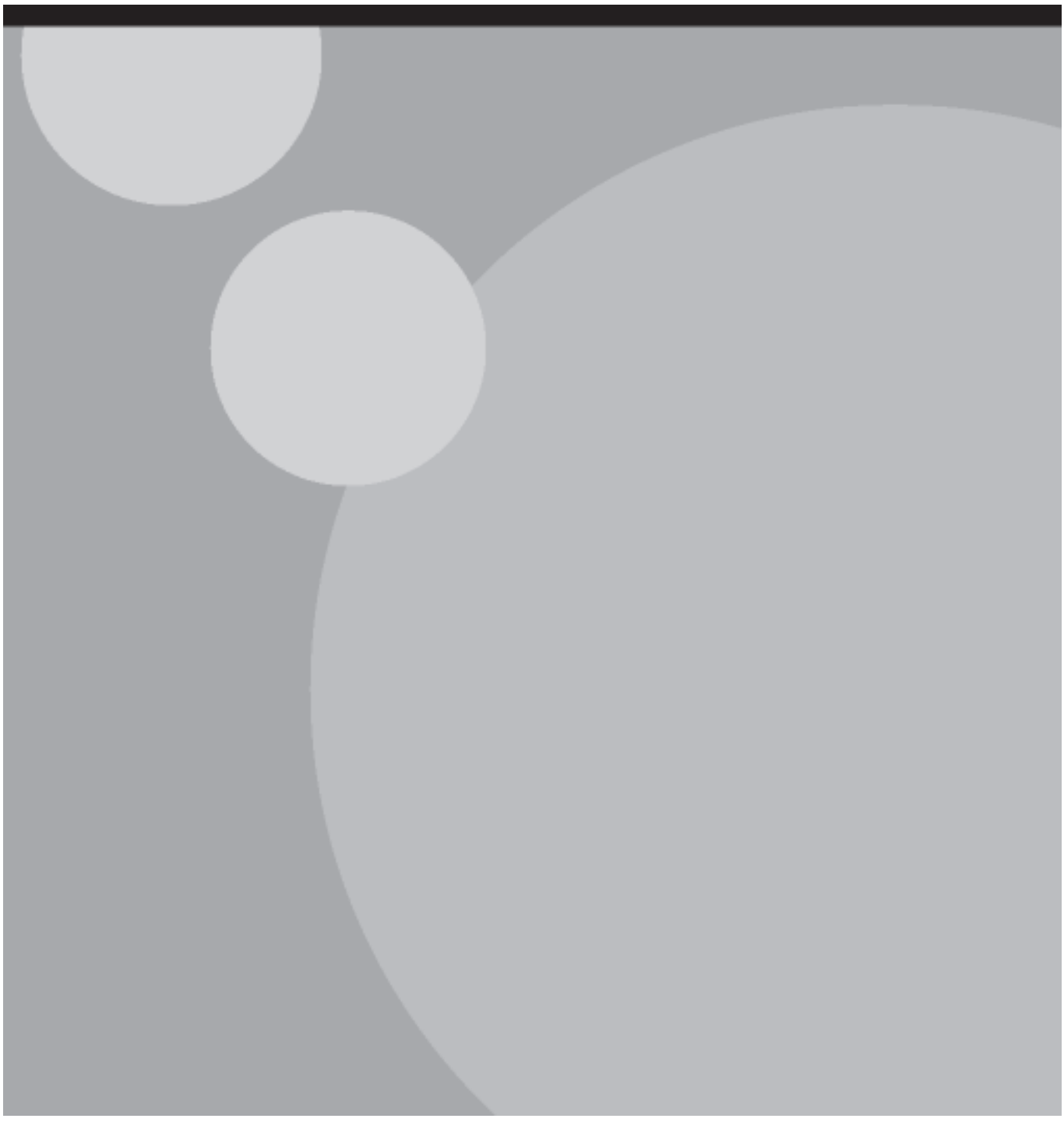
Communities and Local Government

Permitted development rights for small scale renewable and low carbon energy technologies and electric vehicle charging infrastructure consultation

Summary of responses



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1 Introduction

This report sets out the results of the Department for Communities and Local Government (DCLG) consultation exercise on its proposed changes to the permitted development rights regime. The proposed changes are contained within the consultation paper titled *Permitted development rights for small scale renewable and low carbon energy technologies, and electric vehicle charging infrastructure*.

This report provides a summary of consultee responses, key themes, and a statistical analysis indicating the level of support for the proposed changes to permitted development rights.

1.1 Background

The Planning white paper (2007) outlined the intention to explore the scope for extending permitted development rights to domestic and non-domestic microgeneration technologies, such as rooftop solar panels and wind turbines. Around the same time, a consultation document titled *Changes to permitted Development Consultation Paper 1: Permitted Development Rights for Householder Microgeneration* was published setting out detailed proposals for introducing permitted development rights for a wide range of domestic microgeneration technologies.

In April 2008 the Town and Country Planning (General Permitted Development) Order 1995 was amended to grant permitted development rights to domestic properties for certain forms of microgeneration equipment, including solar panels, ground source heat pumps and water source heat pumps. While the 2007 consultation exercise proposed granting permitted development rights for domestic wind turbines and air source heat pumps, unresolved technical issues meant they were not included in the April 2008 legislation. Further work has been carried out to address these issues and the present consultation paper proposes how permitted development rights for these domestic technologies would be implemented.

In June 2007 ENTEC Ltd were commissioned to examine the scope for extending permitted development rights to a wide range of non-domestic renewable energy technologies. The conclusions of this review inform the proposals in this consultation.

In July 2008 a commitment was made to support a motoring revolution in the UK with a shift to electric cars, and to remove any barriers in the planning system to enable an electric charging network to be set up as quickly as possible. Will French was commissioned to review the planning background relating to electric vehicle charging points (electric vehicle charging points).

1.2 The consultation exercise

The present consultation exercise thus combines the three themes into a single consultation exercise.

The consultation paper was issued by DCLG on 17 November 2009 for a 12-week consultation period ending on 9 February 2010.

The proposals in this consultation take forward strategies on promoting renewable energy and low-carbon technologies. They also complement proposals in response to the Killian Pretty recommendations for reforming the planning process.

The technologies for each theme covered by the consultation paper include:

Installation of technologies on domestic premises

- building mounted and stand alone wind turbines
- air source heat pumps

Installation of technologies on non-domestic premises

- building mounted and stand alone wind turbines
- air source heat pumps
- ground source heat pumps
- water source heat pumps
- solar panels
- flues for biomass systems and combined heat and power (combined heat and power) systems on agricultural and forestry land
- structures to house anaerobic digestion systems and biomass boilers; and
- structures to house hydro-turbines

Electric vehicle charging points

For electric vehicle charging points this consultation proposes amendments to existing permitted development legislation and existing advertisement regulations to promote a switchover to electric vehicles.

1.3 Consultation questions

The DCLG consultation paper provides separate details of each proposed group of changes to permitted development rights (and to the advert regulations, for electric vehicle charging points) through a series of commentaries and summary tables of proposed changes. The consultation then seeks respondents' views in relation to each table, as well as a number of general questions at the end. A total of 16 questions were asked. The questions are reproduced below, for ease of reference:

Domestic proposals

Q.1 Do you agree with the proposals for wind turbines on domestic premises, as set out in Tables 1, 2 & 3?

Q.2 Do you agree with the proposals for air source heat pumps on domestic premises, as set out in Table 4?

Non-domestic proposals

Q.3 Do you agree with the proposals for wind turbines on non-domestic premises, as set out in Tables 5 and 6?

Q.4 Do you agree with the proposals for air source heat pumps on non-domestic premises, as set out in Table 7?

Q.5 Do you agree with the proposal for ground source heat pumps on non-domestic premises, as set out in Table 8?

Q.6 Do you agree with the proposal for water source heat pumps on non-domestic premises, as set out in Table 9?

Q.7 Do you agree with the proposals for solar panels on non-domestic premises, as set out in Tables 10, 11 and 12?

Q.8 Do you agree with the proposal for flues for biomass systems and combined heat and power (combined heat and power) systems on non-domestic premises, as set out in Table 13?

Agricultural and forestry proposals

Q.9 Do you agree with the proposal for structures to house biomass boilers, anaerobic digestion systems and associated waste and fuel stores on agricultural and forestry premises as set out in Table 14?

Q.10 Do you agree with the proposal for structures to house hydro-turbines on agricultural and forestry premises, as set out in Table 15?

Electric Vehicle Charging Infrastructure proposals

Q.11 Do you agree with the permitted development and advertisement deemed consent proposals for electric vehicle charging infrastructure as set out in Tables 16, 17, 18 & 19?

Glossary of terms – Annex A

Q.12 Do you agree with the definitions used for the purposes of this document?

Q.13 Do other concepts or technologies need specific definitions?

Consultation Stage Impact Assessments – Annex B

Q.14 Do you think that the impact assessments provide an accurate assessment of the likely costs and benefits of the preferred policy options?

Q.15 In particular do you agree with our estimates of the possible costs to local authorities in relation to investigating noise complaints?

Q.16 In the impact assessments, we assume that the process of obtaining planning permission acts as a disincentive to the take up of renewable technology and that by removing this disincentive take up would increase by between 2 per cent and 5 per cent annually. Do you think that these assumptions are reasonable?

2 Analysis

Each response made to the consultation paper has been read and analysed on a consistent basis. A record has been made of the responses to the questions in the consultation paper and other comments made in relation to the proposals. This report concentrates on the most telling arguments and the most commonly recurring points.

The report is structured in four sections:

- a review of the respondent groups
- headline findings, summary statistics and general comments
- a review by theme of the potential impacts of the new technologies and the proposed regulatory approaches; and
- a summary of responses by consultation question

In referring to the degree of agreement or disagreement expressed by respondents in Sections 6-12, we have used the terms in **Table 1** below.

Table 1: Categorisation of agreement and disagreement

In favour of or opposed to proposal	Term used
0 – 10%	A few agree / disagree
11 – 30%	A minority agree / disagree
31 – 49%	A significant minority agree / disagree
50 – 70%	A majority agree / disagree
71 – 90%	A large majority agree / disagree
91- 100%	Almost all agree / disagree

3 Respondent groups

Almost 200 substantive responses were received. For analysis purposes, the respondents were categorised by type of person or organisation, in order to allow the analysis to reflect common themes emerging from similar types of respondent. The groups used and, the definitions of them are shown in **Table 2** below.

Table 2: Consultation respondent groups

Respondent group	Content
Academe and professional	Includes academe and professional organisations
Owners/managers of private sector business	Includes landowners, developers, and professionals acting for landowners
Environmental and community groups	Includes Areas of Outstanding Natural Beauty, preservation and amenity societies
Government bodies	Includes public sector organisations
Individuals	Includes members of the public
Local authorities	Includes borough, local, county and national park authorities
Other	Includes parish and town councils, residents associations
Political	Includes MPs
Renewable energy industry	Includes creators, manufacturers and installers of renewable technologies

4 Headline findings

It is in the nature of a consultation of this type, which relates to a range of discrete and detailed technical proposed regulatory changes, that responses tend to be correspondingly technical and detailed, rather than providing a set of clear broad themes which reach across most or all of the changes. Notwithstanding this, the analysis found that in general respondents were supportive of the proposed regulatory changes. The comments received by respondents therefore focus on those elements which they did not consider have been sufficiently covered within the consultation document or which related to the implementation/enforceability of the proposals.

Of the different technologies covered by the consultation, wind turbines and air source heat pumps drew the most attention from respondents. Of the different land uses, domestic uses drew the most attention. Electric vehicle charging points drew the least attention.

Summary of consultation responses

Domestic premises

The majority (62 per cent) of respondents agreed with the proposals for wind turbines on domestic premises. However, of the comments supporting the proposals, a large majority suggested further amendments to the proposals.

The large majority (72 per cent) of respondents agreed with the proposals for air source heat pumps on domestic premises, with a majority (58 per cent) of these suggesting further amendments to the proposals.

Non-Domestic premises

The majority (69 per cent) of respondents agreed with proposals for wind turbines on non-domestic premises. A large majority (78 per cent) of these however suggested further amendments to the proposals.

The large majority (72 per cent) agreed with the proposals for air source heat pumps on non-domestic premises, with a majority (55 per cent) of these suggesting further amendments to the proposals.

The large majority (76 per cent) of respondents agreed with the proposals for ground source heat pumps on non-domestic premises. However, of the comments supporting the proposals a significant minority (41 per cent) suggested further amendments to the proposals.

The large majority (79 per cent) of respondents agreed with the proposal for water source heat pumps on non-domestic premises, with a minority (30 per cent) of these suggesting further amendments to be considered.

A large majority (82 per cent) of respondents agreed with the Government's proposals for solar panels on non-domestic premises. Of those respondents that supported the proposals, a majority (57 per cent) suggested further amendments to the proposals.

A large majority (76 per cent) of respondents agreed with the proposal for flues for biomass systems and combined heat and power systems on non-domestic premises, with a significant minority (37 per cent) of these respondents providing amendments for consideration.

Agriculture and forestry premises

A large majority (87 per cent) of respondents agreed with the proposal for structures to house biomass boilers, anaerobic digestion systems and associated waste and fuel stores on agricultural and forestry premises, while a minority (30 per cent) of those who responded suggested further amendments to be considered.

A large majority (84 per cent) of respondents agreed with the proposal for structures to house hydro-turbines on agricultural and forestry premises, with only a minority (23 per cent) of these suggesting changes to the proposals.

Electric vehicle charging points

A large majority (90 per cent) of respondents agreed with the permitted development and advertisement deemed consent proposals for electric vehicle charging infrastructure. However, of the comments supporting the proposals a significant minority (34 per cent) suggested further amendments for consideration.

5 Thematic review of responses

This section provides a summary of responses in relation to the potential impacts of the new technologies and the proposed regulatory approach set out in the consultation document. It is structured thematically and for ease of reference reflects the structure of section 2 of the DCLG consultation document.

By contrast, sections 6-12 of this report provides a detailed breakdown of responses by consultation question, identifying the level of support for each set of proposed regulatory changes and reporting the details of responses in relation to specific technologies or land uses affected by the proposals.

5.1 Other regulatory regimes

Section 2.3 of the consultation document acknowledges that as well as the planning system, many minor developments are affected by other regulatory regimes, such as the need to satisfy Building Regulations or to secure environmental permits for waste management. In addition it is also acknowledged that local authorities have responsibility to implement and enforce the Environmental Impact Assessment Regulations[1] and the Habitats Regulations[2].

5.1.1 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

The proposed regulatory changes, and in particular size and performance thresholds which would mark the limits of the new permitted development rights, have been developed in consideration of the environmental impact assessment regulations. This is of particular importance for example to the development of wind turbines where *"installations harnessing wind from energy production"* (from paragraph 3(i) of Schedule 2 of the environmental impact assessment Regulations) require environmental impact assessment screening where they involve the installation of two or more turbines or where the height of the hub or any other structure exceeds 15m.

The following comments were received from environmental stakeholders in relation to environmental impact assessment screening and the permitted development rights thresholds set out in the consultation document:

- Concern was expressed that while permitted development rights thresholds have been developed with the intention of limiting the need

[1] The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (S.I. 1999/293) (as amended)
[2] The Conservation (Natural Habitats, &c.) Regulations 1994 (S.I. 1994/2716)

for environmental impact assessment screening, the assumption that environmental impact assessment screening or full environmental impact assessment would not be required in sensitive areas is misplaced.

- Section 2 (1), Part 1 of the Environmental Impact Assessment Regulations states that 'Schedule 2 development means development…of a description mentioned in Column 1 of the table in Schedule 2 where any part of that development is to be carried out in a sensitive area'. Environmental impact assessment screening would therefore be necessary for such development in sensitive areas.
- In respect of this, it was considered by respondents that a potential permitted development rights development would trigger the requirement for environmental impact assessment screening if the site was in or close to a sensitive site such as a Site of Special Scientific Interest.
- In addition, it was noted that development within a Site of Special Scientific Interest requires the owner or developer to notify the relevant conservation body (Natural England) of any potential negative impact to the Site of Special Scientific Interest from proposed operations, which may trigger the need for a planning application. The consultation document does not make reference to this requirement.

5.1.2 HABITATS REGULATIONS

With regard to the Habitats Regulations, the consultation document acknowledges that any development that may have a significant effect on a biodiversity site classified under a European Union Directive should not commence until the developer has received the written approval of the local planning authority.

Respondents considered that while the consultation acknowledges this requirement, it does not demonstrate how owners or developers will be aware if they are located in such an area, without first consulting the local planning authority or how the requirement will be discharged without the withdrawal of permitted development rights.

5.2 Location

Section 2.6 of the consultation document states that limits to what would be permitted development would vary according to siting and location. The key question proposed by the consultation document is whether the conditions

and thresholds proposed for these forms of permitted development are correct; these are addressed in sections 6-12 of this report.

5.2.1 ARTICLE 4 DIRECTIONS

Regarding controlling the location of permitted development, Section 2.8 of the consultation paper states that local planning authorities have the necessary instrument, through the use of Article 4 Directions, to remove permitted development rights where they consider more control over development is required. The following comments were received in relation to the use of Article 4 Directions:

- The cost to local planning authorities of undertaking an Article 4 Direction was considered to be in conflict with the rationale for the proposals set out in the consultation document; that is, to reduce the cost of planning and reduce the workload on local planning authorities.
- In particular this was seen as the case in Areas of Outstanding Natural Beauty where permitted development rights are not restricted under the proposals, and where areas of outstanding natural beauty commonly extend across a number of local planning authority areas. In order to apply a consistent regime across a whole area of outstanding natural beauty, the local authorities would need to undertake the process in coordination with each other and absorb the cost of implementing an Article 4 Direction to restrict development.
- It was considered that failing to restrict permitted development rights in areas of outstanding natural beauty would increase the pressure on local planning authorities who have areas of outstanding natural beauty within their boundaries to implement Article 4 Directions as the most powerful instrument against inappropriate development.

5.2.2 OTHER COMMENTS ON LOCATION ISSUES

In addition to comments relating to Article 4 Directions, respondents made a number of broad comments relating to proposed restrictions on permitted development rights and their suitability in controlling the location of development. In particular these comments related to Article 1(5) land where restrictions on permitted development rights are not proposed (with the exception of stand alone solar panels):

- It was recommended that the restrictions that are proposed for World Heritage Sites and Conservation Areas should apply to other Article 1(5) land including areas of outstanding natural beauty, allowing the planning system to strike a balance on a case by case basis between designation objectives and potential contribution of renewables and

low carbon energy developments to reducing national carbon emissions.

- There was concern that proposed permitted development rights would remove the opportunity for a thorough assessment of the potential impacts that development would have on National Parks and whether there would be a conflict with their statutory purposes. Furthermore it was argued that no evidence has been provided by the Government that National Park designations are acting as a barrier to developing small scale renewable energy technologies, where take up of renewable energy technologies, it is argued, is encouraged by local planning authorities.

5.3 Noise

Section 2.10 of the consultation document recognises that the most challenging impact to address for wind turbines and air source heat pumps is noise. Difficult questions arose about what the maximum acceptable limit for neighbours should be; how cumulative noise impact should be addressed and whether or not special provision for sensitive areas should be made.

The following comments were received in relation to noise impact, with a large number of those received from professionals. The individual noise impact of each technology is considered in Sections 7-12.

- Concern was raised at the increase in noise limit to 45dB $LA_{eq,5min}$, from the 37dB limit proposed in the 2007 consultation. Respondents considered that evidence should be provided for the increase in noise limit; with the information currently available it was considered that a precautionary approach should be taken in the first two years, prior to a planned review where the limit could be raised.
- The likelihood of noise complaints was expected to increase, due to the higher noise level limits and lack of householders' and neighbours' specialist equipment to assess noise level post-installation.
- The level of noise is expected to increase over time as equipment ages and requires maintenance to meet the original permitted noise level. This is considered to have resource and cost implication for local authorities due to the anticipated increase in noise complaints, for example the serving of abatement notices.
- Noise impact on adjacent publicly-accessible land should be considered, including for waterways and public footpaths.
- Some professional respondents were concerned that ambient noise levels, the frequency and tonal qualities of the noise, and fluctuating noise levels, had not been adequately addressed by the proposed

blanket noise limit. An absolute noise level was therefore seen as inappropriate as it would not allow individual site context and background noise levels to be taken into account.

- Some professional respondents considered that the proposed limitations did not sufficiently address the impacts of cumulative noise, particularly where multiple installations are within close proximity.
- Tranquillity is a special quality of many of areas of outstanding natural beauty. Some environment and community respondents therefore considered that the noise limit should be the lower limit of 37dB. Respondents were aware that this would be at odds to that set out in the consultation paper, but considered that it is the safer approach in the interests of both the local and wider community.
- It was stated by one respondent that the proposed noise level is higher than that seen as acceptable by the World Health Organization under Night Noise Guidelines.
- Other respondents, particularly from the renewable energy industry, took a different view. They felt that the noise limits for wind turbines and air source heat pumps were appropriate and several expressed concern that noise limits may be lowered in the future.
- A noise limit lower than 45dB is considered by many technology providers to be too onerous. It would be likely to stifle take-up and growth of the microgeneration market, the opportunities for more low carbon energy it promises and the jobs and economic opportunities it offers.
- Technology providers also argued that appropriate protective noise levels would also aid market growth and industry growth, which would enable improvements in acoustic performance to be achieved. Without market growth there would be little revenue to make such improvements.
- The renewable energy industry argued that it is in its interest for a noise level to be set which would not become the cause of nuisance. It wants to instil consumer confidence in microgeneration technologies to encourage take-up and believes that 45dB would provide acoustic protection and not harm the industry's reputation.
- Some technology providers argued that existing installations have generated very low levels of complaints across the country, and therefore suggestions that there would be extremely high levels of complaints from permitted development installations at a 45dB noise level are unlikely to be substantiated in reality.

- Respondents from the renewable energy industry argued that the 45dB limit is lower than that applied to some other domestic appliances. For example, the maximum flue noise from oil-fired boilers is 49dB.
- The renewable energy industry submitted evidence that showed 75 per cent of sampled wind turbines have noise levels measured at the façade of neighbouring buildings that exceed 45dB, and 51 per cent exceed 55dB. It was asserted that none of these have resulted in noise complaints.

5.3.1 MICROGENERATION CERTIFICATION SCHEME

Section 2.15 of the consultation document states that to support the development of the microgeneration industry and to drive up the quality and reliability of installations, the Government has developed the Microgeneration Certification Scheme in partnership with industry and other organisations representing consumer interests. The microgeneration certification scheme includes clear standards to support the installation of wind turbines and air source heat pumps.

According to the consultation documents, the main purpose of the scheme is to build consumer confidence in microgeneration technologies and to help move the industry to an economically sustainable position. Under the proposed regulatory changes, permitted development rights for wind turbines and air source heat pumps will only be accorded for equipment installed by an installer who has been certificated through the scheme using a certificated product. The installer would therefore be responsible for ensuring that the installation meets permitted development noise standards at the time of installation.

Responses to the microgeneration certification scheme were generally mixed, with the following broad comments:

- Some respondents consider the microgeneration certification scheme vital if the consumer is to be protected from poor quality installations and to determine whether the permitted development rights under legislation have been met.
- Other respondents consider that microgeneration certification scheme testing is counterproductive to Government objectives encouraging innovation in small businesses. In particular, the costs of microgeneration certification scheme testing and accreditation are prohibitively expensive to most small wind turbine companies.
- Concern that a microgeneration certification scheme will create a monopoly of certificated installers, which is likely to increase costs of installation and act as a deterrent to wider take-up.

- It was also suggested that the scheme should exist but that making it compulsory would hinder and delay important innovations.

5.4 Vibration

Limited comment was received by respondents in relation to the potential risk caused by vibration following the installation of microgeneration technologies. Section 2.21 of the consultation document considers that the risk of vibration to be most relevant to the installation of wind turbines and so proposes that to manage the risk of vibration causing disturbance to neighbouring residences, permitted development rights for building mounted wind turbines on domestic premises will only be granted for detached dwelling houses (i.e. in single occupation and not sharing a wall with a neighbouring property) and for freestanding outbuildings in the curtilage of residential properties (e.g. a freestanding outbuilding in the curtilage of a block of flats).

In light of this approach, respondents generally welcomed the proposal for controlling vibration transmission. There was a concern however that no limits were proposed for ground source heat pumps and the impact that pump-borne vibration may have.

5.5 Interface with radar and aircraft communications

Section 2.24 of the consultation document acknowledges the potential impact of wind turbines and permitted development rights on air traffic is an issue that the Government is addressing very carefully. The Ministry of Defence, Civil Aviation Authority, and National Air Traffic Service have concerns about the impacts of wind turbines on the operation of radar/air traffic control equipment and aircraft movement. The height of a wind turbine is a very important factor in relation to potential effects on radar and aircraft communications. There is also concern about glare from solar panels on the approach and take-off zones abutting main runways.

Limited comments were received in relation to the interface with radar and aircraft communications. Respondents generally accepted the need to ensure the safety of air passengers and the impact that wind turbines can have on communication equipment. There were some suggestions however that the proposed restrictions were likely to be too cautious with the effect of unnecessarily limiting the take-up of microgeneration technologies. Concern was expressed with regards to how the mapping tool would work and whether the safeguarded area needed to be extended or reduced.

5.6 Visual impact

Section 2.27 of the consultation document acknowledges that the technologies proposed may have a visual impact that can be a concern in particular circumstances. For example these may include:

- scale
- poor siting or location
- poor design
- overshadowing; and
- inappropriate materials

A large number of comments were received in relation to visual impact across all technologies, and it is subsequently considered by respondents as one of the more sensitive issues that the Government must deal with in relation to the proposed permitted development rights. In particular three common issues emerged as being relevant to each of the technologies covered by the proposals. These include:

- a lack of protection for Article 1(5) areas (i.e. National Parks, areas of outstanding natural beauty and the Broads); by not restricting permitted development rights in these areas
- a lack of recognition that Class B2 industrial premises are often located in residential and environmentally sensitive areas and
- that visibility from 'any highway which bounds the property' is not considered sufficient to protect visual amenity

In light of this the following general comments were recorded:

5.6.1 EXTENDING RESTRICTIONS ON permitted development RIGHTS TO ARTICLE 1(5) AREAS

- Respondents were concerned that restrictions on permitted development rights were only proposed for World Heritage Sites and Conservation Areas, and not for all Article 1(5) areas.
- Environment and Community groups in particular asserted that in protected landscapes a single wind turbine (even within the maximum heights outlined in the consultation document) could have a significant detrimental impact on the natural beauty of the area if it is not located in the most appropriate place in landscape terms. This is particularly the case if it is the only wind turbine in an otherwise open vista.

5.6.2 CLASS B2 INDUSTRIAL PREMISES LOCATED IN RESIDENTIAL AND ENVIRONMENTALLY SENSITIVE AREAS

- Class B2 industrial premises, especially those that have been in existence for a long period, will not always be surrounded by similar uses. B2 premises may be located close to domestic buildings with habitable spaces, or in more isolated, ecologically sensitive surroundings. It was considered by Environment and Community groups in particular that the consultation document does not take into account these nuances in locational context.

5.6.3 VISIBILITY FROM 'ANY HIGHWAY WHICH BOUNDS THE PROPERTY'

- Visually intrusive development is not limited to the immediate area and installations may be viewed from other public locations. It is therefore suggested by a range of respondent types that the threshold be amended along the lines of 'if visible from any highway, other public right of way or open access land in the vicinity of the property'.
- It was noted that visual impact often increases as one moves away from the highway. A number of respondents suggested that the proposals should be amended to reflect the fact that some installations are clearly visible from further afield thus resulting in potential harm to interests of acknowledged importance.
- The consultation document proposes that permitted development rights are not to be applied in Conservation Areas and World Heritage Sites where development would be visible from any highway which bounds the curtilage of the property. Further clarification was requested over the meaning of this i.e. does it relate only to that part of the highway which physically adjoins the site, or to the whole of that highway provided that part of it adjoins the site. In addition, the definition of "highway" is continually in dispute and the final General Permitted Development Order should provide certainty about what should be considered as the "highway".
- Visibility from recognised footpaths should also be considered.

5.7 Flicker

With regard to the impact of flicker, both visually and as a public health risk, limited comments were received.

Respondents generally supported the proposed regulatory framework and reinforced the need for non-reflective materials to be used.

5.8 Impact on wildlife, biodiversity and geological conservation

Section 2.37 of the consultation document recognises that there is potential for wind turbines, water source heat pumps and ground source heat pumps to have an adverse impact on wildlife, biodiversity and geological conservation. With regard to heat pump technology there is also recognition that an impact on the environment could be caused by the leaking of refrigerant from coils into a water body, or from contamination of groundwater resources through the digging of boreholes.

A range of responses relating to this theme were provided, with a mix of supportive and opposing views on the Government's proposed regulatory approach. In general, these responses focused on the ecological impact of wind turbine and solar panel installation and the impact of technology installation on geology.

5.8.1 IMPACTS ON ECOLOGY

In reference to the impact of wind turbines and solar panels on bats and birds, and wider ecological value, the following general comments were received (detailed comments are included in Sections 6-12).

- The proposal to allow local planning authorities to exempt sites from permitted development rights, would not appropriately mitigate ecological impact as the sites where protected species reside are often too small, numerous or transitory to allow for effective listing by local planning authorities. There was also a need expressed for further evidence gathering and monitoring of the impacts of small scale wind turbines on birds and bats.
- Renewable energy specialists in particular agreed that the proposed regulatory approach to mitigating impact was reasonable and sensible. For example in relation to Government's awareness that small wind turbines may present potential risks to birds and bats, it was argued that that scientific surveys, collated field data, or indeed any historic ecological study concerning large wind turbines (defined as anything above 100kW) is very unlikely to be applicable to turbines within the proposed permitted development rights thresholds. Furthermore it was argued that no robust scientific evidence is currently available to suggest that bats or birds are unable to successfully navigate fully operational micro and small-wind systems, and that there is a significant volume of anecdotal evidence that small wind system do not pose risks to bats.
- Respondents from local authorities and environmental and community groups in particular argued that wind turbines can cause an

obstruction if sited near to roost entrances, discourage feeding in particular areas, affect commuting paths, and interfere with bat signal/sound waves. Concern was also raised regarding the impact upon important bird populations, including Biodiversity Action Plan species. In particular, ground nesting waders, night flying species and flight lines associated with migratory species may be affected by wind turbines.

- Wind turbines should not be permitted development in National Nature Reserves and Sites of Special Scientific Interest because of the potential for harm to their wildlife interest.
- In relation to solar panels there is no recognition that disturbance of roof installation may disturb bird or bat roosts. Respondents propose that ecological/bat surveys should be required before development is permitted and the extension of the microgeneration certification scheme to include solar panels to protect bats.
- A number of local authorities raised concerns that there are no opportunities to safeguard habitats that fall outside statutory protection and no requirement for submission of ecological surveys
- The caveat set out in paragraph 2.39 of the consultation document is considered to have limited impact since it is not clear who would assess whether or not there was a risk to a protected species or who is responsible for contacting Natural England. It should be a requirement of companies registered in the 'Microgeneration Certification Scheme' to assess risk, and if necessary contact Natural England.

5.8.2 IMPACTS ON GEOLOGY AND GROUND RESOURCES

In relation to the impact of technology installation on geology, the following general comments were received:

- foundation requirements for wind turbines are not considered under the proposals, increasing the potential for contaminated land to be exposed
- there is no means to regulate the depth of boreholes for ground source pumps
- the impact on water tables and sensitive geological features has not been considered

5.9 Archaeologically sensitive areas

Section 2.40 of the consultation document acknowledges the potential impact that the installation (and therefore excavation) of ground source heat pumps can have on important archaeologically sensitive sites. In response to this the Government recommends that where there is a risk to a site, an installer first discusses the development proposals with the local authority.

A limited number of respondents commented on the potential impact of technology installation on archaeologically sensitive areas. In general, comments focused on the installation of ground source heat pumps and the foundation requirements of stand alone technologies. The following particular comments were received:

- Guidance set out in the consultation document is not sufficient to protect archaeologically sensitive areas. Many installers will not be aware if there is potential for archaeology with over 95 per cent of archaeological resource being undesignated and therefore the only protection afforded to this is through the planning system.
- Prior notification should be the preferred approach to regulation.
- There is the potential for adverse impacts on specific heritage assets which are widespread within National Parks and although they are often protected through legislation, such as protected species and Scheduled Monuments, such impacts are often only picked up through the planning application process.
- Under the proposals any impacts may not come to light until the development has already taken place. This harm may not be obvious, for example when installing ground source heat pumps laid horizontally, which could have significant effects upon archaeology.
- The proposed permitted development rights represent an unacceptable threat of damage to buried unprotected archaeology.
- The proposals do not assess the harm caused to the setting of a heritage asset.

5.10 Biomass energy emissions

Recognition is made in the consultation document of the potential impact that biomass related development can have on the environment, which may be considered a planning concern. With regards to the proposed regulatory approach, the consultation document considers it sufficient to permit installations with a capacity of below 45kW without a planning application on

the basis that *"biomass systems must already comply with European and national emissions regulations, particularly orders made under section 21 of the Clean Air Act 1993 which authorises certain fireplaces capable of smokeless operation for use in smoke-control areas. Only boilers burning authorised ('smokeless') fuel can be used in smoke-control areas, but fuels which have not been authorised can only be used in a smoke control area in a fireplace capable of 'smokeless operation''*.

Respondents made very few comments in relation to emissions and were generally supportive of the proposals.

A number of renewable energy manufacturers identified how air quality is already well managed within existing regulations and that the majority of small scale biomass technologies are clean burning with high conversion efficiencies. Moreover it was noted that all biomass installations must be installed in accordance with the guidelines stated within Part L and Part B of the Building Regulations.

Where concerns were expressed by respondents, these related to a lack of reference to Air Quality Management Areas, where it was suggested by a number of local authorities that permitted development rights should be restricted.

5.11 Traffic impacts

Section 2.44 of the consultation documents states that in relation to biomass boilers (see sections 6-12 for detailed response) the consultation document identifies the potential impact that the regular delivery of fuels and other materials needed to supply large scale biomass and waste management systems may have on local road networks. In response to this, and to mitigate the impact it is proposed that conditions as with Parts 6 and 7 of the General Permitted Development order are applied.

Very few comments were received in relation to potential traffic impacts and it was generally considered that the proposed regulatory framework would provide sufficient mitigation.

With regard to the source of material to be used, views were mixed; some respondents felt that the thresholds were overly restrictive and should be broadened to encourage take up, while others felt that the proposed thresholds were adequate.

5.12 Public safety

Section 2.46 of the consultation document acknowledges the role of the planning system in controlling the impact of development on public safety. For example it recognises that developments should not block sightlines at

major road junctions, wind turbines must not sited where they could be a danger, and vehicle charging points should be installed so that their cables are not likely to trip up pedestrians. Subsequently, restrictions on siting are proposed where there could be a danger or a nuisance to the public.

A limited number of respondents commented on the issue of public safety. Comments received were generally limited to the safety of wind turbines and electric vehicle charging infrastructure.

- With regard to wind turbines respondents stated that topple heights of stand alone wind turbines on non-domestic properties do not allow for the safety of those using nearby footpaths or gardens.
- A limited number of respondents believed that the requirements for electric vehicle charging equipment had an inadequate recognition of safety aspects in relation to the 'cable' element. It was suggested that using brightly coloured curled (yellow) cable, which prevents a trailing cable in the gutter or onto the footway, would ensure pedestrian visibility and reduce the risk of tripping.

5.13 Advertisements

Section 2.49 of the consultation document states that for the purposes of controlling consistency in the design and presentation of electric vehicle charging points, and the control of associated advertising/public information the Government proposes that two non-illuminated nameplates, each with a maximum size of 70cm², displayed on an electric vehicle charging point should be granted deemed advertising consent.

A limited number of respondents commented on the control of advertisements on electric car charging points. In relation to electric car infrastructure in general, respondents were very supportive of the transition from direct fossil fuel to electric technology. A small number of issues were raised among respondents and it was considered that:

- The permitted non-illuminated nameplates should not be used for general advertising or sponsorship, but the presentation of operating instructions and general safety guidance.
- The size of the nameplate does not relate to the overall maximum size of the charging point, which may result in undue prominence, and the potential to maximise the impact as a means of advertising.

- In recognition of the need to create an efficient, integrated network of car charging points across the country, providers must consider ways to reduce capital outlay, either through brand association or advertising. With this in mind, some respondents expressed a need for increased adverting potential to attract the attention of traditional road users.

6 Consultation questions

This and the next six sections set out the responses received with regard to the sixteen questions contained within the consultation document. For each question a quantitative and qualitative analysis of the responses has been provided. It should be noted that the percentage under 'answered' is absolute e.g. it indicates the percentage of all respondents who answered this question. The percentages relating to support for the proposals are relative i.e. of those that answered, what their support was for the question. The combined total of "Yes," "Yes, but," "No" and "No, but" will therefore be 100 per cent.

Table 3 below provides a summary of all the responses received.

Table 3: Summary response statistics to consultation questions

Question	Response rate, per question	Yes	Yes, but	No	No, but
1: Do you agree with the proposals for wind turbines on domestic premises, as set out in Tables 1, 2 & 3?	77%	14%	48%	28%	9%
2: Do you agree with the proposals for air source heat pumps on domestic premises, as set out in Table 4?	58%	30%	42%	21%	8%
3: Do you agree with the proposals for wind turbines on nondomestic premises, as set out in Tables 5 and 6?	70%	15%	54%	23%	8%
4: Do you agree with the proposals for air source heat pumps on non-domestic premises, as set out in Table 7?	59%	32%	40%	20%	9%
5: Do you agree with the proposal for ground source heat pumps on non-domestic premises, as set out in Table 8?	53%	45%	31%	19%	5%
6: Do you agree with the proposal for water source heat pumps on non-domestic premises, as set out in Table 9?	47%	55%	24%	17%	4%
7: Do you agree with the Government's proposals for solar panels on non-domestic premises, as set out in Tables 10, 11 and 12?	56%	35%	47%	13%	5%
8: Do you agree with the proposal for flues for biomass systems and combined heat and power (combined heat and power) systems on non-domestic premises, as set out in Table 13?	52%	48%	28%	21%	3%

Question	Response rate, per question	Yes	Yes, but	No	No, but
9: Do you agree with the proposal for structures to house , biomass boilers, anaerobic digestion systems and associated waste and fuel stores on agricultural and forestry premises as set out in Table 14?	43%	61%	26%	12%	1%
10: Do you agree with the proposal for structures to house hydroturbines on agricultural and forestry premises, as set out in Table 15?	40%	65%	19%	15%	0%
11: Do you agree with the permitted development and advertisement deemed consent proposals for electric vehicle charging infrastructure as set out in Tables 16,17,18 & 19?	44%	59%	31%	7%	2%
12: Do you agree with the definitions used for the purposes of this document?	42%	67%	22%	6%	5%
13: Do other concepts or technologies need specific definitions?	39%	43%	9%	42%	5%
14: Do you think that the impact assessments provide an accurate assessment of the likely costs and benefits of the preferred policy options?	25%	33%	18%	45%	4%
15: In particular do you agree with our estimates of the possible costs to local authorities in relation to investigating noise complaints?	19%	38%	16%	41%	5%
16: In the impact assessments, we assume that the process of obtaining planning permission acts as a disincentive to the take up of renewable technology and that by removing this disincentive take up would increase by between 2% and 5% annually. Do you think that these assumptions are reasonable?	30%	37%	31%	31%	2%

7 Proposals for domestic premises

7.1 Question 1 – Do you agree with the proposals for wind turbines on domestic premises, as set out in Tables 1, 2 and 3?

This question sought views on the proposal to extend permitted development rights to wind turbines mounted on a detached dwelling house, mounted on a freestanding outbuilding within the curtilage of domestic premises and stand alone turbines within the curtilage of domestic premises.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
77	14	48	28	9

This was the most frequently answered question among all respondents. The majority of respondents (62 per cent) agreed with the proposals overall. However, the majority of three respondent groups; individuals; environment and community; and others were opposed.

The following general comments were received in support of the proposals (including responses which sought to extend the permitted development rights beyond those proposed):

- Limiting permitted development rights to detached buildings was welcomed as being simple and effective and would prevent any problems with vibration transmission (Local authorities, academe and professional).
- It was suggested that it should be possible to extend permitted development rights to non-detached dwellings through setting an absolute vibration threshold level at turbine mount below which there is no significant risk of disturbance due to this pathway (Academe and professional).
- With the onset of feed-in tariffs in 2010 it was considered that the permitted development rights would prove useful (Academe and professional).
- There are cases where the separation between a pair of semi'-detached or end of terrace properties is greater than some detached dwellings and therefore it would be fairer to allow all types of dwellings to install turbines and set a threshold for siting e.g. distance from boundary.

The following general concerns were raised regarding the proposals:

- That the proposals were limited to certain technologies which could limit the effectiveness of the permitted development rights. One such technology is Vertical Axis Wind Turbines which have different considerations for rotor diameter and were considered to be particularly appropriate for urban installations due to compatibility with turbulent winds, low wind and no/minimal shadow flicker considerations (Renewable energy industry, academe and professional).
- A few respondents queried why micro wind turbines were being encouraged given their noise and visual impact and limited energy generation benefits. Permitted development rights should only be in areas with suitable wind speeds to avoid waste of investment (Individuals). In order to ensure that wind turbines are only installed in suitable locations it was considered that wind speed could also be criteria. Only where suitable wind speeds are present would the turbine be permitted development (Local authorities).
- Support for permitted development rights for standalone turbines was limited through concern that the impact of ground disturbance upon archaeological resources would not be assessed. If the requirement to check with the local planning authority regarding archaeology is not mandatory, the chances of a checking exercise would take place under permitted development would be low. Where there is to be material ground disturbance provision should therefore be made to safeguard undesignated archaeological resource (Academe and professional, government bodies).
- Foundation requirements for stand alone wind turbines could have health and safety implications in relation to historic mine workings (Government bodies).
- It was recommended that conditions be set regarding the monitoring and maintenance of the equipment (Government bodies).

Mixed views were also received on the acceptability of a prior approval process; some respondents considered that this was not appropriate whilst others considered that such a process for was necessary to ensure that uptake and impacts could be monitored (government bodies). In particular the environment and community group typically considered that prior notification should be introduced for a fixed term for development within areas of outstanding natural beauty to ensure that proposals are acceptable within these areas.

The following sections set out detailed comments provided in respect of the proposed limitations/conditions. Generally, the comments made by respondents applied to multiple tables; where the comments only relate to one of the tables this is stated.

7.1.1 MICROGENERATION CERTIFICATION SCHEME

The following comments were raised regarding the microgeneration certification scheme:

- That the microgeneration certification scheme would be unenforceable as local planning authorities could not legitimately take enforcement action against such equipment that met the threshold requirements purely on basis that it was not installed by a certified installer. Instead it would be more appropriate if this was controlled under either Building Regulations or Licensing regimes (Local authorities, academe and professional, owners).
- Concern was raised that the scheme needed to be improved due to production certification waiting times and high costs associated with certification which was resulting in an insufficient number of turbines being certified through the microgeneration certification scheme (Academe and professional).
- It was considered that the microgeneration certification scheme would create a monopoly for certified installers, which is likely to increase costs and act as a deterrent to installing turbines under the microgeneration certification scheme (Local authorities).
- It would be prudent to require registration of an installation on-line: e.g. to a central database accessible by local planning authorities so in event of complaint local planning authority can check whether installation certified (Academe and professional).
- Information and training should be provided to installers so they can identify signs of bat roosts and are aware of any legal responsibilities (Environment and community).

7.1.2 LOCATION

The following comments were made in respect of location:

- Further clarity was requested regarding how the safeguarding zones will be defined since the draft document was not provided (Academe and professional).
- A recent appeal decision found that turbines in certain locations do impact on the operation of radar at aerodromes. However, this impact was not identified from the existing safeguarding map; further

consideration of the terrain and ground levels needs to be undertaken before permitted development rights can be applied (Academe and professional).

- Concern was raised that the safeguarded areas may be too restrictive and may prevent the uptake of turbines (Owners, renewable energy industry).
- Concern was raised regarding whether fixed links associated with broadcast networks would be affected by micro turbines since it was considered that the location of the turbine would affect this. It was suggested that for building-mounted or freestanding turbines, permitted development rights are subject to a condition making rights conditional upon the developer being given clearance under procedures set out in 'Tall structures and their impact on broadcast and other wireless services' published by OFCOM (Owners).
- Small wind turbines constitute a Major Hazard within a parachute dropping zone (British Parachute Association Operations Manual); permitted development rights should not apply within 3km of the perimeter of an aerodrome – this would be consistent with height limitations set out in Part 6 of the General Permitted Development Order (Owners).
- No reference has been made to the distance that turbines should be located from a boundary when installed; the distance should either be applied consistently to all turbine locations (Local authorities, academe and professional) or not at all (Academe and professional).
- Permitted development rights limit turbines to maximum height of 15m; disagreement that this raises requirement to exclude National Air Traffic Services /Ministry of Defence /Civil Aviation Authority safeguarded areas. Further information is requested which confirms that wind turbines not exceeding 15 metres in height and swept area of blade of 3.8m poses a risk of interfering with air traffic control (Environment and community).

7.1.3 MAXIMUM HEIGHT

The following comments were made in respect of maximum height:

- Concern was raised that the 3m projection above the roof line would have a detrimental impact on the streetscape especially where a row of turbines was installed; it was suggested that 2m would be more appropriate (Local authorities, other, academe and professional, environment and community).

- Concerns were raised that the restrictions on height (and swept blade area) for wind turbines would mean that any turbine designed and installed to these parameters would only produce very limited energy since the height is critical to the turbine performance. The turbine would therefore add little value (Renewable energy industry).
- Concern was raised that vibration and safety may be sources of enforcement complaints since no restriction is proposed on the distance from boundary and height of turbine on a outbuilding; it was suggested that a restriction be imposed so that no part of blade be within 5m of boundary or curtilage of the building (Local authorities).
- Clarification was requested regarding whether the limitation of 'above the highest part of the roof' includes chimneys (Local authorities).
- It was requested that wind turbines on domestic properties should not be permitted in front of the building or, where roof mounted, not on the principal elevation to ensure that proposals are consistent with other permitted development rights (Local authorities).
- A query was raised regarding the 15m overall height restriction since buildings with good wind resource will sometimes be higher than this (especially in urban areas) and should not be excluded from permitted development rights (Academe and professional).

The following comments were made specifically in relation to stand alone turbines:

- It was considered that the 11.1m limit appeared 'random' and that the height should be standardised to 15m to accord with the proposals set out in consultation paper tables 1 and 2 (Local authorities).
- Whilst the proposals only allow for 1.5kW turbines field trials have shown that real gains have been made when installing larger turbines e.g. 6kW & above. It was considered that where domestic properties are sited 200m from the nearest residence provision should be made for the installation of 6kW wind turbines especially given that the non-domestic proposals would allow 6kW turbines on non-domestic which could be closer to domestic properties than the 200m proposed (Academe and professional).

- It noted by one respondent that PPS7 identifies National Parks and areas of outstanding natural beauty 'as having the highest status of protection in relation to landscape and scenic beauty '. It was not considered that the proposed permitted development rights for wind turbines are in line with the provisions set out in Planning Policy Statement 7 or within the provisions of Planning Policy Statement 22 which states that a renewable energy project should only take place where it can be demonstrated that the objectives of a nationally recognised designation will not be compromised (Environment and community).

7.1.4 SWEPT AREA OF BLADE

The following comments were made in respect of swept area of blade

- It was considered that the proposed definition is too complicated and that it would be simpler to use maximum blade length (Local authorities).
- It was considered that up-scaling the swept area of a turbine would capture economies of scale in manufacture and installation. It was suggested that no limit should be placed on swept area but that the overall hub height should be maintained. Other suggestions for the radius included 3m and 4m (Renewable energy industry).
- It was considered that within residential areas, the blade width was acceptable. However, this should be increased to 6m blade diameter at remote properties where the turbine is sited 200m from nearest residential dwelling (Academe and professional).

7.1.5 SETBACK FROM BOUNDARY

Local authorities raised the following concerns:

- no setback restrictions are proposed for wind turbines mounted on a detached dwelling house
- setback from the boundary for stand alone turbines is too onerous given 5m limit on turbines attached to outbuildings
- restrictions should set a minimum distance between turbine and neighbours' windows
- setback restrictions should be standardised across the three tables to reduce unnecessary complexity

7.1.6 NOISE LIMIT

This limitation/restriction raised most comment from respondents. A summary of the comments provided in support or against the proposed noise limit are set out below:

There was support, particularly from the renewable energy industry, for the noise limit of 45dB. Evidence provided in support of this position included the following points:

- A lowering of the noise level threshold even 3dB below this level would reduce the UK small wind market by between 21 per cent -25 per cent, jeopardising significant economic, environmental, and employment opportunities.
- Field research undertaken by the industry has demonstrated that thousands of small wind systems have been installed that are exposing neighbouring dwellings to noise levels in excess of 45dB (and indeed 55dB), and are resulting in no noise complaints from neighbours.
- The proposed noise level is further supported by a number of in-built safeguards through the microgeneration certification scheme and the requirement for accredited installers. In addition, the proposed two-year review will provide a better understanding of the impacts of the new permitted development rights.

Several responses expressed concern that noise limits may be lowered in future. A lower limit is considered by technology providers to be too onerous and would stifle the growth of this business and take up (Renewable energy industry, academe and professional).

However, other respondents raised concerns about the 45dB limit and many respondents considered that it would be more appropriate to apply the 37dB limit (Local authorities, academe and professional, government bodies, other, environment and community). The arguments for this are set out below:

- The noise limit applies irrespective of ambient noise level (e.g. in urban and rural areas equally) and does not address issues of noise in sensitive areas or the cumulative impact of noise.
- The noise limit proposed is different to the assessment regime undertaken when investigating a statutory nuisance complaint – it was suggested that the noise limit should relate to the background level as per the existing nuisance assessment regime and ‘rated’ as per BS4142:1997 for permitted development purposes, potentially adding a further 5dB difference to the levels under assessment.

- Use of equipment at night time, when ambient noise levels are lower, will cause greater disturbance to residents and increase the likelihood of complaints; World Health Organization Night Noise Guidelines for Europe recommends a night-time guideline value of 40dB(A).
- The five-minute measurement was considered by one respondent too short a period and should be replaced with Laeq 15min.
- There was concern the proposals do not take into account fluctuating noise affected by wind speed. Given fluctuation, the annoyance factor will not be adequately expressed using Lacq parameter. If an absolute noise level is considered, an Lmax measurement is recommended.
- Concern was raised about the use of a single measure. A weighted scale may not be the best indicator because it does not provide an indication of the frequency spectrum of the noise i.e. discrete tones can be more prominent than broadband noise. Instead a third octave band spectrum or NR curve should be considered to ensure that there is not a strong tonal element within the noise level.
- Measurement of 1m from habitable room does not match current statutory nuisance procedure which takes into account use of gardens, patios, balconies etc; the proposed measurement should be in line with current practice. Others suggested that it should be extended to include impact on publicly-accessible areas.
- Façade effect in measuring noise not accounted for.

Other respondents suggested that the level should be set at 35dB. Within the range of 35-45 they considered that it might be possible to develop a short form noise impact assessment method involving some appreciation of context and likely background/ambient condition. Further work would need to be undertaken to establish whether the assessment could be undertaken as a desktop exercise or whether background noise survey work/more detailed study would be required. Until such an assessment method is developed for 35-45 range, current proposals should be implemented with threshold at 35dB (Academe and professional).

Concerns were also raised with regard to compliance and enforcement of noise limits also (Local authorities, academe and professionals, renewable energy industry):

- Difficulty in measuring noise levels prior to installation. Limits will be judged after installation, when it will be too late to decide if planning permission is required.
- Householders lack equipment, expertise and ability to monitor compliance at neighbour's façade.

- Not possible to judge whether noise limit is being exceeded or not, leading to increase in potential complaints regarding compliance monitoring, which would have consequential resource implications.
- Noise will not be routinely measured unless a statutory nuisance is suspected. Noise emitted from equipment has the potential to change/increase over time.
- Cost and resource implications for local authorities to respond to increase in noise complaints – by both Planning Enforcement Officers and Environmental Health Services.
- There is a need for specialist noise measurement which may place a significant drain on Council's resources.

7.1.7 NUMBER OF TURBINES

The following comments were received in respect of the number of turbines:

- Concern was raised regarding the cumulative impact where a number of different properties are in close proximity: e.g. on a housing estate (Local authorities, other).
- It is considered that the proposed limit of one turbine is arbitrary without specification as to size of premises since the cumulative disturbance caused by two turbines on one large domestic building would be no more than from two neighbouring smaller premises each with a turbine (Academe and professional, owner).
- There was disagreement that planning permission should have to be secured to install an air source heat pump if a turbine is already installed. Instead a cumulative noise impact assessment should be used to assess whether an additional installation would create noise disturbance. It was noted that these are completely different technologies and both may be seen as complementary renewable technologies and also key to the low carbon programme (Academe and professional, local authorities, renewable energy).
- Instead of limiting installations by number it was considered that turbines should be limited by noise nuisance level whether cumulative or individual installations; the level should be set at internationally or EU agreed levels (Renewable energy industry).

7.1.8 MATERIALS

A limited number of comments were received in respect of materials:

- As part of the permitted development rights, colour/finishes for masts, towers, blades and rotors etc should be specified (Local authorities).
- It was considered that the requirement for use of non-reflective materials on blades was not sufficient to mitigate impact on shadow/flicker (Local authorities).
- A query was raised regarding the requirement for turbine blades to adopt materials possessing low levels of light reflectivity. It is considered that the potential for light reflection from any aspect of a small wind system to affect neighbouring occupiers is likely to be very small and can be safeguarded by ensuring acceptable separation distances from the boundary on which a wind turbine is installed. Clarification was also requested on how material reflectivity might be calculated, gauged, limited, and enforced in a scientifically robust and constructive manner (Renewable energy industry).

7.1.9 PROTECTION OF SENSITIVE AREAS

A mix of views was received on which areas should be afforded protection and how that protection should be effected. Comments included the following:

No special protection has been proposed for protected species, especially bats. It was suggested that permitted development rights should only apply either (i) where "turbine blade tips are situated at least 50 metres from any habitat features or structures suitable for roosts". This would accord with advice in Natural England's Technical Note TIN051 "Bats and onshore wind turbines - interim guidance", or (ii) where the turbine shall be switched off and the turbine blades kept at rest between the following times: half on hour before sunset until half an hour after sunrise during the period 1 April to 31 October (Local authorities).

Sensitive Areas and Article 1(5) Land

Given the Environment Impact Assessment Regulations, all sensitive areas should be subject to a local authority screening opinion and permitted development rights therefore may not apply (Academe and professional).

Different views were received on the inclusion of Article 1(5) land within the permitted development rights (Local authorities, academe and professional, other, government bodies, environment and community):

- No protection has been given to National Parks, Green Belt and areas of outstanding natural beauty. Limitations should also include National

Nature Reserves, Sites of Special Scientific Interest, special protection area, special area of conservation, and Ramsar sites.

- In particular for National Parks, it was not considered that the consultation had regard for section 62 of the Environment Act 1995 where a Minister of the Crown is a relevant authority, and therefore is under a duty to have regard to National Park purposes in the exercise or performance of its functions which includes implementation of the General Permitted Development Order.
- Historic battlefields and registered parks and gardens should be included otherwise it would conflict with paragraph 11 of Planning Policy Statement 22.
- No permitted development rights within areas of outstanding natural beauty otherwise it would conflict with paragraph 11 of Planning Policy Statement 22.
- No permitted development rights within Conservation Areas and World Heritage Sites.
- Permitted development rights should exclude all development within world heritage site.
- Support for permitted development rights in Conservation Areas where not visible from public highway (including private right of way) or from publicly accessible land.
- Need for tighter restrictions in National Parks, areas of outstanding natural beauty and the Broads; it would be appropriate to lower maximum height for turbines.
- Paragraph 13 of Planning Policy Statement 22 states that consideration will need to be given to renewable energy projects within Green Belt. Consideration cannot be given if development within Green Belt is permitted development.

Visibility from highway

The limitation ‘visible from any highway which bounds the curtilage of the property’ was seen as contentious for the following reasons (Local authorities, academe and professional, government bodies):

- A turbine may also be visible from highways that do not bound the curtilage of a property; views from further afield need to be taken into consideration other than just an adjacent highway, especially when maximum height limit is 15m.

- Clarification on visible from a highway – does this extend to / include the tip of the blade?
- Does not address the situation of enclosed communal gardens and buildings that front historic parks and gardens, which will be visually affected.
- Suggestion that the phrase 'which bounds the curtilage of the property' be deleted.
- Suggestion that the wording 'or the nearest highway where none bounds the curtilage' be added.
- Suggestion that wording be amended to say ‘from any public vantage point’.
- No account is taken of the buffer zone around a World Heritage Site.

7.1.10 LISTED BUILDINGS AND SCHEDULED MONUMENTS

The following comments were made in respect of listed buildings and scheduled monuments:

- Planning Policy Guidance 15 and Planning Policy Guidance16 refer to assessment of developments affecting the setting of assets - permitted development rights should be restricted where they affect the setting of a listed building or scheduled monument (Local authority, academe and professional).
- Wind turbines within sensitive areas (e.g. Ancient Monuments) are subject to the need for an environmental impact assessment screening opinion from the local planning authority (Academe and professional).

7.1.11 DE-COMMISSIONING

Limited comments were received on de-commissioning:

- Decommissioning should be required when equipment is no longer used; therefore replace ‘needed’ with ‘used’ (Local authorities).
- Definition needed of 'reasonable' period for decommissioning redundant equipment (between 3-6 months suggested) and how one would know when the turbine is no longer required? (Local authorities, academe and professional).

7.2 Question 2
Do you agree with the proposals for air source heat pumps on domestic premises, as set out in Table 4?

The large majority (71 per cent) of respondents agree with the proposals and this was the case for all categories. The main concerns are set out below.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
58	30	42	21	8

7.2.1 NOISE LIMIT

The major reason for objecting to the proposals was on the ground of the noise limit being set too high. This was particularly raised by the environment and community group.

As for wind turbines, industry respondents in particular think the noise limit is appropriate and would not lead to many complaints from neighbours. Some field derived evidence was provided to support their case. Comparisons were also made with other technologies such as oil boiler flues where levels in excess of 49dB apply. Other arguments in favour of the 45dB figure reflect those which justify it for domestic wind turbines, particularly the concern that the limit would be lowered in future, which would be detrimental to expanding the technology and stifle innovation.

Other respondents argued that the noise limit would be a problem, especially at night and in summer when windows may be open. There were particular concerns that the limit is too high for rural settings. Some responses from the academe and professional group considered that a 37dB limit is more appropriate where there is an acoustic feature (BS 4142:1997) or otherwise the limit should be reduced to 40dB. They considered that the threshold should vary by local planning authority area depending on ambient level, nature, character and locality of the area.

It was also noted, primarily by local authorities, that the noise limit will create enforcement issues as there is a need for specialist noise measurement which may drain councils' resources. One local authority also raised concern regarding the potential cumulative impact of air source heat pumps on adjacent properties and did not consider that this had been considered within the proposals.

7.2.2 SITING

Some responses from the owners, academe and professional and renewable energy industry categories considered the siting requirements to be unsuitable since it is possible that the most effective and practical place to install equipment may be on an elevation fronting a highway. It was noted that no other technology covered has a similar requirement. Furthermore, one respondent from the renewable energy industry group suggested that visibility of the technology should be encouraged in order to grow acceptability in the market place and raise awareness. It was suggested that as an alternative to this requirement there could be a stricter limit on size/volume of the unit if sited facing a highway.

The siting limit was also seen as contentious by a number of local authorities, the following comments were raised:

- Foliage on trees may mean equipment is not visible in summer but visible in winter.
- The wording ‘fronting’ was deemed illogical when revised permitted development rights for dwellings now refer to the ‘principal’ elevation.
- There was concern that there is no protection for Conservation Areas.
- It was suggested that the limits should be extended to include the roof of a building as this would have a visual impact.
- There was concern that the limit would mean that a visually obtrusive installation could be installed on a rear or side elevation. It was therefore suggested that 'and sited on an elevation which fronts' be deleted.
- Concern was raised since a height limit on where the pumps could be located had not been proposed. It was considered that installations on upper storeys would have a far greater effect (visually and in terms of noise) than those on the ground floor level.

7.2.3 NUMBER

Restriction on the number of air source heat pumps was also considered by several respondents to be too restrictive. It was highlighted that for larger properties it may be necessary to install two heat pumps and therefore consideration should be given to the property type and location when specifying the number. Some respondents from the ‘owners’ and renewable energy industry’ sectors suggested allowing permitted development for air source heat pumps ‘per occupier’ rather than ‘per building’, as long as they do not cumulatively exceed the given volume threshold.

7.2.4 DEFINITIONS

Several responses considered that a clear definition also needs to be provided on exactly which parts of the installation are included in the 1 cubic metre envelope. Most comments on the reasonableness of this limit were received from the renewable energy industry group. Some felt this limit was reasonable, with other suggested it was too restrictive. The local authorities raised concern as to whether the limit is a practical measurement if the equipment is a complex shape: one authority suggested a discrete measurement such as ‘no greater than 1m long in any dimension’.

Some respondents considered that the definition of an ‘air source heat pump’ needs to be clarified so as to include both air-to-water heat pumps and air-to-air heat pumps.

8 Non-domestic proposals

8.1 Question 3 - Do you agree with the proposals for wind turbines on non-domestic premises, as set out in Tables 5 and 6?

This question sought views on the proposal to extend permitted development rights to wind turbines mounted on a detached non-dwelling house and stand alone turbines within non-domestic premises.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
70	15	54	23	8

This was the second most frequently answered question among all respondents. A large majority of respondents (71 per cent) agree with the proposals, though the majority of the other group are opposed.

In general, respondents reiterated the comments made in respect of domestic wind turbines. Those comments are not set out again under this question; the comments below are therefore those comments which are specific to non-domestic proposals.

The following general comments were received:

- Concern was raised regarding the adequacy of controls and potential impact of proposals within mixed-use areas, town centres, or areas where residential land uses are located in close proximity to B2 uses. Many respondents considered that it was inappropriate to differentiate between the impact of general industry and installations elsewhere (Local authorities, individuals, government bodies, academe and professional, other).
- The proposed permitted development rights could restrict development previously permissible under statutory undertakers' permitted development rights; clarity is needed in relation to development on operational land and whether proposed permitted development rights apply (Academe and professional).
- The proposed permitted development rights do not apply to Uses C1, C2 and C2a – it is unclear why these classes have been excluded. Clarification is also required as to whether the permitted development rights extend to sui generis uses (Academe and professional).

- Non-domestic buildings can adjoin residential buildings and therefore the same safeguards are required as for domestic buildings (Academe and professional, environment and community, local authorities).
- It was suggested that permitted development rights for stand alone wind turbines should be extended to sites previously developed with radio towers/other utilities such as water towers since the material planning considerations are similar in nature and will have already been assessed in the application for radio/towers etc (Owners).

8.1.1 LOCATION

Comments were received regarding the safeguarded area (Owners):

- Individual airports are statutory consultees and have responsibility for defining the safeguarded zones.
- Need to define the air traffic safeguarded area.
- Increasing the tip point increases the safeguarded area.

8.1.2 B2 PROPOSALS

With the exception of the last comment, the following comments are made by local authorities with regard to the proposals affecting B2 premises only:

- It was considered that development within B2 uses was not sufficiently restricted and that the proposals did not take into account the varying locations where B2 uses were present.
- There is concern regarding the lack of noise restrictions on Class B2 premises.
- Distinction between B2 uses and elsewhere assumes industrial sites are of lower quality or importance in visual terms, which is not necessarily the case. Permitted development rights should apply equally to all non-domestic buildings.
- Some respondents considered that only one turbine should be allowed under permitted development for B2 uses.
- It is considered that noise restrictions/limitations should be applied to industrial sites since the development may impact on offices in the industrial units and neighbouring properties.
- It was suggested that restrictions applying to Conservation Areas/World Heritage Sites should be applied to B2 premises. The same approach should also be applied to areas of outstanding natural beauty.

- Further justification was requested regarding the inclusion of two turbines with permitted development rights for B2 and why there is no restriction on the swept area of blade (Environment and community).

8.1.3 MAXIMUM HEIGHT

The following comments were made regarding the height of the turbines:

- More consideration of the siting and maximum height of the turbines needs to be undertaken since the surrounding area will influence what is acceptable e.g. current proposals do not restrict siting an 18m mast against boundary of residential house (Academe and professional).
- Suggestions were made regarding extending the height of the wind turbine. Suggestions include 20m height with a 7m blade or hub height of 18m with 20m overall height (Owners, renewable energy industry).
- In order to encourage uptake, it was suggested that the environmental impact assessment threshold is increased from 15m to 18m so that the turbines do not trigger this requirement (Owners).
- Respondents from the Owner category indicated that the 18m stand alone turbines with 6m blades had not been assessed and might impact on radar interference (Owners).

8.1.4 SWEPT AREA OF BLADE

A limited number of comments were received in relation to swept area of blade:

- Respondents from the Owner category indicated that the swept area of the blade had not been assessed and might impact on radar interference (Owners).
- The swept area of stand alone installations was considered to be particularly restrictive, and it was considered that this should be increased to ensure efficiency of the installations (Renewable energy industry).

8.1.5 DISTANCE FROM BOUNDARY

A limited number of comments were received in relation to distance from boundary:

- Topple height does not allow for the safety of those on footpaths, in gardens etc (Local authorities).

- Distinction should relate to the curtilage of building containing any residential accommodation to account for areas of mixed use (Local authorities).

8.1.6 NOISE LIMITS

Respondents from local authorities requested further clarification on turbines and the 45dB limit; in particular, does the limit apply to one turbine or to the cumulative effect of two turbines permitted within a site?

8.1.7 NUMBER OF TURBINES

The following comments were made in respect of the number of turbines:

- It was considered that further turbines should be permitted on farmland over five hectares to allow the farm to become self-sufficient. Other respondents considered that the same restrictions should apply in rural area to ensure that the cumulative impact of the turbines is assessed (Other).
- It was considered that further study would be required to assess whether two turbines per site would have an impact on air navigation services (Owner).

8.2 Question 4 - Do you agree with the proposals for air source heat pumps on non-domestic premises, as set out in Table 7?

The large majority of respondents (72 per cent) agreed with these proposals. There was particular support from government bodies, all of whom answered 'yes' or 'yes but'.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
59	32	40	20	9

The general points raised for domestic air source heat pumps were also raised for non-domestic turbines.

8.2.1 NOISE

Some respondents consider that the maximum noise level should be reduced and either a relative noise standard, which relates to permitted

noise levels to existing ambient noise levels, applied or the previous proposal of 37dB reinstated.

Industry respondents felt that the proposed 45dB noise limit is appropriate, and that any noise level lower than this will seriously impede the growth and development of the industry.

8.2.2 NUMBER OF UNITS

Several respondents from the renewable energy industry group considered that the restriction in the number of units for commercial premises was particularly restrictive. Respondents noted that non-domestic buildings tend to have higher heat loads and these loads will require a cascade system of units rather than just one big unit. One respondent suggested that permitted development is allowed for air source heat pumps 'per occupier' rather than 'per building', as long as they do not cumulatively exceed the given volume threshold. One response from the local authority category however considered that the proposals should be more restrictive by specifying a limit on the number of pumps that could be installed on a Class B2 premises.

8.2.3 VOLUME

One respondent from the renewable energy industry felt that there should be no volume restriction for non-domestic properties because visual amenity is subjective and size limits can increase noise and have unintended consequences. Conversely one respondent from the environment and community group noted that it is not only residential areas that have any amenity or merit - applications come forward regularly for the conversion of rural buildings to non-domestic uses, including B2 uses, often for buildings of architectural or historic merit, where an insensitively sited air source heat pump (or turbine) would detract from that merit. One respondent from the local authorities group also considered that an air pump of 2m³ could be seen as a large and disproportionate addition to a small building.

The environment and community group considered that this particular category of renewable on non-domestic buildings is regarded as offering some of the greatest scope for carbon reduction, and they were therefore disappointed with the over-cautious nature of proposals. They also felt that limiting the number and volume of units will mean in practice that a significant number of public sector and commercial premises are untouched by these permitted development rights. One respondent from local authorities however considered that a height limit should be placed regarding where the pumps could be located. It was considered that installations on upper storeys would have a far greater effect (visually and in terms of noise) than those on the ground floor level.

A number of local authorities felt that the distinction between B2 uses and other uses appears misguided for air source heat pumps. They considered B2 uses should operate under the same restrictions as all other uses.

8.3 Question 5 - Do you agree with the proposal for ground source heat pumps on non-domestic premises, as set out in Table 8?

The large majority (74 per cent) of respondents agree with these proposals. There was particular (over 80 per cent) support from owners, government bodies and individuals. All of the respondents from the renewable energy industry agreed with the proposals.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
53	45	31	19	5

8.3.1 PROTECTION OF ARCHAEOLOGY

The primary concern raised with regard to ground source heat pumps related to the protection of archaeology. A number of respondents from a range of groups felt that the permitted development rights do not take account of the potential impact of ground disturbance upon archaeological resource; respondents considered that placing the onus on the installer to decide whether or not to discuss the plans with the local planning authority shows complete disregard for safeguarding archaeological heritage. Prior notification for archaeology was suggested as a potential way to deal with this. It was also suggested that installation should be conditional on at least a desk-based assessment of archaeological sensitivity, or that the county archaeologist should be notified prior to commencement of installation.

8.3.2 OTHER CONSIDERATIONS

Concerns were also raised by local authorities that the proposed permitted development rights provide no controls over impacts on ecology/trees/visual amenity. It was suggested that limitations relating to restoration works and ecological impacts should be more explicit.

A number of local authorities felt that the remedial condition for land to be ‘made good’ was too weak. There was a suggestion that land should be restored to its former condition: this was felt to be particularly important in designated areas. One respondent from the academe and professional category suggested that the wording of restoration condition should be drafted to satisfy the test in circular 11/95.

One respondent from the academe and professional category and another from the environment and community category considered that noise emissions and potential for nuisance have not been fully considered as part of the evaluation process.

A number of local authorities and environment and community groups stated that caution was needed for Sites of Special Scientific Interest, special areas of conservation, Ramsar Sites, Listed Buildings, World Heritage Sites, Scheduled Monuments, Conservation Areas and Archaeological Alert Areas for such large scale excavations. One respondent suggested that consent should be required to provide adequate protection. There was also a suggestion that all proposals should contain approved appropriate assessments.

One respondent from local authorities also requested clarification regarding what was meant by ground source heat pump. It was considered that the definition could relate solely to the underground pipe work or did it also include the erection of a small building to house the pump itself if the pump cannot be accommodated within existing buildings.

One respondent from local authorities also raised concern regarding the potential impact on semi-natural Biodiversity Action Plan habitats (in particular, grasslands) such as flower rich hay meadows and unimproved pastures. These habitats are outside statutory designations and would not come to the attention of Natural England. Section 41 of the Natural Environment and Rural Communities Act 2006 requires that these habitats are conserved and that reasonable steps are taken to conserve the habitats. Careful siting and use of conditions are needed to ensure appropriate siting and turf removal and reinstatement; this protection cannot be provided under the proposed permitted development rights.

8.3.4 AREA OF EXCAVATION

A number of local authorities felt that the 0.5ha limit on area of excavation seemed excessive; they also noted that depth is not mentioned. A response from the academe and professional group noted that an extraction of this size could have a major impact on ecology, ground water extraction and drainage.

Other points raised include that greater controls required in areas previously used for mining or on land known to be contaminated. Distinction should be made between different types of ground source heat pumps that have vertical and horizontal impacts. It was also suggested that clarification is needed on the extent of any above-ground development.

8.4 Question 6 - Do you agree with the proposal for water source heat pumps on non-domestic premises, as set out in Table 9?

The large majority (78 per cent) of respondents agreed with these proposals. All responses from the renewable energy industry, government bodies and owners were in favour of the proposals.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
47	55	24	17	4

There were a limited number of responses to this question, and comments largely match those for ground source heat pumps (question 5).

A few responses considered that the proposals do not fully consider noise emissions. Also, as for ground source heat pumps, concern was raised that the proposals do not provide adequate protection to archeologically-sensitive sites and conservation areas because the works will involve excavations. Prior notification was suggested as a potential solution to overcome this. One respondent from the local authorities group also considered that biodiversity and protected species (especially Great Crested Newts) had not been taken into account.

Some respondents considered that there should be a land remediation requirement and it was also highlighted that the permitted development rights could have a major impact on ecology, ground water extraction and drainage. One of the responses from a local authority suggested that the Environment Agency and Natural England should be notified prior to commencement of the installation. Another respondent from the local authorities group also requested that clarification was provided regarding extraction sources; only existing lakes and ponds would fall within the permitted development rights and formation of new lakes and ponds would require planning permission.

One respondent from the 'renewable energy industry' noted that the measure of surface area is not considered to be applicable to water source heat pumps which can extract significant quantities of ground water from a single borehole. It was suggested that instead a maximum abstraction rate could be stipulated.

A local authority also noted that there is no provision for monitoring or controlling impacts.

One respondent from the local authorities requested clarification regarding whether small buildings to house the pump would also be considered permitted development. They also requested that clarity on the definition of 'water source heat pump' be provided since two types could be installed;

'surface heat pumps' and 'water source heat pumps'. For ground water heat pumps clarification was requested regarding whether the formation/improvement of wells would also be considered permitted development.

8.5 Question 7 - Do you agree with the Government's proposals for solar panels on non-domestic premises, as set out in Tables 10, 11 and 12?

This question sought views on the proposal to extend permitted development rights to solar panels mounted on pitched roofs of non-domestic buildings, solar panels attached to flat roofs or walls of non-domestic buildings and a stand alone installation of solar panels on non-domestic premises.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
56	35	47	13	5

A large majority of respondents agree (84 per cent) with the proposals for non-domestic solar panels. The following general comments were made with regard to solar panels:

- Concern was raised that it has not been recognised that roof installation may disturb birds/bat roosts. It was suggested that ecological/ bat surveys should be required before development is permitted and that the microgeneration certification scheme should be extended to include bat protection as part of solar panel installation (Local authorities).
- More limited support from respondents for permitted development rights for stand alone solar panels since it was considered that the impact of ground disturbance upon archaeological resource has not been assessed and that the requirement to check with the local planning authority regarding archaeology is not mandatory and therefore may have more limited effect. If permitted development rights are to be introduced provision should be made to safeguard undesignated archaeological resource where there is to be material ground disturbance (Academe and professional, government bodies).
- It was considered that the proposals would exclude C use classes (Academe and professional).
- Concerns were raised that pilots may be dazzled by large arrays solar panels. The Ministry of Defence has defined a 2km exclusion zone that fans 10 degrees out from the runway which has not been acknowledged in the consultation document. Further study needed to be undertaken (the Civil Aviation Authority Safety Regulation Group is

studying the implications of large arrays of solar panels) which should be analysed before the permitted development rights come into force (Owners).

- The visual impact of unlimited solar panel installations especially from glare could be significant (Academe and professional, environment and community).
- Concern that some of limits to positions of the panels might have the effect of limiting the number that can be installed unnecessarily (Academe and professional).
- The permitted development rights should be extended to include solar combined heat and power systems which collect energy from the sun via a dish (Renewable Energy Industry).

8.5.1 LISTED BUILDINGS AND SCHEDULED MONUMENTS

A limited number of responses have been received on this topic:

- Planning Policy Guidance15 and Planning Policy Guidance16 refer to assessment of developments affecting the setting of assets - permitted development rights should be restricted where they affect the setting of a listed building or scheduled monument (Local authority, academe and professional).
- A limited number of respondents considered that permitted development rights should be extended to listed buildings where panels are completely out of sight such as within a valley roof (Academe and professional).

8.5.2 SIZE

The following responses were received regarding the size of solar panels:

- This limitation needs to be more specific and clear for pitched roofs. Unclear whether the requirement means the area of the roof, not the height, and, if 100 per cent of the roof area can be covered by solar panels, then this needs to be stated. Some respondents considered that a similar approach to table 11 should be adopted so that panels could not extend less than 1m from edge of building (Local authorities, academe and professional).
- It was considered that an inconsistent approach has been applied to stand alone solar panels where the size of the array is limited to 3x3m when a whole pitched roof can be covered and most of a flat roof. Furthermore, the 9m2 installation will only produce just over 1kW, which in most cases will be a fraction of the energy needed by even

the smallest commercial building (Local authorities, renewable energy industry, environment and community).

- Various extensions to the limit for stand alone panels has been proposed including 5x5m, at a height of 3m, within 10m of an existing building (Other), 7x7 (Owner) at least 18sqm should be allowed to make provision for 2kWp system which is set in terms of total area, not by dimensions as different shaped sites will require different dimensions for their installations e.g. to prevent shading (Academe and professional).
- The height of the unit should be measured from the surface to which the unit is attached, not from ground level. It is considered that a height of not more than 3 metres from the surface to which the unit is attached would be appropriate (Renewable energy industry).
- Clarification was requested regarding whether an array included the dimension of a solar collector.

8.5.3 PROJECTION ABOVE ROOF PLANE

It is considered that the government should consider restricting installations in all areas forward of the building line to protect character of the area (local authorities). In addition, respondents within the renewable energy industry and owner categories considered that the height restriction may lead to solar panels being installed below their optimal pitch; instead alternative heights included 1.5m, 1.6m or 2m. Furthermore clarification was requested regarding how the 1m restriction on flat roofs/walls would be measured (Local authorities)

8.5.4 AREAS WHERE THERE WOULD BE FURTHER PROTECTION

The following comments were made in respect of areas where further protection would be afforded:

- It is considered that proposals to permit solar panels on each orientation of roofs would lead to damaging effects in conservation areas; it would be more appropriate to limit installation to rear roof elevations, where practical, in conservation areas. Others were supportive of solar panels within conservation areas where not visible from public highway or from publicly accessible land (Local authorities, academe and professional).
- It was considered that the wall restriction in designated town centres should include panels on pitched roofs or stand alone arrays; restrictions in town centres should also apply to built-up areas in villages (Local authorities, academe and professional). Other

respondents considered that inclusion of designated town centres was unnecessary (Environment and community).

- It was considered that further protection was required for other article 1(5) land and also that more protection should be applied to B2 uses. Environment and community respondents suggested that a prior approval process also be brought in for areas of outstanding natural beauty (Other, environment and community, local authorities).
- Clarification was requested regarding the inclusion of areas of outstanding natural beauty, National Parks and the Broads only for stand alone solar panels in comparison to other microgeneration proposals (Academe and professional, environment and community). Two respondents noted that this limitation was contrary to paragraph 2.31 which states that all stand alone solar panels in sensitive locations would require the submission of a planning application (Academe and professional, local authorities).
- It was considered that limitations or conditions should be provided for free standing solar panels in registered parks and gardens (Local authorities).

8.5.5 DISTANCE FROM EDGE OF THE BUILDING/BOUNDARY

The following comments were received with regard to the distance from the edge of the building/boundary:

- Clarification was requested regarding how the distance from edge of building applies to wall-mounted panels (Local authorities).
- It was considered that the distance to the boundary for stand alone solar panels is excessive and that 5m would be more appropriate (Local authorities, owner, renewable energy industry).

8.5.6 NUMBER OF PANELS

The following comments were received regarding the number of panels which could be installed for stand alone solar panels:

- It was considered that the restriction was unnecessary and that the number of stand alone panels should be increased (Local authorities).
- Clarification was requested regarding the term ‘first stand alone installation’. Does this mean first stand alone array or the first installation? (Owner, renewable energy industry)

8.6 Question 8 - Do you agree with the proposal for flues for biomass systems and combined heat and power (combined heat and power) systems on non-domestic premises, as set out in Table 13?

The large majority (77 per cent) of respondents were in favour of the proposals. The highest levels of support were from academe and professional, owners and government bodies.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
52	48	28	21	3

8.6.1 AIR QUALITY

The most significant concern raised in response to this question related to the lack of reference in the proposals to air quality. This was particularly raised by local authorities who noted that assessment of odour or smoke from such equipment has not been provided.

A number of local authorities raised the potential conflict with the London Mayor's Draft Air Quality Strategy which states that planning applications with small biomass boilers in Air Quality Management Areas (air quality management areas) are considered unsuitable unless they can demonstrate they have no adverse effects on local air quality. Some local authorities suggested that there should be no permitted development rights within air quality management areas, and areas where a statutory further assessment of air quality was taking place, or areas identified through the Department for Environment, Food and Rural Affairs's biomass screening tool.

However, one local authority considered that air quality is unlikely to be significantly affected as separate legislation controls emissions from such installations. This was echoed by one respondent from the renewable energy industry who considered that the proposals conflict with the Building Regulations Part J and stated that air quality is adequately covered by the Clean Air Act, Smokeless zones and local authority air quality management strategy.

Local authorities also raised concern on the impact on the ability of Pollution Control staff to collect information on such boilers for air quality management purposes, which is usually collected via the planning process.

8.6.2 NOISE

Noise emissions, vibration and potential for nuisance were also considered by some to not have been fully considered as part of the evaluation process

where installations are in close proximity to noise sensitive premises; some respondents felt that visible impact has been afforded more priority.

8.6.3 NUMBER OF FLUES

Several responses from a range of respondent categories considered that the number of flues permitted should be increased. A response from a local authority noted that large biomass or combined heat and power installations may require and justify more than one flue, which should be acceptable. One respondent from the renewable energy industry felt that there is no justification for additional restraints on the number of chimneys per property because the current, existing planning rules and building regulations already ensure that none of the supposed negative impacts occur. One local authority response suggested that the permitted development proposals for flues are unnecessary as should be dealt with as part of combined heat and power consent.

A couple of respondents from the renewable energy industry considered the 45kW limit to be too small for the majority of non-domestic installations.

8.6.4 HEIGHT OF FLUES

With regards to the height of new replacement flues, a number of local authorities raised the concern of the potential harm to visual amenity. Some respondents felt that the height restrictions do not consider requirements under environmental health and questioned whether the height is sufficient to allow exhaust gases to clear surrounding buildings. They also noted that assessment on height needs to be site-specific and based on surrounding built structures, which may require higher flues. There is a greater likelihood of nuisance from odours if the correct stack heights given the individual circumstances/location cannot be considered.

8.6.5 OTHER CONSIDERATIONS

A respondent from Environment and Community group suggested that greater protection is needed in Conservation Areas because flues could be visible in areas other than the highway with a respondent from local authorities considering that greater protection should be afforded to National Parks, areas of outstanding natural beauty and The Broads. One local authority suggested that an additional limitation is imposed to prevent flues mounted on elevations fronting a highway to protect the character and appearance of building/area. Conversely one response suggested liberalising the restrictions by removing the limitation for non-domestic buildings, as for domestic buildings there is no restriction on flues in listed buildings.

Other responses noted that biomass units have an expectancy of 10 years, and one respondent therefore queried whether it is necessary to have a

requirement for decommissioning be incorporated into the permitted development rights.

9 Agricultural and forestry proposals

9.1 Question 9 – Do you agree with the proposal for structures to house biomass boilers, anaerobic digestion systems and associated waste and fuel stores on agricultural and forestry premises as set out in Table 14?

The large majority of respondents (86 per cent) were in support of these proposals. Those that did not support the proposals came from all sectors excluding the renewable energy industry and government bodies.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
43	61	26	12	1

One local authority suggested that in order to encourage development the need for prior approval should be removed and instead permitted development parameters should be specified. Other responses were generally supportive of the prior notification process, particularly responses from the environment and community group. It was considered that in assessing prior notification the local planning authority will take into account design, siting and means of access.

9.1.1 RESTRICTIONS FOR DESIGNATED AREAS

Responses from local authorities raised concern that there are no restrictions on erecting structures within designated areas. It was also noted, in responses from more than one category, that noise emissions, vibration and potential for nuisance have not been considered as part of the evaluation process where installations are in close proximity to noise-sensitive premises. One response from the environment and community group suggested that noise should be given equal or higher priority as visual impact.

One local authority suggested that the permitted development proposals for biomass structures are unnecessary as could be dealt with as part of biomass plant consent.

9.1.2 FUEL SOURCE

A response from the environment and community group suggested that the limitation relating to fuel source is overly restrictive and should have a wider radius by allowing fuel from other holdings in order to encourage combined

heat and power. It was suggested by one respondent that the condition instead should state the maximum volume that could be brought in from elsewhere. It was also recognised that wood chip or pellets are imported to fuel most on-farm biomass boilers, and permitted development should facilitate this.

This was also noted by one local authority that many agricultural and forestry sites are split in management and ownership terms, and as such there should be a restriction that waste or fuel cannot be imported from a distance of more than 30km.

A few respondents considered that crops, vegetable cuttings, animal slurries and other non wastes which are generated on the farm should be included. One respondent also queried whether it is possible that food waste can be included in order to reduce impact on landfill. One respondent also raised concern that farmland would be used for growing of biomass crops which would detrimentally impact agricultural productivity and affect the character and appearance of the landscape.

One response from the academe and professional category stated that sources and nature of anaerobic digestion feedstock are difficult to regulate unless through planning conditions, they highlighted that prior approval does not offer opportunity to impose planning conditions or any other adequate control.

A number of local authorities raised concerns that there is no limit on size in terms of floorspace, height and scale, other than those already laid out in Parts 6 and 7 of the General Permitted Development Order.

9.1.3 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

Some responses raised concern relating to environmental impact assessment regulations. One response from the Environment and Community group noted that there is no upper limit for the amount of material to be consumed. Given the size of some farms/forestry holdings it may be the case that some activities will trigger the requirement of an environmental impact assessment.

This was also raised by the academe and professional category who noted that there is no threshold set for energy generated, but under environmental impact assessment regulation over 0.5ha screened and development area would need to include source of fuel and include access tracks and will be likely to exceed 0.5 ha. It was noted that even if development was not considered to be environmental impact assessment development, Part 6 of the General Permitted Development Order has criteria for new buildings sufficient to control biomass boilers, anaerobic digestion etc where prior approval is applicable.

It was also noted that power generation as primary purpose falls outside the definition of agriculture given in s336 of Town and Country Planning Association; anaerobic digestion systems for farmers are based upon the premise of agricultural purpose: therefore farm permitted development rights cannot be included without legislative changes.

One response from the other group emphasised that proposed restrictions may result in plants that are sub-optimal in their power generation and it may also limit multi-farm cooperatives as the farms are not of a sufficient size for an efficient anaerobic digester. So ideally farms should group together to fund one larger digester that is unlikely to fall inside permitted development rights. Farms have a requirement to store slurry which may increase; therefore if they could group together for an anaerobic digester they could do this instead of storage.

9.2 Question 10 - Do you agree with the proposal for structures to house hydro-turbines on agricultural and forestry premises, as set out in Table 15?

The large majority (84 per cent) of respondents agreed with these proposals, although many respondents chose not to answer this question.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
40	65	19	15	0

Few comments were received in response to this question, and responses were generally supportive. Those that agreed with the approach generally welcomed the use of prior notification.

One respondent from the academe and professional category considered that the proposals do not reflect the aim of simplifying the planning system and do not assist in improving and streamlining the system. They considered that the norm for the erection of such structures is to form an integral part of development to enable their use which in itself requires planning permission.

The proposed permitted development rights would allow development in Flood Zones 3a and 3b which would trigger a requirement to consult the Environment Agency. Also, housing for hydro-turbines is not identified as a ‘water compatible use’ in table D2 of Annex D of Planning Policy Statement 25 but would fall be classified as ‘essential infrastructure’. Therefore, the sequential test and the exception test approach is required. Clarification was therefore requested regarding how the tests would be met.

9.2.1 VISUAL IMPACT

One response from the community and environment group considered that it should always be necessary to apply for planning permission given the potential visual impact. This was also recognised as a concern by one respondent from the academe and professional category who suggested that the structure should be made to blend with the landscape, preferably with a grass roof since most hydro schemes are in very remote rural areas. One respondent from the environment and community group also considered noise to be a significant issue, and felt that this should be given equal or higher priority as visual impact.

9.2.2 SAFEGUARDING AREAS

A number of local authorities raised concern that there is no safeguarding of habitats that fall outside statutory protection and no requirement for submission of ecological surveys.

10 Electric vehicle charging infrastructure proposals

10.1 Question 11 - Do you agree with the permitted development and advertisement deemed consent proposals for electric vehicle charging infrastructure as set out in Tables 16, 17, 18 & 19?

The large majority (90 per cent) of respondents agree with these proposals. 100 per cent of respondents in the academe and professional, owners, government bodies and other categories agreed with the proposals.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
44	59	31	7	2

Generally speaking responses from all categories were supportive of the principle of these proposals and several respondents considered that the proposals could go further to encourage take up. It was recognised that adequate charging points are important in encouraging uptake of electric vehicles. However, it was felt that infrastructure must be planned as part of wider local, sub-regional and regional infrastructure planning processes and be integrated with transport and housing developments.

A number of local authorities were concerned that proposals will clutter streetscape. It was suggested that a clear framework is provided so that good practice is applied to location and style of any infrastructure. It was also suggested that details are specified for finished appearance and materials and that the installer of charging points be required to make good the affected areas if reinstatement of footway is necessary.

A number of local authorities also considered that proposals do not safeguard designated areas. They suggested that conditions exclude permitted development within the curtilage of a listed building (domestic or non-domestic), Conservation Area, Scheduled Monuments and World Heritage Sites. This was also raised by one response from the academe and professional category.

10.1.1 SITING

A number of local authorities raised concern that requirements need more specific guidance about appropriate locations for electrical charging points. They considered that siting provisions are not sufficient to stop leads being trailed around the corners of buildings. It was also noted that the proposals do not adequately recognise the safety aspects of cable, one response

suggested using brightly coloured curled (yellow) cable, which prevents a trailing cable in the gutter or onto the footway and ensures visibility.

Regarding an electrical outlet mounted on an external wall the siting requirements were considered by one respondent from the renewable energy industry to be too onerous. One respondent considered that for an upstand electric vehicle changing infrastructure often has a system of lights which inform a user of its availability and it is therefore beneficial to be able to see this from the road and hence the 2m restriction may be excessive, particularly when an off-street car park abuts the road.

One respondent from the ‘Other’ category also felt that the proposals were over restrictive in terms of listed buildings. They noted that people living in listed buildings already have restrictions on substantially improving energy efficiency and considered that the impact of electric charging points cannot harm the interest of the building.

It was suggested by one local authority that the siting requirement is amended to read 'fronting a highway used by vehicular traffic'. Another response from the academe and professional category questioned what is defined as highway; they considered that this should have a wide interpretation to include public footpaths.

It was also noted that a restriction on 2m from the boundary in terms of signs and charging points could be problematic if the designated area is small. It was suggested that the restriction should relate to the size of area allocated instead of a generic requirement. One of the suggestions for liberalising the permitted development rights was that the boundary restriction should be relaxed and there should be more than one per parking space for locations where vehicles could share multiple outlets from a single charge.

10.1.2 MAXIMUM HEIGHT

There was some concern from the local authority respondents that a height of up to 1.6m will have a significant impact on the character and appearance of the streetscape, especially in heritage areas. One responded suggested that the maximum height should be no higher than existing on-street electromotive charging points.

However, other responses considered the height limitation to be too onerous, one response suggested that the maximum height of the upstand could be increased to 1.7m. Another respondent stressed the need make sure all products in the market place fell within the stated height.

One respondent from the renewable energy Industry cited disappointed that permitted development rights were not proposed for solar PV canopies installed in car parks.

10.1.3 MONITORING

One response from a local authority highlighted that it will be necessary to monitor the uptake and use of the permitted development rights, and that long term durability of charging points is essential to maintain units and preserve the character and appearance of the vicinity. One respondent from the renewable energy industry raised concern with the decommissioning criteria because they considered that usage levels could be fairly low in the early years of development and it would be inefficient to remove infrastructure likely to be used in later years as the market develops.

10.1.4 ADVERTISING

Responses on advertising were mixed with those from the renewable energy industry sector considering the proposals to be too restrictive, and those from local authorities generally considering them to be too generous.

One response from the renewable energy industry' noted that the scale of the investment required to create a properly integrated network of charging points around the UK requires innovative ways of recovering the capital outlay; either through brand association and/or advertising. Responses from this sector noted that electric vehicle infrastructure has a role to play in educating the public about electric vehicles and that providers will need to compete for the attention of car drivers in order to create a viable, competitive business, and advertising their brand identity at each charging point to an approaching motorist will be an important factor.

A number of local authorities considered that it is important that small nameplates are not used for general advertising or sponsorship. One local authority also considered that 70 sq cm is too large and suggested 50 sq cm as a more appropriate size. Another local authority raised concerns that size does not relate to overall maximum size of the charging point, especially as future charging points are expected to be smaller, therefore undue prominence will be given.

One response from the environment and community group welcomed the limits on illumination. However, it was noted that charging posts typically have LED indicators to show if the charging point is in use, available or out of service and these are visible from a distance. It was highlighted that these should not be confused with nameplate illumination and therefore not permitted. One response also suggested that nameplates should include emergency information.

11 Glossary of terms

11.1 Question 12 - Do you agree with the definitions used for the purposes of this document?

Almost all respondents agreed (91 per cent) with the proposed terminology used within the document. Refer to Appendix B for details of the comments made in respect of the definitions.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
42	67	22	6	5

11.2 Question 13 - Do other concepts or technologies need specific definitions?

A significant minority (49 per cent) do not consider that additional concepts or technologies need to be included within the definitions. However, respondents did propose that a number of additional concepts or technologies should be included.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
39	43	9	42	5

A limited number of respondents queried why the proposals exclude mixed residential and commercial properties. It was also considered that a statement should be included discussing technologies that are unknown and how these will be dealt with.

The majority of respondents who did suggest the inclusion of additional terms did not provide proposed definitions. Where definitions have been suggested, these are set out below.

- ‘as for other developments’ on B2 premises
- distance from edge of building
- solar array
- micro-generation
- agricultural units should be referred to as defined in the General Permitted Development Order
- planning unit

- waste
- forestry holding
- hub
- highway
- within the curtilage of listed building
- non-residential uses
- ambient background noise level
- visible from highway should include part of highway adjoining site or whole of that highway
- curtilage
- solar panels – it is not clear if this includes solar slates or solar trees
- solar combined heat and power (comprising a solar collection dish) should be included
- turbine - vertical axis' turbines should also be included; these are an emerging technology and should benefit from the permitted development rights
- curtilage of farmland needs to be defined as this is not clear
- National Air Traffic Services, Ministry of Defence, Civil Aviation Authority safeguarded area needs to be defined
- anaerobic digestion system
- prior notification
- water source heat pump - The term ‘water source heat pump’ is not specific enough as there are two common types; ‘surface heat pumps’ featuring coils submerged in a lake, and ‘ground water heat pump’ where water is pumped from a well through a heat exchanger.

12 Consultation stage impact assessments

12.1 Question 14 - Do you think that the impact assessments provide an accurate assessment of the likely costs and benefits of the preferred policy options?

Very few respondents chose to answer this question; of those that did half considered the assessments did provide an accurate assessment of the likely costs and benefits, with the other half answering ‘no’ or ‘no but’.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
25	33	18	45	4

The following things were listed as missing costs:

- The possible upgrade required by the householder to the electric services in their property.
- Cost of assessing the safeguarded areas given the larger wind turbines and individual assessments will need to be undertaken for each turbine category. Furthermore, for transparency the radar cross-section presented will need to independently assessed. Also missing is the protection of safeguarded areas from unauthorised turbines.
- Impact on landscape should also be considered a cost. The analysis includes no reference to the natural environment and the representation of sustainable development is linked entirely to climate change. It was considered by one respondent that the loss of the natural environment is a cost which should be accounted for.
- Embodied energy costs should have been taken into account.
- Consideration has not been given to householder/businesses/those affected on mitigation measures to address nuisance issues.

The following points were raised as underestimated costs:

- Many local authorities queried whether the assessment takes account of full cost of monitoring noise and enforcing regulation. Some considered that the costs to local authorities associated with increased noise complaints and non-compliance is unrealistically low, especially during first two years of adoption.

- Local authorities considered that initial uncertainty with new permitted development regulations may see more Certificate of Lawfulness applications than estimated.
- It was also noted that local planning authorities could receive a significant number of environmental impact assessment screening requests and the resource implications of this need to be considered.
- It was also highlighted that some local authorities may never have received any applications for the type development listed and this could have significant resource implications.
- It was also suggested that there could be an increase in listed building consent applications.
- One respondent considered that the assessment has underestimated take-up of ground/air-source heat pumps as many other renewable energy proposals were not considered to be viable.

The following was identified as a missing benefit:

- The impact assessments in all cases failed to identify the removal of risk and uncertainty in the outcome of the planning process as an obvious benefit of these proposals. This is currently a significant disincentive.

12.2 Question 15 - In particular do you agree with our estimates of the possible costs to local authorities in relation to investigating noise complaints?

This was the least answered question, with only 20 per cent of respondents providing an answer. Most of these responses were from local authorities, the majority (53 per cent) of whom disagree with the estimates.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
19	38	16	41	5

Many local authorities felt noise complaints have been seriously underestimated. They considered that the proposals will lead to a higher number of complaints, particularly initially as equipment is unfamiliar, requiring costly enforcement investigations and use of officer resources (both enforcement and environmental health officers). Some respondents noted that residents lack specialist equipment to gauge whether noise limits have been exceeded, leading to an increased number of complaints.

It was also recognised by one respondent from the academe and professional category the impact could be variable, with some authorities experiencing significantly greater take up and consequential enforcement issues than others.

It was generally agreed that many of the costs will be transferred to environmental health departments.

Respondents from the academe and professional category disagreed as to whether costs were accurate; one respondent considered that the analysis and evidence understates likely costs and resource implications of complaint investigation, enforcement and resolution which would be incurred by environmental health departments when dealing with and resolving complaints of statutory nuisance. They considered that in most cases formal enforcement action would proceed especially where individual householders and businesses have invested relatively large sums. Another respondent however considered that although the additional enforcement burden is difficult to predict, the cost estimates for investigating complaints and serving abatement notices were on the high side.

12.3 Question 16 - In the impact assessments, we assume that the process of obtaining planning permission acts as a disincentive to the take up of renewable technology and that by removing this disincentive take up would increase by between 2 per cent and 5 per cent annually. Do you think that these assumptions are reasonable?

The majority of respondents (68 per cent) agree that the assumptions used are reasonable. The lowest level of support for these proposals was from the other category where the majority (67 per cent) disagreed that the assumptions were reasonable.

Answered (%)	Yes (%)	Yes, but (%)	No (%)	No, but (%)
30	37	31	31	2

This question was recognised as being difficult to answer by all response categories.

Many local authorities were unsure and could not quantify the extent to which removing the need for planning permission would encourage the take up of renewable technology. A number of local authorities felt that those wishing to install will still apply for Certificates of Lawfulness. Other issues which were considered important were identified as: the few providers of

equipment, installation costs, uncertainty over 'payback', confusion over permitted development guidance, and the amount of promotion and public awareness. Local authorities suggested that bigger incentives were the Feed-in Tariff, Renewable Heat Incentives and a grant base system.

Generally the renewable energy industry considered that the estimate that take up would be increased by 2 per cent to 5 per cent annually is either reasonable or too modest.

The environment and community groups generally agreed with the estimate, although specifically they felt that take up of solar thermal panels on non-domestic property had been underestimated and take up of wind turbines on non-domestic property had been over-estimated because the maximum sizes are too small to be economically viable.

A response from the academe and professional category was less optimistic and stated that there is no compelling independent evidence to demonstrate the assertion that planning is a disincentive. They considered that the aim of reducing the number of minor applications will not be achieved to any great extent especially in relation to turbines on domestic properties. The response highlighted that there has been limited uptake of permitted development rights under the existing General Permitted Development Order amendment. It was suggested that more research needs to be done into what the major barriers are and what can be done to lessen their impact.

The academe and professional sector also noted that plans are still needed to satisfy building regulations; they suggested that specification could be provided by authorised installers so there is not much cost involved in submitting a planning application in terms of the overall costs of project.

Appendix A: Permitted development proposals

A.1 **Table 1**

A wind turbine mounted on a detached dwelling house, subject to the following:		
Limitation / condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme	Permitted only if installed and certified through Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Location	Not permitted if sited within a National Air Traffic Services /Ministry of Defence/ Civil Aviation Authority safeguarded area.	To safeguard against interfering with air traffic control.
Maximum Height	No part should protrude more than 3 metres above the highest part of the roof of the dwellinghouse. Overall height (including building, hub and blade) should not exceed 15 metres.	To manage visual amenity.
Swept area of blade	Maximum of 3.8 square metres. (The equivalent of a blade diameter of 2.2 metres. See **Annex A** for explanation of calculation).	To manage visual amenity.
Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ, 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring residential property (but ignoring the effect of that façade).	To manage the risk of disturbance to neighbouring residential uses.
Number of turbines	The first installation only of a wind turbine within the curtilage would be permitted, and only if there is no existing air source heat pump within the curtilage of that property. Subsequent wind turbines or air source heat pumps at the same property would require planning permission.	To manage the risk of cumulative noise impact.
Materials	Only non-reflective materials to be used on rotating blades.	To avoid the nuisance of flicker.
Areas where there would be further protection	In World Heritage Sites and Conservation Areas, not permitted if the wind turbine would be visible from any highway which bounds the curtilage of the property.	To manage impact upon the character and appearance of the area.

Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning	Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent an accumulation of unused equipment.

A.2 **Table 2**

A wind turbine mounted on a freestanding outbuilding within the curtilage of domestic premises, subject to the following:		
Limitation / condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme	Permitted only if installed and certified through Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Location	Not permitted if sited within a National Air Traffic Services /Ministry of Defence /Civil Aviation Authority safeguarded area.	To safeguard against interfering with air traffic control.
Maximum Height	No part should protrude more than 3 metres above the highest part of the outbuilding's roof. Maximum overall height (including building, hub and blade) should not exceed 15 metres.	To manage visual amenity.
Swept area of blade	Maximum of 3.8 square metres. (The equivalent of a blade diameter of 2.2 metres. See **Annex A** for explanation of calculation).	To manage visual amenity.
Distance from boundary	No part of the blade to be within 5 metres of the boundary of the curtilage of the property.	To manage visual amenity.
Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ, 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring residential property (but ignoring the effect of that façade).	To manage the risk of disturbance to neighbouring residential uses.
Number of turbines	The first installation only of a wind turbine within the curtilage of the property would be permitted, and only if there is no existing air source heat pump within the curtilage of that property. Subsequent wind turbines or air source heat pumps at the same property would require planning permission.	To manage the risk of cumulative noise impact.
Materials	Only non-reflective materials to be used on rotating blades.	To avoid the nuisance of flicker.
Areas where there would be further protection	In World Heritage Sites and Conservation Areas, planning permission would be required if the wind turbine would be visible from any highway which bounds the curtilage of the property.	To manage impact upon the character and appearance of the area.

Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning	Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.

A.3 **Table 3**

A stand alone wind turbine within the curtilage of domestic premises, subject to the following:		
Limitation / condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme	Permitted only if installed and certified through Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Location	Not permitted if sited within a National Air Traffic Services /Ministry of Defence/ Civil Aviation Authority safeguarded area.	To safeguard against interfering with air traffic control.
Maximum Height	Maximum overall height (including hub and blade) of 11.1 metres.	To manage visual amenity.
Swept area of blade	Maximum of 3.8 square metres. (The equivalent of a blade diameter of 2.2 metres. See **Annex A** for explanation of calculation).	To manage visual amenity.
Setback from boundary	a set-back from the curtilage of the boundary equal in distance to the total height of the installation + 10%	To ensure public safety and to manage visual amenity.
Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ, 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring residential property (but ignoring the effect of that façade).	To manage the risk of disturbance to neighbouring residential uses.
Number of turbines	The first installation only within the curtilage of a property would be permitted and only if there is no existing air source heat pump within the curtilage of the property. Subsequent wind turbines or air source heat pumps at the same property would require planning permission.	To manage the risk of cumulative noise impact.
Materials	Only non-reflective materials to be used on rotating blades.	To avoid the nuisance of flicker.

Areas where there would be further protection	In World Heritage Sites and Conservation Areas planning permission would be required if the wind turbine would be visible from any highway which bounds the curtilage of the property.	To manage impact upon the character and appearance of the area.
Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning	Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.

A.4 **Table 4**

An air source heat pump on a domestic premises, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme	Permitted only if installed and certified through Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Cubic volume	Maximum of 1.5 cubic metres.	To manage visual amenity.
Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ, 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring residential property (but ignoring the effect of that façade).	To manage the risk of disturbance to neighbouring residential uses.
Number of air source heat pumps	The first installation only of an air source heat pump on a building would be permitted and only if there is no existing wind turbine within the curtilage of the property. Subsequent wind turbines or air source heat pumps at the same property would require planning permission.	To manage the risk of cumulative noise impact.
Siting on building	Not permitted if visible from and sited on an elevation which fronts a highway.	To manage visual amenity.
Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning	Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.

A.5 **Table 5**

A wind turbine mounted on a detached non-domestic building, subject to the following:			
Limitation / Condition		**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme		Permitted only if installed and certified through the Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Location		Not permitted if sited within a National Air Traffic Services /Ministry of Defence/ Civil Aviation Authority safeguarded area.	To safeguard against interfering with air traffic control.
Materials		Only non-reflective materials to be used on rotating blades.	To avoid the nuisance of flicker.
Listed buildings and scheduled monuments		Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning		Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.
Class B2: General Industrial premises	Height	The height of the hub not to exceed 15 metres above ground level, height of the blades not to exceed 18 metres above ground level.	To remain below the environmental impact assessment screening threshold.
	Distance from boundary	No part of the blade to be within 5 metres of any boundary of the curtilage of the premises.	To manage visual amenity.
	Number of turbines	Maximum of two turbines within the curtilage of the property.	To remain below the environmental impact assessment screening threshold.
Elsewhere	Height	The blade should protrude no more than 3 metres above the highest part of the roof. The height of the hub not to exceed 15 metres above ground level, height of the blades not to exceed18 metres above ground level.	To remain below the environmental impact assessment screening threshold and to manage visual amenity.
	Swept area of blade	Maximum of 4.9 square metres. (The equivalent of a blade diameter of 2.5 metres).	To manage visual amenity.
	Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ,\ 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring	To manage the risk of disturbance to

		residential property (but ignoring the effect of that façade).	neighbouring residential uses.
	Distance from boundary	No part of the blade to be within 5 metres of any boundary of the curtilage of the premises.	To manage visual amenity.
	Number of turbines	The first installation only of a wind turbine on a building would be permitted and only if there are no existing installations of air source heat pumps on that building. Subsequent installations of wind turbines or air source heat pumps would require planning permission.	To manage the risk of cumulative noise impact.
	Areas where there would be further protection	In World Heritage Sites and Conservation Areas planning permission would be required if the wind turbine would be visible from any highway which bounds the curtilage of the property.	To manage the character and appearance of the area.

A.6 **Table 6**

A stand alone wind turbine on a non-domestic premises, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme	Permitted only if installed and certified through the Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Location	Not permitted if sited within a National Air Traffic Services /Ministry of Defence/ Civil Aviation Authority safeguarded area.	To safeguard against interfering with air traffic control.
Height	The height of the hub not to exceed 15 metres above ground level, height of the blades not to exceed 18 metres above ground level.	To remain below the environmental impact assessment screening threshold.
Distance from boundary	The set-back from the nearest highway boundary to be equal in distance to the overall height of the installation + 10%	To ensure public safety.
Distance of blade from ground	Minimum of 5 metres.	To ensure public safety..
Materials	Only non-reflective materials to be used on rotating blades.	To avoid the nuisance of flicker.
Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument.	To protect buildings of special architectural or historic interest and

		Not permitted within a site designated as a scheduled monument	nationally important archaeological sites.
Height		The height of the hub not to exceed 15 metres above ground level, height of the blades not to exceed 18 metres above ground level.	To remain below the environmental impact assessment screening threshold.
Decommissioning		Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.
Class B2: general Industrial premises	Number of turbines	Maximum of two within the curtilage of the property.	To remain below the environmental impact assessment screening threshold.
Elsewhere	Swept area of blade	Maximum of 28 square metres. (The equivalent of a blade diameter of 6m).	To manage visual amenity.
	Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ, 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring residential property (but ignoring the effect of that façade).	To manage the risk of disturbance to neighbouring residential uses.
	Number of turbines	The first installation only of a wind turbine within the curtilage of the property would be permitted and only if there are no existing installations of air source heat pumps within the curtilage of the property. Subsequent installations of wind turbines or air source heat pumps would require planning permission.	To manage the risk of cumulative noise impact.
	Areas where there would be further protection	Not permitted if sited within a World Heritage Site or Conservation Area.	To manage the character and appearance of the area.

A.7 **Table 7**

An air source heat pump on a non-domestic premises, subject to the following:			
Limitation / Condition		**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Microgeneration Certification Scheme		Permitted only if installed and certified through the Microgeneration Certification Scheme.	To ensure that the installation meets industry standards.
Decommissioning		Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.
Listed buildings and scheduled monuments		Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Class B2: General Industrial premises		None (other than above).	
Elsewhere	Cubic volume	Maximum of 2 cubic metres	To manage visual amenity.
	Noise limit	The noise level from the installation must not exceed 45dB $L_{AEQ,\ 5\ min}$ at 1 metre from the window of a habitable room in the façade of any neighbouring residential property (but ignoring the effect of that façade).	To manage the risk of disturbance to neighbouring residential uses.
	Number of installations	The first installation only of an air source heat pump on a building would be permitted and only if there were no existing wind turbine installations. Subsequent installations of air source heat pumps or wind turbines would require planning permission.	To manage the risk of cumulative noise impact.
	Areas where there would be further protection	In World Heritage Sites and Conservation Areas planning permission would be required if visible from any highway which bounds the curtilage of the property.	To manage impact upon the character or appearance of the area.

A.8 **Table 8**

A ground source heat pump on a non-domestic premises, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Area of excavation	Not to exceed 0.5 hectares.	To protect against risks of disturbance to ecology and groundwater drainage.
Remedial works	Land should be made good following installation.	To protect visual amenity.

A.9 **Table 9**

A water source heat pump on a non-domestic premises, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Area of pipe work	Not to exceed 0.5 hectares.	To protect against risks of disturbance to ecology and groundwater drainage.

A.10 **Table 10**

Solar Panels mounted on pitched roofs of non-domestic buildings, subject to the following:			
Limitation / Condition		**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Listed buildings and scheduled monuments		Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Class B2: General Industrial premises		As for other developments on B2 premises.	
Elsewhere	Size	Panels should not extend beyond the limits of the roof.	To manage visual amenity.
	Projection above roof plane	No more than 200 millimetres.	To manage visual amenity.
	Areas where there would be further protection	In World Heritage Sites and Conservation Areas planning permission would be required if visible from any highway which bounds the curtilage of the property.	To manage impact upon the character and appearance of the area.
Decommissioning		Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.

A.11 **Table 11**

Solar Panels attached to flat roofs or the walls of non-domestic buildings, subject to the following conditions and thresholds:			
Limitation / Condition		**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Listed buildings and scheduled monuments		Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Class B2: General Industrial premises		As for other developments on B2 premises.	
Elsewhere	Height of installation	No higher than 1 metre (this would provide for panels to be raised at an angle for attracting sunlight and moveable panels).	To manage visual amenity.
	Distance from the edge of the building	Not less than 1 metre from the edge of the building.	To manage visual amenity.
	Number of panels	No limit subject to the above conditions.	
	Areas where there would be further protection.	In World Heritage Sites and Conservation Areas planning permission would be required if visible from any highway which bounds the curtilage of the property. Panels not to be affixed to walls within a designated town centre.	To manage impact upon the character or appearance of the area. To manage visual impact.
Decommissioning		Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.

A.12 **Table 12**

A stand alone installation of solar panels on non-domestic premises, subject to the following:			
Limitation / Condition		**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Listed buildings and scheduled monuments		Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Class B2: General Industrial premises		As for other developments on B2 premises.	
Elsewhere	Height of unit	No higher than 4 metres above ground level	To manage visual amenity.
	Distance from boundary	Minimum of 10 metres.	To manage visual amenity.
	Size of array	Dimension of surface array not to exceed 3 metres x 3 metres.	To manage visual amenity.
	Number of solar panels	Only the first stand alone installation would be permitted.	To manage visual amenity.
	Areas where there would be further protection.	In World Heritage Sites and Conservation Areas, National Parks, Areas of Outstanding Natural Beauty or the Broads not permitted if visible from any highway which bounds the curtilage of the property.	To manage impact upon the character and appearance of the area.
Decommissioning		Should be removed as soon as reasonably practicable if no longer needed for microgeneration.	To prevent the accumulation of unused equipment.

A.13 **Table 13**

Flues for Biomass systems & Combined Heat and Power (combined heat and power) systems on non-domestic premises, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Capacity of the system	45kW thermal or less (i.e. conforming to the definition of microgeneration)	To protect air quality.
The height of a new or replacement flue	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).	To manage visual amenity.
Number of flues	One biomass or combined heat and power system flue per premises.	To protect air quality.
Areas where there would be further protection.	In World Heritage Sites and Conservation Areas planning permission would be required if visible from any highway which bounds the curtilage of the property.	To manage impact upon the character or appearance of the area.
Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.

A.14 **Table 14**

The erection of structures to house ,,biomass boilers, anaerobic digestion system and associated waste and fuel stores, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Source of waste	Only waste generated on the farm/forestry holding is disposed of.	To ensure the scale of operations is commensurate with agricultural or forestry uses
Prior notification (28 days)		As for other developments in Part 6 and 7 of the General Permitted Development Order.
Other conditions	As for Parts 6 and 7 of the General Permitted Development Order.	

A.15 **Table 15**

The erection of a structure to house hydro-turbines, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Prior Notification (28 days)		As for other developments in Parts 6 and 7 of the General Permitted Development Order.
Other conditions	As for Parts 6 and 7 of the General Permitted Development Order.	

A.16 **Table 16**

An electrical outlet mounted on an external wall for recharging electric vehicles off-street, subject to the following:		
Limitation / condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Maximum volume	0.5 cubic metre.	To manage visual amenity.
Siting	Not on or set into a wall that faces onto and abuts a highway.	To protect against danger to the public of trailing wires.
Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building or scheduled monument. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning	Should be removed as soon as reasonably practicable if no longer needed for use as a charging point for electric vehicles.	To prevent the accumulation of unused equipment.

A.17 **Table 17**

An upstand for mounting an electric vehicle charging point, and feeder pillar within an outdoor off-street car parking area, subject to the following:		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Maximum Height	1.6 metres above the surface of the car park.	To manage visual amenity.
Siting	Not within 2 metres of the boundary of a site that fronts the public highway.	To manage visual amenity.
Number of installations	1 per parking space.	To manage visual amenity.
Listed buildings and scheduled monuments	Not permitted within the curtilage of a listed building. Not permitted within a site designated as a scheduled monument	To protect buildings of special architectural or historic interest and nationally important archaeological sites.
Decommissioning	Should be removed as soon as reasonably practicable if no longer needed for use as a charging point for electric vehicles.	To prevent the accumulation of unused equipment.

A.18 **Table 18**

... ‘lamp standards, information kiosks, passenger shelters, public shelters and seats, telephone boxes, fire alarms, public drinking fountains, horse troughs, refuse bins or baskets, barriers for the control of people waiting to enter public service vehicles, **electric vehicle charging points and any associated charging infrastructure** and similar structures or works ...’

A.19 **Table 19**

Class 17 of the Control of Advertisement Regulations: the nameplate of an electric vehicle charging point provider or energy supplier on an external charging point, subject to the following.		
Limitation / Condition	**Threshold** (beyond which any potential impacts would need to be considered through a planning application)	**Justification** for proposed threshold
Size	Maximum of 70 square centimetres each.	To manage visual amenity.
Number	Maximum of two.	To manage visual amenity.
Positioning	If two nameplates are attached, they must be on opposite faces of the charging point, or facing in opposite directions if the charging point is cylindrical.	To manage visual amenity.
Illumination of nameplates	Not permitted.	To manage visual amenity.

Appendix B
Glossary of terms (Annex A)

Glossary of terms

Word/Phrase	Definition	Comments on definition
Article 1(5) land	Areas designated by Article 1(5) of the General Permitted Development Order for special protection. These areas include National Parks and the Broads, Areas of Outstanding Natural Beauty, Conservation Areas and World Heritage Sites.	
At 1m from the facade.....at the window to a habitable room of any neighbouring residential property	Noise levels decrease as the distance between the source and receiver increase. Therefore it is important to specify the exact location at which the noise limit is to be applied. For these proposals, the exact location is 1 metre from the window of the habitable room in the facade of any neighbouring residential property. This location was chosen in order to protect habitable rooms of neighbouring residential properties from noise.	Could be made clearer to clarify where and when measurements should be made. Suggest ‘at the nearest residential property' (Local Authorities) At 1 metre from the façade, it is considered that this needs to be supported by a manufacturer standard to enable an easy comparison for sound levels in much the same way as SEDBUK does for boilers (Owner, Renewable Energy Industry) Only relates to location where noise limit is to be applied - simplistic and does not take account other factors that affect resultant level (Academe and Professional)
Car parking area	Any off-street external area lawfully used to park a car.	

Word/Phrase	Definition	Comments on definition
Curtilage	For the purposes of this consultation only, the curtilage of a property is land that is the land associated with and used in connection with the main use of the property.	Definition as it stands could mean property owners could claim certain areas of their property are not the main use and install additional equipment (Local Authorities) Definition that would include any land associated with a farm building, i.e. anywhere on a farm. If this interpretation is correct it could have a significant detrimental impact on area of outstanding natural beauty landscapes (Other, Local Authorities) Misleading and could give rise to uncertainty on shared sites and/or where there are multiple uses and/or where there are multiple installations; focussing on main site does not assist this (Academe and Professional)
Decibel (dB)	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 Pa, the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.	
dB(A)	Decibels that incorporate a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness.	
Designated town centre	A town centre designated in a local development plan. May include metropolitan centres, town centres, small suburban centres, and local shopping parades.	Should be consistent with PPS4 and refer to city centres, district centres and local centres (Local Authorities, Academe and Professionals)

Word/Phrase	Definition	Comments on definition
Detached building	A building that does not share a party wall with a neighbouring property.	What about detached house, but linked by garages? (Academe and Professional)
Domestic premises	For the purposes of this consultation a building solely used as a place to live in (as defined in Class C3 of the Use Classes Order 1987) and land associated with and used in connection with it.	Referring to the Use Class Order 1987 to define 'domestic premises' is confusing as Class C3 is defined as a 'dwellinghouse' (Local Authorities) What is the difference between dwelling house and domestic premises? Needs to be clearer- definition appears to exclude flats (Local Authorities) Lack definition of what constitutes domestic premises (Academe and Professional) Definition of domestic premises and dwelling house imply different controls would be in place for dwellings which are flats - how does the government propose to deal with this? (Academe and Professional)
Dwellinghouse	For the purposes of this consultation a house standing on its own land in single occupation. A dwellinghouse can be detached, semi-detached or terraced. A dwellinghouse does not include flats, or buildings which have been converted from a purpose-built dwellinghouse into flats.	Referring to the Use Class Order 1987 to define 'domestic premises' is confusing as Class C3 is defined as a 'dwellinghouse' (Local Authorities) What is the difference between dwelling house and domestic premises? Needs to be clearer- definition appears to exclude flats (Local Authorities) How are flats and apartments addressed? Need a separate element to be included or incorporated into description (Local Authorities) Definition of domestic premises and dwelling house imply different controls would be in place for dwellings which are flats - how does the government propose to deal with this? (Academe and Professional) Definition includes semi-detached and terraces - leads to confusion since table 1 refers to detached dwelling houses only (Academe and Professional)

Word/Phrase	Definition	Comments on definition
Electric vehicle	A vehicle used for the purpose of carrying people and/or goods which derive some or all of their motive power from electricity provided by the national grid or distributed microgeneration source.	
Electric vehicle charging infrastructure	An electricity source and the supporting devices used to recharge an electric vehicle using electricity from the national grid or distributed microgeneration source. Often referred to as charging points.	Over-specific about power sources – they might be served by private wire, a large district combined heat and power system, or stand alone power source (Local Authorities)
Electric vehicle charging point	The electrical outlet that is the source of power for recharging electric vehicles.	
Habitable Room	For purposes of noise measurement, habitable rooms are all rooms in a residential property which are designed to be used as living rooms, bedrooms or kitchens.	Under the Environmental Protection Act 1990, kitchens and bathrooms are specifically not included in the definition of 'habitable rooms' (Local Authorities) Ambiguity as definition states 'designed to be used as habitable'; aggrieved neighbour may claim noise measurement should have been taken from window that whilst not in use was designed to be habitable (Academe and Professional)
LAEQ,T	The equivalent continuous sound level - the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). LAEQ, 5 min – refers to the equivalent continuous sound level over a 5 minute period.	Could benefit from further clarification (Local Authorities)

Word/Phrase	Definition	Comments on definition
Microgeneration certification scheme (microgeneration certification scheme)	Microgeneration certification scheme is a certification scheme which evaluates microgeneration products and installers against strict criteria using European and ISO technical standards for micro wind turbines, heat pumps including ground and air source heat pumps. Microgeneration certification scheme is operated by the Department of Energy and Climate Change.	"Microgeneration certification scheme is operated by DECC" is not true. Whilst DECC owns the microgeneration certification scheme property rights it has appointed Gemserv (a profit making consultancy to administer the scheme on their behalf). All consultation with committees and steering groups etc. approached through DECC is referred to Gemserv. Gemserv have overseen the appointment of accreditation agencies many of which are as yet not accredited (Renewable Energy Industry) Amended wording suggested: microgeneration certification scheme is an accreditation scheme which certifies products and installation companies against strict criteria using Industry, British, European and ISO technical standards for microgeneration technologies. Microgeneration certification scheme is an industry lead scheme supported by the Department for Energy and Climate Change (Renewable Energy Industry)
Non-domestic premises	For the purposes of this consultation these comprise a building occupied for purposes other than as a dwellinghouse (as defined in Class C3 of the Use Classes Order 1987) and any land associated with and used in connection it. They exclude all premises falling within Classes C1, C2 and C2A of Class C3 of the Use Classes Order (1987).	Confusing excluding every other use in Class C except for C3. Definition suggests that hotels, schools, hospitals, care homes etc do not have permitted development rights for renewable technologies, which seems illogical as they are great energy users. Also, suggestion to reword to be 'used in connection with it' (Local Authorities) It remains unclear if the definition for non-domestic buildings includes a heat limit (Renewable Energy Industry)

Word/Phrase	Definition	Comments on definition
Permitted development	Minor development which, by virtue of The Town and Country Planning (General Permitted Development) Order 1995 (the General Permitted Development Order) as amended, does not require an application for planning permission to the local planning authority. Developments that are defined within Parts 1 to 40 of Schedule 2 to the General Permitted Development Order are said to enjoy permitted development rights (permitted development rights).	
Predicted 1m from the facade.....at the window to a habitable room of any neighbouring residential property	Noise levels decrease as the distance between the source and receiver increase. Therefore it is important to specify the exact location at which noise predictions are to be made. In this case, the exact location is 1 metre from the window of the habitable room of any neighbouring property in residential use.	Could be made clearer to clarify where and when measurements should be made. Potential difficulties in achieving the measurement where apartments above ground floor level are involved (Local Authorities) Not clear why the definition has been included since it is not referred to in body of the consultation document. If predicted noise levels are to be incorporated into permitted development rights, an appropriate methodology including significant factors affecting propagation from source would need to be developed (Academe and Professional)
Residential use	For purposes of noise measurement only, a residential use includes all Class C uses within the Town and Country Planning (Use Classes) Order 1987 as amended.	Should be strengthened to state clearly not just use class C (Local Authorities)

Word/Phrase	Definition	Comments on definition
Statutory nuisance and planning	Case law has established that the fact that the use of land is lawful does not necessarily mean it cannot constitute a public nuisance and that the grant of planning permission is not a licence to commit nuisance. This means that Part 3 of the Environmental Protection Act 1990 which relates to statutory nuisance apply even in circumstances where a planning permission is granted through the General Permitted Development Order. Enforcement action under the statutory nuisance regime could therefore require the abatement of the nuisance (e.g. a reduction in the noise levels generated) regardless of whether the permitted development limits and conditions are or have been met.	
Swept area	The swept area is calculated as follows: pi (π) x radius2. Radius is half the total blade diameter.	Needs to be more clearly defined - the area of the circle covered by the blades when rotating or the length of the blade? (Local Authorities)
Under free-field conditions	Means that the noise level predicted will not consider any surface that may reflect the noise from the source except the ground. This includes the facade or window that the prediction uses as a point of reference. In reality, a free-field prediction of a noise from a source 1m from a facade will be 2.5dB – 3dB lower than a non free-field measurement at the same position from the same source.	Definition does not appear in body of document although definition is correct (Academe and Professional)

Appendix C: List of respondents to the consultation

Adams Hendry Consulting Ltd.

Agriculture and Horticulture Development Board.

Airport Operators Association

Alvesta Energy Ltd

Arqiva Ltd

Assoc. of London Borough Planning Officers Technical Support Group

Association for the Conservation of Energy

Association of Consultant Architects

Association of Local Government Archaeological Officers: England

Association of Noise Consultants

Aylesbury Vale District Council

British Airports Authority Ltd

Barnsley MDC

Bat Conservation Trust

Bell Cornwell

Birmingham City Council

Blackdown Hill area of outstanding natural beauty Partnership

Blackpool Council

Brighton & Hove City Council

Bristol, Gloucestershire and Somerset Environmental Protection Committee

British Chimney Manufacturers' Association

The British Electrotechnical and Allied Manufacturers Association

British Gas

British Horse Society

British Hydropower Association

British Small Wind Association (BSWA)

British Wind Energy Association

Broxtowe Borough Council

C&F Green Energy [Ireland]

Campaign for National Parks

Charlotte Street Association

Chartered Institute of Environmental Health

Chepping Wycombe Parish Council

Chesterfield Borough Council

Chichester District Council

Chichester Harbour Conservancy

Chilterns Conservation Board

The Chiltern Society

City of Lincoln Council

City of London Corporation

Coal Authority

Commission for Rural Communities

Community and Regional Planning Services

Consumer Focus

Cotswolds Conservation Board

Council for British Archaeology

Country Land & Business Association

Campaign for the Preservation of Rural England

Cranborne Chase and West Wiltshire Downs

Cumbria County Council

Derby City Council

Devon County Council

Dorset area of outstanding natural beauty

Dorset County Council

Dunster House Ltd.

E.ON UK plc

Earth Energy Ltd

EDF Energy

Electricity North West Ltd. [ENW]

Energy Saving Trust

English Heritage

English National Park Authorities Association (ENPAA)

Environment Agency

Environmental Protection UK

Evoasis plc

Exmoor National Park Authority

Exmoor NP

Federation of Bath Residents' Associations

FreeGEN Research Ltd

Greater London Authority/Transport for London

Green Party

Ground Source Heat Pump Association

Guildford and Waverley (+other groups) Friends of the Earth

The Guildford Society

Harrogate Borough Council

Heat Pump Association

Heating and Hotwater Industry Council

Heliocentric Power Ltd

Herefordshire Council

Hertsmere BC

Highways Agency

Infracharge

Infratil Airports Europe Limited

Institiute of Acoustics

Institiute of Zoology

Institute for Archaeologists

Institute of Historic Building Conservation

J & J Design

Kensa Engineering Ltd.

Kent Development Control Officers Forum

The Knightsbridge Association

Lichfield DC

Local Governmentt Association / Local Authorities Coordinators of Regulatory Services

London Biggin Hill Airport

London Borough of Camden

London Borough of Redbridge

London Borough of Waltham Forest

Loughton Resident's Association

Manchester Airport Group

Marks & Spencer

MBE Consultants in Technical Refurbishment LLP

Micropower Council

Mid Sussex District Council

Mitsubishi Electric

Moog Insensys Limited

The National Association for Areas of Outstanding Natural Beauty

NAPIT Certification Ltd.

NAREC [New and Renewable Energy Centre]

National Organisation of Resident's Associations

National Air Traffic Service

Natural England

National Farmers Union

Norfolk Environmental Protection Group

North East Chamber of Commerce (NECC)

North Wessex area of outstanding natural beauty

North York Moors National Park Authority

Northamptonshire Environmental Protection Sub-Committee

Nottingham City Council

Nottinghamshire CC

One Engineering

One North East

Peak District National Park Authority

The Planning Inspectorate

Planning Officers Society

Poujoulat (UK) Limited

Public Protection Partnership Greater Manchester

Reading Borough Council

Renewable Energy Association

Reuben Power PLC

Richmondshire District Council

Royal Borough of Kensington and Chelsea

Royal Society for the Protection of Birds

Royal Town Planning Institute

Rushcliffe Borough Council

RWE npower

Scottish and Southern Energy

Sefton Metropolitan Borough Council

Sevenoaks District Council

Severn Trent Water Ltd.

Sheffield City Council

Sketty Resident's Group, Swansea

The Society of Motor Manufacturers and Traders Limited

Solarcentury

The Solar Trade Association

South Downs Joint Committee

South Oxfordshire District Council

Specflue

Suffolk Coasts and Heaths area of outstanding natural beauty

Surrey CC / Surrey Hills area of outstanding natural beauty

Tandridge District Council

Tendring District Council

Tesco

The Theatres Trust

Town and Country Planning Association

Trevor Roberts Associates

Tunbridge Wells Borough Council

Vaillant Group

Warrington Borough Council

Wellingborough Borough Council

West Devon Borough Council

Westbourne Neighbourhood Association, City of Westminster

Westminster City Council

Windtricity [Ireland]

Wooley Co.

Worcester City Council

Wychavon District Council

And 24 respondents writing in an individual capacity.