

Local Area Potential Heat Users Search

Wealden Works site for the Recycling, Recovery and
Renewable Energy (3Rs) Facility

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1. Summary

This report has been produced to provide background research of the potential for local heat and power users in the vicinity of the proposed development for a Recycling Recovery and Renewable Energy Facility (3Rs) on the former Wealden Brickworks off Langhurstwood Road, Horsham, HR12 4QD on behalf of Britaniacrest Recycling Limited. Should planning permission be granted, this facility will take commercial and industrial waste or similar waste types and sort and segregate the materials such as metals, plastics and rubble and recover their value using the latest sorting technology. The facility will have a capacity to treat 180,000 tonnes per year, diverting circa 90% from landfill. The residual materials will be used to produce electricity and potentially heat for export from the site. The facility will be able to export up to 21 Megawatts of electricity into the national grid which would be approximately enough to provide heat, light and power for more than 42,000 homes at current average energy consumption rates.

The facility has been designed to be able to provide a combination of electricity into the national grid and district heating or power should a viable and deliverable solution be forthcoming; either from the start of the operation or at a later date. The ability to supply energy in the form of heat depends also on the capacity to install the necessary infrastructure. Any local direct heat or power users would reduce the amount of energy exported to the national grid.

2. Site Description and Setting

The site is located approximately 700m to the north of A264 and the outskirts of Horsham. The site is bounded, by the railway line to the west and the landfill site to the north east. The site is situated within the Brookhurst Wood site, an industrial dead end, consisting of a landfill, a municipal waste Mechanical Biological Treatment and Anaerobic Digestion plant to the east and the Wealden Brickworks to the south. The site is roughly square in shape and extends to approximately 3.1 hectares. It is defined by steel fencing.

The closest residential properties to the site are situated approximately 210m to the north east at Graylands Lodge, 330 to the south west along Station Road and 290m to the south east on Langhurstwood Road. However, the site is separated from residential premises extensive woodland screening and also by the railway line, to the south west.

3. Site History

The site has a long industrial history and is situated on the former Wealden Brickworks off Langhurstwood Road. Bricks are still manufactured on the adjacent site and it sits alongside the mechanical/biological waste treatment plant operated by Biffa with the Brookhurst Wood landfill site about 900m away. Since 2015 the site has been handling waste materials from local businesses and the district council for processing. The site currently has planning approval to handle 230,000 tonnes a year of industrial and commercial waste.

4. Site assessment for Combined Heat and Power (CHP)

In assessing the potential for CHP in the local area of the site various desk-based studies were undertaken. Firstly a google map search was carried out to primarily identify any potential larger heat or power users near to the site.

An online search using the Department of Energy and Climate Change (DECC) guidance on CHP site <https://www.gov.uk/guidance/combined-heat-and-power> was undertaken. DECC’s website with it’s CHP Focus page is aimed at supporting the development of Combined Heat and Power providing useful data to help developers search possible heat users. CHP Focus is a DECC initiative to support the development of combined heat and power in the UK.

A review of a database of local businesses indicative of the local area was undertaken where potential key ones were singled out to obtain further details on their energy consumption.

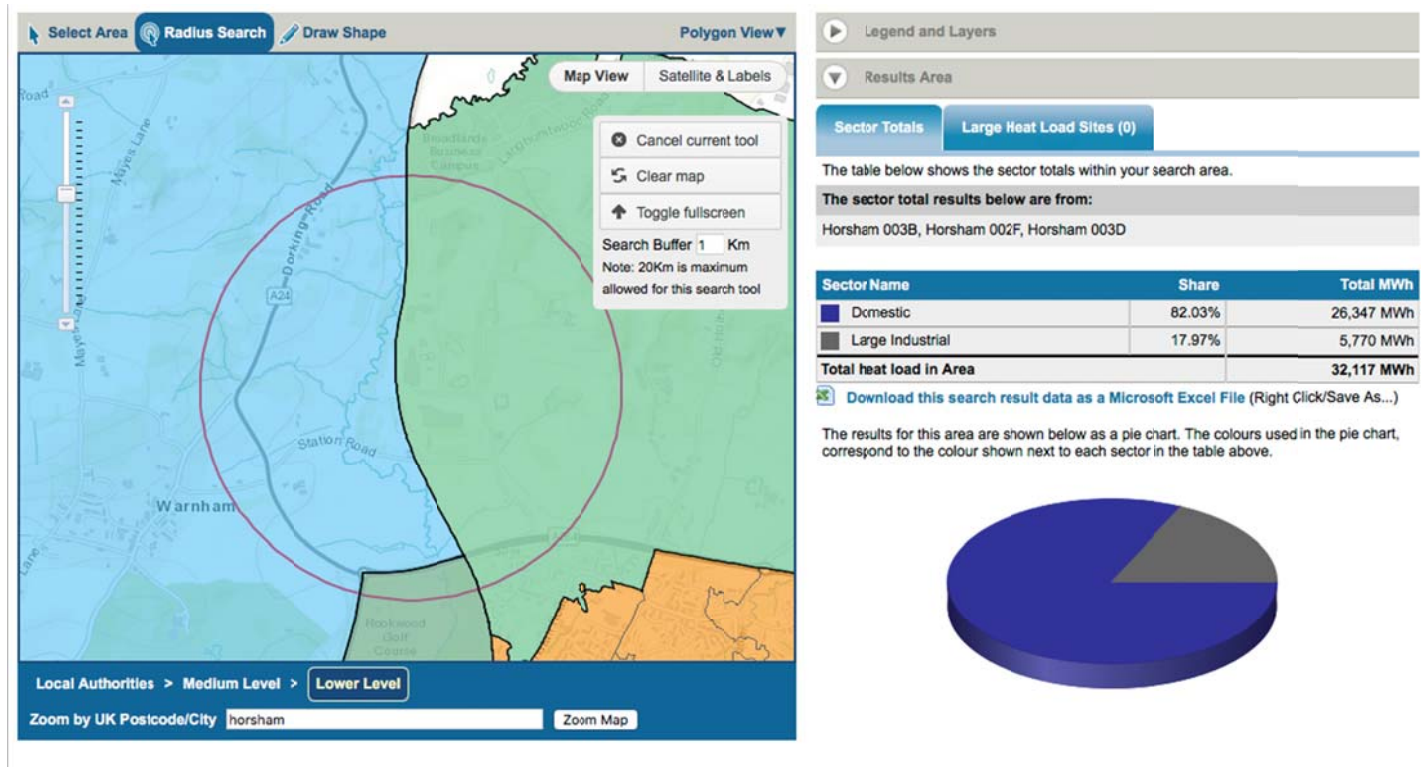
A key criterion to identifying potential viable CHP markets is proximity to the facility generating heat and/or energy, scale of heat or power use and energy demand throughout the year.

5. National Heat Map Results

The total heat load in the area was undertaken using the DECC heat map tool.

The breakdown of energy consumption by sector up to a 1km radius of the site shows a total heat load of 32,117 MWh thermal. The majority, over 82%, of which is domestic. Due to the nature of domestic heating in terms of fluctuating heat load requirements and multiple units it does not provide a suitable base on its own to support good quality CHP. That said the heat map shows large industrial users at 5,770MWh.

Diagram 1 - At 1 km



At a radius of 10km from the site the heat load in the area is 969,365 MWh thermal. Again the majority is domestic at over 89%. As you will see this search did not reveal any potential large heat users either.

Diagram 2 - At 10KM

Sector Name	Share	Total MWh
Communications and Transport	8.38%	81,188 MWh
Commerical Offices	0.11%	1,113 MWh
Domestic	89.32%	865,879 MWh
Education	0.17%	1,644 MWh
Government Buildings	0.01%	77 MWh
Hotels	0.68%	6,546 MWh
Large Industrial	0.99%	9,606 MWh
Health	0.04%	365 MWh
Other	0.02%	235 MWh
Small Industrial	0.06%	601 MWh
Retail	0.06%	547 MWh
Sport and Leisure	0.15%	1,458 MWh
Warehouses	0.01%	107 MWh
Total heat load in Area		969,365 MWh

6. Local business results

To identify key heat users a more detailed search was undertaken, taking account of the key criterion, namely proximity to the facility generating heat and/or energy, potential scale of heat or power use. As well as a broad brush approach to review the potential of a viable heating scheme taking consideration of logistical and technical issues and also in terms of long term energy supply agreements and therefore the potential viability of such a CHP scheme.

7. Initial findings

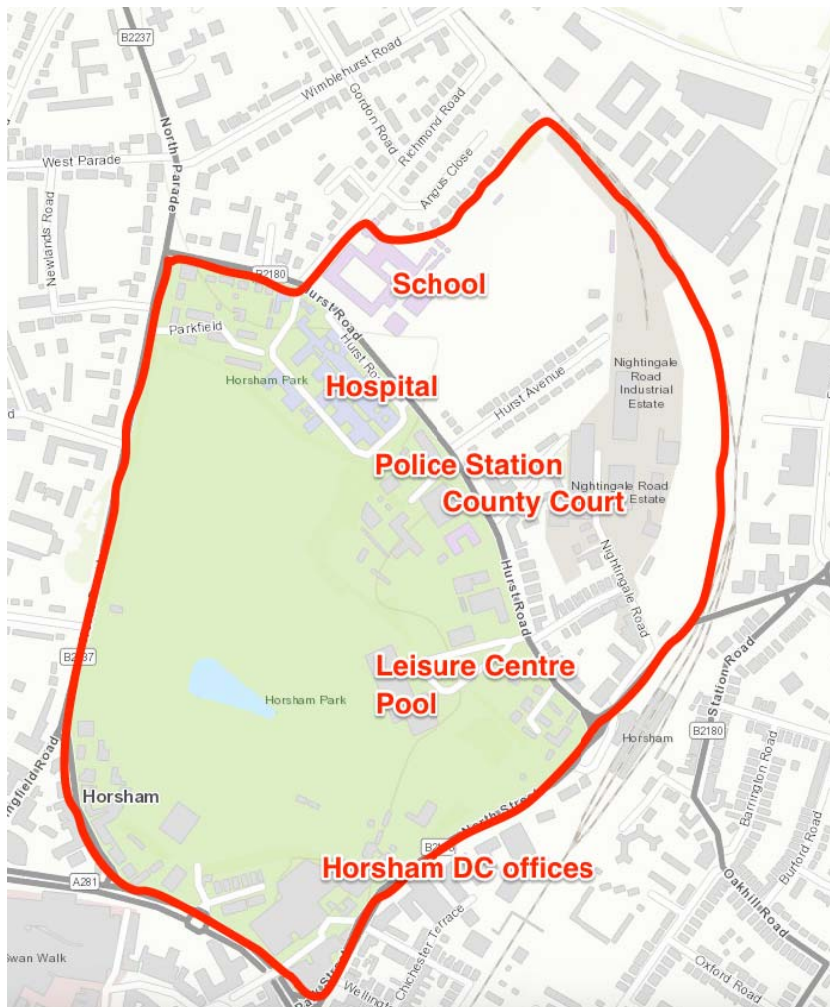
There are businesses to the north east but again in terms of potential heat users these are too small and mainly office based business premises. To the east of Langhurstwood Road there is a large development proposed, which this summer 2016, the developers Liberty Property Trust, submitted an outline planning application for a mixed use site comprising extensive housing, shops and light industrial premises, leisure and so on. As there is not sufficient detail in their plans online and as this proposal has yet to be given planning permission at this time it is considered not appropriate to review the potential in any further detail especially as it would appear the majority would be dwellings.

As you will see from Diagram 1, which covered an area up to 1km of the site, large industrial heat users equaled 5770MWh. Due to the rural setting of the site there are very few locations with this consumption, so at this point in the desk study research it is assumed that the large industrial potential heat user is the brickworks across the road to the south from the proposed development.

At this time along with the brickworks the most realistic and potentially viable area in terms of potential heat users would be the south, in the town of Horsham. Roughly 2.5 – 3.5kms from the site there is a collection of government buildings that might prove to deliver a viable scheme linking buildings such as the College of Richard Collyer, Horsham Hospital, Horsham Police Station, Horsham County Court, pavilions in The Park Leisure Centre which includes a pool and lastly Horsham District Council offices. All these facilities are close together in one area. Also in terms of practically these premises could be connected via piping following the railway line that is on the western boundary of the 3Rs site at Langhurstwood Road and leads in almost a direct straight line to the buildings referred to above and on Drawing 3 in the town of Horsham. Also, as can be seen in Drawing 3, installation of pipework is hugely simplified with much reduced cost and disruption as pipes, as these could run along Horsham Park and would need to cross just one single lane side road.

See Drawing 3 below which shows the locations of interest in terms of potential heat users in one area. The heat load for this area circled in red on this drawing is 33,451 MWh. This is significant, but not large and therefore worth exploring should the 3Rs project proceed, but it is diverse and will be difficult secure within a single network.

Drawing 3 – Horsham Park Area



Information was gathered using various means including google search on aerial maps, various desk and location based evaluation.

8. Conclusions

The current heat load in the general area is relatively small and would not give good quality CHP meeting the requirements of Ofgem CHPQA without an extensive network and suffer from low consumer density. There is, however, a real potential opportunity to provide heat to the brickworks on the adjacent site to the development in view of its proximity. Also as this is a brickworks, in general terms it would be large industrial heat user due to firing and drying the bricks and have a constant demand – optimally required when networked to a facility such as the proposed 3Rs Facility. To date, only general discussions have been held, and no site-specific arrangements have taken place with the owners of the brickworks. Should planning permission be granted this will be pursued further.

It is also proposed that, should planning permission be granted, potential sites identified in drawing 3 in this report, and any other opportunities that come to light, will be looked at in more detail and preliminary discussions should be undertaken with those potential larger heat users to evaluate their heat load requirements throughout the year and general viability considerations of such a scheme with Horsham District Council properties. Any development is likely, however, to take time and is a long-term prospect.