



**Biomass energy register
for sustainable site development
for European regions**

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BEn

**Biomass energy register for sustainable site development
for European regions**

Intelligent Energy – Europe (IEE)

Horizontal action: Bio Business Initiative

**Deliverable D4.2: SWOT analysis of the biomass market
situation in the model regions**

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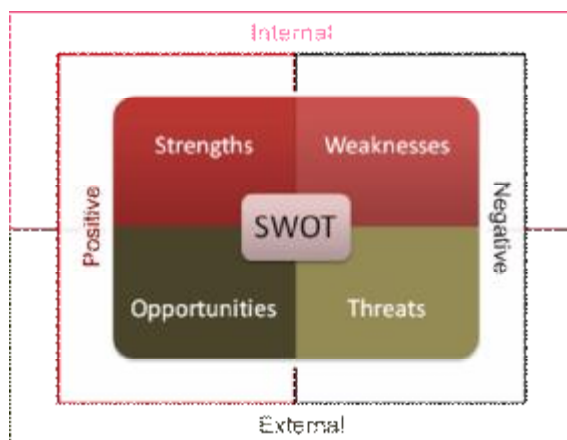
Introduction to SWOT analysis for Ben project

SWOT analysis has been chosen for project Ben to serve as an initial assessment of suitability of the region for bio-energy actions. The analysis aims to identify internal strengths and weaknesses of the biomass markets of 4 project model regions as well as examining the external opportunities and threats which can endanger their biomass supply chains.

SWOT is a flexible concept that can be used in various scenarios from assessing projects or business ventures, making decisions, solving problems to strategy formulation. In the project BEN we use it to analyse the regional situation in regard to bio-energy market in four project model regions.

SWOT analysis helps us to understand the regional strengths and uncover good opportunities that can place our model regions in an advantageous position and lead to achieve the agreed bio-energy targets. It also brings to sight weak sides of our regions and points out external threats. If foreseen in advance, the factors influencing regions in a negative way can be omitted or faced with confidence and preparation. In that case they might not become big obstacles for the development of a strategic master plan and practical bio-energy actions later on during the BEn project and beyond.

Concept of the SWOT analysis, which is presented on the graphic below contains four sections: strengths / weaknesses / opportunities / threats which describe positive or negative, internal or external characteristics of an analysed region.



INTERNAL factors describe the region itself and can be influenced by local decisions and actions.

STRENGTHS are internal attributes that add value to the region. They give a good starting position for establishing or strengthening a biomass supply chain.

WEAKNESSES are internal factors that may detract from regions potential. They are, however, within control and can be influenced by local and regional decisions.

EXTERNAL factors describe broader factors, which are independent from a regional situation but might affect it.

OPPORTUNITIES are external positive factors facing the region like favourable legislation for renewable energies which can uncover a greater potential for development of a bio energy sector.

THREATS are external obstacles that are largely beyond any control. They are characterised by unfavourable trends like price wars or changing technology.

The SWOT analyses for 4 project model regions which were carried out between June and Oct. 2009 are presented below in English and national languages respectively.

1. SWOT analysis of the regional situation in regard to bio-energy market in the North East of England

| | |
|-----------------------|----------------------------|
| Model region | North East of England (UK) |
| Organisation | Northwoods, RDI Ltd |
| Contact person | Katarzyna Zielewska |
| Date | 10.10.2009 |

STRENGTHS

- Region readily accessible by road (A1, A19, A69)
- 5 deep sea ports including the major ones: Tees, Tyne and Blyth
- Urban areas located relatively close to rural areas, what reduces logistical problems for domestic and small scale biomass supply
- Good regional forestry resources in comparison to the rest of England
- Underutilised straw resources
- Extensive areas of agricultural land
- Extensive high-yield wheat and oilseed rape production
- Big timber processors based in the region - sawmill co-products are an important biomass source, mainly used in Eggers on long term contracts
- Large demand for biomass from 3 existing and 3 planned large biomass end users in the region
- Considerable developments at smaller community CHP level
- The North East has a growing reputation as a leader in the renewables sector with:
 - Active stakeholders & a regional forum for those in the biomass sector
 - Woodfuel suppliers' group & support of woodland initiatives
 - Strong existing biomass users
 - Growing robustness of fuel supply chain - strong timber supply chain based on large forest resource and established industrial markets
 - Large public forestry estate holding 50% of forestry land in the region
 - Growing biomass installation sector
 - Signs of support from RDA, however the ONE's involvement could be much stronger as it is in some other regions in England or in the devolved administrations (Scotland & Wales)
 - Universities in the region involved in bioenergy research and larger projects
- Ignite woodfuel course developed and delivered in the NE
- National Biomass Energy Centre (BEC) portal providing a list of regional woodfuel/biomass suppliers
- CPI Sustainable Processing Centre (SUSPROC) and the national industrial biotechnology facility including technologies like AD, use of algae for carbon capture, development of zero carbon cities (based on bio and waste processing) and low carbon closed loop systems
- Large-scale biodiesel and bioethanol generation facilities
- Access to strong supply chain links via North East Biofuels & NEPIC

WEAKNESSES

- Lack of manufacturers of biomass systems in the region (or UK) – most systems imported from EU
- Lack of large woodfuel producers and suppliers with a well known/trusted household name
- Lack of trained installers including installers for domestic sector registered on grant scheme (LCBP)
- Lack of installers training provision
- Poor supply chain for pellets, patchy access to logs – unclear picture of the regional biomass supply chain
- Limited professional awareness of biomass energy (architects, engineers etc)
- A small number of businesses in the region who are able to do all of the following in one package
 - a. Carry out feasibility studies of properties (which set out simply the total investment required with pay-back times)
 - b. Source appropriate funding
 - c. Source the equipment from reputable manufacturers (boilers etc.)
 - d. Organise certified installers to fit systems and recycle/dispose of old heating systems and to
 - e. Establish long term supply and maintenance contracts
- Need for more support in form of free source of good independent advice and support
- North East not given sufficient credit for its achievement (distance from London)
- Lack of region's own bio-energy centre and web portal, which would promote bio-energy activities in the region and provide wide information and support as e.g. Future Energy Yorkshire biomass portal
- Biomass industry currently dependent on continuous public sector support to maintain growth
- Limited role of public sector procurement due to its structure e.g. no through life cost approach taken, utilities/ facilities management often very separate from the more "strategic" renewables / carbon/ sustainability aspects (albeit this is coming with the CRC and other measures)
- A lack of larger scale end users raises concerns from some potential growers as to the security of market (3 big investments planned in the future so might not be that relevant soon)
- Negative farmers' perception of bio-energy due to pitfalls with planting SRC in NE in the past
- The North East climate only suitable for Short Rotation Coppice (SRC), Miscanthus cannot be grown economically in the region
- Limited resources of organic animal waste due to the domination of extensive free range farming

OPPORTUNITIES

- UK and EU parliaments recognising the need for a strong bio-energy sector. Biomass rapidly moving up political, policy and media agenda
- Governmental support for biomass systems (e.g. Bioenergy Capital Grants Scheme, Feed in Tariffs, Low Carbon Buildings Program)
- Development of the Renewable Heat Incentive provided the plans they lay down are adequate and pre-qualified to avoid potential consumers delaying installation to claim tariff payments
- Energy Crops Scheme funding available to cover part of the establishment costs of biomass crops
- ONE RDA funded RENEW project supporting organisations seeking to invest in Low Carbon

Energy and Environmental Technologies

- Need to capitalise on biomass programmes e.g. NewHeat to establish supply chains
- Promotion of biomass systems for new buildings
- Public perception that bio-energy schemes are good for the environment and local economy
- Private and public sector interest in biomass fuelled heating growing strongly. Emerging fire wood market.
- Development of planned big biomass plants could mobilise and establish robust fuel supply chains both local and import-based providing confidence to all players in the market (See also threats)
- Gas and oil supplies exposed to the security and price fluctuations of international markets
- Large areas off gas network that can benefit from switching from oil / LPG
- Sewage sludge, organic waste & recovered fuels currently underutilised for energy production
- Scope for increase and more efficient use of the regional biomass resources
- Extension of the Nitrate Vulnerable Zones (NVZ's) could be a chance to motivate farmers to deal with animal waste in a more efficient and ecological manner e.g. use for AD
- Forestry sector increasingly recognising the benefits of bio-energy to the value of forestry products
- Research expertise in advanced processes for biomass conversion (e.g. gasification and pyrolysis) is available at Newcastle University.
- Research and development services for bio-energy offered by CPI

THREATS

- Large users of biomass such as the proposed projects on Teesside and beyond consuming a large proportion of the regions biomass could result in limited supplies and rising prices for smaller consumers (see also opportunities!)
- Co-firing with waste biomass from abroad raises ecological concerns what can have of negative influence on local biomass supply chain. (Ecological and sustainability standards are under development. They are expected to be published in the next couple of months to solve that debate.)
- Concerns over air-quality impact from biomass heating applications need some clear-headed thinking
- Unstable global economic situation leading to funding difficulties
- Biomass & fossil fuel price fluctuations difficult to predict
- Exchange rates fluctuations (£ vs. €)
- Lack of leadership from Government in plugging gap before introduction of Renewable Heat Incentive
- Lack of biomass systems manufacturers compared to other EU countries
- Process of applying for grants and funding too complex
- Lack of good financial incentives & assistance for investors to meet initial capital cost of installing biomass boilers. Difficult access to capital for investment
- Unclear security of local fuel supply e.g. logs
- Waste wood resources overestimated by up to 50% (depending on data source) according to the new WRAP report
- Competition for biomass resources with other sectors e.g. liquid fuels & chemicals. (NEPIC currently developing recommendations for the NE Regional Transport Fuel Strategy re. biomass)

utilization)

- Competition for land with crop based oilseed rape/corn/sugar beet used for biofuels and food
- The current strength of the agricultural economy with strong arable and livestock prices means that SRC is not particularly competitive
- Public opposition to the construction of 'new' biomass thermochemical processing technologies (gasification, pyrolysis, torrefaction) on the grounds of NIMBY-ism (Not In My Back Yard) which is widespread in the UK - Lack of understanding of biomass technologies
- The delay in seeing a return from land planted with SRC for 3-4 years following planting does not encourage land managers to consider growing this crop on a large scale
- The misconception by land managers that SRC will render land unusable for any future conventional cropping due to the cost of reinstating land to arable production
- EA regulations and planning processes not very helpful for farmers
- Landowners are slow to take up the challenge and opportunity of growing more trees in upland area

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