

Design & Access Statement

for a
Biomass Power Generation Plant
at
Whaley Road
Baraugh Green
Barnsley
S75 1LT

Background

Changes were made to the Development Control System with affect from 10th August 2006, requiring applicants seeking planning permission to provide a Design & Access Statement which covers both the design and concept principles along with access issues relating to the site.

It illustrates the process followed to produce a development proposal and to explain and justify the proposal in a structured way.

This Design & Access Statement has been prepared to support a planning application for a small scale biomass power generation plant at Whaley Road, Barugh Green, Barnsley, S75 1LT.

The application will be submitted by Rocpower Limited which is a Joint Venture company with Hargreaves Services plc. This Design & Access Statement has been prepared to appraise the site and demonstrate how the wider context has influenced design principles and access arrangements for the proposed developed.

The proposed development is entirely privately funded with a project value of £2.5million.

Background and Context

This section of the Design & Access Statement provided some background and context to Rocpower's proposal. In particular, the following areas are considered:

- Choice of vegetable oil co products as a renewable fuel
- Site selection
- Area context
- Plant components and operation

Tall Oil & Vegetable Oil Co Products as a Renewable Fuel

Rocpower Limited are developing a portfolio of renewal energy generation plants throughout the UK, identical to this proposal, utilising vegetable co products as the feed stock. The oil has been selected as the primary fuel due to its contribution in tackling greenhouse gas emissions as well as its availability. The Oil is classed as carbon neutral which is inline with Barnsley's Carbon Management program. Rocpower Limited are strong believers in running existing technology on renewable energy sources to provide power at the point of usage.

At the start of the Industrial Revolution atmospheric CO2 levels were around 280 ppm. Today that levels stands at 381 ppm – an increase of a mere 36% of what is no more than a fractional gas. Yet the effect on global weather patterns has been frightening with freakish weather increasingly being experienced around the world. Predictions now are for CO2 levels to rise to

500 ppm (effectively double) by 2040 and to around 700 ppm (effectively triple) by 2100 – if that happens most life forms on earth will be facing extinction. The only sensible course of action for the 21st Century is to cease releasing fossil carbon into the atmosphere and to switch as rapidly as possible to 'Carbon Neutral' energy production.

Site Selection

In identifying the site at Whaley Road as an appropriate location a number of factors have been considered mainly:

- Land availability
- Electrical connection
- Site suitability

Land Availability

The subject site forms part of a YEDL primary substation and was previously used as a peeking site. This site housed a number of diesel electricity generators which were used to increase the power supply to the National Grid in times of need or power cut. The site has therefore previously been used in the same manner as Rocpower's proposal.

Proximity to Electricity Infrastructure

Electricity will be exported from the generation plant to the National Grid through the primary substation owned by YEDL adjacent to the site. Feasibility studies show that a small scale biomass power generation plant could produce as much as 10MW to be supplied to the grid through the existing substation.

The proximity of the adjacent primary substation reduces energy loss in transmission to the National Grid and minimises the environmental impacts of having to establish longer distance connections either by underground cable or overhead pylon.

Site Suitability

The site is considered suitable for biomass renewable energy generation as:

- It is well served by the transport network
- The site has the requisite electricity infrastructure and connections
- The site has previously been used for a similar operation
- It is located within an existing industrial estate

The YEDL substation lies to the East of Whaley Road and is protected by security fencing consummate with primary substations.

The proposed building would be located in the Eastern corner of the site. The original installation benefited from GPDO rights held by the electrical utility company, although the generating equipment has now been removed the electrical connection still remains.

The development is not located within an area identified as being a flood risk (see Supporting Statement).

The design of the plant in this proposal reflects the process required to convert vegetable oil co products into electricity.

Biomass Electrical Generating Process

The process uses vegetable oil co products which are classed as carbon neutral, as defined by the UK Renewable Obligation Scheme to power compression ignition engines which in turn drive alternators generating electricity.

To enable the oil to be combusted through the engines it is preheated in storage tanks utilising the waste heat from the generators, both via exhaust and water coolant making the production self sufficient.

The electricity is then fed directly in to the local distribution network for use in the area. Therefore the amount of electricity lost in transmission is kept to a minimum. This will also assist in reducing the number of power lines required to bolster the network in future years.
The proposed use is consistent with development plan policies, the site and local character. It will provide a facility to meet national and regional demand for renewable energy.

The proposed development gives the opportunity to provide reliable, sustainable electricity generation that will assist Barnsley Council in meeting their targets for renewable energy in the coming years.

Layout

A detailed layout and design of the building is shown on plans.

- BAR 001 P 1:1250 OS Plan
- BAR 002 P 1:200 SITE PLAN AS EXISTING
- BAR 003 P 1:200 SITE PLAN AS PROPOSED
- BAR 004 P 1:100 GENERAL ARRANGEMENT PLAN INC. SECTIONS
- BAR 005 P 1:100 ELEVATIONS AS PROPOSED.

The proposals are simple yet effective to provide a housing for a renewable power generation plant.

Having determined the general location of the proposed plant, the layout of the plant is largely determined by the operational structure and adjacencies of the plant.

The layout of the proposed generation plant has been carefully thought through to maximise the efficiency of the plant. The layout of the plant has taken into consideration handling operations in terms of site manoeuvrability together with the loading and unloading of fuels in a safe working environment.

Scale

The scale and height of the proposal reflects its purpose and intended generating capacity of up to 8MW. The proposed 9 metre building is in keeping with other units of a similar nature within the area.

Appearance

The overall objective for the design of the small scale biomass power plant is to create a clean industrial character consistent with its role as a sustainable energy generation technology, within the proposed location in line with Policy BE6 of the Barnsley UDP.

The proposed power generation and fuel handling sections of the building will consist of a clear span steel portal frame building clad with forest green profile sheet metal with a dark green trim.

The design, layout, colour and materials proposed for the construction of the building have been chosen to ensure that the development sits well within its landscape setting.

Vehicle access to the site will be via the existing palisade entrance gates and manoeuvrability will be through the existing turning head provided within the YEDL site as shown at Appendix II. Three personnel access doors will also be provided.

The design, layout, colour and materials of the building ensure that the development sits well in its landscape setting.

Access

The site is generally level providing a good standard of access for all. In addition to this, no steps have been incorporated into the design of the proposed plant and the approach and the access to the building meets all necessary accessibility criteria.

It is considered inappropriate and unsafe to seek to provide access for non operational personnel to the site which effectively houses power generation equipment.

As noted by the Building Regulation 2000 Part M Access and Use of Buildings, the requirements for disabled access do not apply to any part of a

building which is used solely to enable the building or any service or fitting in the building to be inspected, repaired or maintained.

As an operational energy plant the site would not generally be accessible to the members of the public.

The perimeter of the site is already fenced and as private property will not be accessible without the consent from Rocpower or YEDL. Open access to the site would not be appropriate due to health and safety requirements and security. The applicant estimates that there will be approximately two traffic movements to and from the site per day based on fuel deliveries to the site and any maintenance and monitoring that may be required.

The internal access road to the development will be re-laid with concrete where the road is currently gravel.

Conclusion

This proposal will assist Barnsley in hitting its target of 15MW of renewable energy generation identified in the RSS by 2010 with a potential 10MW.

The promotion and use of renewable energy is now a key element of regional and national planning policy (PPS22 Renewable Energy).

This proposal meets the ever growing need for point of use electricity generation. It will reduce CO_2 emissions as it is carbon neutral and reduce the need for additional pylons in the future transporting electricity around the county and country.

Appendix I

Appendix II

Appendix III