

BIOMASS SYSTEMS: A GUIDE FOR PLANNERS

BIOHEAT IS ONE OF THE MOST EXCITING CURRENT DEVELOPMENTS IN GREEN ENERGY AND IS NOW REALLY STARTING TO TAKE OFF IN SOUTH WEST OF ENGLAND.

TO HELP YOU REVIEW AN APPLICATION TO INSTALL A LOCAL BIOHEAT PROJECT. THE SOUTH WEST BIOHEAT PROGRAMME HAVE PREPARED THIS INFORMATION SHEET COVERING SOME OF THE KEY POINTS OF RELEVANCE FOR PLANNERS.

WHAT IS THE SOUTH WEST BIOHEAT PROGRAMME?

The aim of the South West Bioheat Programme (which was launched in 2007) is to stimulate the biomass heating industry in the South West of England. It has engaged the most promising schemes and offered individual tailored help in areas such as site feasibility, system specification, fuel negotiations, funding applications, planning liaison and demonstration visits. In the eighteen months following its launch, we have already helped develop and support more than 30 sites for biomass wood fuel installation the project is currently on target to deliver an additional 30-40MW of installed capacity, which would nearly double the South West's installed renewable heat capacity.

In parallel, we are building the skills and knowledge-base in the region via training courses, demonstration visits, information events, and associated advice in the form of briefing and guidance notes. A variety of sites, ranging from a hospital, through to the National Trust, schools, colleges, housing associations and dairies have been supported.

WHAT TYPES OF PLANNING APPLICATION HAVE ARISEN AS A RESULT OF THE SOUTH WEST BIOHEAT PROGRAMME?

We specifically help projects above 150kW. Projects of 150kW are typically primary schools, small housing developments or large community centres. Larger projects take many forms; typical examples include plant nurseries, universities, hospitals, local authority buildings and any location performing significant industrial processes.

The majority of projects are heat-only (thermal), although there are some heat-and-power (known as Combined Heat and Power, or CHP) projects. There are few differences between the two types of installation as far as the planning process is concerned.



HOW DOES SOUTH WEST BIOHEAT PROGRAMME GET INVOLVED IN THE PLANNING APPLICATION PROCESS?

Part of the support offered to projects includes assisting with planning issues. The programme provides each project with a 'Project Champion' whose role is to provide the necessary documentation required by the planning process.



WHAT ARE THE POTENTIAL ISSUES FOR ME AS A PLANNER?

As a renewable technology, biomass raises several issues for planners, although biomass installations are increasingly common and, unlike other forms of renewable energy, visual and noise aspects rarely cause a problem.

The main issues to consider are:

- **Access** – does any additional provision need to be made for fuel delivery? Are there any implications for increased traffic in residential areas? Public sites should also consider the movement of people around the site at times of fuel delivery;
- **Flue heights and boiler houses** – planning issues related to installation of flues and boiler houses/fuel stores if required (more relevant for new installations), covered by building regulations¹;
- **Smoke control zones** – is the installation within a zone², and if so is the boiler equipment approved/exempt?

- **Listed building status and built heritage Conservation Areas** – will there be any visual impact? (which is usually limited to the flue and any infrastructure necessary for fuel storage);
- **Visually protected landscapes and areas** (e.g. AONBs, National Parks, Conservation Areas) which will need to address particular local sensitivities if there are any visual impact implications;
- **Footprint of new installations** – the construction of new installations might have potential effects upon ecology, hydrogeology, archaeological remains or disturbance to contaminated land;
- **Water discharges from installations** – if water discharges are to a watercourse, there may be implications for water quality; and,
- **Odour from installations** – depending upon the type of technology and the material being used to create the biopower, there may be odour issues that could affect local residents.

The size of most bioheat projects mean that that there will probably be good access to the site, rendering additional access works unlikely.

Wood fuelled boilers require fuel to be delivered, usually by road transport. Whilst this can be a sizeable amount over the year, it will usually be a very small fraction of the overall traffic which is typically generated by large heat-using sites. As an example, a 3MW heat-user (towards the larger end of the scale) running for 60% of the year will require about 5,000 tonnes of wood delivered to site, in approximately daily lorry-loads.

It is also worth noting that wood fuel deliveries will be offsetting other fuel deliveries, such as oil, and in well thought-out projects this will not be a problem.

A number of the projects are conversions, replacements or modifications of existing plant, meaning that the boiler house, fuel store, and possibly the flue, will be existing buildings.

Please visit our website www.southwestwoodshed.co.uk for further guidance and a wide range of information resources on wood fuel.

¹ For more information see: www.direct.gov.uk/en/HomeAndCommunity/Planning/BuildingRegulations/index.htm

² For further information see: <http://uksmokecontrolareas.co.uk/index.php>

WHEN IS AN EIA NEEDED?

Biomass projects fall under Schedule 2, Category 3a of the Town and Country Planning (Environmental Impact Assessment) Regulations 1999. A screening application on the need for an EIA will need to be submitted to the local planning authority for the following installations:

- Industrial installations for the production of electricity, steam and hot water, where the development exceeds 0.5ha or any part of that development is to be carried out in a 'sensitive area' as defined by the Regulations; and,
- Industrial installations for carrying gas, steam and hot water where the area of the works exceeds 1ha or any part of that development is to be carried out in a 'sensitive area' as defined by the Regulations.



South West Bioheat Programme supported projects that fall into either of the above two categories will need to be screened by the local planning authority on the need for a statutory EIA based upon the screening criteria in Schedule 3 of the Regulations. These criteria are grouped into three categories, namely:

- the project characteristics;
- the project location; and,
- the significance of the potential impacts.

It is believed that the majority of the supported schemes will fall outside of the above two categories, and will therefore not require screening to determine the need for a statutory EIA.

WILL PPC REGULATIONS BE REQUIRED?

It is unlikely that there will be any installations with a thermal energy input of the magnitude that will require an Environmental Permit under Part 1A or B of the Pollution Prevention and Control Regulations¹. An Environmental Permit is required under Part 1A for all installations over 50MW thermal input or over 3MW thermal input if the fuel used is oil or waste.

An Environmental Permit is required under Part 1B for all installations with a thermal input of greater than 20MW but less than 50MW, and less than 3MW thermal input if the fuel used is oil or waste. Note that the Regulations do not consider gas produced by biological degradation of waste to be 'fuel'^{2,3}.

1 For more information see: www.defra.gov.uk/Environment/ppc/

2 Bower, C. (2001). Integrated Pollution Prevention and Control. Presentation to National Energy Crops Conference.

3 See also: www.rcep.org.uk/biomass/Biomass_Report.pdf

WHAT ARE THE RELEVANT PLANNING POLICY GUIDELINES?

The most relevant documents are:

Planning Policy Statement: Planning and Climate Change – Supplement to Planning Policy Statement 1

Para 13. “Climate change should be a key and integrating theme... and be addressed in conjunction with the economic, social and environmental concerns that together inform the overall spatial strategy and its components. In particular, regional planning bodies should: ensure opportunities for renewable and low-carbon sources of energy supply and supporting infrastructure, including decentralised energy supply systems, are maximized.”

Para 19. “In developing their core strategy and supporting local development documents, planning authorities should provide a framework that promotes and encourages renewable and low carbon energy generation. Policies should be designed to promote and not restrict renewable and low-carbon energy and supporting infrastructure.”

Para 20. “In particular, planning authorities should: ensure any local approach to protecting landscape and townscape is consistent with PPS22 and does not preclude the supply of any type of renewable energy other than in the most exceptional circumstances¹; and, expect a proportion of the energy supply of new development to be secured from decentralised and renewable or low-carbon energy sources.”

Para 26. “Planning authorities should have an evidence-based understanding of the local feasibility and potential for renewable and low-carbon technologies. Drawing from this evidence-base, and ensuring consistency with housing and economic objectives, planning authorities should: (i) set out a target percentage of the energy to be used in new development to come from decentralised and renewable or low-carbon energy sources where it is viable. The target should avoid prescription on technologies and be flexible in how carbon savings from local energy supplies are to be secured; (ii) where there are particular and demonstrable opportunities for greater use of decentralised and renewable or low-carbon energy than the target percentage, bring forward development area or site-specific targets to secure this potential; and, in bringing forward targets, (iii) set out the type and size of development to which the target will be applied”

Note: the PPS explains ‘Renewable and low-carbon energy’ as including energy for heating and cooling as well as generating electricity. Renewable energy covers those energy flows that occur naturally and repeatedly in the environment – from the wind, the fall of water, the movement of the oceans, from the sun and also from biomass. Low-carbon technologies are those that can help reduce carbon emissions. Renewable and/or low-carbon energy supplies include, but not exclusively, those from biomass and energy crops; CHP/CCHP (and micro-CHP); waste heat that would otherwise be generated directly or indirectly from fossil fuel; energy-from-waste; ground source heating and cooling; hydro; solar thermal and photovoltaic generation; wind generation.

¹ See Key Principles in ODPM (2004) Planning Policy Statement 22 Renewable Energy

Planning Policy Statement 22 – Renewable Energy

Para 18. “Local planning authorities and developers should consider the opportunity for incorporating renewable energy projects in all new developments. Small scale renewable energy schemes utilising technologies such as solar panels, Biomass heating, small scale wind turbines, photovoltaic cells and combined heat and power schemes can be incorporated both into new developments and some existing buildings. Local planning authorities should specifically encourage such schemes through positively expressed policies in local development documents”

The South West Draft Regional Spatial Strategy

RE3 Renewable Heat Targets. LDDs will include positive policies to enable the achievement of the following targets by the use of appropriate resources and technologies: 100MWth Installed Thermal Capacity by 2010, and 500MWth by 2020.

Para 7.3.7. “While there are currently no Government targets for heat production from renewable sources this situation is expected to change during the RSS period. PPS22 refers to increasing the development of ‘renewable energy’ in general, which is taken to cover both renewable electricity and renewable heat. There is considerable potential in the South West for the production of heat from renewable sources, and the South West has a lot to gain from harnessing these. The region has: the best solar resource in the UK with considerable opportunities for solar water heating and a significant resource of forest residues that can be used for biomass heating; and a strong indigenous industry able to support the installation of renewable heating technologies.”

Para 7.3.8. The targets equate to roughly 0.2% of the region’s heat demand (excluding transport) by 2010 and 1.4% by 2020, assuming that the full range of energy efficiency measures set out in the ‘Energy White Paper’ are put into place.

There is a key role for Local Planning Authorities within the region in ensuring a synergy between sites for major new developments, and the location of renewable Combined Heat and Power (CHP) generators, to ensure that the heat from the latter can be effectively used, for example as part of community heating systems.

In addition, the technical report on Carbon neutral/Zero Carbon Development highlighted that:

“For a given heat load, biomass provides greater carbon savings at a lower cost than either solar water heating or GSHPs.”

Zero carbon in terms of regulated emissions was found to be technically viable without wind, with a combination of PV and woodfuel communal heating (residential small city infill 10-50 dwellings)

Zero carbon in terms of regulated emissions was found to be technically viable without wind, through the use of small-scale biomass CHP (100-300kW) alone, or a combination of PV and biomass communal heating (Medium scale, market town 50-500 dwellings)

Local planning documents are likely to provide additional support to biomass installations as they start to reflect the increasing importance of renewable energy at the national policy level.

APPENDIX

What is biomass heating?

The Oxford English dictionary definition of biomass is: “organic matter used as a fuel” or “being derived from plant or animal matter or substances derived directly or indirectly there from... and includes agricultural, forestry or wood wastes or residues, sewage and energy crops...”

Biomass energy covers a wide range of different fuels or feedstocks, conversion and generation processes. Such feedstocks include, but are not limited to:

- Forestry and related products - Woodland thinnings/ coppicing, Felling residues (“lop and top”), Short rotation forestry (SRF), Sawmill residues, Arboricultural residues
- Energy crops – short rotation coppice (SRC): willow, poplar, Miscanthus (elephant grass)
- Co-products - Recycled wood: untreated or treated

We hope that you have found this information useful. Further information is available at www.southwestwoodshed.co.uk

