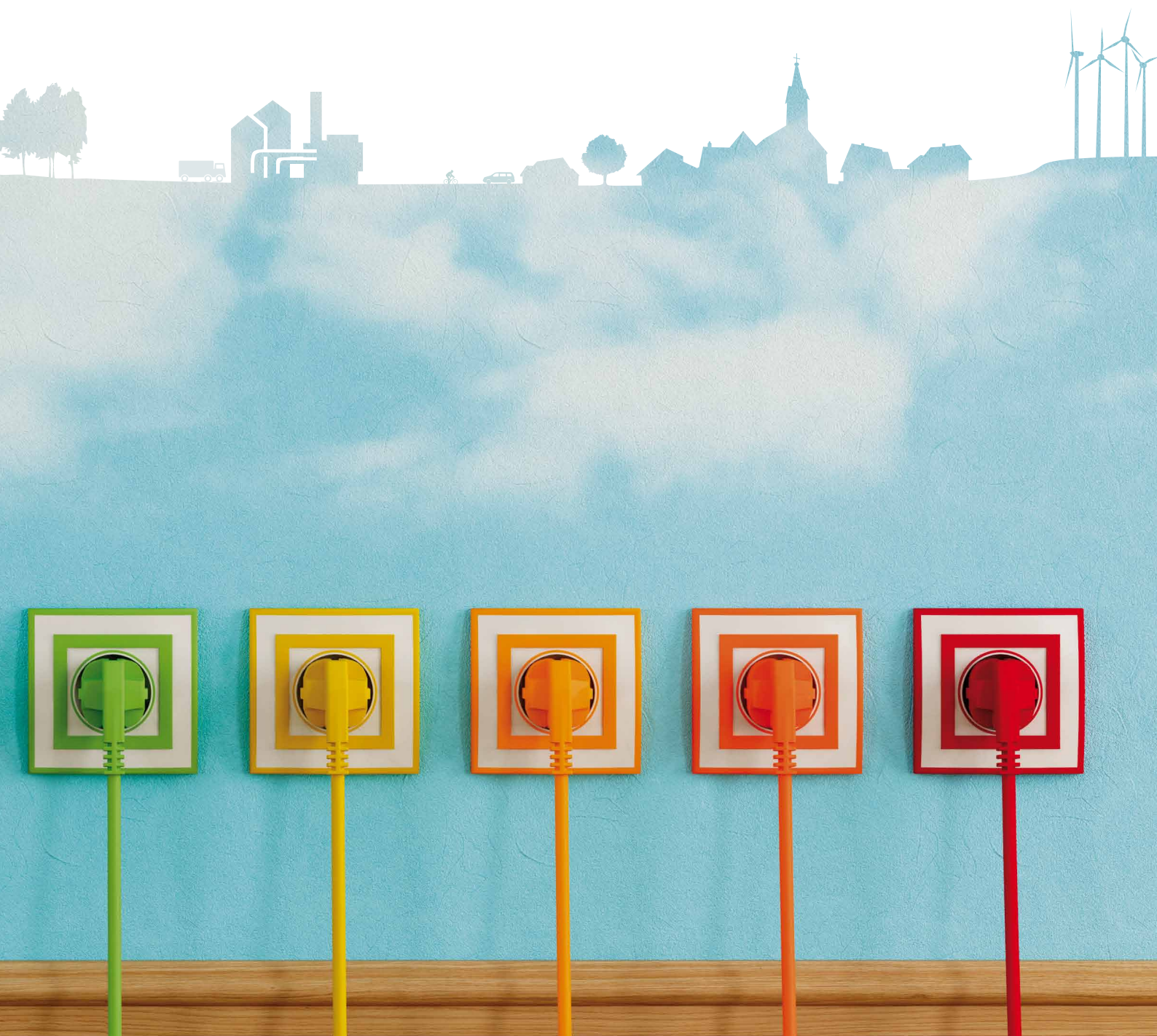


ACCELERATING CHANGE - DELIVERING SUSTAINABLE ENERGY SOLUTIONS

Good practices from Intelligent Energy Europe
and European Territorial Co-operation projects

Proceedings of the joint seminar



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Dear reader,

We are pleased to introduce you to the first joint Intelligent Energy Europe and INTERACT publication! This is the result of a growing co-operation between two European Funding Instruments active in the field of energy issues. Faced with the global challenges of climate change and an increasing pressure on limited fossil energy resources, we must detect our strengths and share best practices.

The Union has set itself a goal of achieving, by 2020, a 20% cut in primary energy use compared to projections; a 20% reduction in greenhouse gases emissions compared to 1990; and a 20% share of renewable energy in the total final energy consumption of the EU. Meeting these ambitious goals requires many initiatives and concrete efforts from all governance levels. It requires an initiative that spans across borders in order to engage actors in understanding the cross-cutting challenges and assets pertinent to their regions. Here, European programmes and their projects can demonstrate how we can achieve a low carbon, energy efficient and competitive economy.

On 15-16 May 2013, beneficiaries and managers from the Intelligent Energy Europe programme (IEE) of DG Energy and the European Territorial Co-operation programmes (ETC) of DG Regional and Urban Policy met to talk about 'Accelerating change at local and regional level for effective delivery of sustainable energy solutions'. 67 experts from 13 programmes participated, empowered each other and promoted the results of their work.

Both IEE and ETC programmes contribute to the delivery of European energy and climate objectives. In the 2007-2013 period, these programmes have invested nearly EUR 1.3 billion of European funds in more than 900 projects in the field of energy. We want to use the project results of both funding instruments in order to share expertise and best practice with a wider audience, so that we see more sustainable energy solutions implemented throughout Europe.

This publication summarises the findings of the two-day event, addressing the following key questions:
How have European Funds been used to facilitate knowledge transfer between local authorities?
What are critical success factors in securing integrated energy/climate actions in urban and spatial planning and how can we build the capacity of planners to that extent?
What role do regional authorities play in empowering local actions?
What good practice examples exist for sustainable energy planning at regional levels across Europe?
What financing mechanisms are suitable for the delivery of sustainable energy actions at local and regional levels?

These questions sparked the debate amongst energy practitioners – their professionalism, enthusiasm and commitment led to fruitful and thought-provoking discussions. We hope that by capturing the spirit of the event, we can inspire many professionals in preparing for the future.



Patrick Lambert
(Director Executive Agency for Competitiveness and Innovation)



Petra Masáková
(Head of INTERACT Programme)

Interview with Marie Donnelly, Director of Renewables, Research and Innovation, Energy Efficiency, European Commission's Directorate-General for Energy



Ms Donnelly, can you outline the general objectives of EU energy policies and the key successes already achieved?

Comfortable buildings, transport, manufacturing industry, telecommunications, ... so many essential services in our day to day lives could not exist without energy. Indeed, without energy our economies could not function at all. Europe is importing increasing quantities of energy at volatile, unpredictable prices, which puts the competitiveness of Europe's businesses at risk.

Moreover, the increasing flow of currency out of the EU to pay for energy supplies puts the brakes on our efforts to deliver more growth and jobs. Considering in addition the environmental impacts of burning oil, gas and coal, whose greenhouse gas emissions result in climate change, it is not surprising that the European Commission has identified energy as one of Europe's biggest societal challenges.

To address these challenges, the EU has set itself some short term targets for 2020, and a longer term goal to largely decarbonise the energy sector by 2050. At the same time, the EU is committed to securing its energy supplies at affordable prices. A series of directives has been adopted, to ensure that all Member States work together in the most cost-effective ways to achieve these goals, and of course it will also be essential to establish a single European energy market.

Let me say a few words about our 2020 targets. Consuming 20% less energy by 2020 is particularly important, because the cheapest form of energy is the one that is not used at all. Greater energy efficiency will reduce our energy import dependency and therefore have very positive effects on our economy, helping us out of the financial crisis. All sectors of the economy, particularly small and medium-sized enterprises, can benefit from improving the energy efficiency of buildings and from changing to more energy-efficient modes of transport.

Supplying 20% of the energy consumed in Europe from renewable sources by 2020 is a collective commitment by all EU Member States, a commitment which has already led to the creation of more than a million jobs across the EU. However, the costs of renewables have come down quicker than expected, and several Member States could not adapt their support schemes fast enough. The resulting retro-active measures in some countries have badly damaged investor confidence. A more market-based approach is needed now to re-build confidence and encourage investments in the period up to 2020 and beyond.

To accommodate higher levels of supply from fluctuating renewable sources such as wind and solar energy, the EU needs a better inter-connected, more flexible electricity grid, with higher storage capacity and use of demand-response mechanisms.

Europe is committed to reducing its greenhouse gas emissions by 20% of 1990 levels by 2020. The European Commission recently launched discussions on the policy needs for climate and energy towards 2030. The 2030 policy framework will build on lessons learnt from the 2020 framework, and will identify where improvements can be made. It is expected to be finalised around the end of the year.

How can programmes such as Intelligent Energy Europe and the European Territorial Co-operation programmes contribute to reaching the European energy targets?

Both Intelligent Energy Europe and European Territorial Co-operation programmes contribute to the 2020 targets through work on the ground with public and private sector stakeholders. These programmes take Europe forward by fostering the market uptake of proven sustainable energy solutions and services. They help to empower citizens, businesses and public authorities by providing objective and practical information on which investment decisions can be based. They also help to create more favourable market conditions, and prepare the ground for investments by informing sustainable energy policy makers and guiding the implementation of their policies at EU, national, regional and local levels.

Here are some examples of Intelligent Energy Europe projects which, like many European Territorial Co-operation projects, are bringing tangible benefits to local and regional communities across the EU:

(i) ComeOn Labels and ATLETE help European citizens see the energy consumption of the products that they buy, and ensure that manufacturers comply with energy labelling requirements. More than 75 000 products from 330 shops in 13 countries were checked by the ComeOn Labels project, and ATLETE projects test and check data on energy labels for 130 models of refrigerator.

(ii) The Concerted Action on Implementation of The Energy Performance of Buildings Directive enables national authorities from 29 countries to exchange experiences and identify best practices on policies, codes and legislation aimed at reducing energy consumption in buildings.

How can public authorities actively contribute to applying the various measures outlined in the Energy Efficiency Directive?

The public sector should play an exemplary role in moving the EU towards a sustainable energy system, and this is recognised in the Directive. To date, more than 4 800 cities and towns have demonstrated their commitment to this role by signing the Covenant of Mayors, and adopting Sustainable Energy Action Plans.

Public authorities are nevertheless having difficulty in mobilising capital to finance their energy measures, so the EU has responded with new financing mechanisms such as the ELENA facility and the Energy Efficiency Fund.

The Commission has also launched a campaign with workshops and events across Europe to promote the use of Energy Performance Contracting, particularly for public authorities. The ManagEnergy Initiative funded by IEE is an important pillar of this campaign¹.

In the context of the new Multiannual Financial Framework 2014-2020, can one expect an emphasis on market replication and territorial co-operation initiatives?

Starting in 2014, a new seven-year Multiannual Financial Framework will provide funding for projects and initiatives that will help the EU to promote more jobs and growth, in order to deliver on its policy agenda for 2020 and beyond.

The EU's long term goals require major investments in the energy sector, and several budget lines in the new Multiannual Financial Framework will give more emphasis to sustainable energies than has been the case in the past; for example, Horizon 2020 Programme for Research and Innovation, Connecting Europe Facility, and Cohesion Policy funding. Details of how the use of these budgets will be prioritised are still being finalised, but there is no doubt about the importance of energy efficiency and renewable energies in the future economic growth of the EU.

Investing in sustainable energy is a no-regrets option, but EU budgets for the next Multiannual Financial Framework are very small compared with the scale of the investments needed. Therefore, the EU must use each Euro of its funding strategically, so that it will leverage as many Euros of private funding as possible into investments in the sustainable energy sector.

Interview with Colin Wolfe, Head of Unit; Competence Centre Macro-regions and European Territorial Co-operation - Transnational and Interregional Co-operation, European Commission's Directorate-General for Regional and Urban Policy



Mr Wolfe, what are the Commission's views on the role of the European Territorial Co-operation Objective programmes for fulfilling the European energy targets?

No doubt the programmes implemented in the framework of the European Territorial Co-operation (ETC) Objective play an important role in supporting Member States to meet EU energy targets and achieve sustainable growth. ETC programmes facilitate reaching energy targets by encouraging exchange of experience and good practice between regions across Europe in the

¹ http://ec.europa.eu/energy/efficiency/financing/campaign_en.htm

energy area, as well as by implementing pilot initiatives and testing new energy efficiency and saving tools. ETC programmes point the way to solutions to energy challenges. ETC programmes also play an important role in the development of joint use of energy infrastructure, creation of missing links in energy infrastructures, etc., which are crucial to achieving European energy goals.

The draft European Regional Development Fund Regulation proposes, for goal 1 programmes, that a minimum of 20% in more developed regions, a minimum of 15% in transition regions and a minimum of 12% in less developed regions of the resources are devoted to energy efficiency and renewable energy related measures. What would be the effect of this proposal for the ETC programmes?

For the period 2014-2020, the Commission has proposed a significant concentration of effort on supporting the shift towards a low-carbon economy in all sectors, i.e., a larger focus on renewable energy, energy efficiency and smart grids at the distribution level. This will lead to significantly increased availability of resources for sustainable energy. ETC should increasingly be utilised in spreading good ideas further, speeding up progress towards energy targets. More ETC programmes will focus on energy efficiency and renewable energy, and as a result more investments will be relevant to this theme.

What are the territorial patterns of energy challenges in Europe that can be observed, and how should programmes and projects relate to these challenges in the new period?

All European regions face common challenges in the field of energy, such as the need for greater sustainability and energy efficiency, security and diversity in energy supplies. However, some energy challenges and potentials are specific for different parts of the EU. For example, in the Baltic Sea region the key issue is the lack of energy inter-connections between the Baltic States and the rest of the EU, and their high dependence on one energy supplier. The Danube Region is characterized by several common problems: high energy prices, security of supply, high dependency on individual suppliers, deficient infrastructure and a low share of renewables in the energy mix. The ETC programmes should address these challenges in a 'tailor-made' way, with actions and projects to be implemented under specific ETC programmes addressing those specific energy challenges.

The Common Strategic Framework calls for exploring complementarity and coordination between the European Structural and Investment Funds and other Union policies and instruments. For example, INTERACT and Intelligent Energy Europe have worked together since 2010. What are the benefits from this co-operation and how can such practices be furthered in view of the 2014-2020 period?

We need policies to support each other. This means we can do what we want more successfully, with overall energy policy on markets or renewables or efficiencies being carried through also by regional funding. This is exactly the aim of the Common Strategic Framework. As regards the co-operation between INTERACT and Intelligent Energy Europe, it has been very valuable. It accelerates considerably the sharing of expertise and experiences in relation to energy matters. The potential for further co-operation between INTERACT and Intelligent Energy Europe in the next programming period should be further developed.

What is the one most memorable fact picked up during the joint Intelligent Energy Europe and INTERACT conference?

The high level of commitment of local and regional authorities and actors across the EU in implementing sustainable energy projects. There is a wealth of experience and knowledge available which needs to be further fostered. There appears to be a strong desire to facilitate links in improving energy efficiency and developing renewable energy initiatives and projects, in particular in a cross-border and transnational context. I find this very encouraging.

Peer learning: enhancing project results

Peer-to-peer learning, also known as peer learning, is an aspect of co-operation and a fundamental feature of good practice pertinent to European projects. Where there is a need for policy to embrace a diversity of actors, to recognise existing practice and to foster delivery of quality results, peer learning helps to think out-of-the-box and, ultimately, leads to better results. Peer learning relates to individuals, organisations, municipalities and regions, thus has strong connotation in promoting excellence in European governance. By the same token, local and regional authorities working in EU-funded projects benefit from the exchange of experience in drawing up energy strategies and plans with their European colleagues.



Put simply, peer learning is a process where practitioners and actors from one country or organisation learn, through direct contact and practical co-operation, from the experiences of their counterparts elsewhere in Europe in areas of shared interest and concern².

Reaching beyond sharing knowledge and expertise

Projects funded by Intelligent Energy Europe and European Territorial Co-operation programmes are composed of large partnerships representing a variety of organisations, working cultures, set-ups

and different nationalities. An undisputed added value of these projects is that high quality of results feeds on the collective experience, knowledge sharing and transfer among the

partners. Peer learning activities provide a natural environment for this knowledge to thrive, be moulded and transformed into new experiences and practices, thus supporting innovativeness and entrepreneurship in projects.

The critical talents of peer learning activities are the promotion of reflection, development and enhancement. It is envisaged that, through peer-assisted reflective practice, individuals and organisations alike will

develop within the area of their competency. Peer learning goes beyond information gathering and encourages constructive dialogue and reflection between project practitioners and other key actors.

The role that peer learning plays for the enhancement of good quality project results is driven, on the one

hand, by the strengthened mutual learning and deepened exchange of practice between participating partners, and on the other, by promoting practical, hands-on exchange coupled with analysis of existing practices in the respective fields. Peer learning is a recognised means for capacity-building and competence enhancement.

The many faces of peer learning

Peer learning can have many faces and take many forms. In a workshop

session dedicated to the subject, participants from Intelligent Energy Europe and European

Territorial Co-operation projects identified the peer learning techniques commonly adopted in their practice. Most of these involve face-to-face interactions between partners and relate to:

► **staff exchange** – aiming at strengthening co-operation among partners by optimising the opportunities presented by exchange visits in

“Peer learning is something we all do, but still we don’t make the most of it!”

² Source: European Commission (2006). Operational guide for Clusters and Peer Learning Activities (PLAs) in the context of the Education and Training 2010 work programme

order to acquire a better understanding of the culture in which partners operate. Staff exchanges were successfully organised, for example, by the ACE-NWE project to foster the replication of successful projects in the field of renewable energy production.

► **site visits** - designed for participants to obtain understanding and gain first-hand knowledge of the environment within which a project's

between all partners, through setting up ongoing relationships of learning, dialogue and communication. For example, the project CASCADE used the mentoring technique for improving the implementation of local sustainable energy policies.

► **work shadowing** – this method bears some resemblance to staff exchange and relates to direct observation of how a person/organisation works and goes about their day-to-day job, and brings many ben-

ment of peer review and assessment systems, integrated in the implementation of projects, provides partners with a common appraisal system in order to establish a basis for mutual comparison, transnational co-operation and learning. In the project Regions 4 Green Growth, peer review of a group of experts helped the participating regions to understand how well their policies and practices are working and supported them in making improvements.

"on-the-ground" work is embedded. This form of peer learning often includes the demonstration of a particular skill, procedure or method of working pertinent to a project partner.

► **partner-to-partner mentoring and coaching** – these forms of learning are used extensively by projects in order to strengthen communication within the partnerships. They are appreciated as they promote targeted knowledge transfer, usually from more experienced to less experienced partners, but also

efits to the participating partners. For example, the project LEAP arranged a four-week exchange among peers. Within this time, partners from city administrations observed and learned about the working procedures of their counterparts.

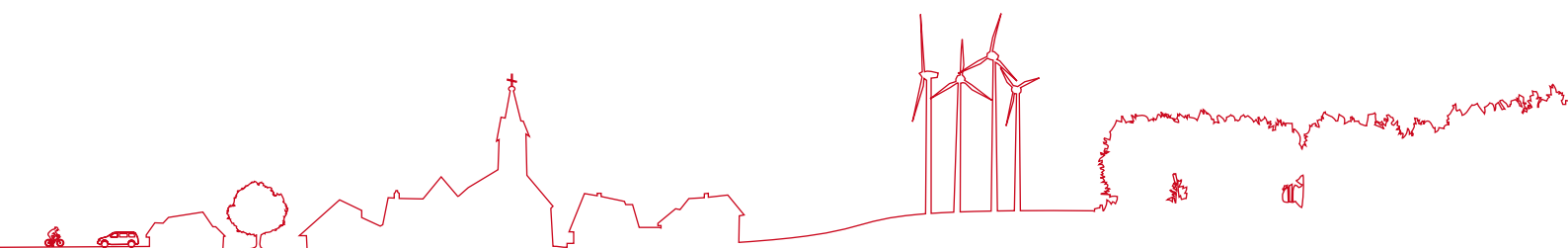
► **peer review and assessment** – by using the system of peer review, partners assist the process of mutual learning and stimulate the process of feeding a large range of expertise into the project initiatives, pilot projects, plans and visions. Develop-

► **discussion groups** – usually established as online platforms. These groups are used to promote in-depth discussion and common understanding on topics of common interest. Discussion groups have been used as platforms for consensus-reaching and decision-making.

Fig. 1: Peer learning (source: "An Engineers Without Borders Facilitation Guide")



“Peer learning takes us out of our comfort zones but it is certainly worth the effort.”



To peer or not to peer: the key to successful replication of good practice

What makes peer learning successful and where can we go wrong? The workshop on peer learning focused discussions on what can be done in order to make peer learning an effective tool for delivering high-quality project results. One of the participants shared:

“It takes courage to participate in peer-to-peer activities”, and another replied: “Peer learning is something we all do, but still we don’t make the most of it!”

‘Making the most of it’ requires thorough preparation and understanding of the process. Participants elaborated on the various aspects that make peer learning successful, and on the basis of this input the following process value chain can be deduced:

- ▶ Peer learning starts with agreeing on the needs to be addressed.
- ▶ Based on identified needs, specific learning objectives can be derived.

▶ The peer learning activity should be designed to meet the objectives set.

▶ Evaluating the results from peer learning once it has taken place is needed in order to assess effectiveness and plan for quality improvements.

The implementation of this value chain is supported by a number of rudiments. Securing commitment from the participating partners and the institutions they represent, openness and access to data and knowledge, identification of participants with appropriate background, creating ownership of the process and the expected results, creating a platform where all ideas are taken on-board represent a few. These, coupled with more technical aspects, such as time, duration, language, location, and size of learning groups illustrate the variety of factors accompanying peer learning processes.

Successful practice has found demonstration in numerous ways. In the City of Malaga, Spain, peer learning has supported the establishment of

a platform for the development and discussion of sustainable urban models. In Alicante, Spain, peer learning has promoted the establishment of an energy savings plan. Many practitioners highlighted the contribution towards improved Sustainable Energy Action Plans.

An important expression of peer learning has been demonstrated by implementation of collective improvements in the integrated energy plans by partners and cities involved in projects, and the identification and replication of best practices throughout Europe. Influences on the legal and political environment, and support in the development of innovative business models have also resulted from successful peer learning practices.

All partnerships have valuable knowledge and expertise to share! That assured, European excellence is fostered and promoted. In the words of one participant: “Peer learning takes us out of our comfort zones but it is certainly worth the effort.”

Cities sharing sustainable energy experiences and solutions

Ioanna Tsalakanidou, EUROCITIES (Belgium)



Programme website: ec.europa.eu/energy/intelligent/

Project website: www.cascadecities.eu

Project coordinator: EUROCITIES asbl, Belgium, Ms Ioanna Tsalakanidou, ioanna.tsalakanidou@eurocities.eu

Project budget: EUR 2 033 529.00 (EU contribution: 75%)

Project duration: 01.06.2011 – 31.05.2014

The CASCADE project supports cities in the implementation of sustainable energy policies by providing the necessary tools to ensure meaningful and sustained learning, and sharing of good practices on local energy leadership.

It has developed a “CASCADE toolkit for peer-to-peer learning on local energy leadership”, offering operational guidelines for effective peer learning visits, including programme preparation, tips for maximising the learning impact of the visit, and for transferring the new knowledge and skills gained back home. The use of effective learning methods (peer review, mentoring, work shadowing and study visits) was tested by engaging 75 large and medium European cities in transnational exchanges. The knowledge shared and gathered during the peer learning visits will be included in the “CASCADE good practice collection”. This collection will include examples of how cities are addressing key challenges in the implementation of local energy policies.

Some key recommendations for successful peer learning are:

- ▶ It is important to enrol in the learning process all categories of actors involved in the development and implementation of energy policies: city experts, decision makers, local stakeholders. Delivering energy policies is not only about identifying the right technical solutions, but also making sustainability a political priority and gaining local stakeholders' support.

- ▶ The learning experience should be beneficial for everyone involved. The peer learning visits should be interactive, allowing both the hosts and visitors to share their own experiences and learn from the experiences of others.

- ▶ Building personal contacts is essential for a good, long collaboration between cities. The programme of the visit should allow opportunities for participants to network, to get familiar with each other's work and in general to get to know each other better.

The CASCADE methodology made the peer learning experience beneficial for all the cities involved. This is echoed in the feedback from the peer reviews:

- ▶ 80% of cities are more confident in using this methodology for sharing sustainable energy knowledge and experiences with other cities.

- ▶ 75% have increased their knowledge on implementation of local sustainable energy policies.

- ▶ 82% have established new personal networks and contacts across Europe.

- ▶ 60% have improved the implementation of their energy policies.

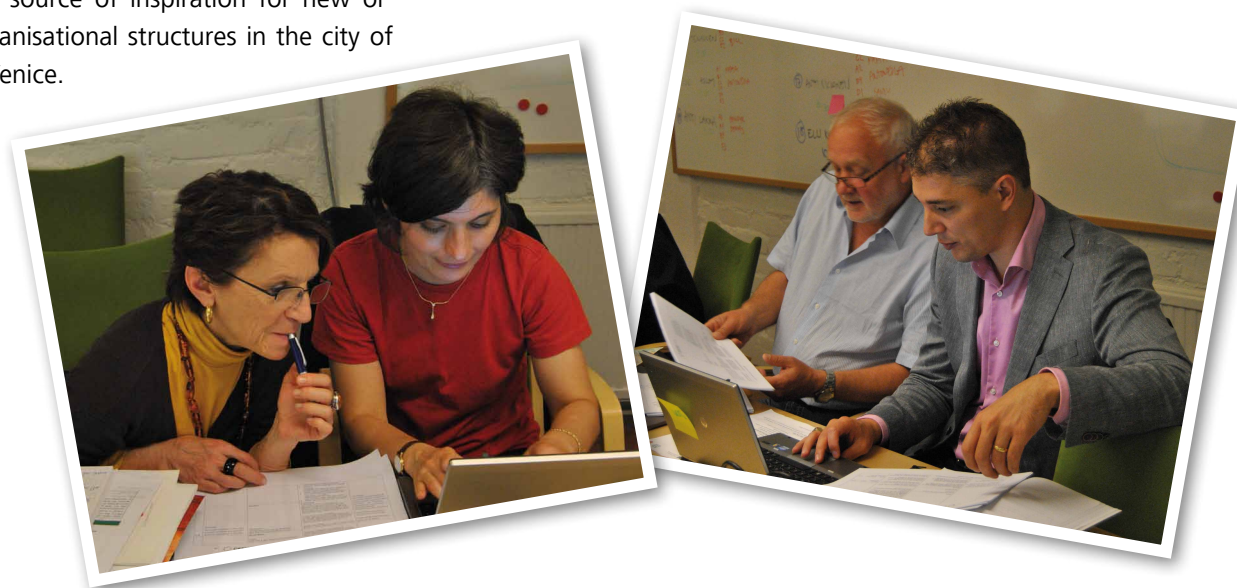
- ▶ 45% have increased co-operation with local stakeholders.

- ▶ 20% have already started developing new local sustainable energy policies or projects.

CASCADE led to improvements in existing projects and gave inspiration for the initiation of new ones. For example, a peer review helped the

city of Birmingham to improve its energy efficient building policy, while a work shadowing visit in Nantes was a source of inspiration for new organisational structures in the city of Venice.

Fig. 2 & 3: CASCADE cities review Tampere's policies on energy efficient buildings and districts (photo: Elli Kotakorpi, City of Tampere)



Peer learning to boost investments in sustainable energy

Bob Pels and Karin Maatje, Province of Flevoland (Netherlands)

Regions4GreenGrowth is an INTER-REG IVC project that aims to improve access to finance and boost investments in sustainable energy. Peer review is used in the course of this work as a successful expression of peer learning.

How does peer review work?

All 13 partner regions in Regions4GreenGrowth organize a five-day peer review, during which a team of 10 to 15 experts from different countries visit the host region to assess its policies and practices in the field of sustainable energy, and give advice on improvements. The process takes approximately six months (see Fig.5), and begins with the host region determining a focus area for the peer

review. This is done in co-operation with the region's stakeholders, and involves the preparation of a set of background information for the experts (the peer team), and a relevant programme for the peer review, including meetings with politicians, interviews with stakeholders and field visits. Following the peer review, the experts prepare a report with recommendations, which is then used by the host region to improve policies and practices.

Success factors

The methodology is surprisingly effective, as the international team possesses a great amount of knowledge and experience. Practice has shown that all host regions discover,

as a result of the process, that they either have blind spots or problems

Fig. 4.: Wind park in Flevoland (photo: Juul Baars)



that other regions have already found a solution to. One of the Swedish project partners said: "We were convinced that we were doing pretty well, but the peer review was an eye opener. We've discovered that we can improve things quite a lot, especially in the field of leadership and public-private partnerships." The advice given by the peer team may not be strikingly new, but having its ideas confirmed brings the host region more (political) weight and a reassurance that it is on the right track.

engaging Energy Service Companies.

Transferability to other regions

A peer review can be organized in every region and on different subjects (for example, the Assembly of European Regions has organized reviews in the fields of sustainable tourism and youth employment). A successful peer review requires clear focus, thorough preparation and careful selection of experts. Furthermore, the people in the host region need to be prepared to show their weaknesses and their success stories. Finally, political commitment from the beginning is very important for ensuring that the peer review recommendations will be imbedded in the region's policies.

Development and investment organisation for sustainable energy

In addition to peer review, knowledge is transferred by means of master classes and pilots on how to create a Development and Investment Organisation (DIO) for sustainable energy. Flevoland, Manchester and Noord-Brabant have experience in creating an investment fund which works best in combination with a project development unit. The master classes focus on the "why", the "how" and the feasibility of a DIO. Lazio and Prahova region are currently doing a feasibility study to start a DIO.



Programme website:

www.interreg4c.eu/

Project website:

www.regions4greengrowth.eu

Project lead partner: Province of

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Project budget: EUR 2 090 576.58

ERDF co-financing: EUR 1 621 841.26

Project duration:

January 2012 – December 2014

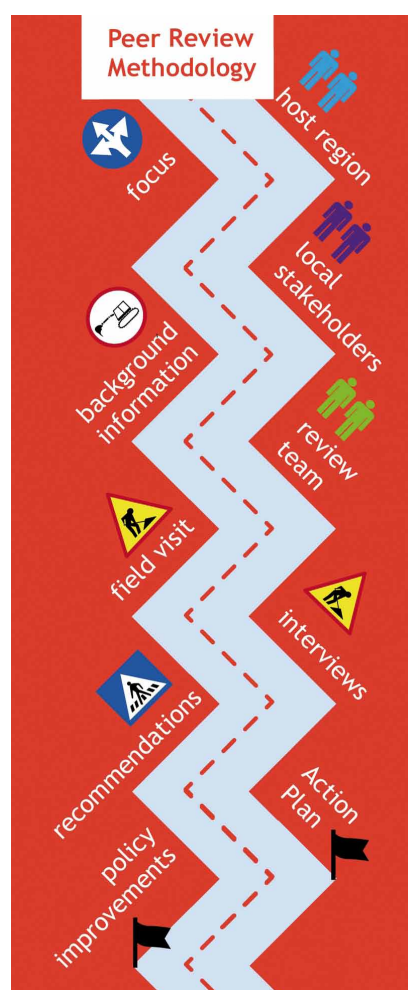


Fig. 5: Pathway of the peer review methodology. Adapted from and with thanks to the SMART EUROPE project (source: MUSIC)

Learning in a transnational project: the case of MUSIC

Chris Roorda, DRIFT, Erasmus University Rotterdam (Netherlands)

MUSIC - Mitigation in Urban Context, Solutions for Innovative Cities - is a co-operation project between five cities and two research institutes in North-Western Europe. The main aim of the project is to catalyse and mainstream carbon and energy reduction in urban policies, activities and the built environment. The cities work on this ambitious goal in three parallel ways: by implementing pilot projects, by developing a "Geospatial Urban Energy Information and Support System" to integrate energy in urban planning, and by applying the "Transition Management³" approach (TM) to mobilise stakeholders to take action for CO₂ reduction.

The application of TM in the context of the project is a prominent example of how partners learn from each other. This innovative approach enables the cities to build up networks of change-agents and, together with them, formulate and take up an agenda for a low-carbon future. The application of this approach is challenging for the policy officers involved, because it requires them to get out of their comfort zone and critically reflect on their role and practice.

Transition Management seeks to influence the direction and pace of societal change by strategically creating space for new paradigms and practices. The key is the building up of a network of change-agents, jointly drafting a systemic change perspective, and empowering diverse actors to engage in, and learn from, initiatives contributing to a sustainable future.

To structure the learning process, each partner city has been assigned a 'city coach' who trains the policy officers involved and assists them in adapting and implementing the approach. A guidance manual assists the application of the TM-approach, and this manual is updated yearly to include new insights emerging from experiences created in the project. Furthermore, the project partners learn from each other in half yearly transnational workshops, documented by 'visual memory aids'.

The transnational workshops have proven to be a valuable tool for exchange of experience and for boosting the motivation of the participating policy officers who have an important task of promoting this innovative approach among their, sometimes sceptical, colleagues. All partner cities bear differences (e.g., in policy culture and size) and similarities (all dealing with sustainability challenges and applying the TM-approach), and have a lot to learn from each other.

The workshops lead to insights applicable to their own settings – for example, concerning the role of local government, the framing of the CO₂ reduction challenge, or the embedding of the project in the city administration.

Partners agreed that the most important preconditions for successful peer learning in the context of Transition Management relate to the willingness to share and critically reflect



Programme website: www.nweurope.eu

Project website: www.themusicproject.eu

Project lead partner:

City of Rotterdam, Netherlands, Ms Esther Sprangers, e.sprangers@rotterdam.nl

Project budget: EUR 5 621 429.00

ERDF co-financing: EUR 2 810 714.50

Project duration: 09.04.2009

– 30.06.2014



on own experiences, and the curiosity to listen to others. Extensive preparation contributed to a meaningful exchange of experiences; for example, interviewing the participants in advance enhanced the learning experience. Site visits, as well as celebration of intermediate results, made the progress tangible and motivated the group.

Learning has spilled beyond the project partners: the MUSIC project aims to inspire and inform cities across Europe about the benefits of implementing the TM-approach. As a follow-up, opportunities for organising intensive training sessions with individual cities or (inter)national city networks are explored.

Peer-to-peer approach in sustainable energy action plan development

Marika Roša, Ekodoma (Latvia) and Federica Fontana, Municipality of Vicenza (Italy)



Programme website: ec.europa.eu/energy/intelligent/

Project website: www.conurbant.eu

Project coordinator: Municipality of Vicenza, Italy, Ms Federica Fontana, conurbant@comune.vicenza.it

Project budget: EUR 1 279 634.00
(EU contribution: 75%)

Project duration:
10.05.2011 – 10.05.2014

The CONURBANT project (An inclusive peer-to-peer approach to involve EU CONURBations and wide areas in participating to the CovenANT of Mayors) aims at helping medium and large cities as well as smaller towns in their urban area to address sustainable energy planning issues through capacity building, using peer-to-peer support and training between less ('trainee') and more experienced ('tutor') municipalities.

The first step in the project was the organisation of three centralised training sessions for the trainee municipalities to increase their knowledge regarding the Covenant of Mayors, financing possibilities, technical issues like energy efficiency, and involvement of stakeholders through energy forums. Based on these centralised training sessions, local sessions for conurbation municipalities and also civil servants within the trainee municipalities were organised, in order to spread the knowledge to those, whose collaboration was crucial. In total, 448 local stakeholders were trained.

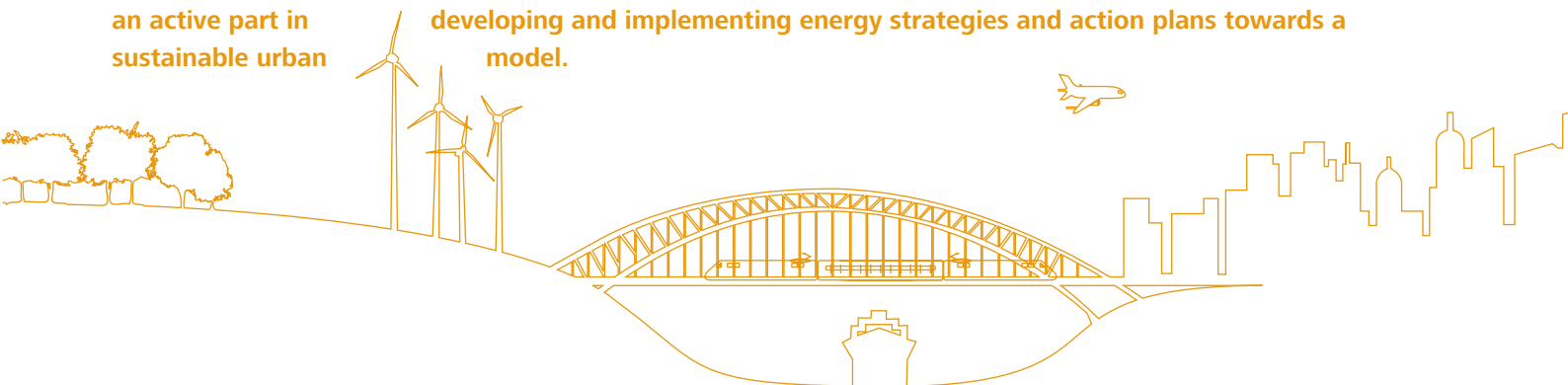
The second step included the creation of twinning partnerships. In the initial phase of the project, each tutor municipality selected four trainee municipalities. The trainee municipalities were then split in pairs. Twinning activities included visits of the tutor municipalities to their trainee municipalities, study visits and regular tutor-trainee meetings

To facilitate the twinning activities, a checklist of 10 sets of questions was developed, based on Covenant of Mayors guidelines and different Intelligent Energy Europe projects. The objective of the checklist is to allow municipalities to focus on the development of the Sustainable Energy Action Plan and the implementation of the measures to identify the main drivers and barriers, as well as on monitoring.

The first observations from the twinning partnership activities have revealed that there is a great potential for municipalities to learn from each other. However, it is essential to give clear instructions and guidance to participants prior to any peer learning activities, in order to best capitalise from this approach. Moreover, a collaborative working climate must be established from the beginning to allow trainee municipalities to identify their weak points and work on possibilities for improvement.

Integrating sustainable energy aspects into spatial planning

How we arrange our daily activities (e.g., dwelling, work, education, leisure, mobility, etc.) in space has fundamental implications on energy consumption, production and distribution. Spatial planning has a pivotal role to play in securing areas for the expansion of renewable energy production and in creating urban development which favours less energy-intensive lifestyles. Spatial planning also plays an active part in developing and implementing energy strategies and action plans towards a sustainable urban model.



Spatial dimensions of sustainable energy systems

Achieving the EU 20-20-20 objectives will have to rely on the contribution of an integrated policy approach to land use and transport planning to boost renewable energy production and curb energy consumption. The successful transition towards a sustainable energy system implies a more regionalised energy provision. The production of energy from renewable sources requires larger

areas of land, as compared to an energy supply based on the import of fossil energy carriers. Spatial planners have to mediate between competing land uses and secure areas for the expansion of renewable energy production.

Low density, sprawling development

and mono-functional land use are generally thought to increase energy demand for dwelling, infrastructure and mobility. In a study for Switzerland⁴, the contribution of settlement types on primary energy demand was estimated at 10 to 30%. Promoting a compact urban development with mixed land use is one of the key competences of spatial planners. Spatial

“Spatial planners need to have a better understanding of the implications that their decisions have.”

planning intervenes on the level of settlement structures and building types, all of which has implications on the demand for heating, cooling, and lighting of buildings. Land use patterns and settlement structures also impact on energy demand by increasing both the demand for tech-

nical infrastructure, such as water supply and transport infrastructure, and public services, such as mobile nursing services or garbage collection. Spatial planning can influence the demand for (private) motorized transport, by increasing spatial density, thus reducing journey distances and, making public transportation a viable option, and by supporting a mixed land use with good local supply structure of goods and service.

The role of spatial planning

Spatial planning is a key instrument for establishing long-term frameworks for social, territorial and economic development. Its primary role is to enhance the integration between sectors such as housing, transport, energy and industry, and to im-

⁴ Source: Ott, Walter, Arend, Michal, Philippen, Daniel, Gilgen, Kurt, et al. (2008). Energieaspekte städtischer Quartiere und ländlicher Siedlungen, Final report, Zurich, Bundesamt für Energie



prove urban and rural development, taking environmental concerns into consideration. Spatial planning is the responsibility of the public sector and is cross-sectorial by nature. Even though integrating a wide variety of sectors, including sustainable energy aspects, into a single strategy maximises the public good and economic efficiency, this integrated approach is mainly hindered by lack of political commitment, lack of capacity of spatial planners and other relevant professional bodies, and lack of dedicated structures fostering collaboration between the various governance levels and administration.

Even though there is no responsibility for

spatial planning at European level, it does not mean that this subject is left unattended. Several EU papers and strategies have been published in the past, arguing strongly for integrative spatial planning and co-operation between regions. The EU Cohesion Policy including its territorial cohesion objective clearly emphasises the need for co-operation and an integrated, place-based approach. Other European initiatives, such as the Covenant of Mayors⁵, promote the implementation of Sustainable Energy Action Plans to reach the 20-20-20 objectives⁶.

How to better integrate sustainable energy aspects into spatial planning?

The question on how to better integrate sustainable energy aspects into spatial planning was explored in a workshop session by a group of 21 representatives from Intelligent Energy Europe and European Territorial Co-operation projects, with the participation of the European Council of Spatial Planners. The discussions centred on opportunities and barriers in integrating energy and climate

public and that serves as the uniting component for all stakeholders. The vision will set out the guiding principles for the next 15 to 20 years for the overall development of the territory, and will ensure a stable framework for actions within the given territory. A sustainable spatial model, which includes not only energy aspects but also aspects like social cohesion and efficient use of resources, needs to be pursued. Good practice examples for an integrated sustainable urban development are evident

in places such as the Western Harbour in Malmö, Sweden. Here the energy planning team is integrated within

“Pioneer local authorities play a crucial role in achieving the EU 2020 energy goals. We need more local leadership!”

actions in spatial planning. Good practices in linking energy and spatial planning exist across Europe, and were shared by the participants:

► **The implementation of effective spatial planning** depends on the development of relevant laws, policies, guidance, procedures and incentives. Ensuring the necessary political support for energy strategies and plans is one of the key factors for success. Implementation of an integrated spatial plan also requires a long-term vision that inspires politicians, authorities and the general

the Planning Department of the municipality. During the planning of the new neighbourhood, spatial and energy planners from the City worked closely together to ensure an effective district heating system was established using aquifers, heat pumps and solar. The system was also connected to the existing city district heating to allow for import and exports. Renewable energy provides the area with 100% of its electricity, and the houses are built to high energy efficiency standards, while food waste is collected for biogas production. The environment department

⁵ http://www.covenantofmayors.eu/index_en.html

⁶ http://ec.europa.eu/energy/strategies/2010/2020_en.htm



was the driving force, and working groups were set up combining them with the planning department and the services department of the city. The energy planning was embedded within the planning of the new urban development in a holistic way. At city level, the Malmö Comprehensive Plan combines different layers of infrastructure on one map, which allows for the integrated siting of new energy installations in areas of new housing development⁷.

► **Involving stakeholders**, i.e., those involved in the decision-making process (local authorities and other tiers of government), as well as businesses, private investors, community representatives, non-governmental organisations and the general public, at an early stage of the process is crucial. They are often willing to engage in the discussions on spatial planning, since it directly involves and affects end-users. It is important to note that the influence of energy suppliers should not be underestimated. Engaging with the relevant actors in the planning process can lead to the emergence of innovative ideas and increase the overall acceptance of measures. Public participation can also lead to significant changes in energy consumption or mobility behaviour patterns. Political

leadership at the municipality level is also a key to driving public debate.

► An important factor for the success of spatial planning is the **capacity of the team**. Pursuing a multidisciplinary approach, enhancing inter-departmental coordination and providing for a clear distribution of responsibilities are critical success factors. The spatial planning team should be composed of mixed professionals in order to include a wide range of expertise, and spatial planners should assume the role of mediator.

► Although **knowledge of sustainable energy aspects** exists among spatial planners, it seems that they still experience problems in applying these concepts and techniques related to these in their daily work. Tailored capacity building for spatial planners need to be increased through life-long learning programmes, energy topics must become an integral part of university curricula, and peer learning with other cities in the framework of European programmes should be fostered. Spatial planners need to have a better understanding of the implications that their decisions have on the energy demand of the built

environment, of transport and of the opportunities offered by renewable energy. However, they do not necessarily have to be experts in new technologies.

The range of spatial planning is very vast, and sustainable energy systems, their generation as well as their utilisation, are intrinsically linked to spatial management. Spatial planners can thus greatly influence the use of energy when siting, zoning and mixing land uses. It is then of great added-value to integrate sustainable energy aspects into the single spatial strategy, enabling to build more sustainable and energy self-sufficient communities. In order to achieve this, sustainable energy aspects need to better find their way into the working practices of spatial planners, and a more participatory working model should be fostered between energy and planning professionals.

Clear legislation and funding policies as well as improved organisational infrastructure are critical, and the focus should go from physical land use regulations to an integrative spatial planning approach. If executed well, spatial planning strategies can help avoid duplication of efforts by actors and support a sustainable model of development in communities. Bottom-up initiatives on this aspect can be observed across Europe but more remains to be done.

⁷ <http://www.malmo.se/English/Sustainable-City-Development>

Leadership for energy action and planning

Diane Smith, Town and Country Planning Association (United Kingdom)



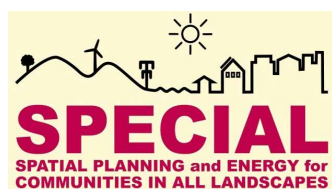
Programme website: ec.europa.eu/energy/intelligent/

Project website: leap-eu.org/

Project coordinator: Town and Country Planning Association (TCPA), United Kingdom, Isobel Bruun-Kiaer, Isobel.Bruun-Kiaer@tcpa.org.uk

Project budget: EUR 1 975 383 (EU contribution: 75%)

Project's duration: 18.05.2011 – 18.11.2013



Programme website: ec.europa.eu/energy/intelligent/

Project website: www.special-eu.org/

Project coordinator: Town and Country Planning Association (TCPA), United Kingdom, Ms Diane Smith, Diane.Smith@tcpa.org.uk

Project budget: EUR 2 302 219 (EU contribution: 75%)

Project duration: 08.03.2013 – 08.03.2016

Local leadership and spatial planning have a crucial role to play in creating urban environments that support less energy-intensive lifestyles and the move towards low carbon communities. Two Intelligent Energy Europe funded projects aim to create better integration between spatial planning and sustainable energy supply and delivery: LEAP - Leadership for Energy Action and Planning and SPECIAL – Spatial Planning and Energy for Communities in All Landscapes.

The LEAP project is a partnership of nine local authorities from seven EU countries with the aim of embedding Sustainable Energy Action Plans (SEAPs) into the corporate strategies of municipalities at local and regional level. LEAP aims to increase the ability of EU local authorities to pioneer and promote the use of sustainable energy measures, and bridges the gap between the EU's high level targets and local action on the ground, primarily through the development and adoption of SEAPs.

Many EU municipalities are challenged to deliver SEAPs because of the lack of integration between departments, with the result that the desired holistic approach to creating and sustaining low carbon solutions is not happening. LEAP project partners have worked closely together to identify, and then implement, techniques and actions to raise awareness of the SEAP process across all municipality departments, particularly spatial planning.

Through peer-to-peer working, mentoring and work-shadowing, the partners have gained direct experience of integrated ways of working, as well as visiting successfully planned low carbon communities. Three case studies from Zagreb, Hannover and Southampton on spatial planning and energy have been particularly valuable in identifying the role of planners and the way in which collaborative working creates sustainable results.



Fig. 6: Biomass plant site visit in the City of Hagen (photo: TCPA)

Building upon the results of LEAP, the project SPECIAL aims to build the capacity of Town Planning Associations to integrate sustainable energy solutions into spatial planning training, practice and delivery. Recognising that spatial planning and urban planners have a central part to play in developing energy strategies and actions plans, the SPECIAL project has been set up to help bring together climate change/energy action planning and spatial and urban planning.

Working with partners representing national or regional planning associations in eight different member states, SPECIAL will focus initially on studying and learning from existing good practice in the UK, Sweden and Germany. Partners will then develop country specific training portfolios for piloting through 'multiplier' or-

ganisations working with local authority planners at the local and regional level. In addition, by working with the European Council of Spatial Planners, the SPECIAL project will launch the first-ever "Spatial Planning and Energy Award" and also produce a pan-European training manual in several languages.



Fig. 7: Integrating sustainable energy supply and infrastructure through planning at the local level - The London Nine Elms Plan (photo: SPECIAL)

Future-proof historic city centres

Antonio Borghi, URBACT thematic expert in physical regeneration of urban areas (Italy)

Programme website: urbact.eu

Project website: <http://urbact.eu/en/projects/urban-renewal/links/homepage/>

Project lead partner: City of Bayonne, France, Ms Frédérique CALVANUS, f.calvanus@bayonne.fr

Project duration: 2009-2013



Cities are key players in the reduction of CO₂ emissions and the fight against climate change. Energy consumption in urban areas – mostly in transport and housing – is responsible for a large share of CO₂ emissions. The urban way of life is both part of the problem and part of the solution. In Europe, CO₂ emission per person is much lower in urban areas compared to non-urban areas⁸. The density of urban areas allows for more energy-efficient forms of housing, transport and service provision. Consequently, measures to address climate change may be more efficient and cost-effective in big and compact cities than in less densely built space⁹.

The URBACT LINKS Network partner cities claim that "*historic centres must evolve to exist*". They affirm that this is not only possible, but necessary, and in the long run it is always profitable to combine heritage conservation and improvements in energy performance of buildings, social cohesion and economic development. They propose that relevant policy makers rely on the active engagement of European historic cities to promote a sound sustainable urban development which is energy-efficient, environmentally sensitive and full of opportunities for local economies. The LINKS partners came to this conclusion, considering specific examples within their own

⁸ Source: International Energy Agency (2008). World Energy Outlook, Geneva

⁹ Source: European Commission (2011). Cities of tomorrow, Challenges, visions, ways forward

historic centres, re-discovering that the paradigm of sustainable urban development is the European historic compact city model. In fact, European cities can be space-saving, energy and resource efficient, thriving centres of economic development and social cohesion, thanks to the fruitful exchange among diverse cultural identities and social groups. Today, as the 'car dependant & single home on the greenfield' suburbia model is rapidly declining, we have to retrofit our existing compact cities and their infrastructure, re-shaping their relationship with the surrounding regions.

Among the manifold aspects of urban heritage preservation and re-development, energy efficiency is the

key driver, but this does not mean that it can be dealt with in isolation. On the contrary, only the awareness of the whole range of implications and interdependencies of the choice between different retrofitting options (shallow to deep), scales (from the urban area to the single unit) and steps (financing, designing and delivering) can guarantee the best result. Energy retrofitting of historic buildings requires conscious clients, professionals and contractors that have the requisite skills and understanding of how historic buildings operate. For example, historic buildings invariably have a breathable shell. Applying an air-tight type of insulation and relying only on mechanical ventilation could create excessive hu-

midity and dampness, damaging the fabric irreversibly. A sound balance between air tightness and unwanted heat loss through the envelope and controlled ventilation needs to be found. Research evidence¹⁰ shows that it might well be far more efficient to improve the efficiency of energy production and delivery instead of investing in wall insulation, which is the most costly and difficult retrofitting measure to be undertaken. A truly sustainable approach should take into account the embedded energy of each building material and technique, preferring eco-materials and local craftsmen to mass-produced industry products, but this often clashes with certification systems and market barriers.

¹⁰ Source: Dittmann, Robbi (2008). Fernwärmeausbau versus Dämmung auf Passivhausstandard, In: Euroheat & Power, Fernwärme International, 37, Nr.7/8, pp. 26-31

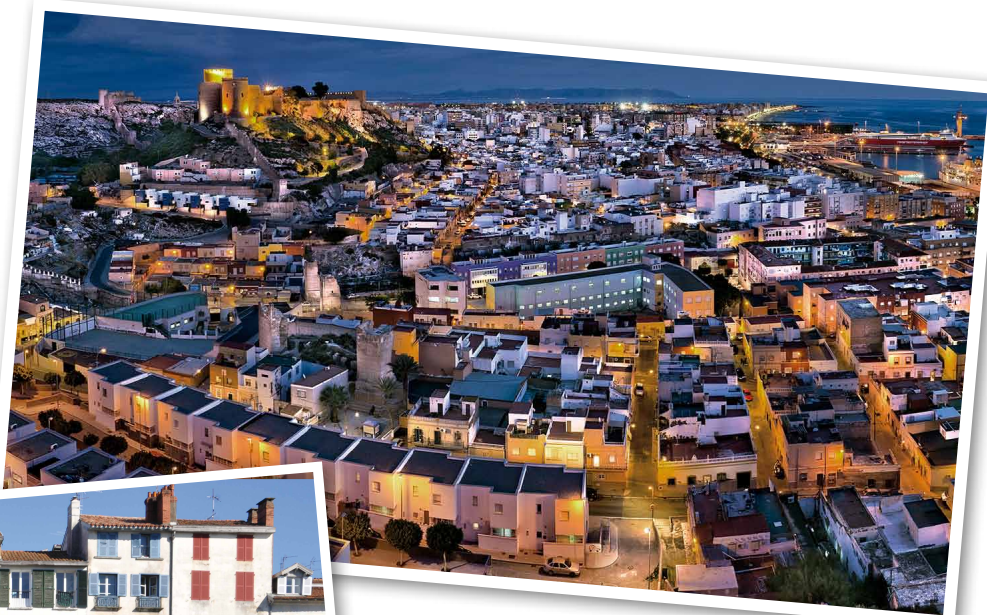


Fig. 8: Almería: historic centre as key asset for green growth (photo: City of Almería)



Fig. 9: Bayonne: retrofitting our historic centres for the next generation (photo: City of Bayonne)

Urban planners with renewable energy skills

Anna-Maija Ahonen, Aalto University Professional Development (Finland)

All human activity involves energy in various forms, and so do the emissions caused by energy consumption. Urban structures currently either support or hamper the improvement of energy efficiency and the expansion of the energy generation from renewable sources. The urban planner is the first to act, but often does not have the necessary skills to integrate energy efficiency and renewables into urban plans. Not only co-operation but real co-planning with energy planners is vital. In order to facilitate co-planning, training of urban planners, who need to understand both the quantitative impact and basic requirements of energy from renewable sources, is important.

Nevertheless, such training faces challenges due to the different backgrounds of energy and urban planners (e.g., civil engineers vs. architects with mathematical/physical science vs. aesthetic/behavioural sciences). Furthermore, there has not been much research carried out on integrating energy and urban planning issues. This research would usually provide the foundation for any university level training, but as no such tradition in research prevails, training had to be based on examples, best practice cases, etc.

The project UP-RES improved competence and built confidence on energy issues among urban planners through tailored training design, methodology and content. For the professionals it was crucial to come

together and share experiences, obtain information and co-create knowledge. For instance, in Barcelona the head of an urban planning department told how the employees have come up with new ideas and enthusiasm on integrating renewable energy skills in urban planning.

Based on the above, the trainings also speeded up the acceleration of transition into energy efficient cities. In Finland, UP-RES provided real impact on the urban planning in Finnish cities, as lessons learned from the UP-RES course were adapted to the urban plans, planning policies and practices in Jyväskylä, Oulu, Mikkeli, Kuopio and Sipoo.

There is an urgent need for closer and more frequent liaison between urban and energy planners. 46 short and five long courses were delivered in five partner countries, with about 1 000 participants. In the United Kingdom, the number of participants increased in the course of the 20 training events, indicating increasing awareness about energy and urban planning.

UP-RES partners were able to create sustainable training products. Similar training sessions will be continued in all partner countries. Other universities and planning schools have shown interest in starting their own training based on UP-RES. Thus, the need for training on energy-efficient urban planning remains and has become even stronger.



Urban Planners with Renewable Energy Skills

Programme website: ec.europa.eu/energy/intelligent/

Project website: aaltopro.fi/up-res

Project coordinator: Aalto University Professional Development, Finland, Ms Anna-Maija Ahonen, anna-maija.ahonen@aalto.fi

Project budget: EUR 985 000.00

(EU contribution 75 %)

Project duration: 01.9.2010 - 28.2.2013

However, some economic challenges need to be overcome as the European financial crisis continues.

The pilot training has been carried out, but the need for training is still there. New efforts are required to extend the training to other countries and planning schools. To support extending training, the UP-RES project provided training schemes and materials, translating the latter into 10 European languages in terms of introductory texts and 3 000 slides that are downloadable on the web.

The urban sustainability of compact cities

Pedro Marín Cots, Urban Environmental Observatory (Spain)



Programme website:

www.programmemed.eu

Project websites:

www.urbanempathy.eu

www.catmed.eu

Project lead partner: Malaga City

Council, Spain, Mr Pedro Marín

Cots, pmarin@malaga.eu

Project budget: EUR 1 225 000

ERDF co-financing: 75%

Project duration:

June 2013 - November 2014



Energy consumption is directly related to CO₂ emissions, and both issues in turn are related to the configuration of a city. These trends are some of the elements that define the Sustainable Urban Models Platform, which in 2011 emerged from the CAT-MED Project, giving it durability through a permanent structure that currently has 31 members.

The current predominant urban model coincides with the expansion of the automobile and oil industry, mainly in North America, where the idea of urban sprawl and diffuse cities was spread. Nowadays, an empirical relationship is evident: in those cities where energy consumption is higher, such as Houston, Phoenix and Los Angeles, the level of urban density is very low. Conversely, cities (mainly in Europe, e.g., Barcelona or Vienna) with high urban density levels have a much lower energy consumption. In a typical American city 97% of the population uses a private car every day, while in a typical Mediterranean city 35% of the inhabitants usually move on foot.

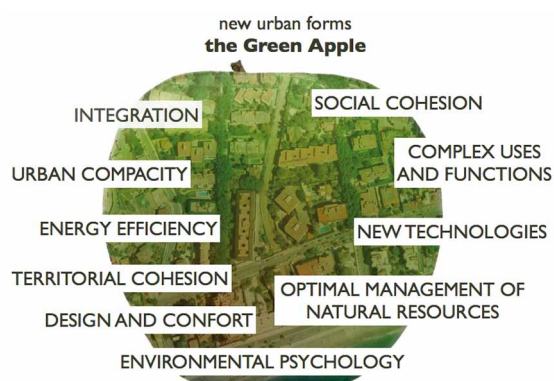
The main aim of CAT-MED is precisely to promote and encourage the development of sustainable urban models that stimulate social and territorial cohesion. The Platform's capitalization process, URBAN EMPATHY, guarantees a permanent enrichment through innovative input. Fortunately, we don't need to invent new urban models. The classic European city with its many facets has

maintained a high population density per hectare and a high building compactness, complexity of uses and functions, and a walking scale to access the main services needed on a daily basis such as shops and urban services, residents' facilities such as education and healthcare, leisure, or even the workplace.

In 2013, European sustainable priorities demand specific sustainable urban strategies. Moreover, apart from encouraging the European urban model, we now have specific needs, such as compacting the extended city that we have generated over the last 50 years to create low density, purely residential neighbourhoods. The best features of the classic European city compared to the sprawling city are not only its greater energy efficiency or lower level of CO₂ emissions, but also its ability to improve the residents' environmental awareness and their sense of well-being and comfort. The simple saving of time in traffic jams, for example, allows more time for social activity, stimulates social cohesion and is living proof of the benefits of urban complexity.

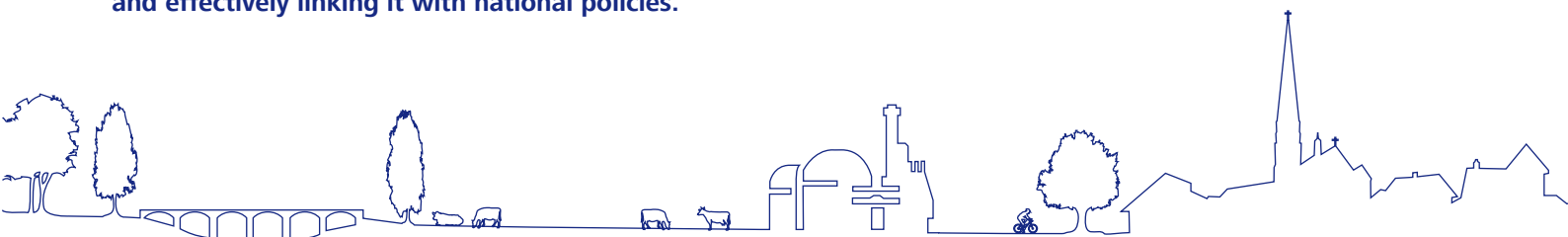
It is important that the European Union, through its institutions or networks like CAT-MED, encourages sustainable urban models, and that protocols can be set up for city planning in the same way that European directives have been developed in such areas as air or noise pollution levels, or wastewater treatment.

Fig. 10: Features of Green Apple, CAT-MED pilot project of the sustainable urban model neighborhoods (source: Urban Environmental Observatory)



Speeding up sustainable energy planning through multi-level governance

Planning and implementation of sustainable energy actions need better collaboration and coordination between local, regional and national governance levels, in order to ensure a coherent but also swift implementation of sustainable energy actions moving Europe towards its ambitious energy and climate policy goals. Regional authorities can play an important role in this process in scaling-up local action and effectively linking it with national policies.



From European policy to local action

In March 2007, the European Heads of State adopted ambitious energy and climate policy targets which resulted in an increasing number of policies and strategies being drafted at local, regional and national level as a response. Member States are committed to supporting the European energy targets by transposing various EU directives into national law, such as on the energy performance of buildings, eco-design and labelling of energy-using products, renewable energy and, most recently, on energy efficiency. Moreover, Member States have adopted national energy efficiency (NEEAP¹¹) and renewable action plans (NREAP¹²), putting forward catalogues of measures to deliver on the European policy objectives. At the same time, an increasing

number of local authorities are drawing up local energy plans to embark on a journey towards sustainable energy communities in response to the growing importance of EU and national sustainable energy policies and obligations. The local efforts become very visible through the key European initiative, which involves local and regional authorities in delivering sustainable energy targets: the Cov-

thorities have signed up as coordinators and are assisting their local authorities in developing and implementing local sustainable energy action plans. More and more regions are also establishing energy action plans at regional level.

With a host of plans being developed at all governance levels, it becomes clear that strong collaboration is needed to better link actions from local, regional and national plans, thus allowing a more coherent delivery and monitoring of sustainable energy actions.

“In our experience, cities do appreciate external support and exchange. Plus, collaborative processes are a good way to motivate stakeholders!”

enant of Mayors. This initiative has been growing significantly over the past five years, and to date around 5 000 local authorities have signed up to go beyond the European energy policy objectives and to submit a local Sustainable Energy Action Plan (SEAP).

In addition, over 100 regional au-

Regional sustainable energy strategies to support efforts at local level

Sustainable energy planning is increasingly being recognised by public authorities as having wider socio-economic benefits. The implementation of SEAPs can gener-

¹¹ See http://ec.europa.eu/energy/efficiency/end-use_en.htm for national energy efficiency action plans

¹² See http://ec.europa.eu/energy/renewables/action_plan_en.htm for national renewable energy action plans

ate significant investment and economic growth, creating green jobs and innovative industries. Moreover, money spent on fossil fuels in most cases leaves the region's economy, while investment into energy efficiency and local renewable energy supply retains money within the local economy, supports the development of local value chains and increases the resilience of a region's energy network by diversifying the region's energy supply. The EU energy bill could be reduced by EUR 200 billion annually in 2020, and more than two million jobs could be created by then if EU renewable energy and energy efficiency targets were achieved¹³.

Regional energy strategies have the potential to accelerate the transition to sustainable energy communities by facilitating local

processes, by bringing together important stakeholders and by bringing in specialist expertise and capacities. In this way, energy aspects can be addressed that are better dealt with at regional level.

ter address sustainable mobility issues. Providing attractive alternatives to private motorised transport can only be realised based on an integrated strategy involving communities across the region. The regional level can also help with economies of scale when it comes to looking for financing of energy projects. Regional authorities together with their local counterparts can bundle small investment projects in order to make them bankable and attractive for investors¹⁴. Moreover, greater efficiency in the procurement of goods and services to deliver energy projects can be achieved.

Effective regional SEAPs are complementary to local efforts and integrate already adopted local energy plans. A serious attempt at stakeholder participation is a prerequisite to a successful process.

governance structures.

One such good practice project is the Intelligent Energy Europe funded project ENNEREG, which set up collaborative structures between local and regional level in 12 regions across Europe. The benefits for both municipalities and regional authorities were manifold: reduced costs and better impact for joint sustainable energy projects, access to regional infrastructure and funding, common learning and sharing of goals between municipalities, and strong support and expertise from regional level (e.g., regional energy agency or governmental departments), in particular for small-sized municipalities that would not have the capacity to develop a SEAP on their own.

While the technical know-how necessary to reduce energy consumption and increase renewable energy

cal processes, by bringing together important stakeholders and by bringing in specialist expertise and capacities. In this way, energy aspects can be addressed that are better dealt with at regional level.

Having a more strategic perspective over a region can help to smartly establish a profitable renewable energy infrastructure. In particular, where small municipalities do not reach a sufficient level of energy demand to efficiently operate, e.g., a biomass plant, planning and building such a plant that is cooperatively owned by several municipalities can be a financially viable solution. In the same context, the regional level can bet-

Facilitating multi-level governance

Multi-level governance refers to the effective interaction between the different political levels for an improved coordination and coherence between the local, regional, national and European policy level. How to better link the different governance levels for a better co-ordination and exploitation of scale effects was the topic of a workshop session on regional energy strategy planning. 22 participants exchanged good practices in engaging local authorities in regional energy planning, and shared experiences on setting up multi-level

supply is well documented and ready for use, it is often the so-called 'non-technological' barriers that impede the roll-out of sustainable energy solutions. Examples of non-technological barriers are lack of knowledge, lack of capacities, inefficient regulatory framework, administrative burdens, etc. The European Territorial Co-operation project SEACS ("Sustainable Energy Across the Common Space") worked with regions across the Channel in France and the UK to set up partnerships and networks to actively facilitate the exchange of good ideas through a network of six so-called energy ambassadors. Since regional sustainable energy

¹³ See http://ec.europa.eu/energy/efficiency/eed/doc/2011_directive/20110622_energy_efficiency_directive_slides_presentation_en.pdf

¹⁴ See for example Intelligent Energy Europe MLEI project ENSAMB: <http://ensambprojekt.wordpress.com/english-summary/>

planning requires co-ordination with a multitude of public authorities and other stakeholders, regional energy agencies can play an important role as communicators and knowledge providers, mediating between the different levels of governance and other actors involved. In the Spanish Province of Alicante, the provincial energy agency assesses the technical and economic feasibility of projects proposed by municipalities that request funding from the Provincial Council. It also assists municipalities in implementing sustainable energy projects, mainly in the areas of public lighting and renewable energy. Currently, this agency is engaged in drafting a provincial energy saving plan, bringing together the Provincial Council, local authorities and major socio-economic actors from industry, business and professional

In the European Territorial Co-operation project „Energy Öresund“, stakeholders from the two neighbouring regions of Denmark and Sweden are working across the border to set common standards that support the transition to a joint renewable energy system. As an essential part of the project, municipalities and energy companies across the Öresund implement concrete renewable energy demonstration projects such as large-scale heat pumps, electricity storage facilities and joint wind power platforms to stimulate green co-operation between the two countries. European funding is used in this project to even go a step further from cross-border energy planning, jointly realising projects on the ground and influencing the strategy for political co-operation between the metropolitan areas of Copenhagen and Malmö.

rial Co-operation project to establish strategic partnerships that span across governance levels, in particular through the establishment of networking structures. This has led to a transfer of knowledge and know-how, an increased use of synergies and a better co-ordination of roles and resources. What also came across clearly in the discussions was that multi-level partnerships bear the potential of better matching strategic goals with local needs and of integrating other strategic issues (e.g., social inclusion) in energy plans. Regions are giving financial as well as technical support to local authorities, and in more than one occasion they have initiated local pilots.

bodies. As an independent and competent expert, the Alicante Energy Agency brings added value to the public authorities.

Discussions during the workshop showed that many local and regional actors use the framework of an Intelligent Energy Europe or European Territo-

Changing a regional energy system from fossil fuel to sustainable and renewable energy requires a common vision about the specific needs and potentials in the region, in terms of energy demand and supply for all sectors in life. Local as well as regional actors must work together to ensure that such a vision becomes a strong, consistent and integral part of decision-making and action within the region.

THE WHOLE PICTURE	ACTIVITIES	INSTRUMENTS
Global level - UNFCCC	Goal setting - defining the goal	Negotiation - COPs
EU level - renewable energy	Goal setting - binding goals (! or ?)	Directive - supporting structures
National level - National Renewable Energy Action Plans	Goal & Policies - National Renewable Energy Action Plan	National Policies - financial support, research and development, etc.
Regional level - strategic energy planning	Strategies - strategic plans for energy, climate, etc.	Regional Strategy - strategic planning, network, business development, etc.
Local level - sustainable energy action plan (SEAP)	Implementation - action plans, PPP and implementation	Realization - planning, local co-operation, partnership

Fig. 11: Local Energy Action Plan for renewable energy and the multilevel governance (source: Roskilde University Denmark)

Regions paving way for a sustainable energy Europe

Nils Dugaard, Energy Consulting Network ApS (Denmark)



Programme website:

ec.europa.eu/energy/intelligent/

Project website:

<http://www.regions202020.eu/>

Project coordinator: Energy Consulting Network ApS, Denmark, Mr Nils Dugaard, nda@ecnetwork.dk

Project budget: EUR 1 960 472.00
(EU contribution: 75%)

Project duration:

01.05.2010 – 30.04.2013

How can regions contribute to fulfilling the EU's sustainable energy policy goals? This was the overall objective set for the ENNEREG project on sustainable energy regions in Europe.

ENNEREG developed and implemented regional Sustainable Energy Action Plans (SEAPs) to steer the sustainable energy process in the following regions: Upper Palatinate, Germany; Cyclades, Greece; Triangle, Denmark; Basque, Spain; Madeira, Portugal; Silistra, Bulgaria; Kaunas, Lithuania; Blekinge, Sweden; Rhône Alpes, France; Wales, United Kingdom; Pomerania and Wielkopolska, Poland. A key element in this has been a network oriented approach for engaging the regions' key stakeholders; the process only succeeds and creates momentum for a long-term impact if a broad spectrum of stakeholders from both the public and private sector become engaged. While some of the partner regions had a more mature starting point and were able to progress further in the process, all regions took essential steps in creating a sustainable energy region. The successes, strengths and weaknesses in the course of the action have been evaluated for the benefit of other regions, so they can also make a start and progress along the path towards becoming sustainable energy regions.

The project team succeeded in triggering almost 300 Sustainable Energy Projects (SEPs) - double the original target. The evaluation shows that these SEPs correspond to cumulated investments of around EUR 250 000 million within the project period, and are estimated to reach nearly a billion Euro by 2020. The total energy savings are estimated to be around 200 000 toe (2 326 GWh), renewable energy production 1.6 million toe (18 608 GWh) and reductions of CO₂ emissions more than 2 million toe (23 260 GWh) - all figures until 2020.

An interesting aspect of the project has been how the regional partners have supported the SEPs in their regions in order to reach these achievements; e.g., through capacity building, awareness raising, direct support such as assistance with feasibility studies, or other types of intervention that have helped the SEPs to develop.

In addition, ENNEREG has fulfilled a successful twinning and replication programme. A core activity has been the twinning with regions outside the consortium for direct interaction on SEAP development and initiation of SEPs in the twin regions. On both sides, ENNEREG regions and their twins evaluated the twinning experience as useful, and $\frac{2}{3}$ of the partnerships are expected to continue co-operation after the ENNEREG project has ended.



Fig. 12: Dessalinated water unit on the Cyclades (photo: G. Makryonitis)

The work on regional SEAPs has been accompanied by the promotion of specific sustainable energy actions.

The Regions 202020 platform has been put in place as a facilitator of

interaction between European regions and communities on SEAP actions. The website contains useful information not only from the ENNEREG project but also parallel projects, and attracted great interest with more than 327 000 visits to the website during the project period. In addition, almost 700 regional and local stakeholders have joined the Regions 2020 Network.

Due to the wide variation in regional characteristics, there is no uniform approach to how to design a SEAP and SEP implementation process. Regions that are starting such a process must find a path suited to the regions' specific circumstances. ENNEREG's Inspiration Guide, building on the examples and learning of the partner regions, helps regions identify how they can take appropri-

ate steps in order to elaborate and implement SEAPs. It is enriched with extensive good practice examples and implementation stories from the achievements in the ENNEREG regions.

Fig. 13: Energy education in Wales
(photo: ENNEREG)



Energy Öresund – a more sustainable future through co-operation

Maja Baungaard Jensen & Neel Modin Ynddal, Energy Öresund (Denmark)
Karolina Huss, Interreg IVA Öresund-Kattegat-Skagerrak Programme (Denmark)

The cross-border co-operation project Energy Öresund unites Danish and Swedish municipalities, power suppliers and universities in efforts to increase the share of renewable energy in the Öresund Region through strategic energy planning. The project focuses on the crucial pillars in the transition of our energy systems: What does it take to enhance wind power production by setting up plants shared between two countries? How do we transform electricity into heat? Is seasonal waste storage cost-beneficial? What is the ideal regulative set-up for low-energy buildings? These are examples of questions the partners are focusing their work on.

Energy Öresund offers stakeholders across the energy planning cycle (owner, producer, developer) the opportunity to compare and share Danish and Swedish incentives and

challenges in enhancing renewable energy and green growth. This co-operation has made it possible for stakeholders to establish shared initiatives in several fields.

One example is the findings from the work with municipal regulation of low-energy buildings. A review of the strategies developed in the cities of Copenhagen and Malmö showed that Malmö benefits greatly from implementing a systemized dialogue with private developers at an early stage of city planning, in order to enhance the energy efficiency of new buildings. The "Builders' Dialogue" proved to have great effect on the duration and costs of construction. Developers shared costs for common installations (such as parking lots), and were inspired to reach for even higher standards, while the municipalities motivated many different

developers to contribute, in order to ensure variety in the new city area. As a consequence of these positive results, the City of Copenhagen has now initiated the process of adjusting the methods to Danish conditions, guided by supervisors from the City of Malmö.

Another example is "Green Co-operation Denmark-Sweden". A cross national visitors' service was established, offering delegations the opportunity not only to see a number of applied technologies, but also explore similarities and differences in how policies and development projects are planned and run. While the Danish partner (State of Green) already has a visitor service in place, the Swedish organization is yet to be established. As part of the project, the Swedish counterpart Sustainable Business Hub launched the visi-

tor service GreenTech Visits, and a common platform was developed. Delegations are offered first-hand experience of two different ways of solving the green challenges of the future. Green Co-operation Denmark-Sweden is a prime example of the top green solutions in the Öresund Region within climate adaptation, sustainable urban planning, waste treatment and biogas, as it creates an important link between foreign municipalities, companies, etc. and local Swedish and Danish counterparts.

municipalities approved by the highest level of administration.

Moreover, the project findings are anchored at a municipal political level by making use of existing or developing official strategies, such as the official strategic co-operation between the cities of Malmö and Copenhagen and municipal plans and guidelines. At regional political level, the project cooperates with the Öresund Committee, in which municipal and regional politicians inspire each other in planning for the future of the Öresund Region. The Committee supports raising the project findings to national level, as contact between the Swedish and Danish Energy Authorities is important in order to initiate changes in the energy measurement framework in both countries.

ENERGIÖRESUND

Programme website: www.interreg-oks.eu

Project website: www.energiøresund.org

Project lead partner: Energi Öresund, Denmark, Ms Maja Baungaard Jensen, maja.baungaard@luopen.lu.se

Project budget: EUR 1 410 924.00

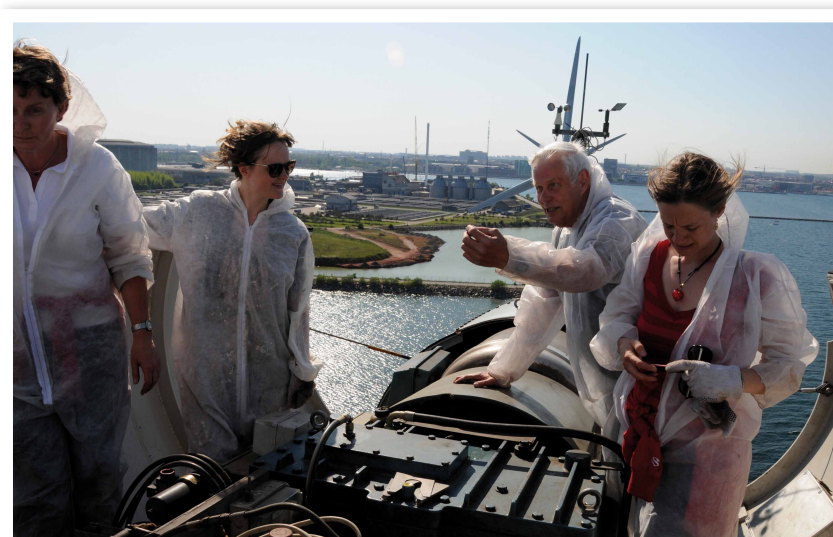
ERDF co-financing: EUR 782 882.00

Project duration:

January 2011- December 2013

One of the most important concerns for the project is to ensure full integration of the findings at local, regional and national level. As exemplified above, Energy Öresund supports long-term co-operation between

Fig. 14: Visit to wind turbine on European Cooperation Day (photo: Energi Öresund)



► Fig. 15: Scholars during the puppet show that took place in Denia during the EU Energy Week 2012. (photo: Alicante Energy Agency)

► Fig. 16 & 17: LED street light installed in the city of Benimassot within the Provincial Energy Savings Plan. (photo: Alicante Energy Agency)

Regional energy action planning in the Province of Alicante

Gemma Belén & Antonio Belmar, Alicante Energy Agency (Spain)

The example of the Province of Alicante illustrates the important role energy agencies can play in developing regional energy strategies. With its technical expertise and capacity, the energy agency is supporting the provincial authority in the planning, development and monitoring of the provincial energy saving plan. Moreover, it helps with the design of technical and administrative tools for energy management, and supports the Provincial Council in managing the Covenant of Mayors in the Province.

Alicante Energy Agency works closely with the provincial authority, acting as a facilitator-interlocutor with all municipalities in the delivery of the plan. This plan is a technical and financial tool that has a budget of EUR 4.5 million for 2012 - 2014, and is implemented through annual calls. The idea behind the plan is to assist municipalities fulfil their commitment to the Covenant of Mayors, help municipalities reduce their energy bills and improve the liquidity of their public accounts.

To be able to benefit from the grant, municipalities must be a signatory of the Covenant of Mayors, have de-

veloped a Sustainable Energy Action Plan and submit technical feasibility studies for proposed energy efficiency projects. The provincial authority awards 95% grant funding through a call to municipalities that are proposing energy efficiency and energy savings projects, and that have expressed their firm commitment by signing the Covenant of Mayors initiative.

The energy agency assists the provincial authority in the selection process by validating the technical and financial feasibility of the proposed measures. It also supports the local municipalities in carrying out the measures and monitoring energy consumption reductions after the interventions.

The first two calls enabled 62 municipalities to reduce their energy bill by EUR 500 000 per year - and CO₂ emissions by 700 tons/year in total. Investments focused on improving street lighting, and 17 municipalities replaced sodium and mercury vapour lamps with LED lights. LED's were also used in public schools in Biar, replacing fluorescent tubes.

Another project from this call focused on changing old heating, ventilation and air conditioning and

domestic hot water systems in public buildings in the city of Benifato to more efficient ones.

Alicante Energy Agency also participated in the development of the concept and design, as well as providing a member of the jury for a regional competition on exemplary energy efficiency works organised by the Province of Alicante within the Covenant of Mayors initiative. Onil, the winning city, was awarded EUR 20 000 to install photovoltaic streetlights with LED lamps in one of its busiest areas.



Agencia Provincial
de la Energía de Alicante

Programme website: ec.europa.eu/energy/intelligent/

Project website: www.alicantenergia.es

Agency director: Province of Alicante, Spain, Mr Jose Luis Nuín, info@alicantenergia.es

Project budget: EUR 1 016 266.77



Renewable energies as a motor for sustainable regional development

Jan Schmidt, atene KOM GmbH (Germany)

In recent years, the cost of fossil energy resources has increased heavily, and this trend is likely to continue in the medium and long term. Rising energy costs contribute to steadily increasing financial pressure on public utilities and public transportation, making it necessary to explore alternative energy sources, and absorb rising costs by critically questioning the status quo of energy consumption and identifying existing energy saving potential. By adding a value base to new value chains, these challenges can be turned into opportunities and become the motor for sustainable regional development.

The Public Energy Alternatives project (PEA) addressed these challenges in a transnational partnership consisting of public authorities, research institutions and mainstreaming partners, to share knowledge and expertise for the development and implementation of regional energy strategies.

At regional or local level, energy strategies were elaborated for each participating region of the PEA partnership and under the premise of developing a "realistic vision" for the regions. The potential of sustainable energy supply and consumption based on renewable resources was assessed based on the region's renewable energy infrastructure and its potential. Guiding questions in the development of the strategy were, for example, "What have we already done in terms of renewables, rational use of energy, CO₂ emissions saved?", "Do we have the potential

to produce more energy from renewable energy sources and if yes, from which resources and under which conditions?", "What can we do to encourage the sustainable and responsible use of energy by individuals, households, local companies and administrative bodies?"

Action plans for pursuing the implementation beyond the duration of the project were a vital part of the strategies, while project findings were presented at higher political levels and in a European context; e.g., round table meetings were held on NUTS-II level and PEA participated in the Baltic Sea Region Cluster Initiative "Energy Efficiency and Renewable Energy Sources".

The project's Lead Partner, the municipality of Wittenberge in Germany, elaborated the strategy in joint collaboration with the City Council, public utilities, housing companies, several administrative bodies, and the project's scientific partners. An open and engaging dialogue ensured the support of these actors. What may have appeared trivial at the outset became, in fact, a key success factor. Experience shows that it is not enough to communicate the advantages and importance of sustainable energy production and supply to stakeholders; it is crucial to listen to their problems, and ideas. Integrating the affected stakeholders in the process of energy planning and letting them know that their opinion is vital, ensures their long-term support. As a consequence of this proc-

ess, the municipality of Wittenberge created a position of local energy manager, located within the building authority of the city's administration, to implement the energy strategy.

On project level, the Baltic Energy Compendium was elaborated as a collection and conclusion of the energy strategies of the single project regions. This should serve as a blue print for other European regions, promoting a bottom-up approach to energy planning. The Baltic Energy Declaration, signed by all PEA project partners, commits the subscribing party to sustainable energy production and responsible use of energy, hence contributing to the achievement of the EU 2020 targets.



Public Energy Alternatives

Programme website: www.eu.baltic.net

Project website: www.peaproject.eu

Project lead partner:

Municipality of Wittenberge, Germany,
Mr Jan Schmidt, j.schmidt@atenekom.eu

Project budget: EUR 385 295.00

ERDF co-financing: EUR 288 971.00

Project duration:

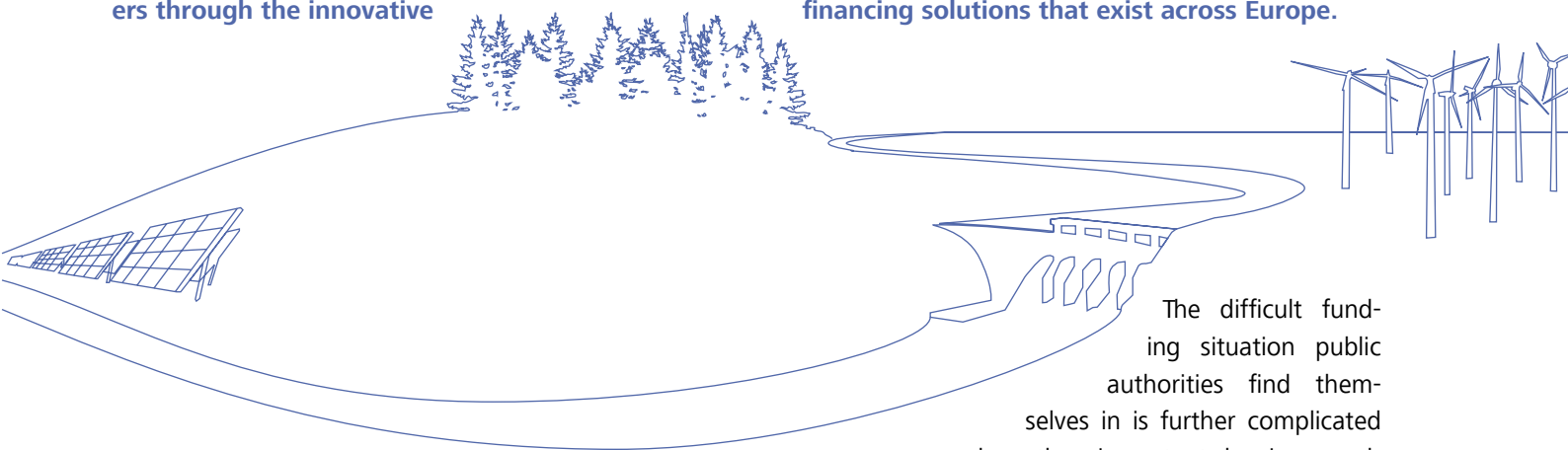
September 2009 - December 2012



Baltic Sea Region
Programme 2007-2013

Innovative financing mechanisms for investments into energy efficiency and renewable energy

Financing the implementation of sustainable energy measures remains one of the biggest challenges on the path towards sustainable energy communities. In spite of political commitment and sound action planning at local level, crucial projects are often not realised by municipalities due to a lack of financial resources and a lack of capacity to apply financing mechanisms. Nevertheless, interested municipalities and regions can learn from a growing number of good practice examples on overcoming funding barriers through the innovative financing solutions that exist across Europe.



The difficult funding situation public authorities find themselves in is further complicated by other important barriers, such as the lack of capacity to develop bankable projects and lack of viable financial models. Public authorities often lack internal resources and know-how for harvesting even profitable „low-hanging fruits“ with low pay-back times, such as refurbishment of public lighting. Barriers also include high up-front costs for the development of sustainable energy projects as well as the low profitability of many projects, even though these projects might have high socio-economic benefits. One such example is the deep energy retrofit of existing housing, which, by taking a whole-building approach, can result in much larger energy savings than a conventional energy retrofit would, but payback times are often too long to attract private investors.

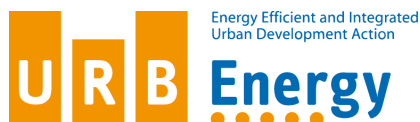
Need for financing solutions

Seven years into the challenge to make Europe's energy system less carbon-intensive, more efficient and independent of fossil fuels by 2020, it becomes clear that the costs of achieving these targets cannot be met by the public purse alone, and the use of market-based instruments needs to be increased. Significant amounts of investment are needed in the energy efficiency of existing infrastructures and an energy supply based on renewables, at a time when Europe is experiencing a severe economic crisis. An estimated EUR 80 billion¹⁵ needs to be spent annually in Europe to achieve the target of 20% reduction of primary energy use, as set in the 20-20-20 objectives. This amount is 33 times higher than the

annual allocation of EUR 2.43 billion for energy efficiency and renewable energy measures planned through the European Regional Development Fund (ERDF) between 2014 and 2020. The proposed ERDF ring-fenced share that should be used for the transition to a low-carbon economy is currently a minimum of 12% in less developed regions and a minimum of 20% in other regions, totalling at least EUR 17 billion for that period (increased from the EUR 9.4 billion that was available between 2007 and 2013). At the same time, the European Energy Efficiency Directive is calling Member States to establish energy efficiency obligation schemes to direct private investment towards energy efficiency projects¹⁶.

¹⁵ Source: European Commission, DG Energy

¹⁶ See Directive 2012/27/EU on energy efficiency: http://ec.europa.eu/energy/efficiency/eed/eed_en.htm



UrbEnergy

Programme website: <http://eu.baltic.net>

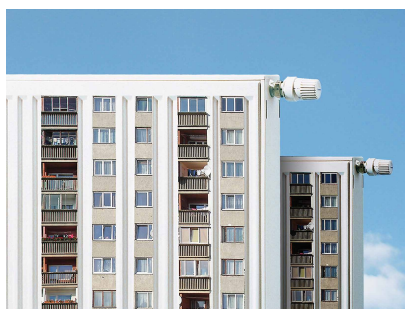
Project website: www.urbenergy.eu

Project lead partner: German Association for Housing, Urban and Spatial Development, Germany, Mr Christian Huttenloher, c.huttenloher@deutscher-verband.org

Project budget: EUR 3 714 260.00

ERDF co-financing: EUR 2 805 030.00

Project duration: October 2008 - January 2012



In some European countries the law does not allow public authorities to increase debts, which often prevents them from investing in sustainable energy projects, even though this would make economic sense in the mid-term.

across the EU. The funding supports project development costs and not the actual energy investments, thus assisting public authorities to buy in necessary legal, financial and technical expertise.

Good practice examples

Substantial experience has been gained over recent years as the use of financial instruments has become more wide-spread, and a considerable number of good practice examples has emerged – many of which originate from European Territorial Co-operation and Intelligent Energy Europe

JESSICA

JESSICA is a so-called revolving fund. EU countries can choose to invest some of their EU structural fund allocations in revolving funds to help recycle financial resources, thus accelerating investment in Europe's urban areas. By allocating some of the European Regional Development Fund money to Urban Development Funds, which invest them in public-private partnerships or other projects included in an integrated plan for sustainable urban development, this money takes the form of equity, loans and/or guarantees. In this way, the returns from investments are reinvested in new urban development projects and the public money is 'recycled'. For more information, visit: http://ec.europa.eu/regional_policy/thefunds/instruments/jessica_en.cfm#1

Other financial challenges, but also effective solutions, are today well documented; for example, by the "Finance Working Group of the Smart Cities and Communities Stakeholder Platform"¹⁷.

The European Commission calls for an increased use of ERDF funds to establish financing instruments such as Jessica, Jeremie and Jaspers, which help set up long-term financial vehicles that support sustainable energy projects. In addition, the European Commission provides help to public authorities in overcoming the barriers associated with project development through specific assistance facilities funded by the Intelligent Energy Europe Programme, such as the European Local Energy Assistance (ELENA) and Mobilising Local Energy Investment (MLEI)¹⁸. These facilities aim to support shining examples of organisational innovation to launch investments in sustainable energy projects that can be widely replicated

projects. During our seminar we dedicated a whole session to a hands-on information exchange between projects with practical experience in financial engineering and those eager to learn. Five projects reported on how they tackled the financing issue in their context, the obstacles they faced, and how they managed to overcome them. All these examples illustrate that public authorities have already found smart financing solutions for their sustainable energy projects. It is crucial that local and regional authorities across Europe transfer these good practices into their own realities.

Financing for integrated urban development

Sustainable energy investment projects often follow a sectorial approach, focusing - for example - on the refurbishment of buildings or the development of a local renewable

¹⁷ <http://www.eu-smartcities.eu/blog/finance-group-documents-open-consultation>

¹⁸ <http://ec.europa.eu/energy/intelligent/getting-funds/project-development-assistance>

energy supply. The European Territorial Co-operation project Urb.Energy advocates a holistic view on the built environment and social structure: it combines the approach of energy efficient refurbishment of residential buildings with integrated urban development concepts, the modernisation of the energy supply infrastructure, the revaluation of the residential environment, and the identification

equity financing. Good results have been experienced in Estonia (KredEx¹⁹) and England (London Energy Efficiency Fund²⁰). **Urb.Energy** points out the importance of leaving behind pure subsidy schemes and instead establishing revolving funds that are able to recycle money and are long-lasting. However, the project concludes that more technical support is needed to assist public authorities in setting-up such funds.



MLEI POSITIF

Programme website: ec.europa.eu/energy/intelligent/

Project website: www.energiespositif.fr

Project coordinator: SEM Energies POSIT'IF, France, Mr José LOPEZ, jose.lopez@energiespositif.fr

Project budget: EUR 2 061

018.00 (EU contribution: 75%)

Project duration:

05.04.2013 – 04.04.2016

of innovative financing instruments. Whilst there are funding mechanisms available for sustainable energy projects on one hand and urban development funds on the other, the financing opportunities for properly linking energy efficiency and renewable energy supply with the urban dimension in integrated urban development concepts are yet to be fully developed. The pooling of different funding sources remains a big challenge for public authorities, and impedes a more universal approach in developing low carbon neighbourhoods in urban settings.

An important tool for using EU funding for urban development which may include energy refurbishment is JESSICA. This financial instrument helps to set up revolving funds that can provide loans, guarantees or

Energy Performance Contracting

Energy Performance Contracting (EPC) has become one of the key financial instruments for facilitating investment into the energy efficiency of existing infrastructure, such as buildings and lighting systems. The promotion of energy saving services by Member States is one of the obligations deriving from the Energy Efficiency Directive. Since the European market around EPCs has been evolving in many directions, the directive suggests minimum conditions²¹ which should be stipulated in an EPC, in order to ensure a fair and transparent contract between client and service provider.

The Intelligent Energy Europe **MLEI project POSIT'IF** is pioneering the concept of EPC for deep renovation of condominiums in the Region of

The idea of Energy Performance Contracting

Energy Performance Contracting is a proven, cost-efficient instrument for tapping existing energy saving potentials in the building sector. An Energy Service Company (ESCO) implements a customized energy service package consisting of planning, building, operation & maintenance, optimisation, fuel purchase, (co-) financing and user behaviour.

The contract between ESCO and the building owner contains guarantees for cost savings, and takes over the financial and technical risks involved in implementation and operation for the entire project duration of typically 5 to 15 years. The EPC service or main parts of it is paid by realized energy cost savings.

More information on: www.european-energy-service-initiative.net

¹⁹ <http://www.kredex.ee/energy-efficiency/>

²⁰ <http://www.leef.co.uk/>

²¹ Directive 2012/27/EU on energy efficiency, Annex XIII



RE:FIT

Programme website: <http://www.eib.org/products/elena/>

Project website: <http://www.refit.org.uk/>

Project coordinator: Greater London Authority, United Kingdom, Ms Vicky Kingston, vicky.kingston@london.gov.uk

Project Management, United Kingdom

Project budget: EUR 2 884 680.00

Project duration: 2011 -2013



ESCO Limburg

Programme website: ec.europa.eu/energy/intelligent/

Project website: www.escolimburg2020.be

Project coordinator: Province of Limburg, Belgium, Mr Patrick Boucneau, patrick.boucneau@limburg.be

Project budget: EUR 1 174 380.00

Project duration: 01.04.2013 – 31.03.2016

Ile-de-France. For this purpose, the regional authority set up a public-private Energy Service Company Energies POSIT'IF in January 2013 with capital of EUR 5.3 million from regional and local authorities and the banking sector (Caisse des Dépôts et Consignations and Caisse d'Épargne Ile-de-France). The ESCO will develop an innovative EPC model based on a design-implement-operate contract for works and services, a guarantee on energy performance in the operation phase, and the refurbishment to the French low energy building standard (BBC - bâtiment basse consommation). The innovation also lies in the ESCO providing full technical coordination of the work, including a financing offer for deep renovation projects that will have long-term contracts running for 15 to 30 years. The project aims to mobilise energy investments of nearly EUR 40 million in the low-energy refurbishment of condominiums, social housing and public buildings by 2016.

London's building retrofit programme **RE:FIT** was launched by the Mayor of London (Greater London Authority) in 2010 and is funded through the ELENA facility of the European Investment Bank. RE:FIT is an Energy Performance Contracting framework for public sector organisations, providing guaranteed energy savings across a portfolio of buildings and over a set payback period. A team called the "Programme Delivery Unit" was tendered by the Greater London Authority and supports clients through all stages of their RE:FIT projects: identification of buildings, energy benchmarking, financing options, setting energy saving targets and payback times, selecting and supervising ESCOs carrying out the works and guaranteeing the sav-

ings, as well as the payback of the investment with the delivery risk transferred to the ESCO. The energy investments are financed through own capital, borrowing (e.g., London Energy Efficiency Fund provided through JESSICA), third party funding, service agreements or operating leases. Up until now, the programme has invested around EUR 17.5 million in energy efficiency measures in 136 public buildings, resulting in an annual energy cost saving of more than EUR 2.5 million. By 2015 it aims to cover 600 London public sector buildings and reap savings of EUR 14 million per year.

The Belgian Province of Limburg is also using an ESCO to achieve their ambitious target of becoming climate neutral by 2020. In a concerted effort, 44 Mayors throughout the province signed up to the Covenant of Mayors initiative, signalling their political commitment to support the climate and energy targets. The Province of Limburg is leading a consortium of local partners, including the provincial energy grid operator Infrax in the IEE MLEI project **ESCO-LIMBURG2020**. This project aims to accelerate the large-scale retrofitting to high energy standards (average savings of 40%) of the public building stock owned by the 44 municipalities and the province itself, by making use of an optimised ESCO-model. This solution aims to relieve the local authorities from complex investment processes. The ESCO offer consists of the management of the whole energy retrofitting process on behalf of the municipality, from the feasibility analysis to the tendering and implementation of the work. The investments are either paid upfront by the municipality or deferred. Grid operator Infrax will act as the

ESCO, and aims to bundle total energy investments of almost EUR 20 million over the course of the next three years.

Voluntary agreements

The ETC project **ELIH-MED** focuses on improving energy efficiency and promoting energy saving in low income housing in the Mediterranean region, and looks at innovative financial mechanisms backed by ERDF funds. The project is on-going, and the pilot energy refurbishment projects to be implemented by the partners will experiment with a number of innovative financing mechanisms. One of those is voluntary agreements with the private sector. Voluntary agreements in the framework of large-scale energy efficiency projects are contracts between a local, regional, national government or public sector organisation and an industry partner, with negotiated targets, clear commitments and time schedules for all participating parties. The agreements can either be based on mutual voluntary commitment or facilitated through legislation or taxation policies, setting specific obligations on sectors. For example, the Municipality of Genoa was able to leverage in some funding for the refurbishment of apartment buildings from construction companies by means of voluntary agreements.

Capacity building

There are many other ways of financing sustainable energy projects around Europe and there is a wealth of case studies - including ELENA and MLEI projects- using different instruments successfully. In order to support municipalities in finding innovative ways of financing their sustainable energy projects, the

ManagEnergy²² initiative organises 45 capacity building workshops as part of a European EPC campaign, which in the future will also include webinars organised by the Covenant of Mayors Office²³. A special corner at the ManagEnergy website is dedicated to project financing, explaining financing instruments and presenting some case studies. In addition, the corner will inform about future workshops and conferences around the theme of sustainable energy investments.

²² www.managenergy.net

²³ www.eumayors.eu

Gateway to Project Development Assistance facilities

Project Development Assistance (PDA) is targeted at public authorities and bodies, and covers up to 90% of the technical support cost needed to prepare, implement and finance the investment programme. This could include feasibility and market studies, programme structuring, energy audits and tendering procedure preparation. With solid business and technical plans in place, this will also help attract funding from private banks and other sources. MLEI and ELENA PDA facilities are funded through the Intelligent Energy Europe Programme and are separately managed by the Executive Agency for Competitiveness and Innovation, European Investment Bank, Council of Europe Bank, Kreditanstalt für Wiederaufbau and European Bank for Reconstruction and Development. More detailed information and case studies are available at: http://ec.europa.eu/energy/intelligent/getting-funds/project-development-assistance/index_en.htm



ELIH-MED

Programme website: www.programmemed.eu

Project website: www.elih-med.eu

Project lead partner: National Agency for New Technologies, Energy and Sustainable Economic development (ENEA), Italy, Ms Anna Moreno, anna.moreno@enea.it

Project budget: EUR 9 147 196.00

Project duration: April 2011 - March 2014

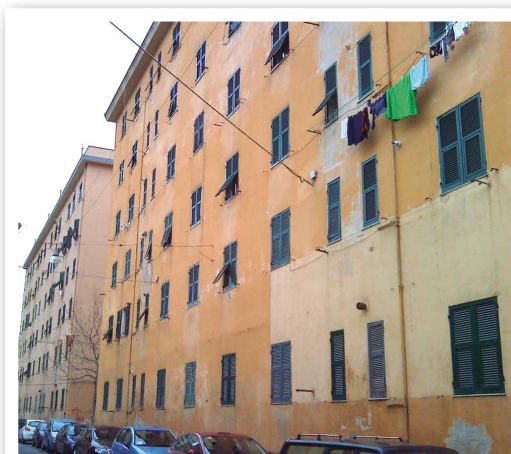


Fig. 18: Energy refurbishment of low-income housing in Genoa, Italy (photo: ELIH-Med)

Fig. 19: Energy refurbishment of student residences in Komotini, Greece (photo: ELIH-Med)



About Intelligent Energy Europe

The Intelligent Energy Europe (IEE) programme finances projects promoting the uptake of sustainable energy solutions. Launched in 2003 by the European Commission, the programme is part of a broad push to create an energy-intelligent future for us all. It supports EU energy efficiency and renewable energy policies, with a view to reaching EU 2020 targets. The programme is managed on behalf of the European Commission by the Executive Agency for Competitiveness and Innovation (EACI).

Find out more about our projects and visit us on <http://ec.europa.eu/energy/intelligent>.

Please also visit the ManagEnergy portal which is a technical support initiative of the Intelligent Energy - Europe (IEE) programme and which aims to assist actors from the public sector and their advisers working on energy efficiency and renewable energy at the local and regional level. www.managenergy.net/

The Intelligent Energy Europe programme is also funding the Covenant of Mayors initiative, which is the mainstream European movement involving local and regional authorities, voluntarily committing to increasing energy efficiency and use of renewable energy sources on their territories. www.eumayors.eu



About INTERACT

INTERACT is a programme co-financed by the European Regional Development Fund and the EU Member States, Norway and Switzerland. Since 2003 we have been delivering services to European Union programmes working with European Territorial Co-operation: we are the European programme created especially for assisting territorial co-operation programmes.

What does INTERACT do?

We provide practical support, training and advice to European Territorial Co-operation programmes on management techniques, financial issues, European regulations, communication, strategic orientation and policy development.

We also offer a unique forum for European Territorial Co-operation stakeholders by supporting institutional and thematic networks on topics of common interest.

Find out more about our activities and services on www.interact-eu.net

Our expertise includes:

- ▶ Programme and financial management
- ▶ Project management and support
- ▶ Capitalisation for co-operation programmes and projects
- ▶ Strategic programme planning
- ▶ Audit and control
- ▶ Monitoring and evaluation
- ▶ Communications



Other participating IEE projects

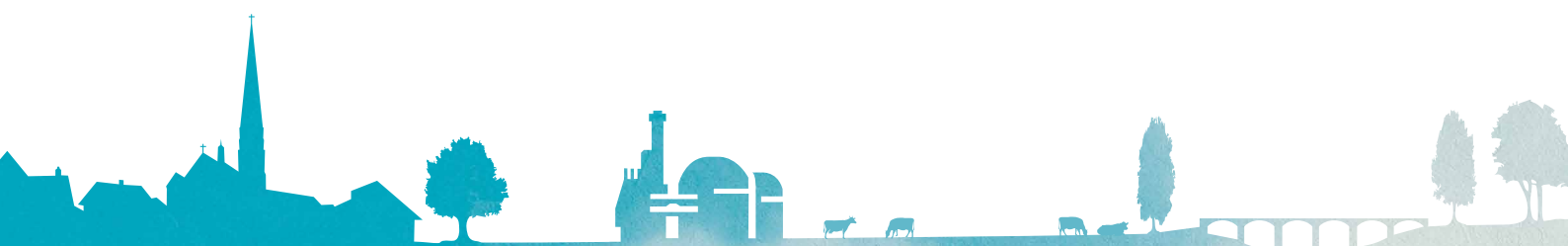
ACRONYM	WEBSITE	BRIEF DESCRIPTION
City_SEC	www.citysec.eu	Capacity building for municipal staff and decision-makers to be able to draft and implement Sustainable Energy Action Plans and become active members of the Covenant of Mayors initiative.
100% RES COMMUNITIES	www.100-res-communities.eu	Experimenting and spreading the model of joint Sustainable Energy Action Plans (SEAPS) development and implementation in rural territories and towns in 10 European countries.
COOPENERGY	www.coopenenergy.eu	Foster the development of collaboration models in sustainable energy planning between the regional and local public authorities to lead the transition towards low carbon communities and regions.
COVENANT CAPACITY	www.covenant-capacity.eu	Testing and roll-out of a comprehensive, well-structured European Local Government capacity building programme to support all the phases of implementing a SEAP, and to empower municipalities to engage in the Covenant of Mayors.
ENERGY FOR MAYORS	www.energyformayors.eu	Strengthening the role and capacity of Covenant Coordinators and Supporters as well as at assisting in the development and implementation of Sustainable Energy Action Plans with local authorities.
ERENET	http://erenet.epu.ntua.gr/	Development of an intelligent and integrated "Rural Web Energy Learning Network for Action" with the aim to assist the rural communities to develop their specific SEAPs and identify bankable projects.
GREEN TWINNING	http://green-twinning.eu/	Supporting local authorities in the preparation and implementation of their Sustainable Energy Action Plans through twinning partnerships and tutoring.
MESHARTILITY	www.meshartility.eu	Development of procedures to facilitate the exchange of data of energy consumption among energy utilities and public authorities responsible for the development of SEAP's.
NETCOM	www.networkingcovenantofmayors.eu	Creation of 12 permanent national/regional Covenant Networking Platforms with active involvement of LAs and national/regional key actors.
PATRES	www.patres.net	Enhancing effective policies fostering the introduction of renewable energies (RES) in building regulations and codes for new or refurbished buildings and improving RES-related public procurement.
Region of Trier Energy Agency	www.energieagentur-region-trier.de	EART has participated in the setup of the nearly passive-house settlements, vocational training course for school teachers and citizens, provides lists with energy consultants and funding possibilities for retrofitting of existing buildings.
SEAP PLUS	www.seap-plus.eu	Enhancing the Covenant of Mayors' results and impacts through increasing the number of Covenant Coordinators/Supporters and signatories with Sustainable Energy Action Plans.
SMILEGOV	www.sustainableislands.eu	Setting-up clusters of European islands that will facilitate the exchange between different levels of governance and between different clusters in order to support the development of sustainable energy action plans and the implementation of concrete actions.
SUSREG	www.susreg.eu	Improving the knowledge, attitudes and skills of professional planners through a 3-stage capacity building programme including on-the-job training of planners on real case examples.

Timis County Energy Agency	www.ame.ro	Timis County Energy Agency assisted the drafting of the Energy Master Plan for the Region, education, awareness raising and examines the potential for geothermal energy in the area.
Warminko- Mazurskie Energy Agency	www.wmae.pl	The Agency has supported municipalities of the Region covered in energy planning, promoted the use of solar panels in households, development of agricultural biogas and education at schools.
West Portugal Energy Agency	oestesustentavel@oestedigital.pt	Assists primarily the 14 covered municipalities of the Association with drafting of SEAPs and submitting, reduction of energy use in buildings, public procurement and transport.

Please visit our projects database for an overview and detailed information of IEE projects: <http://eaci-projects.eu/iee>

Other participating ETC projects

ACRONYM	PROGRAMME	WEBSITE	BRIEF DESCRIPTION
KliKER - Klimakommunen in der Euregio Rhein-Waal	Germany - Netherlands (DE-NL)		Development of climate change action plans.
SEACS - Sustainable Energy Across The Common Space	France (Manche) - England (FR-GB)	www.seacs.info	Establishing a network of six energy ambassadors that raise awareness, advise and promote opportunities for individual households, communities, schools and partner authorities to reduce their energy demand.
EnSURE - Energy Savings in Urban Quarters through Rehabilitation and New Ways of Energy Supply	Central Europe Programme	www.ensure-project.eu;	Development of strategies for an energetic rehabilitation of the building stock and energy efficiency in urban development.
ENERMED - Mediterranean Renewable Energies	Mediterranean	www.enermedproject.eu	Improving regional policies within the Mediterranean region in support of the integration of renewable energies.
ZECOS - Development and Introduction of the Communal Zero CO ₂ Emission Certification System as a Tool for Sustainable Communities and Regions	North West Europe Programme	www.zecos.eu	Developing a Zero CO ₂ Emission Awarding System acknowledging communities which set themselves CO ₂ emission reduction goals that are far beyond the regular compliance.
EnergyCity – Reducing energy consumption and CO ₂ emissions in cities across Central Europe	Central Europe Programme	www.energycity2013.eu;	ENERGYCITY aims at contributing to the implementation of renewable energy sources and efficiency practices in cities in Central Europe through data collection, the refinement of an online Spatial Decision Support System and implementation of concrete actions in cities.
SEAP APLS - Sustainable Energy Action Plans	Alpine Space Programme	www.seap-alps.eu	Promotion of sustainable energy planning at local level and sharing of a common methodology through capacity building.
Energy Cluster	Baltic Sea Region Programme	eu.baltic.net/Energy21783.html	Cluster of sustainable energy projects in the INTERREG Baltic Sea programme.
ACE-NWE - Academy of Champions for Energy	North West Europe Programme	www.aceforenergy.eu	Demonstrating and promoting the increased use of renewable energy among local authorities, businesses and citizen to foster sustainable energy communities.



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