



NORTH SEA

SUSTAINABLE ENERGY PLANNING



EUROPEAN UNION
European Regional
Development Fund

The Interreg IVB
North Sea Region
Programme



*Investing in the future by working together
for a sustainable and competitive region*

THE NORTH SEA REGION PROGRAMME

The North Sea – Sustainable Energy Planning project is partly financed by the Interreg IVB North Sea Region Programme which supports regional development projects around the North Sea. Promoting international cooperation, the Programme aims to make the region a better place to live, work and invest in. A principal aim is to expand the scope of territorial cooperation and focus on high quality projects in innovation, the environment, accessibility, sustainable and competitive communities. The 2007 – 2013 Programme connects regions from seven countries around the North Sea. It aims to foster policy level planning and seeks long-lasting, tangible effects from its projects.

EXPECTATIONS

AIMS & OBJECTIVES

North Sea – SEP aims to develop and promote a model for regional development centred on renewable energy and efficiency activities, and to meet the needs of local and regional authorities undertaking sustainable energy planning. The model takes a holistic and integrative approach, addressing energy production, use, innovation and governance. It seeks to establish and locate activities, to source services, to organize value chains and to maximize the regional economic benefits. North Sea – SEP will generate and trial new organizational models for energy initiatives that can stimulate and facilitate cooperation among SMEs, citizens, public authorities, planners, and the energy and construction sectors. It will devise practi-

The Programme has four priorities:

1. Building our Capacity for Innovation
2. Promoting the Sustainable Management of our Environment
3. Improving the Accessibility of Places in the North Sea Region
4. Promoting Sustainable and Competitive Communities

The North Sea – SEP project is part of Priority 2 and within that addresses a specific area of intervention: environmentally responsible energy production practices. For more information please visit: <http://www.northsearegion.eu>

cal tools for planning and decision-making, including scenario, roadmapping and evaluation methods. It will contribute to the consolidation and dissemination of knowledge in the area, particularly by setting up an online platform and knowledge base, training materials for a virtual academy, and other key resources. Reorientating regional energy systems and creating new regional profiles needs wide involvement: decision-makers, research institutions, industries, investors and users. The project sets out to enlist all these types of actor in its activities and thus to lay the ground for continuing cooperation and commitment. Its own membership forms an ideal testbed for the collaborations and methods it develops.

REGIONAL DEVELOPMENT

In recent years the cost of fossil energy resources has been heavily increasing. At the same time, small towns and villages in rural areas experience decreasing populations. Public agencies are caught in a vicious circle of declining budgets and rising costs. Tackling these problems requires better regional development, decision-making processes and a variety of innovations: tools for regional planners, methods for decision-making, innovation transfer, processes for planning and decision-making, improved knowledge, models for public-private cooperation, and business

models for ventures as part of regional renewable energy markets. The North Sea – SEP project envisages and supports the development of sustainable energy regions, and the growth of green energy industries to meet their needs. It aims to provide regional planners, decision-makers and stakeholders with the means to develop effective and well-informed regional energy strategies and initiatives. The project creates an extensive network of partners in the North Sea Region united in their goal of helping improve regional, sub-regional and local energy planning.

PROJECT OBJECTIVES

- Increase the role, profile and understanding of sustainable energy planning
- Provide innovative structures and processes for regional development
- Build energy planning capacity
- Identify new cooperation models
- Develop new methods and tools for sustainable energy planning





COOPERATION AND KNOWLEDGE TRANSFER

Cooperation is one of the main aims of North Sea – SEP. Besides the transnational partnership, this aim is reflected in the development of cooperation models

and partnerships between diverse actors. Exchanges with other projects and initiatives ensure that we transfer knowledge and get the benefits of synergy.

MAIN OUTPUTS

- Regional energy analysis
- Partner and expert networks
- Case studies on alternative energy supply for private and public buildings
- Checklist for each participating region resulting in a general grid for energy alternatives
- North Sea investment appraisal model
- Networks in the construction and housing sectors
- Final compendium
- Education and training to improve energy knowledge
- Online knowledge base system
- Pilot activities: planning processes using GIS Tools; photogrammetric plotting; insulation retrofit in buildings
- Calculation tools for cost benefit analysis
- Handbook on regional measurements and effects

North Sea – SEP is therefore supported by the following organisations:

- European Centre for Renewable Energies, Germany
- Green Business Norway, Norway
- PO Kerngroep Europees Milieubeleid, Netherlands
- Telemark County Council, Norway
- Faculty of Spatial Sciences of the University of Groningen, Netherlands
- City of Växjö, Sweden

PARTNER NETWORK



- 1 Aberdeen City Council (CK) 2 Dundee College – Construction & Built Environment Centre (UK)
- 3 Institute for the Study of Science, Technology and Innovation (ISSTI), University of Edinburgh (UK)
- 4 Intercommunale Leiedal (BE) 5 Imog (BE)
- 6 Provincie Drenthe (NL)
- 7 City of Osterholz-Scharmbeck (DE)
- 8 Jade University of Applied Sciences (DE)
- 9 U.A.N. Municipal Environmental Campaign (DE)
- 10 Green Network (DK) 11 EMC – The Coalition for Energy and Environment Varberg (SE) – Campus Varberg (Municipality of Varberg) (SE)

WORKING AREAS



PUBLICITY & COMMUNICATION

The dissemination activities of the project are crucial for achieving its goals. Projects outputs will be presented and project partners will participate in major events throughout its lifetime.



DEVELOPMENT & IMPLEMENTATION

Tools and methods developed in the project – like its investment appraisal model, its checklists for assessing renewable energy potential, and its evaluation criteria for planning initiatives – will be trialled, refined and implemented in the partners' own energy planning activities.



TOOLS, METHODS & CAPACITY

Tools for sustainable energy planning are being developed for the specific needs of public authorities. As well as local and regional public agencies, SMEs, housing associations and other stakeholders will contribute to this development.



EVALUATION, BENCHMARKING

The project is developing procedures and criteria for the systematic and continuous evaluation of its activities in terms of their management, their economic performance and their contribution to sustainability and regional development.

PROJECT TIMELINE

The North Sea – SEP project started in 2009 and lasts for three years. The project will work intensively on a wide range of activities and issues in this time.



2009

The first phase entails defining goals, establishing cooperation among partners, and thus laying the ground for their joint work. Background and baseline studies, regional energy analyses and theoretical work provide an essential knowledge base.



2010

Work on the main project outputs starts in 2010. Energy strategies and roadmaps are developed on the basis of the regional baseline studies. Activities are piloted. Frameworks are devised for evaluation and quality assurance.

STATEMENTS

REGIONAL ENERGY PLANNING...

REINHARD KOCH

»... means to create optimal conditions. It is very important to begin with energy planning for a balance between economy, efficiency & production.«

RICHARD LAING

»... is a necessity given the reality of climate change and has the capacity to influence behaviour, economies, planning and design.«

JAN SUNDQUIST

»... an opportunity to make an impact of the use of energy in a region / community – both what kind of energy to use and what amount ...«

DR. DAVID RODLEY

»... is critical to delivery of the low carbon future. Local energy planning needs to be properly integrated into the wider picture. Effective and efficient deployment of renewable energy solutions is crucial, but must be tailored to best fit the local environment.«

JOOP KRAMER

»... can be an enormous challenge to reform the society in a sustainable and energy neutral way.«

JOHN J. BECKER

»... it is necessary to control and manage the process in order to avoid negative impacts and resistance.«



2011

Energy planning activities in the partner regions are well underway, the concepts and methods are put into practice, and experience is fed back to develop them further.

EXPERT COMMITTEE

THINK TANK

North Sea – SEP has set up an international Think Tank with eminent members from the political, scientific, NGO and industry worlds. The Think Tank guides the development of the whole project and advises project partners on developments in sustainable energy and policy.

Additional special experts are invited to Think Tank to address specific subjects. The Think Tank will form the growing core of a Sustainable Energy Planning Foundation that will operate beyond the lifetime of the project.

THINK TANK MEMBERS

- John J Becker – CEO, REON AG, Germany
- Donaat Cosaert – expert on climate and energy policy, Institute Society and Technology, Flemish Parliament
- Göran Fremrot – Senior Advisor, Växjö Kommunföretag AB (VKAB), Sweden
- Reinhard Koch – Executive Director, European Centre for Renewable Energy
- Joop Kramer – Master of Laws, Province of Drenthe, Netherlands
- Prof Richard Laing – Robert Gordon University, Scotland
- Dr David Rodley, Lecturer – University of Dundee, Scotland
- Prof Dr Uwe Schneidewind – President and Chief Research Executive, Wuppertal Institute for Climate, Environment and Energy, Germany
- Jan Sundquist – energy engineer, Varberg Energi AB, Sweden



2012

Pilot activities are completed. A major conference presents and evaluates the project outputs. A firm basis is established for making its work available, and for continuing the life of the partnership, beyond the end of the project.

TRANSNATIONAL PARTNER

BELGIUM

The Belgian partner group consists of the intermunicipal association Leiedal and the intermunicipal cooperation Imog. Leiedal unites 13 municipalities and cities in the Kortrijk region and has a rich tradition of 50 years of intermunicipal cooperation and regional development concerning spatial and economic planning, environmental issues, ICTs and transnational cooperation. Imog is located in South West

Flanders and manages integrated waste treatment for 11 municipalities, representing 227,000 inhabitants. Its facilities are housed at two sites, each with specific activities and an extensive network for selective collection with 16 civic amenity points and kerbside collection. Imog provides a wide range of services such as extensive communication and advice on sustainability.



PROJECT ROLE

In North Sea-SEP Leiedal is developing an overarching regional energy strategy to bring together a wide network of public authorities, private companies and education partners around the future of sustainable energy in the Kortrijk region. Imog treats the project as an opportunity to put a regional energy strategy into

practice.

It will promote energy consciousness in the region through communication, training and awareness-raising. Imog will pursue good educational practice: an integrated approach using active and passive sensitization, on-site and through an education centre.

MAIN ACTIVITIES

- Intermunicipal cooperation and capacity-building on energy saving and renewable energy for municipal buildings
- Regional energy strategy – setting regional targets for the region's energy future and initiating actions in collaboration with regional stakeholders
- Developing waste incineration capacity of 70,000 tonnes, with 32 MWh energy recovery and 30,000 tonnes of biomass from waste wood chips

TRANSNATIONAL PARTNER

DENMARK

The Danish partner network comprises the »Green Network«, a cooperation among private companies and public sector partners, and the municipalities of Hedensted, Vejle, Fredericia, Kolding and Middelfart. They work together to achieve greater sustainability, focussing on environment, social commitment and occupational health and safety. More than 300 companies and public bodies, as well as the five municipalities, have

collaborated through the Green Network since it started in 1994. The keywords in this venture are dialogue, voluntary agreement and commitment. The subtitle of Green Network makes its mission clear: »growing responsibility«. It involves the members individually taking on greater social and environmental responsibility and the Network together developing more sustainable ways of working.



MAIN ACTIVITIES

- Local action plan for reducing CO² in Vejle
- Local climate change strategy including renewable energy
- Communication for energy savings projects, such as the renovation of old buildings
- Strategic energy planning

PROJECT ROLE

The Danish partners focus on strategy development, with the overall aim of reaching a higher level of renewable energy usage and reducing general energy consumption. The municipalities are working on a new kind of planning to pursue the Climate Commission's energy

and climate change goals. Through its public-private partnership, the Green Network is developing best practice and giving international partners an exemplary model for achieving sustainable energy goals through such a collaboration.

GERMANY

The German partner network consists of four main partners, Jade University of Applied Science (Lead Partner), the City of Osterholz-Scharmbeck, REON AG, and the Municipal Environmental Campaign UAN, plus the municipalities of Worpswede, Hambergen, Ritterhude, Grasberg and Lilienthal. At Jade University 6200 students study in the fields of Energy, Design, Materials and Construction, Health, IT and Maritime Business and Technology. The City of Osterholz-Scharmbeck is the

capital of the County of Osterholz; it consists of seven municipalities and straddles rural and urban environments. REON AG is a fully integrated engineering firm in the field of renewable energy; it offers project supervision and management for energy projects. UAN is a non-government organization founded by the association of towns and municipalities in Lower Saxony; it supports them in solving local environmental challenges.



MAIN ACTIVITIES

- Analysis of the energy situation: demand, sources, organisation, governance
- Implementation of a regional energy strategy »Energiewende Osterholz 2030« in cooperation with the municipalities, the county administration, energy suppliers and local industries
- Informing and raising public awareness and facilitating exchange of experiences among municipalities
- Constructing a regional solar energy map

PROJECT ROLE

The German project partners work together on different levels in the North Sea SEP project. Research on energy saving measures at Jade University is used by other partners who analyse possibilities for implementing them. The City of Osterholz is developing a regional energy strategy aiming at 100% reliance on

renewable energy. REON undertakes technical and economic feasibility assessments. UAN contributes lessons from the experience of developing energy policies among the municipalities in Lower Saxony, and is responsible for awareness-raising and participatory processes.

TRANSNATIONAL PARTNER

SWEDEN

In Sweden the project partnership consists of the Campus Varberg, the Energy Agency for Southeast Sweden in Växjö (Energikontor Sydost - ESS) and the Coalition for Energy and Environment (EMC). Campus Varberg is a multi-university centre offering university education programmes, advanced vocational training and adult education. Connected to the Campus is the Alexanderson Institute, a unit which encourages collaboration between academia and industry on regional development

initiatives. EMC is a private enterprise association whose aim is to encourage its members to increase energy efficiency and reduce negative impact on the environment. ESS strives for improved energy efficiency and increased supply of renewable energy by helping set up sustainable energy systems; it offers up-to-date information and impartial advice in the energy and transport sectors.



MAIN ACTIVITIES

- Regional analysis of the energy sector
- Network analysis for the North Sea Region as a basis for setting up cross-sectoral networks in the energy field
- Coordinating and participating in a range of projects on energy efficiency and renewable energy issues in the public and private sectors
- Organizing and participating in seminars, lectures and workshops to spread information on sustainable energy systems, energy production and use

PROJECT ROLE

Campus Varberg and the Alexanderson Institute work on networking structures and ways of building long-term links between academia and industry. Through industry work-groups connected to their education programmes, and through joint initiatives with the Coalition for Energy and Environment, the aim is to improve dialogue between the public and private

sectors on energy and sustainable regional planning. The Energy Agency for Southeast Sweden is building networks in the housing sector by supporting the creation of a Regional Climate Commission in the Kronoberg County, and as a member of the »Goda Hus« network on energy efficient buildings.

TRANSNATIONAL PARTNER

THE NETHERLANDS

The project partnership consists of the Province of Drenthe, a regional government organization, and the municipality of Tynaarlo. Drenthe employs about 600 people on many different fronts, and allocates many millions in subsidies.

As a governmental authority the Province is responsible for many aspects of spatial planning, the environment, landscape and nature, traffic and transport, the economy, welfare, health, and culture.



Its governing body (Provinciale Staten) sets regulations and grants permits in many relevant areas. The Province has specific responsibilities in energy planning, climate change adaptation and mitigation: organizing cooperation between municipalities, business and energy companies, and encouraging and subsidizing the use of renewable energy. Energy is one of the areas of special attention in the Northern Netherlands.

MAIN ACTIVITIES

- Establishing new co-operative links within the region between government organizations, SMEs and the rest of the private sector
- Creating a network of parties that actively participate in developing sustainable living areas and neighbourhoods
- Initiating and managing new approaches to building, recycling and water purification, with the relationship with the current built and natural environments as their primary consideration
- Creating innovative concepts for housing developments that generate their own energy

PROJECT ROLE

The Province of Drenthe is developing an innovative business model for establishing sustainable living areas; the model forms the basis of cooperation among the diverse parties involved. Another part of the project is the development of a model for regional energy planning. Knowledge and experience from the project is

shared with other municipalities and international partners; knowledge transfer is one of the key requirements of a successful collaboration. In addition, the Municipality of Tynaarlo is planning a new completely sustainable housing development in Vries.

TRANSNATIONAL PARTNER

UNITED KINGDOM

The partner network in the United Kingdom consists of Aberdeen City Council, Dundee College and the University of Edinburgh. Aberdeen City Council is a local authority employing over 11,000 people. With the decline in oil and gas the city is working to build a renewable energy industry in North East Scotland to underpin the future prosperity and sustainability of the local economy. The Sustainable Industries Institute SI2 at Dundee College adopts a comprehensive,



PROJECT ROLE

Aberdeen City Council is mainly involved in developing and implementing energy strategies, particularly with work on roadmaps, strategies and a focus on public buildings. Dundee College is developing an internet platform and energy knowledge database for the diverse project stakeholders. Other key roles include

multi-disciplinary approach, providing training and qualifications in workforce skills required to support the latest developments in environmental and sustainable technologies and renewable energy. The Institute for the Study of Science, Technology and Innovation (ISSTI) at the University of Edinburgh is involved in a range of social science and collaborative multi-disciplinary projects on energy innovation and policy issues.

MAIN ACTIVITIES

- Developing a city wide strategy for low carbon developments
- Undertaking a mapping exercise of Aberdeen to identify the energy demand in each area of the city
- Finding ways of incorporating this information in the planning system to ensure the most appropriate low-carbon heating and power systems are recommended at early stages of development
- Developing and assessing options for sustainable energy planning initiatives: organisation, business models, evaluation frameworks and criteria

developing construction techniques for retrofitting insulation and other energy efficiency measures to existing buildings, and leading the evaluation of supply chains and regional sustainable energy planning. ISSTI provides wide-ranging research support to the project partners.



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