

Biomass markets scoping study



A study carried out by Northwoods and funded by RENEW

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Executive Summary

We recommend that well-targeted public funding could substantially benefit the SME sector in the North East by providing new or updated information for the biomass sector. The subjects we recommend for further or updated study are detailed in Section 3. We would also recommend that some form of update is considered for adding to this catalogue of reports and studies. This should probably be held online (on google docs or equivalent) and be publicised to relevant stakeholders. This should help maximise the benefits of existing and future studies, and minimise confusion about what studies are ongoing or being funded.

Some of the recommendations are inextricably linked to wider regional developments, such as an updated Regional Economic Strategy. We would therefore suggest that these elements are put to the relevant bodies as indicated, rather than acted on as 'stand-alone' pieces of work.

The best model for a regional support portal for biomass is almost certainly the Future Energy Yorkshire biomass portal; such a portal could help provide a hub for regional information on the biomass and woodfuel sectors. At the moment the nearest equivalent in the region is the Northwoods website.

Going beyond the remit of the biomass sector, wider support which could benefit the renewable energy sector at large could include:

- Supporting the formation of a regional energy agency (the model could be something like the Centre for Sustainable Energy, Marches Energy Agency, or the Severn Wye Energy Agency)
- Setting up a dedicated renewable energy delivery body at One NorthEast along the lines of RegenSW or Future Energy Yorkshire

A first step towards the recommendations above would be to carry out a study describing the potential economic and infrastructural benefits to the region which could arise from the formation of an Energy Agency and RDA sustainable energy delivery body.

A final note regarding missed opportunities is worth making here; a remarkably prescient Biomass Action Plan for the region was drawn up in April 2003 by many of the key stakeholders in the region. The actions proposed therein were logical and achievable, but were not followed up coherently or supported by public sector pump-priming. The region had the potential to be the UK leader by a huge margin; that advantage is now gradually being ceded to other parts of the UK, and determined action should be taken to ensure that the North East does not lose further ground in the sector.

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1. Introduction

This report, commissioned by RENEW and carried out by Northwoods, outlines the scope for potential work in the biomass sector in the North East which would benefit SMEs in the region.

The report is broken down into the following components:

- Catalogue of regional publications and studies on biomass, and recommendations on actions
- Catalogue of relevant national publications and studies on biomass, and recommendations on actions
- Catalogue of regional mapping studies (or national studies with a useful regional component)
- Research into other regional documents, maps or studies which could prove useful in the North East
- A table of regional stakeholders
- Suggested additional research/information which would benefit the biomass sector in the region
- References
- Internet resources

2. Existing studies

This section details the studies which are currently available to the biomass sector specific to the North East, and an indication as to the relevance of the resource, bearing in mind the date of publication and the quality of the information.

Note that there are additional supporting documents for the biomass sector (specifiers guides etc) which are published across different parts of the UK; tracking down all these is beyond the remit of this study, and would probably be a significant body of work in itself.

a. Regional reports

Date	Name	Sponsor	Relevance	Recommendation
2009, Aug	Marketing Study for Biomass Pre-treatment Technology	NEPIC ¹	Study on market potential, production opportunities and supply chain linkage for extracted biomass components in fuels and chemicals arenas within the North East region (includes a review of the regional biomass feedstock situation)	To be published; no update require
2009, August	Study to Propose Local Targets for Integrated Decentralised and Renewable or Low Carbon Energy Sources in New Development	Durham County Council	Contribution to development of the County Durham Local Development Framework. Study to propose local targets for integrated decentralised and renewable or low carbon energy sources in new development (includes biomass)	To be published; no update required
2009, August	Organics report. Phase 2	RENEW	Study on regional resources and use of organic municipal waste in the North East	To be published; no update required
2009, July	Opportunities for biomass production on non-agricultural land ²	RENEW	Qualitative summary of main issues at different types of non-agricultural site	No update required
2009, July	Woodfuel supply chain study for the NE	RENEW	Should provide an indication of strengths and weaknesses of the supply chain	To be published; no update required
2009, July	Organics report. Phase 1	Environment Agency, NISP ³ , RENEW	A study of organic waste arising from the food and drink manufacturing sector within North East England	To be published; no update required
2009, May	'Energy for businesses' ⁴	NSP ⁵ , Northumberland County Council	Case studies on renewable energy projects supported by the Northumberland Renewable Energy Group – includes biomass projects	No update required
2008, August	An economic evaluation of current and prospective value to the North East from biomass-related activities ¹⁴	NEWHeat, ONE, Forestry Commission	High-level analysis of biomass economics, benchmarked against the European experience	Worth updating on an interim basis

¹ North East Process Industries Cluster

² Evans, E. (2009) "Opportunities for Biomass Production on Non-agricultural Land in the North East of England", Biomass Mapping Solutions Ltd, RENEW, Morpeth

³ National Industrial Symbiosis Programme

⁴ To obtain a paper copy of the document email Ruth Machen: rmachen@northumberland.gov.uk

⁵ Northumberland Strategic Partnership

2008, August	The waste woodstream as a biomass resource ¹⁴		A useful introduction to the subject, but more detailed regional information would be useful	Should be re-evaluated in the light of the forthcoming 'regional waste mapping study' from RENEW
2008, June	Reusing brownfield sites for renewable energy crops ⁶	RENEW	Study on using energy crops to improve brownfield land in the North East	Publicise existence of report to biomass forum
2008, March	Planning guide for biomass ¹⁴	NEWHeat, ONE	The planning system is constantly undergoing change, but for the moment this is still a useful guide	No update required at this time
2007, Sept	The wood resource for energy in the North East ¹⁴	NEWHeat, ONE, Forestry Commission	High-level summary of availability woodfuel (including waste) in the region	Worth updating as part of a wider study on woodfuel availability (possibly incorporating city timber reports)
2007, April	Engaging the private sector with biomass ¹⁴	Northwoods	Brief but useful treatise on the problems endemic to forestry sector engagement	Still relevant to the sector today
2007, March	Regional Market Assessment for Wood Waste for North East England ^{7,14}	WRAP ⁸	Insight into the wood recycling market in the region	Still relevant
2005, Sept	North East Regional Renewable Energy Strategy ⁹	GO-NE ¹⁰	Comprehensive review of strategy	Updated strategy required; GONE or One NorthEast input necessary
2005	Food Waste Opportunities in the North East ¹¹	ONE, EU, EIF ¹²	Useful introduction to the food waste issue in the North East	Updated and broadened within the frame of the organics report to be published
2005, July	South East Northumberland woodfuel resource study ¹⁴	Northumberland and County Council	Very detailed study on woodfuel resources available and utilized in the South East Northumberland	Worth updating as a part of a wider study on woodfuel availability
2004, Oct	Biomass sector skills analysis ¹⁴	GO-NE, Biomass Implementation Group ¹³	Identified training as a major issue for the sector	Should be updated given development of the sector since publication
2004, August	Newcastle city timber resource report ¹⁴	Newcastle City Council, Northwoods	Provides information on quantities of arisings and current destination	Should be updated and expanded for all arboricultural activities in urban areas and road/rail corridors
2003, April	Biomass Action Plan for the North East of England 2003 ¹⁴	EIF	Provides strategic statement, situational analysis and detailed plan of actions for development of a regional biomass market in the North East	Review and update of the biomass action plan required. A biomass regional master plan is being developed within the BEn project (One NorthEast collaboration)

⁶ Available from www.bioregen.eu/downloads/ (accessed 20/08/09)

⁷ Link at <http://tiny.cc/W3AiR> (accessed 08/08/09)

⁸ Waste and Resources Action Programme

⁹ Available from <http://tiny.cc/1KjUL> (accessed 24/08/09)

¹⁰ Government Office for the North East

¹¹ Evans, E. (2005) "Food Waste Opportunities in the North East", Bio Recycling Solutions Ltd, EIF

¹² Environmental Industries Federation

¹³ Currently called the North East Biomass Forum

¹⁴ Available from www.northwoods.org.uk/biomass-publications (08/08/09)

2003, Nov	Northumberland Renewable Energy and Energy Efficiency Strategy ¹⁵	NREG, NSP	Provides strategic statement for development of renewable energy sector in Northumberland	Review and update required
2003, Jan	North East Biomass Mapping Exercise ¹⁴	EIF, ONE	A baseline study for the NE Biomass Action Plan conducted by North Energy and TNEI for Environmental Industries Federation on behalf of One NorthEast	Review of information is being undertaken within the BEn project

b. UK reports

Date	Name	Funder	Relevance	Recommendation
2008, Nov	National and regional supply/demand balance for agricultural straw in Great Britain ¹⁴	NNFCC	A simple mass balance analysis of the current production and use of agricultural straw in Great Britain in national and regional context	Verification of the data and addition of information on distribution of the resources in the regional context would be useful;
2008, Oct	Addressing the land use issues for non-food crops ¹⁶	Defra, NNFCC	Provides information on the current scale and location of biomass production in the UK and the potential for increasing biomass production in the future	No action required, Can be used as a reference data for regional studies
2008, August	Mapping waste in the Food Industry ¹⁷	Defra, FDF ¹⁸	Provides information on waste type and quantity produced by members of Food and Drink Federation and waste disposal routes by RDA / county	Compare results with the Organics report (Phase 1)
2008, April	Waste wood as a biomass fuel. Market information report ¹⁴	Defra	Defra report on progress in the development of wood waste as an energy source	No update required
2008, April	'The food we waste' ¹⁹	WRAP	A UK wide study on food waste. Interesting statistics for food wasted per household and person	No action required; can be used as reference data for modelling of food waste arisings

¹⁵ Available from www2.northumberland.gov.uk/reports/nreg/pdfs/NorthumberlandRE&EEStrategy.pdf (accessed 26/08/09)

¹⁶ Available from www.nnfcc.co.uk/metadot/index.pl?id=8253;isa=DBRow;op=show;dbview_id=2457 (accessed 08/08/09)

¹⁷ Available from www.fdf.org.uk/publicgeneral/mapping_waste_in_the_food_industry.pdf (accessed 08/08/09)

¹⁸ The Food and Drink Federation

¹⁹ Available from www.wrap.org.uk/downloads/The_Food_We_Waste_v2_2_08ea05ac.5635.pdf (accessed 08/08/09)

c. Mapping studies

The following table contains a list of relevant regional (or national where there is good regional detail) mapping services which have potential uses for SMEs in the region.

Date	Name	Relevance	Suggested action
To be published	Carbon Trust biomass potential map	Should provide information about potential sites for installation of biomass	Collaboration between Northwoods and the Carbon Trust should allow early use of the data in the North East in the BEn project
Ongoing	REA installation map ²⁰	UK map of renewable energy installations	Publicise existence of map when it becomes available
Ongoing	BEn GIS project ²¹	Regional map of biomass source and potential sites	Maintain close collaboration with the BEn project officer to obtain the greatest benefit from the project
Ongoing	Regional waste mapping study	RENEW-funded regional map of waste resources and flows carried out by Arup	Publicise mapping study when available
Ongoing	NEWFuels website ²²	Online map of NEWFuels biomass suppliers in the North East region. A separate list is held by the Biomass Energy Centre ²³	None required
Ongoing	Sustainable Biomass Accessibility Model Cumbria ²⁴	The proposed project will develop a prototype for a GIS-based "Sustainable Biomass Accessibility Model" for forests and woodland in Cumbria	Final results may be useful for other regions
Published	Woodfuel Resource ²⁵	Forestry Commission study into the potentially available woodfuel resource of Great Britain categorised by government region or forest district	Useful tool for estimation of woodfuel resources on a regional scale
Published	Industrial Heat Map ²⁶	An interactive map presenting industrial heat load data on the grid basis, data on single heat users available for download	Publicise existence of map to biomass forum
Published	Waste Data Flow ²⁷	A web portal delivering waste data by type regional/local authority; includes green and wood waste. Datasets available for download	LAs and WDF Operation Group keep the records updated
Published	Optimum sites for energy crops ²⁸	Maps showing optimum sites for Miscanthus, SRC, existing energy crop locations and restricted sites	Publicise existence of map to biomass forum
Outdated	NREG projects website ²⁹	Online map of NREG renewable energy projects in Northumberland County including a few biomass sites	A centralised methodology of tracking installations ought to be incorporated into the feed in tariffs and RHI (DECC)
Outdated	Energy North East ³⁰	Interactive map of renewable energy projects (including biomass) in the North East	None required (inefficient methodology)

²⁰ Available from www.r-e-a.net/installations (accessed 20/08/09)

²¹ Available from www.northwoods.org.uk/ben and www.ben-project.eu (accessed 20/08/09)

²² Map available at www.northwoods.org.uk/newfuels (accessed 07/08/09)

²³ Supplier list available from www.biomassenergycentre.org.uk (accessed 07/08/09)

²⁴ Proposed by A. Ottitsch from University of Cumbria, National School of Forestry

²⁵ Available at www.eforestry.gov.uk/woodfuel/pages/EngRegMap.jsp (accessed 07/08/09)

²⁶ Heat Load data for the North East available at www.industrialheatmap.com/download.php?m=7 (accessed 06/08/09)

²⁷ Available from www.wastedataflow.org/home.aspx (accessed 07/08/09)

²⁸ Available at www.defra.gov.uk/farm/crops/industrial/energy/opportunities/ne.htm (accessed 07/08/09)

²⁹ List available at www2.northumberland.gov.uk/reports/nreg/projects.asp

³⁰ Available from www.energynortheast.co.uk/page/map/index.cfm (accessed 20/08/09)

d. Resources in other regions

Date	Name	Region	Description	Recommendation
Ongoing	Biomass portal ³¹	Yorkshire	Excellent portal providing a range of support to the biomass sector	Establish the equivalent in the North East
Ongoing	Biomass Sankey Diagrams	Yorkshire	Analysis of biomass flows into and out of the region, including waste	A useful piece of work which could be replicated in the North East
Ongoing	Southwest woodshed supplier list ³²	South West	Webpage which lists wood fuel, chipping service, delivery service and vehicle hire, and provides location	Should be replicated in the North East
2009	Survey of renewable electricity and heat projects ³³	South West	Analysis of renewable energy installations in the region	Could be replicated in the North East though an inefficient way of gathering information (see above; DECC suggested as actor)
2009	Energy Crops Calculator ³⁴	UK	NNFCC tool for calculating energy crops' economic value and competitiveness with wheat crops	Can be used as is
2008	BHA Initial Assessment Tool ³⁵	UK	Carbon Trust's tool for determining the economic value of biomass	Can be used as is or in conjunction with RETScreen

An examination of the RDA webpages from other regions demonstrated a wide range in support for renewable energy across the regions.

The strongest region in terms of visible public sector support is probably the South West, which promotes itself as a renewable energy 'hotspot', and has benefited from the setting up of a dedicated RDA renewable energy delivery body (RegenSW) as well as having the UK's largest and best-established energy agency located in Bristol (the Centre for Sustainable Energy). Yorkshire also has an excellent biomass portal, and an RDA renewables delivery body (Future Energy Yorkshire).

However, the setting up of a distinct body does not necessarily translate into action on the ground – this depends on commitment and resources; several of the RDA's renewable energy delivery bodies appear to be delivering little.

³¹ For example www.fey.org.uk/site/WIPBiomass/InteractiveMap/tabid/175/language/en-GB/Default.aspx

³² Available from www.southwestwoodshed.co.uk/index.php/search (accessed 20/08/09)

³³ Available from http://regensw.co.uk/downloads/RegenSW_301.pdf (accessed 20/08/09)

³⁴ Available from www.nnfcc.co.uk/metadot/index.pl?id=9321;isa=DBRow;op=show;dbview_id=2539 (accessed 20/08/09)

³⁵ Available for download from www.carbontrust.co.uk/technology/technologyaccelerator/biomass-online-resources.htm (accessed 24/08/09)

3. Key biomass stakeholders / organisations

a. Networks

Network	Contact details	Description	Contact person
North East Biomass Forum	North East Biomass Forum One North East Innovation & Development Team Stella House, Goldcrest Way Newburn Riverside, Newcastle upon Tyne NE15 8NY t: 0191 229 6412 e: Ben.McLaughlin@onenortheast.co.uk	Representative body for biomass stakeholders in the region	Ben MacLaughlin
North East Recycling Forum (NERF)	Daxi Environmental Ltd, The Steadings, Glebe Farm Ryton Tyne & Wear NE40 4SY t: 07815 754 931 f: 0191 438 4546 e: jobennison@daxi.co.uk w: www.daxi.co.uk	NERF is a forum for the public, private and community sector to share best practice in waste and recycling issues	Jo Bennison
North East Regional Sustainable Waste Board	Regional Sustainable Waste Board Co-ordinator RENEW Centre for Process Innovation Ltd Wilton Centre, Wilton Redcar TS10 4RF t: Wilton 01642 447304 t: Blyth 01670 543002 e: nikki.silcock@renew-cpi.com w: www.uk-cpi.com	Newly established (2009) body to represent the sustainable solutions in the waste sector in the North East region	Nikki Silcock
Northumberland Renewable Energy Group (NREG)	Northumberland County Council County Hall Morpeth NE61 2EF t: 01670 534 155 e: ruth.machen@northumberland.gov.uk www2.northumberland.gov.uk/reports/nreg/	Representative body for public and private sector organisations from across the County that are involved or interested in renewable energy and energy efficiency	Ruth Machen
Community Renewable Energy (CoRE)	The William Elder Building 56-58 Castlegate Berwick-upon-Tweed TD15 1JT t: 01289 309669 e: infor@core.coop www.corecoop.net	The CoRE Network is a forum for community groups and others interested in renewable energy issues to promote opportunities for community groups and develop renewable energy systems	Ross Weddle
NEWFuels	NEWFuels The Old Stables Greys Yard Morpeth, Northumberland NE61 1QD t: 01670 513292 www.northwoods.org.uk/newfuels	Cooperative woodfuel producer group	John Farquhar

b. Organisations

Organisation	Contact details	Description	Contact person
Forestry Commission	Forestry Commission North East England Conservancy 1 Walby Hill, Rothbury, Morpeth Northumberland NE65 7NT t: 01669 621591 e: richard.pow@forestry.gsi.gov.uk w: www.forestry.gov.uk/northeastengland	Regional Office of the Forestry Commission England	Richard Pow
Northwoods / Rural Development Initiatives Ltd	Northwoods The Old Stables Greys Yard Morpeth, Northumberland NE61 1QD t: 01670813929 f: 0870 460 2041 e: info@northwoods.org.uk w: www.northwoods.org.uk	Northwoods supports the rural, tree and timber businesses in North East England with professional training, advice and best available information	David Clubb
RENEW	RENEW Centre for Process Innovation Wilton Centre, Wilton TS10 4RF t: 01642 442479 e: victoria.melchor@renew-cpi.com w: www.renew-cpi.com	Renew is a joint venture between research and business aiming to deliver value creating near-to-market industrial/ commercial projects using sustainable energy and environmental-technology	Victoria Melchor
Natural England	Government Team Natural England The Quadrant, Newburn Riverside, Newcastle-Upon-Tyne NE15 8NZ t: 0191 2295477 f: 0191 2295460 e: mark.usher@naturalengland.org.uk w: www.naturalengland.org.uk	Natural England's Energy Crops Scheme provides funding to growers to cover a proportion of their establishment costs for biomass crops ³⁶ .	Mark Usher
ConFor	North England Region Woodland Place, West Street Belford Northumberland NE70 7QA t: 01668 213937 f: 01668 213555 e: Jane.Karthaus@confor.org.uk w: www.confor.org.uk	The membership organisation of the businesses in forestry industry assuring the industry a strong voice in the market place and in all levels of government - international, UK and local	Jane Karthaus
CLA – Country Land and Business Association	North East Office Old School Glanton, Alnwick Northumberland NE66 4BA t: 01665 578 681 f: 01665 578 681 e: info.north@cla.org.uk w: www.cla.org.uk	The membership organisation of private landowners and rural businesses representing their interests on a political scene and providing advice and services to them	Angus Collingwood-Cameron
Energy Saving Trust	Energy Saving Trust advice centre North East t: 0191 230 5492 f: 01642 564221	A Government-funded body that provides free impartial advice on energy saving solutions to the domestic/	Colin MacDonald

³⁶ See www.naturalengland.gov.uk/ourwork/farming/funding/ecs/default.aspx (accessed 26/08/09)

	e: colin.macdonald@est-ne.org.uk w: www.energysavingtrust.org.uk/	community sector	
National Energy Action (NEA)	St. Andrew's House 90-92 Pilgrim Street Newcastle upon Tyne NE1 6SG t: 0191 261 5677 f: 0191 261 6496 e: claire.green@nea.org.uk w: www.nea.org.uk	NEA develops and promotes energy efficiency services to tackle the heating and insulation problems of low-income households.	Claire Green

4. Recommendations for further study

Our recommendations for further study based on existing work – in the region or without – are summarised in the following table:

Subject area	Type of information
Agricultural by-products	Quantifying the amount of straw and other arable by-products in the region which could be used in biomass facilities (builds on NNFC study, November 2008)
Arboriculture	Quantifying the amount of arisings which could be used in the biomass sector (depends on the outcome of Arup mapping report); determine whether a 'tree station' type project would be appropriate for the region
Biomass end use	Information which will determine current and potential end use of biomass, aimed at capturing best value from wood products in the region
Economics	Updated report on the economic benefit of biomass to the region
Forestry resource	Woodfuel resource available from North East forestry activities, both public and private sector
Map; installers	Online map of biomass installers (including wood stoves), highlighting where relevant membership of trade bodies, quality standards and Government accreditation
Map; stakeholders	Online map of regional stakeholders in the biomass sector
Map; woodfuel services	Online map of woodfuel service providers (chipper hire, delivery service, vehicle hire)
Mass and energy flows	Sankey diagram quantifying mass and energy flows of biomass products into and out of the region
Skills and training	An evaluation of the current skills requirements of the biomass/woodfuel sector, and any gaps
Waste	Quantifying the waste wood resource (depends on outcome of Arup mapping report)

The following table indicates our recommendations for further study which are not based on existing work; this means that the work would be new to the region, and possibly original work in the UK (as far as our existing knowledge ascertains).

Area of work	Benefit to the sector
Barriers to market	Understand the barriers to full market development of biomass in the region
ESCOs	Energy supply companies (ESCOs) are common in continental Europe, but not in the UK. A study could be undertaken to understand why this is the case, and to quantify sensitivity of the ESCO model with heat load, fuel and other running costs
Forestry ownership	Ascertaining the ownership of privately-held woodland would make it easier to approach potential biomass suppliers about managing their holdings
Logistics/infrastructure	Evaluate biomass logistics routes and spatial distribution of biomass energy infrastructure; model their optimisation within the region. Implications of timber haulage to the current road infrastructure capacity
Potential capacity of region for biomass	Sets the theoretical limit for supply of biomass from the region to inform regional strategic development
Regional implications of Government targets	Regional implications for biomass installation and the potential gaps which will result in the installation and fuel supply market (long-term projections to 2020)
Development of biomass markets	The understanding of economics of biomass markets & forecasts/ projections for the future will result in better planning of biomass actions in the region

Going beyond the remit of the biomass sector, wider support which could benefit the renewable energy sector at large could include:

- Supporting the formation of a regional energy agency (the model could be something like the Centre for Sustainable Energy³⁷, Marches Energy Agency³⁸, or the Severn Wye Energy Agency³⁹)
- Setting up a dedicated renewable energy delivery body at One NorthEast along the lines of RegenSW⁴⁰ or Future Energy Yorkshire⁴¹

5. References

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³⁷ See www.cse.org.uk (accessed 24/08/09)

³⁸ See www.mea.org.uk (accessed 24/08/09)

³⁹ See www.swea.co.uk (accessed 24/08/09)

⁴⁰ See www.regensw.co.uk (accessed 24/08/09)

⁴¹ See www.fey.org.uk (accessed 24/08/09)

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- WRAP (2008) "The food we waste", Report produced by Exodus Market Research, Banbury

6. Internet resources

Biomass Energy Centre	www.biomassenergycentre.org.uk
Carbon Trust	www.carbontrust.co.uk
Centre for Sustainable Energy	www.cse.org.uk
Confederation of Forest Industries (ConFor)	www.confor.org.uk
Defra, Bio-energy site	www.defra.gov.uk/farm/crops/industrial/energy/energy2.htm
Energy North East	www.energynortheast.co.uk
Energy Saving Trust	www.energysavingtrust.org.uk
Forestry Commission, North East of England Office	www.forestry.gov.uk/northeastengland
Forestry Commission, Woodfuel Resource website	www.eforestry.gov.uk/woodfuel
Food and Drink Federation	www.fdf.org.uk
Future Energy Yorkshire	www.fey.org.uk
Industrial Heat Map	www.industrialheatmap.com/
Marches Energy Agency	www.mea.org.uk
National Energy Action	www.nea.org.uk
National Non Food Crops Centre	www.nnfcc.co.uk
Natural England	www.naturalengland.gov.uk
Northwoods	www.northwoods.org.uk
Regen SW	www.regensw.co.uk
Renewable Energy Action (REA)	www.r-e-a.net
Severn Wye Energy Agency	www.swea.co.uk
Southwest Woodshed	www.southwestwoodshed.co.uk
UK Waste Data Flow	www.wastedataflow.org
Waste and Resources Action Programme (WRAP)	www.wrap.org.uk