BEn - Biomass energy register for sustainable site development for European regions

http://www.BEn-project.eu

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Agenda

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Background

- Know-how on regionally adapted technologies is not widely disseminated
- Energy “sinks” for biomass in the region are not well known
- Single energy-related projects are implemented, but due to missing comprehensive strategies in the regions, these projects are often contradictory and impede sustainable concepts
- Site planning and planning of new sites (e.g. industrial or trade areas) do often not consider utilisation of renewable resources
- The “matchmaking” between the right partners is difficult. Lacking knowledge on how to cooperate effectively in the regions (flagship function)
Additional European Background

EU-Targets:

- 20% of the EU final energy consumption is due to come from renewable sources by 2020.
- Currently, the EU meets about 4% of its energy needs from biomass.
- INSPIRE (infrastructure for spatial information in Europe), harmonising of geodata
EU Project BEn – Key Data

- Idea was created in 2007 and submitted in 2007 under IEE programme
- Acronym: BEn
- Title: Biomass energy register for sustainable site development for European regions
- Website: www.ben-project.eu
Objectives of BEn

- Set up web-based energy register platform displaying energy sources and energy sinks covering the 4 target regions (transferable also to other European regions)
- Creation 4 regional master plans which include financial, management and technical guides elaborated and endorsed at local level (1 per region)
- Identification of bioenergy priority development areas in 4 regions + 2 agreements per region on bioenergy actions
- Establishment of 4 regional networks
- 80 relevant stakeholders to be trained on the BEn methodology (e.g. land planners) including training materials
- 700+ relevant stakeholders to be targeted via dedicated events
Model Regions

The Project includes four European model regions: Great Britain, Germany, Italy and Poland.

The model regions were selected on the basis of different technological standards of biomass use.

The objective of BEn and the energy register is to develop a comprehensive bioenergy register according to the specific requirements of the regions – measures included.
Project Model Regions

North East England

Umbria

Emscher-Lippe

Gostynin Lake District

Image 1: Photos from the model regions [ben-project.eu]
BEn - Partners

7 project partners from 5 countries

- **WiN** Emscher-Lippe limited company for structural change (D)
- **RDI** - Rural Development Initiatives Ltd. (UK)
- **EEE** – European Center for Renewable Energy Güssing (AT)
- **Fraunhofer** - Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT (D)
- **CRB** – Biomass Research Center (IT)
- **StowGmin** – Gostynin Lake District Tourist Communes Association (PL)
- **IETU** – Institute for Ecology of Industrial Areas (PL)
From the start, Citizens and agents of the regions have been integrated into the conception of the register:

Additionally, both, citizens and agents of the region, participated in the development of the common regional Master Plan, the regional guides for finances, management and technology and the discussion of possible regional actions and projects.
Web GIS Architecture

One WebGIS-Application

North East England

Emscher-Lippe

Gostynin Lake District

Umbria

Identify actions to be implemented in the region

Energy data
Data on logistics
Local stakeholder data, …

Energy data
Data on logistics
Local stakeholder data, …

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Local stakeholder data, …

Energy data
Data on logistics
Local stakeholder data, …

DB = Database
WMS = Web Map Service

Financial, Technological, Management Guides
GIS Architecture

Tier

- Presentation
- Mapserver
- Data

Software Product

- MapFish Framework
- UMN Mapserver
- PostgreSQL/Postgis

Main task

- Map service managing and presentation
- Map service generation
- Data maintenance
- DBMS
- File system

GUI in Web browser

External map service generation
Input of Data

- **Background maps:** *Open street map*
- **Content data:**
  - **Biomass source:** Display of theoretical potential
  - **Energy source:** Statistic data (also plants in planning process), Information from network
  - **Energy sinks:** Data acquisition through qualitative interviews and questionnaires
  - **Stakeholders:** Research in the region (plant operators, farmers, politicians, local economic promotion, municipalities...
Show the stakeholders in the region

Online Guides (management, technological, financial)

Actions

Creation of thematic actor clusters

Competing biomass demand is known in 5 km radius -> set-up of plant

Change the energy source for fossil hospital heating e.g. to wood boiler/heating

Show the biomass installations from point XY in a radius of 5 km

Show the biomass sources in the region
What has BEn to offer?

- Contacts in the biomass sector of the region and the partner country regions
- Template of a Master Plan in the bioenergy sector with a sustainability indicator matrix for future assessment of actions
- Structure and function of a network, i.a. network guides
- Different templates of questionnaires (energy sinks, query for actions)
- Media plan for displaying PR activities
- Expandable web-based bioenergy register; compilation of energy specific data from the model regions (partly OGC conform)
- [www.biomassenatlas.de](http://www.biomassenatlas.de)
What is the Biomass energy register capable of?

- Display of punctual and terrestrial data of the biomass energy sector
- Implementation of web mapping service data (WMS data)
- Worldwide independent implementation of punctual data through defined data layers
- General area and length calculation
- Support through tools and document templates (i.a. Master Plan, calculation tools)
- Collection of Best Practice examples and illustration of performed BEn actions
Thank you for your attention!

For more information please have a look on www.BEn-project.eu