



# Renewable Energy Regions

Connecting urban demand & rural supply

## Why this Project?

**The Northwest of Europe is one of the EU's highest energy consuming regions. The share of renewable energy (RE) in the region's production and consumption mix is low and there is a strong dependence on non-renewable energy sources.**

The countries in Northwest Europe have EU-wide the highest challenge to reach their 2030 targets of RE share in consumption.

Urban and rural territories are required to make the most of their renewables potential progressing the energy industry from a heavily centralised and non-directional, demand-driven model to a regional model, in which supply and demand will be balanced better.

### **RegEnergy connects rural RE production with the urban energy demand**

Urban areas are heavy energy consumers and the main emitters of greenhouse gases, but don't dispose of the potential to produce the RE within their territory. Rural areas have large capacities to offer RE.

Partnerships, which connect the high energy demand of urban areas with the large RE production potential, are a key component for a spatially compatible expansion and use of RE.

### **Tackling Regional Obstacles by:**

**Developing optimal institutional arrangements**, e.g. partnership agreements between cities & rural areas for urban support to rural RE producers to deliver energy to urban consumers.

**Providing the necessary networks between RE producers and consumers cost-effectively**, e.g. for transport of biogas from rural to urban areas.

**Tackling technological challenges to match and manage regional RE production and consumption** and allow renewables growth despite limited grid capacities.

**Proposing solutions to overcome restraints from regulatory frameworks** and consumer concerns by combining best-practices of the partner countries.

## Project Focus & Results

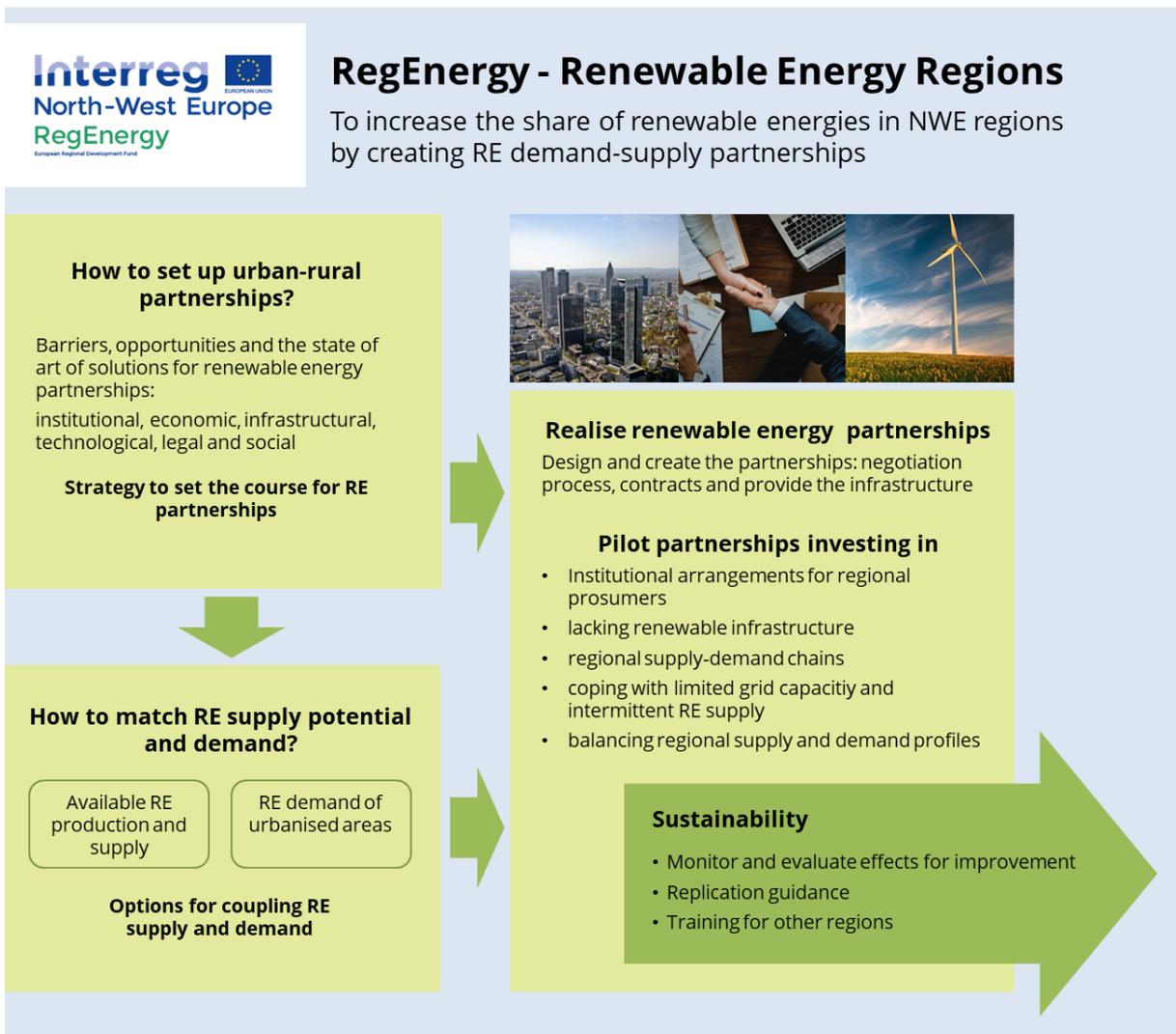
Collaborative efforts by urban-rural partnerships are seen as one main pillar of working towards a RE future (European Territorial Review 2017). These partnerships between urbanised and surrounding rural areas create win-win relationships:

Densely populated urban areas are not able to provide the necessary RES supplies to meet their demand. Hence, providing financial and technical support for the development of RE production in neighbouring rural areas is fundamental. Whereas rural areas dispose of natural resources, but lack in number of energy consumers, and personal and financial capacities for developing solutions.

### **Solutions & Outputs**

In RegEnergy, territorial cooperation of urban-rural regions will help to overcome these barriers and find better advanced solutions. Looking beyond the national administrative system will speed up finding better solutions for new institutional arrangements. The French approach of reciprocal framework contracts between city and county-side or the UK partner's integrated urban-rural joint local plan will offer one starting point for the other partners to develop the best solution for their region. NWE member states have different regulatory approaches

facilitating an increase of RE consumption and production. Restraining national regulations can be tackled faster by transnational learning establishing best-practice among all partners, e.g. to enable smart grids and energy sharing for regional approaches. The project responds to the diversity of the NWE territories with highly urbanised areas encompassed by rural areas, and contributes to a sound territorial development of NWE by ensuring a balance of strengths between rural communities and growing metropolitan areas.



## Activities

### Set up of urban-rural partnerships on increased use of RE

Effective and operational urban-rural RE partnerships need to cope with manifold barriers (e.g. institutional). The aim is to find viable solutions based on best-practices and the state of art from all partners despite the existing barriers. This leads to a common strategy on how to set up partnerships that can cope with these barriers.

Key activities are:

- Analysis of relevant institutional, economic, infrastructural, technological, legal and social barriers in the national and EU context hindering RE urban-rural partnerships.
- Jointly deepen the state of art for solutions by comparing and learning from the existing solutions of PP countries.
- Jointly draft framework guidelines for a common strategy developing RES partnership models.



### Create models to match RE supply and demand in NWE regions

The optimised allocation of the regional RE potential and supply with its diversified sources and locations and consumer's energy demand in urban areas is a pre-requisite to apply adequate partnerships and to increase the RE production and consumption within a regional territory. This leads to joint models to match RES demand and supply within a regional territory.

Key activities are:

- Investigation and modelling of the conditions and future availability and options of RE sources and supply in the urban-rural region as well as the potential demand and energy consumption within the Renewable Energy Regions. These activities provide the basis for developing regional options for coupling the RE production and supply with the demand within a regional territory.
- Project partners will support each other and regularly share their specific knowledge.
- Joint assessment of regional options by all partners based on the lessons learned from the pilot activities and leads to jointly validated regional models.
- Jointly developing a transferable method for coupling RE supply and demand for a regional territory in NWE.



### Realise RE demand-supply partnerships for matching consumption and production

The developed practical solutions need to be tested and verified as pilot activities to increased RE production and consumption and reduced GHG emissions as main outputs of the implemented partnerships.

Key activities are:

- Design and deliver concrete RE partnerships on complementary issues; negotiate with relevant local, regional and national stakeholders; develop details of contractual and financial agreements; signed contracts.
- Implement related facilities to overcome structural and technological barriers.
- Based on the implementations: test and validate the developed models and opportunities under real life conditions in the highly complex environment (cf. cooperative urban-rural monitoring device)

### Long-term effects

Validated solutions and outputs will be rolled-out and replicated throughout NWE beyond the lifetime of RegEnergy.

Positive long term effects are:

- GHG emission reduction from increased RE production and consumption.
- Decentralised RE production and consumption within a regional territory implementing regional energy and low carbon strategies.
- Main barriers are solved.

To sustain and widely expand the positive effects, RegEnergy partners will develop a replication scheme. RegEnergy will boost impact by implementing the solutions to 8 cooperating regions (4 million inhabitants) already during the project's lifetime. At 12 impact meetings, RegEnergy partners will present best-practice and showcases to cooperating regions and will actively help them to develop appropriate RE demand-supply partnerships in their regions.

Key activities comprise:

- Develop and agree on common maintenance plan ensuring and increasing low carbons reductions achieved through investments supported through ERDF (European Regional Development Fund) and leverage of funding.
- Prepare the solutions for replicability and ongoing active roll-out in 8 cooperating regions.

- Develop a roadmap for implementation of the results after the project in case of changing regulations and policy.
- Develop roll-out strategy for uptake of results beyond RegEnergy territories after the end of the project.

#### Project Data

- Project duration: Oct 2018 – Sep 2022
- Total Budget: 11,08 million Euro;  
ERDF funding: 6,1 million Euro

## Project Partners



9 project-partners from 7 NWE countries, representing metropolitan regions, cities, rural communities, regional agencies, scientific institutions and renewable energy producers will facilitate viable new urban-rural partnerships and will close missing regional links between RE demand and supply of renewable energy and will thus increase regional RE share in these regions.

The partners represent the types of regional territories found in 80 % of NWE. Research and engineering organisations with broad practical experiences will support the design and conceptualisation of the supply and demand models. Regional agencies and producers of renewable energies will complement the partnerships. The best solutions found for RegEnergy areas will serve as effectively transferable blueprints for regions throughout NWE.

The European Secretariat of Climate Alliance, located in Frankfurt (Main) coordinates the project and carries out two projects, which focus on strengthening RE regions in Germany with special consideration of CO<sub>2</sub> monitoring.

## Partner-Organisationen

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