

Capabilities on project:  
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### B.19 Sheffield

Population: 534,500

Land area (km<sup>2</sup>): 368



Sheffield is located in South Yorkshire. It is geographically very diverse; the urban area nestles in a natural bowl created by seven hills and the confluence of five rivers.

The city of Sheffield's district heating network is the largest in the UK. It was established in 1988 and is still expanding. There are currently over 140 buildings connected to the network that benefit from low carbon energy generated from Sheffield's MSW. These include the Sheffield City Hall, the Lyceum Theatre and its two universities, in addition to a wide variety of other buildings such as hospitals, flats, shops, offices and leisure facilities. Around 2,800 homes, mainly in flats, are also connected to the scheme.

The urban nature of Sheffield provides substantial opportunity for the deployment of microgeneration technologies. Several of the police stations in Sheffield have installed 0.4MW<sub>th</sub> biomass boilers, including Ecclesfield and Mossway police stations. Also of note is the Sheffield Solar Farm at the University of Sheffield's Hicks Building, which has been designed to provide a real-world test platform for solar PV technology and communicating the effectiveness of solar in northern latitudes.

There are two hydro schemes in the borough, at the Loxley and Ewden Sewage Treatment Works. A scheme has also been proposed at Kelham Island. This study has found that the hilly nature of the borough means that there is relatively high hydro resource which should be explored further.

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Sheffield	Current capacity (MW)	Current capacity (GWh)	Potential resource - heat (MW)	Potential resource - electricity (MW)	Potential resource (GWh)	Potential resource (No of existing homes equivalent energy demand)	Potential resource (Proportion of regional resource)
Commercial wind	0	0	0	14	36	0	0%
Small scale wind	0	0	0	1	2	0	7%
Hydro	0	2	0	2	5	0	0%
Solar PV	1	1	0	21	16	0	0%
Solar thermal	0	0	34	0	21	2254	10%
Air source heat pumps	0	0	21	0	32	1371	8%
Ground source heat pumps	0	0	9	0	16	581	5%
Biomass energy crops	0	0	0	0	1	12	0%
Biomass woodfuel	2	6	9	0	23	591	2%
Biomass agricultural arisings (straw)	25	175	0	0	0	3	0%
Biomass waste wood	0	0	2	1	17	143	4%
Energy from waste wet	0	0	2	2	18	134	2%
Energy from waste poultry litter	0	0	0	0	0	0	0%
Energy from waste MSW	20	140	4	2	35	298	5%
Energy from waste C&I	0	0	10	5	77	649	6%
Energy from waste landfill gas	11	58	0	0	0	0	0%
Energy from waste sewage gas	0	1	0	0	7	0	0%
<b>Total</b>	<b>99</b>	<b>554</b>	<b>109</b>	<b>48</b>	<b>388</b>	<b>7,271</b>	

Table 70 Current capacity and renewable energy resource in Sheffield. Current<sup>tr</sup> refers to facilities that are operational or have planning consent

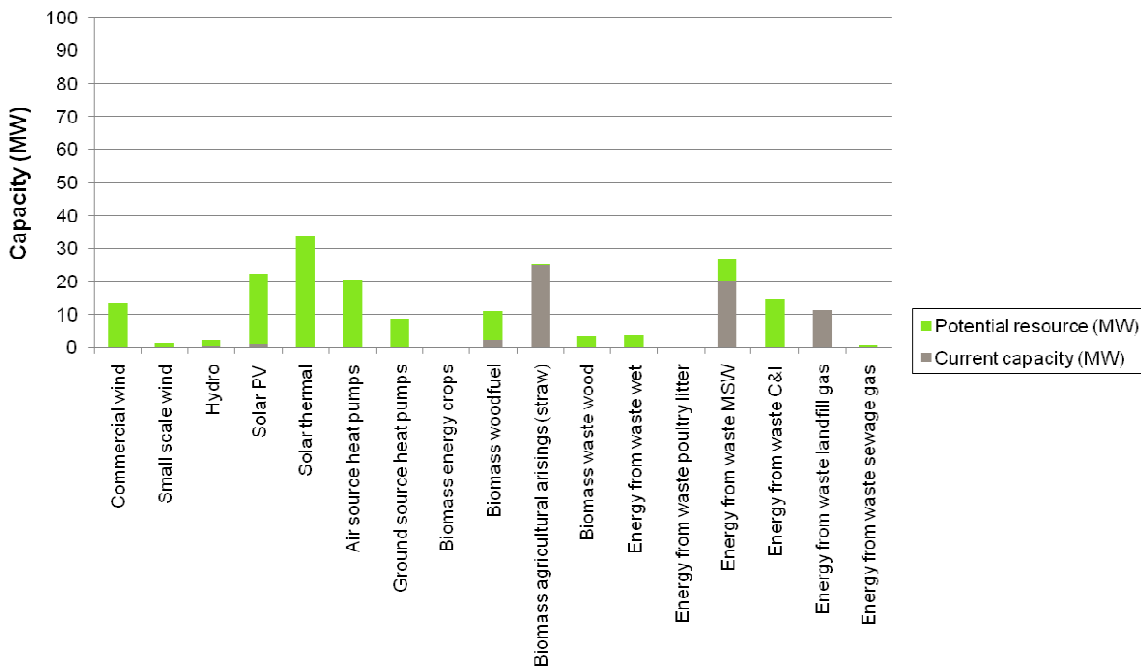


Figure 97 Current capacity and renewable energy resource in Sheffield. Current<sup>tr</sup> refers to facilities that are operational or have planning consent

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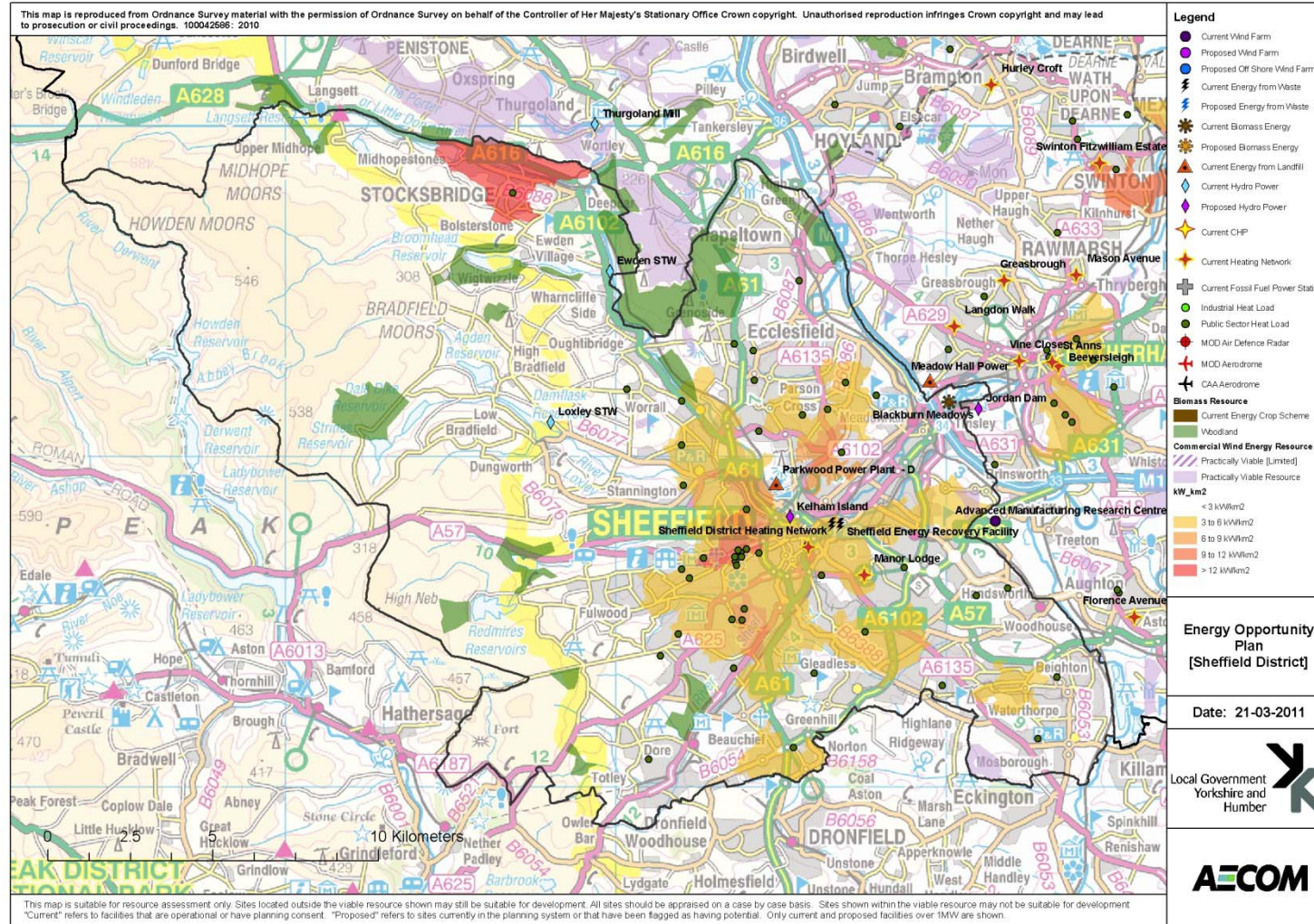


Figure 98 Energy opportunities plan for Sheffield. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential. Only current and proposed facilities over 1MW are shown. The areas with purple hatched shading described as "Practically viable [Limited]" represent areas where commercial scale wind energy development should be viable but the number of turbines may be restricted due to environmental constraints. Please refer to section 5.15 and appendix A for more details.

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## B.20 Wakefield

Population: 322,300

Land area (km<sup>2</sup>): 339



Wakefield is located in the southeast of the Leeds City Region in the lower Calder valley. The north of the district is largely urban and is dominated in the west by Wakefield city. There is a large 1923 MW coal power station in the district at Ferrybridge “C” and a smaller 56 MW gas power station at Castleford.

SSE have submitted an application for an energy from waste plant on the Ferrybridge “C” site will process a range of fuels including waste wood and other types of biomass, sourced predominantly from the Yorkshire and Humber region.

The City of Wakefield, Castleford, and Knottingley all have the heat density required to support a district heating network.

Wakefield has some potential for commercial scale wind but not operational or consented schemes. Around 70% of Wakefield District lies within the Green Belt, most of which is rural in character, concentrated mainly in the south. These rural areas are largely in agricultural use, interspersed with parkland associated with large estates and are populated by a series of smaller towns and villages set within open countryside.

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Wakefield	Current capacity (MW)	Current capacity (GWh)	Potential resource - heat (MW)	Potential resource - electricity (MW)	Potential resource (GWh)	Potential resource (No of existing homes equivalent energy demand)	Potential resource (Proportion of regional resource)
Commercial wind	0	0	0	79	208	0	0%
Small scale wind	0	0	0	2	2	0	8%
Hydro	0	1	0	1	5	0	0%
Solar PV	0	0	0	16	12	0	0%
Solar thermal	0	0	25	0	15	1663	7%
Air source heat pumps	0	0	13	0	20	838	5%
Ground source heat pumps	0	0	12	0	22	801	8%
Biomass energy crops	0	0	7	4	54	439	1%
Biomass woodfuel	1	3	40	0	105	2671	11%
Biomass agricultural arisings (straw)	0	0	3	2	25	213	1%
Biomass waste wood	0	0	2	1	19	160	5%
Energy from waste wet	0	0	3	3	26	195	3%
Energy from waste poultry litter	0	0	0	0	1	0	0%
Energy from waste MSW	0	0	4	2	29	245	4%
Energy from waste C&I	0	0	7	4	56	475	5%
Energy from waste landfill gas	15	76	0	0	0	0	0%
Energy from waste sewage gas	0	1	0	0	8	0	0%
<b>Total</b>	<b>16</b>	<b>82</b>	<b>138</b>	<b>113</b>	<b>708</b>	<b>9,215</b>	

Table 71 Current capacity and renewable energy resource in Wakefield. Current<sup>tr</sup> refers to facilities that are operational or have planning consent

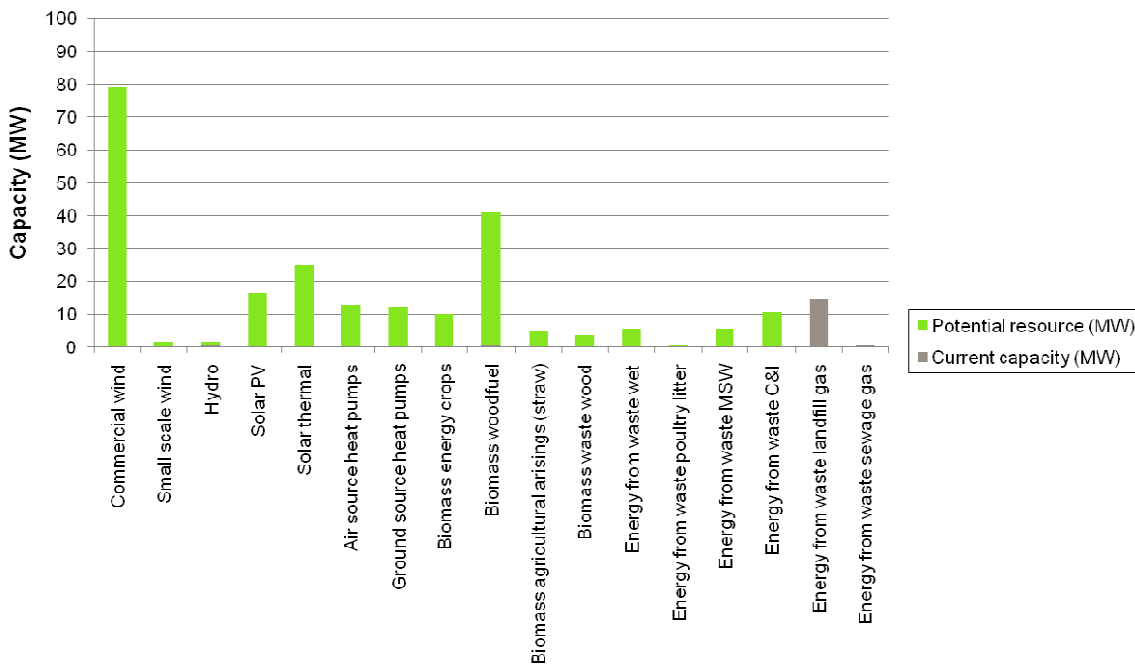


Figure 99 Current capacity and renewable energy resource in Wakefield. Current<sup>tr</sup> refers to facilities that are operational or have planning consent



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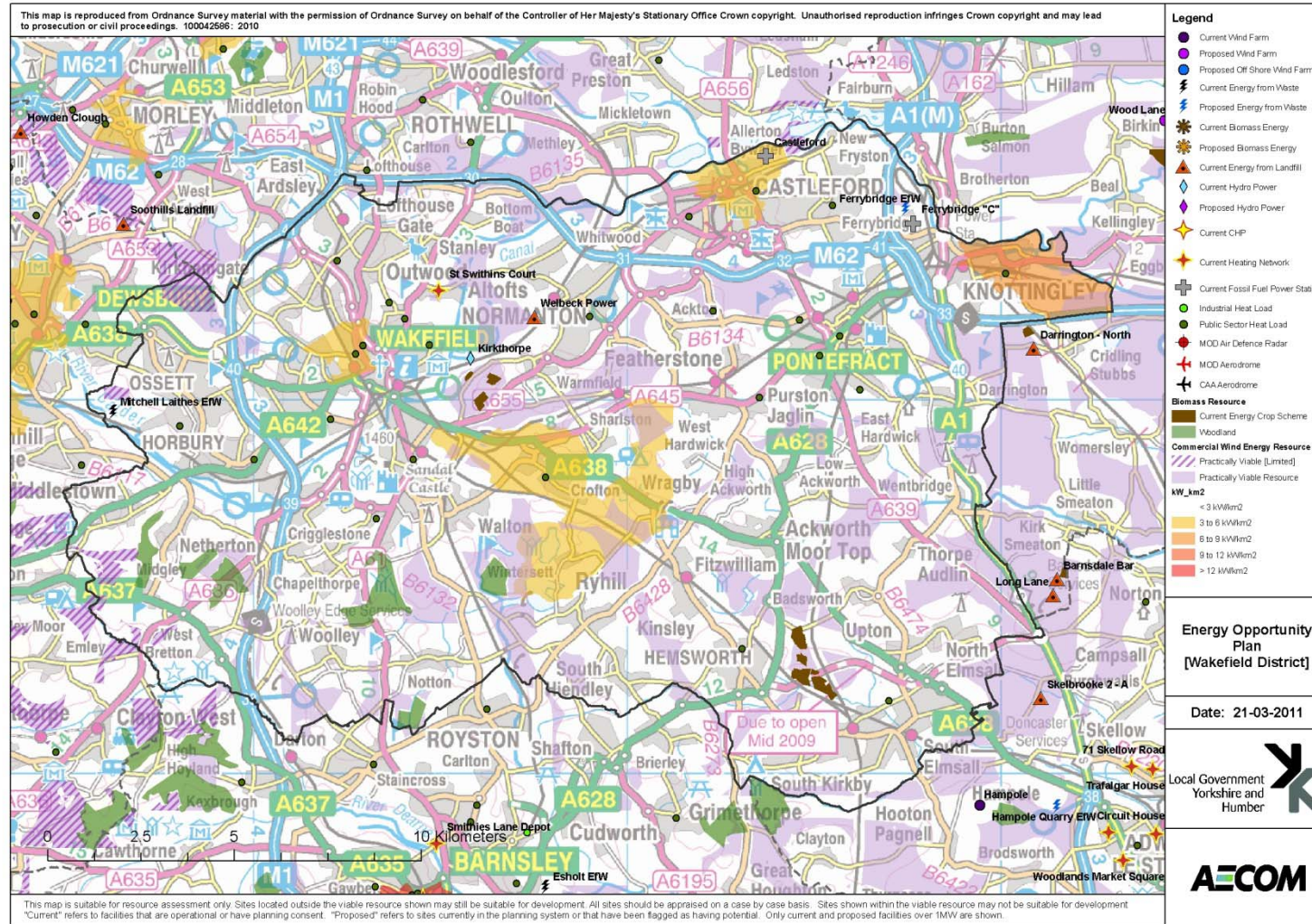


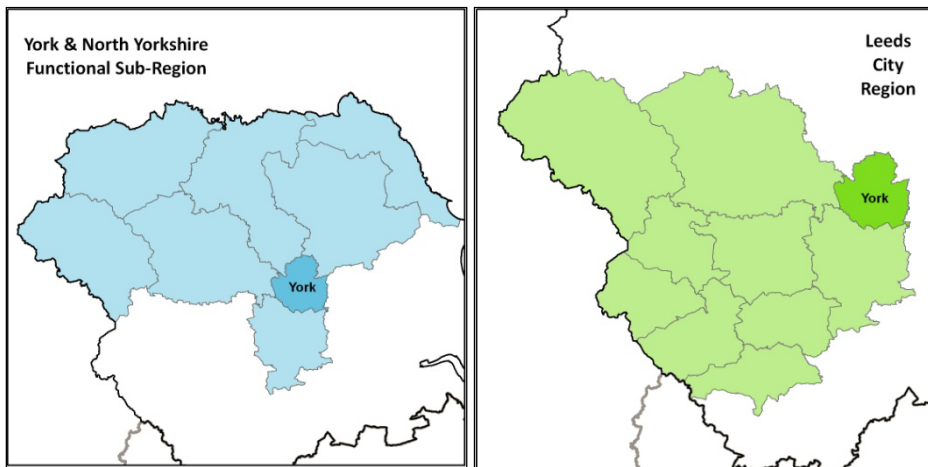
Figure 100 Energy opportunities plan for Wakefield. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential. Only current and proposed facilities over 1MW are shown. The areas with purple hatched shading described as "Practically viable [Limited]" represent areas where commercial scale wind energy development should be viable but the number of turbines may be restricted due to environmental constraints. Please refer to section 5.15 and appendix A for more details.

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## B.21 York

Population: 195,400

Land area (km<sup>2</sup>): 272



Situated in both Leeds City Region and the York and North Yorkshire Sub-region. The majority of the population resides within the urban area surrounding the historic city centre but there are many small rural and semi rural settlements across the district.

There is significant potential for district heating networks in the city centre. The University of York has a CHP plant and a small biomass boiler with planning consent, which could take advantage of biomass from the nearby energy crop scheme at Earswick. This study has also found that York has significant resource for commercial scale wind energy, although local issues such as the historic setting of Yorkshire Minster may limit the resource.

York has quite a lot of smaller scale renewable energy generation already installed. The urban nature of the city centre presents opportunities for further microgeneration deployment, although this must be balanced with the need to protect the city's heritage environment.

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York	Installed capacity (MW)	Installed capacity (GWh)	Potential resource - heat (MW)	Potential resource - electricity (MW)	Potential resource (GWh)	Potential resource (No of existing homes equivalent energy demand)	Potential resource (Proportion of regional resource)
Commercial wind	0	0	0	35	92	0	0%
Small scale wind	0	0	0	1	1	0	4%
Hydro	0	0	0	0	0	0	0%
Solar PV	0	0	0	10	7	0	0%
Solar thermal	0	0	13	0	8	861	4%
Air source heat pumps	0	0	9	0	14	600	4%
Ground source heat pumps	0	0	9	0	16	573	5%
Biomass energy crops	0	0	5	3	45	363	1%
Biomass woodfuel	3	8	7	0	19	483	2%
Biomass agricultural arisings (straw)	3	18	5	2	36	308	2%
Biomass waste wood	0	0	1	1	10	85	3%
Energy from waste wet	0	0	0	0	4	28	0%
Energy from waste poultry litter	0	0	0	0	0	0	0%
Energy from waste MSW	0	0	2	1	19	163	3%
Energy from waste C&I	0	0	4	2	32	274	3%
Energy from waste landfill gas	7	35	0	0	0	0	0%
Energy from waste sewage gas	1	2	0	1	4	0	0%
<b>Total</b>	<b>13</b>	<b>63</b>	<b>70</b>	<b>56</b>	<b>369</b>	<b>4,651</b>	

Table 72 Current capacity and renewable energy resource in York. Current<sup>o</sup> refers to facilities that are operational or have planning consent

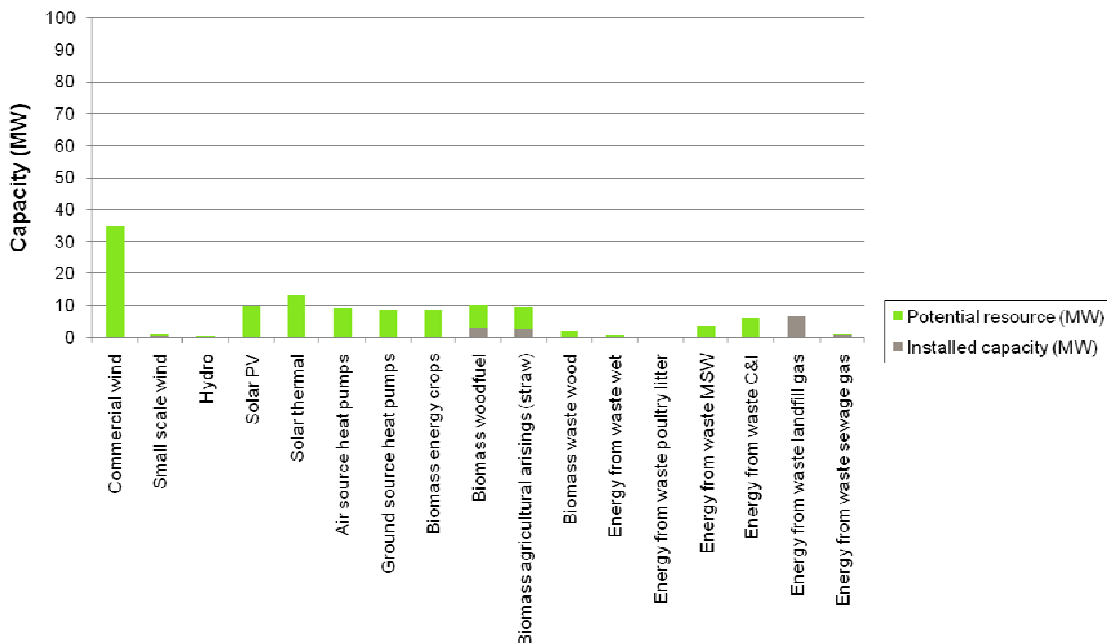


Figure 101 Current capacity and renewable energy resource in York. Current<sup>o</sup> refers to facilities that are operational or have planning consent



Capabilities on project:  
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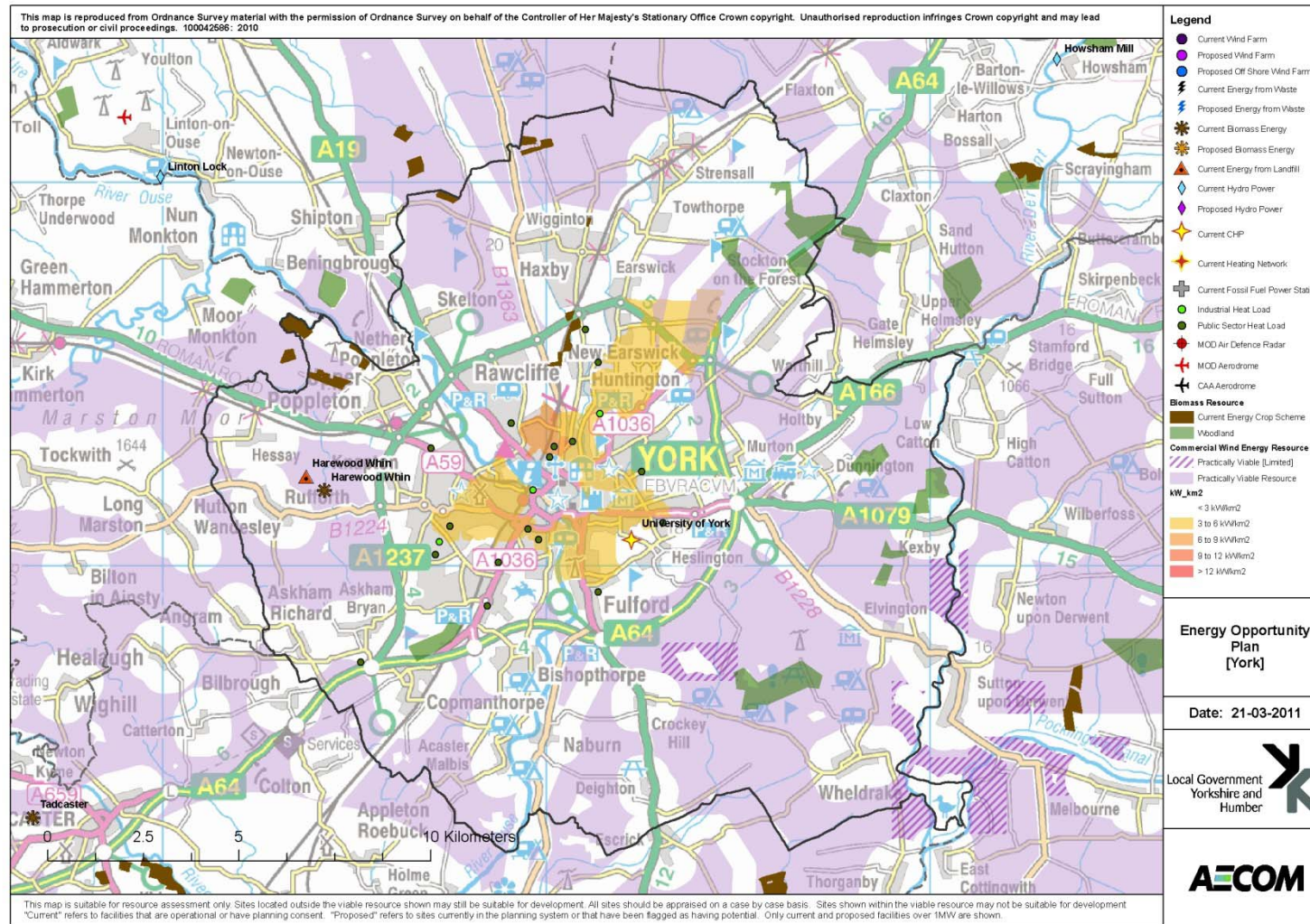


Figure 102 Energy opportunities plan for York. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential. Only current and proposed facilities over 1MW are shown. The areas with purple hatched shading described as "Practically viable [Limited]" represent areas where commercial scale wind energy development should be viable but the number of turbines may be restricted due to environmental constraints. Please refer to section 5.15 and appendix A for more details.

## Appendix C Stakeholder engagement

This chapter describes the barriers and opportunities to the development of low carbon and renewable energy in the region, obtained from meetings with stakeholders.

### C.1 Meeting with CO2 sense, 17 September 2010

Stakeholders can overcome barriers to biomass and anaerobic digestion schemes by:

- Working to develop food waste collection schemes for C&I organic waste – CO2 sense has currently developed four such schemes
- Look at providing transfer facilities for this waste
- LAs can help create a market for AD by how they collect and procure solutions for their municipal organic waste. i.e. need to separate food waste from green waste, and provide long term fuel supply contracts to AD operators.

### C.2 Meeting with Microgeneration Partnership, 28 September 2010

Strategic actions to improve delivery are as follows.

- Local authorities need to be more informed. Do not like being sold to but need to build relationships with local suppliers.
- A lot of bureaucracy at the moment involved with being members of REA, HETAS, BPEC, Solar Energy, etc. Process needs to be streamlined.
- Too much bureaucracy in particular with MCS accreditation. Process needs to be easier and faster. E.g. DEFRA Clean Air Act list does not recognise MCS Air Emissions test.

### C.3 Meeting with CE Electric, 13 October 2010

Strategic actions for region are as follows:

- Limited potential to affect low voltage network. It is generic across our region and we need to keep it reasonably standard. However different network operators have historically chosen (and are now tied to) different standards. Moving those standards is a slow process.
- Clustering of wind farms is an issue, particularly in East Riding which is a light load area. North of Humber, thermal rating of 66kV lines is an issue.
- Generally not an issue with capacity of grid. There are a number of substations where there is spare capacity.

### C.4 Meeting with Scottish and Southern Energy at Ferrybridge “C”, 13 October 2010

Strategic actions for region are as follows:

- Region is ideally located to take advantage of CCS if this technology proves viable.
- Younger people need to be encourage into industry to replace skills
- Greater investment is needed.
- More certainty is needed in terms of regulation (e.g. ROC banding significantly affected business model).

### C.5 Meeting with Banks Renewables, 26 October 2010

Strategic actions for region are as follows:

- Produce study outputs by local authority (or by an area with defined boundaries such as National Park, not sub-regions). This engages LA in process and highlights renewable energy as issue that needs to be tackled.
- Is a general lack of strategic landscape expertise at the local authority level, for example, with respect to interpreting ZTVs, cumulative impact, etc. Quality of external advice is dependent on which consultant is used.
- Regional datasets that are kept up to date would be useful. This study could be a live document with its own website that industry, Renewables UK, etc could feed into.

### C.6 Meeting with Environment Agency-Hydro, 26 October 2010

Strategic actions for region are as follows:

- High level feasibility studies good for demonstrating potential of hydro to local authorities. However, it is not really possible to assess feasibility at a lower level without site visits, which is expensive,
- Bureaucracy and regulations are a barrier at the moment, i.e. getting EA consents, construction licences, river consents, fish pass consents, etc. EA is trying to bring this together into a single application.

### C.7 Meeting with RWE NPower, 8 November 2010

Strategic actions for the region are as follows:

- Constraints for wind energy development should be set at a strategic level.
- At a local level, guidance is needed to avoid assessment of sites using a checklist approach.

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- National energy policy is not filtering down to local level. Councils should be made more aware of the need for renewable energy.

#### **C.8 Meeting with Civil Aviation Authority (CAA), 8 November 2010**

Strategic actions for the region are as follows.

- Regional solutions to radar mitigation should be encouraged. This is beginning to happen with offshore wind development.
- Developers should work together to find appropriate solutions, to share capital costs. Will all benefit as region is opened up.

#### **C.9 Meeting with Energy Saving Trust, 9 November 2010**

Strategic actions for the region are as follows:

- Supply chain for solar thermal is quite advanced, but this is not the case for solar PV or for domestic biomass.
- EST runs a renewables network for the region. Can be an issue with competition between installers.
- Are very few installers based in North Yorkshire.
- May be an issue for individuals and community groups to obtain the funding needed for expensive feasibility studies.

#### **C.10 Meeting with Osprey consulting on behalf of Leeds Bradford International airport, 24 November 2010**

Strategic actions for the region are as follows:

- Is an issue with proliferation of wind farms, planners do not have the tools to deal with cumulative impact.
- Airports often do not have time to deal with wind farm applications. Is the option for developers to use independent consultants or bodies to mediate between themselves and the airports.
- Solar is not an issue at the moment.
- Objections can also be raised against small wind turbines.

#### **C.11 Feedback from stakeholder workshop, 17 November 2010**

The following opportunities and constraints were identified from the sub-regional breakout sessions. Actions emerging from the workshop are described in Table 73.

#### **Hull and Humber Ports sub-region**

##### *Opportunities*

Renewable Heat Incentive and Feed-in Tariff

Wind in Port/Humber frontage and perimeter, 350m Hull Turbine to residents - dead bird shower?

Heat Networks

Council owned properties – solar in housing stock

Build on city wind turbine services

Solar on car parks

Education

Council Transport

Better public consultation at the front end

Significant wind potential not tapped

Solar farms rather than wind

Bridlington AAP/development

Affordable homes and public buildings

Leisure centres CHP

Strong potential for Energy from burning straw – 30MW has consent (Tesco in Goole, Tansterne, and Game Slack Farm in Wetwang)

Energy from Waste – from food or fish industry

Biomass plants – access biomass from world. Local vs Global supply

Drax biomass plant in Grimsby and Helius Biomass power plant

Offshore wind support – skills

Oil refineries potential for biofuels

Carbon capture and storage pipes in Lincs

Skills fund – community upskill

Community benefit

Microgeneration more palatable?

##### *Constraints*

Small and highly built up

No funding

Viability at code levels – onsite renewable currently at 10% only

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Increasing resistance to wind. Localism – no more wind farms.  
Political opposition. Too much wind already. Political reject  
planning appeal. Landscape issue. Cumulative effect.  
Difference in urban/rural opinion

Yorkshire Wolds

Grid constraints

MoD radar

Issues with biomass – poor link between farmers and bailers.  
Landscape and food supply. Carbon footprint of imported  
biomass. Concern about biomass monocultures - biodiversity

Nature of conservation around Humber

Birds on estuary

Development pressure around Grimsby

Price of fuel. Around 2008/2009, Drax were paying £5-6/GJ

Public opposition to plants too – transport traffic, heavy trucks,  
industrial. EfW in Hull and East Riding contributing pollution

Hydro doesn't seem to be delivered

Disrupt vs entrance

General support but delivery constraints

#### **York and North Yorkshire sub-region**

##### *Opportunities*

Hydro in Yorkshire Dales (National Park)

Nidderdale AONB hydro, Harrogate

Leeming bar food cluster – AD?

Large wind potential, Hambleton

Whitby Business Park, North York Moors

District Heating Study, North York Moors

District Heating in York Northwest (35 ha)

Nestle chocolate factory near hospital, York

District heating in South side, Skipton-in-Craven

Good grid connection

5,000kW hydro, Richmondshire

Some potential for Efstraw

Energy crops can be used as feedstock for straw combustion,  
co-firing, dedicated biomass plant burning crops, waste wood  
300,000kW potential from Building Integrated Renewables

##### *Constraints*

Access to capital?

Local opposition

Developers can't engage with members

Effect of localism bill

Uncertainty over Feed-in Tariff

Legacy of ARBRE (acronym?)

Terms of trade

Unfamiliar crop for farmers

#### **Leeds City Region sub-region**

##### *Opportunities*

Wakefield - 2 strategic sites for Anaerobic Digestion (1 subject  
to PFI)

Multifuel (e.g., Terrybridge, Knottingley, Castleford)

Local Enterprise Partnership?

Relationship between LA and communities

Climate change skills partnerships (£800,000)

Pellet Mill in Pollington

Cross boundary opportunities for Pollington with East Riding

Significant wind potential

Europe, green investment bank

Public sector could provide anchor load

Procurement policies

Leeds Sewage TW – incinerator?

Bradford Gasification

PV on terraced roofs

DECC low carbon pilots

Aire Valley EfW

Food waste collection pilot



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Landowners enterprise

Ferrybridge installed dedicated biomass burner. Ferrybridge planning a plant that will burn SRF

Collection of grass clippings

Strategic need for digesters

Using transport policy

Behavioural change

Revenue from microgeneration

### Constraints

Risk due to uncertain national policy

Communication – CCS network

Partnerships dependent on RDA

Lack of resource

Managing transition

Skills for planners & members (e.g., infrastructure) and LAs generating energy

Cash

Travel distance for biomass

MoD radar

Local opposition

Aversion to targets – lack of drivers. Lack of understanding towards national targets

PV – loss of employment land

Airports on wind 17km buffer

Grid in certain hot spots

South Yorkshire sub-region

### Opportunities

Blackburn Meadows biomass station. Meadow Hall (EON). Proposed biomass power installation (oil/woodchip). Size unknown. No heat customers. Finance an issue.

Significant wind potential

Existing Veolia EfW with DH. DH network could be extended. There is ongoing study looking into this – linked to a study around Sheffield becoming an ESCo. Also numerous existing

CHP in Sheffield – some studies have looked at connection into wider network. Constraints are viability studies and finance.

Sterecycle – waste autoclaved. Thought to be only a waste transfer handling station. Where does the processed waste go? Is this a potential EfW site? Project team should review Joint Waste DPD

Dearne Valley EcoVision – 2 sites identified for future EfW, Cross boundary strategic development initiative. The Dearne Valley EcoVision is a potential catalyst project – flagship. Only got 1 bidder. All sorts of PFI contracting complications

Thorpe Marsh Coal Gasification (any potential for renewables component?). Hatfield Carbon Capture and storage scheme (no renewable link?). Scheme was intended to link to cross channel gas pipe line. Apparently this scheme now shelved? UK Coal proposed power station for Algreave/Waverline. Is there potential for co-firing?

Look into ROC Power – put in a number of planning applications for 1 – 2MW biomass power (CHP) (Vegetable Oil)

Hickleton Mine Gas scheme. Stakeholders wanted to know if could count towards renewables targets – they were arguing no different to mining Landfill gas?!

Civic biomass district heating proposal including Town Hall, Library, Offices, Westgate Plaza 1 and 2.

C5 sites have been identified in City – each with capacity for 2 – 3 wind turbines.

Thorne and Hadfield SSSI – understand a wind turbine has recently been consented

Great Hardon Community Wind Farm – 2MW. Origin Energy.

Local opposition was suggested as the biggest problem in the region – community projects have best potential to get buy-in and change perceptions.

Need to consult with British Waterways as well as EA. Thought to be reasonable potential from weirs (low head). British Waterways have a stake in a small Hydro company. They have a delivery/phasing plan. Could tap into this.

CO2 sense thought there was a study which identifies 4 – 5 low head potential hydro sites in/around Sheffield. Consult EA/BW

Sheffield Renewables are looking at a Hydro scheme (Dam/Weir) on the border of Sheff/Rotherham/Doncaster.

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Could talk to Peaks National Parks (Bakewell) re potential for high head hydro

No collection of food waste. Green waste is collected. Waste goes to Incinerator (Veolia). 'Sheffield needs to feed its incinerator'

There is a cluster of food companies around Clay Wheels Lane. Perfect site for Anaerobic Digestion?

What about 'Prem Doors' (just off M1) – lots of wood waste.

Two woodland management groups managing pockets/clusters of woodland. These are: White Rose Forest and South York Forest Partnership. Good awareness raising.

A facility burning hazardous waste wood – is there any potential for clean up.

AD plant (PDM)

Speak to Yorkshire Water – sewage sludge – incinerator (Blackburn Meadows)

Constraints

C5 wind sites scrapped by new Lib Dem leadership. Focus on other types of renewables as part of manifesto pledge.

Buffer zones around SPA where designation is for birds. The Night Jar is the key protected species – should allow 300m buffer.

CAA asked if vertical obstruction been picked up (for aircraft take off and land) – is this assumed with DECC constraints? Has route radar been considered? NATS dataset? There are 23 of these radars nationwide – only a finite number of areas that are allowed to be blanked out (i.e. wind sites get blanked out).

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Hull and Humber Ports sub region	York and North Yorkshire sub region	Leeds City sub region	South Yorkshire sub region
Viability of renewables in new development	LAs facilitate community involvement	Apply pressure to LAs (e.g., projects in partnership with LA)	Find Sheffield EfW/DH project brief. Find out how the Sheffield scheme was set up/financed.  Are there lessons that can be learnt for other areas?  Feasibility study for Doncaster? Thought to be less commercial buildings in Doncaster.  Undertake feasibility study for power station/DH in Doncaster
Local policies and strategic sites studies	Funding for feasibility study	Adopt targets in partnership with LA	Viability study of Barnsley biomass district heating proposal (which includes Town Hall, Library, Westgate Plaza 1 and 2)
Educate communities, authorities, and members about appropriate technologies	Training for officers and members on technologies and statutory consultees	Capital and asset pathfinder – output should have low carbon focus	Determine if there is potential for co-firing at proposed Algreave/Waverline power station in Rotherham
Skills development to help communities deliver schemes	Sharing expertise between LAs	Use eco-settlements as exemplars	Viability of renewables in new development
Hull District Heating Viability Study	Engage with private woodland owners	T A Climate change skills fund	Educate communities, and authorities about appropriate technologies and set up skills development programs
Demonstration schemes/tours	Renewable energy expert/advice	Communication to elect members (publicly visible projects) e.g., streetlighting	
Upgrade grid issues, especially for offshore wind		Energy efficiency	
Apply pressure to LAs (e.g., projects in partnership with LA)		Transport strategy	
Adopt targets in partnership			

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with LA			
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Table 73 Sub regional actions emerging from stakeholder workshop

### C.12 Attendance list for stakeholder workshop, 17 November 2010

No	Forename	Surname	Organisation
1	Martin	Earle	Banks Renewables
2	Stacey	Heppinstall	Barnsley Metropolitan Borough Council
3	Edward	Broadhead	Bradford Metropolitan District Council
4	Anna	Helley	Bradford Metropolitan District Council
5	Richard	Williamson	Bradford Metropolitan District Council
6	Anna	Wodall	City of York Council
7	Jo	Adlard	CO2 Sense
8	Jemma	Benson	CO2 Sense
9	Sian	Watson	Craven District Council
10	Craig	Wilson	Craven District Council
11	Stephanie	Major	East Riding of Yorkshire Council
12	Lance	Saxby	Energy Saving Trust
13	Sally	Armstrong	Environment Agency
14	Keith	Davie	Environment Agency
15	Gail	Hammond	Environment Agency
16	Tina	Penswick	Government Office Yorkshire and Humber
17	Bryony	Wilford	Hambleton District Council
18	Linda	Marfitt	Harrogate District Council
19	Philip	Reese	Hull City Council
20	Thomas	Knowland	Leeds City Council
21	Helen	Miller	Leeds City Council
22	Andy	Haigh	Leeds City Region
23	John	Clubb	Local Government Yorkshire and Humber
24	Marta	Dziudzi	Local Government Yorkshire and Humber
25	Martin	Elliot	Local Government Yorkshire and Humber



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No	Forename	Surname	Organisation
26	Ruth	Hardingham	Local Government Yorkshire and Humber
27	Mike	Barningham	Natural England
28	Hannah	Boot	Natural England
29	Heather	Rennie	Natural England
30	James	Walsh	Natural England
31	Sarah	Housden	North York Moors National Park Authority
32	Ray	Bryant	North Yorkshire County Council
33	Rachael	Richardson	Ryedale District Council
34	Kathryn	Jukes	Savills
35	Emma	Wells	Sheffield City Council
36	Tanya	Palmowski	Sheffield City Region
37	Jenny	Poxon	Sheffield City Region
38	Neville	Ford	Wakefield Metropolitan District Council
39	Alex	Roberts	Wakefield Metropolitan District Council
40	Robert	Mashedor	West Yorkshire Ecology
41	Andrew	McCullagh	Yorkshire Dales National Park Authority
42	Gordon	McArthur	Yorkshire Forward

Table 74 Attendance list for stakeholder workshop

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## Appendix D Funding mechanisms for low carbon and renewable energy technologies

This section identifies sources of funding that could assist with the deployment of low carbon and renewable energy technologies. It is not intended to be an exhaustive list, nor does it reach definitive conclusions about which mechanisms are most suited to the Yorkshire and Humber region. Rather it seeks to provide guidance on the opportunities that exist.

### D.1 Renewable Energy Certificates (ROCs)

The Renewables Obligation requires licensed electricity suppliers to source a specific and annually increasing percentage of the electricity they supply from renewable sources. The Obligation is guaranteed in law until 2037. The types of technology and the number of ROCs achieved per MWh are outlined in Table 75 below. The value of a ROC fluctuates as it is traded on the open market. The average value of a ROC in November 2010 was £48.12.<sup>73</sup>

Technology	ROCs/MWh
Hydro	1
Onshore wind	1
Offshore wind	1.5
Wave	2
Tidal Stream	2
Tidal Barrage	2
Tidal Lagoon	2
Solar PV	2
Geothermal	2
Geopressure	1
Landfill Gas	0.25
Sewage Gas	0.5
Energy from Waste with CHP	1
Gasification/Pyrolysis	2

Anaerobic Digestion	2
Co-firing of Biomass	0.5
Co-firing of Energy crops	1
Co-firing of Biomass with CHP	1
Co-firing of Energy crop with CHP	1.5
Dedicated Biomass	1.5
Dedicated energy crops	2
Dedicated Biomass with CHP	2
Dedicated Energy Crops with CHP	2

Table 75 Value of ROCs for a range of renewable energy technologies (Source: Renewable Obligation Certificate (ROC) Banding (DECC websites <http://chp.defra.gov.uk/cms/roc-banding/>, accessed August 2009)

### D.2 Feed-in-tariffs

A feed-in tariff is a policy mechanism designed to encourage the adoption of renewable energy sources. These came into legislation in April 2010 for installations not exceeding 5 MW. The feed-in-tariffs consist of two elements of payment made to generators:

The first element is a generation tariff that differs by technology type and scale, and will be paid for every kilowatt hour (kWh) of electricity generated and metered by a generator. This generation tariff will be paid regardless of whether the electricity is used onsite or exported to the local electricity network.

The second element is an export tariff which will either be metered and paid as a guaranteed amount that generators are eligible for, or will, in the case of very small generation, be assumed to be a proportion of the generation in any period without the requirement of additional metering.

The following low-carbon technologies are eligible:

- Fuel cells
- PV & Solar Power
- Water (including. Waves and tides)
- Wind
- Geothermal sources

<sup>73</sup> Average ROC prices, e-ROC website <http://www.e-roc.co.uk/trackrecord.htm>, accessed November 2010

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- CHP with an electrical capacity of 50 kW or less

The electricity produced by these technologies will be bought by the utilities at above market prices. These prices will decrease over time to reflect the impact of increasing installation rates on end prices charged to consumers, the goal being to enable industries to “stand alone” at the end of the tariff period.

### D.3 Renewable Energy Heat Incentive

Renewable heat producers of all sizes will receive payments for generation of heat. The payments are intended to give a 12% rate of return will be 'deemed' rather than metered. There is no upper limit to the size of heat equipment eligible under the Renewable Heat Incentive and anyone who installs a renewable energy system producing heat after July 15th 2009 is eligible. The following technologies are included in the scheme.

- Air source heat pumps
- Anaerobic digestion to produce biogas for heat production
- Biomass heat generation and CHP
- Ground source heat pumps
- Liquid biofuels (but only when replacing oil-fired heating systems)
- Solar thermal heat and hot water
- Biogas injection into the grid

### D.4 Allowable Solutions

While details of how allowable solutions will be administered have not yet been made available, early announcement by Government indicates a possible cap of around £3000 per tonne of annual CO<sub>2</sub> savings required. There will need to be a body to administer these funds, to access additional funds and prioritise how they should be invested. Whatever the eventual structure that emerges to do this, there will be a need for planning bodies to understand the potential opportunities and priorities in their area.

### D.5 Salix Finance

This is a publicly funded company designed to accelerate public sector investment in energy efficiency technologies through invest to save schemes. Funded by the Carbon Trust, Salix Finance works across the public sector including Central and Local Government, NHS Trusts and Higher & Further Education institutions. It will provide £51.5 million in interest

free loans, to be repaid over 4 years, to help public sector organisations take advantage of energy efficiency technology .

Salix launched its Local Authority Energy Financing (LAEF) pilot scheme in 2004. The success of this programme has allowed the pilot to be rolled out into a fully fledged Local Authorities programme. The next closing date for applications is 1st October 2009.

### D.6 The Community Infrastructure Levy

The CIL is expected to commence in April 2010 and unlike Section 106 contributions can be sought ‘to support the development of an area’ rather than to support the specific development for which planning permission is being sought. Therefore, contributions collected through CIL from development in one part of the charging authority can be spent anywhere in that authority area.

### D.7 Carbon Emission Reduction Target (CERT)

The Carbon Emissions Reduction Target (CERT) is a legal obligation on the six largest energy suppliers to achieve carbon dioxide emissions reductions from domestic buildings in Great Britain. Local authorities and Registered Social Landlord's (RSL) can utilise the funding that will be available from the energy suppliers to fund carbon reduction measures in their own housing stock and also to set up schemes to improve private sector housing in their area.

The main different types of measures that can receive funded under CERT are:

- Improvements in energy efficiency.
- Increasing the amount of electricity generated or heat produced by microgeneration.
- Promoting community heating schemes powered wholly or mainly by biomass (up to a size of three megawatts thermal).
- Reducing the consumption of supplied energy, such as behavioural measures.

### D.8 Section 106 Agreements

Section 106 agreements are planning obligations in the form of funds collected by the local authority to offset the costs of the external effects of development, and to fund public goods which benefit all residents in the area.

### D.9 The Community Energy Saving Programme

This is a £350million programme for delivering “whole house” refurbishments to existing dwellings through community based

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projects in defined geographical areas. This will be delivered through the major energy companies and aims to deliver substantial carbon reductions in dwellings by delivering a holistic set of measures including solid wall insulation, microgeneration, fuel switching and connection to a district heating scheme. Local authorities are likely to be key delivery partners for the energy companies in delivering these schemes.

The Community Sustainable Energy Programme has two grant initiatives. Both are only available to not-for-profit community based organisations in England.

#### **D.10 Prudential borrowing and bond financing**

The Local Government Act 2003 empowered Local Authorities to use unsupported prudential borrowing for capital investment. It simplified the former Capital Finance Regulations and allows councils flexibility in deciding their own levels of borrowing based upon its own assessment of affordability. The framework requires each authority to decide on the levels of borrowing based upon three main principles as to whether borrowing at particular levels is prudent, sustainable and affordable. The key issue is that prudential borrowing will need to be repaid from a revenue stream created by the proceeds of the development scheme, if there is an equity stake, or indeed from other local authority funds (e.g. other asset sales).

Currently the majority of a council's borrowing, will typically access funds via the 'Public Works Loan Board'. The Board's interest rates are determined by HM Treasury in accordance with section 5 of the National Loans Act 1968. In practice, rates are set by Debt Management Office on HM Treasury's behalf in accordance with agreed procedures and methodologies. Councils can usually easily and quickly access borrowing at less than 5%.

The most likely issue for local authorities will be whether or not to utilise Prudential Borrowing, which can be arranged at highly competitive rates, but remains 'on-balance sheet' or more expensive bond financing which is off-balance sheet and does not have recourse to the local authority in the event of default.

#### **D.11 Best Value**

Local authorities have the right to apply conditions to sales of their own land, whereby a lower than market value sale price is agreed with the developer in return for a commitment to meet higher specified sustainability standards. Rules governing this are contained within the Treasury Green Book which governs disposal of assets and in within the Best Value - General Disposal Consent 2003 'for less than best consideration'

without consent. It is our understanding that undervalues currently have a cap of £2 million without requiring consent from Secretary of State.

#### **D.12 Local Asset-Backed Vehicles**

LABVs are special purpose vehicles owned 50/50 by the public and private sector partners with the specific purpose of carrying out comprehensive, area-based regeneration and/or renewal of operational assets. In essence, the public sector invests property assets into the vehicles which are matched in case by the private sector partner.

The partnership may then use these assets as collateral to raise debt financing to develop and regenerate the portfolio. Assets will revert back to the public sector if the partnership does not progress in accordance with pre-agreed timescales through the use of options.

Control is shared 50/ 50 and the partnership typically runs for a period of ten years. The purpose and long term vision of the vehicle is enshrined in the legal documents which protect the wide economic and social aims of the public sector along with pre-agreed business plans based on the public sector's requirements.

The first generation of LABVs were largely predicated on a transfer of assets from the public sector to a 50/50 owned partnership vehicle in which a private sector developer/investor partner invested the equivalent equity usually in cash. The benefits were in some instances compelling.

This transfer of assets suited the public sector given yields and prices had never been stronger. There is now a need for a second generation of LABVs that deliver many of the recognised benefits of LABVs as set out above but protect the public sector from selling 'the family silver' at the bottom of the market.

The answer may lie in LABV Mark 2 – a new model that is emerging based on the use of property options that will act as incentives. A better acronym would be LIBVs (Local Incentive Backed Vehicle) in which the public sector offers options on a package of development and investment sites in close 'place-making' proximity. The private sector partner is procured, a relationship built, initial low cost 'soft' regeneration is commenced such as; understanding the context, local consultation, masterplanning, site specific planning consents etc. Thereafter, as and when the market returns, the sites and delivery process will be ready to respond, options will be



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exercised, ownership transferred and a price paid that reflects the market at the time.

#### **D.13 Green Renewable Energy Fund**

An example of this is operated by EDF. Customers on the Green Tariff pay a small premium on their electricity bills which is matched by EDF and used to help support renewable energy projects across the UK.

This money is placed in the Green Fund and used to award grants to community, non-profit, charitable and educational organisations across the UK.

The Green Fund awards grants to organisations who apply for funds to help cover the cost of renewable energy technology that can be used to produce green energy from the sun, wind, water, wood and other renewable sources.

Funding will be provided to cover the costs associated with the installation of small-scale renewable energy technology and a proportion of the funding requested may be used for educational purposes (up to 20%). Funding may also be requested for feasibility studies into the installation of small-scale renewable energy technology.

There is no minimum value for grants, with a maximum of £5,000 for feasibility studies, and £30,000 for installations. All kinds of small-scale renewable technologies are considered. The closing dates for the applications usually fall on the 28th February and the 31st August.

#### **D.14 Intelligent Energy Europe**

The objective of the Intelligent Energy - Europe Programme aims to contribute to secure, sustainable and competitively priced energy for Europe. It covers action in the following fields:

- Energy efficiency and rational use of resources (SAVE)
- New and renewable energy resources (ALTENER)
- Energy in transport (STEER) to promote energy efficiency and the use of new and renewable energies sources in transport

The amount granted will be: up to 75% of the total eligible costs for projects and the project duration must not exceed 3 years.

#### **D.15 Merchant Wind Power**

A scheme of this type is operated by Ecotricity who build and operate wind turbines on partner sites. Ecotricity take on all the capital costs of the project, including the turbine itself, and also

conducts the feasibility, planning, installation, operation and maintenance of the wind turbines. Merchant Wind Power partners agree to purchase the electricity from the turbine and in return receive a dedicated supply of green energy at significantly reduced rates.

Partnerships for Renewables is a company that has been set up to deliver turbines on public sector land. In return for a turbine the recipient receives an annual return on its investment. Importantly, installation would be limited to local authority owned land.

#### **D.16 Energy Saving Trust Low Carbon Communities Challenge**

Local authorities can apply for up to £500,000 for energy efficiency and renewable energy measures across their locality. This could help deliver carbon-saving projects such as area-based insulation schemes or community renewables. The two year programme will provide financial and advisory support to 20 'test-bed' communities in England, Wales and Northern Ireland, support inward investment and foster community leadership. The programme is open to local authorities and community groups and the Challenge is focused on communities already taking action, or facing change in the area as a result of climate change and those looking to achieve deep cuts in carbon over the long term.

The programme will provide around £500,000 capital funding (up to 10% can be spent on project management). The timescale on the scheme is short with the capital money needing to be spent very soon. The challenge will be run in two phases with applicants able to apply for either of them. Phase 1 will be for green 'exemplar' communities that have already integrated community plans to tackle climate change and Phase 2 is for communities already taking some action or facing change in their area. All applicants are required to register interest by 12 noon on Wednesday 28th October 2009.

#### **D.17 Biomass Grants**

If grown on non-set-aside land then energy crops are eligible for £29 per hectare under the Single Farm Payment rules (set-aside payments can continue to be claimed if eligible). The Rural Development Programme for England's Energy Crops Scheme also provides support for the establishment of SRC and miscanthus. Payments are available at 40% of actual establishment costs, and are subject to an environmental appraisal to help safeguard against energy crops being grown on land with high biodiversity, landscape or archaeological value.

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#### **D.18 Local Authorities Carbon Management Programme**

Through the Local Authority Carbon Management Programme, the Carbon Trust provides councils with technical and change management guidance and mentoring that helps to identify practical carbon and cost savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and waste.

Participating organisations are guided through a structured process that builds a team, measures the cost and carbon baseline (carbon footprint), identifies projects and pulls together a compelling case for action to senior decision makers. Carbon Trust consultants are on hand throughout the ten months. Direct support is provided through a mixture of regional workshops, teleconferences, webinars and national events.

The programme could provide a useful mechanism for the Council to address its carbon emissions of which energy planning and delivery will be an important part.

#### **D.19 2020 European Fund for Energy, Climate Change and Infrastructure - Marguerite Fund**

The target volume of the fund is EUR 1.5 billion. The fund's investment policy is geared towards financing projects which contribute to achieving European key priorities in the transport and energy sectors. Projects related to all kinds of renewables will be examined including wind (onshore and offshore), solar, geothermal, biomass, biogas, hydro, and waste-to-energy. The fund will however not invest in pilot projects deploying experimental or non-tested technologies. Biofuels are not specifically contemplated in the investment strategy at the present stage.

#### **D.20 JESSICA**

The Joint European Support for Sustainable Investment in City Areas (JESSICA) is a policy initiative of the European Commission and European Investment Bank that aims to support Member States to exploit financial engineering mechanisms to bring forward investment in sustainable urban development in the context of cohesion policy.

Under proposed new procedures, Managing Authorities in the Member States, which in the case of the UK is the RDAs, will be allowed to use some of their Structural Fund allocations, principally those supported by ERDF, to make repayable investments in projects forming part of an 'integrated plan for sustainable urban development' to accelerate investment in urban areas. The investments may take the form of equity,

loads and/ or guarantees and will be delivered to projects via Urban Development Funds (UDFs) and, if required, Holding Funds (HF). The fund will recycle monies over time and series of projects.

#### **D.21 European Regional Development Fund**

The European Regional Development Fund (ERDF) helps stimulate economic development and regeneration in the least prosperous regions of the European Union.

For 2007-13, the department for Communities and Local Government has transferred responsibility for managing and administering ERDF programmes to RDAs. All European funds need to be matched by, at the least, an equivalent sum from non-European sources.

#### **D.22 ELENA**

The European Local Energy Assistance facility, ELENA, can cover up to 90% of the costs associated with technical assistance for preparing large sustainable investment programmes. It aims to help cities and regions implement viable investment projects in the areas of energy efficiency; renewable energy sources and sustainable urban transport.

The technical assistance can be provided for development of feasibility and market studies, structuring of programmes, business plans, energy audits, preparation of tendering procedures and contractual arrangements, and programme implementation units and include any other assistance necessary for the development of Investment Programmes.

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## Appendix E Existing renewable energy capacity

Details of the renewable energy installations in the Yorkshire and Humber region above 1MW that are operational, have planning consent or are in the planning system are provided below.

### E.1 Wind Energy

Type	Status	Name	Local authority	Capacity (MW)
Wind	Consented	Blackstone Edge Wind Farm	Barnsley	7.0
Wind	Consented	Todmorden Moor Wind Farm	Calderdale	15.0
Wind	Consented	Hampole Wind Farm	Doncaster	8.0
Wind	Consented	Tickhill Wind Farm	Doncaster	5.0
Wind	Consented	Tween Bridge Windfarm	Doncaster	66.0
Wind	Consented	Burton Pidsea Wind Farm	East Riding of Yorkshire	9.0
Wind	Consented	Goole Fields Wind Farm	East Riding of Yorkshire	32.0
Wind	Consented	Hall Farm Wind Farm	East Riding of Yorkshire	24.0
Wind	Consented	Sanction Hill Wind Farm	East Riding of Yorkshire	10.0
Wind	Consented	Sixpenny Wood Wind Farm	East Riding of Yorkshire	30.0
Wind	Consented	Sober Hill Wind Farm	East Riding of Yorkshire	15.0
Wind	Consented	Sunderland Farm Wind Farm	East Riding of Yorkshire	20.7
Wind	Consented	Tedder Hill Wind Farm	East Riding of Yorkshire	6.0
Wind	Consented	Twin Rivers Wind Farm	East Riding of Yorkshire	28.0
Wind	Consented	Withernwick Wind Farm	East Riding of Yorkshire	22.5
Wind	Consented	Bullamoor Wind Farm	Hambleton	12.0
Wind	Consented	Keadby Wind Farm	North Lincolnshire	85.0
Wind	Consented	Penny Hill Lane Wind Farm	Rotherham	19.8
Wind	Consented	Rusholme Wind Farm	Selby	24.0
Wind	Operational	Hazlehead Wind Farm	Barnsley	6.0
Wind	Operational	Royd Moor Wind Farm	Barnsley	5.9
Wind	Operational	Spicer Hill Wind Farm	Barnsley	6.9
Wind	Operational	Crook Hill Wind Farm	Calderdale	12.5
Wind	Operational	Ovenden Moor Wind Farm	Calderdale	9.2
Wind	Operational	Chelker Reservoir Wind Turbine	Craven	1.3
Wind	Operational	Red House / Gedney Marsh Wind Farm	Doncaster	12.0
Wind	Operational	Lisset Airfield Wind Farm	East Riding of Yorkshire	30.0
Wind	Operational	Loftsome Bridge STW Wind Turbines	East Riding of Yorkshire	2.6

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Wind	Operational	Out Newton Wind Farm	East Riding of Yorkshire	9.0
Wind	Operational	Saltend STW Wind Turbine	East Riding of Yorkshire	1.3
Wind	Operational	Knabs Ridge Wind Farm	Harrogate	16.0
Wind	Operational	Croda Chemicals Wind Turbine	Kingston Upon Hull, City of	2.0
Wind	Operational	Bagmoor Wind Farm	North Lincolnshire	20.0
Wind	Operational	Advanced Manufacturing Research Centre Wind Turbines	Rotherham	2.6
Wind	Operational	Loscar Farm Wind Farm	Rotherham	3.9
Wind	Operational	Marr Wind Farm	Selby	12.0
Wind	Planning	Norton Wind Farm	Doncaster	4.0
Wind	Planning	Aire & Calder Wind Farm	East Riding of Yorkshire	45.0
Wind	Planning	Celcon Blocks Ltd	East Riding of Yorkshire	2.3
Wind	Planning	Spalding Common Wind Farm	East Riding of Yorkshire	16.1
Wind	Planning	Spaldington Airfield	East Riding of Yorkshire	10
Wind	Planning	Melmerby Wind Farm	Harrogate	17.5
Wind	Planning	Dearne Head Wind Farm	Kirklees	10.0
Wind	Planning	Mars Petcare Wind Turbine	Kirklees	2.0
Wind	Planning	Caverns Wind Farm	North East Lincolnshire	12.5
Wind	Planning	Saxby Wold Wind Farm	North Lincolnshire	40.5
Wind	Planning	Aske Moor Wind Farm	Richmondshire	14.8
Wind	Planning	Heslerton Wind Farm	Ryedale	32.5
Wind	Planning	Bishopwood Wind Farm	Selby	17.5
Wind	Planning	Cleek Hall Wind Farm	Selby	15.0
Wind	Planning	Wood Lane Wind Farm	Selby	32.2
Wind Off Shore	Consented	Humber Gateway Wind Farm	-	300
Wind Off Shore	Planning	Westernmost Rough Wind Farm	-	245
Wind Off Shore	Potential site	Dogger Bank Wind Farm	-	13,000
Wind Off Shore	Potential site	Hornsea Wind Farm	-	4,000

Table 76 Current and proposed commercial scale wind farms (over 1MW) in Yorkshire and Humber. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential.

## E.2 Hydro Energy

Type	Status	Name	Local authority	Capacity (MW)
Hydro	Operational	Aiskew Watermill	Hambleton	0.027
Hydro	Operational	Armitage Bridge	Wakefield	0.06
Hydro	Consented	Bainbridge	Richmondshire	0.045

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Hydro	Operational	Bonfield Ghyll	Ryedale	0.001
Hydro	Operational	Esholt STW	Bradford	0.18
Hydro	Operational	Ewden STW	Sheffield	0.275
Hydro	Operational	Garnett Hydro	Leeds	0.15
Hydro	Operational	Gayle Mill	Richmondshire	0.0207
Hydro	Operational	Gibson Mill	Calderdale	0.009
Hydro	Planning	Grange Farm	Harrogate	0.45
Hydro	Operational	Grassington	Craven	0.006
Hydro	Operational	Greenholme Mills	Bradford	0.392
Hydro	Planning	Halton Gill	Craven	0.33
Hydro	Operational	High Corn Mill	Craven	0.0120
Hydro	Operational	Howsham Mill	Ryedale	0.024
Hydro	Planning	Jordan Dam	Rotherham	0.1
Hydro	Planning	Kelham Island	Sheffield	0.025
Hydro	Consented	Kirkthorpe Hydro Scheme	Wakefield	0.38
Hydro	Consented	Linton Lock	Hambleton	1.0
Hydro	Operational	Lowna Mill	Ryedale	0.0026
Hydro	Operational	Loxley STW	Sheffield	0.22
Hydro	Operational	Newby Hall	Harrogate	0.083
Hydro	Planning	Ruswarp Weir	Scarborough	0.05
Hydro	Operational	Settle Bridge End Mill	Craven	0.0480
Hydro	Operational	Tanfield Mill	Hambleton	0.036
Hydro	Operational	Thurgoland Mill	Barnsley	0.00723
Hydro	Operational	Yore Mill	Barnsley	0.0023

Table 77 Current hydro installations in Yorkshire and Humber. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential.

### E.3 Biomass Energy

Type	Status	Name	Local authority	Capacity (MW)
Biomass	Consented	Briar Hill Farm	Doncaster	8.0
Biomass	Consented	Game Slack Farm	East Riding of Yorkshire	12.0
Biomass (straw)	Consented	Tansterne Straw-Burning Power Station	East Riding of Yorkshire	10.0
Biomass (straw)	Consented	Tesco Distribution Centre, Goole	East Riding of Yorkshire	5.7
Biomass	Consented	Helius Energy Biomass Plant	North East Lincolnshire	65.0
Biomass	Consented	Victory Mill	Ryedale	6.0
Biomass	Consented	Blackburn Meadows Biomass Plant	Sheffield	25.0
Biomass	Consented	Harewood Whin	York	2.5
Biomass	Operational	Sandsfield Gravel	East Riding of Yorkshire	2.5



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Biomass	Operational	South View Farm	Ryedale	2.0
Biomass	Operational	John Smiths Brewery	Selby	4.7
Biomass (straw)	Planning	Brigg Energy Resource Centre	North Lincolnshire	40.0
Biomass	Planning	Drax Heron	North Lincolnshire	290.0
Biomass	Planning	Drax Ouse	Selby	290.0
Biomass	Planning	Pollington Energy Park	Selby	56.0

Table 78 Current and proposed biomass installations (over 1MW) in Yorkshire and Humber. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential.

#### E.4 Energy from Waste

Type	Status	Name	Local authority	Capacity (MW)
AD	Consented	Selby Renewable Energy Park	Selby	8.0
AD	Operational	ReFood Energy from Waste	Doncaster	2.0
AD	Operational	Kirkburn	East Riding of Yorkshire	2.0
EfW	Consented	Energos	Bradford	14.9
EfW	Consented	Kirk Sandall Energy Recovery Facility	Doncaster	9.5
EfW	Consented	Saltend Energy from Waste Facility	Kingston Upon Hull, City of	20.0
EfW	Operational	Huddersfield Incinerator	Kirklees	10.0
EfW	Operational	NewLincs	North East Lincolnshire	6.0
EfW	Operational	Sheffield Energy Recovery Facility	Sheffield	20.0
EfW (poultry litter)	Operational	Glanford Power Station	North Lincolnshire	14.0
EfW	Planning	Hampole Quarry Incinerator	Doncaster	2.0
EfW	Planning	Allerton Waste Recovery Park	Harrogate	25.0
EfW	Planning	Skelton Grange Energy Recovery Facility	Leeds	21.0
EfW	Planning	Ferrybridge "C"	Wakefield	100.0
Sewage Gas	Operational	Esholt	Bradford	1.2
Sewage Gas	Operational	Hull WWTW	East Riding of Yorkshire	1.5
Sewage Gas	Operational	Mitchell Laithes	Kirklees	1.4

Table 79 Current and proposed energy from waste installations (over 1MW) in Yorkshire and Humber. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential.

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The table below summarises the current proposals for how Waste Disposal Authorities in the region will deal with residual MSW.

	Local authority	Waste responsibility	Total MSW 2009/10 (tonnes)	Procurement status
1	Bradford	Unitary	262,000	Interim contract preferred bidder is Waddingtons-Yorwaste (cancelled).
	Calderdale	Unitary	83,000	Partnership out to tender for long-term residual waste management contract – down to 2 bidders, Earth Tech/Skanska and Shanks
2	Barnsley	Unitary	116,000	Each has separately prepared waste management strategies and a Joint Strategic Waste Development Plan Document published in 2010 for waste management until 2026.  3 procurements: Interim Treatment (Rotherham); Treatment & Disposal PFI (Barnsley); HWRC (Doncaster, awarded to WRG)  Partnership to tender for long term residual waste treatment contract – down to 2 bidders, Shanks/SSE and Sita.  Preferred bidder is expected to be named in April 2011.
	Doncaster	Unitary	167,000	
	Rotherham	Unitary	122,000	
3	East Riding of Yorkshire	Unitary	196,000	Partnership has a long term integrated waste management contract with WRG until 2024 but “contractual problems in recent years” means that the Councils will re-procure the contract in 2013. WRG will continue to carry out waste services for the councils until 2013.  Proposed WRG EfW plant at Saltend has planning consent but its future is uncertain. <sup>74</sup>
	Kingston upon Hull, City of	Unitary	139,000	
4	Kirklees	Unitary	219,000	Has a 25 year integrated waste management contract with SITA which began in 1998, based around EfW. This is the existing Huddersfield energy recovery facility.
5	Leeds	Unitary	336,000	Out to tender for long-term residual waste management contract - down to 2 bidders, based around EfW; final 2 bidders are Veolia Environmental Services (proposing a 190,000 tonnes/year incinerator on site of former wholesale market in Cross Green) and the Aire Valley Environmental consortium (proposing a 230,000 tonne incinerator on site of Knostrop waste water treatment, Cross Green)  Decision due in February 2011
6	North East Lincolnshire	Unitary	84,000	Have a long term integrated waste management contract until 2024 with Tiru, based around EfW. This is the existing Newlincs energy recovery facility in Grimbsy. Preferred approach is to build a second CHP facility on the same site.  Biffa Singleton based on gasification, WRG on MBT.
7	North Lincolnshire	Unitary	98,000	Partnership out to tender for long term residual waste management contract –

<sup>74</sup> Saltend energy-from-waste facility will not go ahead, MRW website, accessed January 2011 <http://www.mrw.co.uk/news/saltend-energy-from-waste-facility-will-not-go-ahead/8610103.article>

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				down to 2 bidders,
8	Sheffield	Unitary	226,000	Have long term integrated contract with Veolia Environmental, based around EfW including district heating. This is the existing Sheffield energy recovery facility.
9	Wakefield	Unitary	174,000	Out to tender for long-term integrated waste management contract, with preferred bidder appointed as Babcock/ VT Group in 2007, based around MBT, autoclaves. However Babcock are understood be reconsidering their position on the procurement process.
10	York	Unitary	106,000	Long-term 25 year residual MSW contract awarded to AmeyCespa in December 2010.  Technologies include AD and EfW incineration at Allerton Waste Recovery Centre in Harrogate, expected to be operational from 2014 if planning consent is received.
	North Yorkshire	Disposal	355,000	

Table 80 MSW procurement status in Yorkshire and Humber (Source: State of the nation briefing: waste and resource management, ICE)

## E.5 Energy generation from landfill

Type	Status	Name	Local authority	Capacity (MW)
Landfill	Consented	Parkwood Power Plant	Sheffield	8.0
Landfill	Operational	Manywells Quarry- A	Bradford	1.0
Landfill	Operational	ATLAS POWER	Calderdale	1.1
Landfill	Operational	Skibeden Landfill Site	Craven	1.1
Landfill	Operational	BOOTHAM LANE	Doncaster	1.3
Landfill	Operational	Bootham Lane, Phase II A, C	Doncaster	1.4
Landfill	Operational	Levitt Hagg Generation - A,C	Doncaster	1.1
Landfill	Operational	Scabba Wood Generation - A	Doncaster	2.8
Landfill	Operational	Skelbrooke 2 - A	Doncaster	2.1
Landfill	Operational	Carnaby Generator	East Riding of Yorkshire	1.4
Landfill	Operational	Gallymoor	East Riding of Yorkshire	1.4
Landfill	Operational	ALLERTON PARK	Harrogate	1.0
Landfill	Operational	Honley Wood - A	Kirklees	1.0
Landfill	Operational	HOWDEN CLOUGH ROAD	Kirklees	1.9
Landfill	Operational	Soothills Landfill	Kirklees	1.0
Landfill	Operational	Gamblethorpe Landfill	Leeds	1.1
Landfill	Operational	PECKFIELD QUARRY	Leeds	4.1
Landfill	Operational	Skelton Grange - A, C	Leeds	3.1
Landfill	Operational	IMMINGHAM LANDFILL	North East Lincolnshire	1.0
Landfill	Operational	New Crosby Warren	North Lincolnshire	1.4
Landfill	Operational	PG2 BOLAM POWER GENERATION	North Lincolnshire	1.0
Landfill	Operational	Winterton	North Lincolnshire	3.0
Landfill	Operational	Meadow Hall Power	Rotherham	1.1
Landfill	Operational	Roxby Gas to Energy - A, C, D	Scarborough	8.5

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Landfill	Operational	SEAMER CARR	Scarborough	1.5
Landfill	Operational	BARNSDALE BAR LANDFILL	Selby	1.4
Landfill	Operational	Parkwood Power Plant - D	Sheffield	2.5
Landfill	Operational	Darrington - North	Wakefield	4.0
Landfill	Operational	Long Lane Landfill Site	Wakefield	2.5
Landfill	Operational	Welbeck Power	Wakefield	8.0
Landfill	Operational	Harewood Whin	York	6.6

Table 81 Current and proposed landfill sites (over 1MW) in Yorkshire and Humber. "Current" refers to facilities that are operational or have planning consent. "Proposed" refers to facilities currently in the planning system or sites that have been flagged as having potential.

## E.6 District heating networks

Local authority	Type of system	Description	postcode
Barnsley	Boiler house	Sheffield Road Flats	S70 4NW
Barnsley	Boiler house	500 kW scheme for the council depot, Smithies Lane Depot	S71 1NL
Barnsley	Boiler house	Westgate Plaza One	S70 2DR
Barnsley	Boiler house	Town Hall	S70 2TA
Barnsley	Boiler house	Digital Media Centre	S70 2JW
Bradford	-	No information received	
Calderdale	-	None	
Craven	-	No information received	
Doncaster	Boiler house	Doncaster College	DN1 2RF
Doncaster	Boiler house	Balby BridgeMilton Court, St James Court & Stirling Day Centre	DN1 3QG
Doncaster	Boiler house	Trafalgar House	DN6 8BS
Doncaster	Boiler house	Sheep Dip Lane	DN7 4AU
Doncaster	Boiler house	Adwick Town Hall	DN6 7DR
Doncaster	Boiler house	Marlborough House	DN6 0LN
Doncaster	Boiler house	Circuit House	DN6 7TE
Doncaster	Boiler house	Victoria Court	DN5 0HA
Doncaster	Boiler house	Woodlands Market Square	DN6 7SS
Doncaster	Boiler house	Ennerdale	DN2 8QR
Doncaster	Boiler house	71 Skellow Road	DN6 8HP
East Riding	-	None	
Hambleton	Boiler house	No information received	

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Harrogate	Community	Town Centre	HG1 2WH
Kingston Upon Hull, City of	Boiler house	Boothferry Flats Boilerhouse	DN14 6BB
Kingston Upon Hull, City of	Boiler house	Melville St Flats Boilerhouse	HU1 2QJ
Kirklees	-	No information received	-
Leeds	Community	Leeds General Infirmary	LS1 3EX
Leeds	Community	University of Leeds	LS2 9JT
North East Lincolnshire	-	No information received	-
North Lincolnshire	-	No information received	-
Richmondshire	-	No information received	-
Rotherham	Boiler house	Arbour Drive Boiler House	S66 9DU
Rotherham	Boiler house	Ascension Close Boiler House (Model Village)	S66 7HQ
Rotherham	Boiler house	Beeversleigh	S65 2AD
Rotherham	Boiler house	Conery Close Boiler House (Vale Road)	S65 4ES
Rotherham	Boiler house	Elizabeth Parkin Boiler House	S65 4LF
Rotherham	Boiler house	Florence Avenue Boiler House (Mansfield Road)	S26 4RL
Rotherham	Boiler house	Greasbrough - District Heating	S61 4RB
Rotherham	Boiler house	Hurley Croft Boiler House	S63 6BN
Rotherham	Boiler house	Langdon Walk Boiler House	S61 3QF
Rotherham	Boiler house	Manor Lodge Boiler House	S2 1UH
Rotherham	Boiler house	Mark Grove Boiler House	S66 2UZ
Rotherham	Boiler house	Mason Avenue Boiler House	S62 6DB
Rotherham	Boiler house	St Anns - Boiler House	S65 1DA
Rotherham	Boiler house	Swinton Fitzwilliam Estate Boiler House	S64 8HF
Rotherham	Boiler house	The Grange Boiler House	-
Rotherham	Boiler house	Tickhill Road Boiler House (Glencairne Court)	S66 7NQ
Rotherham	Boiler house	Vine Close Boiler House	S60 1JN
Rotherham	Boiler house	Woodland Drive Boiler House (Narrow Lane)	S25 4JT
Ryedale	-	None	-
Scarborough	-	No information received	-
Selby	-	No information received	-



Capabilities on project:  
Building Engineering - Sustainability

Sheffield	Community	Sheffield District Heating Network	S1 2BG
Wakefield	Boiler house	St Swithins Court, Ferry Lane in Stanley	WF3 4QA
York	-	None	-

Table 82 District heating networks in Yorkshire and Humber