

**Possibilities for additional EU and national
policy measures in support of urban-rural
balance and synergy in sustainable energy
investments**

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Ecologic Institute.
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Summary

When Denmark took up the EU Presidency in January 2012, it declared energy policy to be one of its priorities. The proposed Energy Efficiency Directive¹ will be among the main pieces of legislation that negotiations will focus on. To support this process a detailed understanding of the opportunities for increasing energy efficiency in all regions of the EU27 is necessary, including, in particular, rural areas, the urban-rural fringe and how urban and rural energy supply and consumption are intertwined.

To accomplish this, it is useful to review the following basic energy facts.

Energy policy is of the utmost importance for the current and future prosperity, competitiveness, security and environmental sustainability of the European Union. The energy sector² is both the lifeblood of the EU's over 12 trillion euro strong economy and the largest source of greenhouse gases in its territory.³ Total primary energy production was 812 million tons of oil equivalent (toe) in 2009, of which 31 percent came from oil and gas, 28 percent from nuclear energy, and 20 percent from solid fuels (e.g. coal). Renewable energy sources, in particular biomass (73 percent of total renewable energy production), had a share of 18 percent.

The EU27 is a net energy importer with more than half (53.9 percent) of the EU's gross inland energy consumption from imported sources in 2009. Russia continues to be the dominant supplier of crude oil, natural gas and, more recently, hard coal (33 percent share of EU27 imports), while Norway delivers a growing share of natural gas.

Energy consumption in the EU27 has begun to decouple from economic growth, with both gross inland consumption and final energy consumption remaining virtually flat since 2000 in contrast to real GDP growth of 17 percent by 2007 and 15 percent by 2010.⁴

¹ Proposal for a Directive on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC [COM(2011)370, 22/06/2011], available at http://ec.europa.eu/energy/efficiency/eed/eed_en.htm (accessed 22 April 2012).

² Category 1 of the UNFCCC classification of GHG emission sources, i.e. including fuel combustion (1.A) and fugitive emissions (1.B).

³ 3,659,751.12 Gigagrams of CO₂ equivalent in 2009 according to the UNFCCC GHG emissions inventory database, which equates to 79 percent of total GHG emissions.

⁴ The EU27 experienced a decline of 4.3 percent in 2009 due to the economic and financial crises.

Rural areas tend to have less efficient and more climate-unfriendly energy infrastructures than urban areas and can, therefore, play a significant role in reducing greenhouse gas emissions. The transition from heating oil and coal to renewable or low-carbon energy sources in rural areas could reduce carbon emissions from households and services in five EU countries by up to the equivalent of emissions from 3500 small towns (35 megatonnes CO₂).⁵

Improving energy efficiency is part of the ambitious EU climate and energy policy with its three 20-20-20 targets.⁶

The Europe 2020 Strategy reaffirms these targets through its goal of boosting sustainable growth and the two connected flagship initiatives: (a) resource-efficient Europe, and (b) an industrial policy for the globalisation era.

In the context of these targets, the Committee of the Regions (CoR), in its Opinion on Climate Change Mainstreaming and the Future EU Budget, calls for increased support for urban rural interaction and development to increase energy efficiency, environmentally-friendly transport, protection of rural environmental services and recreational values.

A 2010 survey on sustainable energy policies conducted by the CoR revealed, furthermore, that successful policies are usually multi-sector, multi-action initiatives, which are heavily dependent on EU and national sources for funding and on local and regional authorities (LRAs) for administrative, logistical and organisational support.

The present report focuses specifically on sustainable energy policies for rural areas and how they interact with urban centres. Using an inventory of EU sustainable energy projects and selected case studies, the study analyses the main types of existing local and regional initiatives promoting rural and urban-rural cooperation in sustainable energy investments. The study finds that:

- there is still a scarcity of publicised rural and rural-urban initiatives reflecting sustainable energy approaches. While projects may be implemented across the EU, few entail an explicit dissemination component such as a project website, information material, or another public outreach mechanism that allows their inclusion in the inventory forming the baseline for this study. The study therefore included all

⁵ See <http://www.rural-energy.eu/report/> (accessed 29 March 2012).

⁶ By 2020 the EU27 aims to reduce GHG emissions by 20 percent, increase the share of renewable energy sources to 20 percent and reduce primary energy use by 20 percent, mainly by increasing energy efficiency: http://ec.europa.eu/clima/policies/package/index_en.htm (accessed 22 April 2012).

initiatives involving rural communities regardless of whether they entailed a specific urban-rural component;

- the initiatives identified confirm the CoR's previous findings that actions are usually scoped to combine gains in energy efficiency and diversification with rural development, knowledge and skills training, economic competitiveness, and job creation;
- the lack of a sufficient knowledge and skills base is often seen as a challenge to and a reason for energy initiatives in rural areas. Several of the surveyed initiatives were specifically aimed at filling this gap by means of knowledge transfer and the creation of local energy agencies as information and resource centres for sustainable energy-related projects and investments;
- securing sufficient and stable funding is a major challenge for rural sustainable energy initiatives. LRAs generally lack the funds, especially in the wake of the economic and financial crises, and depend heavily on national and EU budgets to support local resources;
- while urban areas often have greater access to more diversified private and local investment capital, potential investors in rural areas do , and therefore depend more heavily on publicly-backed financing;
- stakeholder involvement is a critical component for the success of the initiative. Such involvement helps to ensure that, *inter alia*, the initiative's projected benefits are realistic, that the investments made are supported by the public, that awareness of the multiple benefits of sustainable energy policies is increased, and that opportunities for synergies are harnessed;
- horizontal and cross-border exchange is still relatively rare – only a minority of initiatives reviewed included this element;

Overall, the transition to a sustainable energy future for the EU27 is linked closely to the EU's and Member States' future budget allocations. Three funding sources are particularly relevant in this context:

- EU cohesion policy via the Structural Funds (SF) and Cohesion Fund (CF);
- the common agricultural policy (CAP) and its funding mechanisms; and
- EU climate change policy.

The current budget 2007-2013 Multiannual Financial Framework (MFF) includes €348 billion allocated for cohesion for growth and employment (convergence of the least-developed EU countries and regions, EU strategy for sustainable development outside the least prosperous regions, inter-regional cooperation). A total of €9 billion is allocated for Competitiveness for Growth and Employment (research and innovation, education and training, trans-European networks, social policy, economic integration and accompanying policies).⁷

The proposed MFF 2014-2020 includes a proposal by the European Commission to significantly simplify and reduce the administrative burden on the beneficiaries of EU funding and speed up the delivery of the EU's financial support to its citizens in the light of Europe 2020 while ensuring the highest degree of financial soundness, accountability and transparency.⁸

Part of the simplification would be bundling of currently separate programmes into coherent packages, thereby reducing the total number of programmes by 22.

The different instruments will also be brought under a single framework. Particularly relevant in this context is the proposal by the Commission to establish the Connecting Europe Facility (CEF), a unique instrument for EU priority infrastructure investments that applies a single set of rules to the funding of projects across transport, energy and telecommunication networks. In addition, cohesion policy and funding (EAFRD, ERDF, ESF, Fisheries Fund) will have one set of rules instead of five separate rules.

A second important change from the MFF 2007-2013 will be the mainstreaming of priorities, including resource efficiency, climate change, environment, energy security and energy efficiency, and SMEs into different programmes. This explicitly acknowledges the already widely recognised fact that investments can and should pursue different complementary objectives at the same time.

Further measures that would help bring more investments in sustainable energy to rural areas and to promote cooperation between rural and urban communities include a reduction in the administrative burden placed on the beneficiaries, simplified application forms, removal of disincentives for investments, clearer guidelines on monitoring and impact evaluation of the proposed initiatives, giving beneficiaries greater flexibility to form partnerships and sub-contracts where needed, and moving towards e-governance.

⁷ http://ec.europa.eu/budget/figures/fin_fw0713/fw0713_en.cfm (accessed 19 April 2012).

⁸ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0042:FIN:EN:PDF> (accessed 21 April 2012).

Overall, the proposed MFF 2014-2020 includes €91 for Smart and Inclusive Growth (including €76 for economic, social and territorial cohesion). Sustainable Growth: Natural Resources is allocated €83 billion. While the MFF 2007-2013 and 2014-2020 budget lines are not directly comparable, it is clear that the new MFF acknowledges the interlinkages of actions related to sustainable energy. The Connecting Europe Facility, for example, will finance the missing links in energy, transport and information technology and the new research and development programme Horizon 2020 will be linked to key sectoral policy objectives, including energy.

Funding will be tied to key priorities, including energy efficiency and renewable energy. The Commission proposes to allocate €40 billion for the 2014-2020 period to the Connecting Europe Facility and €10 billion to related transport investments through the Cohesion Fund. This amount comprises €1 billion for the energy sector, €1.6 billion for transport (including €10 billion in the Cohesion Fund) and €1 billion for ICT.

CAP funding will be aligned more strongly with Europe 2020 objectives, weaving in the three guiding themes of *smart, sustainable and inclusive growth*. The second pillar of the CAP, covering rural development, will continue to contribute to meeting specific national and/or regional needs.

Sustainable energy projects should be able to access CAP funds as part of the CAP's goal of increasing the competitiveness of agriculture and forestry (e.g. by increasing production of biomass-based energy) and improving the quality of life (e.g. by upgrading infrastructure and transportation systems as well as access to energy) and management of economic activity (e.g. by diversifying the income sources of rural citizens through clean energy industries). The CAP's financial instruments are also among the largest in the EU budget and can therefore meet the considerable funding need for integrated, multi-sectoral rural initiatives.

CAP funds complement national, regional and local actions, thereby explicitly tying LRAs into EU-level policies. At national level, Member States requesting funds through the CAP are required to submit National Strategy Plans covering the period 2007-2013 prior to presenting their rural development plans. The goal is to embed accountability and soundness of planning in all stages of the projects. It furthermore allows the EU to review Member State plans, identify cross-border linkages and thereby increase the effectiveness and efficiency of EU-funding.

Climate change policy is also a key component of the EU's Multiannual Financial Framework. The next period, 2014-2020, which is being negotiated in the European Council and Parliament during 2012-2013, is projected to devote at least 20 percent (or approximately €200 billion for 2014-2020) directly to climate action or indirectly through other policies that also address climate action. To achieve this aim, climate mitigation and adaptation actions will be mainstreamed into all the major EU programmes, in particular cohesion policy, energy and transport and research and innovation and the CAP will be greened. The EU Commission also assigned €3.6 billion to a new LIFE fund for environment and climate projects in the 2014-2020 period, which includes energy-related projects insofar as it entails measurable environmental protection aspects.

The EU12 – the new Member States of the European Union – face additional hurdles to developing and implementing sustainable energy policies. Public funding remains a dominant challenge, although ten of the twelve new Member States are eligible for EU financial support through the Cohesion Fund.

Infrastructure such as buildings, transport systems and energy production, storage and transmission capacity in rural areas of the EU12 tends to be older than in the EU15 since modernisation has centred on urban areas. This means that, on the one hand, investments in rural EU12 regions will need to be more comprehensive and address both energy efficiency considerations and general expansion and modernisation of infrastructure while also offering greater opportunities for investments since energy efficiency gains are likely to be higher on average than in the EU15 Member States.

Sustainable energy policy in the EU12 will also need to be explicitly multi-sectoral due to the generally higher economic development needs of EU12 rural areas compared to the EU15. Population loss, lack of skilled jobs and a knowledgeable workforce, and general economic decline all offer opportunities for an integrated rural development policy that includes sustainable energy as a key part. Thus, energy policy in the EU12 should be an integral part of economic and social development policy at EU and national level with funding originating in part from cohesion, agricultural and climate change policy.

1. Introduction

At the beginning of 2012 Denmark took up the Presidency of the European Union, with energy and climate policy among the declared top priorities. The proposed Energy Efficiency Directive (COM(2011) 370 final), which would codify the 2007 target of 20 percent increase in efficiency by 2020, will be part of ongoing energy-related negotiations. In addition, EU energy policy also aims to increase the share of renewables to 20 percent by 2020 and to reduce GHG emissions by 20 percent.

To reach these targets all sectors and regions of the EU Member States must be considered, including the rural communities and the urban-rural fringe of larger agglomerations. To date, energy efficiency gains have, however, focused primarily on specific industrial sectors (e.g., energy efficient industries such as manufacturing, cement production, energy production and transportation) and the urban areas where private households and industry are responsible for 69 percent of net primary energy consumption. This figure is expected to rise to 75 percent by 2030 according to OECD and IEA projections.⁹

This is in contrast to rural areas, which make up 90 percent of the EU27 and are home to 56 percent of the population. They also generate 43 percent of economic value added and employ 55 percent of the workforce in the EU27.¹⁰

A recent study by the Ecofys Consultancy on behalf of SHV Energy within the framework of the Future of Rural Energy in Europe (FREE) initiative¹¹ reviewed rural energy policy in five countries (Germany, France, Italy, Poland, UK) and showed that rural communities often rely to a greater extent on fossil fuels such as oil and coal, lag behind in energy efficiency, and are less likely to have access to clean energy, including from renewable energy sources such as wind and solar energy, despite having potential for the diversification of energy sources and shifting to cleaner and more efficient sources. Some of the reasons are lack of economies of scale and older industrial and building infrastructure.

The Committee of the Regions (CoR) has the task of involving regional and local authorities in the European decision-making process at the earliest stage through mandatory consultation by the European Commission, the European Parliament and the Council of Ministers on key policy areas of regional concern

⁹ OECD/IEA World Energy Outlook 2008, available at http://www.iea.org/weo/docs/weo2008/WEO_2008_Chapter_8.pdf (accessed April 3, 2012).

¹⁰ The Future of Rural Energy in Europe (FREE) initiative: http://www.rural-energy.eu/en_GB/rural-energy (accessed 2 April 2012).

¹¹ See <http://www.rural-energy.eu/report/> (accessed 29 March 2012).

and by issuing opinions on the work of the European Commission on issues affecting local and regional authorities.

In this context, the CoR issued an Opinion on Climate Change Mainstreaming and the Future EU Budget in June 2011 that called for greater support for urban-rural interaction and development in, *inter alia*, energy efficiency by means of an integrated approach. This call will be supported by specific proposals – developed using case studies – for helping local and regional authorities to plan and implement sustainable energy investments that take into account the structural differences between urban and rural communities. Use of both innovative and proven strategies will be important to harness the potential of clean, renewable energy in and for urban communities. At the same time, the proposals will reflect the current and anticipated legislative proposals of the European Commission regarding rural development, the EU budget, energy efficiency and renewable energy.

The present report provides a survey and analysis of local and regional impact of current energy policies at EU national, regional and local levels, along with recommendations for further development of such policies.

The report is structured as follows. Chapter 2 provides an exemplary inventory of local and regional initiatives. Chapter 3 reviews the main developments in current and anticipated future EU policy and budgetary provisions for sustainable investment in rural areas. Chapter 4 involves selected case studies with a focus on the obstacles encountered in the implementation of these policies as well as recommendations for resolving and avoiding these obstacles in the future. Chapter 5 analyses key differences between EU15 and EU12 countries. Finally, Chapter 6 concludes with an overall assessment of the local and regional impact of current policies at EU, national, regional and local levels, with corresponding recommendations for further policy development at EU and national levels.

2. Inventory of local and regional initiatives

Sustainable energy investment initiatives should give due consideration to urban-rural differences. In the light of the ambitious EU energy and climate policy goals, effective and efficient designation and use of limited funds are particularly important.

To gauge the current status of sustainable energy policies within rural and regional development, an inventory of projects, programmes and policies was compiled with the objective of identifying and describing the types and locations of projects and measures that have already been put in place.

The inventory uses available electronic records and also builds on the 2010 survey conducted by the Committee of the Regions with the support of the Covenant of Mayors on “Sustainable energy policies by EU regions and cities: good practices and challenges”¹². The CoR survey did not specifically focus on urban rural differences with respect to the successful development and implementation of sustainable energy initiatives. Indeed, the majority of the 204 responses received covered examples in urban areas (cities and municipalities), while only a smaller number involved rural areas or regions that included significant rural features. Nonetheless, the findings of the survey, which are shown below, are relevant to this study because they identify how LRAs instigate and participate in helping achieve the EU’s energy goals.

The survey found, in particular, that sustainable energy policies in the regions and cities tend to:

- be multi-pronged and multi-sectoral in that they address not only energy policy but also competitiveness, social equity and access considerations, etc. and aim to simultaneously increase energy security, jobs and economic growth;
- involve substantial investments in infrastructure, equipment and buildings;
- increasingly include elements such as communication, awareness building and public and stakeholder participation;

¹² Committee of the Regions. Sustainable energy policies by EU regions and cities: good practices and challenges. October 2010. ISBN 978-92-895-0523-9.

- are embedded in regulatory measures and involve multi-level governance elements with local and regional authorities (LRAs) delivering the most comprehensive actions;
- use funding from EU and national sources while being limited overall by a deteriorating funding situation due to the economic crisis;
- identify political leadership, multi-level governance and budgetary/technical support as the key challenges for achieving EU and national energy policy goals such as the 20-20-20 targets.

The present inventory is based on research using electronic media (Internet websites and online reports) in the English language. Although the trend towards disseminating information electronically and via the Internet ongoing, it cannot be assumed that the inventory is complete. Many smaller initiatives are likely not to have project websites or may be not be publicised in English. The inventory uses information available up to 30 March 2012.

The inventory covers a representative sample of local and regional cooperation in sustainable energy investment within the European Union (EU27), with a particular focus on:

- energy efficiency as a central element of the cooperation;
- cooperation between urban and rural actors;
- sourcing of renewable energy supplies as a means towards a sustainable energy transition.

The time period covered by the research focuses on projects and initiatives that have taken place since 2000. Earlier initiatives that may or may not be active to date are included if they were evaluated to be highly successful and provide useful information for identifying best practices and recommendations within current EU policy developments.

Each initiative or project is summarised in a fact sheet, which is included in Appendix 1 to this report.

Here, all the initiatives are evaluated to derive more general conclusions in terms of how common urban-rural collaborations are, what organisational and financial forms they tend to take, who the stakeholders are that are involved and what the general criteria for success were.

2.1 Reasons for rural and urban-rural energy policy

There are a variety of reasons for including a rural component in national and sub-national energy policy, but a few stand out because they are present in nearly all cases:

- acceptance of the need for a transition from a fossil fuel based economy to one based on carbon-neutral, renewable energies. These two characteristics of an energy transition are generally intended when the term sustainable energy policy is used;
- the acceptance of the need for an energy transition is itself motivated by the recognition of
 - man-made climate change,
 - energy security,
 - local energy independence, including the perceived need for a local energy agency, and
 - potential for positive stimulation of job and economic growth resulting from investments in alternative and renewable energy sources;
- rural revitalization and survival of rural communities is a prominent force in rural energy policy, including demands for educational materials for the general public and for businesses and investors in terms of access to capital and energy project management;
- resource use considerations, including energy, and especially the differences in resource utilisation between urban and rural areas, have led to a better understanding and appreciation of the contributions rural areas make to economic activity. For example, while rural areas tend to use fewer natural resources compared to cities and provide the latter with vital products and services, they are also often perceived as less developed, less innovative and less efficient in resource use;
- regulatory and legal mandates issued at local, national and supra-national level (EU level) that trickle down to local areas and have to be implemented in practice by local authorities. Although energy policy is still a sovereign issue governed by EU Member States' legislation, the EU

has over time acquired substantial competencies in this area and EU-wide energy policy is also affected by legislation and regulation of closely related areas such as climate change, environmental protection, regional policy, etc.

In conclusion, while the actual mix of reasons for rural authorities and communities to invest in sustainable energy may differ depending on their context, there is widespread interest in such investments. Sustainable energy policy is also characterised by a need for a multi-dimensional approach (i.e., not focusing solely on GHG emission reductions or job creation) that involves all stakeholders (i.e., local government, businesses, NGOs, and citizens) but often also benefits from aligning the goals with those of local cities and is seen as having the potential to yield multiple benefits.

2.2 Types of sustainable energy policies

The projects and initiatives identified here vary greatly in ambition, geographical scope, type of energy source promoted, groups and stakeholders involved, and anticipated outcomes and benefits. It emerges, nonetheless, that the projects surveyed have identified untapped opportunities for building local renewable energy supplies, in some cases building on a strong existing base (e.g. in Upper Austria), but in most cases because the local energy mix is heavily dominated by fossil fuels or imported from other domestic areas.

The surveyed projects included primarily wind, solar, and biomass as RES. Some initiatives, such as Energie21 in Upper Austria, involve an integrated energy plan encompassing all renewable sources that can be found or meaningfully installed in the region.

The projects primarily involved the building of new RES infrastructure and plants, but in some cases energy efficiency of buildings and existing energy producers and users were also included.

2.3 Approaches taken

Most of the surveyed projects involve different types of partners ranging from local government to development agencies, energy businesses, technology companies and consultancies. This reflects the previously mentioned general impression that sustainable energy policy in rural areas is seen as multi-pronged and requires cooperation between all stakeholders. In several cases it was mentioned that the main obstacles to energy projects were (i) lack of knowledge among local stakeholders, (ii) limited access to capital and a skilled workforce,

and (iii) restrictions in the economies of scale that can be harnessed to make projects profitable. Energy agencies were involved or created in several instances because it was seen to be needed and useful to have a dedicated body to promote sustainable energy in the rural areas and build the necessary know-how and convening power to align the different stakeholders.

One proposed research project addresses specifically the need for educational material and pilot clusters/projects from which valuable lessons can be learned and then transferred to other contexts and scenarios. The project (as well as others) recognised the need for:

- adaptation of educational material and design tools to the local conditions;
- organisation of specific events promoting the use of RES in buildings;
- assessment of the energy characteristics of the building stock of each region involved;
- training of professionals in techniques and high quality materials or systems;
- training of energy auditors in accordance with the EC directive; and
- establishment of a partner network for design and advice support units.

2.4 Urban-rural cooperation

It was found that urban-rural cooperation did not play an explicit role in the majority of cases reviewed. Projects and energy policy that are developed within a region often include several cities, but their interaction with, dependency on and opportunities for knowledge transfer from urban to rural contexts was hardly discussed. This may be a characteristic unique to the selected sample of projects and initiatives or point to a larger deficiency in rural sustainable energy policy. The FREE initiative, which is dedicated to promoting sustainable energy policy in rural areas, has recognised the need to integrate urban areas into rural energy planning and the role that the urban-rural confluence plays in the flow of energy and resources between urban and rural areas. At the same time FREE was perceived as viewing rural areas as regions that have long been neglected in Europe in favour of urban development (including the resulting flow of financial resources) – a situation that FREE argues needs to be rectified. In this context urban-rural cooperation is presented as one means to accomplishing this, rather

than as a unique possibility in its own right for connecting rural and urban energy issues.

3. Latest developments and trends in EU sustainable energy policy and funding schemes

More than 56 percent of the EU population live in areas classified as rural according to a standard definition. Moreover, 91 percent of the EU is considered rural under this definition. Rural areas provide many raw materials, areas for recreation and, increasingly importantly, sequestration for greenhouse gases. Therefore, rural issues and rural social and economic development are critical policy areas for the EU and tackling them successfully is an overall EU priority.

At the same time, average per capita incomes are 20-30 percent lower than in urban areas, and in Central and Eastern Europe even 50 percent lower. The knowledge and educational skills base in rural areas tends to lag behind that in urban areas and modern sectors such as technology and services are less developed.

These two broad sets of issues faced by rural communities are the scope of two major EU policies: EU energy policy and EU rural development policy.

EU energy policy is concerned with two main objectives: increasing the security of energy supply and reducing greenhouse gas emissions. Bioenergy from forestry and agriculture is an important contributor to achieving these objectives, contributing more than two thirds of total renewable energy in the EU today. The shares of wind and solar energy are also rising and they, too, have a place in rural areas. Biomass is primarily sourced from forests (around 50%) but the share of agriculture share is growing fast. Moreover, biomass is available readily in most parts of the EU, albeit with different levels of energy content and production efficiency. There are several major pieces of EU energy policy legislation that affect rural areas and their interaction with cities, which are discussed in more detail below.

The second EU policy area is **rural development policy**. The Lisbon Strategy for jobs and growth and now the Europe 2020 Strategy include rural areas as much as urban areas when it comes to sustainable development, economic growth and job creation, incubating innovation and fostering competitiveness. The essential rules governing rural development policy for the period 2007-2013 are set out in Council Regulation (EC) No. 1698/2005. The regulation focuses on three thematic lines of action:

- improving the competitiveness of the agricultural sector;

- improving the environment and countryside;
- improving the quality of life in rural areas and encouraging diversification of the rural economy.

While sustainable energy is not directly mentioned, the first and third thematic lines of action include energy policy and investments as means to improve competitiveness, quality of life and diversification of the economic base.

The following two sections discuss both energy policy and rural development policy from a viewpoint of major, current policy and legislation.

3.1 Sustainable energy policy in the EU

3.1.1 Energy 2020 Strategy

The EU Commission's Communication "Energy 2020: A strategy for competitive, sustainable and secure energy"¹³ calls for action now to set the transition to a sustainable and secure energy future for the European Union in motion. The challenges that need to be addressed are energy efficiency, infrastructure, choice and security for consumers, energy technology and the external dimension of the internal energy market.¹⁴

The Energy 2020 Strategy recognises that over the next ten years, energy investments in the order of €1 trillion are needed to build new and diversify existing energy infrastructure and make the necessary deep structural changes in energy supply. This pathway requires the consideration and integration of rural communities and the urban-rural confluence.

The Strategy, therefore, refers to rural areas as part of its Action 2: The Commission will be launching four new large-scale European projects, the fourth of which is:

¹³ COM(2010) 639 final.

¹⁴ http://ec.europa.eu/energy/energy2020/index_en.htm (accessed April 17, 2012).

Providing cities, urban and rural areas with ways of making greater energy savings. The ‘Smart Cities’ innovation partnership to be launched in early 2011 will bring together the best from the areas of renewable energies, energy efficiency, smart electricity grids, clean urban transport such as electro mobility, smart heating and cooling grids, combined with highly innovative intelligence and ICT tools. EU regional policy can play an important role in unlocking local potential. Rural areas also have significant potential in this respect and could make use of the EARDF that provides the financial means to support such innovation projects. Source: Energy 2020 Strategy, page 17.

At the same time, the Strategy laments the insufficient quality of National Energy Efficiency Action Plans, developed by Member States since 2008, which leave much potential, including in rural areas, untapped. Although the EU is by and large on track for meeting its 20 percent renewable energy use target, it is still a long way from achieving the objective set for energy efficiency, and moreover for a sustainable, secure energy supply.

In addition, Priority 1 – Achieving an energy-efficient Europe – indirectly includes rural and urban-rural areas in Action 1:

Action 1: Tapping into the largest energy-saving potential — buildings and transport

The energy-efficiency renovation rate should be accelerated by investment incentives, wider use of energy service companies, innovative financial instruments with high leverage factors and financial engineering at European, national and local levels. In this context, division of investment incentives between owners and tenants and energy labelling of buildings (certificates used in the real estate market and public support policies) will be addressed in forthcoming proposals by the Commission.

Furthermore, the Energy Strategy 2020 sets five ambitious priorities:

1. achieving an energy efficient Europe;
2. building a truly pan-European integrated energy market;
3. empowering consumers and achieving the highest level of safety and security;
4. extending Europe's leadership in energy technology and innovation;
5. Strengthening the external dimension of the EU energy market.

Priorities 1, 2, and 3 have indirect links to energy policy for rural areas. Actions in this area would include measures to improve energy efficiency in rural and urban-rural areas (where the existing infrastructure often lags behind that in urban conurbations in terms of energy efficiency), connecting rural areas more strongly with urban centres and across regions to increase energy choices for consumers, make use of energy generation and storage proposals in rural areas, and harness local storage capacities for smart grid and distribution systems.

In this context the Strategy recognises the special attention that should be given to the sectors with the highest potential for making energy efficiency gains, namely the existing building stock and transport sector. Rural areas should offer opportunities for efficiency gains because the building stock in rural areas tends to be older and less efficient than in urban areas and transport is more car-dependent than in larger cities with higher population density.

3.1.2 Energy Roadmap 2050

On 15 December 2011, the European Commission adopted the Communication "Energy Roadmap 2050", in which the EU outlines its commitment to reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050 in the context of necessary reductions by developed countries as a group. In the Energy Roadmap 2050 the EU Commission explains the dual challenges of transitioning to a low-carbon energy economy while simultaneously ensuring security of supply and price stability and competitiveness. With its deadline of 2050, the Energy Roadmap 2050 is the basis for developing a long-term European energy framework that involves all stakeholders.

Even if all of the objectives of the Energy 2020 Strategy were achieved within the specified timeframe, it would only be enough to reach half of the European Union's 2050 decarbonisation.

The Energy Roadmap 2050 is based on several scenarios of how the decarbonisation goal could be achieved if various government policies, investment incentives, and other forms of financial, tax and regulatory provisions were put in place at different points in time. The scenarios in the Energy Roadmap 2050, therefore, serve to explore several routes towards decarbonisation of the energy system. However, *all* imply major changes in, for example, carbon prices, technology and networks.

The Roadmap does not replace national, regional and local efforts to modernise energy supply, but seeks to develop a long-term European technology-neutral

framework in which these policies will be more effective. It argues that a European approach to the energy challenge will increase security and solidarity and bring lower costs than parallel national schemes by providing a wider and flexible market for new products and services.

The following scenarios are contemplated and analysed in the Roadmap:

Current trend scenarios

- Reference scenario. The Reference scenario includes current trends and long-term projections for economic development (gross domestic product (GDP) growth 1.7% pa). The scenario includes policies adopted by March 2010, including the 2020 targets for RES share and GHG reductions as well as the Emissions Trading Scheme (ETS) Directive. For the analysis, several sensitivities with lower and higher GDP growth rates and lower and higher energy import prices were analysed;
- Current policy initiatives (CPI). This scenario updates measures adopted, e.g. after the Fukushima events following the natural disasters in Japan, and proposed in the Energy 2020 strategy; the scenario also includes proposed actions concerning the "Energy Efficiency Plan" and the new "Energy Taxation Directive".

Decarbonisation scenarios:

- High energy efficiency. Political commitment to very high energy savings; it includes, e.g., more stringent minimum requirements for appliances and new buildings; high renovation rates of existing buildings; establishment of energy savings obligations on energy utilities. This leads to a decrease in energy demand of 41% by 2050 as compared to the peaks in 2005-2006;
- Diversified supply technologies. No technology is preferred; all energy sources can compete on a market basis with no specific support measures. Decarbonisation is driven by carbon pricing assuming public acceptance of both nuclear and Carbon Capture & Storage (CCS);
- High renewable energy sources (RES). Strong support measures for RES leading to a very high share of RES in gross final energy consumption (75% in 2050) and a share of RES in electricity consumption reaching 97%;

- Delayed CCS. Similar to Diversified supply technologies scenario but assuming that CCS is delayed, leading to higher shares for nuclear energy with decarbonisation driven by carbon prices rather than technology push;
- Low nuclear. Similar to Diversified supply technologies scenario but assuming that no new nuclear infrastructure (besides reactors currently under construction) is being built, resulting in a higher penetration of CCS (around 32% in power generation).

The Energy Roadmap 2050 does not explicitly refer to rural energy in any form. Indirectly and implicitly, however, the Energy Roadmap 2050 includes several references to how rural communities and the urban-rural fringe can and must contribute to the decarbonisation of the EU's energy supply:

- Increase in energy efficiency: all scenarios discussed in the Roadmap envisage a substantial increase in energy efficiency. To achieve this, rural communities cannot be excluded and urban centres must develop more effective ways to source their resource and energy needs from the surrounding urban-rural confluence;
- Increase in the share of electricity in the energy mix: the projected increase in electricity demands (including from RES) cannot be met by installations in urban areas alone. This means that electricity production, including from renewables such as wind, solar, and biomass sources will increasingly become part of the rural landscape and ideally be located near major electricity consumers, i.e., urban and industrial centres, but is also expected to shift the rural energy mix towards more efficient, low-carbon sources;
- Share of renewable energy rises sharply: the effect of this scenario (especially the high renewables scenario) also means greater integration and connection of rural and urban areas with respect to power generation and transmission;
- Deployment of new technologies such as Carbon Capture and Storage (CCS): if commercialised, CCS is expected to contribute significantly in most scenarios, with a particularly strong role of up to 32% in power generation in the case of constrained nuclear production and shares between 19 to 24% in other scenarios with the exception of the High RES scenario;
- Decentralisation: decentralisation of the power system and heat generation is expected to be the direct result of increased development of RES, smart

grid, and distributed storage capacity. At the same time, remaining centralised large-scale systems such as e.g. nuclear and gas power plants and decentralised systems will increasingly have to work together. Both trends will require greater collaboration between urban and rural areas and integrate rural areas more strongly into sustainable energy policy;

- **Competitiveness:** the desired energy transition cannot take place in a vacuum. As the European Economic Area becomes ever more integrated into global flows of resources, capital and labour, decarbonising its energy mix cannot succeed if it puts key economic sectors at competitive disadvantage. As a result, rural areas will need to develop solutions to their energy needs that take into account what their strategic advantages are. It will not be sensible to emulate urban solutions, but rather the optimal energy mix should be identified within the constraint of a limited carbon budget;
- **Investments:** access to capital and financing are crucial to developing sustainable energy systems in rural areas. Innovative business models coupled with incentives to change behaviour, such as taxes, grants or on-site advice by experts, including the monetary incentives provided by energy prices, will be needed.
- **Interconnectivity:** the Energy Roadmap 2050 states that “for the successful further integration after 2020, the EU needs to fully eliminate energy islands in the EU by 2015.”¹⁵ The implementation of existing policies in the internal energy market and new policies, such as the Energy Infrastructure Regulation, can help enable the EU to meet this challenge. The European 10-year planning of infrastructure needs by the ENTSOs and ACER already provides a longer term vision for the investors and is leading to stronger regional cooperation. In the framework of the North Seas Countries' Offshore Grid Initiative, ENTSO-E is already conducting grid studies for North Western Europe with a 2030 horizon. This should feed into ENTSO-E's work for a modular development plan of a pan-European electricity highways system by 2050.

3.2 Rural development policy

A major policy instrument for rural development is the common agricultural policy (CAP). The 2003 and 2004 CAP reforms focused on rural development

¹⁵ Energy Roadmap 2050. COM(2011) 885/2. Page 15.

by introducing a financial instrument (see Funding in 3.3) and a single programme: the European Agricultural Fund for Rural Development (EAFRD). The fund's goal is to contribute to the three objectives of increasing competitiveness, enhancing the quality of the environment and countryside, and raising quality of life and economic activity. Administration of the EAFRD entails a strong element of multi-level governance because it complements national, regional and local actions while ensuring that they are linked to EU-wide support measures.

In addition, EU rural development, as the second CAP pillar, aims to tap into local, indigenous potential to generate new jobs and income sources and – importantly – to stabilise rural populations, which are losing many young people in search of better jobs and more security in urban areas.

The four principles of the new EU approach to rural development policy are:

- subsidiarity and partnership through decentralisation;
- multi-functionality that reduces the emphasis on agricultural production and includes environmental and heritage preservation, thereby creating alternative sources of income;
- multi-sectorality that focuses on diversification of the economic base to promote sectors such as tourism and hospitality, environmental services, energy, and services;
- efficiency, along with flexibility that does not assume a one-size-fits-all solution but creates and implements tailored strategies according to local, regional and national needs and circumstances.

3.3 Funding

3.3.1 Funding under EU cohesion policy

EU cohesion (or regional) policy is financed by three main funds:

- European Regional Development Fund (ERDF);
- European Social Fund (ESF);
- Cohesion Fund (CF).

The ERDF is an important fund for sustainable energy initiatives because it aims to correct regional imbalances in economic and social cohesion. The ERDF

finances: (i) companies (especially SMEs) seeking to create sustainable jobs, (ii) infrastructure projects, including research and innovation in IT and TC, environment, energy and transport, (iii) local development funds in order to support regional and local development and to foster cooperation between towns and regions, and (iv) technical assistance measures.

While rural areas in general are the recipients of ERDF funding, particularly remote and peripheral areas benefit disproportionately.

These rules make the ERDF a particularly suitable financial instrument for sustainable energy policies.

The ESF was set up to improve employment and job opportunities in the EU, especially in disadvantaged areas. This type of funding would, therefore, be particularly useful for rural sustainable energy initiatives in helping to build the skilled and knowledgeable workforce needed in the clean energy sector.

The CF is geared toward providing economic development assistance to Member States with *per capita* Gross National Incomes (GNI) of less than 90 percent of the EU27 average. It serves to reduce their economic and social shortfall, as well as to stabilise their economy. It is now subject to the same programming, management and monitoring rules as the ESF and the ERDF.

For the 2007-2013 period the CF supports the ten EU12 countries – Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia – and Cyprus, Greece, Malta, and Portugal. Spain is eligible insofar as its *per capita* GNI is less than the EU15.

3.3.2 Funding under EU energy policy

The Energy 2020 strategy singles out the European Agricultural Rural Development Fund (EARDF) as a funding mechanism for helping to harness rural potential in renewable energies, energy efficiency, smart electricity grids, cleaner transport such as electro mobility, smart heating and cooling grids, combined with highly innovative intelligence and ICT tools.

Current EU legislation and policy include several funding mechanisms for investments in sustainable energy systems, including in the rural and rural-urban context.

The Energy Roadmap 2050, for example, states that the EU has an important role in advancing the development of new technologies that will speed up the energy transition. In this role, the EU can make significant contributions by

directly promoting and funding scientific projects and research and demonstration programmes that build on the Strategic Energy Technology Plan (SET Plan) and the next Multiannual Financial Framework. A third funding stream exists through Horizon 2020, the successor to the Framework Programme on Research and Development. All three funding streams can be used to invest in partnerships with industry and Member States to demonstrate and deploy new, highly efficient energy technologies on a large scale. A reinforced SET Plan could also encourage the formation of European research clusters in times of tight budgets in Member States. The benefits of cooperation are significant, going beyond financial support and building on better coordination in Europe.

Since the investments needed for the decarbonisation of the EU energy system are huge, the public sector has an important role as a facilitator for investment in the energy revolution. It needs to reduce uncertainty in investment decisions and lower the cost of capital for low-carbon investment. The EU can start improving the conditions for financing in the energy sector and has already done so in part through carbon pricing, which functions as an incentive for deployment of efficient, low-carbon technologies across Europe. The ETS is the central pillar of European climate policy.

In addition to private investment capital, a move towards greater and more tailored financing via public financial institutions, such as the European Investment Bank (EIB) or the European Bank for Reconstruction and Development (EBRD), can help to make the transition work.

At the same time, temporary support in the form of subsidies may remain necessary beyond 2020 to ensure that the market encourages the development and deployment of new technologies.

3.3.3 Funding under EU agricultural and rural development policy

Rural development policy is funded in part from the EU budget and in part by individual Member States, including their central and regional budgets depending on the circumstances.

Among the EU funds the CAP is a major source of support, with €7 billion allocated to rural development. Regional EU funds contribute another €71 billion during the 2007-2013 period. The investments are showing effects. Prior to the economic and financial crises, rural areas saw faster economic growth and higher declines in unemployment than cities and towns. However, these positive trends only mean that the gap between urban and rural areas had begun to

shrink. Incomes and employment opportunities in rural communities still lag behind those in urban areas.

A new rural coalition launched in 2011 has brought together five pan-European interest groups with the goal of refocusing attention on the specific and special challenges faced in rural areas. The group's members are the European Landowner's Organisation (ELO), Copa-Cogeca, CEJA, FACE and UECEBV. How the new coalition will bundle and distribute funds remains to be seen.

In the meantime, the CAP's European Agricultural Fund for Rural Development (EAFRD), according to EU Regulation (EC) 1290/2005 strengthens EU rural policy and streamlines its implementation, management, and control provisions, starting in 2007.

For example, the EAFRD will be coordinated with other CAP policy and funding instruments such as the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Fisheries Fund and the European Investment Bank.

Overall, the EAFRD has an allocated budget of €6.3 billion for 2007-2013, which equates to a fifth of total CAP funds.

While funding comes from the CAP, provision sharing management between the European Commission and the Member States means that for each rural development project, programme or policy, the Member State must designate a management authority, a paying agency, and a certification body. Annual reports on the status of implementation and its impact must be sent to the Commission. A further monitoring element regarding the spending of EU development funds is *ex ante*, mid-term and *ex-post* assessments, but these also generate useful information on lessons learnt and factors that contributed to the success or failure of the project.

3.3.4 Funding under EU climate policies

In light of the EU's commitment to combat climate change and the close connection between energy policy and greenhouse gas emissions, climate change funds have an explicit focus on energy.

3.3.5 Funding for candidate and accession countries

Support for EU candidate and potential candidate countries is available via the Instrument for Pre-Accession Assistance (IPA).

A new climate action sub-programme, with a budget of €904.5 million, will act as a platform for the exchange of best practices among Member States and a catalyst for more effective investments. It will help develop capacity-building projects at local and regional levels and support private actors in implementing small-scale low carbon and adaptation technologies.

4. Case studies

This chapter presents case studies that have been selected from the inventory on the basis of the following criteria:

The case study:

- has access to sufficient information to fully describe the project, programme or policy such that it can be analysed within the context of this study, including promoters, participating parties, stakeholders, type, size and scale of the initiative, budget and funding source, etc.;
- has sustainable energy in rural or urban-rural areas as its primary goal (although additional objectives are permitted);
- is a recent example of planning and implementation of a project, programme, or policy by LRAs within the EU27 and has been completed or has reached a sufficient state of maturity to be able to evaluate its outcomes and impact;
- demonstrates clearly how LRAs are involved in the development and/or implementation of the project, programme or policy;
- ideally shows how multi-level governance elements were used or developed during the initiative's lifetime;
- can be used as an example of good practice but also highlights where and what the challenges are in rural and urban-rural areas in terms of promoting energy sustainability;
- provides a reasonable level of geographic balance;
- was part of the 2010 survey by the CoR on sustainable energy policies in cities and regions.

The last two criteria were considered desirable but not mandatory. Geographic balance helps ensure that different socio-economic, political, regulatory and historical contexts in energy policy are reflected in the initiatives. Participation in the 2010 survey would further link the present study to the findings of the survey and also make it possible to use the information that the survey gathered on the initiative.

Six initiatives identified in the inventory that meet the above criteria (see Table 1).

Table 1: Case study candidates

Name	Location	Urban-rural nexus	Type
Bruxelles Mobilité/ MobiElBrussel	Brussels Capital Region (IGBE), Belgium	Urban-rural confluence	Transportation: Corporate Mobility Plan
By Car Together	Province of Ancona, Italy	Provincial level	Transportation: Carpooling initiative
Assistance in managing the energy consumption of local authority assets: Shared Energy Consultancy	Communauté d'agglomération Grand Dole, France	Region of some 40 communities with a mixture of cities, towns, and villages	Buildings: energy consumption
RURASU: Rural Advice and Support Units for RES in Heat Systems and Integrated Energy Management in Buildings	Prefecture of Pieria, Greece	Regional unit in Greece with towns and strong rural character	Horizontal measures: provision of information on energy management and conservation
Pyrenean Climate Change Observatory (PCCO)	Midi-Pyrenes Region, France, Spain, Andorra	Cross-border region in the Pyrenes with strong rural character	Horizontal measure: improve the understanding of climate change
Siena Carbon Free 2015	Siena province, Italy	Province in Tuscany with 36 communities, the biggest being Siena, with a population of around 55,000	Horizontal measures: transition to a carbon-free Siena province

Of these, three are presented in more detail below. The Brussels mobility initiative focuses on transport, a major energy-consuming sector, and includes a specific rural-urban confluence. The Shared Energy Consultancy in the Grand Dole region of France considers another major energy consumer, buildings. And the RURASU project in Greece addresses energy policy from a holistic energy management perspective in a larger region with approximately 40 communities and a cross-border component. These three case studies were also selected as models of good practice in the 2010 CoR report on “Sustainable energy policies by EU regions and cities”.

MobielBrussels/BruxellesMobilité

Objective: All-encompassing mobility plan for public and private bodies with more than 100 employees the Brussels capital region.

Start: 2004
2011 extension to all public and private bodies with more than 100 employees

Lead: Special unit comprising the environment and mobility administrations

Funding: National support scheme

Content: Mobility plan must provide a strategy for reducing car-travel in and around Brussels.

Results: Car use fell by 4.8% between 2005 and 2008 (2.5 percent more than in companies not required to implement a Mobility Plan)
Greater shift to public transport and bicycle use

Relevance: For rural and urban-rural energy policy this case study shows that individual behaviour can be changed with the right incentives and regulations. As in most urban-rural peripheral areas, people commute into the city for work, often by car and over larger distances. A mobility strategy that favours public transportation and alternative means such as walking and bicycling can: (a) reduce energy use for the commuter and hence save expenses, (b) reduce congestion on arterial routes, (c) reduce GHG emissions, and (d) improve local air quality.

Website: <http://www.bruxelles.irisnet.be/a-propos-de-la-region/le-ministere-de-la-region-de-bruxelles-capitale/mobilite>

Shared Energy Consultancy in the Grand Dole agglomeration

Objective: Provide free, competent assistance to the communities in the Grand Dole region concerning energy consumption management and renewable energy projects.

Start: --

Lead: AJENA énergie environnement en Franche-Comté

Funding: ADEME and Franche-Comté Regional Council

Content: Provide consultancy services to find tailored solutions for each community by: (a) providing initial assessment and regular monitoring of energy and water consumption, (b) performing a supplementary thermographic analysis of the building, (c) providing a prioritised list of actions to be taken that are most cost-effective, (d) organising campaigns to raise awareness among technical and administrative staff and developing an inter-municipal network of energy management stakeholders, (e) publishing the energy performance of buildings and providing the communities with operational support for their projects, (f) supporting communities in opening up energy markets to competition.

Results: Municipal representatives and technical services receive customised solutions to their building energy conservation plans.

Relevance: Studies have shown that rural areas and probably also smaller towns and cities have limited access to expertise and financing to upgrade, retrofit and modernise their public infrastructure in terms of renewable energy and increased energy efficiency. Building stock also tends to be older and less efficient than in larger cities. Therefore, the creation of a shared energy service agency funded either externally or through shared commitments by the participating municipalities can create economies of scale, harness the know-how needed and provide planning and implementation security to the municipalities. The approach also yields a rich data basis from which to analyse solutions that work and good practices that can be emulated.

Website: <http://www.grand-dole.fr/vivre/energie.htm>

Rural advice and support units for RES in heat systems and integrated energy management in buildings

Objective: Provide energy management and conservation consultancy services in rural areas.

Start: 1/2005 – 6/2007

Lead: Pieriki Anaptixiaki S.A. (Pieriki), Greece
With participating locations in Allgäu, Germany, Pieria, Greece, South Ayr, Scotland, Cordillera Subbetica, Spain

Funding: €1 095 500 (EU contribution: 50%)

Content: RURASU was created to close the information gap regarding renewable energy sources (RES) and energy efficiency issues in selected rural and remote areas of Europe. Through the establishment and operation of rural Design and Advice Support Units (DASUs), the project bridged this gap.

Results: Continuous support to local users resulted in broader use and implementation of RES and energy efficiency technologies. In addition, the lessons learnt and materials developed can be used in other locations.

Relevance: This project addresses the information gap that often exists in rural areas regarding the availability, implementation and use of renewable energy sources and energy efficient technologies. In this case, external funding contributed to creating a consulting service that led to greater uptake of such technologies, built new knowledge capacity for the long-term, promoted exchange between locations in four countries, and helped rural areas to catch up with urban areas.

Website: <http://www.rurasu.info/>

5. Key differences between EU15 and EU12

Sustainable energy policy differs in several major respects between the new EU Member States (EU12) and the old Member States (EU15). Accession conditions require the adoption of the Community *acquis* of the European Union. The accession negotiations, which last several years, and provision of support funds by the EU also mean that the new Member States are generally prepared to follow important policy initiatives of the European Commission and able to implement them domestically. For sustainable energy policy this has meant support programmes for retrofitting older buildings, tightening of air pollution standards and adoption of climate-related legislation to curb greenhouse gas emissions.

In addition, the economic transition has also led to opposing developments. While rural areas saw their economic base by and large decline substantially, urban areas experienced a softer landing (in most cases) and have been able to adapt to EU market competition faster and more successfully.

Sustainable energy policy in the EU12 still faces greater challenges than in the EU15. The EU12 still has average *per capita* incomes below the EU15 average, although there is large variation. Many EU12 regions' economies are substantially agriculture-based. This translates into greater challenges, but also opportunities, for sustainable energy policies. Cost-effectiveness calculations under current price and income conditions require larger savings over the lifetime of the investment (interest rates also tend to be higher in the EU12) but the savings potential is likely high in rural areas compared to the EU15, where energy efficiency measures due to higher energy prices have already caused much low-hanging fruit to be picked.

The EU12 were also hit hard by the economic and financial crises, and because these countries had less time to build financial cushions public sector funds are particularly tight. At the same time, public debt is comparatively manageable considering the woes of EU15 members Greece, Italy, Ireland, Spain and Portugal. This means that the EU12 will be particularly dependent on EU funding for implementing sustainable energy policies.

The built infrastructure in the EU12 is mostly a mixture of modern, post-communist buildings and remaining older structures, whereas the EU15 has more ongoing renewal of building stock that reflects innovations in energy efficiency and – depending on the country – a shift from coal to oil and natural gas and emerging renewable sources. EU12 post-1990 residential and commercial infrastructure will already be more energy efficient and uses cleaner

energy sources than the previously dominant coal such as natural gas, but still has potential for improvements, for example through the installation of solar panels. However, while labour costs are lower, technology prices may not be, with the result that uptake again depends on the right mix of incentives and regulation.

Sustainable energy policies in many EU12 countries should be particularly well integrated with general rural development due to the gap in socio-economic level, neglect of historical infrastructure and the slower rate of growth and adaptation observed in these areas. Policies should be multi-sector, multi-action and multi-level. Energy policy might be part of a larger programme or action, for example, as part of a project to increase competitiveness, education, and economic diversification. It should bring all relevant sectors together, such as energy supply and distribution, public and residential buildings, and the transport sector. Budget concerns are a key challenge for both the EU12 and the EU15, especially if they coincide with shortages of human and technology resources. EU12 countries may see a higher share of projects fail because of these constraints. It can furthermore be expected that local and regional authorities will contribute mostly through human resources, organisation, regulation and implementation, while national and, especially, EU authorities can be expected to be involved mainly as funders and legislators.

Horizontal partnerships are important for both EU12 and EU15 countries, although cross-border exchange of good practices may be particularly useful for the EU12. And since it has been shown that the success of initiatives is directly linked to public and stakeholder participation, EU12 countries need to focus on adequate communication, awareness-raising, and transparency of information-sharing because of generally lower levels of participation and knowledge in rural areas.

EU12 Member States with GNI below 90 percent of the Community average benefit from the EU's Cohesion fund. For the 2007-2013 budget period this includes Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

6. Overall assessment of the local and regional impact of current EU sustainable energy policies for national, regional and local implementation

EU energy policy is driven by the two main objectives of securing energy supply and combating climate change by transitioning to renewable and low-carbon energy sources. While energy policy is increasingly an EU-level policy area, implementation lies predominantly in the hands of LRAs, often with substantial impact on the actions taken by the LRAs.

A second source of local and regional impact is EU development policy, and in many ways these policies allow LRAs to implement energy policy or to establish links through both multi-sector and multi-action initiatives. The funds provided through development policy channels such as the CAP and the Cohesion and European Social Funds are vital contributions for LRAs to be able to increase local competitiveness while modernising and diversifying their energy base.

However, while there are a plethora of examples of energy-focused or energy-related initiatives in urban areas, ranging from transport and mobility to building upgrades and renewable energy installations, case studies for rural areas, and especially for urban-rural collaborations, are more difficult to find. Indeed, the Energy 2050 Roadmap and Energy Strategy 2020 do not pay much attention to these vital areas.

Windparks and solar/photovoltaic installations are increasingly built in rural areas, but their impact on local economies is small if it does not lead to job creation, sharing of knowledge and of the revenue generated in the energy plants, and greater connectivity between rural and urban communities.

The 2010 CoR survey and the case studies and inventory included in this study find the impact of energy policies at EU, national, regional and local levels to be characterised by:

- generally focusing on several areas rather than energy alone, including economic development, competitiveness, combating population loss, training and skill base building;

- being either infrastructure-oriented (such as building, new installations, equipment) or addressing shortages of expertise, knowledge, human resources or financing;
- requiring a communication, awareness-building, public and stakeholder participation component in order to be successful;
- also requiring active participation by LRAs, and thereby involving multi-level governance;
- high dependence on funding from EU and national sources, especially during and after the economic and financial crises;
- identifying political leadership.

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Appendix

The following pages show the factsheets prepared for each of the initiatives that were identified and deemed to represent or touch upon rural or urban-rural sustainable energy policy within the EU27 during the period 2000-2012.

Name of the initiative	Promoting renewable energy and energy efficiency in rural areas: Lessons from Pieria, Greece; RURASU -- RURAl Advice and Support Units project
Parties involved	<p>Coordinator</p> <ul style="list-style-type: none"> - Pieriki Local Development Agency S.A. (PIERIKI S.A.) – GREECE, contact person: Zapounidis Konstantinos, address: 16th Oktobriou 17b, 60100, Katerini, GREECE, e-mail: pieriki@otenet.gr , tel: +30 2351027541, fax: +30 2351025187 <p>Project Partners</p> <ul style="list-style-type: none"> - University of Cadiz, (UCA), SPAIN - Institute of Accelerating Systems and Applications, (IASA), GREECE - Energie-& Umweltzentrum Allgäu gGmbH, (eza!), GERMANY - WIP KG, (WIP KG), GERMANY - University of Strathclyde, (UoS), UNITED KINGDOM
Region(s)	<p>Allgäu (Germany)</p> <p>Pieria (Greece)</p> <p>Ayr (Scotland)</p> <p>Cordillera Subetica (Spain)</p>
Time period	01/2005 – 06/2007

Goals/Objectives	<p>Overall objective:</p> <ul style="list-style-type: none"> - Provision of energy management, energy conservation consultancy and services in rural areas <p>Specific Objectives:</p> <ul style="list-style-type: none"> - Adaptation of educational material and design tools to the local conditions - Organisation of specific events promoting the use of RES in buildings - Assessment of the energy characteristics of each involved region's building stock - Training of professionals on techniques and high quality materials or systems - Training of energy auditors in accordance to the EC directive, and - Establishment of a partner network for Design and Advice Support Units
Problems identified that the initiative aims to help solve	<p>Rural areas as focus theme, because these areas did not have easy access to decision-making centres, academic institutions or consultancy firms.</p> <ul style="list-style-type: none"> - Substantial number of local enterprises that require energy consultancy - Local actors and professionals are lacking training in relevant subjects - Lack of simplified educational material
Approach for implementation	<p>Creation of DASU - Design and Advice Support Units – for assistance in rural areas in developing and implementing energy efficiency solutions</p> <p>Pioneering actions to be implemented for the first time in the rural areas, including:</p> <ul style="list-style-type: none"> - Adaptation of EC legislation (e.g. EPBD) - Wide dissemination plan and adaptation of PR strategies at local level - Survey in order not to re-deliver already accomplished actions and objectives of other projects
Funding sources	Funded under Intelligent Energy Europe Programme – EIE/04/223/S07.38603
Funding volume	€1 095 500 (EU contribution 50%)

Results	<p>Two initial DASUs were set up in</p> <ul style="list-style-type: none"> - Allgäu (eza!, Germany), and - Pieria (PIERIKI, Greece) <p>Lessons learned were applied successfully in start-up of two additional DASUs in Cordilleras Subetica (Spain) and Ayr (Scotland):</p> <ul style="list-style-type: none"> - Ofaer Subbetica (Spain) - South Ayrshire Council (Scotland) <p>Deliverables already produced are important methodology tools for other regions in Europe. In more detail:</p> <ul style="list-style-type: none"> - “Formulation of an action agenda for DASU set-up in rural areas” (comprising technical, administrative and financial aspects) is drafted in such a general way that it can easily be used in other EU regions. The Action Agenda is disseminated broadly, as part of the dissemination policy. - “Report on the experiences of the existing DASUs in the rural environment in Germany and Greece”, and - “Report on the further development of DASU work in Greece and Germany” are two important methodology tools for replication
Information source:	<p>http://www.rapido-fp6.eu/download/expert3_Zapounidis_session2_ws2.pdf www.rurasu.info</p>

Name of the initiative	Rural Energy in Europe: Country Studies for France, Germany, Italy, Poland and the UK
Parties involved	Consultancy Ecofys, commissioned by SHV Energy within the framework of the Future of Rural Energy in Europe (FREE) initiative
Region(s)	Rural areas in <ul style="list-style-type: none"> - Germany - France - Italy - Poland - UK
Time period	Report published September 2011
Goals/Objectives	This study presents energy mixes in rural, intermediate and urban areas, as well as GHG emissions per head.
Problems identified that the initiative aims to help solve	Energy use and resulting GHG and pollutant emissions higher in rural areas than in urban areas.
Approach for implementation	Comparative analysis of energy statistics regarding energy sources, mix, and GHG and pollutant emissions.
Funding sources	
Funding volume	
Results	<p>A switch from heating oil and coal to renewable energy sources or lower carbon fuels in rural areas could reduce carbon emissions from households and services in five EU countries by up to the equivalent of eight coal-burning power plants or by up to the equivalent of 3500 small towns.</p> <p>The European Commission should link the upcoming EU Budget with the Energy Efficiency Directive and ensure that enough funds are attributed to energy efficiency in rural housing.</p>

	<p>The upcoming EU Budget should not focus solely on large-scale energy infrastructure projects, but also allocate funds to decentralised energy production and supply, especially in the areas where this type of energy production is the most effective.</p> <p>The key is the right, lower carbon energy mix. It can be expensive to extend natural gas distribution to remote rural areas. A similar or even greater effect can be achieved by using renewable energy or other lower carbon alternatives that are available and locally generated.</p> <p>In the five countries studied, there are an estimated 26 million households in rural areas. These rural households emit about 27 Mt CO₂-eq from coal and heating oil. In the service sector, rural emissions amount to 8.3 Mt CO₂-eq. Together these emissions are equal to the greenhouse gas emissions from eight 600 MWe coal plants, or from 3 500 small towns (10 000 inhabitants forming 4 000 households) in the EU.</p> <p>Recommendations:</p> <ol style="list-style-type: none">1. Specific policies aimed at energy use in rural areas could bring environmental and economic benefits. Rural areas can contribute greatly to reducing greenhouse gas emissions.2. Within the European policy approach of lowering the carbon intensity of regional energy mixes, there is good reason to give additional attention to low GVA regions including rural areas3. In general, more focus on energy mix in policies for the agricultural sector would bring substantial greenhouse gas emission reductions.
Information source:	<p>http://www.rural-energy.eu/report/ http://www.rural-energy.eu/report/uploads/documents/full-report.pdf http://www.energy-enviro.fi/index.php?PAGE=2&NODE_ID=4&ID=3816</p>

Name of the initiative	Energy Cities - the European association of local authorities inventing their energy future
Parties involved	More than 1 000 towns and cities in 30 countries.
Region(s)	Represents more than 1000 towns and cities in 30 countries
Time period	Founded in 1990
Goals/Objectives	<ul style="list-style-type: none"> - To strengthen local authorities' role and improve their skills in the field of sustainable energy - To represent local authorities' interests and influence the policies and proposals made by European Union institutions in the fields of energy, environmental protection and urban policy - To develop and promote local authorities' initiatives through exchange of experiences, the transfer of know-how and the implementation of joint projects
Problems identified that the initiative aims to help solve	<ul style="list-style-type: none"> - A single municipality does not have a strong voice, an association of many does. - The main focus is on energy and, within this area, the association helps address the problems of linking EU and national law, regulations, and initiatives to the municipal level, scaling-up of energy innovations, exchange of knowledge and best practices, recognition of location-specific contexts and how they factor into building a sustainable, secure energy supply at the local level.
Approach for implementation	<p>Energy Cities takes a multi-pronged approach to getting involved in the planning for and transition to a sustainable energy future:</p> <ul style="list-style-type: none"> - Opinions and position papers - Projects - Conferences - Study tours - City actions - Other events

Funding sources	Funded by members' fees
Funding volume	
Results	
Information source:	http://www.energy-cities.eu

Name of the initiative	Joint EU Project Proposal - Introduction to the General Idea and Approach of Urban-Rural Energy Partnerships
Parties involved	Fraunhofer MOEZ
Region(s)	EU
Time period	2012 - ??
Goals/Objectives	<ul style="list-style-type: none"> - Development of guidelines for successful energy partnerships between neighbouring urban and rural areas
Problems identified that the initiative aims to help solve	<ul style="list-style-type: none"> - There are already many regional and local initiatives all over Europe (e.g. local/regional energy concepts, biomass action plans, etc. But there is a lack of interaction/cooperation among neighbouring regions, particularly between cities and their conurbation area: - 100 % self-sufficient energy production based on renewable energy sources is not realistic for cities, particularly due to limited space -> Dependency on partners, who are providing energy - Rural areas are able to produce more energy than they will need -> Dependency on partners, who need energy -> Urban-rural energy partnerships could lead to a win-win-situation
Approach for implementation	<p>Proposed research will address the following issues:</p> <ul style="list-style-type: none"> - “Inventory” of the current situation in the pilot regions - Political and administrative framework - Technical aspects (electricity, heat, mobility; energy efficiency – renewable energy production) - Economic and social situation/conditions - Development of integrated energy action plans for the pilot regions - Development of future scenarios for pilot regions (2015/2030/2050) with regard to technical, economic and social aspects

	<ul style="list-style-type: none"> - Short term, mid term, long term - Stakeholder Involvement - Strengthening social acceptance for renewable energy sources and energy efficiency - Evaluation - Derivation of recommendations for successful urban-rural energy partnerships (Guideline) - Legal aspects - Planning issues - Financing - Generalisation/Transferability for other regions - Dissemination/Training activities
Funding sources	German Ministry of Education and Research (BMBF), EU calls for tender
Funding volume	
Results	Not yet implemented
Information source:	http://www.owwz.de/fileadmin/hiwi/Kassel_110927/11-09-27_Presentation_MOEZ_EU-Proposal.pdf

Name of the initiative	Future of Rural Energy in Europe (FREE)
Parties involved	FREE – a voice for all those who believe that rural energy needs are important issues, both for those who live in the countryside and for European society as a whole.
Region(s)	Europe-wide but the case studies focus on the UK, Ireland, and Austria
Time period	Ongoing
Goals/Objectives	To raise awareness about the energy challenges of rural communities and to promote the development and implementation of innovative, more climate friendly energy sources in these communities
Problems identified that the initiative aims to help solve	<p>Over 50% of European citizens live in rural areas. They occupy over 90% of Europe and contribute 43% of Europe’s gross value. And yet, despite their importance, rural communities are rarely considered by politicians and regulators when writing energy policy.</p> <ul style="list-style-type: none"> - Rural communities in Europe are important - Rural communities are disadvantaged when it comes to energy choice and energy policy - Engaging and supporting rural communities is essential if government energy and climate change policies are to be realised
Approach for implementation	<p>FREE provides links to case studies, public documents related to energy policy and a dedicated solutions page with energy information for solar/PV, CHP, micro-CHP, biomass, GHP, heating and cooking, and energy efficient glass.</p> <p>See http://www.rural-energy.eu/en_GB/solutions/the-future-of-rural-energy-in-europe for more information.</p> <p>FREE sees cohesion policy and associated funding as a key avenue for addressing access to energy and energy efficiency in rural communities.</p>
Funding sources	The FREE initiative is launched and funded by <i>SHV Energy</i> , an independent family-owned Dutch company and the largest distributor of LPG in the world.
Funding volume	Unknown

Results	Not named
Information source:	http://www.rural-energy.eu/en_GB/home-en

Name of the initiative	Wind Power Plan for the Valencia region in Spain
Parties involved	Promoter is the regional government of Valencia Other parties involved are: <ul style="list-style-type: none"> • Regional Department for Industry and Trade • Regional Department for the Environment • Regional Department for Public Infrastructure, Urban Development and Transport • Private companies will also be involved in the plan once the concessions are approved
Region(s)	Valencia, Spain
Time period	2001
Goals/Objectives	<ul style="list-style-type: none"> - To ensure energy security because the Valencia region only supplies 2.9% of its own energy, almost exclusively through RES - To cope with increased demand (in part due to seasonal variation as a result of tourism) - To increase energy efficiency - To ensure further GDP growth in the region, which contributes 10% to Spain's GDP
Problems identified that the initiative aims to help solve	<ul style="list-style-type: none"> - Doubling of energy demand over the past 20-30 years - Large seasonal variations - No local fossil fuel energy sources, and reliance on energy from other parts of Spain and other countries - Further development of RES as a viable energy source for the region
Approach for implementation	Electricity currently accounts for 20 or 30% of total energy consumption. Current policies aim to increase the level of self-supply by encouraging the production of electricity through RES, especially wind, solar photovoltaic and biomass. By 2010, it is estimated that between 50 and 70% of all energy obtained from RES will come from wind plants.
Funding sources	
Funding volume	
Results	Not known

Information source:	http://ec.europa.eu/energy/idae_site/deploj/prj046/prj046_1.html http://www.aven.es
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Name of the initiative	ENERGIE 21, the energy action plan of Upper Austria
Parties involved	Promoter is O. Ö, Energiesparverband (Regional Energy Agency of Upper Austria) Other parties involved are: <ul style="list-style-type: none"> • Regional government • Energy Commissioner for Upper Austria • Interest groups (e.g. Chamber of Commerce, professional associations) • Energy supplier • Technology companies • Energy consultants
Region(s)	Upper Austria, Austria
Time period	2001-ongoing
Goals/Objectives	The Energie21 Plan reinforces and widens the set of actions from the previous period (1994-2000) while also taking into account the recommendations put forward in the “White Paper for a Community Strategy and Action Plan (Com/97/599 final)” of the European Commission. As it is now clear that a change in energy behaviour patterns will not come about on its own, the plan comprises a mix of measures aimed, on the one hand, at “creating demand” for RES and, on the other hand, at “meeting demand” through RES.
Problems identified that the initiative aims to help solve	<ul style="list-style-type: none"> - Need for continued incentives for RES installations - Planning security for investors, operators and price stability and competitiveness for consumers - Regionally integrated plan
Approach for implementation	Energie21 is a comprehensive energy plan for Upper Austria. A key element is the stimulation of RES demand while simultaneously creating a positive climate for new investments in RES projects.
Funding sources	
Funding volume	

Results	<p>Under the previous plan, renewable sources of energy accounted for 30% of the primary energy consumed in Upper Austria in 2000. This outstanding result was driven by the design and implementation of an energy strategy including a clear political commitment and the application of an action plan targeted at various market actors. As a result, RES participation in total consumption rose from 25% in 1993 to 30% in 2000. The strategy also led to a reduction of energy consumption in new domestic buildings of 30%, and the consumption of specific industrial sectors was decreased by 2% annually. It has been estimated that renewable energy sources and energy efficient technologies provide employment to around 10 000 people.</p>
Information source:	<p>http://ec.europa.eu/energy/idae_site/deploj/prj040/prj040_1.html http://www.esv.or.at/</p>

Name of the initiative	CHIETI 104, renewable energetic source
Parties involved	<p>Promoter: Province of Chieti</p> <p>Other parties involved:</p> <ul style="list-style-type: none"> • All 104 municipalities of the province of Chieti; • Consortiums: Consorzio Industriale Sangro Aventino-Casoli; Consorzio Industriale Valle del Pescara-S. Giovanni Teatino; Consorzio per l'Area di Sviluppo Industriale del Vastese (Coasiv)-Vasto; Consorzio Comprensoriale RSU del Lancianese-Lanciano; Consorzio Comprensoriale del Chietino per lo Smaltimento Rifiuti-Fara F. Petri • Mountain communities: Zona "P" Della Maielletta-Pennapedimonte; Zona "R" Medio Sangro-Quadri; Zona "T" Medio Vastese-Gissi; Zona "Q" Aventino Medio Sangro-Palena; Zona "S" Val Sangro-Villa S. Maria; Zona "U" Alto Vastese-Torrebruna • Territorial agreements: Trigno Sinello-Vasto; Sangro Aventino-S. Maria Imbaro; Chietino Ortonese-Chieti • ENEA • Regione Abruzzo - Corpo Forestale Dello Stato • Universita' Degli Studi G. D'Annunzio • Associations: Assoenergia-Roma; Copagri; Unione Provinciale Agricoltori; Confederaz. Naz. Le dell'Artigianato; Amab Abruzzo; Associazione Piccole Industrie; Associazione Ind. Le Prov. Di Chieti • Private sector companies: Edison Energie speciali - Bologna; Arpa Spa - Chieti; La Panoramica - Chieti; Di Fonzo - Vasto; Napoleone - Ortona; Gestione Governativa Sangritana - Lanciano; SAP; Amga Energia; Fontecal; D'Alessandro Termotecnica • Local banks: Banca Popolare Lanciano; Sulmona
Region(s)	Chieti province, the southernmost province of the Abruzzo region in Italy
Time period	2001 -
Goals/Objectives	<ul style="list-style-type: none"> • diversification of energy sources • rational use of fossil fuels and

	<ul style="list-style-type: none"> • strengthening of the links between energy, environment and sustainable development
Problems identified that the initiative aims to help solve	<ul style="list-style-type: none"> • Abruzzo region does not have an energy plan • Chieti, a province in the Abruzzo region, recognised the need to diversify its energy mix and make it more climate friendly
Approach for implementation	<p>Chieti will base its energy plan on available information and research regarding the potential for developing renewable energy sources. It has also benefited from the creation of an Energy Agency in 2000. Specific information underpinning the energy plan includes:</p> <p>As highlighted by a number of studies, the characteristics of the local climate and soil suggest there is significant potential for the development of renewable energy sources in the area. The mountainous terrain is suitable for hydroelectric plants, which at present produce 406.1 MW. Solar radiation varies from around 5 MJ/m² in December to 24 MJ/m² in July or August. The data on soil use, although patchy, points to the possibilities of biomass production. There is also a wind farm with three 320 KWh generators, one 225 KWh generator and one 110 KWh generator. The use of olive pressings as a substitute for diesel oil has been taken up to some extent, given that there is extensive olive cultivation in the area.</p>
Funding sources	
Funding volume	
Results	Status unclear. The project website is not active.
Information source:	http://ec.europa.eu/energy/idae_site/deploy/prj031/prj031_1.html

Name of the initiative	100% RE supplied Region Lübow-Krassow
Parties involved	<p>Promoter: Solar Initiative Mecklenburg - Vorpommern e. V. (SIMV e.V.)</p> <p>Other parties involved:</p> <ul style="list-style-type: none"> • Rural District North-West Mecklenburg • Municipalities of Dorf Mecklenburg, Lübow, Zurow, Benz, Krusenhausen, Neuburg and Hornstorf • HKF Heizungsbau GmbH • Wismarer Wirtschaftsgemeinschaft e.V.
Region(s)	Lübow-Krassow in northern Germany
Time period	2002 -
Goals/Objectives	Analyse and increase the potential of renewable energy sources in the Lübow-Krassow region, which to date sources only 3.8% of its energy from RES.
Problems identified that the initiative aims to help solve	The district of Lübow-Krassow is situated in northern Germany and consists of 7 village communities, with a total population of 10 428 people. Its economy is mainly based on agriculture and tourism, together with a thriving car dealing and repair industry. In terms of energy use, only 3.8% of the district's power demand is met from renewable energy sources, which leaves considerable potential for further implementation.
Approach for implementation	Over the last few years, an innovative core has emerged on which future growth may be based, consisting of competent partners from industry, agriculture, universities and associations. In view of the potential for development of new technologies and innovative products for the use of renewable energy sources as an opportunity for economic benefits and the environmental protection, in 1997 an independent organisation, Solarinitiative Mecklenburg - Vorpommern e. V. (SIMV e.V.), was created with the aim of promoting science and training in relation to the use of environmentally-friendly energy sources.
Funding sources	
Funding volume	

Results	SIMV e.V. now has over 300 members and is cooperating with 56 local handicraft companies within the "Bündnis Solar - Sonne und Arbeit" alliance. In addition, it leads a regional network about climate security: "Klimaschutz und Nachhaltigkeit - Solarenergie für Mecklenburg-Vorpommern". The alliance remains open to any new partners wishing to join.
Information source:	http://ec.europa.eu/energy/idae_site/deploy/prj069/prj069_1.html http://www.solarzentrum-mv.de/preview/ http://www.100re.net/

Name of the initiative	PLAN for the promotion of wind power in the Basque Country: Eólicas de Euskadi
Parties involved	Promoter: Eólicas de Euskadi SA Other parties involved: <ul style="list-style-type: none"> • Iberdrola Energias Renovables • Ente Vasco de la Energía, EVE (Basque energy agency)
Region(s)	Basque Country
Time period	2002
Goals/Objectives	The principles on which the 3E-2005 Energy Strategy (drawn up by the Basque Government in 1997) is based are derived from the framework of the Basque government's industrial policy. This policy clearly demonstrates that there is a political will to implement energy options which will contribute to development of the Autonomous Community of the Basque Country, within a framework of respect for the environment and institutions, in a global context, and for a long-term perspective, in a manner that complies with the targets of the Kyoto Protocol.
Problems identified that the initiative aims to help solve	The Basque Country has unused potential for wind power generation, through which can help it meet its energy demand while reducing CO2 emissions from fossil energy use as prescribed by the 3E-2005 Energy Strategy.
Approach for implementation	Investment in additional wind farms.
Funding sources	
Funding volume	
Results	As part of the Plan, 175 MW of wind power installed by 2005 has been envisaged, thus meeting EU directives for power generation using renewable energy. The most recent large wind turbines are so competitive today that the use of electricity from wind turbines is one of the cheapest ways of reducing CO2 emissions from power production. As a preliminary demonstration of the social,

environmental and economic benefits of this type of energy, Eólicas de Euskadi is operating a wind power plant - the "Elgea wind farm" – which has an output of 27 MW and power production of 80 GWh per year.

Information source:

http://ec.europa.eu/energy/idae_site/deploy/prj061/prj061_1.html

Name of the initiative	ENHANCING the proactive role of local and regional authorities with regard to RES in the Netherlands
Parties involved	Promoter: The Dutch Office for Renewable Energy Other parties involved: <ul style="list-style-type: none"> • Dutch local, provincial and regional governments • Business community (producers and traders of energy, as well as energy-related products) • NGOs and other organisations: housing associations, real estate developers, agricultural organisations, environmental groups and research institutes
Region(s)	Netherlands at provincial, regional and local levels
Time period	2002 -
Goals/Objectives	Actively promoting RES in the Netherlands, a task which is crucial to the achievement of the government's target of obtaining 10% of total energy consumption from renewable energy sources by the year 2020
Problems identified that the initiative aims to help solve	High level of recognition and acceptance for RES but lack of networks linking investors and local, regional authorities. PDE was founded to fill this gap.
Approach for implementation	The independently-acting Dutch Office for Renewable Energy (PDE) was founded in 1997 with the objective of actively promoting RES in the Netherlands. One of the main roles of the PDE is to strengthen the economic network comprising the Dutch authorities and the business community. Among other activities, workshops and seminars are held to discuss bottlenecks arising from policy and legislation. The transfer of knowledge is the second pillar of the PDE's activities, and this takes place through the publication of general dissemination products, including a website and fact sheets giving information about successful example applications. Specific information tools have been developed for certain target groups, such as local and regional government and consumers.

	In the view of the PDE, to a large extent the key to the success of RES lies in the symbiosis between potential investors and government, in particular at the provincial, regional and local level.
Funding sources	
Funding volume	
Results	Consequently, it developed the "Renewable energy process approach", which provides lower tiers of government (provinces, regions, municipalities) with support for the development of well-structured renewable energy policies.
Information source:	http://ec.europa.eu/energy/idae_site/deploy/prj048/prj048_1.html http://www.milieucentraal.nl/themas/bronnen-van-energie/duurzame-energiebronnen

Name of the initiative	Renewable energy today in the Rhône-Alpes region
Parties involved	<p>Promoter: Rhône-Alpes Regional Council (Conseil Régional de Rhône-Alpes)</p> <p>Other parties involved:</p> <ul style="list-style-type: none"> • Territorial groups • Professionals • ADEME • Associations • Other governmental bodies
Region(s)	Rhône-Alpes region, France
Time period	2003 -
Goals/Objectives	<p>After the petrol shocks of the 1970s, the regional council's concern was to control energy demand and exploit local resources in order to boost the energy economy and promote independence and energy diversity with respect to energy supplied from centralised producers.</p> <p>The continued pursuit of this policy has made it possible to identify and develop the niches best suited to the potential of the Rhône-Alpes (wood energy, solar heating and drying, standalone renewable energy sources, grid connected photovoltaic systems, water-supply micro-hydropower), help monitor work in the study phase and implement demonstration facilities, and develop networks of institutional, professional and association partners and bolster their competencies.</p>
Problems identified that the initiative aims to help solve	Rhône-Alpes Region is France's leading producer of electricity (mostly from nuclear energy but also from RES such as hydropower). The regional council aims to ensure continued stability in the energy sector while further promoting its advantages for RES development.
Approach for implementation	In 1995, the regional council decided to set up the DEE, a body to manage energy and environmental issues (Direction de l'Environnement et de l'Energie), and Rhônalénergie became Rhônalénergie-Environnement. In 2001 the DEE merged with the agriculture and forestry department (Direction de l'Agriculture et de la Forêt) to create the current DAFEE (Direction de l'Agriculture de la Forêt de l'Environnement et de l'Energie), which is closely bound up with the

	regions' economic development.
Funding sources	
Funding volume	
Results	The continued pursuit of this policy has made it possible to identify and develop the niches best suited to the potential of the Rhône-Alpes (wood energy, solar heating and drying, standalone renewable energy sources, grid connected photovoltaic systems, water-supply micro-hydropower), help monitor work in the study phase and implement demonstration facilities, and develop networks of institutional, professional and associational partners and bolster their competencies.
Information source:	http://ec.europa.eu/energy/idae_site/deploy/prj103/prj103_1.html

Name of the initiative	VARESE LIGURE 100% sustainable
Parties involved	Promoter: Comune di Varese Ligure Other parties involved: <ul style="list-style-type: none"> • Public utilities company (ACAM) • Regional, provincial and mountain community authorities • Breeding and farming cooperatives • ARE Liguria Spa (regional energy agency)
Region(s)	Varese Ligure is a small rural municipality in the region of Liguria, in Italy
Time period	2003 -
Goals/Objectives	Economic revitalisation within a sustainable development framework to reverse population out-migration, promote economic activity that generates jobs and income and reinvent the region to make it more attractive to young people. The municipality plans to be 100% renewable and 100% organic within a few years.
Problems identified that the initiative aims to help solve	In the early 1990s, Varese Ligure found itself in difficulties. Its economy was weak, the settlements were decaying and people were moving away. This prompted the mayor to try to do something to reverse the trend and revitalise the municipality by investing in its main resources within the framework of sustainable development.
Approach for implementation	The village launched its overall development strategy with the renovation of the urban centre; on the economic side, the policy has focused on promoting agriculture and tourism and encouraging farmers to take up organic farming. The administration put a great deal of effort into the protection and promotion of the environmental quality of the village, which eventually allowed it to become the first ISO 14001 certified Italian municipality (Oct. 1999) and the first European EMAS-registered municipality (Nov 1999). An important aspect of the environmental strategy is the focus on renewable sources of energy and on energy saving.
Funding sources	
Funding volume	
Results	The actions taken as part of the development strategy resulted in important synergies that support

	each other to reach the final aim, which is for the municipality to be 100% renewable and 100% organic in the next few years.
Information source:	http://ec.europa.eu/energy/idaa_site/deploj/prj083/prj083_1.html

Name of the initiative	Renewable energy sources in Sardinia
Parties involved	Promoter: General Directorate for the Environment of the Sardinian Region (Environmental Board) Other parties involved: <ul style="list-style-type: none"> • General Directorate for Industry (Industry Board) - Energy service
Region(s)	Sardinia, Italy
Time period	2003 -
Goals/Objectives	Reduction of GHG emissions and diversification of the energy mix towards renewables
Problems identified that the initiative aims to help solve	The energy consumption of the region of Sardinia is very imbalanced, with a preponderance of fossil fuel use. This is partly due to its situation as an island, which makes connecting to the electricity and natural gas grids more difficult (in this latter case, there is no connection at all, although plans exist to extend the methane and natural gas grid in the medium term).
Approach for implementation	<p>Creation of a local partnership that shares the objectives of the Campaign for Take-Off, albeit adapted to the specific characteristics of Sardinia.</p> <p>The Regional Department for Industry, known as the Industry Board, which includes the Energy Service – in its capacity as the body responsible for energy issues – has set up a “Regional Energy Forum”, of which the Environmental Board is a member, together with trade associations, producers and representatives of industry and research centres.</p> <p>A specific working group will be in charge of defining the scope of RES actions. The working group “Renewables/Energie Rinnovabili” is made up of representatives of the Sustainable Environmental Service (Department for the Environment) and the Energy Service (Department for Industry), supported by an external consultancy company (Koba).</p>
Funding sources	

Funding volume	
Results	Not known
Information source:	http://ec.europa.eu/energy/idae_site/deployp/prj072/prj072_1.html

Name of the initiative	Energy planning in Navarre
Parties involved	<p>Promoter: Department for Industry, Technology, Commerce and Labour of the Navarre regional government</p> <p>Other parties involved:</p> <ul style="list-style-type: none"> • Private investors • Other departments of the regional government • Non-profit organisations • Local companies
Region(s)	Navarre province, Spain
Time period	2003 -
Goals/Objectives	Building on the already strong renewable energy sectors of wind, solar and biomass, new initiatives planned and promoted by the Energy Agency founded in 2002 are intended to build on and strengthen the region's success in RES technologies and to comply with the new obligations arising from the Kyoto Protocol and EU energy-related directives.
Problems identified that the initiative aims to help solve	Navarre province already has a high level of renewables in electricity generation (40% of electricity consumed comes from wind power), a high level of awareness and acceptance of RES, and investors who are willing to invest in RES despite certain risks and uncertainties
Approach for implementation	In 2002, a new strategic document, called "Energy planning" was approved, involving, among other things, the creation of an energy agency, a training centre and support funding lines.
Funding sources	
Funding volume	
Results	
Information Source:	http://ec.europa.eu/energy/idaa_site/depoy/prj085/prj085_1.html

Name of the initiative	VIS NOVA
Parties involved	<p>Lead: Aufbauwerk Region Leipzig GmbH (Sachsen, DE)</p> <p>Other parties:</p> <ul style="list-style-type: none"> • District of Northern Saxony (Sachsen, DE) • District of Schwäbisch-Hall (Baden-Württemberg, DE) • Micro Region Development Association Tullnerfeld West (Niederösterreich, AT) • Center of Excellence for Renewable Energy, Energy Efficiency and Environment (CERE) (Wien, AT) • South Transdanubian Area and Economic Development Nonprofit Ltd. (Del-Dunantul, HU) • City of Szekszárd (Del-Dunantul, HU) • Association of Municipalities Polish Network Energie Cities (PNEC) (Malopolskie, PL), • Administrative District of Gorlice (Malopolskie, PL) • AGH University of Science and Technology (Malopolskie, PL) • Economic Development Corporation of the Northern Saxony district (Sachsen, DE)
Region(s)	Central European regions
Time period	May 2011 - October 2014 (42 months)
Goals/Objectives	<p>VIS NOVA aims to develop and implement a transnational strategy for the strengthening of rural Central European regions' local economies through the efficient exploitation of endogenous energy resources. The project will develop and implement tools based on transnational know-how and experience (Energy Efficiency Plan) and mainstream these outputs and approaches through political endorsement at local and transnational level (Guidelines for Elaboration of Energy Efficiency Plans). Innovative pilot projects and feasibility studies conducted will lead to actual implementation, enhancing capacities for the identification of technological innovation and its transfer between the partner regions. The approaches for the exploitation of decarbonisation potential will create added value and help to strengthen territorial cohesion. The project will also</p>

	<p>promote internal integration as reduced energy dependency allows less developed regions to explore new incentives to stimulate economic development, and will create the platform that will provide exchange of good practices and know-how and organise transnational events and workshops with key actors in energy development. Furthermore, it will help to reduce greenhouse gas emissions through a strategic approach to promoting the actual uptake of intelligent energy technologies.</p> <p>Pilot investments and feasibility assessments are subject to a transnational peer review test and will demonstrate new means to exploit endogenous energy sources in a sustainable way and enhance their efficiency. Whereas resulting Energy Efficiency Plans are endorsed by the five partner regions' responsible public authorities, guidelines are drawn up to assist other regions' stakeholders to transfer and replicate the approaches taken.</p>
<p>Problems identified that the initiative aims to help solve</p>	<p>To fight against climate change and to provide a secure and affordable supply of energy, European regions have to explore new approaches in order to exploit endogenous renewable energy sources and to improve their energy efficiency.</p>
<p>Approach for implementation</p>	<p>Especially for rural regions, the ongoing restructuring of European energy markets represents an enormous opportunity for the creation of own added value. To integrate the concept of energy autonomy based on renewable sources and energy efficiency into regional development policies, public authorities in rural regions need adequate planning instruments to avoid isolated approaches that fail to develop the full potential for territorial cohesion, competitiveness and employment. Furthermore, public authorities often lack in-depth knowledge about the transferability of European good practices and have poor access to cutting-edge innovations in intelligent energies. Focus on renewable energies and energy efficiency calls for cross-district cooperation. Searches for good practices in other regions revealed a lack of reliable data, shortages in regional actors' capacities, and the absence of a strategic approach for the implementation of set objectives. These deficits can be overcome by integration of instruments promoting energy efficiency. The project VIS NOVA aims to introduce so called Energy Efficiency Plans that are based on EU good practices, new technologies and transnational learning regarding regional development policies. The project will therefore assist rural regions to</p>

	plan and to take action to create new value added in the renewable energy sector, to secure local energy supply, to improve energy efficiency performance, to strengthen their competitiveness as locations for economic activities, and to promote territorial cohesion across the board.
Funding sources	Central Europe. Cooperating for Success. http://www.central2013.eu
Funding volume	€2 745.661.00 €2 166.626.25 (ERDF contribution)
Results	<p>The project focuses on assistance to the rural regions to help them to plan and to take action to create new added value in the renewable energy and lessen their dependency on outside energy supply.</p> <p>Produced Efficiency Plans will be endorsed by the competent public authorities of the partner regions in order to shape the regional development policies of the 5 regions. As plans are transferable they can be easily replicated in other regions too and therefore have a wider impact.</p> <p>Furthermore, based on results and learning from pilot projects and feasibility assessments, the project will produce a comparative SWOT analysis of endogenous energy potential, available technologies, and a Transnational Sustainable Energy Strategy including European good practices as framework for striving towards a lower energy dependency.</p>
Information Source:	http://www.vis-nova.eu http://www.central2013.eu/nc/central-projects/approved-projects/funded-projects/?tx_fundedprojects_pi1[project]=98