ENGLISH HERITAGE

Biomass Energy and the Historic Environment

English Heritage is the Government's adviser on the historic environment. Central to our role is the advice we give to local planning authorities and government departments on development proposals affecting historic buildings, sites and areas, archaeology on land and underwater, designed landscapes and the historic aspects of the landscape as a whole. We also manage an estate of over 400 historic properties open to the public.

This guidance is intended for developers of biomass energy projects which may affect any of these aspects of the historic environment. It is also aimed at those, including local authority planners and their historic environment advisers, involved in strategic planning for renewable energy, in the determination of project specific applications, and in the grant-aiding of new projects.

Alongside this guidance on biomass energy, English Heritage has also produced guidance on climate change and other renewable energy technologies and the historic environment. This is available at the Historic Environment – Local Management website: **www.helm.org.uk/climatechange.**

CLIMATE CHANGE AND RENEWABLE ENERGY

The Earth's climate is changing. The average global temperature has risen by 0.6 degrees Celsius since the beginning of the 20th century, taking the northern hemisphere outside the range of average temperatures it has experienced over the last 1,000 years. Globally, all of the 10 warmest years on record have occurred since the beginning of the 1990s, and the effects of recent warming can be seen in an increased incidence of heat-waves, storminess and flooding, the retreat of glaciers and ice sheets, and altered responses in plants and animals.

Although climate change is a natural and constant process, there is a strong scientific and political consensus, internationally and within the UK, that the current increase in average temperatures results mainly from increasing atmospheric concentrations of carbon dioxide and other greenhouse gases and that these increasing concentrations are the result, in part at least, of human influences. There is also general agreement that average temperatures are likely to rise even faster, particularly in the second half of this century, unless action is taken to limit and reduce greenhouse gas emissions.

Under the terms of the Kyoto Protocol, the UK pledged to reduce greenhouse gas emissions by 12.5 per cent below 1990 levels by 2008-12, with a further undertaking to reduce CO_2 emissions by 20 per cent by 2010. The European Union has also endorsed the need to reduce carbon dioxide levels in order to limit future temperature rise to 2 degrees Celsius.

Within this framework of international obligations and targets, the Government set out its energy policy, including its policy on renewable energy, in the 2003 Energy White Paper, Our energy future – creating a low carbon economy. The White Paper aims to put the UK on target to cut its carbon dioxide emissions by some 60 per cent by 2050, with real progress made by 2020, while maintaining reliable and competitive energy supplies.

The generation of energy from a variety of renewable sources is intended to make a major contribution to achieving this target, as well as providing a response to the depletion of fossil fuels and the need to promote security of energy supply within the UK. The Government has previously set a target to generate 10 per cent of UK electricity from renewable energy sources by 2010. The White Paper set out the Government's aspiration to double that figure by 2020 and suggested that an even greater proportion of energy requirements would be needed from renewable sources beyond that date.

Cover image: Miscanthus crop with Church of St. Andrew, Sutton in the Isle, Cambridgeshire in the background. Photograph: © English Heritage. Photographer Steve Cole.

ENGLISH HERITAGE POLICY ON RENEWABLE ENERGY AND THE HISTORIC ENVIRONMENT

On the basis of the most widely accepted predictions, future climate change is likely to be detrimental to the historic environment. Despite the fact that most historic buildings, sites and landscapes have experienced a changing climate in the past, many may be at risk, together with the important contribution they make to the UK economy:

- Rising sea levels will endanger the preservation of historic maritime landscapes, structures, buildings and archaeology.
- Increasing frequency and severity of flooding may damage the historic fabric of towns and cities.
- Higher temperatures, drier summers, changing patterns of vegetation and altered distributions for pests and disease may pose significant challenges for the long-term maintenance of historic landscapes, including designed landscapes.
- Potential increases in rainfall, storminess and weather intensity together with greater risk of ground subsidence may threaten the continued stability and weather resilience of many historic buildings.
- Changes in hydrology and cropping regime and increasing soil erosion as a result of weather extremes may make it more difficult to conserve buried archaeological remains.

Recognising these threats to the historic and natural environments and to our national prosperity, English Heritage welcomes the Government's commitment to reduce the emissions which contribute to global warming. We support measures to reduce fuel consumption, increase energy efficiency and exploit renewable energy sources. In addition, through our own environmental strategy (**www.english-heritage.org.uk/sustainabledevelopmentstrategy**), we are committed to reducing the environmental impact of our own activities. Nevertheless, we also recognise that some renewable energy technologies have the potential to cause serious damage to irreplaceable historic sites, which are themselves an integral part of the wider environmental and sustainability agenda.

A truly sustainable approach to renewable energy generation needs to secure a balance between the benefits it delivers and the environmental costs it incurs. English Heritage therefore supports an approach to renewable energy generation which:

- acknowledges the need for society to invest in a wide range of renewable energy generation technologies;
- recognises the potential environmental impacts of different technologies, including their implications for the historic environment;
- keeps the balance of environmental benefits and disadvantages of each technology under continual review; and
- continually seeks to limit and mitigate adverse impacts.

English Heritage believes a pro-active and strategic approach to the land-use planning system will maximise the benefits of renewable energy projects, while minimising their adverse effects on the historic environment. This should be achieved by considering the cumulative effects of projects as well as their specific impacts and by ensuring that the implications of renewable energy developments are adequately reflected in national, regional and local planning policy and at all stages of the environmental impact assessment process.

We also believe that high quality design should play a key role in minimising any adverse effects of projects, whether this is directed at the disposition of wind turbines and energy crops in the landscape or the positioning of photo-voltaic cells on historic buildings. Fundamental to achieving high quality design will be a sound understanding of the character and importance of the historic asset involved, whether at the scale of individual buildings and sites or more extensive historic areas and landscapes.

BIOMASS TECHNOLOGY AND ENERGY CROPS

Biomass is fuel derived from plant material. Although CO_2 is released into the atmosphere when plant material is burnt, an equivalent amount will have been taken from the atmosphere during growth. The carbon in biomass fuel does not therefore increase atmospheric greenhouse gasses (although its cultivation, transport and combustion do involve some additional emissions) and, when it is used in place of fossil fuels, a net reduction in carbon emissions is achieved. Unlike most other renewable energy sources biomass can be stored and used on demand to give controllable energy. It also offers potential as a source of heat as well as electricity.

Biomass for fuel can be gathered or grown. The principal biomass fuel sources include arisings from forestry and timber processing; biodegradable waste, including municipal and agricultural waste; crop residues, such as straw; and energy crops, which are grown specifically for the purpose of energy generation. Biomass can be burned in suitably adapted traditional coal-fired power stations (so-called "co-firing") or in specialised biomass facilities designed for the production of electricity, heat, or combined heat and power.

In the UK, the exploitation of biomass and energy crops is in its infancy. In 2006 around 4,500 hectares of agricultural land was under energy crop cultivation, although this is likely to increase significantly in 2007. To date, most practical experience had been gained with Short Rotation Coppice (SRC) Willow or, to a lesser extent, Poplar. *Miscanthus* (Elephant Grass) is also being cultivated as an energy crop and consideration is being given to the potential for Short Rotation Forestry (SRF) using native species.

SRC Willow is a perennial crop, harvested rotationally to ensure a constant supply of fuel. The crop is established during the spring by planting around 15,000 cuttings per hectare. A year later these are cut back close to the ground, causing them to form multiple shoots which are allowed to grow for between two and four years. Depending on soil conditions, these may reach 25-50mm in diameter and 3 to 4 metres in length. The shoots are usually harvested during the winter (as chips, billets or whole stems) by cutting them close to ground level. The cut stems regenerate to become the next harvest: a cycle which can be repeated through an expected productive lifespan of 15 to 20 years. There is less long-term experience of growing *Miscanthus* commercially in the UK. The grass is of tropical origin, but is considered to be commercially viable over a large part of England, except for a few areas of upland. Plants are grown from rhizomes and reach heights of 2.5 to 3.5 metres. Like SRC, *Miscanthus* is perennial and harvested in the winter, but on a one year cycle. The fuel has a similar calorific value per unit weight as wood, but is considered to have a higher yield potential than SRC.

The Defra/DTI Strategy for non-food crops (Defra/DTI 2006a) notes that current funding aims to stimulate the planting of 15,000 hectares of energy crops by the end of 2007. The Government's Biomass Task Force (BMT 2005) has suggested that a total of 1 million hectares of land may be available for non-food crop production in the UK, including energy crops. The Royal Commission on Environmental Pollution (RCEP) has proposed that the UK should be aiming for 1 million hectares of energy crop planting by 2020 (RCEP 2004). Calculating the likely density of energy crop planting within the supply zone of any single generating facility is difficult in the face of variables such as the availability of other sources of biomass fuel. However, RCEP has suggested that generating facilities capable of powering fairly significant conurbations might require planting densities approaching 10% by area, within a 50 km radius supply zone, with the highest planting densities close to the generating facility and its communicating roads.

The benefits of energy crops in terms of reducing carbon emissions and supporting agricultural diversification need to be balanced against potentially negative effects, in some locations, on the historic character of the landscape and the survival of archaeological remains. English Heritage therefore welcomes Government's commitment (Defra/DTI 2006b) to increase the supply of biomass from alternative sources, including forestry waste and crop residues, alongside energy crops. The consequential improved management of existing woodland may deliver benefits for the landscape and historic environment.

1 Stand of mature Willow Short Rotation Coppice. Photograph: © Defra

2 Willow Short Rotation Coppice in leaf, August 2005. Photograph: © Forest Research

3 Harvesting of Willow Short Rotation Coppice at the end of second three-year rotation. Photograph: © Forest Research

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RENEWABLE ENERGY: THE PLANNING CONTEXT

National Policy

Planning policies on land-based renewable energy generation in England are set out in Planning Policy Statement 22: Renewable Energy (PPS 22). These are amplified by Planning for Renewable Energy: A Companion Guide to PPS 22, which offers practical advice on how these policies can be implemented on the ground. Additional advice is provided by The Planning Response to Climate Change: Advice on Better Practice issued by ODPM, the Scottish Executive and the Welsh Assembly Government.

The policy set out in PPS 22 and its companion guide are to be taken into account, alongside other planning policies, by regional planning bodies in the preparation of regional spatial strategies, by local planning authorities in the preparation of local development documents, and may also be material to decisions on individual planning applications. Where renewable energy developments affect the historic environment, the policies set out in Planning Policy Guidance 15: Planning and the Historic Environment (PPG 15) and Planning Policy Guidance 16: Archaeology and Planning (PPG 16) must also be taken into account.

PPS 22 states that renewable energy developments should be capable of being accommodated throughout England in locations where the technology is viable and where environmental, economic, and social impacts can be addressed satisfactorily. It stipulates that regional spatial strategies and Local Development Documents (LDDs) should contain policies designed to promote and encourage, rather than restrict, the development of renewable energy resources.

The PPS recognises the potentially adverse effect of some renewable energy developments on the visual amenity of the landscape. It requires these to be assessed by local planning authorities on a case-by-case basis – according to the type of development, its location and landscape setting – by means of objective analysis and professional judgement, supported by appropriate descriptive material. The PPS also recognises that renewable energy developments may have an adverse effect on both the historic and natural environment. It therefore stipulates that applications affecting World Heritage Sites should only be granted once an assessment has shown that the integrity of the site would not be adversely affected. It also specifies that planning permission for renewable energy projects which affect Scheduled Monuments, Conservation Areas, Listed Buildings, and sites on the Register of Historic Battlefields and the Register of Parks and Gardens of Special Historic Interest in England should be granted only where it can be demonstrated that the objectives of designation of the area will not be compromised by the development, or where any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the development's environmental, social and economic benefits.

The PPS discourages the creation by regional planning bodies and local planning authorities of "buffer zones" around internationally or nationally designated areas which will prevent renewable energy projects. However, it acknowledges that the potential impact of developments close to the boundaries of these designated areas will be a material consideration to be taken into account in determining planning applications.

Regional Spatial Strategies and Local Development Frameworks

Regional level policy is seen by government as critical to the achievement of national targets for renewable energy generation. PPS 22 stipulates that the regional spatial strategy framework should contain regional renewable energy generation targets and criteria-based planning policies which reflect considerations likely to influence the location of projects, such as the presence of internationally or nationally designated areas within the region. Although Regional Spatial Strategies will have a key role in identifying broad locations for renewable energy projects, these locations are not to be given defined boundaries and will not preclude projects in other locations. Regional planning bodies are encouraged to work with local authorities to ensure that any criteria-based policies are applicable across the region or in defined sub-regions.

PPS 22 includes internationally and nationally designated heritage sites amongst those considerations for which specific policies at the regional level may be appropriate. The Companion Guide to PPS 22 also confirms that sites or areas of heritage importance should be included and that criteria-based policies may be appropriate for undesignated landscapes with particular characteristics where the criteria have to be consistent across a number of individual districts.

Although much of the strategic framework for renewable energy planning will be established at the regional level with the involvement of local authorities, Local Development Frameworks (LDFs) will also play a strategically important role. PPS 22 requires local planning authorities to include criteria-based policies in LDFs which support regional generation targets and which provide guidance in relation to standalone renewable energy schemes or the integration of renewable energy into new development. These policies should focus on key local issues, within the framework set out by national planning policy and the Regional Spatial Strategy.

The Companion Guide to PPS 22 makes it clear that it will be usual for policies for standalone renewable energy schemes to list the issues which will be taken into account in determining specific applications, and that this should include impacts on landscape, townscape, and historic and cultural features and areas. The guide also makes it clear that, as the impact on designated sites of surrounding development is a material consideration in determining applications, local planning authorities should ensure that their criteria-based policies afford appropriate protection to the areas around nationally-designated assets. Policies can also be framed to assist decision-making on issues of landscape character outside nationally designated areas, and local planning authorities are advised to consider undertaking landscape capacity and sensitivity analyses in order to frame these.

Local planning authorities are also encouraged to consider preparing Supplementary Planning Documents on renewable energy. These documents can be used to set out in detail how criteria will be applied to assess renewable energy applications, to address the specific locational issues of different technologies, and to provide design guidance. They may also be used to indicate the relative sensitivity of some landscapes to particular types of renewable energy development, in order to guide developers' choice of sites.

4 Field of Miscanthus.
Photograph: © Defra

5 Harvesting of Miscanthus.
Photograph: © Defra

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EVALUATING THE IMPACT OF BIOMASS PROJECTS ON THE HISTORIC ENVIRONMENT

Dealing with historic sites

Historic sites are a finite resource which cannot be replaced once damaged or destroyed. Therefore, when scoping and designing biomass energy projects (including the establishment of crops or construction of power stations), when determining planning or grant applications, or when reviewing the requirement for Environmental Impact Assessment, the effects of the proposed project on the historic environment should always be considered in accordance with Government guidance provided in PPG 15 and PPG 16. English Heritage recommends that consideration should include the implications for archaeological remains, historic buildings and designed landscapes, including their setting, as well as the historic character and associations of the wider landscape; should extend to both designated and significant undesignated sites and areas; and should embrace both the direct physical effects of projects and any indirect impacts, such as hydrological impacts in surrounding areas.

Biomass power stations

The Companion Guide to PPS 22 confirms that planning controls apply to biomass power stations and their associated impacts, but not to the production of energy crops. There are currently three basic categories of biomass power station:

- Plant designed primarily for the production of electricity;
- Combined Heat and Power (CHP) plant from which the primary product is electricity, but the excess heat is used productively, for instance as a district heating scheme;
- Heat only plant, covering a wide range of applications and scales, including heating for a single dwelling, a district or an industrial process.

Within these categories, there are several methods for converting dry biomass fuels into energy. These are described in detail in the Companion Guide to PPS 22. Visually, all of these facilities are very similar and share much in common from a planning perspective. More significant in planning terms is the generating capacity of the plant which will govern its scale and footprint and the procedure for handing applications.

New electricity generation plants with capacity of more than 50MW need to obtain consent from the Secretary of State for Trade and Industry under Section 36 of the Electricity Act 1989. In these cases, the Local Authority is a statutory consultee on the application. Heat only plants, and electricity plants or Combined Heat and Power plants with an electrical output of 50MW or less require planning permission from the local planning authority under the Town and Country Planning Act 1990.

When determining a planning application for a plant or advising the Secretary of State, Local Planning Authorities are advised to consider its possible impact in terms of visual intrusion, noise and increased traffic, alongside its economic and carbon mitigation benefits. The Companion Guide to PPS 22 sets out in more detail the information which might be expected to accompany an application and possible planning conditions which might be applied to any permission. Depending on the scale of the plant, it may require screening to determine whether an Environmental Impact Assesment (EIA) is required under The Town and County Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

The Companion Guide to PPS 22 (paragraph 43) also confirms that individual crop planting proposals may be subject to an Environmental Impact Assessment (EIA). Where planting of SRC is proposed under The Energy Crops Scheme (ECS) of the England Rural Development Programme, the Forestry Commission is required to determine whether an application is likely to have sufficient impact on the environment to require an Environmental Impact Assessment (EIA) in accordance with the procedures set out in The Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999.

Where crops are to be established within areas of uncultivated land or semi-natural areas, the Environmental Impact Assessment (Agriculture)(England) Regulations 2006 may apply. A determination similar to that required for the forestry EIA will take place for *Miscanthus*. Local authority historic environment advisers are consultees in both of these processes, as is English Heritage where statutorily protected sites are involved. It is expected that any further planting of energy crops under the 2007-13 Rural Development Programme for England (RDPE) would be subject to the same EIA process.

Energy crops and environmental impact assessment

Although the cultivation of energy crops does not require planning consent, the Companion Guide to PPS 22 confirms that environmental issues associated with fuel supply may include impacts on landscape and archaeology. Defra's best practice guidelines (Defra 2002 and 2004) on planting and growing *Miscanthus* and SRC, also stress the need to consider landscape and archaeological issues in choosing sites for energy crops, as does Forestry Commission guidance on the establishment of SRC (Tubby and Armstrong, 2002).

English Heritage therefore considers it to be good practice for biomass plant applications to be preceded by a broad constraints and opportunities assessment for cropping within the plant's catchment. This is not only because of the potentially significant landscape and archaeological impacts of large-scale energy crop cultivation but also because of the "knock-on" effects which any large-scale constraints within the catchment could have on travel patterns associated with fuel supply. This constraints and opportunities exercise should include a desk-based appraisal of the landscape character and archaeological potential of the plant's catchment area.

Energy crops and archaeological sites

Energy crop cultivation has the potential to damage archaeological remains as a result of planting processes, subsequent root growth, hydrological impacts, the eventual retrieval or disposal of plants and rhizome harvesting.

The establishment of crops within previously cultivated areas need not require more invasive ground disturbance than normal inversion tillage for cereal planting, provided sub-soiling in advance of crop establishment is avoided. However, grubbing out of redundant SRC stools or mechanical retrieval of *Miscanthus* rhizomes for propagation purposes has the potential to cause significant disturbance to any underlying archaeological remains and should, therefore, be avoided in areas considered to be archaeologically sensitive.

The potential for damage to archaeological remains arising from root growth should also be considered and may vary with the type of energy crop grown. The roots of SRC can reach over 1 metre in depth, although deep roots may be small and few in number (Crow and Houston 2004). *Miscanthus* rhizomes may grow to a depth of 0.3 metres, while continuing to develop laterally,

6 Planting of biomass crops should avoid known archaeological sites. Short Rotation Coppice plantations near Swindon, Wiltshire, avoid well preserved areas or Medieval ridge-and-furrow earthworks. Photograph: NMR 24190-01 © English Heritage NMR

7 The impact of energy crop plantations on the setting of historic sites, buildings and landscapes should always be considered. Photograph: © English Heritage. Photographer Steve Cole.

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and its fibrous rooting system can penetrate to as much as 2 or 2.5 metres in depth. These deeper roots may develop considerable mass, (Neukirchen et al 1999; Riche and Christian 2001) and further research work is required on this topic. In broad terms, however, the cultivation of energy crops is very likely to be less benign in archaeological terms than retaining sites within permanent pasture and may be more damaging than some other types of crop cultivation, despite reducing the frequency of cultivation episodes. Past and current land use will, therefore, be a major factor in determining the potential effect of energy crops on archaeological site preservation.

Depending on rainfall and soil type, energy crops, particularly SRC, are likely to have a higher water requirement than most other types of ground cover and cause localised lowering of the water table. This effect could have adverse implications for waterlogged (and therefore well preserved) archaeological remains in wetland and alluvial areas and should be considered as part of any Environmental Impact Assessment of planting proposals.

Government policy, set out in Planning Policy Guidance 15 and 16, promotes the preservation of significant archaeological remains in situ wherever practicable. Where remains are threatened by development and cannot be preserved, provision for recording threatened remains is the responsibility of the developer. To avoid unnecessary damage, and as the profit margins of energy crop developments are likely to be seriously adversely affected by any requirement to record threatened archaeological remains, those seeking to establish energy crops should always avoid recorded sites and, wherever practicable, should also avoid areas recognised as being of high archaeological potential. Early consultation with the local authority Historic Environment Record in order to inform site selection is therefore essential if the potential archaeological impacts of energy crop cultivation are to be recognised and avoided. A full list of Historic Environment Records is available at **www.heritagegateway.org.uk**.

As the planting of energy crops will occupy only a proportion of a typical biomass power station supply zone and as establishment grants make provision for unplanted areas, it should be possible to avoid damage to areas of archaeological sensitivity, if appropriate assessment procedures are carried out.

Areas of grassland present a particular challenge as they often contain archaeological sites that are better preserved than those in cultivated areas, but often pose greater problems in terms of site detection and recognition. As a result, the record of archaeological sites tends to be more complete in areas of cultivation. For several reasons, therefore, planting in cultivated areas is likely to present a lower risk of damage to archaeological remains and is generally preferable to planting in areas of permanent grassland.

Planting in areas of very low archaeological potential, such as disused or reinstated gravel pits, landfill or open cast coal mining sites will minimise the risk of damage to archaeological remains, although landscape impacts will need to be considered.

Energy crop cultivation is likely to damage the archaeological integrity of scheduled monuments. As these sites are comparatively limited in area and can generally be avoided, English Heritage will normally oppose energy crop planting within their boundaries.

Energy crops and the setting of historic sites

Without careful planning, biomass power stations and (because of the potential scale of planting and the exotic character of some crops) energy crop plantations have the potential to impair the setting of historic sites and compromise the visual amenity of the wider landscape, detracting from historic character and sense-of-place. PPS 22 and its Companion Guide advises that, in determining planning applications for biomass power station developments, consideration should be given to their impact on the wider landscape setting and visual amenity of historic sites. This consideration should include the effects of the plant and its related infrastructure (such as power transmission lines, access roads and signage). Similarly, Defra and Forestry Commission guidance on energy crop establishment require consideration to be given to the visual impact of energy crops, through relevant EIA procedures.

While changes within the setting of historic buildings, sites or areas may often be acceptable, in some instances biomass developments or energy crop establishment will be unacceptably detrimental to their character or visual amenity. This may particularly be the case within, or in the vicinity of, important designed landscapes or other significant historic landscapes, such as battlefields. English Heritage recommends that proposals for biomass power stations or energy crops within sites on the English Heritage Registers of Parks and Gardens of Special Historic Interest in England or Register of Historic Battlefields, or within their settings, should not normally be permitted, where these would adversely affect the historic significance of the site.

The wider landscape

PPG 15 (paragraph 2.26) refers to the need to take the historical dimension of the landscape as a whole into account when defining planning policies for the countryside. The historic character of landscapes should therefore be considered when framing planning policies for renewable energy alongside other visual and aesthetic issues. English Heritage also recommends that historic landscape character is considered when determining individual planning applications for biomass generation facilities or grant-aid applications for energy crop establishment.

While all landscapes are the product of human intervention and are therefore have some degree of historic interest, some landscapes have been far more dynamic over time or have altered more radically than others. These historically dynamic landscapes, particularly those where the prevailing character is industrial or agriculturally intensive, may be better suited to accommodating large-scale energy crop establishment than less dynamic areas such as areas of well preserved prehistoric or medieval fieldscape.

Where local authorities have completed an appraisal of the historic dimension of the landscape as part of the English Heritage sponsored Historic Landscape Characterisation programme, English Heritage recommend this is incorporated at an early stage in the overall assessment of landscape and archaeological impact. Where significant plantings are proposed close to historic settlements, Conservation Area Appraisals may also be relevant.

Consideration of landscape impacts should extend not only to the effects of individual projects but also to the cumulative effects of developments. Seasonal variations in visual impact should also always be considered.

World Heritage Sites

PPS 22 stipulates that, along with other designated sites of international importance, renewable energy developments should not adversely affect the integrity of World Heritage Sites. World Heritage Sites are inscribed under the terms of the World Heritage Convention, an international treaty which imposes obligations on the UK. Details of the operation of the World Heritage Convention are contained in Operational Guidelines for the Implementation of the World Heritage Convention (2005). This guidance extends to protection of the visual amenity of the setting of World Heritage Sites, as well as the sites themselves.

The setting of some World Heritage Sites in the UK is more formally defined than for other heritage designations, by means of a mapped area included in the nomination file and approved by the intergovernmental World Heritage Committee at the time of the Site's inscription on the World Heritage List. This should be taken into account when determining proposals for power station construction or energy crop planting in proximity to World Heritage Sites, as should the specific guidance on World Heritage Sites provided in PPG 15.

Impacts from traffic

Generally, only short term storage facilities are provided at biomass power stations, and regular fuel deliveries are needed. It has been estimated, for example, that a 10MW plant producing electricity continuously would require around 20 deliveries a day by 38 tonne lorry. In determining planning applications for large biomass power facilities, English Heritage recommends that consideration should be given to the implications of resultant increases in traffic volumes for the historic environment. Traffic should, for example, avoid vulnerable historic settlements, such as villages with narrow streets, fragile buildings or vulnerable monuments, such as historic bridges.

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BIOMASS ENERGY AND THE HISTORIC ENVIRONMENT: ENGLISH HERITAGE RECOMMENDATIONS ON BEST PRACTICE

- The implications for the historic environment of biomass energy developments should be reflected in Regional Spatial Strategies, Local Development Frameworks and Supplementary Planning Documents
- The effects of biomass energy programmes and projects on the historic environment should be evaluated in all levels of environmental impact assessment
- Consideration of the historic environment should include World Heritage Sites; marine, coastal and terrestrial archaeology; historic buildings and areas; designed landscapes; and the historic character of the wider landscape
- The significance of internationally and nationally designated sites should be safeguarded and physical damage to other historic sites should be avoided
- The impact of biomass energy projects on the setting and visual amenity of historic places and landscapes should also be considered
- Where biomass energy developments affect historic sites, national planning policies on the historic environment should be taken into account
- Local Authority Historic Environment Records should be consulted at an early stage in project planning.

HELM HISTORIC ENVIRONMENT LOCAL MANAGEMENT

www.helm.org.uk

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