a tool for the energy auditors while visiting the client's premises, and during the analysis and diagnosis phases. The Handbook is focused on Small and Medium Enterprises (SMEs), which do not have an internal specialist for energy management and need an external support not only for the diagnostics but also for designing the main measures, selecting the necessary suppliers and supervise the implementation works.

CONTACT: Daniel Caratti (caratti@ecuba.it)

DETAILED INFO: www.erasme-project.eu/Style%20Library/Erasme/Deliverables/D2.1_ERASME_Handbook_EN.pdf
www.erasme-project.eu/Style%20Library/Erasme/Documents/ERASME_HANDBOOK_HUN.pdf

LEVEL	Local, regional, national
LANGUAGE	Hungarian, English
ADAPTABILITY	HIGH.
TRANSFERABILITY	YES. The methodology used for developing energy audits is based on: - Horizontal approach, covering different industrial sectors - Two-step audit - Use of existing well accepted manuals on energy audit in industry like the CHANGE manual - Application of tested training packages (for example using the CHANGE experience on pre-checks, or the ENFORCE training experience in buildings) - Use of the benchmarks made available by the 35 BREFs manuals of IPPC (eippcb.jrc.ec.europa.eu), translating and adapting the sectoral benchmark values available for each technology for use by the energy auditors.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Pellets energy calculator, Hungary

	Pellets energy calculator- The energy calculator is intended to provide information about the cost difference between conventional fuels and the use of pellet firing. The calculation determines the approximate heat demand of the building and the annual specific energy consumption of specific geometry of the building, the general data of the thermal boundary and structures. Thus, the heat demand calculation is only an accurate order of merit, however, sufficient energy prices differencing exact branch enter the expected heating costs.
CONTACT: posta@pelletnrg.hu DETAILED INFO: www.pelletnrg.hu/calc.php	
LEVEL	Local, regional, national
LANGUAGE	Hungarian
ADAPTABILITY	HIGH. The parameters of this tool are common - such as dimension of the buildings. The fuel cost is in hungarian forint, but can be calculated into euro.
TRANSFERABILITY	YES. Now the calculator is only at Hungarian language. After translation in english can be used from wide audience.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

4.3 Tools from ARENE -France

Cit'ergie, France

Cit'ergie European Energy Award	Cit'ergie is an operational device (label) addressed to local communities which want to improve their energy policy (sustainable energy actions plan) and its actions resulting from it. It awards the quality of actions, management of project, local concertation… The label is derived from the European label Energy Award. The local community have to: 1. Make an inventory on the 6 areas considered in Cit'ergie, 2. Validate an energy-climate policy and local actions plan, 3. Conduct an external audit for check the policy and actons, 4. Realise an audit every 4 years to maintain or improve its level of labeling.
CONTACT: Lionel GUY (l.guy@areneidf.org) DETAILED INFO: www.european-energy-award.org/home/ // http://www.citergie.ademe.fr/	
LEVEL	Local, regional, national
LANGUAGE	French and English
ADAPTABILITY	HIGH. This label is a certification of existing energy policy and energy actions plan (SEAP). The European label (European label Energy Award) provide an assistance and a package of tools and guidelines to adapt the European label. But to join the European label, the country or region have to acquire a license.
TRANSFERABILITY	YES. The label is derived from the European label Energy Award. It supports municipalities willing to contribute to sustainable energy policy and urban development through the rational use of energy and increased use of renewable energies. This label is currently implemented in 9 countries (Austria, France, Germany, Italy, Liechtenstein, Luxembourg, Monaco, Switzerland).
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Regional Climate, Air and Energy Plan (SRCAE), France

The Ile-de-France regional climate, air and energy plan (SRCAE) is the reference document for local authorities wishing to act on their territory.

The SRCAE is a strategic document that sets out the objectives for: energy efficiency, renewable energy development, improving air quality and adapting to climate change.

CONTACT: Louise Vaisman (l.vaisman@areneidf.org)

DETAILED INFO: www.areneidf.org/publication-arene/srcae-%E2%80%93-sch%C3%A9ma-r%C3%A9gional-du-climat-de-l%E2%80%99air-et-de-l%E2%80%99%C3%A9nergie-de-l%E2%80%99%C3%AEle-de-france-premiers-rep%C3%A8res-octobre-2015

LEVEL	Regional
LANGUAGE	French
ADAPTABILITY	HIGH. The adaptation of the strategic objectives and the form of the strategic document seems plausible.
TRANSFERABILITY	YES. A similar configuration, with support from the Regional Council, from the Statistic Observatory Network of Energy (ROSE) and from the Prefect of the Region, should be existing beforehand.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector strategic goals with defined targets at national level (art. 3) • no energy efficiency policy public sector operational goals with defined programme to deliver them (art. 3) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Shared Energy Council, France

The "shared energy advice' is a specific to small and medium-sized communities service which is to share the energy of a specialised technician skills. This helps communities lacking sufficient internal resources to implement an energy policy under control, and to take concrete action on their heritage to achieve savings.

This tool is intended for the municipalities with less than 10,000 inhabitants. The benefits of the shared energy (CEP) consulting :

The pooling of expertise a territorial approach

- An objective and independent advice: priority is given to the control of energy without privileging an energy solution in particular;
- Cost potentially offset by the savings;
- A network of advisers energy on the whole of the french territory, trained, equipped and led by ADEME;
- Support and technical assistance in the long term.

CONTACT: energie.idf@ademe.fr
DETAILED INFO: www.ademe.fr/collectivites-secteur-public/patrimoine-communes-comment-passer-a-laction/batiments-publics-reduire-depense-energetique/conseil-energie-partage-cep

LEVEL	Regional, national
LANGUAGE	French
ADAPTABILITY	HIGH. At the national level, ADEME provides energy advisers with different tools and provide different services : – access to energy accounting software (GEPweb360) – access to a forum and a platform to download reference documents – provision of a methodological guide and communication media (brochures, videos...) – to hold annually a day of exchanges – the implementation of a dedicated training course. At the regional level, ADEME provides the mobilisation of partners, Contracting and financing of projects, as well as the follow-up of energy advisors hired. In areas with a significant number of advice on power sharing (CEP), ADEME also organises a supplementary animation that could include business meetings or visits to facilities.
TRANSFERABILITY	YES. The main principles can adapted to other countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector strategic goals with defined targets at national level (art. 3) • no energy efficiency policy public sector operational goals with defined programme to deliver them (art. 3) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Display, France

Display is a communication tool complementary to the national certificate for public buildings that today has most of the Member States. With emphasis on local communication campaigns and providing a variety of communication tools, Display exceeds the requirements of the Directive on the energy of buildings (EPBD) Performance. In particular, post 'evolution' to show efforts and improving the energy efficiency of a building, by including on the same post the energy performance of the building on two years.
With the DISPLAY poster as a communication tool, it is easy to inform all users of the buildings and to motivate them to save water and energy to improve the efficiency of the building class.
Is a European campaign which aims to help municipalities to carry out concrete actions against waste energy in buildings. This campaign aims to empower every citizen on its energy consumption, to reduce greenhouse gas emissions and financial savings. Currently, more than 500 European communities participate in DISPLAY. Inspired by the label for appliances, Display to view, on a poster visible by everyone, the energy performance of public buildings. Consumption of energy, water, and CO2 is rated according to different classes, from A, the more thrifty, to G, the worst. The poster also informs about the origin of the used energy: renewable, nuclear or fossil. On the simple gestures that allow to avoid unnecessary waste, on technical solutions as well as the potential of the building if he rode a class. It makes readable and visible use of energy for consumers, citizens and policymakers.

CONTACT: Sophie Borboen
DETAILED INFO: www.citedelenergie.ch/fr/instruments-exemples/displayr-laissez-parler-les-batiments/

LEVEL	Local, regional, national
LANGUAGE	French
ADAPTABILITY	HIGH. The campaign offers many additional benefits for each local authority to : – The opportunity to communicate with citizens by presenting the initiative publicly – Display a poster attractive and accessible to all in order to capture the attention of the general public – To be able to increase the attention of users and managers about their consumption of energy and water. – Get instant access to an online efficient, pragmatic and easy to handle tool. – Become a member of an innovative European campaign to combat climate change. Each year, the public authorities which have the best results for their communication campaign will be awarded the prize "Towards"Class A". This award is open to all municipalities and local authorities throughout Europe members of the Display campaign.
TRANSFERABILITY	YES. The Display tool is intended for all municipalities in Europe.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on technical tools (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

SEC-Suisse, France

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Urban energy planning

The MEU project has as objective to develop and test a web tool that precisely meets the needs of planners of urban energy systems. This project helped put together the academic partners, as well as four Swiss cities.

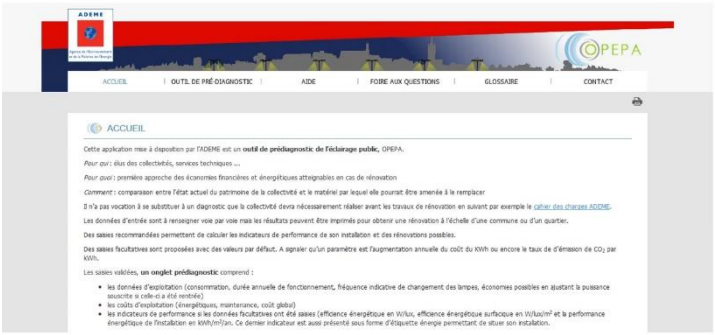
The tool offers the following features:
- GIS mapping interface as main working environment;
- web-based platform, including services provided through ArcGIS Server;
- quantitative assessment of a series of energy and environmental indicators for an urban area, both at the level of the (request) buildings as the supply;
- direct access to the planning of urban areas, through the creation, then the quantitative assessment of scenarios built directly by the user, on the basis of direct modifications on the energy state of affairs to an arbitrary year;
- monitoring ongoing, on annual basis of energy flows, consumption, as well as energy projects undertaken, through a temporal database.

A first prototype of the MEU platform is currently in an intensive phase of tests, based on concrete cases defined with the partner cities. A computer architecture consolidation effort is also undertaken in order to improve the robustness of the tool.

CONTACT: Massimiliano Capezzali (massimiliano.capezzali@epfl.ch)
DETAILED INFO: www.bfe.admin.ch/php/modules/enet/streamfile.php?file=000000010045.pdf
http://meu.epfl.ch/

LEVEL	Local
LANGUAGE	French
ADAPTABILITY	HIGH. This tool can adapted to different urban areas, depending on its level of application.
TRANSFERABILITY	YES. This tool can be transferable in France and applicable to communities and their urban areas. Fully accessible through the web, its implementation methodology is quick, to the extent where the calculations are made by dedicated servers, and requires the creation of a government.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Public lighting diagnostic tool, France



Who: representatives of communities, technical services...
What: first approach to financial and energy savings achievable in the case of renovation
How to: comparison between the current state of the heritage of the community and the material by which she might have to replace it

OPEPA is intended to provide a comparison between the hardware on the lighting of a community and that by which she could replace it. It allows to give an overview of the financial and energy savings achievable in the case of renovation.

How do I use OPEPA ?

The user must enter data on public lighting of his commune. The tool then calculates estimates of the financial and energy savings according to different scenarios of renovation. The results can be printed. Attention, OPEPA is a tool for helping the first level decision which should not replace a full diagnosis of its public lighting directed by a professional.

CONTACT: -
DETAILED INFO: http://opepa.ademe.fr/

LEVEL	Local, regional, national
LANGUAGE	French
ADAPTABILITY	HIGH. More and more ambitious renovation four scenarios are available : - Night extinction during off-peak hours; - Replacement of the source and the equipment; - Complete replacement of the luminaire; - Complete replacement of the fixture with dimming or dual module. Each scenario includes new operating data, indications of cost including the return on investment and the new values of performance indicators. Several parameters are adjustable in the scenario of renovation proposed such as the price of material and sources the power, efficiency, and economic life of the sources.
TRANSFERABILITY	YES. This tool is an application of the European standard "Lights" EN 13201. Designed as an application for the calculation of the financial and energy savings according to different scenarios of renovation, it is intended to be used in other countries and at different levels.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

PlanETer, France

Project PlanETer (territorial energy planning). This R&D project has been funded with The Ark Energy program of the Foundation for innovation in the Valais.
The developed tool is intended to provide local decision-makers, technology of systems of Geographic Information (GIS), a vision global and systemic municipal area from the perspective of the consumption of energy and the availability of local energy resources.
This tool, still in the phase of evolution and consolidation, quickly met with a great success with the public communities of French-speaking Switzerland. Thus, more than 10 towns asked CREM, through CREM-Services, to carry out such an audit across their territories. Today, developments are still underway to improve the tool in our CREM R & D sector. At the same time, discussions are under to develop this project outside our association.
The tool PlanETer permait the common participants not only to set goals but also to launch concrete projects (geothermal, wind-mini, CAD). Thanks to this project and to the work of the engineers of the CREM, Commons have the following :
- A tool spatialised, allowing them to have a global energy vision of their territory
- Database allowing them to define, on the one hand, objectives and priorities both for supply and for energy efficiency, and, on the other hand, to establish a Plan Director of energy.

CONTACT: Mme Martine Plomb - Gillioz, Responsable CREM - Services, Répondant "Pôle Collectivités publiques" Tél: 027/ 721 25 46
DETAILED INFO: www.crem.ch/planeter

LEVEL	Local
LANGUAGE	French
ADAPTABILITY	HIGH. This tool is based on the systems of Geographic Information (GIS), also used in France and other countries. Bringing a vision global and systemic communal territory from the perspective of the consumption of energy and the availability of local energy resources, there are several positive feedback.
TRANSFERABILITY	YES. The PlanETer tool is adaptable to any type of commune, depending on their size. It allows to carry out energy planning territorial, and provided map data that can be integrated into the programming of territorial actions of Commons.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Recruitement of an ambassador for Energy Efficiency, France

Booklet giving the key steps to recruit and train an eco-companion or ambassador for EE. The booklet give the key elements to recruit an eco-companion to accompany inhabitants in their Energy Efficiency projects.

CONTACT: Louise Vaisman (l.vaisman@areneidf.org)
DETAILED INFO: www.areneidf.org/publication-arene/lutte-contre-la-pr%C3%A9carit%C3%A9-%C3%A9nerg%C3%A9tique-comment-recruter-et-former-un-ambassadeur-de

LEVEL	Local, regional
LANGUAGE	French
ADAPTABILITY	HIGH. The guidelines may be adapted if the local context is taken into account accordingly.
TRANSFERABILITY	YES. Those guidelines are aimed at communities and associations in involved in the fight against energy poverty through a national and local context, in particular through the Agenda 21 and Territorial Energy Climate Plan context.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about training (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

The Francilian Energy Bill, France

Tool developed within the framework of the Ile-de-France region's support missions on improving regional energy knowledge, to better understand data on consumption and production of energy.
This new indicator developed by the ARENE translates energy consumption data into monetary data (euro), in order to analyze the economic impact of energy consumption.

CONTACT: Louise Vaisman (l.vaisman@areneidf.org)
DETAILED INFO: www.areneidf.org/publication-arene/la-facture-%C3%A9nerg%C3%A9tique-francilienne

LEVEL	Regional, local, national
LANGUAGE	French
ADAPTABILITY	HIGH. The method can be reproduced: translation of data into monetary data (euros). It does not need to have any local grounding and the monetary data is the European Union currency.
TRANSFERABILITY	YES. The method can be reproduced without complications: translation of data into monetary data (euros).
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

The Territorial Energy Bill/Energy Scoreboard, France

Provides a financial transposition of energy consumption data across territories + sectoral studies for a more detailed analysis.
Allows a better understanding of the energy impacts of tertiary businesses in the Île-de-France region ; estimates energy savings potential and the potential cost of consuming less.

CONTACT: m.boitel@areneidf.org
DETAILED INFO: www.areneidf.org/projet/l%C3%A9nergie-en-%C3%AEle-de-france-consommation-production-facture-chiffrer-et-analyser

LEVEL	Local, regional, national
LANGUAGE	French
ADAPTABILITY	HIGH. The method to calculate the indicator and the energy scoreboard could be adaptable
TRANSFERABILITY	YES. However the indicator builds on the work of the regional observatory of energy and greenhouse gases (ROSE)as well as on the partnership between ARENE and energy distributors such as ErDF and GrDF.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24) • there are no implications to the public sector where targets are not being met (art. 24)

4.4 Tools from Croatia & Slovenia

Handbook Guide through a Green office, Croatia

The Handbook Guide to the Green Office deals with one of the most important environmental issues of the 21st century - how everyday office work can contribute to reducing overall environmental impact and increase the use of other resources for the benefit of employees and the wider community. The purpose of introducing a green office and green business to the organisation is the contribution to the application of the principle of sustainable development in the business sector. The organisation whose strategy is based on sustainable development becomes competent and recognisable at the local and global level. Socially responsible business is not just a matter of responsible behaviour towards the environment, but also towards the employees and community care, social justice, and economic security. Energy efficient business entities do not lose their comfort but smartly manage their energy by doing the same or greater workload with less energy consumed and investing in financial resources to improve their business.

CONTACT: Dean Smolar (dean.smolar@cei.hr)
DETAILED INFO: www.enu.hr/gradani/info-edu/savjeti/edukativni-materijali/

LEVEL	Regional, local, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required
TRANSFERABILITY	YES. These materials were developed under UNDP Croatia Project „Removing Barriers to Energy Efficiency in Croatia“, financed by GEF and implemented in Croatia. All the materials can be updated and translated and the right for use can be obtained at no charge.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Handbook for energy advisors, Croatia

The Energy Advisory Handbook was prepared as a starting point for future Energy Advisers, i.e. participants of the Energy Advisers Course. The manual contains all the information handled within the Course that provides basic knowledge of the thermal protection of buildings, energy consumption in heating, cooling, ventilation and domestic hot water, and electricity consumption for lighting and electrical appliances. Special chapters are dedicated to the application of renewable energy in households, as well as the economic assessment of energy efficiency projects. The Handbook was developed through the United Nations Development Program (UNDP), in cooperation with the Ministry of Economy, Work, Entrepreneurship, aiming at supporting energy efficiency in Croatia.

CONTACT: Dean Smolar (dean.smolar@cei.hr)
DETAILED INFO: www.enu.hr/gradani/info-edu/savjeti/edukativni-materijali/

LEVEL	Local, regional, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required and booklet proved to very practical for public authorities to learn about main EE concepts
TRANSFERABILITY	YES. These materials were developed under UNDP Croatia Project „Removing Barriers to Energy Efficiency in Croatia“, financed by GEF and implemented in Croatia. All the materials can be updated and translated and right to use can be obtained at no charge.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • insufficient information on training possibilities (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Energy management in cities, Croatia

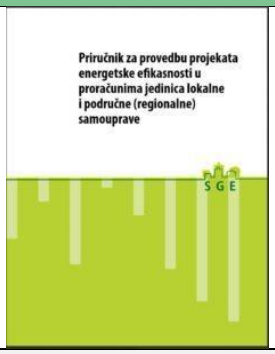
The aim of this guide is to introduce users to the different ways of consume energy and how the efficiency of energy consumption can be improved. The guide provides a basis for initiating a process of improving energy efficiency in the buildings owned by cities and counties. This guide is a tool that helps to monitor and measure how energy is consumed and is focused on increasing the efficiency of energy consumption. Environmental protection, as well as the system for efficient management of the city or county that can be upgraded by applying similar principles, are presented peripherally but extensively enough so that increase in energy efficiency is permanently connected with other aspects of management of cities and counties. Energy is only part of the broader context of natural resources. What is suggested is perhaps partly already implemented or planned in cities or counties but this Guide provides a quick and easy way of advancing to the level of EU cities that are already enjoying all the benefits that systematic energy management yields.

CONTACT: Dean Smolar (dean.smolar@cei.hr)

DETAILED INFO: www.enu.hr/gradani/info-edu/savjeti/edukativni-materijali/

LEVEL	Regional, local, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required
TRANSFERABILITY	YES. These materials were developed under UNDP Croatia Project „Removing Barriers to Energy Efficiency in Croatia“, financed by GEF and implemented in Croatia. All the materials can be updated and translated and the right for use can be obtained at no charge.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technology (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Handbook for energy efficiency project implementation in local and regional government, Croatia



Handbook provides a classification of the energy efficiency projects in the budgets of local and regional government. It describes the process of preparation of energy efficiency projects, their implementation in the budgets of local and regional governments. Additionally, it provides examples of good practice energy efficiency projects funded by local and regional governments. This manual is intended primarily for decision-makers in the public sector and officials in charge of the implementation of energy efficiency projects, their budgetary planning, and monitoring, as well as the interested public. Manual describes the process of identifying energy efficiency projects and the implementation of the project budget.

CONTACT: Dean Smolar (dean.smolar@cei.hr)
DETAILED INFO: www.enu.hr/gradani/info-edu/savjeti/edukativni-materijali/

LEVEL	Local, regional, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required
TRANSFERABILITY	YES. These materials were developed under UNDP Croatia Project „Removing Barriers to Energy Efficiency in Croatia“, financed by GEF and implemented in Croatia. All the materials can be updated and translated and the right for use can be obtained at no charge.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • the recommended actions from the energy audits completed are not implemented (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of guidelines & handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Analyses and recommendations for local budgets with aim of encouraging energy efficiency projects, Croatia

The research topic of this Guidebook is the adjustment of the local budgets in order for them to become supportive of the energy efficiency projects in public services. The main goal of the research was to provide suggestions and recommendations based on analysis of the current situation in Croatia and the comparative review of the experience of selected countries. The study provides suggestions and recommendations for the appropriate treatment of financial savings resulting from the increase in energy efficiency, during the process of planning, execution, and control of the budget of local and regional governments in Croatia. The study was developed through support from the United Nations Development Program (UNDP Croatia).

CONTACT: Dean Smolar (dean.smolar@cei.hr)
DETAILED INFO: www.enu.hr/gradani/info-edu/savjeti/edukativni-materijali/

LEVEL	Regional, local, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required
TRANSFERABILITY	YES. These materials were developed under UNDP Croatia Project „Removing Barriers to Energy Efficiency in Croatia“, financed by GEF and implemented in Croatia. All the materials can be updated and translated and the right for use can be obtained at no charge.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • the recommended actions from the energy audits completed are not implemented (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

System for monitoring and verification - SMIV, Croatia

SMIV is the first Monitoring and Verification Platform developed as an online application that incorporates National Energy Efficiency Action Plans, Regional and Local Energy Efficiency Action Plans and planning instruments together with specially devised tools that allow all users to generate reports, plans and calculations of their energy savings under the same unified methodology, defined by EU principles. Data contained in SMIV is used for many energy savings calculations, analysis and continuous overview of achieved National energy efficiency targets. SMIV is based on the bottom-up methodology and is used on a local and national level to calculate energy savings in three main sectors: Building, Industry, and Transport. Croatian Energy Efficiency Act defines SMiV as the national System for monitoring, measurement, and verification of energy savings. With this tool Croatia is reporting energy savings regarding Article 3, 5 and 7 of the EED.

CONTACT: Josip Kobescak (josip.kobescak@cei.hr)

DETAILED INFO: http://cei.hr/en/smiv-system-measuring-and-verifying-energy-savings/

LEVEL	Local, regional, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required. Every country has its own Bottom up methodology that needs to be transferred to SMIV. SMIV is a very practical digital tool which can be easily adapted and modified in each country. The calculation of the energy savings is done with the National Bottom up methodology.
TRANSFERABILITY	YES. SMIV tool could be transferred to other EU countries with minor changes to bottom up algorithms and language
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Energy management Information system (EMIS), Croatia

EMIS is a web application for monitoring and analysis of energy and water consumption data in public sector buildings and as such provides a transparent overview and control of energy consumption in all public sector buildings that makes it an inevitable tool for Systematic Energy Management in the Public sector. Data contained in EMIS are used for many energy performance calculations, analysis and continuous oversight and control of energy usage. This enables easier understanding of how and where we consume energy and water in a particular building, the comparison of individual buildings with other similar buildings, as well as identifying unwanted, excessive and irrational energy and water usage. EMIS greatly simplifies the process of sustainable energy management in public buildings because it allows easy access to data on energy and water consumption, enables easy graphical and tabular display and print of the data. In addition to embedded analytical functions, EMIS allows data export in XLS format thus providing data resource for any kind of advanced analysis. This leads to easier identification of potential measures of energy efficiency improvements, development of local energy efficiency improvement plans, implementation of projects that deliver energy and financial savings and at the end to monitoring and verification of achieved results.

CONTACT: Iva Fakin (iva.fakin@apn.hr)
DETAILED INFO: www.apn.hr/informacijski-sustav-za-gospodarenje-energijom--isge.aspx

LEVEL	Regional, local, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required. EMIS could be easily adopted into EU countries.
TRANSFERABILITY	YES. EMIS could be easily transferred to EU countries. Biggest issue would be language translation.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme for monitoring energy efficiency levels at national level (art. 5) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Green calculations - A plus for you and two pluses for the environment, Croatia

"Green calculations - A plus for you and two pluses for the environment" was a Croatian Environmental Protection and Energy Efficiency Fund's public call and campaign aimed at households. The measures to achieve energy savings in homes are one of the major guidelines of European as well as the national energy policy. Most modern households own a series of electric household appliances. In the energy consumption of households, the consumption of household appliances in 20%. In Croatia, there are about 180,000 appliances sold every year. By 2020 it is expected that it will be necessary to replace the more than 2 million units whose lifespan expires. In order to reduce resource consumption and reduce costs in the households, subsidies for the purchase of a total of 20,000 A +++ household appliances were approved.

CONTACT: Dean Smolar (dean.smolar@cei.hr)

DETAILED INFO: www.fzoeu.hr/hr/energetska_ucinkovitost/enu_u_zgradarstvu/sufinanciranje_kupnje_a__kucanskih_uredaja/

LEVEL	National, regional, local
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Some changes required, depending on the EE Fund existing in the MS.
TRANSFERABILITY	YES. Campaign and content can be easily translated once the funds for the campaign are available.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • absence of an Energy Efficiency National Fund (art. 20) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Project office for building renovation, Slovenia

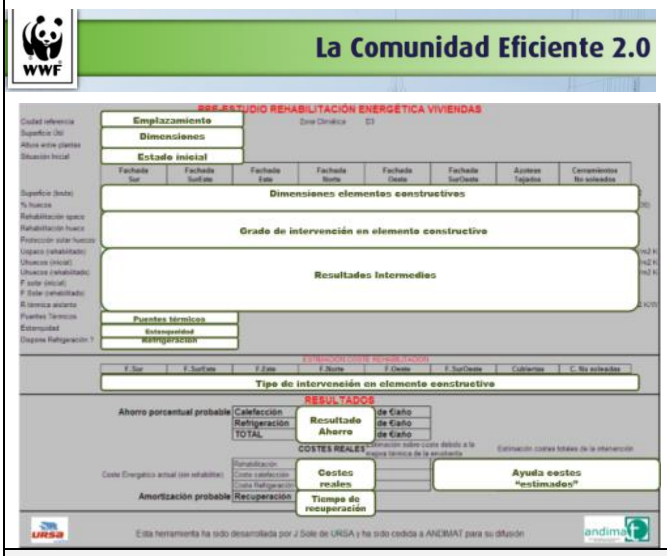
Energy renovation of existing buildings is one of the priorities within the development of sustainable use of energy. Due to the importance and the size of the task, the Ministry of Infrastructure (MZI) in Slovenia established an Office for energy renovation of buildings in October of 2015. The office consists of experts from the fields of construction, engineering, law, and economics, which together manage all aspects of this measure. The tasks of the project office are to enable an appropriate and supportive environment and the necessary documents based on existing legal instruments; to provide assistance and technical support to intermediary and executive authorities, public sector entities, energy service providers and applicants. Additionally, the Office keeps the necessary records (records of public buildings to be energy renovated), monitors and controls the operations and provides the transfer of knowledge and best practices.

CONTACT: Dean Smolar (dean.smolar@cei.hr)
DETAILED INFO: -

LEVEL	Regional, local, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Some changes required.
TRANSFERABILITY	YES. Easily replicable in other national contexts.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on legal and administrative aspects (art. 17) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about legal and administrative aspects (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

4.5 Tools from Spain

La Comunidad Eficiente 2.0, Spain



This is a tool developed by WWF with the collaboration of the Ministry of Agriculture, Food and Environment and the Fundación Biodiversidad. It is aimed at estimating in a simplified way the energy consumption in the household. The objective is to contribute to boost the market for energy rehabilitation of buildings and the promotion of renewable energies through distributed generation and self-consumption. The tool is targeted to the general public, uses a simplified approach to estimate the energy consumption and provides recommendations to save energy. Exemplary applications of the tool are not provided.

CONTACT: info@ecoavantis.com
DETAILED INFO: www.ecoavantis.com/analisis/selector.php

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	LOW. The tool uses climatic data for Spain. Its application in other countries needs an adaptation to other climatic conditions, which is not easy since the tool is not in an open format.
TRANSFERABILITY	NO. The tool uses climatic data for Spain.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

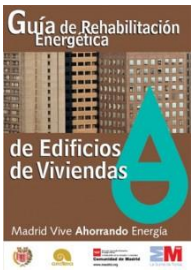
Green rating, Spain

This is a tool developed by WWF with the collaboration of the Ministry of Agriculture, Food and Environment and the Fundación Biodiversidad. Its use is aimed at estimating in a simplified way the energy consumption in the households. The objective of the collaboration is to contribute to boost the market for energy rehabilitation of buildings and the promotion of renewable energies through distributed generation and self-consumption. This tool is targeted to the general public, uses a simplified approach to estimate the energy consumption and provides recommendations to save energy in households. Exemplary applications of the tool are not provided.

CONTACT: contact@green-rating.com
DETAILED INFO: http://www.bureauveritas.es/BqAzvGxP/01_ficha_GreenRating.pdf

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	LOW. The tool uses climatic data for Spain. Its application in other countries needs an adaptation to other climatic conditions, which is not easy since the tool is not in an open format.
TRANSFERABILITY	NO. The tool uses climatic data for Spain.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of other tools supporting EE measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Pre estudio rehabilitacion energetica de viviendas, Spain



"Pre estudio rehabilitacion energetica de viviendas" is an excel tool that estimates the costs and savings of the interventions in buildings to reduce energy consumption. The purpose of this tool is to offer in a very simplified way a pre-study of the energy saving and the amortisation of the investment in building rehabilitation works. The web page where the tool is available provides two application examples of the tool.

CONTACT: andimat@andimat.es
DETAILED INFO: www.andimat.es/sobre-aislamiento/rehabilitacion/

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	LOW. The tool uses climatic data for Spain. . Its application in other countries needs an adaptation to other climatic conditions. Moreover, the tool uses default cost values for several interventions in the buildings that need to be adapted to other countries' situation.
TRANSFERABILITY	NO. Adapted to Spanish climatic zones. The transferability is not straightforward.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Guías Técnicas de Ahorro y Eficiencia Energética en Climatización, Spain

Series of Technical Guidelines developed by IDAE, the Spanish Institute for Energy Diversification and Saving, with the objective of increasing energy efficiency of the thermal installations in buildings. These documents are addressed to designers, installers, maintainers, inspectors and users of thermal installations of buildings, and have been recognised as official documents of the Regulation of Thermal Installations in Buildings (RITE). This new regulation establishes the requirements for achieving thermal and hygienic welfare through heating, air conditioning and domestic hot water, and for rationalising the use of energy. There are 22 guidelines addressing heating, cooling and water heating installations.

CONTACT: Instituto para la Diversificacion y Ahorro de Energía (IDAE) - ciudadano@idae.es
DETAILED INFO: www.idae.es/index.php/relcategoria.1030/id.430/relmenu.347/mod.pags/mem.detalle

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	HIGH. Technical information valid in all the countries but need to be translated.
TRANSFERABILITY	YES. Translation to other languages has to be done.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (art. 14) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Aislamiento en edificación 1: Guía práctica de la energía para la rehabilitación de edificios. El aislamiento, la mejor solución, Spain

A divulgative guide directed to communities of neighbors and house owners on thermal refurbishment of buildings. The guide explains what is a thermal refurbishment with isolation, when it can and should be done, what buildings are susceptible to a refurbishment, practical advice and how to apply for the available aids. The last chapter contains a case study of a real example. This publication has been drafted by the National Association of Insulating Materials Manufacturers (ANDIMAT) in collaboration with the Institute for Energy Diversification and Energy Saving (IDAE).

CONTACT: Instituto para la Diversificacion y Ahorro de Energía (IDAE) - ciudadano@idae.es

DETAILED INFO: www.idae.es/uploads/documentos/documentos_10501_Guia_practica_rehabilitacion_edificios_aislamiento_5266ec2a.pdf

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	HIGH. General information valid in all the countries but need to be translated.
TRANSFERABILITY	YES. Translation to other languages has to be done.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Aislamiento en edificios 2: Guías Técnicas para la Rehabilitación de la Envolvente Térmica de los Edificios, Spain

Collection of technical guides focused on each type of insulation material. They are complementary to the general information provided by the previous Divulgative Guide and are aimed at professionals in the building sector, with more detailed information on the technical level.
These guides have been drafted by the National Association of Insulating Materials Manufacturers (ANDIMAT) for the Institute for Energy Diversification and Saving (IDAE), with the aim of promoting efficiency in end use of energy in buildings.

CONTACT: Instituto para la Diversificacion y Ahorro de Energía - ciudadano@idae.es
DETAILED INFO: www.idae.es/index.php/relcategoria.1030/id.48/relmenu.349/mod.pags/mem.detalle

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	HIGH. Technical information valid in all the countries but need to be translated.
TRANSFERABILITY	YES. Translation to other languages has to be done.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

“Cómo ahorrar energía instalando domótica en su vivienda. Gane en confort y seguridad”, Spain

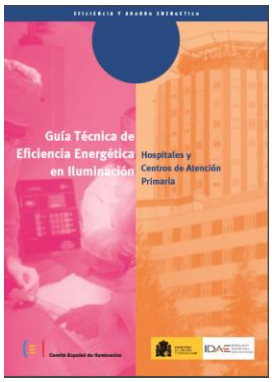
An informative guide directed to the citizens to make known the contribution of domotics to energy saving and to promote the responsible consumption of energy. The guide was written by CEDOM, the Spanish Association of Domotics, in collaboration with the Institute for Energy Diversification and Saving, IDAE. Throughout the different sections that compose this guide the reader is informed about what is the domestic energy consumption in Spain, and what annual cost it supposes for an average family. It also explains how domotics can help save energy and money, while gaining comfort and security.

CONTACT: Instituto para la Diversificacion y Ahorro de Energía (IDAE) - ciudadano@idae.es

DETAILED INFO: www.idae.es/uploads/documentos/documentos_11187_domotica_en_su_vivienda_08_3d3614fe.pdf

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	HIGH. Technical information valid in all the countries but need to be translated.
TRANSFERABILITY	YES. Translation to other languages has to be done.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Iluminación eficiente en edificios, Spain



Technical guidelines on Energy efficiency in lighting in different type of buildings: offices, educational centers and hospitals.

The purpose of these guides is to establish a series of guidelines and recommendations for the designers of the lighting installations of offices, schools, hospitals and primary care centers, with the purpose of:
• Comply with the recommendations of quality and visual comfort.
• Create pleasant and comfortable environments for the users of the facilities
• Rationalise the use of energy with energy-efficient facilities.
This publication is the result of the Collaboration Agreement signed between the Institute for the Diversification and Saving of Energy (IDAE) and the Spanish Committee of Lighting (CEI).

CONTACT: Instituto para la Diversificacion y Ahorro de Energía - ciudadano@idae.es
DETAILED INFO: www.idae.es/index.php/id.36/relmenu.352/mod.pags/mem.detalle

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	HIGH. Technical information valid in all the countries but need to be translated.
TRANSFERABILITY	YES. Translation to other languages has to be done.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Guia basica de redes de calor y frio, Spain

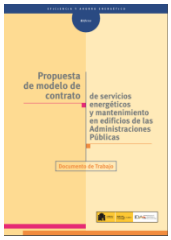
The purpose of this guide is to promote and disseminate the technology of district heating and / or cooling networks, as well as to advise the potential promoters of this type of installations from a methodology that establishes the criteria that should be considered when designing a district network. In addition to this "basic guide", the Integrated Guide for the development of district heating and cooling networks has been developed. (http://www.adhac.es/priv/clientsimages/asociacionperso6_1338538783.pdf) The basic guide has a more generalist approach, to give some global notions of these systems, while the integral guide goes deeper into the themes, with the purpose of being an instrument that helps to make decisions on the suitability of implementing a district network in a given environment.

CONTACT: Instituto para la Diversificacion y Ahorro de Energía (IDAE) - ciudadano@idae.es

DETAILED INFO: www.adhac.es/priv/clientsimages/asociacionperso6_1338538783.pdf (INTEGRAL GUIDE), www.idae.es/uploads/documentos/documentos_20110502_Guia_Basica_Redes_de_Calor_y_de_Frio_ES_5e18b14a.pdf (BASIC GUIDE)

LEVEL	Local, regional, national
LANGUAGE	Spanish
ADAPTABILITY	HIGH. Technical information valid in all the countries but need to be translated.
TRANSFERABILITY	YES. Translation to other languages has to be done.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (art. 14) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Modelo de Contrato de Servicios Energéticos para Edificios Públicos, Spain



It is a contract model for energy services and integral maintenance for buildings of public ownership. The aim is to promote efficiency in the final energy use in the buildings of the government and overcome the legal, administrative and technical barriers encountered by the public administrations in contracting these type of energy services. It is a working document, so it is subject to comments from the different sectors involved.

CONTACT: Instituto para la Diversificacion y Ahorro de Energía (IDAE) - ciudadano@idae.es

DETAILED INFO:

www.idae.es/uploads/documentos/documentos_10704_Propuesta_modelo_contrato_serv_energ_07_32458412.pdf

LEVEL	National
LANGUAGE	Spanish
ADAPTABILITY	LOW. Adapted to Spanish legislation.
TRANSFERABILITY	NO. Adapted to Spanish legislation.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • no access to model contracts for energy performance contracting (art. 18)

4.6 Tools from Greece

Implementation Actions to improve EE in street lighting, Greece

The financing programme "Implementation actions to improve energy efficiency in street lighting in Municipalities" is an initiative of the Deposits and Loans Fund (www.tpd.gr) in Greece with the cooperation of the Centre for Renewable Energy Sources and Saving (www.cres.gr). The initiative for the purchase and installation of energy efficient equipment in street lighting in Municipalities aims to cost savings, reduction of the operational and maintenance expenditures and improvement of the lighting quality in Municipalities. In the framework of this programme, the following tools are available: 1. Guide for studies for the improvement of energy efficiency in Municipal street lighting 2. Model study for energy upgrade 3. A spreadsheet for street lighting energy upgrade (an xl tool).

CONTACT: George Kanavakis, CRES
DETAILED INFO: www.tpd.gr/?p=3539, www.cres.gr

LEVEL	Local, regional, national
LANGUAGE	Greek
ADAPTABILITY	HIGH. The technical support of the tool can be adapted by any country. Translation is needed only if there isn't any similar technical support in the country. The only thing that cannot be adapted is the financial support and procurement procedure, which applies only for Greece but which, nevertheless can be translated.
TRANSFERABILITY	NO. The tool is applicable only in Greece in its present form
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • absence of an Energy Efficiency National Fund (art. 20) • the National Fund is not accessed and utilised by the public sector (art. 20) • innovative financing mechanisms are not used (art. 20) • there is no financial institution which act as Energy Efficiency National Fund (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

“Building the Future”, Greece

“Building the Future” (ktizontastomellon.gr) is a portal for Green Buildings and Sustainable Development. Its main objective is the contribution to the achievement of national targets for energy savings of 20% by 2020.

The main idea of the portal is to involve the public sector, the building industry, professionals and the citizens in an attempt to ameliorate energy efficiency and decrease energy consumption of the Greek residential and commercial buildings. This will be accomplished through a series of twelve “interventions”, such as replacement or installation of windows, insulation, cool roofs etc, by the use of innovative energy efficient products and systems. The portal www.ktizontastomellon.gr, is a dynamic web platform addressed to building owners, engineers, builders, energy consultants, energy inspectors, energy products companies, installers / technicians of technologies / products and includes:

- Guidelines for the energy saving in buildings
- Legislation for the energy saving in buildings
- Technical Instructions for the implementation of energy management systems
- List of certified products and systems and of their suppliers
- Online toolkit for measuring the energy efficiency performance
- Statistics of the buildings certificates

CONTACT: Kostas Tigas (ktigas@cres.gr)
DETAILED INFO: www.ktizontastomellon.gr

LEVEL	National, local, regional
LANGUAGE	Greek
ADAPTABILITY	HIGH. It has been developed by CRES so it can be adapted considering the appropriate time and resources. For other countries it can be adapted directly with translation or can be developed without any translation using country’s' literature and market.
TRANSFERABILITY	YES. Can be used by all Greek speaking municipalities and in other countries if translated.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of other tools supporting EE measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

EnergyHUB for ALL, Greece

The Greek energy HUB "EnergyHUB for ALL" is a web – platform which represents an interface between different stakeholders in the building sector, and serves as a market place to connect demand and supply side actors, as well as a meeting place and advice resource for refurbishment activities. The relevant outputs for these target groups are:

• For trades people/supply chain: A database with companies providing energy efficient materials and systems is offered in the HUB platform, Also, trades people provide technical advice on adequate installation techniques.

• For home owners: A user friendly 'Home Energy Check' tool allowing the dynamic modelling for the potential energy saving improvements is presented and also integrated into the HUB. Home owners have the opportunity to learn the energy consumption of their houses, as well as to find different ways to save energy for their home. Moreover, the Hub platform presents useful guidelines and tips for homeowners, in order to promote the EPCs recommendations.

• For policy makers: Address level data about the energy efficiency characteristics of homes, including EPC rating, implemented energy efficient measures, etc.

The Greek web - platform provides information on the latest energy efficiency guidelines, the energy performance in buildings, the nearly Zero Energy Buildings (nZEBs), statistics on EPC's, as well as useful information about the national and European funds, under the new program period 2014 – 2020 for energy.

CONTACT: Anastasia Spanou (aspanou@cres.gr)

DETAILED INFO: www.cres.gr/energyhubforall/index.html

LEVEL	National, regional, local
LANGUAGE	Greek
ADAPTABILITY	HIGH. As it is a web based application, it has a high adaptability. It refers to promotion of energy efficiency in buildings, local and European news, capacity building etc. Only the statistics that are on national basis cannot be adapted. The calculation tool needs only translation.
TRANSFERABILITY	YES. All the web site can be transferred if adapted in national requirements and translated (when it is needed).
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations which have insufficient competency and knowledge (art. 17) • stakeholders' lack of available time (art. 17) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Energy Performance Certificates (EPC), Greece

According to the article 11 of the Law 4122/2013, the Energy Efficiency Certificate (EEC) includes the energy efficiency of the building or the building unit and reference values such as minimum energy efficiency requirements so to allow to the owners or the tenants of the building to compare and evaluate its energy efficiency. It is possible for the EEC to include additional information such as the annual actual energy consumption of the building or the percentage of the share of energy from RES to the total energy consumption. The data analysis tool of the Energy Efficiency Certificates (EEC) is a user friendly application that presents characteristics of energy consumption in buildings for which a first certificate (A) and a second one (B) has been issued interpreting it comes to buildings in which one or more of the suggested renovations has been implemented. So, the user can take useful information for the energy profile of a building such as energy consumption, before and after the building renovation. It has to be mentioned here that the buildings that have A+B certificate are mainly residents and municipal buildings.

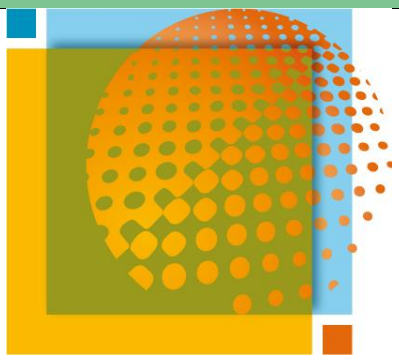
CONTACT: Margarita Petroliagi, YPEN

DETAILED INFO: www.ypeka.gr/Default.aspx?tabid=229&language=en-US

LEVEL	National, regional, local
LANGUAGE	Greek
ADAPTABILITY	HIGH. It can be adapted by other countries with some transformations on the calculations in order to take into account the local conditions (Climate, building stock and typology, law, tariffs, spatial planning)
TRANSFERABILITY	YES. If adapted by applying it to national needs.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations which have insufficient competency and knowledge (art. 17)

4.7 Tools from Italy

Winshelter, Italy



WINSHELTER (WINdows and SHading Energy Luminous and Thermal Evaluation Routine) is a software for evaluating building performance. The software consists of three main modules, with the possibility of importing the results from one to the other. The first module applies the relevant Italian and EU standards for the calculation of the solar and luminous properties of glazing systems equipped with shading devices and ventilated gaps. The second module allows the calculation of the thermal properties of assembled fenestration systems, eventually coupled to night shutters. The third modules allows the calculation of the energy balance of a window during the heating and cooling seasons and to compare different products to each other. The tool provides design data, as well as input to be used in building energy performances software's and tools. The tools is based on the application of relevant EN standards. For some calculation ISO standards are also applied, whenever related EN standard is not available. The list of standards included in the calculation process includes: EN 410, EN 763, EN 13363 part 2, EN 13125, EN ISO 10077 part 1, ISO 18292, ISO 15099). The tool, moreover, uses a set of database of standard products for the various window components (glass panes, shading elements, PVC, wood and metal frames). The database has been developed by the relevant national industry association. The tool combines calculation accuracy with user-friendliness and is recognised as a support instrument for several stakeholders.

CONTACT: michele.zinzi@enea.it
DETAILED INFO: www.pit.enea.it

LEVEL	Local, regional, national
LANGUAGE	Italian, English
ADAPTABILITY	HIGH. The software can be used by all stakeholders, involved in the public and private sectors.
TRANSFERABILITY	YES. The software is based on CEN standards, which are the reference standard in EU. This means that input and output of the calculation are acceptable and valid in all Member States.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17)

City Public Lighting Profiler, Italy

The City Public Lighting Profiler is a user-friendly technical tool, developed by CRIET (Centro di Ricerca Interuniversitario in Economia del Territorio, Interuniversity Research Center of Territory Economics) in collaboration with ENEA, dedicated to Municipality technicians and administrators in order to have a state of the art photograph of their Public Lighting Plants as well as a provisional financial evaluation in view of their refurbishment. City Public Lighting Profiler is a software that allows municipal administrations to obtain a "tableau de board" for identifying the activities related to the refurbishment of public lighting systems in order to achieve the desired results in terms of energy saving.

CONTACT: Mr. Roberto Chierici, CRIET, roberto.chierici@unimib.it
DETAILED INFO: http://criet.unimib.it/progetto/408/

LEVEL	Local, regional, national
LANGUAGE	Italian
ADAPTABILITY	HIGH. It can be easily adapted and modified in other European Countries.
TRANSFERABILITY	YES. The City Profiler is a very practical digital tool which can be easly transferred to other countries. It is available on the Internet. Log-in information have been sent to all Italian Municipalities by certified e-mail, in order to help the developer to monitor its application.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17)

PELL - Public Energy Living Lab, Italy

PELL is a data collecting and monitoring platform focused on public lighting systems data. This managing software platform operates in two steps. The first one is concentrated on data collection and elaboration in order to evaluate public lighting plants, figure out their performance through a specific algorithm approach. In other words, this step is characterised by an acquisition of a static view of the plants of which the data collection is obtained by using an appropriate standardised model (developed within ENEA Lumière Programme). Thanks to this process we can evaluate the quality of the lighting system and its performance (synthetised in Key Performance Indicators (KPIs). Through this step, we can also simulate and evaluate future possible upgrading projects, and suggest solutions and the relevant intervention costs.

The second step enhances the monitoring function, providing an evaluation on consumptions and related performances of public lighting systems, thanks to a Smart Meter installed on the electric board (POD Point of Delivery). This approach, by making use of dynamic Key Performance Indicators (KPIs), will monitor, assesse and validate the facility's operation and provide benchmarking reports. So that PELL can be considered a crucial tool for supporting:

- a highly-skilled, clear and monitored facility management;
- policies promoting a more effective service for end-users;
- project financing, in order to verify the opportunity for projects to be financed and the investment risk to be monitored.

PELL launches a revolution which cannot be considered only as technological one but cultural as well, for promoting a more effective and glassy management of public energy-intensive infrastructures. In particular, the public street lighting network, spread all over the national territory, can be considered not only a public light provider but also a real promoter of a wide range of reliable future smart services, turning into a supporting structure for data collection and transmission, enabling and matching the smart city realisation and vision.

CONTACT: ENEA's Scientific Responsible: nicolette.gozo@enea.it, laura.blaso@enea.it

DETAILED INFO: Link: http://criet.unimib.it/progetto/408/

LEVEL	National, Regional, Local
LANGUAGE	Italian
ADAPTABILITY	HIGH. PELL can be applied and adapted in other European Countries.
TRANSFERABILITY	YES. PELL can be transferred to any similar situation in other European Countries . From a technological point of view, Public Lighting systems and other public energy-intensive services are generally working in the same way in each European country; a strict collaboration with the manager of plants (either the company or the Municipality manager in charge of the plants) is required.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17)

Lumière Management Model, Italy

	Lumière is an Italian Project developed by ENEA in order to promote a renovation in the management process of the public lighting service. Many tools and standards have been developed through the project; in particular, the project has developed a wide stakeholder network working as a reference point for operators, end-users and governances. Lumière has defined the public lighting chain, introducing a reference roadmap for an efficient and effective public lighting system and service management.
CONTACT:	Nicoletta Gozo, Enea, (nicoletta.gozo@enea.it)
DETAILED INFO:	progettolumiere.enea.it
LEVEL	Local, regional, national
LANGUAGE	Italian
ADAPTABILITY	HIGH. It can be easily adapted and modified in other European Countries
TRANSFERABILITY	YES. It can be transferred to other similar European realities.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • lack of expertise and capacities in the concerned organisations (banks, private sector, public institutions) (art. 17) • lack of interest for energy efficiency matter (art. 17) • difficulties to find the right person within each organisation (art. 17)

Simplified Energy Auditing Software 3.0 (SEAS), Italy

SEAS is a software for energy audits of buildings developed within the Research program of Electric System, through a collaboration between ENEA and the Department of Engineering of the University of Pisa. The software has been designed with the aim to make building energy audit flexible and easy for the sector professionals. The tool with a graphical interface responds to the growing needs arising at local and national level for spreading buildings' energy audits and for identifying the potential of energy saving in building sector. Different from the energy certification, the diagnostic procedure takes into account the actual energy consumption of single user (for example: room, apartment, plant, ecc.) and compare the estimated energy consumptions with the energy bills.

CONTACT: Luciano Terrinoni, Enea, (luciano.terrinoni@enea.it)

DETAILED INFO: www.efficienzaenergetica.enea.it/pubblica-amministrazione/documentazione/realizzazione-di-un-software-con-interfaccia-grafica-per-l2019audit-energetico-negli-edifici-ad-uso-residenziale-uffici-e-scuole

LEVEL	Local, regional, national
LANGUAGE	Italian
ADAPTABILITY	HIGH. SEAS is a very practical digital tool which can be easly adaptated and modified in each country. The estimation of energy consumption is based on the following national/international standard: UNI EN ISO 13786: 2008 (thermal transmittance) UNI EN ISO 13790: 2008 (international standard for calculating heat demand) UNI TS 11300-1: 2008 (italian standrd for calculating heat demand, corrisponding to the UNI EN ISO 13790: 2008) UNI CEI / TR 11428: 2011 (European/Italian standard for energy audits methodology in general) UNI CEI EN 16247-1: 2012 (European/Italian standard for energy audit methodology) EN 15459: 2007 (international standard for costs calculation) UNI EN 15459: 2008 (for Italy transposes the EN 15459: 2007) UNI 10339: 1995 (hygienic air requirements for Italy) UNI 10349: 1994 (Italian standard for calculating solar radiation) The adaptability can be reached by the substitution of the Italian standards with the national in place.
TRANSFERABILITY	YES. The SEAS tool can be easly transferred by the replacing the italian standards with the national one.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• competition between national, regional and/or local stakeholders (art. 8) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17)

Energy saving for Energy Audit, Italy

ENERGIA ELETTRICA			CONSUMO	TEP ING.	Ipg						
			kWh	tep	tipo misura [continuo, rpst o calcolo]	kWh /	Consumi monitorati/ calcolati	Altro	% copertura	E' necessario dettagliare maggiormente la suddivisione dei consumi	
LB	j=1	ENERGIA ELETTRICA	0	0		#DIV/0!	0	0	#DIV/0!		

			CONSUMO	TEP ING.	Ipg		D.s.		Ips		
LC	1.1	ATTIVITA' PRINCIPALI	0				valore	u.m.	tipo misura [continuo, rpst o calcolo]	valore	u.m. [kWh/D.s.]
LD	1.1.1	Attività Principale 1									
	1.1.2	Attività Principale 2									
	1.1.3	Attività Principale 3									
	1.1.4	Attività Principale 4									
	1.1.5	Attività Principale 5									
	1.1.5	Attività Principale 6									
	1.1.6	Attività Principale 7									
	1.1.7	Attività Principale 8									
LC	1.2	SERVIZI AUSILIARI	0				valore	u.m.	tipo misura [continuo, rpst o calcolo]	valore	u.m. [kWh/D.s.]
LD	1.2.1	Servzio Ausiliario 1									
	1.2.2	Servzio Ausiliario 2									
	1.2.3	Servzio Ausiliario 3									
	1.2.4	Servzio Ausiliario 4									
	1.2.5	Servzio Ausiliario 5									
	1.2.6	Servzio Ausiliario 6									
	1.2.7	Servzio Ausiliario 7									
	1.2.8	Servzio Ausiliario 8									
	1.2.9	Servzio Ausiliario 9									

ENEA has implemented a guideline document to describe what is the relevant data to be collected in relation to the energy audit in compliance with the article 8 of the Legislative Decree 102/2014. In order to gather the mentioned information of energy saving deriving from the energy audit intervention identified, Enea has developed a specific excel template which indicates the data to be collected, with mandatory fields to be filled.

CONTACT: Domenico Santino, Silvia Ferrari, Enea (domenico.santino@enea.it, silvia.ferrari@enea.it)

DETAILED INFO: www.efficienzaenergetica.enea.it/per-le-imprese/documenti-1/diagnosi-energetica/guida-operativa-enea.pdf

LEVEL	National
LANGUAGE	Italian
ADAPTABILITY	LOW. The guideline and excel template are used for industrial and services private companies, should be adapted for the public sector.
TRANSFERABILITY	YES. The guideline and excel template should be translated in English.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector operational goals with defined programme to deliver them (art. 3) • there is no programme for conducting energy audits in the public sector at national regional or local level (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17)

Regional Energy Information System (SIER), Italy

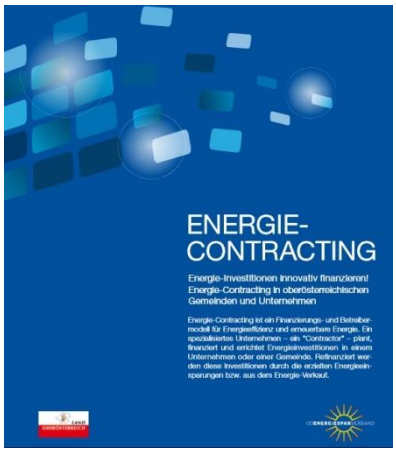
SIER is a program to estimated annual energy demand and supply for 19 regions and 2 autonomous provinces (Bolzano and Trento) and all fuels covered. The structure of Regional Energy Balance (BER) is disaggregated in oil, gas, coal, renewables and electricity according Eurostat Energy National Balance. Letter sent to all regions requesting comments and suggestions. The software has been designed with the aim to estimate CO2 emission from fuel combustion and the regional progress toward the use of renewable and the progress in energy infrastructure. Extensive communications between energy statisticians in National administration and in regional organisations.

CONTACT: Giulia Iorio, Enea, (giulia.iorio@enea.it)
DETAILED INFO: www.agenziaefficienzaenergetica.it

LEVEL	Regional
LANGUAGE	Italian
ADAPTABILITY	LOW. SIER can be adapted and modified in each country on the basis of available data but the methodology should be formalised in an operating procedure.
TRANSFERABILITY	NO. The SIER tool can be easly transferred by the replacing.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• absence of other tools supporting energy efficiency measures development (art. 17) • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24)

4.8 Tools from Austria

Information brochure on energy contracting, Austria



A 28-page information brochure on energy contracting. It offers detailed information on energy contracting, including: what is energy contracting, its advantages, steps to implementing an energy contracting project, minimal content of a energy contracting contract, FAQs, examples of implemented projects. The document is available in electronic and printed format. It can be downloaded free of charge from the website of the OÖ Energiesparverband.

CONTACT: OÖ Energiesparverband (office@esv.or.at)
DETAILED INFO: www.energiesparverband.at/fileadmin/redakteure/ESV/Info_und_Service/Publikationen/Energie-Contracting.pdf

LEVEL	Local, regional
LANGUAGE	German
ADAPTABILITY	HIGH. The brochure is only available in German, but can be translated to other languages. The content was developed for use in Upper Austria, but it could be adapted to represent the market conditions in other regions and countries.
TRANSFERABILITY	YES. The brochure was developed for use in Upper Austria, but it could be adapted to represent the market conditions in other regions and countries. The document mostly contains information about energy contracting that is valid regardless of the region or country. The examples of implemented projects refer to Upper Austrian projects.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no long-term energy performance contracts in place in the public sector (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • no access to model contracts for energy performance contracting (art. 18) • lack of information on best energy performance contracting including, if available, cost-benefit analysis using a life-cycle approach (art. 18) • the public sector does not use energy service companies, and energy performance contracting (art. 18)

Flyer on Energy Performance Certificates for buildings in Upper Austria, Austria

A compact information folder on Energy Performance Certificates for buildings in Upper Austria. The folder offers detailed information on Energy Performance Certificates for buildings, including: what is an Energy Performance Certificate for buildings, when is one required, how to obtain one, its content, regulations and requirements regarding Energy Performance Certificates for buildings, an example of a certificate. The document is available in electronic and printed format. It can be downloaded free of charge from the website of the OÖ Energiesparverband.

CONTACT: OÖ Energiesparverband (office@esv.or.at)

DETAILED INFO: www.energiesparverband.at/fileadmin/redakteure/ESV/Info_und_Service/Publikationen/Energieausweis.pdf

LEVEL	Local, regional, national
LANGUAGE	German
ADAPTABILITY	HIGH. The brochure is only available in German, but can be translated to other languages. The format of the document can be used as template to develop a similar type of folder for other regions or countries. Since the regulations and content of the Energy Performance Certificates for buildings can differ between regions or countries, the content would need to be verified and adapted accordingly.
TRANSFERABILITY	NO. Since the regulations and content of the Energy Performance Certificates for buildings can differ between regions or countries, the folder is not valid for direct use outside of Upper Austria.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Information brochure on saving electricity in schools, Austria

A 16-page information brochure on reducing electricity consumption in schools through low investment measures and class projects. This brochure mostly targets school directors, teachers and other staff members. The tool is helpful for all those interested in reducing schools' electricity costs while increasing environmental awareness of students and staff. It offers a large among of tips and trick on how to get students and teachers involved. Content of the brochure includes: electricity consumption in schools, assessing the level of energy consumption, which measures to priorities, efficient utilisation of office and IT equipment, optimising the heating system, energy-efficient lighting, green procurement of new equipment. The document is available in electronic and printed format. It can be downloaded free of charge from the website of the OÖ Energiesparverband.

CONTACT: OÖ Energiesparverband (office@esv.or.at)

DETAILED INFO: www.energiesparverband.at/fileadmin/redakteure/ESV/Info_und_Service/Publikationen/Strom_sparen_Schule_fin.pdf

LEVEL	Local, regional, national
LANGUAGE	German
ADAPTABILITY	HIGH. The brochure is only available in German, but can be translated to other languages. The brochure was developed for use and distribution in Upper Austria, but the majority of its content can also apply to other regions and countries. Minimal content would need to be verified and adapted accordingly.
TRANSFERABILITY	YES. The brochure was developed for use and distribution in Upper Austria, but the majority of its content can also apply to other regions and countries. Some content would need to be verified and adapted. Once developed for a region or countries, the brochure can be a helpful tool for all municipalities and schools.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Information brochure on optimising photovoltaic (PV) self-consumption, Austria

12-page information brochure on designing PV-system to optimise the self-consumption rate of the generated electricity. The brochure is targeted at companies and public authorities interested in installing PV-systems on their buildings for self-consumption purposes. The brochure contains a check-list for the first evaluation of the economic feasibility of a project as well as detailed information and tips on steps for project planning and implementation. The document is available in electronic and printed format. It can be downloaded free of charge from the website of the OÖ Energiesparverband.

CONTACT: OÖ Energiesparverband (office@esv.or.at)

DETAILED INFO: www.energiesparverband.at/fileadmin/redakteure/ESV/Info_und_Service/Publikationen/PV-Eigenverbrauchsanlagen-Betriebe.pdf

LEVEL	Regional, local
LANGUAGE	German
ADAPTABILITY	HIGH. The brochure is only available in German, but can be translated to other languages. The format of the document can be used as template to develop a similar type of folder for other regions or countries. The tool was develop for use in Upper Austria. Therefore technical and financial information would need to be verified and adapted to conditions in other regions and countries.
TRANSFERABILITY	NO. Since technical and economic conditions can differ between regions or countries, the folder is only of limited use for direct use outside of Upper Austria.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • absence of guidelines & handbooks supporting energy efficiency measures development (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

4.9 Tools from Poland & Czech Republic

National programmes, Czech Republic

STATE ENVIRONMENTAL FUND OF THE CZECH REPUBLIC

The State Environmental Fund of the Czech Republic provides grants from national sources to support projects that cannot be supported from the EU funds within the Operational Programme of Environment or from the Green Savings programme within the so-called National Programmes. The support is especially aimed at the areas of water protection; waste treatment; air protection and quality; renewable energy resources; countryside care; environmental education, training, edification and consultancy; research, development, production and implementing suitable technologies and actions; and scientific and technological development in the environmental area. The support is provided in the form of dotations or loan or a combination of dotation and loan.
The form and aim of the support is set by the Ministery of Environment based on so-called "Attachments". On of the "attachments" is targeted at municipalities, unions of municipalities, non-enterpreneur subjects and natural persons may apply for dotation for a small extent procuration in the area of national parks regarding touristic infrastructure, tip removing, small sewage plants build-up, the green revitalisation, environmental consultancy etc.

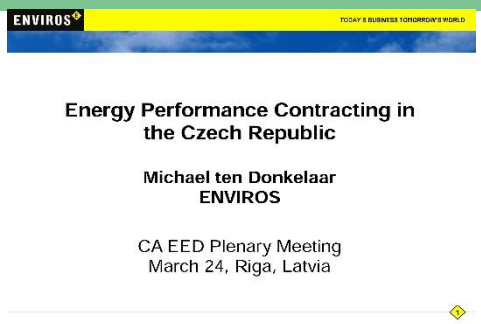
The support within this programme is provided in four sub-programmes:

- non-investment environmental education, trainig, edification and consultancy
- the support of energetical autarchy of cities in the area of national parks
- the support of small extent procuration
- the support increase from the Fund in case of co-financing from Operational Programme of Environment (OPE)

CONTACT: dotazy@sfzp.cz
DETAILED INFO: http://en.sfzp.cz/sekce/566/national-programmes/

LEVEL	National
LANGUAGE	English
ADAPTABILITY	HIGH. The idea if the tool can be adapted according to different national circumstances.
TRANSFERABILITY	NO. The tool is aimed at target groups in Czech Republic.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • absence of an Energy Efficiency Fund (art. 20)

Energy Performance Contracting in Czech Republic



Contents of presentation:

- energy performance contracting in the Czech Republic (general rules, barriers);
- EPC facilitators;
- EPC tendering procedure;
- Other supporting documents for EPC in the public sector.

CONTACT: Michael ten Donkelaar, https://en.enviros.cz/ (author of the presentation)
DETAILED INFO: http://www.ca-eed.eu/country-information/czech-republic

LEVEL	National
LANGUAGE	English
ADAPTABILITY	HIGH. The presentation can be adapted to other countries circumstances.
TRANSFERABILITY	NO. The content of the presentation is aimed only at target groups in Czech Republic.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • no access to model contracts for energy performance contracting (art. 18)

Energy Efficiency in Public Procurement Procedures in Czech Republic

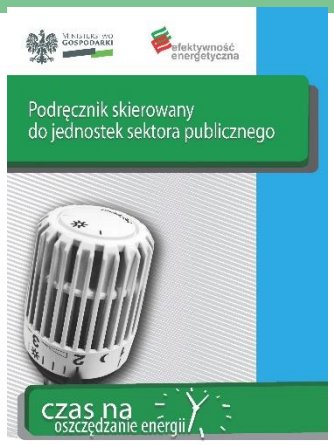
The content of presentation includes:

- information about barriers in public sector (lack of eneregy efficiency experts, external experts needed);
- information about a guide for public organisations proposing how to include the energy efficiency into public tendering;
- reference documents;
- examples of practical combination of public tender with the reference document.

CONTACT: Michael ten Donkelaar & Josef Votruba, ENVIROS https://en.enviros.cz/ (authors of the presentation)
DETAILED INFO: http://www.ca-eed.eu/country-information/czech-republic

LEVEL	National
LANGUAGE	English
ADAPTABILITY	HIGH. The content can be adapted to other countries circumstances.
TRANSFERABILITY	NO. The presentation is for Czech Republic stakeholders.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the central government in your country does not purchase energy efficient buildings, products and services (art. 6) • the wider public sector does not purchase energy efficient buildings, products and services at national level (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on legal and administrative aspects (art. 17) • lack of in-house expertise about legal and administrative aspects (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Handbook addressed to public sector entities, Czech Republic



Since the Energy Efficiency Directive obliges public sector entities to implement energy efficiency improvement measures, the Ministry of Energy has issued a manual with recommendations for public sector entities.
Each chapter of the book focuses on different areas in which public sector should take action to improve energy efficiency, such as:

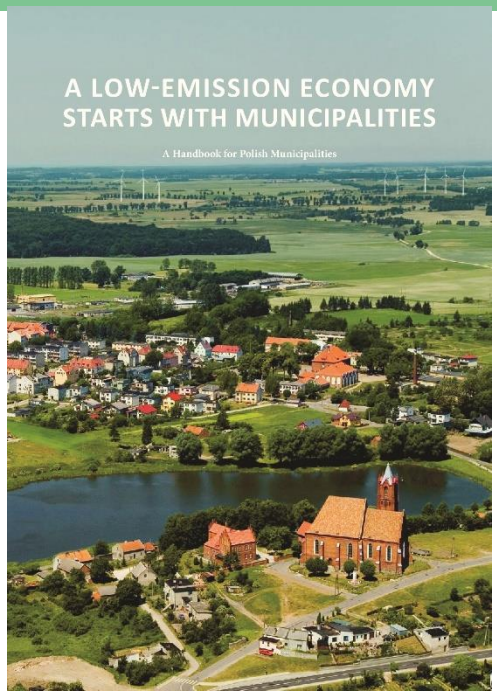
- energy management for public buildings with available tools and software;
- the list of available thermal - modernisation measures for public buildings and other possible ways of saving energy by public sector;
- green public procurement, ESCO and other kinds of agreements and procedures for realisation and financing energy efficiency measures in public sector (EPC,EDC).

Public authorities can find there also applicable law regulations, templates of agreements and other documents.

CONTACT: Anna Mazur (amazur@kape.gov.pl)
DETAILED INFO: www.me.gov.pl/Energetyka/Efektywnosc%20energetyczna

LEVEL	Local, regional, national
LANGUAGE	Polish
ADAPTABILITY	HIGH. The idea of the tool can be adapted by other countries.
TRANSFERABILITY	NO. The document is very useful tool only for polish municipalities, but the idea of the tool can be transferred to other countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the central government in your country does not purchase energy efficient buildings, products and services (art. 6) • the wider public sector does not purchase energy efficient buildings, products and services at national level (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on legal and administrative aspects (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about legal and administrative aspects (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • no access to model contracts for energy performance contracting (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18) • lack of knowledge regarding existing financial tools (art. 20)

"A low emission economy starts with municipalities" - Handbook for Polish Municipalities, Czech Republic



The handbook was produced as part of the project "Exploring new opportunities for the Polish - German cooperation on low-emission strategies".The aim of the project was to facilitate the exchange of experience and the development of new fields of cooperation between Poland and Germany in the area of energy and climate policy. The focus of this handbook is on low-emission strategies related to the reduction of carbon dioxide emissions and other GHG. This handbook showcases a number of model solutions and good practices for how Polish and German municipalities contribute to the development of a low-emission economy through climate mitigation and air quality. The case studies convey ideas and inspire replication of similar actions, stimulating both investments and activities that can be implemented under tight budget. It focuses on the available systems for financing from public sources – through subsidies, grants and loans, as well as self-financing for reducing emissions, increasing energy effectiveness and improving air quality. Besides describing options through domestic programmes such as the National Fund for Climate Protection and Water Management (including the priority programmes such as KAWKA, LEMUR, Bocian and Prosument), the handbook also informs Polish municipalities about the main conditions with regard to the most effective use of EU funds in the 2014-2020 perspective. It also presents the ways of supporting the development of a low-emission economy on the municipal level by leveraging private funds through third party financing (TPF) and contracting (TPC). Low-emission strategies linked to the involvement of local stakeholders, such as the participation of citizens and cooperation with local companies. Planning low emission economy.

CONTACT: Anna Mazur (amazur@kape.gov.pl)
DETAILED INFO: www.low-emission-project.de

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. The ideas can be adapted by other EU municipalities.
TRANSFERABILITY	NO. It describes only case studies from Polish and German municipalities.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • stakeholders' lack of available time (art. 17) • the public sector does not use energy service companies and energy performance contracting (art. 18) • lack of knowledge regarding existing financial tools (art. 20)

“Energy Bus campaign", Czech Republic

The main objective of the campaign is increasing social awareness of climate change. This involves the causes of climate change and actions which can be carried out to counter climate change, and also encouraging everyone to take action against climate change in everyday life and their environment: at home, work, school, or the local community. The main tool of the campaign is especially equipped and designed bus - a mobile education and information centre. The main job of the mobile centre and the educational programme is reaching out to the inhabitants of municipalities and increasing ecological awareness in wide-ranging social groups (representatives of local government, entrepreneurs, residents). Part of the project’s realisation is carrying out educational campaigns in 200 municipalities. The experts travelling with the bus constitutes an advisory group, offering free, independent and up-to-date knowledge connected to climate change and energy efficiency. The group is not connected with the interests of particular companies or equipment producers, which ensures the information provided is independent and reliable.

CONTACT: Anna Mazur (amazur@kape.gov.pl)
DETAILED INFO: autobusenergetyczny.pl

LEVEL	Local, regional, national
LANGUAGE	Polish
ADAPTABILITY	HIGH. The concept of the campaign can be tailored to the specific conditions in a particular municipality in any EU municipality. Its flexibility allows to adapt to local initiatives and to provide information most suitable for a particular municipality.
TRANSFERABILITY	NO. The energy bus is equipped in model described in Polish language.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of mobilisation of the elected representatives (art. 17) • difficulties to mobilise all the stakeholders (art. 17)

"Low-emission reduction in municipalities", Czech Republic

The aim of the project is to support municipal energy coordinators in the implementation of actions aiming at reducing low-emission in the municipality. Under the project two handbooks have been produced:

1. the handbook for energy coordinators;
2. the handbook for public authorities.

Additionally a promotional campaign and the trainings have been conducted. The main results of the project are two pilot municiplities. The purpose of these pilot projects was to examine the practical aspects and the social, economic and environmental determinants influencing low-emission reduction in areas with relatively lower level of population's wealth and limited investment opportunities or with limited access to district heating.

In particular the focus was on:

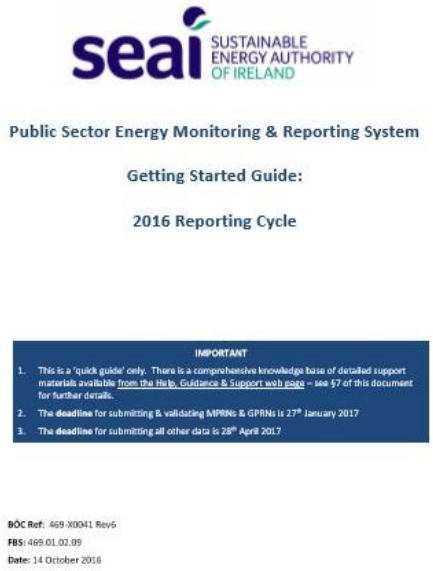
- identification of barriers in reaching the ecological effects,
- identification of incentives adressed to owners of single-family houses and a model scope of public authorities activities.

CONTACT: jogrodniczuk@kape.gov.pl
DETAILED INFO: niskaemisja.info.pl; www.kape.gov.pl

LEVEL	Local, regional
LANGUAGE	Polish
ADAPTABILITY	LOW. The handbooks and pilot municipalities are useful only for polish municipalities.
TRANSFERABILITY	YES. The handbooks and pilot municipalities are useful only for polish municipalities but the idea could be very useful for other EU countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of mobilisation of the elected representatives (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • lack of knowledge regarding existing financial tools (art. 20)

4.10 Tools from Ireland

Monitoring & Reporting Online Tool, Ireland



The key principles of the system are:

- Individual public bodies report their energy consumption for all fuel types (electricity, thermal fuels and transport fuels (including fossil and renewables)) at an organisational level.
- Public bodies report baseline {FAQ 12.12} data on a once off basis (default baseline is 2009, but public bodies can elect to use earlier baselines).
- Public bodies then report their energy consumption annually for the previous year.
- For electricity & natural gas, all public bodies have to do is submit their meter numbers once to SEAI (MPRNs {FAQ 17.1} & GPRNs {FAQ 17.2}). SEAI accesses the energy consumption data corresponding to these meter numbers directly from the regulated meter operators (ESB MRSO and Gas Networks Ireland) each year.
- Each year, public bodies self-report their total consumption subtotals for all non-network connected energy sources (e.g. heating oils, LPG, solid fuels, diesel) directly to SEAI.
- Each year, public bodies self report an activity metric {FAQ 11.1} that describes the activity level in their organisations.

Savings are calculated by comparing changes in each public body's energy consumption and activity metric each year.

CONTACT:	Alan Ryan, SEAI Public Sector Programme Manager. (Alan.Ryan@seai.ie)
DETAILED INFO:	www.seai.ie/Your_Business/Public_Sector/FAQ Full FAQ on the system: www.seai.ie/Your_Business/Public_Sector/Reporting/FAQ/Monitoring-and-reporting-FAQs-revised-Nov16.pdf
LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The Requirement to report public sector organisation's energy performance directly to national authorities each year – to track progress towards the 2020 target - is a generic requirement across all EC member states. There may however be the M&R requirements across each member state which would need to be revised for adaption.
TRANSFERABILITY	YES. Transferability would require the co-operation of the national energy authority SEAI. It would also require support assistance from the designers who developed the tool.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Public Lighting Standard Inventory List, Ireland

The National Energy Efficiency Action Plan 2009-2020 sets out the Government's commitment to ensure a 20% reduction in energy consumption by 2020. In order to deliver the action plan it is essential that all local authorities have a comprehensive and accurate public lighting asset inventory. Transport Infrastructure Ireland (TII), City and County Managers Association (CCMA), Sustainable Energy Authority of Ireland (SEAI) and a number of Local Authorities have developed a Public Lighting Inventory Template to ensure standardisation and consistency of data entry for all Local Authorities. This user manual has been prepared as an accompanying guide to the standardised template to assist individuals within local authorities in completing their public lighting inventories, whether working from an existing database or starting one for the first time. It explains the overall format of the template, the classification of categories for each data field and includes guidance notes for each entry. The Public Lighting Inventory is a basic pre-requisite requirement for all local authorities considering energy efficiency upgrades to their street lighting stock.

CONTACT: Alan Ryan, SEAI Public Sector Programme Manager. (Alan.Ryan@seai.ie)
DETAILED INFO: -

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. The Template is accompanied by a user manual prepared as an accompanying guide to the standardised template to assist individuals within local authorities in completing their public lighting inventories. It can easily be adapted to suit different national requirements.
TRANSFERABILITY	YES. The template and the user guide can easily to transferred to other regions.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Gap Tap Target Model, Ireland

Sustainable Energy Authority of Ireland (SEAI) developed a Gap To Target Model Template to ensure public bodies know exactly what the 33% savings requirement means for their organisation. The tool was developed in excel and issued to all public bodies. It mains to assist public bodies in answering some key questions: What savings projects do I need to hit 2020? Can I incorporate planned changes in service levels? Plus include primary energy improvement. How do I know my targets will be reached? What investment may I need? To use the model input of the M&R data must first be completed along with the opportunity to present a series of up to 10 scenarios based on different potential projects etc. to deliver the required savings. It includes an introduction to describe how to use it. It explains the overall format of the template, the classification of entry categories and includes guidance notes for each entry.

CONTACT: Alan Ryan, SEAI Public Sector Programme Manager. (Alan.Ryan@seai.ie)
DETAILED INFO: -

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	HIGH. The Template is developed in excel and would be fairly simple to adapt for other member states. It can easily be adapted to suit different national requirements. It should be noted the primary input data arises from the M&R system.
TRANSFERABILITY	YES. Following adaptation this template and user information can easily to transferred to other regions. The various scenarios are selected by the end user therefore making it simple enough to transfer to different regions, the assumption of the model (summarised in the excel sheet) will need to be checked however.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting EE measures development (art. 17) • absence of other tools supporting EE measures development (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Local Authority Social Housing Upgrade Management, Ireland

TEA have developed a system as a shared service to Local Authority Users. A web based, tailored, project and data management system utilises Term Maintenance Contract (PW-CF11) Methodology to survey, tender, complete & check, in as quick with minimum time & administration possible. The system includes:

- Training program & accountability system for contractors
- Streamlined management of Admin (TCC, Ins. Etc.)
- QA & H&S Management system for Housing upgrades
- Property management system, once data is entered it can be used future upgrades.
- Secure, remotely backed up IT system to manage above items

CONTACT: Paul Kenny, Tipperary Energy Agency (paul@tippenergy.ie)
DETAILED INFO: -

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	LOW. Some degree of system tailoring would be required. High level of database coding required to undertake any changes to the system or indeed to develop equivalent from scratch.
TRANSFERABILITY	YES. Following adaptation this system and user guide it would have transferability to other local/municipal authorities undertaking large scale housing retrofit schemes.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17,) • support organisations have insufficient competency and knowledge (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

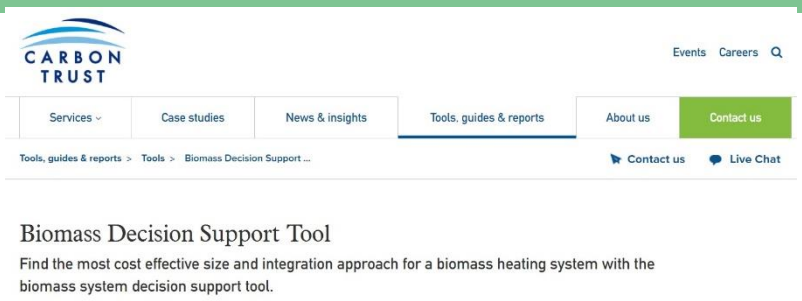
Energy MAP, Ireland

Energy MAP is the Energy Management Action Plan from SEAI. It is an online tool which provides a step by step guide to creating a best practice action plan for your business. The 20 steps of Energy MAP are divided into of five pillars of excellent energy management: Commit, Identify, Plan, Take Action and Review. By registering online, you can create your own personalised Energy MAP plan which allows you track your progress through the 20 steps. The basic principals of EnergyMAP are 1. Understand - How much your company spent on energy in the last year, What the biggest users of energy are and 2. Take action and measure - Implement energy projects such as energy efficient lighting or heating controls, Measure and verify any savings in energy use or cost.

CONTACT: Alan Ryan, SEAI Public Sector Programme Manager. (Alan.Ryan@seai.ie)
DETAILED INFO: -

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	HIGH. The online tool includes a step by step guide to implementing energy management in an organisation. It is accompanied by a selection of tools and resources. All of which are easily adaptable.
TRANSFERABILITY	YES. Following adaptation this online platform and user guides Energy MAP can easily to transferred to other regions. The 20 step process represents a generic energy management system.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• for the recommended actions arising from energy audits, no business cases are prepared and presented for financial approval (art.8) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting EE measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of interest for energy efficiency matter (art. 17)

Biomass Decision Support Tool, Ireland



The biomass system decision support tool will help you assess the most cost effective size and integration approach for a biomass heating system at a particular site based on the site's heating requirements and spatial considerations.

This tool has been developed by the Carbon Trust in collaboration with Strathclyde University and the Campbell Palmer Partnership as an aid to those investigating and/or specifying biomass heating systems. The University of Strathclyde have created an online course for those who want to get started with the Carbon Trust Biomass System Sizing Tool. There are three modules: 'Introduction' (see video below), 'Getting Started' which describes the various methods of creating and amalgamating building heat demand profiles, and 'Sizing the System' which provides an overview and of boiler characteristics, and a step-by-step tutorial on using the tool.

CONTACT: Carbon Trust UK

DETAILED INFO: www.carbontrust.com/resources/tools/biomass-decision-support-tool/

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	LOW. The tool includes a step by step guide to its use. It is all hardcoded and property of Carbon Trust however. It is accompanied by an online training course. It can only be used directly as is, with no scope to adapt.
TRANSFERABILITY	YES. Direct use/transfer of this online platform and user guides can be undertaken.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (art. 14) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Energy efficiency and carbon saving advice for local government, Ireland

Reducing energy use makes perfect business sense; it saves money, enhances reputation and helps everyone in the fight against climate change. The Carbon Trust provides simple, effective advice to help organisations take action to cut emissions. One of the simplest ways to do this is to use energy more efficiently.

This overview for local authorities introduces the main energy saving opportunities for the sector and demonstrates how simple actions save energy, cut costs and make the most of budgets. The information in this publication is aimed at facilities managers, departmental energy managers and decision-makers working in local government. Focusing on low and no-cost measures and actions with the quickest payback, this overview demonstrates the best energy saving opportunities available in many local authority buildings, helping managers to:

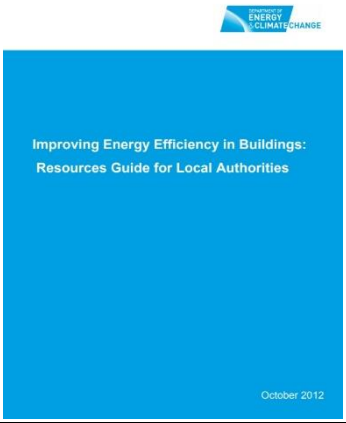
- Appraise the overall performance of a local authority building.
- Assess the potential for energy savings and indicate key areas for improvement.
- Raise awareness of energy conservation amongst staff and motivate them to reduce waste.
- Overcome organisational barriers such as capital investment and purchasing.
- Measure energy and cost savings to demonstrate achievement and maintain impetus for further improvement.

CONTACT: Carbon Trust UK

DETAILED INFO: www.carbontrust.com/media/196392/ctv028-local-authorities.pdf

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	HIGH. This should be relatively easy to adapt (to streamline to national regulations/specific audit requirements) however the permission of Carbon Trust is required. As a general auditing guide it can however be used directly by local/regional authorities responsible for facilities management.
TRANSFERABILITY	YES. Direct use/transfer of this guidebook can be undertaken.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector operational goals with defined programme to deliver them (art. 3) • energy audits do not include technical and financial feasibility assessments (art. 8) • for the recommended actions arising from energy audits, no business cases are prepared and presented for financial approval (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (art. 14) • the potential for developing local and regional heat markets hasn't been taken into account (art. 14) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Improving Energy Efficiency in Buildings: Resources Guide for Local Authorities, Ireland



"Improving Energy Efficiency in Buildings: Resources for Local Authorities" has been developed by the Department of Energy and Climate Change (DECC) and the Department for Communities and Local Government (DCLG). It is intended to act as a resource for local authority personnel who are involved in climate change mitigation in the built environment to support the planning and delivery of projects. The collection of resources will support local authorities as they prepare reports required by new guidance under the Home Energy Conservation Act 1995 (HECA)1 on measures they propose to take to significantly improve the energy efficiency of residential accommodation in their areas. This document draws on existing resources and is not intended to replicate good practice information that is already in existence. It is designed to bring together and categorise tools, models, knowledge, case studies and datasets which can be used and adapted at local levels to meet local authority needs. Live links are provided to resources to allow swift access by individuals.

CONTACT: Department of Energy & Climate Change UK

DETAILED INFO:

www.gov.uk/government/uploads/system/uploads/attachment_data/file/65578/6746-improving-energy-efficiency-in-buildings-resource.pdf

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	LOW. This should be relatively easy to adapt but would definitely need adaptation to reflect national policies and programmes. It should be noted however allot of the material is centred around the UKs Green Deal which does not exist elsewhere (although similar programme may) and so all of this would need to be changed to suit the national situation. In addition all data sets are reflective of UK statistics only. As such this tool is relevant only as template/guide on how to prepare a similar type of guide for a different country.
TRANSFERABILITY	YES. Following adaptation direct use/transfer of this guide can be undertaken.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector strategic goals with defined targets at national level (art. 3) • no energy efficiency policy public sector operational goals with defined programme to deliver them (art. 3) • for the recommended actions arising from energy audits, no business cases are prepared and presented for financial approval (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • financing facilities are not established for energy efficiency improvement measures (art. 20) • absence of an Energy Efficiency National Fund (art. 20) • the National Fund is not accessed and utilised by the public sector (art. 20) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Local Authority Energy Index, Ireland

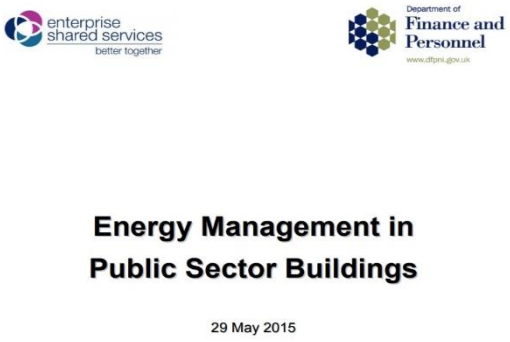
The Local Authority Energy Index, developed by Knauf Insulation, provides a measure of Local Authorities' work on energy efficiency. It uses a combination of quantitative and qualitative measures to produce an overall index of performance in energy efficiency. It is not intended to be critical of individual authorities, and like all indices it has to be interpreted with care. It is intended to show best practice and where Local Authorities can improve their performance. The Local Authority Energy Index is a tool allowing officials, councillors and other interested parties to measure their energy efficiency efforts against other areas, and find ways to overcome barriers they may be facing. A report on 103 local authorities in the UK who utilised the tool in 2015 is available on line. Potential strategies to improve energy management in their areas are also provided for each individual authority based on how they have scored.

CONTACT: none available other than the general contact on the website. The report was compiled by Steven Fawkes and Michael Floyd of EnergyPro Ltd. EnergyPro is an advisory company specialising in energy efficiency, energy management and the financing of energy efficiency and clean technology

DETAILED INFO: http://www.knaufinsulation.co.uk/press-releases/local-authority-energy-index-tool-sharing-best-practice

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	HIGH. The areas assessed would be similar for all local authorities and so should be adaptable. It is clear however that the tool is only as useful as the data set which is entered into it. Effort is required to ensure the input data matches the tool criteria and is of sufficient quality to be used to generate accurate outputs.
TRANSFERABILITY	YES. I am not clear on transferability, as detailed information was not forthcoming for this tool. An insulation company appears to sponsor the tool and perhaps there is scope for them to transfer the tool to other regions although it may be limited to where they currently have large market share.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Energy Management In Public Sector Buildings Guide, Ireland



This guide provides an overview of some of the key EU Energy Directive changes and practical steps that can be taken to improve energy efficiency in public sector buildings. It is aimed primarily at Northern Ireland Civil Service (NICS) departments, their Agencies, Non-Departmental Public Bodies (NDPBs) and Public Corporations however, it will also be of use to other public sector bodies in Northern Ireland (NI). It summarises energy policy in NI, along with the relevant legislation and schemes available. It defines the roles and responsibilities of each government department, properties divisions and the wider public sector. It provides basic introductions into energy bills, energy performance certs, space heating, water management, computers and office equipment.

CONTACT: Department of Finance and Personnel Northern Ireland
DETAILED INFO:
www.finance-ni.gov.uk/sites/default/files/publications/dfp/Energy-management-in-public-sector-buildings-manual-may-2015.pdf

LEVEL	National
LANGUAGE	English
ADAPTABILITY	YES. It is adaptable, but most useful as a template for other national authorities to use as a guide to key legislation, responsibilities and proposed measures. Much work is needed to make it applicable to individual regions.
TRANSFERABILITY	YES. As a template guide this could be transferred to all national authorities/energy government departments.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Financial Model for Street Lighting Toolkit, Ireland

Developed by the Scottish Futures Trust (SFT) and supported by the Scottish Government through its Resource Efficient Scotland (RES) programme, the toolkit allows councils to input their current street lighting data which in turn calculates what the reduced electricity usage would be if they changed to new, energy-efficient LED lighting. The toolkit also calculates what level of investment is required by the council to replace its old lights with new LED fittings, and the payback period of the loan.

The toolkit includes the following functionality:

- Accurate consumption calculated from Elexon Regime codes and Charge codes
- Ability to phase capital expenditure and investment drawdowns
- Multiple technical and financial scenarios can be run and compared, including the ability to consider the use of dimming
- Sensitivities regarding electricity forecasts can be analysed
- Additional infrastructure upgrade (eg. column replacement) can be included and evaluated.
- Replacement costs including O&M savings can be specified for each lantern type.
- The model integrates both the technical and financial components for a business case appraisal.

CONTACT: Lindsay McGregor, Scottish Futures Trust (SFT)
DETAILED INFO: https://www.scottishfuturestrust.org.uk/publications/tag/street-lighting

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. Adjustment to suit each national street lighting energy cost basis would be required but the Scottish Future Trust (SFT) are willingly to engage with interested parties on this (may incur cost).
TRANSFERABILITY	YES. Some effort needed to make it transferable but should be possible with IT support. It has been design with transferability in mind.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • for the recommended actions arising from energy audits, no business cases are prepared and presented for financial approval (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Fleet: Plug in Vehicle Advice, Ireland

energy saving trust

Plug-in Vehicle Advice

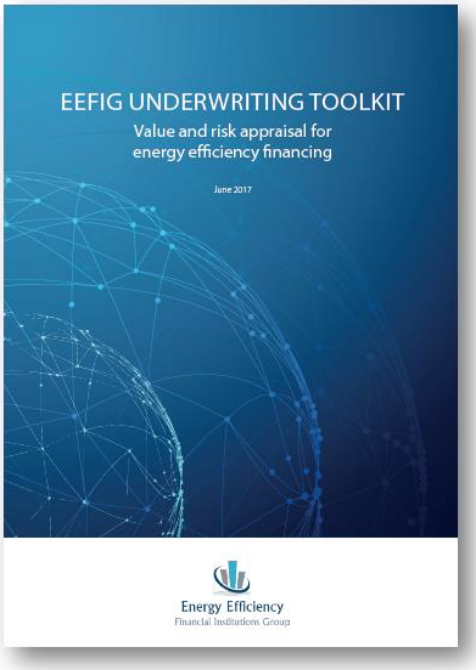
This tool includes an online questionnaire which organisations complete to provide some information about their fleet. The organisation will then receive a bespoke report with recommendations outlining the potential for plug-in vehicles within their fleet.

CONTACT: Energy Savings Trust UK
DETAILED INFO: www.pluginadvice.org.uk/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. Once tailored to national schemes/policy it could be adapted
TRANSFERABILITY	YES. Relevant technology solution for all public bodies with a vehicle fleet
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

4.11 EU tools

EEFIG Underwriting Toolkit, EU



The EEFIG Underwriting Toolkit is designed to assist financial institutions to scale up their deployment of capital into energy efficiency. It was compiled with several objectives in mind:

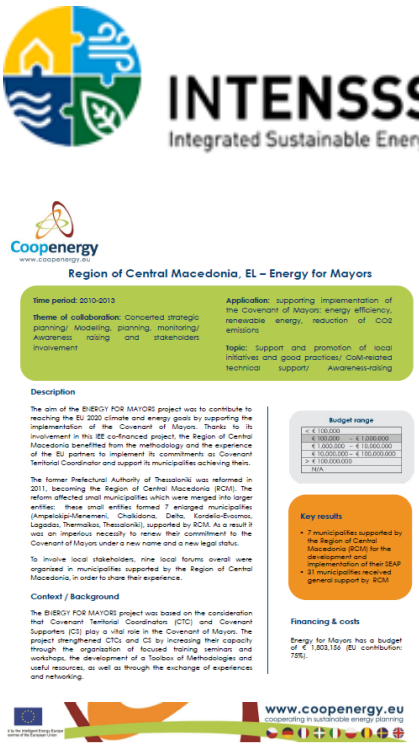
- to help originators, analysts and risk departments within financial institutions better understand the nature of energy efficiency investments and therefore better evaluate both their value and the risks.
- to provide a common framework for evaluating energy efficiency investments and analysing the risks that will allow training and capacity building around standardised processes and understanding.
- to help developers and owners seeking to attract external capital to energy efficiency projects to develop projects in a way that better addresses the needs of financial institutions.
- to foster a common language between project developers, project owners and financial institutions.

Although the focus is on value and risk appraisal, additional material on the size of the potential market, methods of financing and the project life cycle have been included to give a fuller picture and help build capacity within financial institutions.

CONTACT: steven.fawkes@energyproltd.com
DETAILED INFO: www.eefig.eu/index.php/underwriting-toolkit

LEVEL	National
LANGUAGE	English
ADAPTABILITY	LOW. The Toolkit focuses on building sector primarily and the information provided can be adapted to small extent to other sectors.
TRANSFERABILITY	YES. The information of the toolkit compiles ideas from all 28 MS therefore it can be transferrable to the entire EU.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • innovative financing mechanisms are not used (Art. 20) • lack of knowledge regarding existing financial tools (Art. 20)

INTENSS-PA, EU



INTENSSS-PA Web-based Information Platform's Database of Practice provides in a structured way the existing knowledge (i.e. case-studies, training materials, methods, etc.) related to the integration of energy as a theme into spatial planning and physical and socio-economic landscapes that has been identified through a systematic review within INTENSSS-PA project and the INTENSSS-PA outcomes. Two major functionalities are foreseen within INTENSSS-PA Information Platform: The first functionality (External Exploitation) focuses on the exploitation of the training materials and case studies outside of the INTENSSS-PA project, as collected within the project and through a systematic review, analysis and recording process. The available data can be identified using four different types of searching; by: the country of origin, specific keywords, various keywords (open search) and pre-specified topics. It should be highlighted that potential information about case studies in specific regions (either in NUTS-2 or in lower administrative level) can be retrieved utilising both the searching options of Countries and Open Search with the prerequisite that the corresponding information is available. The second functionality (Internal Exploitation) intends to the exploitation of the produced materials within the framework of INTENSSS-PA project. In particular, the aim of the second functionality is to act as a simplified Decision Support System fostering the potential user to utilise both of the developed methodological approach and the produced materials for the seven involved regions. The intention of the database is to increase the possibilities for methodology's replication from other regions in EU level. In addition, INTENSSS-PA has performed a clustering analysis of European Regions on NUTS-2 level in relation to their physical and socio-economic characteristics and the level of energy development; capitalising on this analysis the Platform provides the capacity to each European region in NUTS-2 analysis of retrieving the information for the INTENSSS-PA regions, which belong to the same formulated cluster. This feature not only exemplifies or inspires regions for integrated energy planning but actually provides the detailed implementation of INTENSSS-PA for immediate replication by a region with similar characteristics. The database currently consists of 134 case studies and 189 technical materials (i.e. methodologies, tools, presentations, etc.) related to integrated sustainable energy planning. The database is continuously enhanced with INTENSSS-PA outputs and other related materials identified and used while the project is evolving.

CONTACT: WWW.BPM.GR

DETAILED INFO: www.intensss.bpm.com.gr/

LEVEL	National
LANGUAGE	English
ADAPTABILITY	LOW. The platform refers to regional governance hence it cannot be extrapolated to other types of governance. Nevertheless, the projects explored are non-technological innovations, technological innovations, demonstration projects and projects with significant replication potential, therefore they can expand to various sectors.
TRANSFERABILITY	YES. The aim of the tool is to be replicable to all regions of the EU.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of knowledge regarding existing financial tools (Art. 20)

EmBUILD, EU

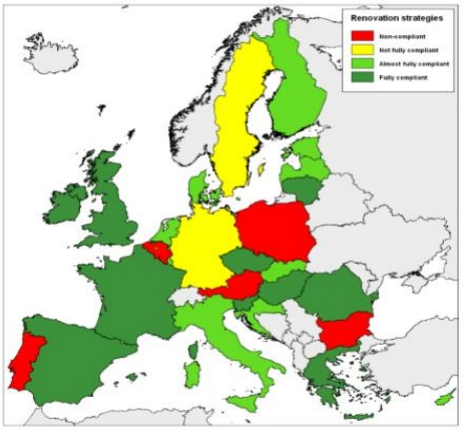


Figure 1: JRC evaluation of national renovation strategies [1]

EmBUILD provides a series of training material and supports public authorities in Southeast European countries to prepare a long-term strategy for mobilising investment in the energy efficient renovation of the building stock. The materials are: a) How to Improve Investment Climate at Local Level. The aim of the document is to contribute to increasing capacity of public authorities at regional and municipal level to guide (public) investment decisions and to facilitate private sector involvement. The document is intended to help representatives and practitioners from local governments; b) Guide to raising awareness. The recommendations and suggestions in this guide are aimed at local energy efficiency practitioners such as energy managers, energy officers, other experts and personnel involved in planning and applying energy efficiency measures at local level who also have the difficult task to convince the decision makers in benefits of application of energy efficiency measures in public buildings for various reasons (new directives, laws, requirements, budget restrictions, etc.) or interact in their daily practice with the stakeholders who are directly affected or influence the application of the energy efficiency measures (general public, NGOs, building societies, and others); and c) Guidance note on stakeholder involvement. In order to increase the capacity of public officers across the partner regions, the first step is to examine their respective fields of interest, knowledge of energy efficiency regulations, understanding the impacts of energy efficiency measures as well as their interest for EmBuild project activities. The information collected and generated during this survey will be at the cornerstone of further project activities planning for selected municipalities and is included in this document.

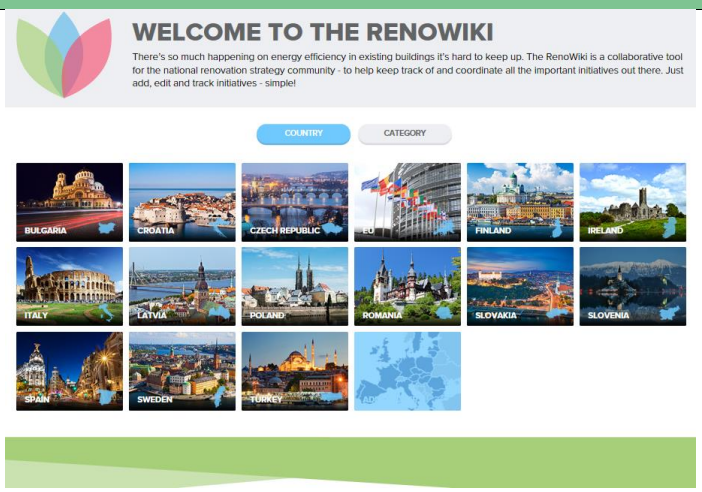
CONTACT: GIZ (www.giz.de)

DETAILED INFO: www.embuild.eu/knowledge-center

http://www.embuild.eu/knowledge-center/training-material/

LEVEL	Regional
LANGUAGE	Greek
ADAPTABILITY	LOW. The EmBUILD training materials will provide information on the renovation strategies and tools for renovation, therefore it is quite focused and cannot be expanded to other sectors (perhaps only adressing both public and private buildings).
TRANSFERABILITY	YES. EmBUILD focused on strategies for financing deep renovation in the SE countries, but its findings can be replicated to the other EU countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • lack of expertise and capacities in the concerned organisations (banks, private sector, public institutions, …) (art. 17) • stakeholders' lack of available time (art. 17) • innovative financing mechanisms are not used (Art. 20) • lack of knowledge regarding existing financial tools (Art. 20)

RenoWiki, EU



The RenoWiki is a product of the BUILDUP project and is an information tool supporting the national renovation strategy dialogue across the region by:

- Connecting stakeholders with experts running high-impact initiatives in other countries, which can help overcome barriers to renovation in their home country;
- Helping stakeholders understand how different types of initiatives are defining and measuring their impact;
- Helping our community come to a shared understanding of what 'collective impact' metrics might look like, to help ensure that all our separate initiatives are greater than the sum of their parts.

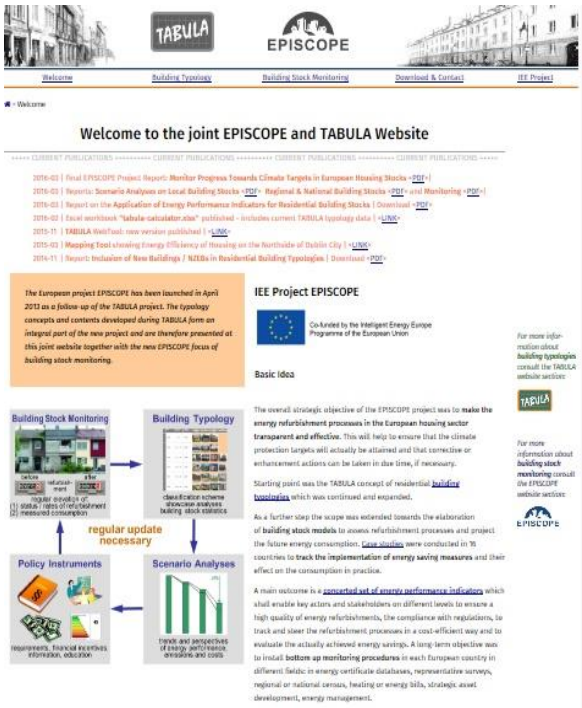
We'll be using it actively at BUILD UPON events to ensure we're capturing information. The project aims to empower 1,000 key stakeholders – from governments and businesses, to NGOs and householders – across 13 countries, to shape the change needed in our existing buildings. By holding over 80 connected events in the capitals and major cities of the project countries throughout 2016 and 2017, we'll create a collaborative community to help countries design and implement their strengthened national renovation strategies.

CONTACT: emilio.miguelmitre@gbce.es

DETAILED INFO: www.buildupon.eu/initiatives/#the-renowiki

LEVEL	National
LANGUAGE	English
ADAPTABILITY	LOW. The RenoWiki will provide information on the renovation strategies and tools for renovation, therefore it is quite focused and cannot be expanded to other sectors (perhaps only addressing both public and private buildings)
TRANSFERABILITY	YES. The RenoWiki refers to renovation strategy information for the entire EU, therefore it can be considered fully transferrable
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector strategic goals with defined targets at national level (art. 3) • insufficient information on legal and administrative aspects (art. 17) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about legal and administrative aspects (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • stakeholders' lack of available time (art. 17) • innovative financing mechanisms are not used (Art. 20) • lack of knowledge regarding existing financial tools (Art. 20)

TABULA WebTool, EU



The TABULA WebTool has been developed within the framework of the Intelligent Energy Europe projects TABULA and EPISCOPE.
The objective is to disseminate the general idea of national residential building typologies to building experts from European countries and to give them an understanding of the concrete implementation according to the TABULA concept www.episcope.eu/building-typology:

– The division of residential building stocks in size and age classes;
– Data of exemplary buildings: visual appearance, commonly found construction elements and corresponding U-values;
– Data of exemplary heat supply systems: commonly found system types and their energy performance indicators;
– Typical values for the energy consumption by energy carriers;
– For old buildings: energy saving measures on two quality levels and their impact on the energy consumption;
– For new buildings: examples for realisation on three energy performance levels: minimum requirements, improved and ambitious or NZEB standard (assumed or announced level of Nearly Zero-Energy Buildings);
– Standard reference calculation procedure based on an agreed data format, user conditions and national climatic data;
– Calibration of the standard calculation procedure to the typical level of measured consumption.

CONTACT: b.stein@iwu.de

DETAILED INFO: www.episcope.eu/building-typology/webtool/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The TABULA Webtool refers to the residential sector (buildings) exclusively therefore it cannot be adapted to other sectors. Still some adaptations ca take place to address the public buildings as well.
TRANSFERABILITY	YES. The TABULA Webtool provides information from most EU MS, therefore the dataset and the case studies can be transferred to the entire EU.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

CERTuS, EU

The web portal integrates all the knowledge gained from the CERtus project in an easy-to-use tool that aims to facilitate the planning and preparation of nearly Zero Energy Building renovation projects for municipal buildings. It is addressed principally to Municipalities and the public sector but it may be equally useful to the ESCOs, financing entities, policy makers and to all parties interested in Energy Efficiency and Renewable Energy systems integration in the building sector. The portal includes information on nearly zero energy cases studies, energy service models, innovative financing and tools to perform financial evaluations of nZEB renovation schemes, and, innovative building materials and HVAC systems. One of the tools developed, Simplified Economic Evaluation Tool (CERtuS SE²T) has been developed under the CERtuS Project with the expectation to become a friendly tool informative tool on financing issues, for building owners that wish to implement a deep energy renovation. CERtuS SE²T could be used in the early stages of building renovation projects, in order to evaluate projects' is financial sustainability. Furthermore, CERtuS SE²T' outputs could be used to facilitate the discussion between the building owners and investors, as it gives useful information on potential financing schemes. CERtuS SE²T requires significant information as inputs, such as the intervention costs, the maintenance expenses, the expected financial performance and loans interest rates. Even so, a detailed study will be always needed in order to proceed in financing. Another tool is an extensive database of energy service model contracts, training materials and materials for technologies and systems.

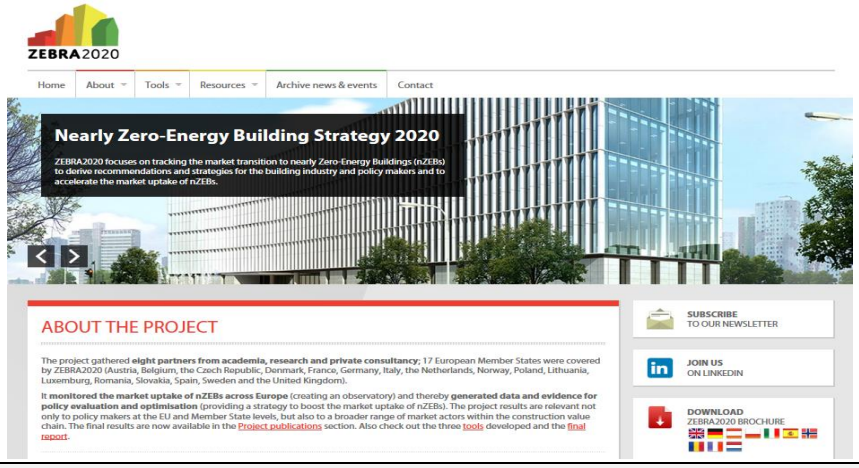
CONTACT: styliani.fanou@enea.it

DETAILED INFO: www.certus-project.eu/tools/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The SET tool refers to financing tools to the building sectors with a focus on public buildings, therefore it cannot be adapted to other sectors (rather than buildings). One possible expansion could be to the private buildings as well
TRANSFERABILITY	YES. The SET tool provides input from the Southern European context and it can be expanded also to other regions in the EU.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • innovative financing mechanisms are not used (Art. 20) • lack of knowledge regarding existing financial tools (Art. 20)

ZEBRA2020, EU

ZEBRA2020 focuses on tracking the market transition to nearly Zero-Energy Buildings (nZEBs) to derive recommendations and strategies for the building industry and policy makers and to accelerate the market uptake of nZEBs. The tool on nZEB buildings enables to display relevant indicators for a sample of nZEB buildings and high efficient buildings estimated to be at nZEB level, built recently in selected European countries. It aims at providing information of best cases in Europe, thereby showing most recurrent technologies, materials and strategies towards the nZEB target. The tool differentiates residential and non-residential nZEB buildings and shows some of the most significant indicators regarding energy performance, passive and active solutions and production of renewable energy. The data mapper is another tool shows scenarios of the market transition to nZEB (nearly Zero Energy Buildings). We analysed, how current building standards and other policy settings affect the building stock transition and corresponding energy demand targets of the building sector until 2050 and how more ambitious policies could change this transition. For this purpose, a current policy scenario and a more ambitious policy scenario of the market transition to nZEB up to 2020, 2030 and 2050 were developed. However, the more ambitious policy scenario is not necessarily in line with long term climate and energy targets. The gap between these two scenarios shows the need for actions moving to a low carbon building stock.



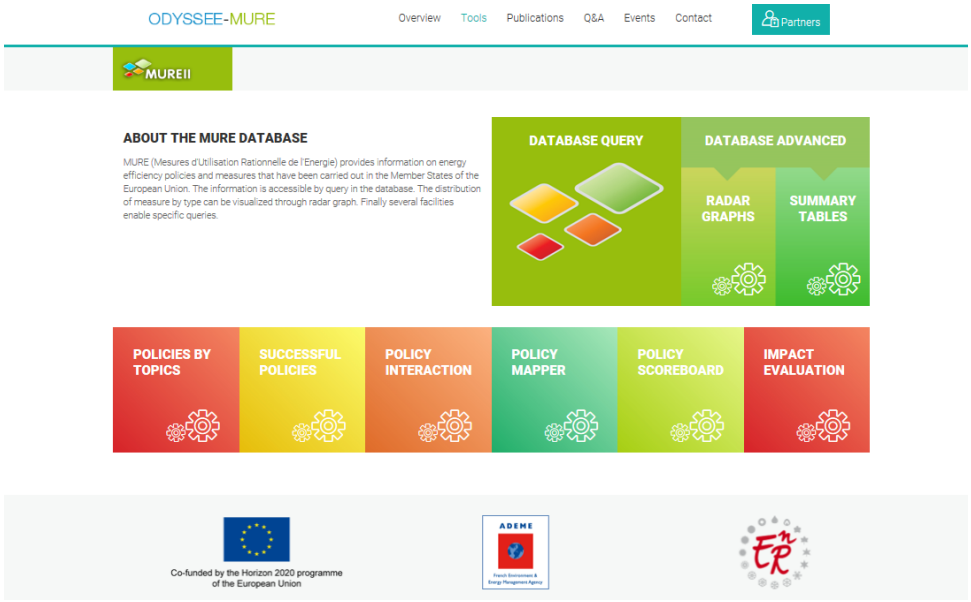
CONTACT: kranzl@eeg.tuwien.ac.at

DETAILED INFO: www.zebra2020.eu/tools/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The tools under ZEBRA2020 refer to the buildings in general with the target of NZEB, therefore they are not replicable for other sectors.
TRANSFERABILITY	YES. The tools under ZEBRA2020 deal with building databases for the majority of countries in the EU, therefore they can be replicable to all countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme for monitoring energy efficiency levels at national level (art. 5) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

ODYSSEE-MURE, EU

ODYSSEE-MURE provides information on energy efficiency policies and measures that have been carried out in the Member States of the European Union. The information is accessible by query in the database. The distribution of measure by type can be visualised through radar graph. Finally several facilities enable specific queries. The ODYSSEE indicators are accessible under different data tools: the full data base, the key indicators facility, as well as five specific data facilities that focus on specific issues and provide some interpretation: market diffusion, decomposition, comparison, energy saving and indicator scoreboard. The access to the data base is restricted, whereas all other data tools are in public access.



CONTACT: didier.bosseboeuf@ademe.fr

DETAILED INFO: www.odyssee-mure.eu/data-tools/

LEVEL	National
LANGUAGE	English
ADAPTABILITY	HIGH. The policies reflect all sectors of the economy as described in the EED, therefore the outcomes can be adapted to all sectors.
TRANSFERABILITY	YES. The evaluation of policies as well as the indicators refer to all EU Member States therefore they are transferrable on the national level.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • no national monitoring and reporting is undertaken for demonstratoin of progress towards national energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Retrofit Action Hub (Request2Action), EU

Request2Action involves pilot projects focused on the following areas: Monitoring the uptake of EPC recommendations; Enhancing self-assessment advice for householders - how much can I save in MY home; Providing effective data from EPCs to different organisations and companies, who need to understand the energy saving opportunity in their country or region; Developing national hubs that will make data available and provide other relevant information and link supply & demand side stakeholders. The Retrofit action hub is one of the pilot projects under the project carried out in some countries. For instance, The Belgian pilot aims at setting up renovation action platforms in close cooperation with the cities.

Many city centres consist of old housing blocks that need drastic renovation to live up to current energy performance and comfort standards. By combining existing databases on energy performance of buildings with data input from homeowners' knowledge is gathered on the current situation of cities' existing housing stock. This data input from home owners will be gathered with online surveys and a door-to-door approach. In Portugal, Development of a one-stop-shop to bring together all key players of the renovation process. The hub intends to be a self-sustainable platform based on the marketing that will be made by the companies that want to be present on the list of suppliers (builders) of the website. These incomes will be used to make marketing and dissemination activities near the different actors of the supply chain and bring more users (professional and non-professional) to the platform.

CONTACT: frances.downy@est.org.uk
DETAILED INFO: www.building-request.eu/pilot-projects/retrofit-action-hub

LEVEL	National
LANGUAGE	English
ADAPTABILITY	LOW. The Action Hub refers to the renovation of buildings mainly from the residential and tertiary sector, therefore its adaptability to other sectors is not foreseen.
TRANSFERABILITY	NO. The Retrofit Action Hub is based in Belgium, Italy, Greece, Portugal and the UK, where national datasets are presented, therefore it cannot be replicated to other countries, except for some best practices.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • lack of expertise and capacities in the concerned organisations (banks, private sector, public institutions, …) (art. 17) • stakeholders' lack of available time (art. 17) • lack of information on best practices for energy performance contracting, including, if available, cost- benefit analysis using a life-cycle approach (art. 18) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

TRUST EPC South, EU

The overall objective of Trust EPC South is to scale up investments on Energy Efficiency (EE) and Sustainable Energy technologies in the private tertiary sector of southern European countries, with particular focus on EPC projects. This objective will be achieved through the development of an ad hoc investment assessment and benchmarking framework building upon an established real estate assessment tool (Green Rating™) and supported with the organisation of tailored capacity building activities that will allow project developers (including ESCOs and other EPC providers), project sponsors and private tertiary sector actors to more easily access third party financing, thus unlocking the large tertiary sector EE and RES market potential. The 33 factsheets presented in this report show which are the most common solutions used and outline how they are being implemented, how they are financed and what are the other conditions for success. For each factsheet, a set of over 20 indicators is provided, divided into four areas: Introductory information including segment of activity and stakeholders involved; The project's context, where the facility and initial situation/energy use are described; Specifications of the contract: including duration, planned savings, contractual details, financing arrangements and results; Additional comments have also been added when relevant to further detail the project and its specificities (elements for success, advantages for the clients, etc.).

CONTACT: pms@creara.es
DETAILED INFO: www.trustepc.eu/en/public-deliverables

LEVEL	National
LANGUAGE	English
ADAPTABILITY	LOW. The project focuses on the tertiary sector therefore it cannot be used for other sectors.
TRANSFERABILITY	YES. The best cases examined and guidance are focusing on Portugal, Spain, France, Italy, Croatia and Greece and they can be expanded to other countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • stakeholders' lack of available time (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (art. 18) • no access to model contracts for energy performance contracting (art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost- benefit analysis using a life-cycle approach (art. 18) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

EPC Plus - Energy performance contracting plus, EU

A collaborative network, under the name of Energy Efficiency Network Europe, has been created to act as the international EPC plus platform. This is in international 'market place' where – according to commonly agreed rules – members of different member states can efficiently and safely exchange valuable know-how between each other, and jointly develop EPC-models and SPIN-concepts. In the case of the international EPC+ platform the buyers and sellers are SMEs offering energy services such as EPC services. Most of these SMEs are only active in one country. The objective is to trade know-how, supporting tools and to enable the development of new business opportunities between the participating members. On the international EPC+ platform members can trade know-how and supporting tools. Each member can sell to and/or buy from other members. Know-how can be related to technical issues as well as to other aspects such as third party financing mechanisms. Examples of supporting tools are contracts, calculation tools, Energy Management Monitoring software.

CONTACT: abotzios@cres.gr
DETAILED INFO: www.epcplus.org/epc-platform/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. The EPC platform is focusing on the EPC and various tools on a national level, which are useful for companies participating in energy efficiency. As the sectoral focus is very broad it can be adapted to more sectors.
TRANSFERABILITY	YES. The EPC platform is a product originally set for 12 countries but the information provided is replicable for the entire EU.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • stakeholders' lack of available time (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (art. 18) • no access to model contracts for energy performance contracting (art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost- benefit analysis using a life-cycle approach (art. 18) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

SPP (sustainable public procurement) Regions, EU

SPP Regions promotes the creation and expansion of European regional networks of municipalities working together on sustainable public procurement (SPP) and public procurement of innovation (PPI). Regional networks can help increase the capacity of public bodies for SPP and PPI, and send a stronger signal of demand for sustainability to suppliers. The regional networks are collaborating directly on tendering for eco-innovative solutions, whilst building capacities and transferring skills and knowledge through their SPP and PPI activities. The Sustainable Procurement Platform, as the online hub for sustainable procurement, has collected a list of more than 200 best case studies on sustainable and innovation procurement. This case studies detail the methods used, the obstacles overcome and successes achieved.

CONTACT: Claudia_Fantini_ICLEI_Brussels_O@mail.vresp.com

DETAILED INFO: www.sustainable-procurement.org/case-studies/

LEVEL	National
LANGUAGE	English
ADAPTABILITY	LOW. The project is focused on the energy use in public buildings, vehicles and transport and food and catering services. Given the public procurement deals with all activities of the public sector, it can be expanded to such other activities.
TRANSFERABILITY	YES. The SPP platform provides concrete case studies and guidance based on the experiences from 9-10 cities, but these lessons can be extrapolated to other cities as well from different countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the central government in your country does not purchase energy efficient buildings, products and services (art. 6) • there are no long-term energy performance contracts in place in the public sector (art. 6) • public procurement doesn't include life-cycle cost analysis (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Premium Light Pro, EU

The international initiative "Premium Light Pro" focuses on the implementation of next-level energy efficient LED lighting systems (indoor & outdoor lighting) in the private and public service sector. A successful implementation of next-level energy efficient LED lighting systems needs a successful project management. Therefore, the overview of planning steps developed through PREMIUM LIGHT PRO will guide user(s) to a strong management of their LED project(s).

The steps recognised in the guidelines are:

a) Situation Analysis
b) Detailed Planning
c) Financing Model
d) Procurement
e) Control and Maintenance.

CONTACT: aniol@ecoserveis.net
DETAILED INFO: www.premiumlightpro.org.uk/indoor-lighting/guidelines-downloads/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. "Premium Light Pro" is an international initiative and focuses on the implementation of next-level energy efficient LED lighting systems (indoor & outdoor lighting) of which the use is no country limits. However, the application of the policy instruments developed through the initiative, for instance new incentive schemes, would need some appropriate revision according to country context.
TRANSFERABILITY	YES. "Premium Light Pro" is an international initiative, implemented through the cooperation among Austria, Czech Republic, Denmark, Germany, Italy, Poland, Portugal, United Kingdom and Spain. The use of the results can be easily extended to other EU countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the wider public sector does not purchase energy efficient buildings, products and services at national level (art. 6) • there are no long-term energy performance contracts in place in the public sector (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

POCACITO, EU

The guidelines consist of the development of a typology of post-carbon cities, which will be the basis of the EU 2050 post-carbon city roadmap. Additionally, the project will establish an online "market place of ideas" that supports an international knowledge exchange of urban best practices between cities in the EU and worldwide. It has created case studies with 8 cities (http://pocacito.eu/case-studies), which provide examples of on post low carbon cities, as well as the marketplace of ideas of good practices globally.

CONTACT: max.gruenig@ecologic.eu / blandine.pidoux@energy-cities.eu
DETAILED INFO: www.pocacito.eu/marketplace

LEVEL	Local
LANGUAGE	English
ADAPTABILITY	LOW. The project refers to the local governments on a global scale and the ideas provided on the lwo carbon are only for city planning.
TRANSFERABILITY	YES. The nature of the project is to provide global solutions for post low carbon cities, which can be shared internationally and good practices eventually adopted.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • insufficient information on training possibilities (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

progRESsHEAT, EU

In the target countries, progRESsHEAT will support the implementation of national heating and cooling plans which have to be released by member states by the end of 2015. The plans will include a policy outlook on how the potentials identified by the comprehensive assessment will be achieved. ProgRESsHEAT will assist national policy makers in implementing suitable policies with a model-based quantitative impact assessment of local, regional and national policies up to 2050. Together with six local authorities in six target countries across Europe (Austria, Germany, Czech Republic, Denmark, Portugal, Romania), heating and cooling strategies will be developed through a profound analysis of (1) heating and cooling demand and future developments, (2) long-term potential of renewable energies and waste heat in the regions, (3) barriers & drivers and (4) a model-based assessment of policy intervention in scenarios up to 2050. The established local energy advisory tool EnergyPRO will be used for the local studies and further developed to appropriately reflect district heating and cooling. The final versions for the investigated regions will be handed over to the authorities.

CONTACT: hummel@eeg.tuwien.ac.at
DETAILED INFO: www.progressheat.eu/Data-mapper.html

LEVEL	Local, regional, national
LANGUAGE	Greek
ADAPTABILITY	HIGH. The data mapper and the project provide guidance based on the local level as case studies to develop heating strategies for the national level, so these plans can be adapted to a different governance level.
TRANSFERABILITY	NO. The project is focused on 6 countries and respectively 6 municipalities and in principle the methodology can be transferred to other regions in the EU. In its current form (ongoing) the provisions for expanding it to other regions does not seem to be foreseen.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• No comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling has been completed at national level (art. 14) • There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (art. 14) • the potential for developing local and regional heat markets hasn't been taken into account (art. 14) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

CITYnvest, EU

	The toolkit clearly explains how to start an energy retrofitting project and identifies the main challenges and success factors, based on RenoWatt's experience in Pilot Region Liège. The toolkit aims to share RenoWatt's best practices and to facilitate replication of the model elsewhere in Europe and on a larger scale. It addresses practical issues and offers step-by-step guidance for private and public actors.
CONTACT: g.piccolo@climatealliance.org DETAILED INFO: www.citynvest.eu/content/guide-launch-one-stop-shop-energy-retrofitting-0	
LEVEL	Local, regional
LANGUAGE	Greek
ADAPTABILITY	HIGH. The services proposed by the One Stop Shop will also target a variety of different audiences: - any actor working in energy retrofitting preparation (and more specifically local companies or local/regional authorities) - any financial actor interested in responsible investments, and more specifically in investments in energy efficiency retrofitting - any actor or entrepreneur working on energy efficiency improvements
TRANSFERABILITY	YES. The tool has been tested and applied to Liege, but can be used in all interested cities in the EU.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no long-term energy performance contracts in place in the public sector (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • the public sector does not use energy service companies, and energy performance contracting (art. 18) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Green Digital Charter, EU

It is a platform where cities are able to browse and share project and tools, exchange with each other and monitor their status in the GDC implementation. The so called "Toolkit" is the main supporting mechanism for cities in the roll-out of Green Digital Charter and is formed by three main parts as described in the table below: a) Green Digital Action Framework - This framework provides guidance for cities on how to identify and initiate green digital activities, b) Green Digital Charter Reporting Tools - This set of tools provide cities with monitoring instruments to assess progress on green digital activities.

- Green-Digital Charter self-assessment tool for cities to identify their baseline and monitor their progress in reference to the Charter commitments
- Charter-Covenant reporting tool facilitating the framing of cities' activities in the field of green digital both under the Green Digital Charter and the Covenant of Mayors
- ICT carbon footprint reporting tool to help cities monitor the carbon emissions generated by their ICT equipment, c) Action Tools Catalogue - This online interactive catalogue supports the identification, exchange and development of green digital activities in cities.

CONTACT: Nikolaos.Kontinakis@eurocities.eu

DETAILED INFO: www.greendigitalcharter.eu/nice_toolkit/index.php

LEVEL	Local, regional
LANGUAGE	English
ADAPTABILITY	LOW. The tool is specifically designed for cities and for the loca governance level, so it cannot be used for other governance levels.
TRANSFERABILITY	YES. The tool is available for all cities that can make use of it, therefore it is transferrable. Via the City Exchange element, cities can identify their counterparts and receive concrete examples and guidance.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

PLANHEAT, EU

The tool is a platform that will allow the interconnections among three open source, easy-to-use IT modules – the mapping module, the planning module, the simulation module – and a KPI panel. The platform will allow the visualisation and mapping of results, the visualisation of the scenarios selected with the planning tool, and the visualisation of results coming from the numerical simulations. The mapping module will develop yearly heating and cooling demand from kinds of end-users and demonstrate the energy potential for heating and cooling supply from renewable sources and waste energy sources available at urban and industrial level.
It will aim To create a geospatial database populated of Heating Degree Hours (HDH) and Cooling Degree Hours (CDH); To create a database for retrofitting and energy efficiency measures applicable to buildings to assess future H&C demand reduction; To further develop and validate models for quantifying current and future heating and cooling demand from residential and service sectors; To further develop and validate models for mapping and quantifying energy sources potential (conventional and unconventional sources); To develop and validate models for quantifying excess industrial heating and cooling; To develop a GIS based platform to quantify and visualise H&C demand and supply potential at local level in an aggregated form. The planning and simulation module will define energy planning criteria for heating and cooling to support end users' decisions in the selection of the sustainable and feasible scenarios; develop an optimisation tool dedicated to the planning of optimal district heating routes; define energy models for simulating hourly variations of H&C demand and supply at city level; develop models to evaluate the interaction between the transport and power sectors; establish a KPI panel by selecting the most relevant energetic, economic, environmental indicators for the cities and calculation models; and implement and validate the planning and simulation modules in the PLANHEAT cities. Finally, the Key Performance Indicator module will include energy targets of national & local policies and local economic scenarios. This means that the output of the KPI panel is tailor-made for each PLANHEAT city.

CONTACT: fabio.sagnelli@dappolonia.it

DETAILED INFO: www.planheat.eu/the-planheat-tool

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The PLANHEAT refers to cities only and to specific technologies for heating and cooling, through economic scenarios, therefore it can be adapted among sectors but not among different governance levels.
TRANSFERABILITY	YES. The PLANHEAT will be tested in the PLANHEAT project cities (through validating it), Antwerp, Velika Gorica and Lecce. Afterwards it can be transferred to other cities once the values are adapted.
NEEDS ADDRESSED	• No comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling has been completed at national level (art. 14) • There are no policies that encourage to take into account the potential of efficient heating an cooling systems, in particular those using high-efficiency cogeneration, at the local and regional levels (art. 14) • the potential for developing local and regional heat markets has not been taken into account (art. 14) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

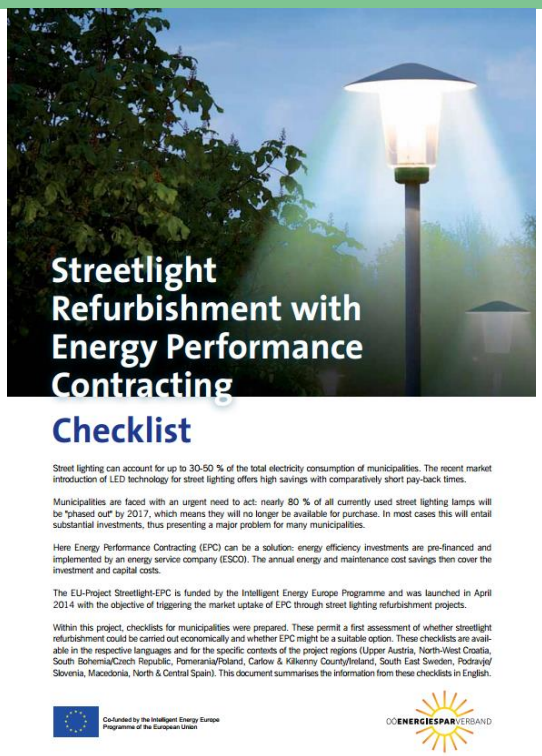
MultEE, EU

The multEE Monitoring and Verification Platform (MVP) is an application that assists in measuring progress towards Energy Efficiency (EE) targets. The application is based on the collection of bottom-up (BU) data on a number of plans and measures, their implementation, energy savings, CO_2 emissions and implementation costs. This enhances the monitoring and verification process and provides support to make any necessary adjustments to the individual measures. The platform also encourages different policy levels, such as states, counties and municipalities, to exchange their experience, share data and coordinate their actions. An efficient multi-level governance approach would lead to the adoption of more integrated and sustainable EE plans, define clear and converging objectives, and ensure more transparency and coherence in the overall planning process.

CONTACT: Benjamin Struss (benjamin.struss@giz.de)
DETAILED INFO: www.multee.eu/how-innovative-web-applications-can-support-energy-efficiency-policy-planning

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The Monitoring and Verification Platform (MVP) can be adapted to various sectors for MRV purposes of eneryg savings, as well as to national, regional and local governance.
TRANSFERABILITY	YES. The Monitoring and Verification Platform (MVP) is currently being implemented in Croatia, the FYR of Macedonia, Greece, Latvia, Lithuania, and Slovakia. The way it is formulated allows for all countries to make use of it and adapt it to their national characteristics
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24) • individual public bodies are not aware of their progress towards their energy efficiency targets (art. 24)

Checklist for Streetlight Refurbishment with Energy Performance Contracting, EU



The EU-Project Streetlight-EPC is funded by the Intelligent Energy Europe Programme and was launched in April 2014 with the objective of triggering the market uptake of EPC through street lighting refurbishment projects.

Within this project, checklists for municipalities were prepared. These permit a first assessment of whether streetlight refurbishment could be carried out economically and whether EPC might be a suitable option. These checklists are available in the respective languages and for the specific contexts of the project regions (Upper Austria, North-West Croatia, South Bohemia/Czech Republic, Pomerania/Poland, Carlow & Kilkenny County/Ireland, South East Sweden, Podravje/ Slovenia, Macedonia, North & Central Spain). This document summarises the information from these checklists in English.

CONTACT: OÖ Energiesparverband (office@esv.or.at)

DETAILED INFO: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-European-EN.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. Checklist was adapted to the contexts of 9 different regions: see the adapted checklists: Upper Austria – Oberösterreich: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Upper_Austria-DE.pdf North-West Croatia – Sjeverozapadna Hrvatska: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-North-West_Croatia-HR.pdf South Bohemia – Jihočeský kraj : http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-South_Bohemia-CZ.pdf Pomerania – Pomorskie: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Pomerania-PL.pdf Carlow & Kilkenny County: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Carlow_Kilkenny_County-EN.pdf South East Sweden – Sydöstra Sverige: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-South_East_Sweden-SV.pdf Podravje: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Podravje-SL.pdf Macedonia – Македонија: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Macedonia-MK.pdf North/Central Spain – España Centro-Norte : http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-North_Central_Spain-ES.pdf

TRANSFERABILITY	YES. Checklist was transfered to different contexts of 9 different regions: see the adapted checklists: Upper Austria – Oberösterreich: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Upper_Austria-DE.pdf North-West Croatia – Sjeverozapadna Hrvatska: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-North-West_Croatia-HR.pdf South Bohemia – Jihočeský kraj : http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-South_Bohemia-CZ.pdf Pomerania – Pomorskie: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Pomerania-PL.pdf Carlow & Kilkenny County: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Carlow_Kilkenny_County-EN.pdf South East Sweden – Sydöstra Sverige: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-South_East_Sweden-SV.pdf Podravje: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Podravje-SL.pdf Macedonia – Македонија: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-Macedonia-MK.pdf North/Central Spain – España Centro-Norte : http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Quick_check/Quick_check_street_lighting-North_Central_Spain-ES.pdf
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

Streetlight Refurbishment with Energy Performance Contracting - Guide, EU

Street lighting can account for up to 30-50 % of the total electricity consumption of municipalities. The recent market introduction of LED technology for street lighting offers high savings with comparatively short pay-back times.

Municipalities are faced with an urgent need to act: nearly 80 % of all currently used street lighting lamps will be "phased out" by 2017, which means they will no longer be available for purchase. In most cases this will entail substantial investments, thus presenting a major problem for many municipalities.

Here Energy Performance Contracting (EPC) can be a solution: energy efficiency investments are pre-financed and implemented by an energy service company (ESCO). The annual energy and maintenance cost savings then cover the investment and capital costs.

CONTACT: OÖ Energiesparverband - office@esv.or.at

DETAILED INFO: www.energiesparverband.at/fileadmin/redakteure/ESV/Info_und_Service/Publikationen/Strassenbeleuchtung_Checkliste_en.pdf

LEVEL	Regional, local
LANGUAGE	German, English
ADAPTABILITY	HIGH. The guide was transferred in 9 different regions, see the adapted guides: – Upper Austria – Oberösterreich: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-Upper_Austria-DE.pdf – North-West Croatia – Sjeverozapadna Hrvatska: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-North-West_Croatia-HR.pdf – South Bohemia – Jihočeský kraj : www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-South_Bohemia-CZ.pdf – Pomerania – Pomorskie: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-Pomerania-PL.pdf – Carlow & Kilkenny County: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-Carlow_Kilkenny-County-EN.pdf – South East Sweden – Sydöstra Sverige: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-South_East_Sweden-SV.pdf – Podravje: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-Podravje-SL.pdf – Macedonia – Македонија: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-Macedonia-MK.pdf – North/Central Spain – España Centro-Norte: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-North_Central_Spain-ES.pdf
TRANSFERABILITY	YES. The guide was transferred in 9 different regions: see the adapted guides:

	Upper Austria – Oberösterreich: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/Guide/Guide-Upper_Austria-DE.pdf
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the wider public sector does not purchase energy efficient buildings, products and services at national level (art. 6) • there are no long-term energy performance contracts in place in the public sector (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

Quick-check lighting refurbishment - Halls & Outdoor Parking, EU

Municipality of Antiesenhofen, Upper Austria
Street lighting project

Project background and objectives

The street lighting system of the municipality of Antiesenhofen was quite old (partly from the 60s) and represented a large percentage of the municipality's electricity consumption. The light quality was unsatisfactory and significant repair work was required. Already some years earlier, the municipality considered a renovation, but it was suspended due to a lack of financial resources. In 2014, the project was undertaken and combined with repair work for damages on some concrete masts. The focus was put on refurbishing the public lighting on the main street and in the west part of the municipality.

Project description

The main objective of the project was to improve the physical state and energy efficiency of the street lighting system without compromising service quality. The municipality was interested in using an EPC (energy performance contracting) model for this project. 4 ESCOs were asked to submit an offer. The decision was taken not to include the maintenance costs in the EPC contract. This was intensively discussed in the preparatory phase. The municipality nevertheless benefits from a significant reduction of its maintenance costs due to the new energy efficient and low-maintenance LED lighting system.

Significant parts of the refurbishment work could not be financed by the electricity saving measures. For these, the municipality paid a deposit. However, combining the necessary repair work with the energy efficiency project ensured a professional implementation of all measures by a street lighting specialist.

Facts

- **Population:** 1,060 inhabitants
- **Type of streets:** 60 % of the street lighting (country roads, residential areas)
- **ESCO:** ewv
- **Electricity cost savings:** 1,600 €/year
- **Reduction electricity consumption:** 10,600 kWh/year
- **CO_2 reduction:** 5 tons/year
- **Investment costs:**
  - 296,500 € (total investment)
  - 15,900 € (financed by the EPC project)
- **Subsidies:**
  - 3,200 € (regional contracting programme)
- **EPC contract duration:** 10 years

Further information:
OÖ Energiesparverband
A-4020 Linz, Landstrasse 45
Telephone: +43-732-7720-14380
E-mail: office@esv.or.at

www.streetlight-epc.eu

Quick-check lighting refurbishment: HALLS

In municipalities and the business sector, there are a large number of halls - larger buildings (or parts thereof) with high ceilings used for a variety of purposes including sports, events, production, logistics, sales, etc. Due to high ceilings, costs for lamp replacement are often higher. In production halls, the quality of the lighting also has a significant impact on pro- ductivity. Many halls have long operation hours, resulting in high electricity costs if inefficient lighting is used.

The costs for LED lighting for halls have significantly decreased in recent years. In many cases, this has made refurbishment economically feasible.

This quick-check aims to support companies and institutions in the first steps towards refurbishing lighting systems in halls. It helps assess whether lighting refurbishment could be carried out economically and whether "energy performance contracting" might be a suitable option. The quick-check was developed in the context of the European "Streetlight-EPC" project.

Quick-check lighting refurbishment: OUTDOOR PARKING

The main task of parking illumination is to ensure safety for the users of the parking lot - both on foot and in vehicles. It is important to avoid blinding the drivers and pedestrians on nearby streets.

In outdoor parking, the same technologies are used as for street lighting. The widespread application of LEDs in street lighting has resulted in a decrease in the price of the technologies and a large variety of quality products to choose from.

This quick-check supports companies and institutions in the first steps towards refurbishing lighting systems for parking lots. It helps assess whether lighting refurbishment could be carried out economically and whether "energy performance contracting" might be a suitable option. The quick-check was developed in the context of the European "Streetlight-EPC" project.

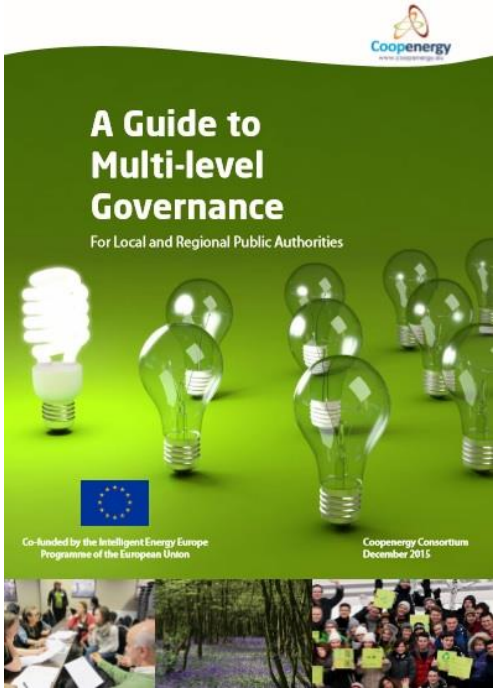
CONTACT: OÖ Energiesparverband - office@esv.or.at

DETAILED INFO: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_halls-European-EN.pdf
Www.streetlight-epc.eu/fileadmin/redakteure/streetlight-epc/project_outputs/wp6/quick_check_parking_lots-european-en.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. Checklists were adapted to the contexts of 5 different regions: see the adapted checklists: – Upper Austria – Oberösterreich: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_halls_and_car_parks-Upper_Austria-DE.pdf – North-West Croatia – Sjeverozapadna Hrvatska: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_halls-North-West_Croatia-HR.pdf http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_car_parks-North-West_Croatia-HR.pdf – South Bohemia – Jihočeský kraj : http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_halls-South_Bohemia-CZ.pdf – South East Sweden – Sydöstra Sverige: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_halls-South_East_Sweden-SV.pdf

	– North/Central Spain – España Centro-Norte : http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP6/Quick_check_halls-North_Central_Spain-ES.pdf
TRANSFERABILITY	YES. Checklists were adapted to the contexts of 5 different regions: see above
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

A Guide to Multi-level Governance for Local and Regional Public Authorities, EU



Coopenergy is a three-year European funded project (co-funded through the Intelligent Energy Europe Programme) aiming to help regional (county) and local public authorities develop their sustainable energy activities by using Multi-Level Governance (MLG) agreements.

These agreements could range from informal meetings to more robust partnerships with Memoranda of Understanding (MoUs), ensuring regional and local authorities are working together to the greatest effect to deliver on the EU 20/20/20 targets. The guide can help you to:

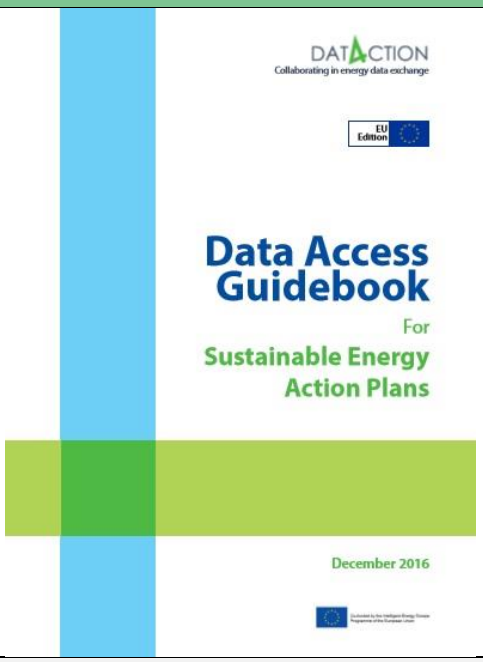
- Understand MLG and how it can help you to work in partnership, learning from experiences and case
- studies from across Europe;
- Develop a regional Sustainable Energy Action Plan (SEAP) and planning tools which are consistent with the needs of municipalities and communities within your region;
- Involve regional and local stakeholders during the preparation phase of your plans in order to get their buy-in and support, ensuring long term benefits for your region, its stakeholders and citizens;
- Deliver SEAPs in partnership, avoid duplication, cut inefficiencies, and share energy resources effectively to help residents and communities make the transition to a low carbon society and economy;
- Identify further information, support and funding.

CONTACT: fedarene@fedarene.org

DETAILED INFO: www.fedarene.org/wp-content/uploads/2016/03/151202-FINAL-Coopenergy-Guidebook.compressed.pdf

LEVEL	Regional, local
LANGUAGE	English
ADAPTABILITY	HIGH. This guide is based on the experiences of seven European sustainable energy regions in implementing collaborative energy planning through the Coopenergy project. – Energy Agency of the Zlin Region (EAZK) – Rhône-Alpes – Basque Energy Agency (EVE) – Regional Energy Agency of Norrbotten (NENET) – Kent County Council (KCC) – IRE spa Liguria-Energy Division (formerly ARELIG) – Metropolitan Region Rhine-Neckar GmbH (MRN)
TRANSFERABILITY	YES. This guide is based on the experiences of seven European sustainable energy regions in implementing collaborative energy planning through the Coopenergy project.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy efficiency policy public sector operational goals with defined programme to deliver them (art. 3) • insufficient information on training possibilities (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of mobilisation of the elected representatives (art. 17) • difficulties to mobilise all the stakeholders (art. 17) • stakeholders' lack of available time (art. 17)

Data Access Guidebook For Sustainable Energy Action Plans, EU



Energy data is crucial for identifying trends in the economic priority sectors to target energy policies and to ensure energy efficiency improvements and increased renewable energy deployment. These measures can then be built in to sustainable energy policies and plans, and their national and local implementation progress can be monitored periodically.

The DATA4ACTION Data Access Guidebook has been primarily developed for:

– Public Authorities that are seeking better access to local, accurate energy data within their territory for use in sustainable energy planning;

– Energy Planning Facilitators wishing to support the development of advanced collaboration models between public authorities and data providers such as a Regional Data Centre or

– Energy Observatory; and

Energy Data Providers willing to play a positive role in the development and implementation of Regional and Local Energy Policies.

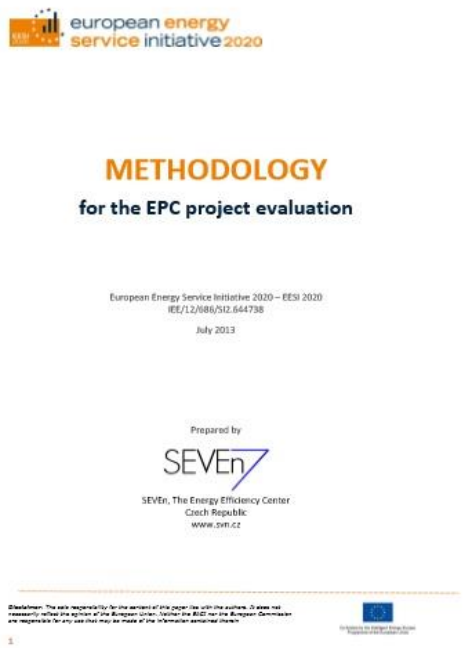
CONTACT: Patrick Biard (patrick.biard@raee.org)

DETAILED INFO: www.fedarene.org/wp-content/uploads/2017/01/576-Data-Access-Guidebook-rx15.pdf

LEVEL	Local, regional
LANGUAGE	English
ADAPTABILITY	HIGH. In addition to this European version, the DATA4ACTION Data Access Guidebook is available in a number of European languages. Each version contains a description of the national framework that underpins the energy data sharing structures and requirements in the respective country. National Data Access Guidebook Availability: - Ireland IR http://data4action.eu/en/?cd=ir - France FR http://data4action.eu/fr/ - Spain ES http://data4action.eu/es/ - Romania RO http://data4action.eu/ro/ - Italy IT http://data4action.eu/it/ - Greece EL http://data4action.eu/el/ - Sweden SE http://energikontornorr.se/data4action-guide/ - United Kingdom UK http://data4action.eu/uk/ - Czech Republic CZ http://data4action.eu/cs/ - Bulgaria BG http://data4action.eu/bg/
TRANSFERABILITY	YES. In addition to this European version, the DATA4ACTION Data Access Guidebook is available in a number of European languages. Each version contains a description of the national framework that underpins the energy data sharing structures and requirements in the respective country. National Data Access Guidebook Availability: - Ireland IR http://data4action.eu/en/?cd=ir - France FR http://data4action.eu/fr/ - Spain ES http://data4action.eu/es/ - Romania RO http://data4action.eu/ro/ - Italy IT http://data4action.eu/it/

	- Greece EL http://data4action.eu/el/ - Sweden SE http://energikontornorr.se/data4action-guide/ - United Kingdom UK http://data4action.eu/uk/ - Czech Republic CZ http://data4action.eu/cs/ - Bulgaria BG http://data4action.eu/bg/
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Methodology for the EPC project evaluation, EU



In order to continuously improve EPC procedures, the evaluation of running and completed projects is highly recommended. For structuring this process, the following methodology has been developed.

The EPC method can be applied to projects that meet certain basic parameters. Among these parameters, primarily factors are :

- sufficient potential for energy savings.
- the need to modernise or rebuild energy facilities, or the renovation of energy system.
- an acceptable payback period for proposed measures (from achieved savings on operating costs related to energy consumption – optimally less than 8 years).
- insufficient amount of own financial sources.
- the need for an expert partner for ensuring energy management.

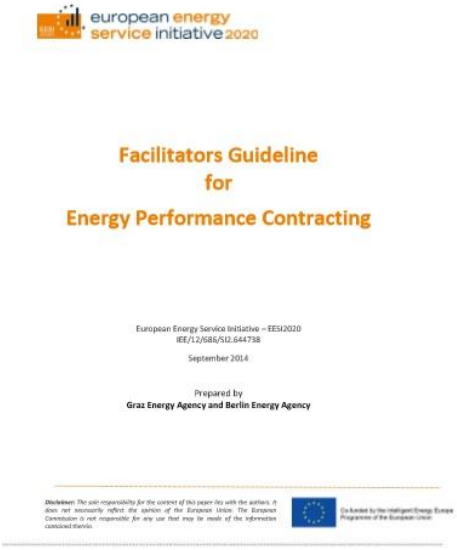
Within the project team some experienced EPC project facilitators made European best practice experiences on how to develop and facilitate an EPC project and programme available to new market players. Once trained to professionals, these new facilitators are now multipliers for the EPC concept in their region and secure long-term effects of EESI 2020.

CONTACT: office@berliner-e-agentur.de

DETAILED INFO: eesi2020.eu/wp-content/uploads/2014/02/EESI2020_WP2_D2.5_Methodology-to-EPC-Evaluation.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. This methodology was developed with the contribution of experts from various cities and regions from the EU. EESI 2020 – the „European Energy Service Initiative towards the EU 2020 energy saving targets" aimed at fostering the use of Energy Performance Contracting (EPC) in major cities and metropolitan regions across Europe such as Antwerp, Barcelona, Berlin, Dublin, Graz, Prague, Oslo, Sofia or Zagreb.
TRANSFERABILITY	YES. This methodology was developed with the contribution of experts from various cities and regions from the EU. EESI 2020 – the „European Energy Service Initiative towards the EU 2020 energy saving targets" aimed at fostering the use of Energy Performance Contracting (EPC) in major cities and metropolitan regions across Europe such as Antwerp, Barcelona, Berlin, Dublin, Graz, Prague, Oslo, Sofia or Zagreb.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • no measures in place to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

Facilitators Guideline for Energy Performance, EU



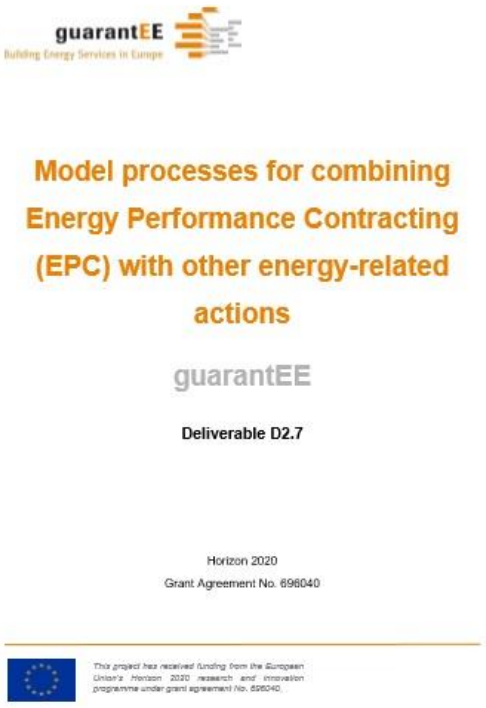
Although many European cities have committed to energy saving actions, certain barriers are still hindering the use of EPC as a tool to open up saving potentials. These barriers are mainly of a non-technological nature such as the lack of systematic information, trust, procurement procedures, know-how or the lack of market facilitators.
To enable energy agencies or consultants to understand the typical tasks and responsibilities of an EPC project facilitator, the EESI2020 Facilitator Guideline has been developed and can be downloaded here: EESI2020 EPC Facilitator Guideline. The presentation is designed as a master file to be adapted to national conditions.

CONTACT: office@berliner-e-agentur.de

DETAILED INFO: eesi2020.eu/wp-content/uploads/2014/11/EESI2020_EPC_Facilitators_Guideline.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. This guideline is designed as a master file to be adapted to national conditions. National translations / adaptations of this presentation can furthermore be found in the national subsections of the EESI2020 project website: www.eesi2020.eu/
TRANSFERABILITY	YES. See adaptability above
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • no measures in place to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting (art. 18) • the public sector does nt use energy service companies and energy performance contracting (art. 18)

Model processes for combining Energy Performance Contracting (EPC) with other energy-related actions, EU

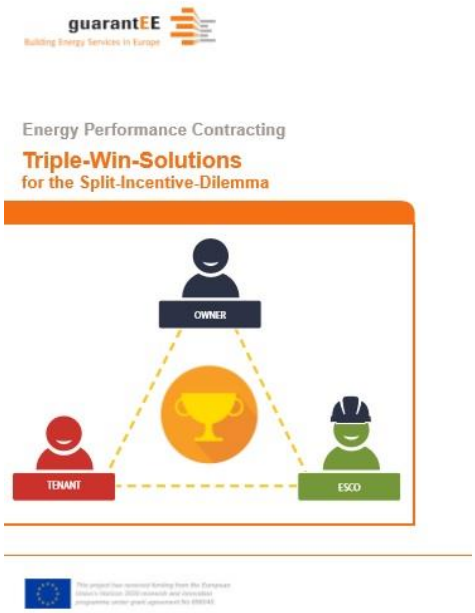


Within guarantEE, 14 experienced partners will develop innovative business and financing models for performance-based ESCO projects. For rented facilities, the aim is to develop and test solutions adequately sharing costs and benefits between user, building owner and ESCO (triple-win approach).
With a special focus on private sector building owners, EPC contract variants providing enhanced flexibility will be developed.
Some specific challenges are not included in standard EPCs. Therefore, solutions in the form of model processes have been developed within guarantEE for two specific cases. In the case where a client has to fulfil energy management / energy audit requirements (according to EED) parallel to an EPC project, or even more, the client is engaged in an ISO 50001 process, synergies can be exploited and decrease the total project costs. This two cases leading to synergies between EPC and energy management / energy audit requirements are being described in this document.

CONTACT: office@berliner-e-agentur.de
DETAILED INFO: guarantee-project.eu/wp-content/uploads/2017/03/D2.7_guarantEE_model_processes_EN.pdf

LEVEL	Regional, local
LANGUAGE	English
ADAPTABILITY	HIGH. This document was developed based on the contributions of 14 experienced partners from different EU countries: Austria, Belgium, Czech Republic, France, Germany, Ireland, Italy, Lithuania, Netherlands, Norway, Romania, Slovakia, Slovenia and Spain
TRANSFERABILITY	YES. See Adaptability described above.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • stakeholders' lack of available time (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

Triple-Win-Solutions for the Split-Incentive-Dilemma, EU



Within guarantEE, 14 experienced partners will develop innovative business and financing models for performance-based ESCO projects. For rented facilities, the aim is to develop and test solutions adequately sharing costs and benefits between user, building owner and ESCO (triple-win approach).
With a special focus on private sector building owners, EPC contract variants providing enhanced flexibility will be developed.
Market stakeholders will be intensively involved in the analysis of current barriers and the definition of adequate contractual solutions.
The innovative energy service models are to be tested in pilot projects, in which the building owners will receive support from experienced EPC facilitators.
This guideline tackles the the split incentives dilemma, proposing potential solutions for 3 different situations:
Case 1: Owner and tenant enter an EPC contract with an ESCo
Case 2: Owner concludes an EPC contract
Case 3: Tenent's intention for an EPC contract

The split incentives dilemma may be the single most significant challenge to the economisation of energy efficiency projects worldwide. The problem, that benefits of energy saving investments
(usually done by the building owner) are not enjoyed by the owner but the user, results in a severe modernisation backlog. This problem is not only restricted to rented residential or commercial premises. It also occurs within private and especially public administrations, where energy efficiency investments (capex) and the resulting savings of operational expenses (opex) are often divided organisationally. Consequently, necessary and economic investments are not undertaken, purely because the investing department or budget is not benefitting from the savings.

CONTACT: office@berliner-e-agentur.de

DETAILED INFO: http://guarantee-project.eu/wp-content/uploads/2017/06/guarantEE_D2.5_Brochure_Triple-Win-Solutions_EN_ADAPTED.pdf

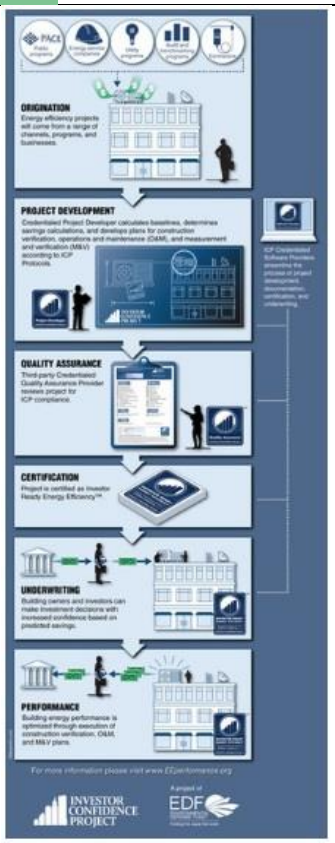
LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. This document was developed based on the contributions of 14 experienced partners from different EU countries: Austria, Belgium, Czech Republic, France, Germany, Ireland, Italy, Lithuania, Netherlands, Norway , Romania, Slovakia, Slovenia and Spain
TRANSFERABILITY	YES. See Adaptability described above.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge(art. 17) • inadequate information on best energy efficiency practices (art. 17) • stakeholders' lack of available time (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • the public sector does not use energy service companies, and energy performance contracting (art. 18)

Investor Confidence Project (ICP) Protocols, EU

The Investor Confidence Project (ICP) Europe unlocks access to financing for the building renovation market by standardising how energy efficiency projects are developed, documented and measured. The project works with the European Technical Forum to develop protocols that are designed to address the range of typical tertiary and apartment block building projects found in the European market. ICP Europe defines tertiary as offices, educational buildings, hospitals, hotels, restaurants, sports facilities, wholesale and retail trade services buildings and institutional buildings.

ICP Protocols are an industry best practice assembly of existing standards, practices, and documentation in order to create the data necessary to enable underwriting or managing of energy performance risk.

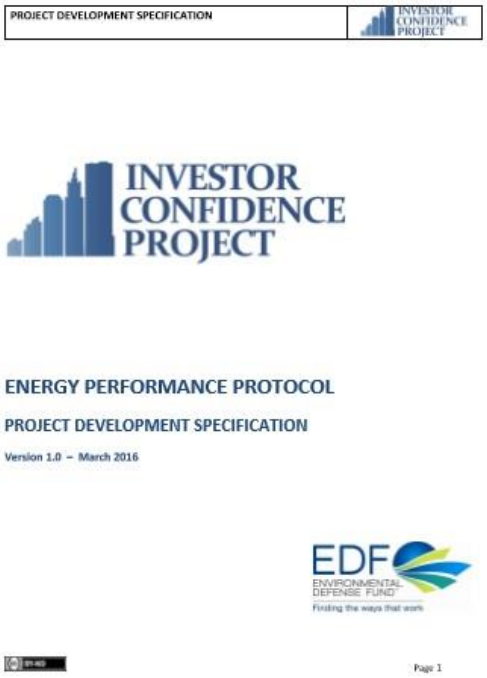
The ICP Protocol portfolio includes six protocols to address different building types and project size/scope. Project Developers should select the most appropriate and recent version of an ICP Protocol at project inception. If a new version is released while a project is underway, developers can choose to either stay with their current version or move to the new version.These protocols reference international, European and national standards and best practices to provide all market actors across the European renovation and investment community with tools to improve the bankability of building energy renovation projects.



CONTACT: panama.bartholomy@eeperformance.org
DETAILED INFO: europe.eeperformance.org/protocols.html
europe.eeperformance.org/icp-protocols-languages.html

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. Similar to an appraisal pack in a commercial real estate deal, each defined EPP creates a standard set of documentation that will help standardise project performance underwriting, leading to better data on performance, and a more efficient marketplace with less duplicative engineering and lower transaction costs. The result should be an increase in deal flow and a more transparent and efficient market. In other languages: europe.eeperformance.org/icp-protocols-languages.html
TRANSFERABILITY	YES. See above Adaptability
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of knowledge regarding existing financial tools (art. 20)

Investor Confidence Project (ICP) Energy Performance Protocol Project Development Specification, EU



The ICP Europe Project Development Specification (PDS) brings the many complex details of an energy efficiency project into focus, providing a clear direction to the entire team with regards to requirements, tools, expectations, and quality management. Its unified approach to project development ensures that projects compliant with the ICP Protocols can be trusted to be consistent in their approach, methodology, and financial returns.

The Project Development Specification provides a clear roadmap for Project Developers to correctly implement each requirement specified in the ICP protocols based on current best practices and available industry resources. It represents the collective project development knowledge of a large team of industry experts and has been designed to allow various stakeholders to develop projects that meet a consistent level of quality and conform to the ICP Protocols. As with all of ICP's offerings the Project Development Specification is a living document and ICP seeks the continuing input of all stakeholders.

CONTACT: panama.bartholomy@eeperformance.org

DETAILED INFO: europe.eeperformance.org/uploads/8/6/5/0/8650231/project_development_specification_v1.0_300316_issued.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. This PDS is intended to support the elements, procedures and documentation requirements presented in the ICP Protocols. This document's structure mirrors the protocols and utilises the same five categories that represent the lifecycle of a well-conceived and well-executed energy efficiency project. Within each category, this document presents an overview of the requirements, best practices, quality assurance tasks, and available resources. Energy efficiency investors, which can include building owners, energy service companies, finance firms, insurance providers, and utility programmes, are exposed to performance risk but often do not have the expertise necessary to evaluate the complex technical details associated with an energy efficiency project. Regardless of the expertise and skills of the investors, transaction costs can mount when multiple investors evaluate a project with each pursuing an expensive and time consuming technical due diligence process.
TRANSFERABILITY	YES. See above Adaptability
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of knowledge regarding existing financial tools (art. 20)

De-Risking Energy Efficiency Platform (DEEP), EU

An open-source initiative to up-scale energy efficiency investments in Europe through the improved sharing and transparent analysis of existing projects in Buildings and Industry.

For users:

- Enhance your understanding of and access to energy efficiency finance related business opportunities
- Streamline underwritng procedures through the development and use of a common language for energy efficiency underwriting
- Decrease due diligence and transaction costs
- Better risks assessment through high quality and credible data framework

For Data providers:

- Contribute to creating of European evidence base which is key to "get the EE policy and market story right"
- Acknowledgement and visibility as data contributor
- Benchmarking your project performance versus others
- Connect your data to investors.

CONTACT: Carsten Glenting, Deputy Project Manager, cag@cowi.com

DETAILED INFO: deep.eefig.eu/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH.
TRANSFERABILITY	YES.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of knowledge regarding existing financial tools (art. 20)

Display Tool, EU

The Display calculation tool determines the primary energy, carbon dioxide equivalents and water consumption performance indicators using the so-called “operational rating scheme”.

Display pilot cities opted for this scheme because:

- Final energy consumption data can be easily obtained;
- Operational rating certificates can be updated yearly and therefore also act as a measure of quality of the management and used to motivate the building;
- caretakers and users.

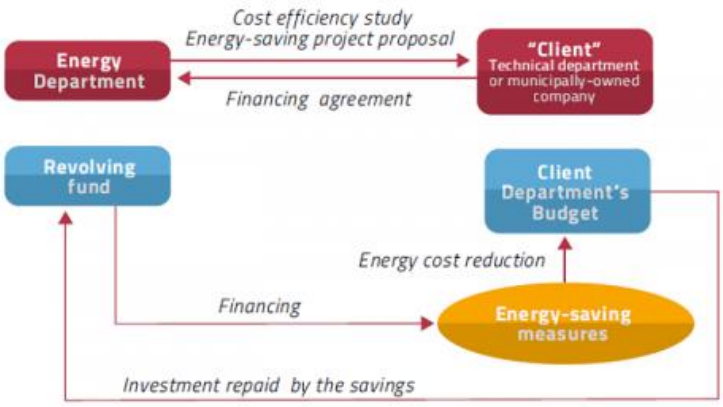
The first step for all Display® Campaign participants is to collect simple baseline data and feed this into the Display® calculation tool. Data requirements include readily available information such as:

- Annual consumption for lighting and equipment in kWh
- Annual heating and hot water consumption in kWh
- Annual water consumption in m^3.

CONTACT: peter.schilken@energy-cities.eu
DETAILED INFO: http://www.display-campaign.org/spip.php

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The statistics section of the calculation tool allows each Display® user to compare the energy, and water use for their building stock by year and compare the total carbon emission of their buildings. Classification results of buildings are only comparable if these buildings are situated in the same climatic zone. The building type is irrelevant for the comparison since the classification scheme is adjusted to the building type. However, most important is to show the improvement of the building itself over the years.
TRANSFERABILITY	YES. Today there are over 500 participants from 32 countries that have committed to use Display® to communicate their buildings’ performances.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there is no programme for conducting energy audits in the public sector at national regional or local level (art. 8) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • lack of in-house expertise about communication (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • difficulties to mobilise all the stakeholders (art. 17)

Internal Contracting (Intracting), EU

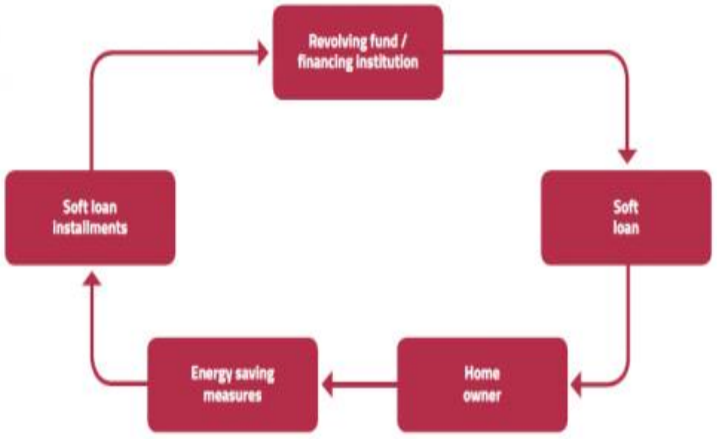


The idea of Internal Contracting, often called Intracting (municipal internal performance contracting scheme), is to enable the municipality to finance multiple investments for energy savings without being bound to an external contractor. This requires that a revolving fund be setup. Adapted for the specific purpose of realising energy savings, the revolving fund as financial buffer is incorporated in a simple cycle of financing energy saving measures and payback of these investments through reduced energy costs. This is the core of Internal Contracting, which was designed by the German city of Stuttgart.

CONTACT: Peter Schilken (peter.schilken@energy-cities.eu)
DETAILED INFO: www.energy-cities.eu/spip.php?page=infinitesolutions_en

LEVEL	Local, regional
LANGUAGE	English
ADAPTABILITY	LOW. The municipalities of Almada (PT), Águeda (PT), Koprivnica (HR), and Udine (IT) have replicated or are in the process of replicating Stuttgart's Internal Contracting scheme on their territories. To be used by regional and local authorities and other public players (e.g. universities, military) Internal Contracting requires an internal unit in charge of energy management, equipped appropriately to monitor energy consumptions and with qualified staff, capable to control the use of energy. This unit needs to be commissioned to investigate energy saving potentials and to suggest investments for energy efficiency improvements as well as to supervise their implementation.
TRANSFERABILITY	YES. Collaboration with the Caisse des Depôts and the Federal State of Baden-Württemberg has shown that the Internal Contracting scheme is not only a financing tool for local authorities but also for other public bodies like universities, hospitals or museums. Such bodies often manage more buildings than small local authorities. Quite often their potential for energy saving measures with short payback time is also high due to the fact that energy costs were not a priority or the saving potential was not visible because energy management was not yet well implemented. For this reason two French universities became associated partners of the INFINITE Solutions project. The French bank Caisse des Depôts has also set up a support programme for the implementation of Internal Contracting in public authorities. Several public authorities in France have shown interest in the programme and in the application of the scheme.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Soft loans tool, EU



The idea of a soft loan is that home owners can borrow money to carry out energy-efficient renovation work in their homes for a lower interest rate than the standard market conditions. The soft loan provides access to more attractive financing. It is an incentive for home owners. Soft loans can also include other advantages such as:

- Longer maturity which allows home owners to adapt the amount of monthly loan instalments to their financial capacity and, ideally, to take into account financial savings achieved thanks to energy savings.
- Longer grace period, which gives home owners an opportunity to accumulate financial savings through lower energy bills and start to reimburse the loan at a later stage.
- Lower administrative, insurance costs or zero early repayment costs.

CONTACT: Jana Cicmanova (jana.cicmanova@energy-cities.eu)

DETAILED INFO: www.energy-cities.eu/spip.php?page=infinitesolutions_en

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. Soft loans could motivate any type of household to invest in energy renovation. However, most people with high incomes already have easy access to commercial loans. Today, they can in some cases obtain loans with very attractive conditions such as nearly 0% interest rate in Denmark. On the contrary, commercial banks do not offer such advantageous loans to low to medium income households. Often they are not willing to provide loans to elderly persons or to people with irregular income. For this target group, soft loans are a solution. They could also be suitable for very low income households, although, these are usually treated through specific policies (e.g. social housing) and funding programmes. This target group often benefits from higher public subsidies.
TRANSFERABILITY	YES. In 2006, the municipality of Delft (NL) set up a revolving fund through which it now provides favourable loans with low interest of about 1.5% to citizens and non-profit organisations wishing to invest in energy efficiency and renewable energy measures (EE/RES) and reduce their energy consumption. The term of payment equals the pay-back time (max. 10 years) of the energy measure. The advantage of a revolving fund is that after a certain time, the credit payments will flow back to the fund and can re-finance further measures. The soft loans scheme is managed by the executing bank - Stichting Volkhuisvesting Nederland (SVn). Bordeaux Metropole (France), Brussels Capital Region (Belgium), Parma (Italy), Riga (Latvia) and Frederikshavn (Denmark) have replicated or are in the process of replicating Delft's approach, adapted and transferred to their local context.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • financing facilities are not established for energy efficiency improvement measures (art. 20) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Business models for EPC in buildings, EU

The EnPC-INTRANS project study "Adapted business models for energy performance contracting in the public sector" outlines three business models for EPC in buildings, which are the "EPC light business model", the "EPC basic business model" and the "EPC plus business model".

The "EPC light business model" achieves savings by optimising technical devices in public buildings and implementing an energy management system. Contracts are short-term (2-3 years) and require little effort from municipalities and ESCOs to set it up. It was already successfully tested e.g. in Berlin-Pankow, where it achieved 10% energy savings in 15 schools and administration buildings.

The "EPC basic business model" includes the implementation of technical measures. Average contracts last between 5 to 15 years and the savings guarantee ranges between 20 to 60%. This model was e.g. implemented in a Slovakian radio energy-saving project and resulted in overachieving the savings guarantee by 25%.

The "EPC plus business model" contains the most comprehensive refurbishment measures, such as insulation on the thermal building envelope. It usually requires co-financing through public funds or building owners. Contracts last usually between 10-20 years and result in energy savings of 70%.

CONTACT: Konstanze Stein, Klimaschutz- und Energieagentur Baden-Wuerttemberg, konstanze.stein@kea-bw.de

DETAILED INFO: www.enpc-intrans.eu/wp-content/uploads/2015/07/EnPC-INTRANS-Deliverable-2.1-submitted-to-EASME.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The strengths, weaknesses, opportunities and threats are in general the same for all EPC business models in all EU countries. Therefore the three types of EPC business models specified in chapter may be applied in all EU countries without any needs for major alterations in project structure, procedures of project development and implementation, contracting, tendering, or M&V.
TRANSFERABILITY	YES. See argument above, these 3 business models can be replicated without major changes in municipalities in all EU Member States. In the EnPC-INTRANS project, this was already done in local authorities in 9 European countries, which were Germany, Greece, Croatia, Latvia, Romania, Slovakia, Slovenia, Serbia and Ukraine.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the public sector does not use energy service companies and energy performance contracting to finance renovations and implement plans to maintain or improve energy efficiency in the long term (art. 5) • insufficient information on training possibilities (art. 17) • lack of in-house expertise about legal and administrative aspects (art. 17) • lack of in-house expertise about training (art. 17) • absence of other tools supporting EE measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (Art. 18) • no access to model contracts for energy performance contracting (art. 18) • the public sector doesn't use energy service companies, and energy performance contracting (art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (art. 18)

Recommendation & Decision Matrix, EU

Recommandations matrix: operational models

	Facilitation		Integration	
Questions	**Answers**	**Check**	**Answers**	**Check**
What kind of implementation model is envisaged?	EPC/ESC		EPC/ESC	
			Seperate Contractor Based	
Does the implementation time (time to market) of the model need to be less than a year or can it be more than a year?	More than a year		More than a year.	
	Less than a year			
Is the creation of a Program Delivery unit as a seperate legal entity a hurdle that is hard to overcome?	Yes. The Program Delivery Unit can be managed by an existing organisation.		No. The Program Authority (PA) will have to consider the creation of a public local company to act as the Program Delivery Unit (PDU).	
Who are the beneficiaries of the model?	Public sector		Public sector	
	Residential sector		Residential sector	
	Commercial sector			
	Industrial sector			
What is the level of ambition of the model?	Up to 35% reduction of energy consumption		Up to 35% reduction of energy consumption	
			Up to 50% reduction of energy consumption	
			Up to 75% reduction of energy consumption	
			Carbon neutral	
Does the model need to be highly scalable or not?	Yes		No	
Does the Program Delivery Unit (PDU) need to be off the PA accounting structure on the long term?	Yes, the model can be sized according to the results.		No	
Should the model discharge the local authority from risk?	Yes, as the technical risks of the projects are being taken on by the beneficiaries and/or the ESCO/Contractors.		No, as the technical risks are generally being taken on by the PDU.	

In order to assist local authorities in determining which of the models might best suit their specific situation and the size of ambition, the CITYInvest Project developed a recommendations and decision matrix tool in Excel that guides through questions / answers the project designer to the most appropriate type of energy efficiency financing model applicable to its local situation.

There are 3 areas of recommendations:
Operational model: Facilitation or Integration

– Aggregation model, as add-on onto the operational model

– Financing model: Own Funds, FI Financing, ESCO Financing, PDU Financing, Investment fund, Citizens Financing.

CONTACT: Elise Steyaert, CITYnvest project (e.steyaert@climatealliance.org)

DETAILED INFO: http://citynvest.eu/sites/default/files/library-documents/20151202_WP2_Final_Report-V1.5.PDF

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. As the template is standardised & multiple choice, it can be used by project designers / technical staff in any local authority in Europe that seeks to determine the suitable financial model to invest in energy efficiency on its territory.
TRANSFERABILITY	YES. Municipalities in Liège province (Belgium), Murcia region (Spain) and the municipalities in Rhodope region (Bulgaria/Greece) have adopted or are in the process of adopting this decision-making tool in order to plan their investments in energy efficiency on their territory.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • innovative financing mechanisms are not used (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Sustainability Puzzle Tool, EU

The Sustainability Puzzle developed by Odense in the framework of the INTERREG IMAGINE project is a unique tool that helps to consider sustainability in all dimensions of a project, a work area, a plan, a campaign or a business. Through the puzzle it is pos-sible to analyse all the components of a task or project and find out where and how to integrate sustainability. The puzzle has pieces of three colours representing the social (orange), economic (blue) and environmental (green) fields of sustainability. Each piece proposes a sub-theme of one of the three dimensions (such as health, education, climate adaptation). The puzzle helps a group of people make sure that they have taken all sustainability fields into account in their project. Each piece/sub-theme is discussed by the group. First, it is discussed whether or not the topic is relevant. If so, the group discusses how to integrate it in the project. This way, the sustainability puzzle helps consider the task/project as a whole and generate ideas to make the solutions more sustainable.

CONTACT: Stephane Dupas (stephane.dupas@energy-cities.eu)

DETAILED INFO: www.energy-cities.eu/db/Odense_involvingadmin_politics_sustainabilitypuzzle_2014_en.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The puzzle is an efficient tool to generate sustainability innovation and is very straightforward to use, meaning it requires little adaptation to specific local contexts.
TRANSFERABILITY	YES. The tool can be used by employees in any municipality, or in a participatory process with citizens and other stakeholders in any city for a broader view in the planning process.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on technical tools (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Mobility Platform Tool, EU

Supported by European programme LIFE+, the mobility platform MOBILESSONNE combines within a single platform (internet / smartphone application) all information necessary to citizens allowing them to make an informed choice for their modes of travel (cost and Co2 emission, travel time, practical information). This collaborative platform relies on institutional information and field user information (Association of cyclists, users of public transport...). Furthermore, it allows to locate some noteworthy points on the territory of Essonne (tourism, relief ...). Informing users of the territory of Essonne about all more energy efficient travel opportunities to encourage alternatives to a single person car (autosolisme): public transport, soft modes, carpooling, car sharing.

CONTACT: Didier Fauvage (dfauvage@cg91.fr)

DETAILED INFO: www.essonne.fr/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. While there basic software specifications, the tool still has to be well adapted to different urban cartographies / mobility contexts / stakeholder constellations.
TRANSFERABILITY	YES. At the Public Transport Show held in June of 2012, the mobility platform was awarded the Innovation Trophy. It has been online since October 2014. It is transferable and replicable when really working in transversally with the different transport authorities and local stakeholders / citizens.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on technical tools (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Green Cloud tool, EU

The idea of the Green Cloud was developed by 2 Parisian artists for Helsinki energy, the municipal utility of Helsinki. The principle of the "Green Cloud" digital tool is that it interacts with residents' homes and, using laser tracking, projects a green cloud into the sky. The cloud grows bigger as energy use decreases in the city. This makes MWh "visible" to citizens and raises awareness about efficient energy consumption.

CONTACT: Martti Hyvonen (martti.hyvonen@helen.fi)
DETAILED INFO: www.energy-cities.eu/db/Helsinki_Arts_and_Energy_2011_en.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	LOW. The digital tool Green Cloud can be applied without much modifications to different cities, as it can make use of the "live consumption" of citizens in particular through the data gathered by (municipal) utilities or by the increasing number of smart meters in citizen's homes (all across the EU).
TRANSFERABILITY	YES. Following the success of the Green Cloud, it was replicated in other forms in Helsinki, such as the "Power Flower". New approaches are in development that are quite similar to the Green Cloud (e.g. the Iceberg project by Artist Rosette de Stefano: http://www.rosettedestefano.com/root_html/fr/iceberg.html).
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12) • insufficient information on technical tools (art. 17)

ENGAGE tool, EU

The idea of the ENGAGE tool is to launch within cities a campaign that commits all citizens and stakeholders to play their part in building a sustainable energy future. Creative posters display participants and their engagements. Thanks to a user-friendly online tool, local authorities can create participant posters with concrete energy and climate engagements. Tailor-made posters foster emulation, encouraging ENGAGE participants to make real energy savings and to monitor their energy consumption! Engaged cities can display their posters on their local website.

CONTACT: Laura Guerin (laura.guerin@energy-cities.eu)
DETAILED INFO: www.citiesengage.eu/

LEVEL	Local, regional
LANGUAGE	English
ADAPTABILITY	LOW. The steps of the ENGAGE Campaign = Research - Plan - Involve - Create - Activate, are straightforward and can be easily followed in different urban societal, cultural and economical contexts. See for instance the Guidebook here: http://www.citiesengage.eu/en/Guidebook.html or a number of easily adaptable ENGAGE campaign tools here: http://www.citiesengage.eu/en/ENGAGE-CAMPAIGN-TOOLS.html
TRANSFERABILITY	YES. 80 cities across Europe and even beyond (e.g. Turkey) have already ENGAGED with this innovative interactive and digital communication tool, and have in total taken over 7000 engagements - see for instance this action by Bistrita (Romania): http://www.energy-cities.eu/db/Bistrita_involvingcitizens_citizencompetitionwater_2014_en.pdf
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12); • difficulties to mobilise all the stakeholders (art. 17) • stakeholders' lack of available time (art. 17)

Climate-Active Families tool, EU

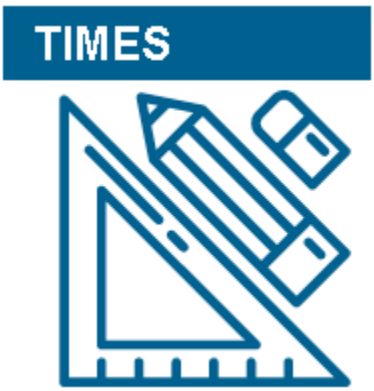
In 2009, Besançon City Council and Greater Besançon Metropolitan Council decided to launch the "200 climate-active families" initiative to curb the ever-increasing rise in domestic energy and water use and household waste. It consists in training families to limit their energy use and waste production. Information and awareness-raising workshops with professionals, exchanges of experience, informal get-togethers, home audits, site visits and lending of measuring equipment are just some examples of the actions taken to help citizens do their bit. An initiative to incentivise family households to curb their domestic energy use and household waste.

CONTACT: Peter Schilken, peter.schilken@energy-cities.eu

DETAILED INFO: http://ville-tandem.eu/fileadmin/inhalte/documents/pdfs/Familles_%C3%A0_%C3%A9nergie_positive-FR.pdf / www.energy-cities.eu/resources/cities-actions/200-families-take-action-for-climate-besan-on~1506

LEVEL	Local, regional
LANGUAGE	English
ADAPTABILITY	LOW. This initiative was extended to Freiburg-im-Breisgau, Besançon's twin city, in 2011, through a twinning partnership between Besancon and Freiburg. 170 families in Besançon and as many on the other side of the Rhine have already joined the initiative, which is very straightforward to adapt to different urban contexts.
TRANSFERABILITY	YES. Apart from Besancon & Freiburg, the climate-active families tool has also been already implemented e.g. in Grenoble, Limousin or to Belgian & Dutch cities. It was also replicated in a successful Intelligent Energy Europe funded programme (Energy Neighborhoods) a couple of years ago: https://ec.europa.eu/energy/intelligent/projects/en/projects/energy-neighbourhood
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of in-house expertise about communication (art. 12); • insufficient information on training possibilities (art. 17) • lack of in-house expertise about training (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

The Integrated MARKAL-EFOM System (TIMES), EU



TIMES (The Integrated MARKAL-EFOM System) is an economic model generator for local, national or multi -regional energy systems, which provides a technology-rich basis for estimating energy dynamics over a long-term. It is applied to the analysis of the energy sector, but may also applied to study in detail single sectors. Reference case estimates of end-use energy service demands are provided by the user for each region. The user provides estimates of the existing stock of energy related equipment in all sectors, and the characteristics of available future technologies, present and future sources of primary energy supply and their potentials.

CONTACT: Plamen Tzvetanov (ptzvetanov@inrne.bas.bg)
DETAILED INFO: https://iea-etsap.org/index.php/etsap-tools/model-generators/times

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. More than 200 users in 73 countries.
TRANSFERABILITY	YES. Coverage- global: 15 regions – Africa, Australia-New Zealand, Canada, Central and South America, China, European Union+, Central Asia Caucasus, Other Eastern Europe, Russian Federation, India, Japan, Mexico, Middle-East, Other Developing Asia, South Korea, United States. National models of 32 countries (including China). Subnational models- Reunion Islands (France), Lombardy (Italy), Pavia (Italy), Western China and Kahtmandu valley (Nepal). Local models for rural areas and cities.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • there is no programme to implement energy management systems in the public sector at national regional or local level (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Energy checking tool, EU

Standardised easy-to-use energy check tool (energy audit) for SMEs in five different crafts: Bulgarian carpenters, German bakers, Greek bricklayer/glass producer/ painter producer, Irish small food producers and Spanish meat producers.
This project was based on the existing knowledge published and brought it to practical application in craft SMEs. Check tool is a guide on what should be checked within the SME. A number of tips and measures are formulated which can be used to create a result sheet. In combination with the professional experience the E-Checker can provide substantial support to the SME to identify the suitable energy saving measures.

CONTACT: Vladimir Valkov (vladimir.valkov@eap-save.eu)
DETAILED INFO: https://ec.europa.eu/energy/intelligent/projects/en/projects/e-check-craft-sme

LEVEL	Local, regional
LANGUAGE	Bulgarian
ADAPTABILITY	HIGJ. This tool combined knowledge and techniques in identifying and realising energy-saving potentials in craft SMEs all over Europe.
TRANSFERABILITY	YES. The energy check tool for SMEs was developed for 5 crafts in 5 countries to swiftly identify the energy savings potentials. This tool can be used for combined knowledge and techniques in identifying and realising energy-saving potentials in craft SMEs all over Europe.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• energy audits do not include technical and financial feasibility assessments (art. 8) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Green Public Procurement (GPP) technical database, EU

The Green Public Procurement technical database is a database with template of technical terms for purchase of green products/services. The templates were developed in compliance with the public authorities' needs and with the specific requirements in each partner country. The tender documents templates are designed to facilitate the GPP process in all public authorities and especially in the Covenant of Mayors' signatories, which commit to achieve higher than average results in their SEAPs.

The documents contain technical terms, technical descriptions and conditions form a green public purchase, supported by guidelines in each step for three products: Vehicles, Street lighting, Computers and screens. Each product group is represented by two documents – Technical terms and Evaluation criteria. The documents contain technical terms, technical descriptions and conditions form a green public purchase, supported by guidelines in each step.

CONTACT: Todor Tonev (energy@ubbsla.org)

DETAILED INFO: http://greensproject.eu/en/our-gpp-support/for-procurers/

LEVEL	Local, regional, national
LANGUAGE	Bulgaria, Greek, Italian, Latvian, Slovenian, Spanish, Swedish
ADAPTABILITY	HIGH. The choice of the Green Public Procurement (GPP) product groups was based on the thorough survey of the existing practices and barriers in the process of Green Public Procurement (GPP) implementation in several countries (Sweden, Latvia, Germany, Slovenia, Spain, Italy, Bulgaria, and Cyprus), conducted in the beginning of the project activities and on an online questionnaire fulfilled by public authorities.
TRANSFERABILITY	YES. The technical database was created in the Bulgarian, German, Greek, Italian, Latvian, Slovenian, Spanish and Swedish language.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• the wider public sector does not purchase energy efficient buildings, products and services at national level (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about legal and administrative aspects (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

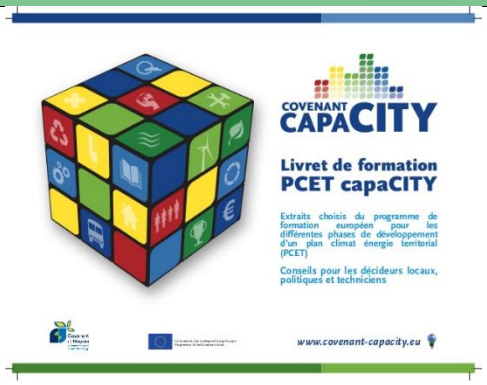
Green procurement handbook (GPP) for office equipment, EU

Green ProcA Green Public Procurement in Action	This handbook gives detailed description of the parameters that must have in mind when prepare and evaluate the public procurement for office equipment.
CONTACT: Király Zsuzsanna (kiraly@energiaklub.hu) DETAILED INFO: http://gpp-proca.eu/hu/wp-content/uploads/sites/4/2014/12/IT_Zold_beszerzes.pdf	
LEVEL	Local, regional, national
LANGUAGE	Hungarian
ADAPTABILITY	HIGH. This handbook is based on EU GPP Criteria for Office IT Equipment.
TRANSFERABILITY	YES. This handbook is based on EU GPP Criteria for Office IT Equipment. Available on Hungarian language, but if could be translated can be used from the public authorities in other EU countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no long-term energy performance contracts in place in the public sector (art. 6) • public procurement does not include life-cycle cost analysis (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (Art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • inadequate information on best energy efficiency practices (art. 17) • insufficient in-house expertise about legal and administrative aspects (art. 17)

Green procurement handbook (GPP), EU

Green ProcA Green Public Procurement in Action	The handbook gives the strategic framework and help public authorities buy goods and services with a lower environmental impact.
CONTACT: Király Zsuzsanna (kiraly@energiaklub.hu) DETAILED INFO: http://gpp-proca.eu/hu/wp-content/uploads/sites/4/2014/12/IT_Zold_beszerzes.pdf	
LEVEL	Local, regional, national
LANGUAGE	Hungarian
ADAPTABILITY	HIGH. This handbook is based on "Buying Green! - A Handbook on green public procurement"- European Commission's main guidance document to help public authorities buy goods and services with a lower environmental impact.
TRANSFERABILITY	YES. This handbook is based on "Buying Green! - A Handbook on green public procurement"- European Commission's main guidance document to help public authorities buy goods and services with a lower environmental impact. Available on Hungarian language, but if could be translated can be used from the public authorities in other EU countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no long-term energy performance contracts in place in the public sector (art. 6) • public procurement does not include life-cycle cost analysis (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (Art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • inadequate information on best energy efficiency practices (art. 17) • insufficient in-house expertise about legal and administrative aspects (art. 17)

Training tool for persons dealing with SEAP development , EU



"Capacity building of local government to take action regarding climate change and energy sources - from planning and action monitoring - is the primary goal of this tool. Capacity Covenant assumes development of communities powered by renewable energy across Europe. This support helps create chains of added value at regional level through îmbuătăţirea energy efficiency and using renewable local energy sources.

There is an unprecedented level of interest and more pressure on the government ocale to achieve energy security and a source of electricity and heating affordable for citizens. Building a smarter energy system, decentralised and efficient fed from local renewable sources is the solution to both challenges.

Lack of awareness, knowledge and capacity is the first hurdle that local governments must exceed in terms of climate and energy measures. Thus, it developed a specific approach to overcome the ad hoc concepts, focused on a single theme. Capacity Covenant training tool is a comprehensive and well-structured to improve capacity building at municipal bodies of political and technical decision, claiming all stages of implementing a SEAP.

This tool brought together the expertise of 19 European partners renowned for combining practical information and examples ready replicated across 8 thematic modules. The result is a unique package of training materials and interactive online communities both at the beginning and for advanced ones. The programme deals with developing a new SEAP ("1st generation" SEAP) and provides ideas when reviewing existing SEAPs ("2nd generation" SEAP). It gives basic guidance, offers ideas, hints, tips and tools - dealing with people, structures, processes for politicians and technical staff. Explore the platform: become a learner or a trainer!"

CONTACT: Ion dogeanu (ion.dogeanu@managenergy.ro)

DETAILED INFO: http://managenergy.ro/wp-content/uploads/2016/09/RO_web_final.pdf

LEVEL	Regional, local, national
LANGUAGE	English, Romanian, French, Bulgarian, Polish, Greek, Estonian, Italian, Swedish, Finnish, Slovenian, Croatian
ADAPTABILITY	HIGH. This tool brought together the expertise of 19 European country combining practical information and examples ready replicated across 8 thematic modules for municipalities willing to develop for the first time SEAP or improve second generation SEAP.
TRANSFERABILITY	YES. The tool can be easily transferred by the replacing the Romanian language with the national one. (translation available on 12 languages) see more at http://www.covenant-capacity.eu
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Energy Data Collection - Good practices (MESHARTILITY), EU

"This document is delivered according to project co-funded by the IEE, MESHARTILITY (measurement and data distribution utilities for the Covenant of Mayors). Based on the findings made in the project and changes in the course of it, this document offers recommendations to facilitate the efficient exchange of data between utilities and local authorities. This report focuses on the experiences and lessons learned from the project through participation of municipalities, utility providers and support structures. It is based on a document delivered previously, "D2.7 document policy recommendations for discussion with EU and National Institutions", which formed the basis of discussion at the second European Round Table, and subsequent consultations with stakeholders. More in-depth views from these consultations were used to complete this report 5.4: Document policies and recommendations for EU policy makers.

The recommendations are often implemented through a number of mechanisms, such as by strengthening EU directives existing, developing new EU directive, or by transposing EU directives into national laws of Member States, or through the development of standards and national legislation, or even regulatory and financial incentives, as well as industry standards and other voluntary initiatives."

CONTACT: Ion dogeanu (ion.dogeanu@managenergy.ro)

DETAILED INFO: http://managenergy.ro/wp-content/uploads/2016/09/Meshartility_raport.pdf

LEVEL	Local, regional, national
LANGUAGE	Romanian, English, German, Bulgarian, Croatian, Spanish, Estonian, Italian, Greek, Latvian, Greek
ADAPTABILITY	HIGH. This tool brought together the expertise of 13 European country combining practical information and examples.
TRANSFERABILITY	YES. The tool can be easily transferred (translation available on 11 languages) see more at http://www.meshartility.eu
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

Ghidul de Acces la Date pentru SEAP, EU

"Energy data is crucial for identifying trends in the economic priority sectors to target energy policies and to ensure energy efficiency improvements and increased renewable energy deployment. These measures can then be built in to sustainable energy policies and plans, and their national and local implementation progress can be monitored periodically.

The Data Access Guidebook for Sustainable Energy Action Plans has been developed for:
- Public Authorities that are seeking better access to local, accurate energy data within their territory for use in sustainable energy planning;
- Energy Planning Facilitators wishing to support the development of advanced collaboration models between public authorities and data providers such as a Regional Data Centre or Energy Observatory; and
- Energy Data Providers willing to play a positive role in the development and implementation of Regional and Local Energy Policies."

CONTACT: Florin Andronescu (office@alea.ro)
DETAILED INFO: https://alea.ro/wp-content/uploads/2017/01/576-Data-Access-Guidebook-rx15_RO_RO_ALEA.pdf

LEVEL	Regional, local, national
LANGUAGE	English, Romanian, French, Bulgarian, Czech, Spanish, Greek, Irish, Italian, Swedish
ADAPTABILITY	HIGH. This tool brought together the expertise of 10 European country combining practical information and examples.
TRANSFERABILITY	YES. The tool can be easily transferred (translation available on 10 languages) see more at http://www.data4action.eu
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • insufficient information on technical tools (art. 17) • • No regional and local monitoring is undertaken for demonstration of progress towards energy efficiency targets (art. 24)

Standard EPC documents, EU

"The Energy Performance Contract between ESCO and building owner usually contains guarantees for energy (cost) savings and regulates allocation of financial and technical risks for implementation and operation during the entire project duration of typically 5 to 5 years. Since there are various European model contracts and different approaches for EPC the EESI project defines not ONE European model contract but the main distinguishing features of Energy Performance Contracts and makes different proven model documents available. This paper on model Energy Performance Contracts provides the main principles of contracts and main articles / heading from available model contracts. For reasons of quality insurance, the EESI team has decided not to publish "full text" contracts. Due to differences in conditions in different countries, such full-text contracts would hardly be of use without advice from experienced project developers. However, sources for the available model contracts are described in the paper and interested users will be provided with the full versions of model documents.

CONTACT: Ion dogeanu (ion.dogeanu@managenergy.ro)

DETAILED INFO: www.grazer-ea.at/eesi/upload/download/standard%20documents/eesi_wp2_standarddocument_financing.pdf

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. This part of the contract includes the agreement of the parties that ESCO, before it starts to implement the proposed energy saving measures, will verify the data and the status of the facility (building and its systems), will inform about any discrepancies between the data in the tender documentation and the verified status.
TRANSFERABILITY	YES. Subject of the contract: ESCO agrees with its obligation to implement energy saving measures at the property of the Contracting Party (Municipality), to achieve the proposed energy and other costs savings, to enable to the Client pay the debts which relate to the measures implementation, to implement the measures in a way in which the building will perform its standard activities.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (art. 18)

Knowledge to warm at home, EU

The booklet is a result of a project "Knowledge to warm at home". Following the requirements of the EU directives and national needs, recently energy poverty has been recognised as a growing problem in Croatia. There are several levels of work on its reduction. Booklet was a tool helping the Croatian county most affected by poverty, as well as the resulting energy poverty. Civil society organisations active in this county expressed willingness to deal with this problem but lacked capacities to resolve it. One important prerequisite for this was the cooperation with the public sector, primarily with local and regional authorities and social welfare centers.

CONTACT: Dean Smolar (dean.smolar@cei.hr)

DETAILED INFO: http://reach-energy.eu/wordpress/wp-content/uploads/2015/05/Vodic_reach_web.pdf

LEVEL	Local, regional, national
LANGUAGE	Croatian
ADAPTABILITY	HIGH. Minor changes required.
TRANSFERABILITY	YES. Materials can be updated and translated.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • lack of in-house expertise about energy technologies (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations which have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)

ENERFUND, EU

ENERFUND is a tool that will rate and score deep renovation opportunities. Similar to the credit score used by banks to rate clients. The tool will be based on a set of parameters such as EPC data, number of certified installers, governmental schemes running, etc. By providing a rating for deep renovation opportunities , whether for private establishments or for public buildings :

- funding institutes can provide targeted loans,
- retrofit companies can identify sound opportunities,
- municipalities can promote targeted incentives and
- the public's trust for retrofitting will be enhanced.

CONTACT: Andreas Androutsopoulos (aandr@cres.gr)
DETAILED INFO: www.enerfund.eu

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. The tool can be adapted by the administrator.
TRANSFERABILITY	YES. The tool and the website are in English.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • innovative financing mechanisms are not used (art. 20)

EnPC-INTRANS training material-model contracts, EU

The objective of the EnPC-INTRANS is to develop local capacities of the public sector at the level of municipalities to set up and use EnPC models for financing of their investments in EE improvements of public municipalities and services. EnPC-INTRANS capacity building concepts and tools are jointly developed on the basis of stakeholder consultations, cooperation, and international exchange of concepts, ideas, and experience. Training concepts and tools are implemented and demonstrated in the partners' countries and presented for further dissemination and replication to experts and stakeholders in all EU28 member states. Available at the project website: 1. EPC Contract guidance note and model contract 2. Training material. Best practices of the tool can be found at :http://www.enpc-intrans.eu/wp-content/uploads/2015/07/EnPC-INTRANS-Best-Practices-in-EPC-for-public-buidlings.pdf.

CONTACT: F. Karamani, CRES

DETAILED INFO: www. Enpc-intrans.eu

LEVEL	Local, regional, national
LANGUAGE	Greek, English
ADAPTABILITY	HIGH. It is a European project
TRANSFERABILITY	YES. EnPC-INTRANS training concepts and materials are available for free download in 10 different languages for the training of experts and stakeholders in EU member states.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• lack of mobilisation of the relevant in-house services (art. 12) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • stakeholders' lack of available time (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • lack of clear and easily accessible information on financial instruments, incentives, grants and loans (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • no access to model contracts for energy performance contracting (art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

INSMART City Energy System Model, EU

The INSMART methodology was developed in the INSMART FP7 Smart City project. The objective is to use a scientifically sound approach in developing Sustainable Energy Action plans a city level. The methodology covers all the energy consumption sectors within a city (buildings, transport, municipal buildings, and other uses) and local energy generation (solar water heaters, PV systems etc). It addresses the needs of municipal project planners to understand the current situation in the city energy system and to prioritise future energy projects using a least cost approach incorporating qualitative criteria and the opinion of all local stakeholders. The first step in the methodology is to enhance the understanding of the existing city energy system. This is crucial in order to understand the significance of and interactions between the different sectors in terms of energy use and potential of energy generation. Field surveys and smart meters provide data for the existing building stock typologies. Door to door surveys provide data on the mobility needs of people in different city zones. Specialised simulation modelling tools provide energy demand for buildings in alternative refurbishment scenarios and shifts in the mobility patterns and transportation demand in alternative transport sector scenarios. Energy demand of municipal services, open spaces and public buildings are recorded and included in a city GIS energy database which is used as a common tool for presenting the existing energy systems and alternative energy futures for each city. Renewable energy potential is estimated using mainly data on available area and solar irradiation.

The City Planning Platform utilises an Energy System Model (ESM) based on the TIMES model generator and combines all the information collected. The City-ESM includes all the energy consuming and producing sectors within the city and is used for analysing alternative scenarios for the development of the city energy system in a medium term horizon. The selection of interventions is also based on a participatory approach and a multi-criteria decision support system in order to incorporate quantitative and qualitative criteria for the final ranking of alternatives.

The tool has been applied in the cities of Trikala (GR), Cesena (IT), Evora (PT), and Nottingham (UK). Details on the application and the outcomes can be found on the project website http://www.insmartenergy.com/

CONTACT: Stavroula Papagianni (spapa@cres.gr)

DETAILED INFO: www.insmartenergy.com

LEVEL	Local
LANGUAGE	Greek, English
ADAPTABILITY	HIGH. The INSMART methodology and tools were designed in order to be adapted to represent the energy systems of different municipalities/cities. Data availability is the main issue to ensure a successful application in a city. Once the energy consumption data, building typologies and RES potential data are gathered, the tools can be readily adapted to represent the energy system of each city. Alternative scenarios for the development of the city energy system can be built and analyzed. The participation of local stakeholders in the process is crucial, since the Multi Criteria Decision Analysis is a fundamental closing step in the methodology where the different alternatives are ranked based on the ranking of the local stakeholders.
TRANSFERABILITY	YES. The INSMART methodology and tools can be directly applied to cities and municipalities, after it is adapted to the local available data.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no energy modelling of future public sector energy trends has been undertaken at national level (art. 3) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

RE-SEEties energy forecasting tool, EU

The RE-SEEties tool is a set of energy forecasting equations that was developed by CRES in the framework of the RE-SEEties project (SEE Programme). Its aim is to estimate future energy needs which can be fed into the ICLEI tool in order to calculate emissions also for future years. For the residential, commercial and transport sectors a series of equations have been developed by CRES to estimate future needs. If necessary longer term projections correction of emission factors may also be provided. The tool has been used already by the folowing cities: Nitra (SK), Miercurea Ciuc (RO), Ptuj (SL), Egaleo (GR), Ivanić-Grad (HR), Budapest (HU), and Skopje.

CONTACT: Stauvroula Papagianni (spapa@cres.gr)
DETAILED INFO: www.Re-seeties.eu/see-methodological-toolikt-full-document

LEVEL	Local, regional, national
LANGUAGE	Greek, English
ADAPTABILITY	HIGH. The RE-SEEties tool has great possibility to be adapted. It is an xl file so the user can easily adapt it. Large quantity of data is required -detailed energy data per sector, elasticities and macroeconomic indicators. The tool has been used for many municipalities in the framework of the Re-SEEties project.
TRANSFERABILITY	YES. The RE-SEEties tool can be applied to cities and municipalities, after it is adapted to the local available data.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• no EE policy public sector operational goals with defined programme to deliver them (art. 3) • insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Examples of implemented lighting refurbishment projects, EU

Municipality of Antiesenhofen, Upper Austria
Street lighting project

Project background and objectives

The street lighting system of the municipality of Antiesenhofen was quite old (partly from the 60s) and represented a large percentage of the municipality's electricity consumption. The light quality was unsatisfactory and significant repair work was required. Already some years earlier, the municipality considered a renovation, but it was suspended due to a lack of financial resources. In 2014, the project was undertaken and combined with repair work for damages on some concrete masts. The focus was put on refurbishing the public lighting on the main street and in the west part of the municipality.

Project description

The main objective of the project was to improve the physical state and energy efficiency of the street lighting system without compromising service quality. The municipality was interested in using an EPC (energy performance contracting) model for this project. 4 ESCOs were asked to submit an offer. The decision was taken not to include the maintenance costs in the EPC contract. This was intensively discussed in the preparatory phase. The municipality nevertheless benefits from a significant reduction of its maintenance costs due to the new energy efficient and low-maintenance LED lighting system.

Significant parts of the refurbishment work could not be financed by the electricity saving measures. For these, the municipality paid a deposit. However, combining the necessary repair work with the energy efficiency project ensured a professional implementation of all measures by a street lighting specialist.

Facts

- **Population:** 1,060 inhabitants
- **Type of streets:** 60 % of the street lighting (country roads, residential areas)
- **ESCO:** eww
- **Electricity cost savings:** 1,600 €/year
- **Reduction electricity consumption:** 10,600 kWh/year
- **CO_2 reduction:** 5 tons/year
- **Investment costs:**
  - 296,500 € (total investment)
  - 15,900 € (financed by the EPC project)
- **Subsidies:**
  - 3,200 € (regional contracting programme)
- **EPC contract duration:** 10 years

Further information:
OÖ Energiesparverband
A-4020 Linz, Landstrasse 45
Telephone: +43-732-7720-14380
E-mail: office@esv.or.at

www.streetlight-epc.eu

This tool is a collection of 50 descriptions of street lighting and indoor lighting refurbishment projects. The projects were implemented in 8 countries in the context of the Streetlight-EPC project. The majority of the projects were implemented using various forms of EPC (Energy Performance Contracting). The collection consists of a 2-page description for each project with key data, results and photos. The EU-Project Streetlight-EPC, funded by the Intelligent Energy Europe Programme, ran from April 2014 to March 2017 with the objective of triggering the market uptake of EPC through street lighting refurbishment projects.

Some descriptions are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish.

CONTACT: OÖ Energiesparverband - office@esv.or.at

DETAILED INFO: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Implemented_Projects/Streetlight-EPC_Implemented_Projects.pdf

LEVEL	Local, regional, national
LANGUAGE	English, Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish.
ADAPTABILITY	HIGH. The 2-page descriptions can be directly used and presented under their current form or information can be extracted and used according to your specific needs. All descriptions are available in English. Some descriptions are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish.
TRANSFERABILITY	YES. All descriptions are available in English. Some descriptions are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish (available on the Streetlight-EPC website: http://www.streetlight-epc.eu/publications-events/). Due to concise text and tables, examples can be easily translated for use in other regions and countries.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no long-term energy performance contracts in place in the public sector (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge(art. 17) • inadequate information on best energy efficiency practices (art. 17) • the public sector does not use energy service companies and energy performance contracting (art. 18) • the National Fund is not accessed and utilised by the public sector (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

Streetlight-EPC project publication: EPC, facilitation, lessons learnt, implemented projects, EU

This brochure offers an overview of the outcomes of the Streetlight-EPC project. It conveys key lessons learnt for developing successful regional EPC facilitation services. It also presents concise examples of 24 street lighting and indoor lighting refurbishment projects implemented in 8 countries in the context of the Streetlight-EPC project. The majority of the projects were implemented using various forms of EPC (Energy Performance Contracting). The collection consists of a 2-page description for each project with key data, results and photos. The brochure directs readers towards other tools developed in the Streetlight-EPC project. The EU-Project Streetlight-EPC, funded by the Intelligent Energy Europe Programme, ran from April 2014 to March 2017 with the objective of triggering the market uptake of EPC through street lighting refurbishment projects. Available in English, in printed or electronic form.

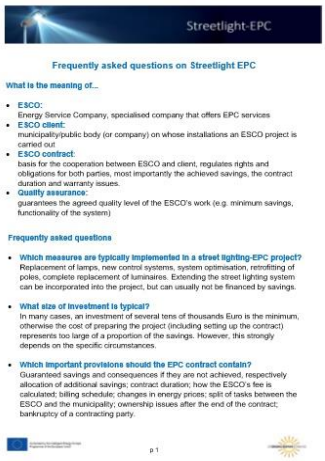
Some descriptions are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish (available on the Streetlight-EPC website: http://www.streetlight-epc.eu/publications-events/).

CONTACT: OÖ Energiesparverband - office@esv.or.at

DETAILED INFO: http://www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP7/Streetlight-EPC_Project_Publication.pdf

LEVEL	Regional, local, national
LANGUAGE	English, Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish.
ADAPTABILITY	HIGH. Since this is an information brochure, it can be downloaded, read and distributed as is. The 2-page descriptions it contains can be directly used and presented under their current form or information can be extracted and used depending on specific needs. The brochure is only available in English. Some project descriptions are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish (available on the Streetlight-EPC website: http://www.streetlight-epc.eu/publications-events/). Local, regional and national procurement rules need to be taken into account when trying to apply the information contained in the brochure to another region or country.
TRANSFERABILITY	YES. The general knowledge contained in the brochure can be helpful for all regions and countries that are trying to develop their EPC market or implement streetlight refurbishment projects. The brochure is only available in English and must first be translated if it is required in another language. Some descriptions of implemented projects are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish (available on the Streetlight-EPC website: http://www.streetlight-epc.eu/publications-events/). Due to concise text and tables, examples can be easily translated for use in other regions and countries. Local, regional and national procurement rules need to be taken into account when trying to apply the information contained in the brochure to another region or country.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no long-term energy performance contracts in place in the public sector (art. 6) • there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • lack of in-house expertise about financial tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge(art. 17) • inadequate information on best energy efficiency practices (art. 17) • the public sector does not use energy service companies and energy performance contracting (art. 18) • no access to model contracts for energy performance contracting (art. 18) • the National Fund is not accessed and utilised by the public sector (art. 20) • lack of knowledge regarding existing financial tools (art. 20)

FAQs on LED streetlight refurbishment and EPC, EU


Streetlight-EPC

Frequently asked questions on Streetlight EPC

What is the meaning of...

- ESCO:
  Energy Service Company, specialised company that offers EPC services
- ESCO client:
  municipality/public body (or company) on whose installations an ESCO project is carried out
- ESCO contract:
  basis for the cooperation between ESCO and client, regulates rights and obligations for both parties, most importantly the achieved savings, the contract duration and warranty issues.
- Quality assurance:
  guarantees the agreed quality level of the ESCO's work (e.g. minimum savings, functionality of the system)

Frequently asked questions

- Which measures are typically implemented in a street lighting-EPC project?
  Replacement of lamps, new control systems, system optimisation, retrofitting of poles, complete replacement of luminaires. Extending the street lighting system can be incorporated into the project, but can usually not be financed by savings.
- What size of investment is typical?
  In many cases, an investment of several tens of thousands Euro is the minimum, otherwise the cost of preparing the project (including setting up the contract) represents too large of a proportion of the savings. However, this strongly depends on the specific circumstances.
- Which important provisions should the EPC contract contain?
  Guaranteed savings and consequences if they are not achieved, respectively allocation of additional savings; contract duration; how the ESCO's fee is calculated; billing schedule; changes in energy prices; split of tasks between the ESCO and the municipality; ownership issues after the end of the contract; bankruptcy of a contracting party.

p 1

This 4-page PDF document contains a compilation of frequently asked questions and answers on streetlight refurbishment with EPC (Energy Performance Contract). The questions were compiled by the EPC facilitation services set un in the context of the Streetlight-EPC project. The EU-Project Streetlight-EPC, funded by the Intelligent Energy Europe Programme, ran from April 2014 to March 2017 with the objective of triggering the market uptake of EPC through street lighting refurbishment projects. The FAQs are available in English and can be downloaded from the project website. The FAQs have also been adapted and translated for the 9 project regions (Upper Austria, North-West Croatia, South Bohemia/Czech Republic, Pomerania/Poland, Carlow & Kilkenny County/Ireland, South East Sweden, Podravje/Slovenia, Macedonia, North & Central Spain).

FAQs are also available in Croatian, Czech, Polish, Swedish, Slovenian, Macedonian and Spanish on the Streetlight-EPC website: www.streetlight-epc.eu/publications-events/.

CONTACT: OÖ Energiesparverband - office@esv.or.at

DETAILED INFO: www.streetlight-epc.eu/fileadmin/redakteure/Streetlight-EPC/Project_outputs/WP2/FAQs/FAQs-European-EN.pdf

LEVEL	Regional, local, national
LANGUAGE	English
ADAPTABILITY	HIGH. The document can be downloaded, read and used in its current form. The FAQs have already been adapted and translated for 9 regions (Upper Austria, North-West Croatia, South Bohemia/Czech Republic, Pomerania/Poland, Carlow & Kilkenny County/Ireland, South East Sweden, Podravje/Slovenia, Macedonia, North & Central Spain) and are available on the Streetlight-EPC website: http://www.streetlight-epc.eu/publications-events/. Since the tool addresses mostly general questions about streetlight-EPC, it can be quite easily adapted for use in further regions/languages. Procurement regulations and EPC practices in your regions need to be considered when adapting the tool.
TRANSFERABILITY	YES. The general topics addressed in the FAQs can be helpful for all regions and countries that are trying to develop their EPC market or implement streetlight refurbishment projects with EPC. The FAQs have already been adapted and translated for 9 regions (Upper Austria, North-West Croatia, South Bohemia/Czech Republic, Pomerania/Poland, Carlow & Kilkenny County/Ireland, South East Sweden, Podravje/Slovenia, Macedonia, North & Central Spain) and are available on the Streetlight-EPC website: http://www.streetlight-epc.eu/publications-events/. Since the tool addresses mostly general questions about streetlight-EPC, it can be quite easily adapted for use in further regions/languages. Procurement regulations and EPC practices in your regions need to be considered when adapting the tool.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• there are no tools/frameworks in place to assist the public sector in the procurement of energy efficient buildings, products and services (art. 6) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (art. 18)

RETscreen, Canada

RETScreen® International is a free, universal tool developed in collaboration with many government, industry and university experts. The program is managed and has ongoing support from Canmore ENERGY at the Canadian Ministry of Natural Resources. On the territory of Poland, training for users is led by the Foundation for Energy Efficiency. The organisation is the translator of educational materials available at www.retscreen.net. There is also a free e-learning course available at www.e-szkolenia.fewe.pl.

RetScreen is a tool that can be used by professionals (eg. planners, decision makers, industry) as well as those without experience. It can be used for:

- Technical assessment and financial feasibility of potential clean technology projects,
- Greenhouse Gas Emission Reduction Analysis - RetScreen® calculates annual greenhouse gas emission reductions for clean energy projects based on the base state of the system,
- RetScreen® calculates cash flow including initial costs, energy savings, EIK costs, fuel costs, taxation, carbon credits, and CE production benefits. In addition, it automatically calculates the most important financial indicators.

CONTACT: nrcan.retscreen.rncan@canada.ca

DETAILED INFO: www.nrcan.gc.ca/energy/software-tools/7465

LEVEL	Local, regional
LANGUAGE	English
ADAPTABILITY	HIGH. it is international, very universal tool.
TRANSFERABILITY	YES. it is international, very universal tool.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of automatic tools supporting energy efficiency measures development (art. 17) • absence of softwares supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17)

Code of Conduct for Energy Performance Contracting (EPC), EU

European Code of Conduct for EPC (Energy Performance Contracting) has been developed for energy service providers (ESCOs). The Code of Conduct defines the fundamental values and principles for successful EPC projects preparation and implementation. It constitutes a guarantee of quality of EPC projects. The EPC Code of Conduct is a voluntary commitment and is not legally binding. The key message of Code of Conduct is that EPC represents a fair energy business model. It has been developed within Transparense project and launched in 2014. The Code of Conduct was developed in cooperation wuth the European Association of energy Service Companies (eu.ESCO) and the European Federation of Intelligent Energy Efficciency Services (EFIEES). These associations have been administering the Code of Conduct since September 2015, ensuring its sustainability. In the Czech Republic two pilot projects were carried out:

- Pool of buildings in the City of Moravska Trebova;
- the main goal of the pilot project was renovation of energy technological equipment and covering investment by savings in the pool of buildings owned by the clien;
- Prague Congress Center.

CONTACT: Project coordinator: SEVEn, The Energy Efficiency Center, Jana Szomolanyiova;code@svn.cz;www.svn.cz/en

DETAILED INFO: http://transparense.eu/eu/home/welcome-to-transparense-project

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. The Code of Conduct is an output of Transparense project realised under Inteligent Energy Europe. The adaptability has been confirmed by pilot projects carried out in all partners' countries. The Code of conduct has been tested in 37 EPC pilot projects.
TRANSFERABILITY	NO. The Code of Conduct is an output of Transparense project realised under Inteligent Energy Europe. The adaptability has been confirmed by pilot projects carried out in all partners' countries. The Code of conduct has been tested in 37 EPC pilot projects.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17) • lack of clear and easily accessible information on available energy service contracts and clauses (art. 18) • there is no support available to the public sector in taking up energy service offers, in particular for building refurbishment (art. 18) • lack of information on best practices for energy performance contracting, including, if available, cost-benefit analysis using a life-cycle approach (art. 18) • the public sector does not use energy service companies and energy performance contracting (art. 18)

Sustainco Tool Kit, Ireland

Sustainable and Renewable Energy for Electricians – sustainco.info

The Sustainco project aims to increase the visibility and understanding of the Near Zero Energy Building (NZEB) philosophy, with special emphasis on rural areas. This will be done by providing easy access to practical information on how to build or retrofit buildings to reach NZEB standards. SustainCo also aims to increase the visibility of front-runners, for both new-build and retrofits, with the aim of capacity- and confidence-building in the public sector. To find out more, check out our Toolkits and case studies, which you will find in the menu to the right. This Project ended in April 2015 - the website will be updated if necessary up until 2017. A wide range of Technical and Financial toolkits have been created to help with the planning and construction of NZEB buildings. It also includes a selection of NZEB Case Studies.

CONTACT: Severn Wye Energy Agency Limited

DETAILED INFO: www.sustainco.info/

LEVEL	Local, regional, national
LANGUAGE	English
ADAPTABILITY	HIGH. EU level project - 7 EU countries directly represented. No adaptation required for EU members.
TRANSFERABILITY	YES. Directly useable in current format.
NEEDS ADDRESSED according with European Energy Efficiency Directive	• insufficient information on training possibilities (art. 17) • insufficient information on energy technologies (art. 17) • insufficient information on financial tools (art. 17) • insufficient information on technical tools (art. 17) • lack of in-house expertise about training (art. 17) • lack of in-house expertise about energy technologies (art. 17) • lack of in-house expertise about financial tools (art. 17) • lack of in-house expertise about technical tools (art. 17) • absence of guidelines and handbooks supporting energy efficiency measures development (art. 17) • absence of other tools supporting energy efficiency measures development (art. 17) • absence of support organisations in your territory addressing energy efficiency matters (art. 17) • support organisations have insufficient competency and knowledge (art. 17) • inadequate information on best energy efficiency practices (art. 17)