



Small-scale renewables and Low-carbon technology Non-domestic permitted development review

Summary



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November 2009
Department for Communities and Local Government

The findings and recommendations of this report are those of the authors and do not necessarily represent the views of Communities and Local Government.

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www.communities.gov.uk

November 2009

Product Code 09PD06147/2

ISBN: 978 1 4098 2001 7

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1. Introduction

This document is a summary of a report produced by Entec UK Ltd (Entec) which makes recommendations to Communities and Local Government (CLG) and the Welsh Assembly Government (WAG) for amending the General Permitted Development Order (GPDO) to allow small scale renewable and low carbon technologies to have permitted development rights in non-domestic land uses (i.e. all land uses excluding residential housing). An outline of our recommended amendments to the GPDO and reasoning behind them are included in this document although reference should be made to the main report for full details.

We have reviewed existing evidence, including case studies and the views of stakeholders, and in light of this have made recommendations regarding extending permitted development rights for solar, wind, hydro, heat pumps, biomass and combined heat and power installations which we believe can be implemented with minimal impacts on neighbouring properties and the environment. This document outlines what these recommendations are and gives a brief summary of why the recommendations were made. In the case of wind turbines and air source heat pumps we have included interim recommendations which can be used to allow permitted development rights for these technologies until a certification process for the devices and installers can be developed that is relevant to the recommendations outlined in this report.

The final section of this summary includes tables outlining the permitted development rights we have recommended and the interim recommendations.

2. Solar

2.1 Solar panels on a pitched roof

Solar panels on pitched or sloping roofs will affect how a building looks. Although the impacts associated with this change in looks depend on the observer we believe that restricting permitted development to those panels that protrude no more than 200mm from the plane of the roof will prevent any significant effects on a building’s roof shape.

We do not recommend that any limit is placed on either the size of panels that can be erected or the proportion of the roof that can be covered by panels as we believe that even the full coverage of a building will have a minimal impact and could even result in a lesser visual impact than allowing small, or a number of small, installations.

To prevent redundant solar panels causing clutter on many buildings a condition should be included with any permitted development rights which requires the owner of a building on which solar panels are installed to remove them if they have not been used to produce energy for six months.

To prevent visual impact in areas designated as conservation areas and world heritage sites no permitted development rights for solar panels should be given in these areas.



Source: Solarcentury

2.2 Solar panels on a flat roof

Flat roofed buildings, in contrast to pitched roofs, require a supporting structure or frame to provide solar panels with an optimum angle to absorb sunlight. The main impact of roof mounted solar panels is likely to be visual and in order to minimise this impact a 2m height limit on permitted development rights for solar panels should be implemented. Limiting permitted development rights for solar panels such that they must be at least 2m from the edge of a building should also help to minimise visual impacts and help to mitigate any safety fears that they may fall off the edge of the building if improperly fitted or maintained. Subject to these conditions there should be no limit to the amount or size of solar panels that can be permitted development on a flat roof.

As with pitched roof mounted panels, we recommend removing permitted development rights in conservation areas and world heritage sites and including a condition requiring the removal of solar panels that have not been used to produce energy for a continuous period of six months.

Solar panels on a flat roof



Source: Solarcentury

2.3 Wall mounted solar panels

Due to the potential visual impact of wall mounted solar panels, particularly in town centres, and the relatively limited contribution we believe they can make to providing renewable energy we recommend that they do not receive any permitted development rights.

Wall mounted solar panels at Technium OpTIC Centre



Source: Solarcentury

2.4 Stand alone solar panels

There are relatively few examples of stand alone solar panels in non-domestic situations in England and Wales that are of a size that permitted development rights could be appropriate. Although the visual impacts associated with them are likely to be less in some situations, such as on industrial estates or on retail parks, we recommend that the limits placed on permitted development are the same as those recommended for households: namely that they should be permitted development provided the solar array is no more than 3m wide by 3m deep, that they should be at least 5 metres from the property boundary and no more than 4m high. To minimise the potential for cumulative visual impact we recommend restricting permitted development rights to one free standing solar array within a building's curtilage and requiring it to be removed if it has not been used to generate energy for a continuous period of six months.

We believe that these permitted development rights are appropriate in most non-domestic land uses, including national parks and areas of outstanding natural beauty (AONBs), but that they should not be extended to conservation areas or world heritage sites. As the erection of a stand alone solar array within the curtilage of a

listed building would not necessarily require listed building consent but could have a major impact on the building's setting we recommend that permitted development rights are not given within the curtilage of a listed building where listed building consent is not required.

Free standing solar panel



Source: Energy Saving

2.5 Stand alone solar on agricultural land

There is an opportunity for free standing solar panels to contribute toward the energy requirements of farm operations. However, the restrictions on permitted development we outline in 2.4 would limit this potential. We therefore believe that further allowances should be made for free standing solar panels on agricultural land provided that the energy produced is for agricultural use, such as to power dairy machinery or provide electricity or heat for a farmhouse. The GPDO currently allows permitted development for farm buildings provided that they have a floor area of no more than 465m² and we believe this scale of development is appropriate as a limit to the surface area of stand alone solar panels on a farm. Visual impact can be mitigated by limiting the height of solar arrays with permitted development rights to a maximum of 4m and removing permitted development for stand alone solar panels in national parks, AONBs, world heritage sites, conservation areas and within the curtilage of a listed building where listed building consent is not required. In addition, panels with permitted development rights should be located a minimum of 5m from the boundary of the property for both visual and safety reasons.

3. Wind

3.1 Free standing wind turbines

The householder microgeneration consultations recommended that stand alone wind turbines should be permitted development for residential dwellings provided that they are a maximum of 11m high (including the blade), located at least 12m from the property boundary and the blades have a maximum diameter of 2m. There were also conditions limiting noise and that vibration and removing permitted development in conservation areas and world heritage sites where development was facing onto and visible from a highway.

Examining case studies showed that many local authorities allowed planning officers to determine planning applications for wind turbines up to a hub height of 15m without referring the application to a planning committee and that the planning applications that were refused were generally either in protected areas, such as an AONB, or were taller than 15m. Although there is still a potential visual impact related to a turbine of this height we believe that the impact is acceptable provided a number of other conditions are met, including a limit to the blade diameter of turbines. Limiting the blade diameter for “traditional” turbines (horizontal axis axial flow turbines) to a maximum of 6m will allow the permitted development of a number of free standing wind turbines that are currently available while minimising the visual impact. To allow non “traditional” wind turbines to be erected using permitted development we recommend that these are permitted development up to a maximum total height of 15m and to a swept area of 28m².

6kW free standing wind turbine: hub height = 9m, blade diameter = 5.5m



Source: Proven

Stakeholders showed great concern regarding the potential visual impact of free standing wind turbines on protected landscapes and townscapes. To minimise this potential impact we recommend that permitted development rights are removed from national parks, AONBs, conservation areas, world heritage sites and within the curtilage of a listed building.

For safety reasons we recommend including a condition regarding permitted development for all free standing wind turbines that turbine blades should be a minimum of 5m above the ground. We also recommend that conditions should be attached to free standing wind turbines requiring that they must be removed if they have not been used to generate electricity for a continuous period of six months and that they are reasonably in keeping¹ with their surroundings.

6kW free standing wind turbine: hub height = 9m, blade diameter = 5.5m



Source: Proven

There is a need to ensure that wind turbines do not cause annoyance to residents of nearby households due to noise. In CLG's response to the householder microgeneration consultation they have proposed that permitted development for free standing wind turbines should be subject to noise and vibration safeguards. These standards have yet to be developed but may include a requirement for installers and turbines to be certified, for example through the microgeneration certification scheme². As suitable standards may take some time to develop we recommend a number of interim standards are adopted by CLG and WAG which could be used to allow permitted development while limiting potential impacts.

The first interim standard is that free standing wind turbines on non-domestic land should be limited to those that are located a minimum of 100m from the window of any residential property (although we recommend excluding any residential properties

¹ The phrase "reasonably in keeping" is included to prevent the installation of a wind turbine that is deliberately incongruous with its surroundings, not to be used as an argument to prevent the installation of wind turbines using permitted development generally.

² See www.ukmicrogeneration.org

within the curtilage of the building where the turbine is being erected to allow hostels, hotels, farmhouses and other similar properties to erect a turbine). This 100m separation requirement will allow for the permitted development of wind turbines with 15m hub height in rural areas and out-of-town developments such as retail parks and industrial sites but will limit opportunities in suburban, town centre and other areas which include residential development. For those non-domestic properties and land within 100m of a residential window we would recommend that the permitted development rights allocated to householders, when satisfactorily resolved to account for noise and vibration, apply instead.

Although we believe that as an interim measure, a 100m separation from wind turbines erected using PDR and residential properties should be sufficient to protect households from significant noise impacts in the majority of cases, we recognise that there is still some potential for a particularly noisy turbine to cause disturbance to residents. A potential solution to this is to require wind turbine manufacturers to test their machines using the standards set out in British Wind Energy Association (BWEA) (2007) *Small Wind Turbine Performance and Safety Standards*. We believe that requiring turbines to have a BWEA Reference Sound Level of 40dB(A) or below should safeguard residents from any significant risk of sleep disturbance and places the burden of noise testing on the manufacturer rather than on an installer or local authorities.

We also recommend that a certification scheme is used to ensure wind turbines are safe and will not harm members of the public. This is particularly relevant to the potential dangers associated with wind turbines falling over, their impacts on radar (and therefore aircraft safety) and whether they can cause epileptic seizures. As an interim measure until these safety issues are addressed by a certification scheme, we recommend that all free standing wind turbines allowed by permitted development are located a minimum of 20m from the boundary of the property and that turbines must have a maximum frequency of 3 Hz. To minimise any effects on radar we also recommend that, where turbines are 11m or more in height and with a blade diameter of 2m or more, a letter stating that there are no safety objections to the erection of a wind turbine is obtained by the installer from Defence Estates Safeguarding and relevant civilian radar operator.

The Turbine Business Innovation Centre, Worksop



Source: Iskra

The ecological effects of small wind turbines on ecology are unknown, although there is concern that they may have an effect on birds and bats, particularly when erected on migration routes or in feeding areas. Further research should be conducted regarding this and used to inform permitted development rights for turbines. Until this has been done we recommend that a condition is placed on installers that they must inform Natural England (NE) or the Countryside Council for Wales (CCW) in writing stating the turbine details and location prior to it being erected. Although no further requirement should be placed on the installer beyond informing the relevant agency this does at least provide the opportunity for CCW or NE to provide advice to the installer if there are likely to be potential impacts on legally protected sites or species.

To reduce the risk of significant cumulative visual impacts we recommend that only one free standing wind turbine can be erected under permitted development rights within a building curtilage or agricultural unit and that no permitted development is allowed within 200m of an existing free standing wind turbine.

⁵ At Tesco's Hucknall petrol station in Ashfield LPA

3.2 Building mounted wind turbines

The building mounted wind turbine case studies for non-domestic buildings showed similar impacts and concerns from stakeholders as were recognised in the householder microgeneration consultations and we recommend that similar conditions to permitted development rights should apply. For permitted horizontal axis axial flow turbines the blade diameter should be a maximum of 2.5m and the total height to the blade tip a maximum of 3m above the ridge line, or the highest point of the roof for buildings with a flat roof. Other types of wind turbine should be permitted development provided they have a maximum swept area of 5m² and are no more than 3m above the ridge line or highest point of the building. We also recommend that conditions are attached to the permitted development for building mounted wind turbines that they must be reasonably in keeping with their surroundings and be removed if not used to produce energy for a continuous period of six months. To reduce the potential for cumulative visual impacts we recommend that only one turbine has permitted development rights on a building of 15m or less in height and that four turbines are permitted on buildings higher than 15m.



Source: Windsave

The visual impact of building mounted wind turbines in sensitive areas such as national parks and AONBs is likely to be less than that associated with free standing wind turbines as they are, by definition, associated with buildings.

We therefore recommend that the permitted development rights outlined above are allowed in national parks and AONBs but are removed in conservation areas and world heritage sites. Turbines mounted on listed buildings will require listed building consent and therefore we do not believe there is any need to remove permitted development rights if this check remains in place.

We recommend that annoyance considerations relating to sound and vibration impacts are included within a microgeneration certification scheme when possible. To allow permitted development for roof mounted turbines in the interim we recommend that building mounted turbines should be permitted development provided they are located a minimum of 100m from residential property windows and have a maximum BWEA Reference Sound Level of 40dB(A). Requiring turbines to be located at least

100m away from a residential window is also likely to mitigate against vibration becoming a significant annoyance issue for householders. Where a turbine is to be erected on a non-domestic building within 100m of a residential window we recommend that the permitted development allowance for building mounted wind turbines allowed for householders is applied instead.

Safety issues should be included within a microgeneration certification schemes when possible. In the interim we recommend that a number of conditions on permitted development rights are applied. In particular, any building mounted wind turbine with a total height (including the building and support structure) of 11m or more above ground level and with a blade of diameter 2m or more must obtain a letter stating that there are no safety objections to the erection of the wind turbine from Defence Estates Safeguarding and the relevant civilian radar operator. We also recommend that turbines should have a maximum frequency of 3Hz and that they should not overhang any highway (including Public Rights of Way and pavements) or publicly accessible open space.

As with free standing wind turbines there is some concern that building mounted turbines could have an impact on bats and birds. However, there is no evidence to confirm that there are any significant impacts. We therefore recommend that until further research is carried out that no limits are placed on the permitted development rights associated with building mounted turbines.

4. Hydro

There is only limited scope to extend permitted development rights for hydro schemes due to the individual nature of such developments and in particular we do not recommend any permitted development where work is to be carried out in a river or other water body.

There is some scope to extend permitted development rights to allow for the erection of small buildings to house turbines and other equipment provided it is not associated with work in a water body. To minimise visual impact we would recommend that permitted development for a turbine house is limited to a maximum floor area of 10m², height of 3m and reasonably in keeping with its surroundings. As this permitted development is for the erection of a new building we do not recommend that it should be applied in national parks, AONBs, conservation areas, world heritage sites or within the curtilage of a listed building.

We also recommend that where there is no requirement for works within a watercourse that pipework of up to 0.5m above ground level is permitted provided any excavation of the ground is made good after installation.



Source: Dulas

5. Heat pumps

5.1 Ground source heat pumps

A ground source heat pump (GSHP) is a device which moves heat from the ground to a building for water or space heating and works on a similar principle to a refrigerator running backwards. The two main types of GSHP are trench systems, where coiled pipes are laid 1-2m below ground, and borehole systems of depth 60m or more. Both systems exploit the fact that the underground temperature is warmer and can be used to transfer heat to a building, by pumping liquid underground to be heated, and then transferring the heat to the building. The cooled liquid is then pumped back underground to be heated again. During this review we came across very few examples of GSHPs where planning permission had been applied for. Discussions with stakeholders confirmed that it was normal for GSHPs to be installed without planning permission.

Our review has found a number of potential impacts associated with GSHPs in non-domestic situations where limits to permitted development are required. In particular, to mitigate for potential ecological impacts and damage to water bodies we recommend that the maximum area of excavation for GSHPs under permitted development rights is limited to a maximum of 0.5ha. Even with this limit we believe there is some potential for unintentional impacts on archaeology during excavation and therefore the appropriate archaeological body should be informed six weeks prior to commencement of work. Although the archaeological body is under no obligation to respond to the notification letter it will give them the opportunity to assess potential impacts in undesignated sites. We also recommend including a condition on permitted development requiring any excavations to be made good after the installation such that the land is returned to the same state it was in before the GSHP was installed.

Installing underground pipes for a ground source heat pump



Source: Kensa

5.2 Water source heat pumps

A water source heat pump (WSHP) works on the same principle as a ground source heat pump except that the source of heat is a water body instead of the ground. During this review we did not identify any examples where planning permission had been applied for a WSHP. However, we believe it is necessary to set some limits on their size to reduce the likelihood of negative impacts on ecology and water quality and recommend that this is set at the same area as for GSHPs, 0.5ha.

Caerphilly Castle moat, site of a water source heat pump



Source: Kensa

5.3 Air source heat pumps

Air source heat pumps (ASHPs) are mounted on the side of buildings and work by using the ambient air temperature outside the building to heat air or water inside a building. We identified only two planning applications for ASHPs during this review, both on village halls.

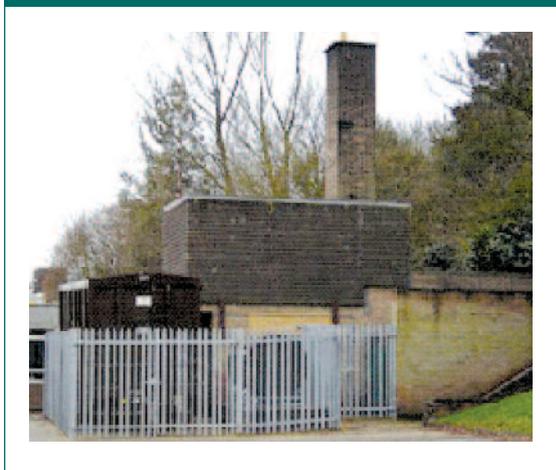
The main limiting issues for permitted development relate to their potential visual and noise impacts. Visual impacts can be reduced by limiting the maximum volume of ASHPs with permitted development rights to 2m³. This should allow ASHPs with a rating of up to approximately 56kW but is of a small enough size that significant visual impacts will not generally be felt. To further mitigate visual impacts we recommend that ASHPs should be a minimum of 5m from the boundary of the property. We also recommend that permitted development rights for ASHPs do not apply in conservation areas and world heritage sites and that only the first ASHP within the curtilage of a listed building should have permitted development rights.

Noise was not generally raised as a major issue by stakeholders with regard to ASHPs in a non-domestic context. However, it is important that there is some protection in place to prevent noise impacts, particularly for residential properties nearby. This would best be dealt with by requiring ASHPs and their installers to be certified by a microgeneration certification scheme. As an interim measure, until such standards are developed, we recommend that permitted development rights are given (subject to the limits in the preceding paragraph) to non-domestic ASHPs provided that they are located at least 100m from all residential windows (including households, hotels, hostels, etc.) except those within the building curtilage. This exception will allow hostels, hotels and other non-domestic residential properties to erect ASHPs within their own grounds.

6. Biomass and combined heat and power plants

Biomass boilers can reduce CO₂ emissions as they use fuel from a renewable source, such as wood and crops, rather than fossil fuels to produce energy. Combined heat and power (CHP) plants use a low carbon technology that generates useable electricity and heat simultaneously, which is a more fuel efficient process than traditional boilers which generally produce either heat or power. Where a biomass or CHP plant can be contained within an existing building and chimney there is generally no need to apply for planning permission (although there may be need to apply for listed building consent if within a listed building). However there are three scenarios where we can envisage that planning permission may be needed to install biomass or CHP: when there is a requirement for an extension or new building to accommodate a new boiler; where there is a need for a new building, fuel hopper or building extension to allow the storage of fuel; and where there is a need to install a new flue pipe instead of utilising an existing chimney. In each of these cases we believe that, subject to certain limits, permitted development rights can apply.

Biomass boiler building and outside fuel store



Source: Bio Energy Group

We recommend that an extension or new building to contain a biomass or CHP boiler is permitted development provided that it has a maximum floor area of 10m². This should be of small enough size in most non-domestic contexts to minimise visual impacts provided that the building or extension is a maximum height of 3m and located at least 5m from the property boundary. To further limit the potential for visual impact the building or extension should be the first such built using permitted

development within the building curtilage. Limiting the new boiler room to this size will also reduce the amount of fuel that will be required and therefore the number of fuel deliveries that may be required. In larger non-domestic buildings it will be necessary to accommodate a larger boiler to provide enough heat or power to make a significant contribution to the buildings needs. We therefore recommend that for large non-domestic buildings of 1000m² floorspace and more, the floor area of the boiler room extension or building is permitted development up to a floor area of 75m². We also recommend that any extension or new building should be reasonably in keeping with its surroundings and that permitted development rights should not apply within a conservation area, world heritage site or within the curtilage of a listed building.

We recommend that permitted development rights also be given for a fuel store for a biomass boiler (or combined biomass and CHP boiler) in either an extension to an existing building or in a new building. As for the installation of a boiler we believe that the size of this extension or new building should be limited to a maximum floor area of 10m² and a maximum height of 3m and that it is a minimum distance of 5m from the property boundary. The maximum floor area should rise to 75m² for non-domestic buildings with a floorspace 1000m² or more. Any extension or new building should be reasonably in keeping with its surroundings and should be limited to the first such permitted building or extension within the curtilage of an existing building. Permitted development rights should not apply within a conservation area, a world heritage site or within the curtilage of a listed building.

New building containing a biomass boiler and fuel store



Source: Bio Energy Group

New biomass and CHP boilers may require a new or replacement flue. We recommend that this should be permitted development up to a height of 1m above the ridge line (or highest point of a flat roof) or to the height of an existing flue to be replaced,

whichever is higher. The flue itself need not be located near the ridgeline and generally would be located towards the edge of a building to allow the flue to be taller and therefore prevent backdraft. To prevent visual impact in sensitive areas we recommend that permitted development rights are removed in conservation areas, world heritage sites and within the curtilage of a listed building.

6.1 Anaerobic digestion plants

From the limited examples of anaerobic digestion plants we have come across in the course of this review it seems likely that, subject to conditions, anaerobic digestion plants are already permitted development. We recommend that these rights are set out in any new part of the GPDO which will be applied to small scale renewables and low carbon technologies. These permitted development rights limit an anaerobic digestion plant to agricultural land and a maximum area of 465m². Anaerobic digestion plants should not be given permitted development rights within the curtilage of a listed building.

7. Summary of recommendations

Tables 7.1 summarises the main conditions we recommend are attached to the permitted development rights for the technologies included in this review. Reference should be made to the main report for full details.

Table 7.1 Summary of recommendations for permitted development rights	
Technology	Limits to permitted development rights
Solar pitched roof mounted	<ul style="list-style-type: none"> • maximum protrusion of 200mm above the roof plane • not permitted development in a world heritage site or conservation area • remove if not in use for six months (unless integral to the roof structure)
Solar flat roof mounted	<ul style="list-style-type: none"> • maximum 2m high • at least 2m from the edge of a building • not permitted development in a world heritage site or conservation area • remove if not in use for six months
Solar wall mounted	No permitted development.
Solar stand alone	<ul style="list-style-type: none"> • only one within a building curtilage • maximum height of 4m • at least 5m from property boundary • maximum panel dimension of 3m x 3m • not permitted development in national parks, AONBs, world heritage sites, conservation areas or within the curtilage of a listed building (where listed building consent is not required) • remove if not in use for six months
Solar stand alone in agricultural areas	<ul style="list-style-type: none"> • maximum of 465m² total surface area of solar panels • reasonably necessary for agricultural use • maximum height of 4m • at least 5m from farm boundary • no permitted development in national parks, AONBs, world heritage sites, conservation areas or within the curtilage of a listed building (where listed building consent is not required) • remove if not in use for six months

Table 7.1 Summary of recommendations for permitted development rights

Technology	Limits to permitted development rights
Wind free standing	<ul style="list-style-type: none"> • maximum 15m hub height for horizontal mounted axial flow wind turbines (maximum of 15m height in total for other turbines) • maximum blade diameter of 6m for horizontal mounted axial flow wind turbines (maximum swept area of 28m² for other turbines) • blade must be a minimum of 5m from the ground • device and installer must be certified by a UKAS accredited microgeneration certification scheme • colour scheme to be reasonably in keeping with surroundings • installer must inform the statutory nature conservation body in writing of the location of the turbine before it is erected • not within 200m of any other free standing wind turbine • remove if not in use for six months • no permitted development in national parks, AONBs, conservation areas, world heritage sites or within the curtilage of a listed building
Wind building mounted	<ul style="list-style-type: none"> • maximum turbine height 3m higher than ridge line (or highest part of roof for flat roofs) • maximum blade diameter of 2.5m for horizontal axis axial flow wind turbines (maximum swept area of 5m² for other turbines) • maximum of 1 turbine on buildings of 15m or less in height, maximum of 4 turbines on buildings of more than 15m in height • colour scheme to be reasonably in keeping with surroundings • remove if not in use for six months • no permitted development within conservation areas or world heritage sites • device and installer must be certified by a UKAS accredited microgeneration certification scheme

Table 7.1 Summary of recommendations for permitted development rights

Technology	Limits to permitted development rights
Hydro new buildings	<ul style="list-style-type: none"> • only one ancillary building allowed by permitted development in an agricultural unit or within the curtilage of a building • maximum of 3m high • maximum floor area of 10m² • reasonably in keeping with surroundings • no permitted development within national parks, AONBs, conservation areas, world heritage sites or within the curtilage of a listed building
Hydro new or replacement pipework	<ul style="list-style-type: none"> • maximum of 0.5m above existing ground level • any excavation to be restored to previous condition after installation
Ground source heat pumps	<ul style="list-style-type: none"> • maximum area of excavation of 0.5ha • excavated land to be restored to previous condition after installation • notify relevant archaeological authority six weeks prior to excavation
Water source heat pumps	<ul style="list-style-type: none"> • maximum area of pipework of 0.5ha
Air source heat pumps	<ul style="list-style-type: none"> • only one allowed by permitted development within a building's curtilage • total volume of heat pump no more than 2m³ • minimum of 5m from property boundary • no permitted development within conservation areas or world heritage sites • device and installer must be certified by a UKAS accredited microgeneration certification scheme

Table 7.1 Summary of recommendations for permitted development rights

Technology	Limits to permitted development rights
Biomass and CHP boiler room	<ul style="list-style-type: none"> • one extension or new building allowed permitted development within the curtilage of a building • maximum of 3m in height • minimum of 5m from boundary of property • reasonably in keeping with surroundings • no permitted development within conservation areas, world heritage sites or within the curtilage of a listed building <p>Buildings with floorspace of <1000m²</p> <ul style="list-style-type: none"> • maximum floor area of 10m² <p>Buildings with floorspace of 1000m² or more</p> <ul style="list-style-type: none"> • maximum floor area of 75m²
Biomass and CHP fuel store	<ul style="list-style-type: none"> • one extension or new building allowed permitted development within the curtilage of a building • maximum of 3m in height • minimum of 5m from boundary of property • reasonably in keeping with surroundings • no permitted development within conservation areas, world heritage sites or within the curtilage of a listed building <p>Buildings with floorspace of <1000m²</p> <ul style="list-style-type: none"> • maximum floor area of 10m² <p>Buildings with floorspace of 1000m² or more</p> <ul style="list-style-type: none"> • maximum floor area of 75m²
Biomass and CHP new or replacement flue	<ul style="list-style-type: none"> • maximum of 1m above the ridge line (or high point of a flat roof) or to the height of an existing flue which is to be replaced, whichever is higher • no permitted development in conservation areas, world heritage sites or within the curtilage of a listed building
Anaerobic digestion plant	<ul style="list-style-type: none"> • must be located on agricultural land • maximum area of 465m² • no permitted development within the curtilage of a listed building

7.1 Summary of interim recommendations

Table 7.2 outlines the interim recommendations that can be applied to allow permitted development rights for wind turbines and air source heat pumps until such time as an UKAS accredited small scale renewables certification scheme is developed.

Table 7.2 Summary of interim recommendations	
Technology	Interim limits to permitted development rights
Wind free standing	<ul style="list-style-type: none"> • at least 100m from residential windows outside curtilage of development site (for turbines within 100m householder permitted development rights apply instead) • maximum BWEA Reference Sound Level of 40dB(A) • must not overhang highways or publicly accessible open space • no safety objections from radar operators (only required if turbine is 11m or more from the ground and blade diameter 2m or more) • maximum frequency of 3Hz
Wind building mounted	<ul style="list-style-type: none"> • at least 100m from residential windows outside curtilage of development site (for turbines within 100m householder permitted development rights apply instead) • maximum BWEA Reference Sound Level of 40dB(A) • must not overhang highways or publicly accessible open space • no safety objections from radar operators (only required if turbine is 11m or more from the ground and blade diameter 2m or more) • maximum frequency of 3Hz
Air source heat pumps	<ul style="list-style-type: none"> • at least 100m from residential windows outside curtilage of development site

ISBN: 978 1 4098 2001 7

ISBN 978-1-4098-2001-7



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