RENREN partners:

- Schleswig-Holstein Ministry of Science, Economic Affairs and Transport (Germany)
- Welsh Government (United Kingdom)
- Region of Jämtland, Institute of Rural Development (Sweden)
- The Association of Municipalities in the Westfjords (Iceland)
- Cyprus Institute of Energy
- Government of Navarre, Department of Rural Development, Industry, Employment and Environment (Spain)
- Regional Energy Agency of Castilla y León (Spain)
- Pays de la Loire Region (France)
- The Agency for Social & Economic Development of Timís County (Romania)
- Łodź Region (Poland)
- Ústí Region (Czech Republic)
- Region of Central Macedonia (Greece)
- Andalusia Energy Agency (Spain)
- Bay Zoltán Foundation for Applied Research (North Hungary)



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...for a cleaner, greener energy future.

Midterm results of the RENREN project (2010-2012)







6. RENREN working structure and contacts

The RENREN consortium consists of regions already well ahead in the renewable energy stakes as well as of regions where renewables are only starting to gain momentum. This network stretches from the north of Europe to the Mediterranean and from the Atlantic shores to the East of the EU. As such, it encompasses a broad range ofdifferent pre-conditions for renewables in terms of land area, geography and climate.

The project content is organized around three Working Groups (WGs), each with a focus on a particular technology family. The working groups cover all major renewables types:

- WG 1: Wind, Ocean, Hydropower
- WG 2: Geothermal, Biomass
- WG 3: Solar thermal, Photovoltaics, Concentrating Solar Power

These WGs undertake their investigations in twice-yearly workshops covering the project's main topics. In addition, there are a range of on-site visits. The partners' policy experts visit renewable installations and projects in the host region, see how they work in practice, learn how the regional authority has supported them, and exchange ideas and expertise.

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Imprint

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1. Editorial

The EU's Climate & Energy Policy adopted in March 2007 committed it to a leading role in contributing to a key international climate change objective, limiting global average temperature increase to a maximum of 2°C above pre-industrial levels. One key plank for the EU is attaining a 20% minimum share of renewable energies (RES) in its overall energy consumption by 2020. Each EU Member State is bound to contribute to this as of 2009 according to mandatory targets set out in the EU Renewables Directive. At the start of 2012, it is already time to reflect on more ambitious targets for the period beyond 2020.

Implementing these ambitions and policies needs to go beyond just the national and EU levels however. Regions are key in encouraging the deployment of renewables through measures tailored to their natural resources, environment and economy. Regional authorities face a challenging task – to set up new processes and practices to support the planning, financing, and licensing of renewables projects and provide the skilled people to put them in place. European regions may vary in terms of legal competencies, size, geography and/or climatic conditions – but they urgently need to learn from the policy approaches of neighbours.

To this end, a number of regions committed to renewable energy established the **"Renewable ENergy REgions Network" (RENREN)** in 2007. In the current project phase, funded by the EU programme INTERREG IV C in 2010-2012, this network encompasses 14 partners from 11 countries – experienced as well as "learning" regions - stretching from the north of Europe to the Mediterranean, and from the west to the east. Dealing with all relevant renewables technologies, RENREN is exploring enabling conditions that help or hinder renewables' expansion in the regions. The main aim is to identify a number of good practice examples and to derive from these Policy Recommendations aimed at encouraging other regional authorities to upgrade their own renewable energy policies.

This brochure takes stock of the project's first thematic results at half-time, outlining how the project works and how it will move forward. This short overview may encourage other regions to learn from the good practices identified.

Wolfgang Schulz, Project Coordinator

5. "Renewables (RES) Monitoring Development Tool" — an indicator-based solution to help regions enhance their own RES policies

Within the RENREN consortium, the Hungarian partner – Bay Zoltán Foundation for Applied Research – has taken on the role of designing and demonstrating a toolkit to help regions verify the effects of their own renewables policies and thus improve them. Based on a variety of indicators, this software solution will outline in graphs all aspects of the existing situation which affect consumption of energy and generation from renewables in any region. A multi-annual development comparison will support decision-makers looking to (re-)design their own renewables policies.

This system needs to be as accessible and user-friendly as possible. It will provide visuals in both diagram and map formats. The user will be able to perform simple statistical queries, but also to refer to a forecasting module or to a comparison of effects of relevant policies, programmes and measures at various levels. The system will also enable the user to view a "Visual Cluster database" demonstrating the linkages between, and key actors within, the relevant clusters present in a region. They can also view a "Visual Project database" displaying on a map relevant approved projects, which should hopefully help strengthen any synergies across these projects.

As the first step, the "Renewables Monitoring Development Tool" will be tested by the members of the RENREN consortium making use of their own data and according to the individual and/or collective needs of the partner regions. These may come within the framework of the project or outside of it. When the testing phase is successfully completed, a final version of the toolkit will be available to all for use online on the RENREN website.

of RENREN partners is being done with regard to the regions' legislative frameworks, decision-making powers, administrative procedures, and general potential for the exploitation of renewable energies. It illustrates the NUTS-level of regions, decision-making powers, cooperation with national government, influence on national legislation, permits & compliance, and the potential & constraints on renewables development.

• Quantitative Data:

What is the current contribution of renewables in the regions' energy portfolio? How ambitious are targets in the regions? What is the remaining distance still to cover? The figures on renewable energy development in the RENREN regions help answer the above questions. To what extent does a regional government contribute directly to the level of renewables development? The pace of development is analyzed under Deliverable 2 (D2).

While national data is usually available for most types of technology (with the exception of mainly small biomass and geothermal installations in the private residential sector), this is not the case for regional data. Due to this partial availability, for D1 a core set of information was selected for investigation:

- a) installed renewables capacity,
- b) the share of renewables in energy production / consumption, and
- c) the distance still to cover as regards renewables share in the energy mix.

Where possible, the data was collected for various years, since the growth rates will help correlate the level of development with the contributing factors.

• Regional Renewable Energy Policies:

The first stage of analysis underway is looking at regional renewable energy development plans and renewables targets in relation to the national targets. Further analysis is being undertaken on existing expertise, (financial) resources and governance. The latter analysis explores different categories, such as university courses on renewable energy issues, research, vocational training, funding for relevant education, guidelines on renewables, or awareness raising & information campaigns.

2. RENREN – What's it all about?

The RENREN network is investigating how regional governments can help accelerate a shift towards renewable energy and so support the EU aspiration for a greener, cleaner energy future. It aims at identifying policy choices to improve regional frameworks for renewable energy expansion. Fourteen regional authorities and organizations from across Europe are jointly exploring the enabling conditions for renewables which a region can influence, and how these can be fine-tuned to support different technologies. These outcomes of the RENREN project work shall also contribute towards sustainable regional development, delivering new job opportunities in rural areas in particular, and designing incentives for research and innovation in the public and the private sectors in a region.

Background on the RENREN network:

RENREN started out with six regions committed to playing their part in global climate action and security of energy supply, and to improving their policies to nurture renewable energy sources. They signed a Charter in April 2007 in Brussels before the then EU Commissioner for Energy, **Mr Andris Piebalgs.** The current 14-member consortium is now funded by the EU INTERREG IV C programme for a three-year period till the end of 2012.

RENREN's targets and tools:

The main aim of RENREN is to identify **transferable good practice** in overcoming bottlenecks faced by the renewables sector by drawing on regional authorities' own efforts and experience. A final outcome will be **Policy Recommendations** to support regions across Europe in making better policy-choices. This work will be supported by an external experts' **Comparative Analysis** looking at the measures and framework conditions that the different regions have already put in place to stimulate renewables.

Dealing with all relevant renewable technologies, RENREN's work is focusing on four cross-sectoral topics affecting the whole range of renewable technologies:

- **1.** Strategic planning for RES at regional level
- 2. Permits and compliance
- 3. Fostering job market development and RTD & innovation
- 4. Finance and incentives

These topics are subsequently explored in **biannual workshops** which consider their implications for different families of technologies. The project also includes on-site visits where participants can see renewable energy initiatives in a practical setting and learn how these have been supported by regional efforts. An indicator-based Regional **"Renewables (RES) Development Monitoring Tool"** will be developed and tested. Its theme is: easy measurement of renewables deployment and potential in any region. It will support decision-makers in improving renewables policies and disseminating their best practice.

Planned outcomes of RENREN:

- min. 40 good practice examples identified,
- min. 30 bottlenecks identified,
- min. 15 good practices successfully transferred to another region, and
- 2 sets of "Policy Recommendation" for 2 stages of the policy learning curve ("learning regions", "experienced regions").

RENREN is actively cooperating with other thematically related INTERREG funded projects, such as MORE4NRG, LoCaRe or RETS.

Midterm results and way forward:

During the first half of the project a range of good practice case studies under Topics 1-3 were successfully collated and several bottlenecks to the development of the renewables sector at regional level identified. Now the work ahead will involve transferring these good practices between the partners, who have already identified how these could apply to their own policy work.

From late 2011 onwards RENREN partners will use the evidence base they have compiled to date to draw up some policy recommendations on approaches to supporting renewables for Europe's regions. The "Comparative Analysis" on renewables will be finalized by external experts and the regional "renewables development monitoring tool" will move from the test phase to a fully functional tool available to all on the RENREN website.

The complete set of findings, recommendations and tools will be presented to a wide audience in a **closing conference** in autumn 2012 in Brussels and will be available online so that interested regional authorities can make best use of the project's outcomes.

4. A "Comparative Analysis" – an external expert's contribution

To add external analytical support to the project, the RENREN consortium contracted a group of experts, the "Freiburg Working Group for RENREN". The tasks consist of two steps with deliverables:

- Deliverable 1 (D1): a description of basic data, plans and projections for renewable energy in the partner regions, and
- Deliverable 2 (D2): a comparative analysis of regional policy approaches, providing a yardstick for the level of advancement / progress on the policy trajectory.

Put simply, the "Comparative Analysis" should support RENREN by answering the following questions:

- How effective are the current policies in the RENREN regions?
- Where and what is the potential for improvement?

General Methodology:

The general approach used for the overall assignment follows the methodology of a correlation analysis, an iterative process of collating data, looking for correlations, and trying to verify those with cross-references, then relating them to the next set of data. In the course of such an analysis it is usual to go back to data and re-iterate certain steps (= cross-referencing).

In order to facilitate this core work under D2, the collection of information and data for D1 was organised under three thematic headings: Framework Conditions, Quantitative Figures on renewables, and Existing Renewables Policies in the RENREN regions. Framework Conditions cover the basic situation which cannot be (directly) influenced by the regions, Quantitative Figures cover the actual renewables situation in the regions and Existing Policies comprises the efforts and enabling activities of the regions to foster RES development.

• Framework Conditions:

Who are the RENREN "regions"? What are their starting points, what is their room for manoeuvre to support and exploit renewable energies? How much leeway do partners have in their policies, and how are they using it? The assessment of renewables policies

In this way, the hospital receives an energy service with lower costs and has no technical responsibilities. It does not have to make the investment and is not initially the owner of the installation. When EREN has recovered its investment, the hospital then becomes the owner of the installation and benefits from the total energy saving.

Evidence of success: Savings of more than 560 tonnes of oil equivalent. Covers 60% of the annual demand for hot water production in regional hospitals representing a total of 7000 beds. The total solar surface area has increased by 3 or 4 since the beginning of the project. Around 50 maintenance employees in hospitals were trained to manage and control the solar thermal installations. The three main areas of success were:

- covering hot water demand with a renewable energy source,
- showcasing the technology (big panels and posters explaining the installations were set up at the main hospital entrances),
- training of maintenance staff in solar thermal energy matters.

RENREN partner to check transferability: Cyprus

3. Good practice case studies to date

A main aim of RENREN is to identify and transfer Good Practice examples. The project defines a **Good Practice** as a regional government's initiative (e.g. methodologies, projects, processes, techniques) which has proved successful and can be transferred to a different geographical area. Within the project the **transferability check** means a measure (such as initiation of a pilot project or adoption of a certain methodology) by one partner based on the Good Practice of another partner region. The aim of the transfer is to overcome related bottlenecks and to support a regional authority's efforts in implementing renewable energy solutions.

Given the differences in the nature of regions as regards their natural resources, environment, economy and the framework conditions already in place, a good practice might not be transferable in its totality but only as regards some measures. For example, some aspects of planning for offshore wind energy may also be useful in planning for offshore marine energy (and vice-versa), but are unlikely to be completely replicable given the differences in the technology and the natural conditions required for each.

During the first half of the project, RENREN dealt with the project Topics 1-3 ("Strategic planning for RES", "Permits and compliance", "Fostering job market development and RTD & innovation"). RENREN is now starting to explore transferability. Good Practice examples under Topic 4 ("Financing & incentives") will be added to this transferability exercise once the thematic work on Topic 4 is finalized.

The following examples from RENREN Topics 1-3 are illustrative of the first results of the RENREN project (status as of June 2011):

- "Recovering Abandoned Small Hydro"
- "Strategic Planning for the Emerging Marine Energy Sector"
- "Bioenergetics Innovation Cluster"
- "Cluster 'Bioenergy for the Region'"
- "Zoning for Onshore Wind"

- "Bioenergy-oriented Forestry"
- "Center of Excellence (CE) for Biomass"
- "Implementation of Curricula for University and Vocational Training".
- "HOSPISOL: an example of an energy services company scheme"

For a complete overview of Good Practice examples identified, please see: www.renren-project.eu

Good Practice: "Recovering Abandoned Small Hydro" (Andalusia/ESP)



Description: Small hydro power plants were a common source of power in Andalusia during the first half of 20th century. They were progressively abandoned from the 1960s. Recovering these old power plants is normally more profitable than building a hydro installation in a new place. It is easier to obtain environmental and water permits since the power plant was established many years ago. 210 abandoned or non-exploited small dams were studied in a previous survey representing to 48.5MW of potential power. For 58% of those considered to be recoverable, a detailed and individual techno-economic viability study was done. Finally, in the scope of the current feed-in tariff, 24.8MW offer an interesting investment choice for private investors (IIR>8%). Funds come from the regional administration to promote renewable energy sources under the region's energy policy.

Objective: The study helps promoters and citizens to search for and identify recoverable small hydro power plants. It is intended to stimulate the interest of companies and people in investing in small hydro and show the potential of this renewable energy source. The study helps to recover a valuable historical and social aspect of the region's heritage. The region is developing a tool (web page) that provides all the information on the technical and economic potential of each hydro site in detail. This study helps to achieve the regional hydro target for 2013 included in the Sustainable Energy Plan of Andalusia.

Who is involved? Andalusian Energy Agency, public body of the Regional Ministry.

How is it financed? Funds from Andalusian Energy Agency: up to € 150,000 (less than € 800 per identified power plant). Target groups: Municipalities, RES enterprises, investors.

Evidence of success: Fostering hydro power development in the region. Providing accurate information to companies, municipalities and people. Recovering historic heritage. Identification of those projects which need less time to get permits and have lower environmental impact. Promotion of hydro power culture among public bodies, companies and people.

Key factors for success: Funds to finance the feasibility study. Include the study in the framework of the region's energy policy. This study helps to achieve the regional hydro target for 2013 included in the Sustainable Energy Plan of Andalusia. For the first time, detailed feasibility studies are displayed for free and geo-referenced through an online mapping tool.

RENREN partners to check transferability: Wales/UK, Ústí/CZ, Cyprus.

physics; S5 Principles of building services; S6 Advanced stage building services; S7 Planning high performance buildings and dynamic energy simulation; S8 Energy certification and calculations adjusted to local specifications.

Each seminar is also free-standing and can be taught as a single unit. The seminars were introduced at Polytechnica University of Timişoara in the 2nd semester of the academic year 2009-2010.

RENREN partners to check transferability: Andalusia/ESP, Cyprus

Good Practice: "HOSPISOL: an example of an energy services company scheme" (Castilla y León/ESP)



Description: Part of the "Castilla y León Solar Energy Plan, HOSPISOL is a programme which is disseminating the benefits of solar thermal energy by supporting installations in public hospitals in the region based on an ESCO (Energy Service Company) approach. The key actors are the Public Health Service (SACYL) of the regional Ministry of Health and the Regional Energy Agency of Castilla y León (EREN).

Of the 23 public hospitals in the region, a feasibility study identified 16 hospitals for installation of solar thermal facilities. The overall programme target is a surface area of 9,000 m2 of solar thermal. Technical support for the HOSPISOL Programme is complemented by new Solar Thermal Energy Guidelines. These are now relevant to the technical bidding conditions linked to the general Mechanical Installations Guidelines for new hospitals. There is also an energy intranet to support the provision of data for managing and monitoring hospital energy consumption.

Investment: Funding source: €5m from the regional Ministry of Economy, Employment & Health.

The hospital sector was chosen for three reasons. It has high levels of domestic hot water consumption, the buildings provide large and accessible areas for the installation of solar collectors and they can serve as a good showcase for solar technology. The Regional Energy Agency of Castilla y León (EREN) designs the projects and manages the programme, the installation and maintenance of the facilities, and invoices the hospital for part of the energy generated from the solar installation.

Good Practice: "Implementation of Curricula for University and Vocational Training" (Timiş/ROM)



Description: The aim of the project was to promote know-how exchange on low energy consumption in buildings across Europe by implementing training programmes, such as:

- Vocational training on low energy consumption for building professionals;
- Vocational training on high-energy efficiency buildings through knowledge exchange
- set up seminars aiming at promoting low energy consumption technologies, products and certification among students (universities, architects and engineering schools).

In Timiş County, this project (by referring to buildings technology matters first) also served as groundwork for a future broader educational effort with respect to renewable energy-related curricula.

Financing programme: Intelligent Energy Europe – IEE 2007 (Project Acronym – ILETE). The partner regions in the project "Initiative for Low Energy Training in Europe" were all committed to voluntary policies intended to control energy consumption, particularly in the building sector and they wished to move very quickly towards a significant reduction in energy consumption in construction with a focus on renovation.

The **aim of the project** was primarily to tackle a lack of training in the field of low energy consumption in the building sector. To achieve this, an expert group (teachers in schools and universities in each partner region) developed a training programme consisting of 8 seminars on highly efficient buildings. These were aimed at architecture and engineering students at university level. The seminars were divided into basic and advanced knowledge in relation to low energy buildings. The seminars have been designed to be transferable to all European regions.

The second objective of the project was to promote know-how exchange on low energy consumption in buildings across Europe by implementing training programmes targeting the building industry. ILETE partners defined a training package for low energy consumption in buildings and installations. This package is dedicated to expert, employees working in the field.

Evidence of success: Seminar topics on high energy efficiency: S1 Sustainability, land-use planning and urban planning; S2 Building concepts; S3 Thermal and hygroscopic characterization of building elements; S4 Advanced aspects of building

Good Practice: "Strategic Planning for the Emerging Marine Energy Sector" (Wales/UK)



Description: Alignment of government strategies, funding and policy measures to capitalise on future opportunities of an emerging renewables sector (marine). The Welsh Government has adopted a forward looking approach to the marine energy sector and its potential for supplying a significant share of electricity to Wales. This is reflected in a hierarchy of related strategic measures and preparatory actions focused on Welsh waters as follows:

- Welsh Government overarching "Programme for Government": Sets 3% greenhouse gas emission reduction target in devolved areas from 2011. Recognises need to reduce use of carbon-based energy by 80-90%.
- Wales: A Low Carbon Revolution": Sets target of 4GW from marine energy by 2025.
- "Ministerial Policy Statement on Marine Energy in Wales": Provides high level support for marine energy development in Wales and sets the strategic framework for the development over the next 20 years of a strong marine-energy sector in Wales. It outlines the enormous marine energy resources in Wales and the initial actions required to accelerate their exploitation in an environmentally acceptable way.
- Marine Renewable Energy Strategic Framework (MRESF): Funded with £1.5m, the MRESF developed the spatial evidence to identify suitable areas for commercial marine energy deployments. The study investigated the practical energy resource potential within Welsh waters, taking into consideration the environmental and socio-economic constraints to development. The interactive GIS mapping system containing baseline data and mapped constraints is shared with other levels of government and statutory bodies and is available to developers on request. The project specific website contains all of the project outputs along with a suite of reports focusing on the potential impacts of marine energy devices on the environment. The study concluded that even when the environmental and technological constraints are taken into account, Welsh waters could produce power for up to two million homes per year.

Objective: Commitment to contribute to the development of a UK Strategic Environmental Assessment for Marine Renewables including for the coast of Wales. In the medium-long term, work with key partners to enable the first leasing round for commercial wave and tidal developments within Welsh waters.

How is it financed? Existing policy resources and Welsh Government funding for MRESF.

Key factors for success:

- Increasing resource commitment (policy resource, funding) to marine energy;
- More joined-up policies to enable the development of this fledgling sector in Wales;
- More joined up working across stakeholders since the goals and steps are set out clearly;
- Tangible topics/ projects (such as spatial evidence, planning, leasing) identified on which stakeholders can collaborate;

Transferability – these initial steps of the Welsh Government and stakeholders provide a blueprint of necessary actions for other coastal regions' preparatory work to harness marine energy.

RENREN partners to check transferability: Schleswig-Holstein (GER), Westfjords (ISL), Pays de la Loire (FRA)

Good Practice: "Bioenergetics Innovation Cluster" (Bay Zoltán Foundation/North Hungary)



Description: The Bioenergetics Innovation cluster was founded in May 2008 by eight members operating in the field of bioenergetics. The size of this dynamic organization is continuously increasing. The current number of cluster members is 35. The aim is the creation of a network based on voluntary cooperation between organizations dealing with renewable energy sources.

A further aim is encouraging effective cooperation between different actors in the value chain, enhancing the innovation capacity of participating or joining enterprises, and increasing the capacity of existing collaborations. The tasks of the cluster are supporting the development of existing and new technologies, especially the creation of innovative bioenergetics technologies, and defining and achieving mutual aims through coordinating the activities of enterprises in the bioenergetics sector.

The management activities of the clusters are carried out by the cluster's project management organization. The cluster members co-operate with national and international partner organizations. The financing of their programmes is assured by local, regional, national and international funds and member contributions.

- Agricultural production, particle flux and recycling
- Extraction of resources
- Process technology
- Energy industry

The results of these projects will enable companies in Schleswig-Holstein to develop raw materials and products and/or develop and/or run processes and thus increase the use and exploitation of biomass in Schleswig-Holstein. This will be crucial to both the energy sector and bio-refineries and will also provide an impetus to agriculture. The centre is also establishing national and international collaborations, thus strengthening Schleswig-Holstein in the acquisition of funding for biomass-related research.

Evidence of success: The long-standing work of CE is covering a broad spectrum of topics, such as

- cooperation with other centres of excellence and institutions (regional, national, international);
- regular meetings of the members enabling excellent and confidential cooperation;
- active networking enabling quick responses to specific calls of different programmes and different topics;
- national and transnational education alliances (i.e. summer courses, bachelor and master's courses in biomass/bioenergy).

During project phase I, 22 new jobs were created; during phase II, 42 new jobs created and 10 small and medium enterprises (SME) incorporated. 1 patent application (Multifunctional Anaerobic Baffled Reactor, MABR). Founding of a new company - Conviotec GmbH Flensburg (target group agriculture and food industry).

RENREN partner to check transferability: Jämtland/SWE.

Other primary forest fuels added to this will be stumps and thin trees, the latter both from forest road cleanings and pre-commercial thinnings.

Evidence of success: What was earlier seen as waste is now a valuable resource with a high market demand. In fact, the price of wood fuel is often comparable with the price of pulp wood. The move to biofuel-adapted forestry has not only resulted in an extra energy feedstock in the heat and power production, but also in an extra income for the forest owners and the creation of many jobs in these fuel chains. It is difficult to estimate how many new jobs have been created by biofuel-adaption as the fuel chain is, to a large extent, integrated into the roundwood chains. It is however an extra feature added into the system and therefore, by definition, implies more jobs. The Swedish Bioenergy Association (Svebio) estimates in total 200-300 jobs are created per TWh of bioenergy.

RENREN partners to check transferability: Ústí/CZ, Castilla y León/ESP

Good Practice: "Centre of Excellence (CE) for Biomass" (Schleswig-Holstein/GER)



By taking a scientific approach, the CE for Biomass ("Kompetenzzentrum Biomasse") aims to tackle fully fundamental questions surrounding the future use of biomass and the associated infrastructure. This two-step project is/was funded by the Schleswig-Holstein Land Government's programmes using ERDF money (phase I from "Regional programm 2000-2006", phase II from "Zukunftsprogramm Wirtschaft 2007-2013").

Description: The CE assures the sustainable transfer of expertise between the universities of applied sciences in Kiel, Flensburg and Lübeck and the universities of Kiel and Flensburg, as well as between farmers, companies, agricultural enterprises and institutions of Land Schleswig-Holstein. It established a sustainable structure for collaboration, with a strong network of companies and participating higher education institutions and acts as a central point of contact, coordinating the scientific aspects of biomass exploitation and the technology transfer within this field in Schleswig-Holstein.

A multitude of individual projects are being carried out under the roof of the competence centre. They are clustered into four subject-related categories with the objective of low carbon and sustainable usage of biomass:

Evidence of success: Clusters are considered as modern initiatives. In Hungary, national and EU support for them started in 2008. The number of existing clusters in Hungary is now 125. 13 of them deal with energetics. There are 22 clusters registered in North Hungary (3 of them accredited). Among the registered clusters 3 are working in the field of renewable energy sources. The cluster founders foresee the long term opportunities since, from the outset, they have generated new co-operation, new partnerships and made possible bigger scale plans or investments. Moreover, the clusters could also have an effect on politics. Thanks to collaborative activities, the turnover of the enterprises is increasing. Another indicator is under evolution – cluster excellence – which describes the efficiency of the cluster management organizations.

RENREN partners to check transferability: Timiş (ROM), Łodź (POL)

Good Practice: "Cluster 'Bioenergy for the Region'" (Łodź/POL)



Description: Cluster "Bioenergy for the Region" is a co-operation platform of companies, research institutions, local administration and business support institutions (including local authorities) with the aim of sustainable energy development in Central Poland. In the context of climate change, the cluster promotes innovative solutions in renewable power engineering with a local and regional dimension.

The Cluster aims to achieve its purposes through:

- 1. comprehensive solutions to issues concerning the regulation of the biomass market in Central Poland, in particular the methods of collection, processing and use as a renewable energy source;
- integration of members of the Cluster businesses, researchers and local authorities – in order to increase the share of solar and wind energy in the energy mix of the region;
- **3**. educational and information activities, promoting the use of renewable energy and energy efficiency.

The Cluster coordinator, the Association of Economic Consultants Pro-Akademia, organizes workshops for members of the cluster and forums on "Bioenergy for the Region".

Key factors for success: Projects implemented by cluster members help in building new skills and professions. One example is the "Renewable Energy Manager" project. It is addressed at working adults, employed under a contract of employment or a civil-law contract, who are residents of Łodź region, interested in gaining practical knowledge of how to plan, finance, build and manage a modern wind farm, a biogas plant or a solar park. The project is a 126-hour-long training scheme, hosted by experts and practitioners of AEC Pro-Akademia, the Technical University of Łodź, the Institute for Fuels and Renewable Energy, and the Institute of Sanitary Heating Technology, ZAE Ergom Ltd. Trainees receive a 'Renewable Energy Manager' certificate in Polish and English.

RENREN partners to check transferability: Jämtland/SWE, Central Macedonia/GRC, Bay Zoltán Foundation/North HUNgary, Timiş/ROM

Good Practice: "Zoning for Onshore Wind" (Schleswig-Holstein/GER, Wales/UK)



Description: The "Land Development Plan" is the basis for planning in **Schleswig-Holstein.** It sets a framework for land-use and also for designated "wind energy areas". For the next plan, the Land Government of Schleswig-Holstein has decided that approximately 1.5 % of the Land's area shall be designated as "wind energy areas". These areas, once identified, are included in the regional plan, which is established by federal state planning. Communities can participate in developing those plans by expressing their wishes for or against wind energy areas. Designation will take account of the need for industrial development and wind turbine test fields. The aim is to concentrate wind turbines in a limited number of areas instead of having single turbines spread over a wide area. Beyond these designated areas, wind turbine installation is prohibited. Areas excluded from designation are e.g. nature protection areas. Some areas, for example urban areas, may be designated only if compatible with different interests. Within these designated areas the concept of "community-owned wind farms" is functioning pretty well and helping foster public acceptance of wind energy.

Wales took a strategic approach to onshore wind planning in 2005. It identified seven Strategic Search Areas (SSAs), based among other things on an evaluation of landscape capacity for strategic scale windfarms (defined as being over 25MW). The indicative capacity for these areas is 1120 MW. The evaluation took account of intrusive aspects (visibility, protected areas, etc.) and used a ranking method to find out where wind

turbines would be most acceptable. The studies of the 7 SSA's have been used to inform development plans, planning decisions and supplementary planning guidance. It is a matter for local planning authorities to undertake local refinement within the SSAs to guide and optimise development within them. Most areas outside SSAs should remain free of large wind power schemes. The government of Wales, communities and local planning authorities are involved. It is financed by existing government resources.

Evidence of success: With the "Land Development Plan" the zoning for onshore wind has been more easily secured and approved. It is a declared aim of the government in Schleswig-Holstein / Wales to secure and expand wind energy areas to use more wind energy potential. Because there has to be a public consultation for the establishment of every development plan for wind, public participation is secured, advancing public authorities' cleaner energy aims and objectives.

Good Practice: "Bioenergy-oriented Forestry" (Jämtland/SWE)



Description: Jämtland is rich in forestry and also good at utilizing this biomass resource as energy. The municipality-owned heat and power company Jämtkraft is the biggest energy producer in the region and has a 99% fossil fuel-free production. The feedstock in the fuel mix comprises approximately 50% sawmill residues, 30% primary forest fuels (thin trees, tree tops, branches and stumps), 10% industrial wood waste and 10% peat. The trend is that the proportion of primary forest fuel will increase, diminishing the relative share of sawmill residues.

The primary forest fuel is a very important resource and tops and branches are in fact seen as a third category in traditional forestry in addition to timber and pulp. This is possible due to the fact that traditional forest final fellings are now commonly biofuel-adapted (~80% of all fellings) in the sense that forest residues, also referred to as slash, are sorted into separate piles at the time of cutting. Slash recovery however, is never carried out from forestry that is too poor in nutrients or where the slope is too steep.

The annual cut that is biofuel-adapted in Jämtland is approximately 16,000 hectares. With an average of 30 tonnes of slash per hectare, around 480,000 tonnes of slash are recovered from these final fellings. These numbers give a total energy recovery of 1,100 GWh per year. Note that this is only from the recovery of slash from final fellings.