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Fraunhofer UMSICHT

Resources and Innovation Management

Greetings

Dear Readers,

Achieving a green Europe mandates an environment-friendly energy supply. Towns and cities, above all, can grasp this opportunity and adopt renewables as a fixed component in municipal energy planning. Lacking, however, are harmonised approaches and a uniform data basis.

Thus we are glad to present in this brochure a solution to this challenge. Our European team, working with the four European model regions, devised a planning and communications tool that can easily be used for local bioenergy planning and within regional networks already in existence. I was especially impressed by the cordial atmosphere that prevailed in our team and the common understanding of the goals to be achieved. We hope that the outcome of our efforts will support attaining an environment-friendly future.

That is why I want to express my heartfelt thanks to the project partners for their inspiring cooperation and to the European commission for providing the funding that made the project possible. I hope that you will enjoy reading this brochure and exploring our findings.



Martin Glynn

Rural Development Initiatives Ltd

Director

The BEn project has been part of a journey for the North East of England – from the biomass industries' embryonic beginnings, through the sector's adolescent years where we climbed the learning curve, to the present-day emergence of a rapidly maturing sector. The North East has a long history of energy supply, traditionally an area with a global reputation for exporting coal. Within the region, we firmly believe that we can continue to play a key role in the provision of renewable energy – predominantly in the form of biomass.

With some very demanding targets set by the UK Government we are, without doubt, we're heading for a period of significant growth in the biomass sector. The real challenge will be to ensure that this growth is sustainable. This is where the BEn project helps. The BEn project provides the region with infrastructure required to encourage and nurture sustainable growth in this important sector for the economy, for the environment and for our community.

Biomass energy register

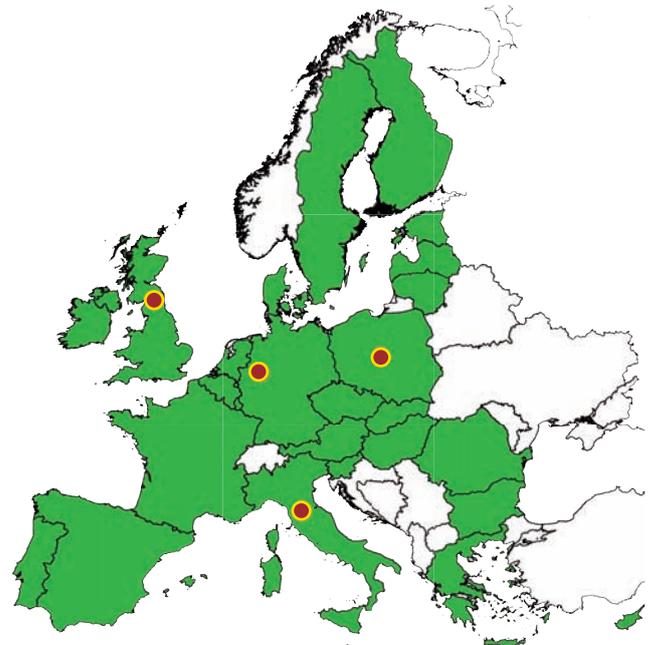
For sustainable site development for European regions

European society is facing massive challenges. One of them is managing climate change. The European Union is promoting reductions in greenhouse gas emissions in every sector of business and everyday life.

One key to enhancing protection of the atmosphere is the efficient utilisation of renewable energies. Capitalising on biomass as a renewable energy source, available locally, offers municipalities and regions an opportunity to actively intervene in energy planning for the region. But full exploitation of this opportunity requires cooperation among the municipalities, regional planners, project developers and other protagonists. Missing here, however, are trans-regional tools and data. This is where the BEn Project starts out. It provides operatives a planning tool, including the required data and visualisations, in support of comprehensive decision-making processes.

The European Commission intends to harmonise projects, make use of synergies, and jointly publicise results. Our BEn Project has two partner projects – MAKE-IT-BE and BioEnerGIS. Both projects deal with planning for bioenergy exploitation at the regional level.

Planning work devoted to biomass-based energy supply has a number of spatial dimensions. The objective is to optimise planning for available biomass resources, for recovering energy from the biomass, and for using the energy thus generated – and thermal energy in particular. A publicly accessible biomass energy register supports this goal in the form of a map application incorporating data relevant to using biomass for energy production. Additional information – such as regional guidelines, master plans and calculation tools – can also be called up. At present this store of information is available for the regions of Umbria (IT), Gostynin Lake District (PL), North East England (UK) and the Emscher-Lippe Region (D). Additional regions and operatives can themselves augment and use the biomass energy register by entering data online. Working together, the European regions are creating a planning and communications portal in the field of sustainable energy supply.



Cooperation with European projects

The MAKE-IT-BE project develops systems to support decision making through an analysis of value addition chains involving biomass. These systems are customised for biomass producers and the market, for bioenergy plants and technologies, for pilot projects and educational facilities.

In the BioEnerGIS project, GIS-based systems are developed to assist decision making when selecting sites suitable for biomass facilities. These systems take account of social, economic and ecological criteria. The GIS-based decision-making tool, named BIPOLE, combines and visualises supply and demand structures, legal aspects, business models, and technical opportunities.



The increased significance of BEn

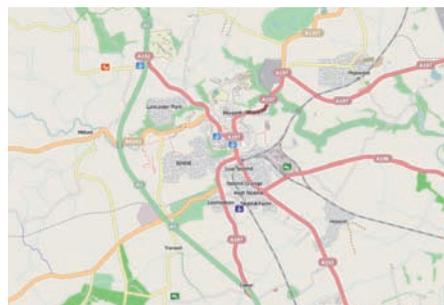
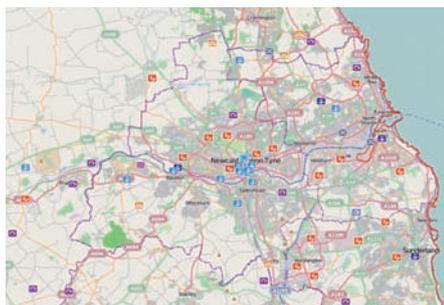
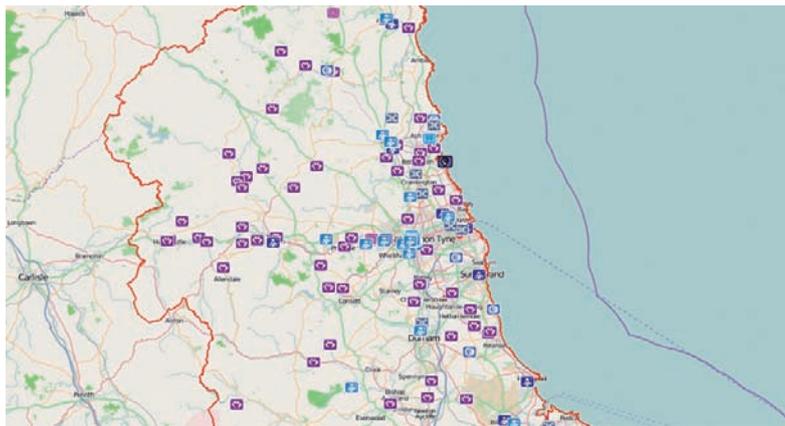
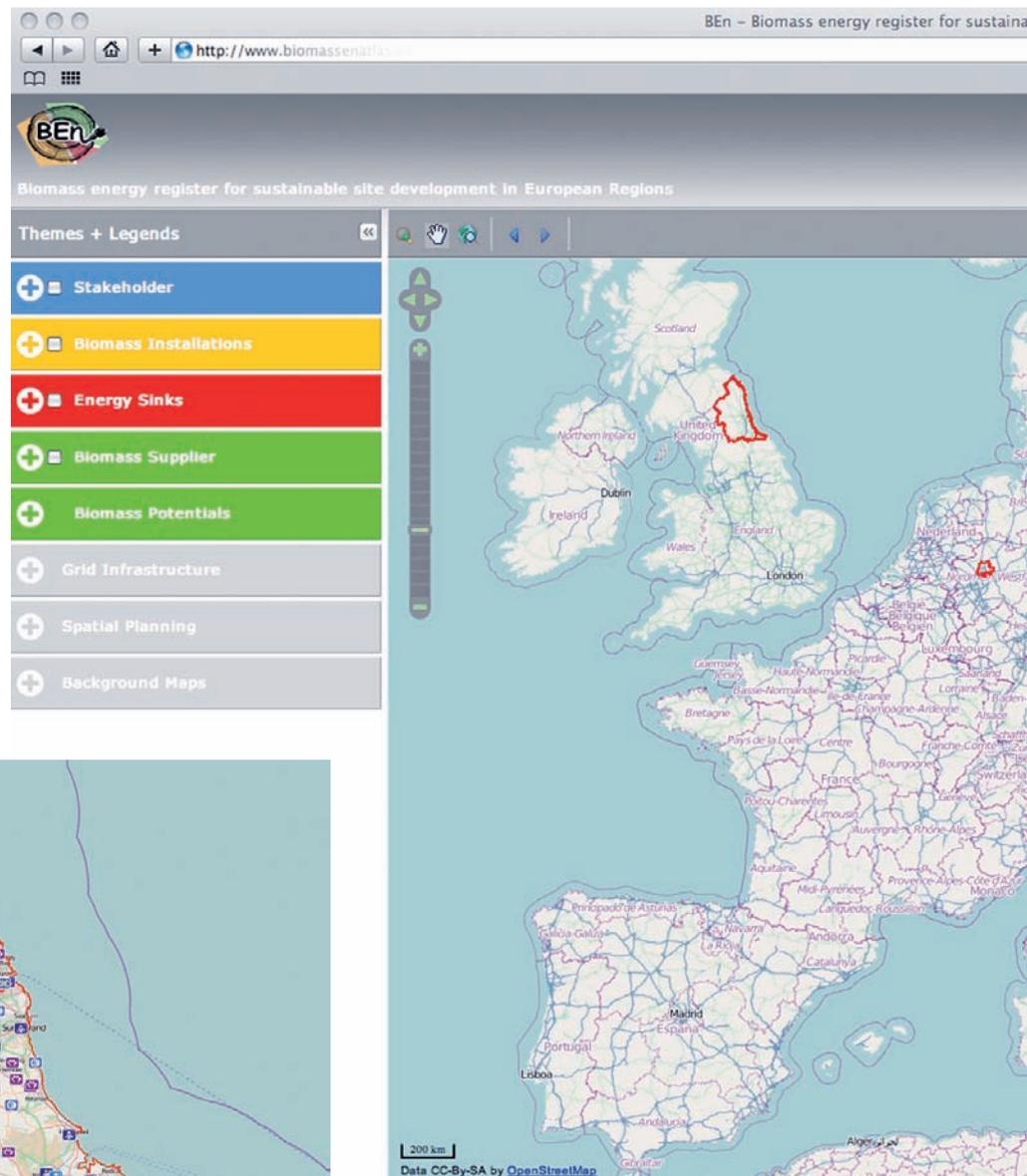
For the region of North East England, United Kingdom

Online GIS as a planning and communications tool

Depicting information on a map gives the user a new technique for communication and for the analysis of questions that involve spatial or territorial aspects.

The register includes an interactive map feature with extensive GIS functions. It permits simultaneous spatial depiction of information concerning relevant data (operatives in the sector, biomass facilities, biomass producers, energy and thermal sinks, and biomass potentials). The biomass energy register is available via Internet all around the world. This application is based on open source software and gives the visitor easy-to-use tools for data analysis and visualisation. The system can easily be adopted for other regions thanks to digitisation tools and entry forms.

The information used to furnish the BEn register with detail has come from a wide variety of sources, local knowledge, partner information, research and Northwoods data. We're grateful for the information provided and whilst we've done everything we can to ensure that this information is accurate, we can't be held liable for its content.





ble site development in European Regions

Google

Logged out

More Functions

- Additional GIS Tools
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- BEn Best Practices
- BEn Masterplans | SWOT
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- BEn Actions
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INTELLIGENT ENERGY EUROPE

The BEn register is a functional tool, intended for those associated with the biomass sector or wanting to get involved in the sector. The atlas is a Web-based GIS tool which allows the user to navigate through the biomass sector of the North East of England and provides a map of biomass activity which is kept up to date and can provide a realistic picture of the availability of resources. If you're considering installing a specific biomass technology and would like to see an example site or contact a local installation company, then the BEn Atlas will provide you with relevant information. We have included in the register a

5

Add your own detail

With a simple log-in function you can update details of your business and the services you offer. A potential developer can use the BEn Atlas to assess the potential supply options for a system due to be installed but also importantly to contact fuel suppliers and those with access to fuel.

As further fuel suppliers come on-stream and indeed as providers of other related services grow, it will be possible for the wider industry to keep the database up to date to ensure that sustainable growth of the sector continues across the North East.

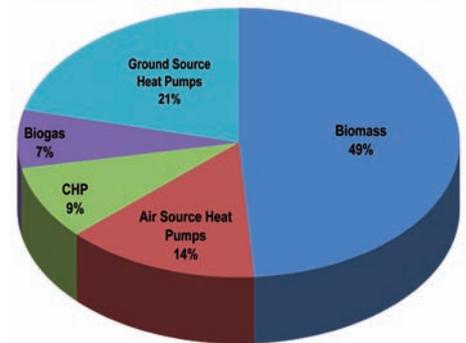
The online database provides a readily accessible tool to assist with site selection and helps with sustainable growth.



Guides Regional structures

The BEn project has produced and published a comprehensive set of guides to provide development orientation for prospective developers and those intending to invest in biomass projects in the North East. The guides are designed to be a comprehensive information resource – taking into consideration the technical, managerial and financial aspects of biomass project development.

Potential UK composition of renewables by 2020



Establishing and expanding bioenergy use will require close cooperation among all the operatives involved in the bioenergy sector. Decisive here is being aware of the various disciplines' interests and considering them in future decisions. The objective is to promote the success of future energy projects.

To achieve this, a bioenergy network was established in the North East region and this was effected within the BEn Project. Network meetings were convened during the run of the project, where strategic vectors and specific undertakings were discussed. In addition to this, network partners conducted numerous bilateral talks aimed at initiating bioenergy projects. Worthy of particular mention is the partners' cooperative attitude. This let them make an important contribution to the success of the project.

From relevant Government initiatives, regulations and incentives through to comprehensive lists of regional fuel suppliers and case-studies of successful installations, the BEn guides provide a unique resource that lays the foundations for a sustainable project.

Biomass energy master plan Focussing on the opportunities

In order to realise the opportunity that biomass presents to the region, the BEn project has developed 'A cornerstone of sustainable development – A master plan and roadmap to success'. The North East biomass master plan builds on other regional initiatives and planning documents to highlight the opportunities and the risks associated with investment in biomass. A comprehensive 'Strengths, Weaknesses, Opportunities and Threats' analysis (SWOT) for the North East's biomass sector provides a backdrop to the master plan. The SWOT report was produced by key stakeholders in the network supported by the BEn project.

The future development of the biomass sector provides significant opportunities: excellent returns on investment and the opportunity to efficiently manage many of the region's natural assets to benefit the wider environment and to meet the region's carbon targets.

There are barriers to overcome in order for the sector to develop – limited raw material resources grown in the region, for example. For non-woody biomass, further investments in conversion technology development and deployment are needed.





As the UK's demand for renewable energy increases, biomass will play an increasingly important role. The North East of England has traditionally been an energy exporter in the form of coal. In the present day, the North East's land-based assets largely drive its rural economy. Used wisely, our natural assets can provide us with a sustainable source of energy. The emphasis on growth must be to manage these assets sustainably and in balance with other industrial sectors, ensuring that opportunities to grow biomass supply chains are maximised.

Results

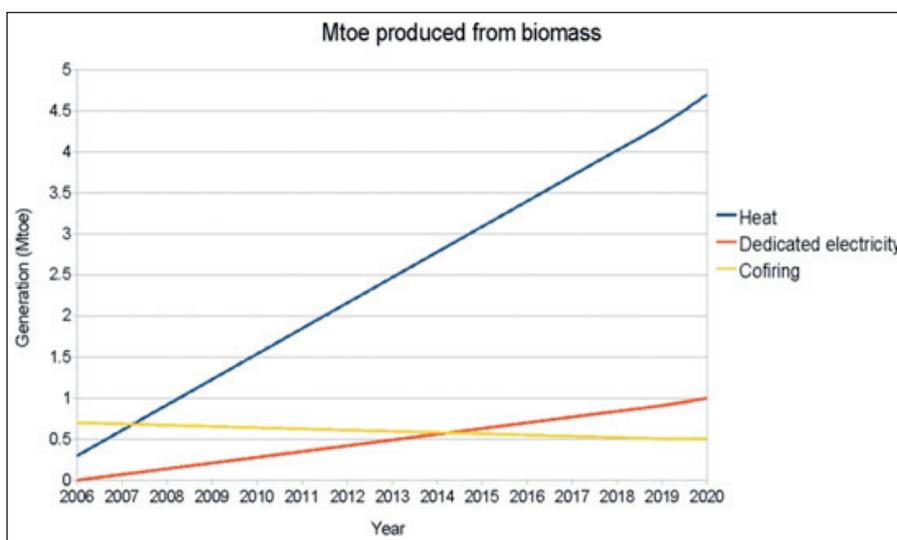
The advancement of biomass energy

'A land of opportunity' is how the UK biomass sector has been described by our European partners. The UK is leading the way in terms of incentivising the growth of renewable energy installations. A combination of feed-in-tariffs and the world's first renewable heat incentive will provide the impetus to stimulate growth in the power and heat sectors, which account for the vast majority of the UK's energy consumption.

Where are we now

The growth of the biomass sector to date in the North East is representative of the growth of biomass across the UK as a whole. There are very few examples of anaerobic digestion, and just short of 100 solid biomass units to heat facilities. A small number of large energy producers in the region dominates the

total installed biomass capacity; a co-firing power station, a dedicated biomass power station, and a panel board manufacturing facility that uses biomass to create steam are the main large-scale biomass consumers in the region. The number of high efficiency, smaller scale biomass converters to heat installations is steadily increasing, but the North East certainly has a long way to go to catch up to other European regions with similar populations.



Where we want to be

The North East has significant potential to contribute to the UK's renewable energy targets, by efficiently using our biomass resources. Our target is to create a sustainable biomass sector that has the potential to sustainably support two thousand jobs in the North East and to complement existing industrial sectors using wood. By 2020 we would expect up to 45% of renewable heat to come from biomass, corresponding to 6.4% of total heat consumed. Total growth in the biomass sector will increase from 152MW of installed capacity to 547MW.

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www.ben-project.eu/energy-register/
www.northwoods.org.uk
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