



Changes to Permitted Development

*Consultation Paper 1:
Permitted Development Rights for
Householder Microgeneration*



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Householder Microgeneration*

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Section 1

Introduction

Background

1. This consultation paper sets out the Government's proposals for changes to the planning system in relation to the installation of microgeneration equipment for domestic properties. The paper explains the changes recommended in order to extend and clarify the scope of permitted development. The revised system would deliver a more permissive regime than exists at present and remove the need for a planning application for many householders. It will also set out clearly what is and is not permitted – an existing source of frustration amongst local planning authorities as well as members of the public. Changes will be delivered through amendments to the Town and Country Planning (General Permitted Development) Order 1995 (GPDO).
2. These proposals are important because there exists real potential for the increased use of microgeneration to contribute greatly to meeting our future energy needs in a sustainable way. A study undertaken by the Energy Saving Trust for the Department for Trade and Industry's *Microgeneration Strategy* suggested that 30-40% of the United Kingdom's electricity demands could be met through the use of these technologies by 2050. Encouraging the residential take-up of microgeneration, in part by providing a better and clearer planning framework, is therefore essential in helping us to meet a significant proportion of our future energy needs. The Government, of course, recognises that for some people there are more cost-effective ways than microgeneration to cut the carbon footprint of their home. Behavioural changes can be cost-free and basic insulation measures can be inexpensive. Both, however, can deliver significant savings for homeowners who would be advised to consider making basic energy efficiency savings before seeking to generate their own energy. More useful advice is available from the Energy Saving Trust.¹
3. Planning's role in shaping places with lower carbon emissions and resilient to climate change is now accepted as inevitable and is set out in the draft Planning Policy Statement (PPS): *Planning and Climate Change* which was published for consultation on 13 December 2006.² The draft PPS expects planning to be a positive force for change including in helping to create an attractive environment for innovation and for the private sector to bring forward investment in renewable and low-carbon technologies and supporting infrastructure.
4. The draft PPS sets out a clear and challenging role for regional and local spatial strategies on energy. They are expected to help shape the framework for energy supply in their area including, at the local level, by expecting substantial new development to gain a significant proportion of its energy supply on-site and renewably and/or from a decentralised, renewable or low-carbon energy supply. This builds on Yvette Cooper's written ministerial statement of June 2006³ which made clear that the Government expects all planning authorities to make full use of the positive approach to renewables set out in Planning Policy Statement (PPS) 22 on Renewable Energy. In particular, it set out the Government's expectation that all

¹ <http://www.est.org.uk>

² <http://www.communities.gov.uk/index.asp?id=1505140>

³ <http://www.publications.parliament.uk/pa/cm200506/cmhansrd/cm060608/wmstext/60608m0068.htm>

planning authorities should include policies in their development plans that require a percentage of the energy in new developments to come from on-site renewables, where it is viable.

5. The consultation on the draft PPS forms part of a wider package of action being taken forward by Communities and Local Government to help deliver the Government's ambition of achieving zero carbon development. This includes the *Code for Sustainable Homes* and a consultation document, *Building a Greener Future*, which sets out how planning, building regulations and the *Code for Sustainable Homes* can drive change, innovation and deliver improvements to the environment.⁴

Summary of Approach in the Consultation Paper

6. This consultation paper deals with proposals in relation to permitted development rights for microgeneration in England only. A separate consultation will be undertaken in Wales.
7. Section 2 of this consultation paper sets out the context within which this work has taken place. This began with the work of the Householder Development Consents Review which looked at the issue of how the experiences of the householder seeking to carry out work on their property could be improved. It then explains about the work undertaken by Entec Ltd for the department on microgeneration and how this has formed the basis for the proposals contained in this consultation paper.
8. Section 3 addresses some of the more general issues that need to be borne in mind when considering the scope for permitted development for microgeneration. The issues covered relate to factors that generally apply across the range of technologies, for example, the approach to be taken to seek to ensure permitted development rights are exercised in a way that minimises visual impact.
9. Section 4 deals with each of the microgeneration technologies in turn. It gives an introduction to each of them, highlights issues for each and spells out the Government's proposals in terms of the scope of permitted development and the reasons for them. Sections of the text have been drawn from the Entec report.⁵ Sections 3 and 4 form the main element of this consultation and we would particularly welcome responses to the specific questions posed as well as any more general comments that you might have.
10. Annex 1 is a table summarising the proposals contained in the consultation paper.
11. Annex 2 contains the detailed noise and vibration criteria for wind turbines and air source heat pumps.
12. Annex 3 is a draft of the amendment to the GPDO necessary to deliver the proposed recommendations. Comments on the draft Order would be welcome.

⁴ These documents are available at <http://www.communities.gov.uk/index.asp?id=1503251>.

⁵ The report is available at <http://www.communities.gov.uk/index.asp?id=1504866>.

13. Annex 4 contains a partial regulatory impact assessment (RIA). This assessment seeks to address potential impacts resulting from the proposals and is required as part of the process leading to the introduction of new regulation. The assessment will necessarily develop to reflect changes resulting from the outcome of this consultation, but again any comments on the partial RIA would be welcome.
14. Annex 5 provides a summary of the specific questions contained in the consultation paper. To ease analysis of consultation responses, consultees are encouraged to use this as a template for their response to the consultation. A Word version of this Annex is available alongside the consultation paper on the Department's website at <http://www.communities.gov.uk/index.asp?id=1143108>.

Responding to the Consultation

15. Comments on the contents of this paper should be sent to:

Microgeneration Consultation Responses
Communities and Local Government
Zone 3/J5
Eland House
Bressenden Place
London
SW1E 5DU

Or by email to: microgenresponses@communities.gov.uk.

16. The period of public consultation will last for 12 weeks and responses should be submitted to arrive by 27 June 2007.
17. A summary of responses to this consultation will be published by 27 September 2007 on the department's website www.communities.gov.uk. Paper copies will be available on request.
18. Information provided in response to this consultation, including personal information, may be published or disclosed in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).
19. If you want the information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.
20. The department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Statement of Consultation

21. The Government has adopted a code of practice on consultations. The criteria below apply to all UK national public consultations on the basis of a document in electronic or printed form. They will often be relevant to other sorts of consultation.
22. Though the criteria have no legal force, and cannot prevail over statutory or other mandatory external requirements (e.g. under European Community Law), they should otherwise generally be regarded as binding on UK departments and their agencies, unless Ministers conclude that exceptional circumstances require a departure.

- 1. Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.**
- 2. Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.**
- 3. Ensure that your consultation is clear, concise and widely accessible.**
- 4. Give feedback regarding the responses received and how the consultation process influenced the policy.**
- 5. Monitor your department's effectiveness at consultation, including through the use of a designated consultation co-ordinator.**
- 6. Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.**

The full consultation code may be viewed at

www.cabinet-office.gov.uk/regulation/Consultation/Introduction.htm

23. Are you satisfied that this consultation has followed these criteria? If not, or if you have any other observations about ways of improving the consultation process, please contact:

Albert Joyce
Communities and Local Government Consultation Co-ordinator
Zone 6/H10
Eland House
Bressenden Place,
London, SW1E 5DU;

Or email: albert.joyce@communities.gov.uk

Section 2

Background to the proposals

24. The Householder Development Consents Review (HDCR) was launched in January 2005 as part of the then Office of the Deputy Prime Minister's 5 Year Plan: *Sustainable Communities: Homes for All*. The review examined ways of reducing bureaucracy for householders seeking to improve their homes while protecting the interests of neighbours, the wider community and the environment.
25. The HDCR Steering Group's Report⁶ made 11 recommendations. As a first stage in responding, the department decided to examine how to reform Parts 1 and 2 of the GPDO, which cover what householders can already do to their homes without the need to apply for planning permission.
26. Les Sparks and Emrys Jones undertook a study for the Review to advise whether categories of development that require planning consent are those that are most likely to impact on neighbours and the wider environment. Sparks and Jones found that several categories of development require a planning application even though they have little or no impact beyond the host property and recommended that the system should be reformed using an impact approach which would be based upon the height of a proposal and its proximity to the plot boundary. The further work being undertaken in relation to householder development, for both microgeneration and more broadly, is based on the notion of an impact approach to permitted development.
27. Ministers have made clear that three important principles must underpin these considerations:
 - clear and robust arrangements should be in place so that the interests of neighbours and the wider community and environment are sufficiently protected.
 - changes to current arrangements should be based on evidence and fully tested.
 - there should be full consultation on detailed proposals for taking forward the Review's recommendations.
28. In advance of taking forward the work on householder permitted development rights more generally, the department contracted Entec Ltd to review the provisions of the GPDO in relation to the installation of microgeneration technology and the operation of those provisions. Using an impact approach, Entec were asked to make detailed recommendations as to how the GPDO could be amended in a way which is consistent with the protection of residential amenity whilst facilitating the installation of microgeneration equipment by householders.

⁶ *The Householder Development Consents Review – Steering Group Report* can be found at www.communities.gov.uk/index.asp?id=1501259

29. While the Government wants to encourage the widest possible take-up of microgeneration equipment by removing unnecessary regulatory barriers, it is concerned to ensure that the right levels of control are retained to protect the reasonable interests of neighbours, the environment and the wider community. Therefore Entec's recommendations also sought to address the impacts on amenity of domestic microgeneration technologies, including those of visual appearance, and the implications of any potential nuisances such as noise and vibration.
30. Consideration also had to be given to how any permitted development limits should be varied for developments in locations with nationally recognised designations including National Parks, areas of outstanding natural beauty and conservation areas.
31. Entec's work is also a starting point in delivering on the requirement contained in section 9 of the Climate Change and Sustainable Energy Act 2006 for the Government to review permitted development rights with a view to facilitating the installation of householder microgeneration equipment through changes to the GPDO.

Section 3

General issues for Microgeneration

32. This section discusses a number of general issues that are relevant when considering the possible future approach to be taken for householder permitted development rights in relation to microgeneration. These, in turn, then impact on the more detailed recommendations as to what should be permitted in relation to the individual technologies, although they do so more generally, and they are therefore a useful starting point when examining the Government's proposed approach.
33. The consultation paper seeks views on both the general issues covered in this section and how these have then been translated into the individual recommendations contained in Section 4.

An Impact Approach

34. A key recommendation to emerge from the work of the HDCR was that future permitted development rights should be informed primarily by their potential impact on others. A starting point would be that the planning system should not be there to regulate development that has no impact beyond the host property. It is also explicitly acknowledged that the current framework of householder permitted developments rights can not only be unclear and confusing, but, by using a sometimes somewhat arbitrary size and volume-based approach, anomalous in terms of impact as to what is and is not permitted.
35. The approach does not, however, suggest that anything that anyone could possibly object to should require an application for planning permission. Rather it seeks to assess the level of impact in terms of its scale and the extent to which any impact would be felt. It is accepted that this will never be viewed as being entirely objective by everyone. It also has to be borne in mind that the Government is keen to promote the further take-up of microgeneration so as to help reduce our dependency on non-renewables.

Question 1 – Do you agree with the principle of an impact approach for permitted development?

Protection for Designated Areas

36. An approach based on impact necessarily recognises that the type of development permitted should reflect not only what the development is, but where it is – and not just in terms of its positioning within or on the property for example, but also in terms of the area within which that property sits. The existing householder permitted development rights already protects certain designated areas, namely National Parks, areas of outstanding natural beauty, conservation areas and the Broads, by having different permitted development rights for them. In the GPDO these designated areas are referred to as “article 1(5) land”.

37. Entec stated that given the nature of these areas and the underlying reasons for their particular status within the planning system, the impact primarily at issue here was visual intrusion. They, therefore, recommended a general restriction to apply for development fronting and visible from a highway. This is in keeping with householder permitted development rights more generally, for example, for the installation of antennas. The restrictions proposed in Section 4 below, therefore, relate to those technologies where their installation impacts on the streetscene, that is, solar, air source heat pumps, wind turbines and flues for combined heat and power and biomass.
38. In addition, the White Paper issued by the Department for Culture, Media and Sport, *Heritage Protection for the 21st Century*, proposes that restrictions on permitted development should also apply to World Heritage Sites.
39. However, the Government, especially given the desire to promote the take-up of householder microgeneration to help respond to climate change pressures, proposes a generally more permissive approach. This would impose additional restrictions in relation to conservation areas and World Heritage Sites only. The Government does, however, particularly welcome the views of consultees on this issue.

Question 2 – Do you agree with a restriction on development facing onto and visible from a highway in conservation areas and in World Heritage Sites?

Question 3 – Should the restriction apply in the same way to the other types of designated area?

Listed Buildings

40. A listed building is one that is considered to be “of special architectural or historic interest”. There exists additional legislative provision to that contained in the Town and Country Planning Act 1990 to ensure their protection. Importantly this includes an additional requirement to obtain Listed Building Consent for works that could potentially affect a listed building. This is in addition to any other planning consent that might be required.
41. Given the protection afforded through the existing requirement for Listed Building Consent approval for any work to, or near, a listed building that could have an impact on that building, the Government believes that the existing safeguards are wholly adequate to protect the character of listed buildings from insensitive development. The Government proposes, therefore, that there is no need to make special provision through the GPDO for listed buildings in relation to what is or is not permitted.

Noise

42. As Section 4 explains, an impact that needs to be addressed in relation to wind turbines (especially those mounted on buildings) and air source heat pumps is the noise that they might produce. It is not the job of the planning regime to control what people do to their property where there is no impact beyond the host property. However, it is quite proper to control development that unreasonably impacts on others. The Government proposes, therefore, to place limits on the levels of noise generated by wind turbines and air source heat pumps so that the installation is

unlikely to cause annoyance or sleep disturbance to an averagely sensitive neighbour. For ease of drafting, the following paragraphs on noise refer mainly to turbines, but are generally equally applicable to air source heat pumps.

43. The Entec report recognised that seeking to control the impact of noise was not straightforward and made an initial recommendation to control noise levels in neighbouring properties by the use of separation distances. Entec did, however, suggest that further work should be undertaken with Defra on this issue. Having carried out this further work, the Government is now proposing to tackle this issue by stating the noise levels at which it is unlikely the installation would cause annoyance or sleep disturbance to an average person, rather than setting a distance-based limit that would not address the problem fully.
44. It is not straightforward to protect both the internal and external environment of neighbouring properties from inappropriate levels of noise and so it has not been possible to produce a single limit. The approach proposed relies on three criteria to determine what should be permitted. References to decibel levels are to those averaged over a five minute period ($\text{dB } L_{\text{AEQ}, 5 \text{ min}}$) – for simplicity “dB” will be used as shorthand for this in this paper. The proposed limits are informed by the World Health Organisation (WHO) guideline that suggests that a noise level of no more than 35dB avoids the potential for sleep disturbance for an averagely sensitive person. For each criterion, an allowance of 5dB has been subtracted from the WHO guideline level to account for the possibility of multiple turbines in the vicinity. For the purposes of these proposals a “habitable room” is a room in a dwelling house or flat other than a bathroom, shower room, WC or kitchen.
45. The first criterion is aimed at structure borne noise, that is, noise transmitted through the structure of a building and re-radiated into a habitable room. The criterion is to be applied within a habitable room with windows closed.
46. A second criterion is required to ensure that any airborne noise, that is noise transmitted through the air, would not compromise the internal noise criterion levels were the windows open in the habitable room. This criterion is to be applied 1m from the external façade at the window to a habitable room of any neighbouring residential property.
47. A third criterion is required to cover airborne noise, affecting the external amenity of private outdoor space. It is accepted that the installation of a stand alone turbine would remove the likelihood of structure borne noise, but could increase the risk of unacceptable noise within private outdoor space. It was considered reasonable to require 50% of the space to be protected.
48. Use of the second and third criteria in tandem will encourage siting of the turbine further away from the façade of any neighbouring residential properties, reducing the likely adverse noise.
49. Current planning guidance for wind turbines requires both developers and planners to evaluate the level of noise from wind turbines on local residents and those working in the vicinity. Noise predictions from a proposed turbine are always considered in relation to the existing background noise levels. Planning Policy Statement 22 – Renewable Energy sets out the approach that it is for local planning authorities to “ensure that renewable energy developments have been located and designed in such

a way to minimise increases in ambient noise levels”, using the 1997 report by ETSU and rate noise from wind energy developments.

50. As we are consulting on removing domestic wind turbines from the requirement to apply for planning permission, additional criteria are necessary to ensure that the installation of a domestic wind turbine would be unlikely to cause annoyance or sleep disturbance to an averagely sensitive person.
51. Details of the proposed criteria can be found in Annex 2.

Question 4 – Do you agree that the likely impact of noise should be dealt with by specific noise restrictions based on decibel levels at/in neighbouring dwellings in the way proposed in Annex 2?

Question 5 – If not, what alternative approach would best address this issue?

Controls on Visual Impacts

52. A general concern in relation to permitted development is that there is the danger that although the rights will generally be used in a way that is acceptable, it is sometimes possible to do something that can have significant effects on others, but be permitted. However, an approach that tries to allow for the worst case scenario is likely to be unduly restrictive and require many other developments that are uncontentious to be submitted to the local planning authority for approval. It is difficult to control through restrictions in the GPDO the potential visual impact of permitted development rights being used in a perverse way. In order to address the issue, the Government proposes to mirror the approach taken in relation to antennas and qualify permitted development rights so as to require that they are exercised so as to minimise their visual impact. As another way of securing longer-term control over visual impact we propose to specify in the GPDO that equipment no longer needed for microgeneration should be removed as soon as reasonably practicable.
53. Additionally, although the approach taken in formulating these proposals seeks to control the impact on others, the Government recognises that there might be circumstances where it is legitimate for a local planning authority to consider using their powers under article 4 of the GPDO to restrict permitted development rights further in exceptional circumstances. An example of such circumstances might be where the nature of the local environment (such as high-density urban areas with little wind) means the limited benefit from the installation of domestic turbines from reduced carbon emissions is outweighed by even the relatively limited visual impacts of what would normally be permitted.

Question 6 – Do you support a general restriction on permitted development (as proposed at paragraph 52 above) so as to require that visual impact is minimised in exercising the rights?

Question 7 – Do you agree that local planning authorities should be able to restrict permitted development rights for microgeneration where the benefit from the technology is outweighed by its impact?

Sites of Biodiversity and Geological Conservation Value

54. Entec recognised the need to consider how permitted development rights in relation to microgeneration might impact on sites that are protected because of their biodiversity and/or geological value. There are at present over 4,000 Sites of Special Scientific Interest (SSSIs) in England covering approximately 7% of the country's land area. More than 75% of these sites, by area, are also recognised internationally for the importance of their wildlife.
55. However, the issue of permitted development and its potential impact on protected sites and/or species is not unique to microgeneration and the joint ODPM/Defra Circular *Biodiversity and Geological Conservation – Statutory Obligations and Their Impact Within the Planning System* together with *Planning for Biodiversity and Geological Conservation: A Guide to Good Practice* explain the protection that currently exists.
56. For European sites, article 3(1) of the GPDO states that permitted development is subject to the provisions contained in regulations 60 to 63 of the Conservation (Natural Habitats, &c.) regulations 1994. These regulations ensure that development that is permitted by the GPDO, but is likely to have a significant effect on a European site, cannot go ahead unless the local planning authority has determined, after consultation with Natural England, that the development would not affect adversely the integrity of the site. The regulations also provide that the opinion of Natural England may be sought as to whether development is likely to have a significant effect and that their opinion will be conclusive. The circular sets out a decision making flow chart of the process that should be followed.
57. Even if the work can proceed as permitted development once this process has been completed, provisions relating to SSSIs will also apply. Here where someone wishes to exercise permitted development rights and the works involved are listed on the SSSI notification as operations likely to damage the special interest features, then section 28E of the Wildlife and Countryside Act 1981, as amended, requires consent from Natural England before work can proceed.
58. In addition to these statutory designations, individual sites may have been identified as Biodiversity Action Plan (BAP) Priority Habitats or as Local Wildlife or Geological Sites by Local Sites Partnerships. In such cases it is open to local authorities, using the powers provided under article 4 of the GPDO, to seek to further protect these sites by withdrawing permitted development rights where they are concerned that these would be exercised in a way harmful to a site. Defra's guidance on this point is called, *Local Sites: Guidance on their Identification, Selection and Management*.
59. The Government believes therefore that the existing legislative framework is satisfactory to ensure these protected areas and species are not damaged by inappropriate development.

Question 8 – Do you agree that the existing protection is adequate?

Archaeologically Sensitive Areas

60. The relationship between planning and the needs of archaeology is set out in *Planning Policy Guidance Note 16: Archaeology and Planning* (PPG16), which advises that archaeological remains should be seen as a finite, and non-renewable resource. It adds that, in particular, care must be taken to ensure that archaeological remains are not needlessly or thoughtlessly destroyed. They can contain irreplaceable information about our past and the potential for an increase in future knowledge.
61. There is a risk that someone exercising permitted development rights for microgeneration could potentially have an adverse effect in an archaeologically sensitive area. In particular, ground source heat pumps, due to the excavation involved, may potentially be damaging to archaeologically sensitive areas. In the light of this it was considered whether any mechanism needed to be put in place to provide additional safeguards for these areas. However, on balance, the Government believes that guidance on microgeneration should highlight this issue and recommend dialogue with the local planning authority where development could potentially impact on such an area. Guidance would also refer to existing advice provided in PPG16 reminding local planning authorities that where they are concerned that permitted development rights would be exercised in a way harmful to a known archaeological site they should consider using the powers provided under article 4 of the GPDO to withdraw those rights.

Question 9 – Is guidance sufficient to address the potential impact on archaeologically sensitive areas?

Guidance

62. The Government intends to issue guidance for householders on permitted development rights for microgeneration. It will seek to provide a simple introduction for householders as to what is permitted and more general advice about how they should go about exercising their rights.
63. We also intend to issue more detailed guidance to accompany the changes. We would welcome suggestions as to what you feel this guidance should cover in addition to an explanation of the scope of permitted development rights for microgeneration.

Question 10 – In addition to providing advice as to the scope of the changes to the GPDO, what could guidance also usefully cover?

Section 4

Microgeneration – the technologies, issues arising and recommendations

Solar – Background

64. Solar microgeneration technology is by far the most common form of microgeneration equipment currently in use in England. Solar systems will be one of two types – a solar water heating system or a solar photovoltaic system. As the name suggests, the former uses solar energy to heat water and the latter system converts the same energy into electricity.
65. The installation of solar equipment is one of the existing grey areas with regard to permitted development. Entec's research suggested that currently 90% of water heating systems are considered permitted development, as are 50% of photovoltaic installations. Although evidence suggests that where planning permission is required refusals are rare, the Government believes it is important for local planning authorities, householders and the microgeneration industry that this confusion and uncertainty, as well as the hurdle of unnecessary permissions, is removed.
66. Entec estimate that a suitably sized solar water heating system will typically provide 50% of a household's hot water needs over the year. Similarly, the typical domestic solar photovoltaic installation will deliver savings of about a third of an average household's annual electricity bill.
67. Given that solar microgeneration is a relatively mature technology, that the take-up of microgeneration will continue to increase and that the Government proposes a more permissive and clear framework as to what is permitted, there is significant scope for solar technology to play a much greater role in meeting our energy needs.

Solar – Issues and Recommendations

68. Solar water heating and photovoltaic systems were identified by Entec as sharing many characteristics that could have a potential planning impact. The approach we propose therefore does not differentiate between the two different systems.
69. The work undertaken by Entec suggests the overriding consideration to be addressed when framing proposals is the visual and landscape/townscape impact. The following factors were highlighted as affecting the degree and significance of the impact:
 - projection above the roof.
 - positioning and coverage on the roof/walls.
 - cumulative impact.

70. Although solar equipment will generally be mounted on a building it is possible for it to be mounted as a stand-alone unit. In respect of stand-alone equipment, distance to neighbouring properties and overshadowing also needs to be considered in terms of the visual impact as should safety in the event of the unit toppling over.
71. Drawing on evidence and views from local planning authorities and other stakeholders, Entec concluded that there is little evidence of likely demonstrable visual harm being caused by solar equipment, other than perhaps on the principal elevations in protected areas. They suggest therefore that there should be a general presumption in favour of the domestic installation of solar microgeneration equipment, subject to a limited degree of control to ensure that what impacts there are are acceptable. The parameters proposed were in respect of height of projection above the roof plane/ from the wall, coverage of the roof/wall and, in the case of stand alone only, distance to the boundary with neighbouring properties and height.
72. The principal restriction would relate to both solar on building and solar stand-alone technologies and reflect the potential visual impact that could occur in a conservation area or a World Heritage Site. The Government proposes that the installation of solar technology should not be permitted where it would face onto and be visible from a highway in such an area.
73. More generally, in relation to solar on buildings, Entec recommended that solar technologies should be permitted subject to them projecting no more than 150mm from the existing roof plane or standing-off no more than 150mm from a wall. In addition, in order to ensure that the visual impact is minimised, no part of the installation should be higher than the highest part of the roof (which will generally be the ridge line). Entec reason that while there would be a visual impact by allowing this degree of flexibility, it would be acceptable. They note that setting a 150mm limit would be sufficient to cater for the installation of most modern solar products.
74. In terms of restrictions for the coverage of a surface, Entec proposed that development should be limited so that coverage would not exceed 60% of a roof or wall. The Government considers that it is arguable as to whether there is necessarily a correlation between the extent of the coverage of panels and their visual impact in the way the report suggests. We therefore propose that there should be no such limit. However, we would appreciate the views of consultees on this issue. We also would particularly welcome views as to whether permitted development rights should apply equally to the installation of panels on both roofs and walls.
75. For solar stand-alone technologies Entec concluded that the key additional consideration in terms of controlling impact was the dimensions of the unit and its positioning in relation to boundaries. In relation to the overall height of the structure, Entec drew upon existing limits in the GPDO to arrive at an acceptable height – the suggested 4m according with the permitted ridge height for stand-alone buildings within the curtilage of a dwellinghouse. However, Entec did recommend that given the nature of these proposals and, for example, the potential to cause shading on neighbouring properties, that development of this type should be no nearer than 3-4m from a neighbour's boundary.

76. Another consideration is that for solar stand-alone systems it will often be the front of the property that is positioned to make the best use of the sun’s energy. Entec considered this in terms of the existing permitted development rights for development within the curtilage of a dwellinghouse and fronting a highway that requires it to be set back at least 20m from that highway. On balance, however, they viewed the 20m limitation as being overly restrictive and suggested that 10m would be sufficient.
77. The Government, however, is keen to seek the views of consultees on a different approach that would be more permissive in terms of development close to a highway, but less permissive in terms of distance to other boundaries (to reflect concerns about the potential for a unit to topple over). We are therefore proposing a single separation distance of 5m to a boundary (with either a highway or a neighbouring property). The distance has been arrived at on the basis of a maximum overall height of a solar stand alone unit of no more than 4m.
78. Further to this, the potential impact of the surface area of the panels is also a factor when considering potential impacts. Entec’s assessment is that an acceptable approach would be to limit the surface area of the panels to 9m². The Government has considered this further and feels that while this proposal seems broadly correct, the restriction needs to be amended slightly to clarify the basic restriction. It is therefore proposed that the size of the array should be no more than 3m wide or deep.
79. **In summary therefore and based on Entec’s recommendations the Government now proposes that solar microgeneration is permitted subject to the constraints set out in the table below:**

Solar on Roof/Wall	Limitation
Height above roof/from wall	150mm and not higher than the highest part of the roof
Restriction in conservation areas and World Heritage Sites	Development facing on to and visible from a highway
Solar Stand-Alone	Limitation
Height of unit	4m
Distance to the boundary of a highway or a neighbour’s property	5m
Size of array	No more than 3m deep or wide – equating to a maximum surface area of 9m ²
Restriction in conservation areas and World Heritage Sites	Development facing on to and visible from a highway

Question 11 – Do you agree with the recommendations for solar microgeneration?

Question 12 – Do you agree that there should be no restriction in terms of the coverage of roofs and walls by solar panels? If not, what would be an acceptable percentage?

Question 13 – Generally, should the same level of permissiveness apply to solar panels on a wall as on a roof?

Question 14 – Do you agree with a minimum separation distance of 5m to the boundary of a highway or neighbouring property for a stand-alone solar unit?

Heat Pumps – Background

80. Heat pumps extract heat from outside a building and release that heat at a higher temperature inside the building. The three main types are ground source heat pumps (GSHPs), water source heat pumps (WSHPs) and air source heat pumps (ASHPs), which, as the names suggest, extract heat from the ground, bodies of water and the air respectively.
81. A GSHP is used to extract heat from the ground for use in space and water heating and can also use the same process to supply cooling. These units take advantage of the earth's constant temperature. The ground loop could comprise a trench system, in which a pipe is buried in a shallow trench, or a vertical system in which a borehole is drilled to a greater depth. Trenches can be laid in the ground between 1 to 2 metres depth. For vertical systems, the depth of the borehole will be specific to the site and to the pump.
82. A WSHP can either be a closed loop or an open loop. The closed loop is basically a pipe containing an anti-freeze mixture and similar to a GSHP. A WSHP can be either submerged in a river or a lake or be installed in the form of a vertical bore into a groundwater body. In the UK, the relatively stable temperature of groundwater of between 4-10°C means these pumps may well be more efficient. An open loop is effectively a bore that draws the water directly from an aquifer before the water is discharged into a separate well or returned to surface water.
83. An ASHP draws heat from the ambient air. If placed outside of a building, their cheaper costs of installation might be offset somewhat by the variability in air temperature.

Heat Pumps – Issues and Recommendations

84. For all types of heat pumps, due to the excavation of trenches or bores, it is important to consider whether archaeological remains exist on the site and if this has any implications for the works involved. Usually any implications can be easily worked through and information can be found in Planning Policy Guidance 16. It was suggested during the course of Entec's work that GSHP proposals should be carefully considered in designated Archaeologically Sensitive Areas and that householders should consult their local planning authority to establish if their property falls within one. The idea of more formal notification and a period of say 21 days for the local planning authority to respond was also mooted. However, the Government proposes that guidance is sufficient to address concerns and no specific provision is therefore required in the GPDO.

85. In respect of GSHPs or WSHPs that rely on vertical drilling, in many cases a licence is necessary from the Environment Agency to drill to prevent harm to groundwater or contamination. In the case of an open loop WSHP licences will always be required. People looking to install a heat pump of either type should therefore speak to the Environment Agency as early in the process as possible. The Government believes that the existing requirements are adequate and do not need to be addressed through the planning regime.
86. In respect of ASHPs, visual impact also has to be considered. ASHPs are most commonly mounted at ground level or on a wall of the building in question, however, they may also be positioned on a balcony of an apartment or alternatively on a flat roof. The mounting is generally sited in an as discrete location as possible, considering also noise implications and air flow into the pump. Ducting may also be necessary to ensure the unit has a reasonable air flow. Whilst clearly not attractive in their own right, Entec suggested that, generally, providing guidance is given as to careful location, these should be acceptable on visual grounds. However, careful attention would be required for situating an ASHP in a designated area. The Government, therefore, proposes restrictions on installation should be limited to development in conservation areas and World Heritage Sites where they would only be permitted where they did not face onto and were visible from a highway.
87. Entec considered that although the pumps are relatively quiet, similar to stand alone air-conditioning units, the fan and compressor on an ASHP in particular can make some noise and if possible should be situated away from windows and adjacent buildings in order to minimise distraction. The Government therefore proposes that the issue of noise should be addressed by placing limitations on noise and these are set out in Section 3 and at Annex 2.
88. **Based on Entec’s recommendations, therefore, the Government proposes that the only controls necessary though the GPDO for heat pumps is for ASHPs. These are:**

Air Source Heat Pumps	Limitation
Noise	Restricted as outlined at Annex 2
Restriction in conservation areas and World Heritage Sites	Development facing on to and visible from a highway

Question 15 – Do you agree with the recommendations for heat pumps?

Question 16 – Do you agree that the likely impact of noise from ASHPs should be dealt with by specific noise restrictions in the same way as proposed for domestic wind turbines?

Wind Turbines – Background

89. Entec’s report suggests that wind turbines are probably the third biggest form of domestic microgeneration in terms of potential, are far less common than solar and can be made at almost any size. However, as turbine technology advances their contribution is likely to expand significantly if, as appears likely, they are promoted more commercially and become more of a mainstream product.

90. The power produced by a turbine depends on the 'swept area' of the rotor. This means that a 'horizontal axis' turbine with a rotor diameter of 2m would produce roughly four times the power of a turbine with a 1m diameter rotor.
91. All wind turbines place a rotor into the wind flow. This rotor is turned by the wind and this rotary motion is then connected to a mill, pump or to an electricity generator. Faster winds contain more energy than slower winds. Winds also vary between heights above the ground; the higher above the ground, the faster the winds. This means that, traditionally, wind turbines are usually placed on tall towers. However, more recently turbines are being introduced to the market that are designed to be sited on buildings. Entec's work therefore considered both the installation of stand-alone and building-mounted turbines. The work suggested that a 1 kilowatt wind turbine with a rotor blade diameter of 1.75 metres could produce around 15-20% of a household's annual electricity needs and in a more windy, rural location this could be significantly more.

Wind Turbines – Issues and Recommendations

92. From a planning perspective, domestic wind turbines have a greater number of characteristics that have a potential planning impact when compared with other microgeneration technologies. Entec highlighted four key areas for consideration when thinking about the planning impact of micro wind turbines: size and scale; safety; nuisance and the impact on bats.
93. **A further consideration that needs more thought is the potential impact of domestic wind turbines on radar. The issue will be taken forward in parallel with this consultation and involve further work with the microgeneration industry, Defence Estates, the National Air Traffic Services and the Civil Aviation Authority. Aircraft safety will obviously be of paramount importance and therefore the following proposals will also be subject to the findings of this further work, as well as the more general responses to this consultation paper, when considering what should finally be permitted for domestic turbines.**
94. Entec considered that the visual impact of wind turbines on the local landscape could be considered small if they were relatively small in size. In relation to stand-alone turbines, the height of the pole on which the turbine is mounted is a key consideration. Evidence collected by Entec showed that while many local planning authorities considered the visual impact to be the key issue in relation to applications for planning permission, where the proposal related to a turbine on a pole of 10m or less planning permission was granted. Entec, therefore, recommended that permitted development rights are set at that level. This, they suggested, allows for many of the products that generate sufficient power for the needs of a household while not affecting unduly visual amenity.
95. With regard to turbines mounted on buildings, Entec sought to address what would be a comparable impact to the permitted development rights proposed for stand-alone turbines. They suggested that 3m above the ridge line of a property is comparable to a stand-alone height of 10m. 3m is adequate in many circumstances, but would enable the turbine to be 'read' as part of the property thus reducing visual impact. In terms of the blade diameter the Government accepts Entec's recommendation that a diameter of up to 2m would be a suitable compromise between energy production and potential impact.

96. Entec also recommended that to ensure the cumulative visual impact is considered, only one turbine should be placed on a “typical” dwelling. They did, however, suggest that larger blocks of flats (not smaller house conversions) could accommodate up to four turbines without an undue adverse impact. The Government accepts the basic reasoning behind the proposal, but proposes that the approach taken should mirror more closely that taken on permitted development for antennas and not differentiate between single dwellinghouses and flats (whether converted or not), but provide different permitted development rights depending on the building height. Therefore on a building below 15m only one turbine would be permitted and on a building of 15m or more four turbines would be permitted.
97. Visual impact, of course, is not only determined by the size and number of the turbines, but also a turbine’s proximity to others. As with solar stand-alone, for turbines that are pole-mounted the risk of topple also has to be factored-in when considering restrictions on the installation of this technology. Given that any restriction might also be complemented by a separation distance of 10m to the nearest habitable room to deal also with issues of noise, Entec’s suggested that a stand-alone turbine should be located no nearer than 5m to a highway and 2m to a neighbour’s boundary.
98. However, having considered this issue further, the Government is minded to take an approach similar to that for solar stand-alone and place just one limit that relates to the separation distance to the boundary of a highway or a neighbour’s property. Given that topple has to be considered and that the maximum height of a turbine could be 11m (given a turbine with a blade diameter of 2m could be mounted on a 10m pole) the Government is proposing this distance should be set at 12m.
99. The remaining issues are the most complex and are related to annoyance and sleep disturbance. It is accepted that wind turbines can cause noise. However, as stated in Section 3, defining readily acceptable, clear, simple and achievable noise limits is not easy. In particular, turbines mounted on buildings pose particular difficulties given that they are likely to be in closer proximity to neighbouring properties. For terraced or semi-detached houses, where they will be mounted on the same structure as a neighbouring property, there is a greater challenge in addressing noise and vibration issues.
100. However, as explained in Section 3, the Government is proposing that limitations on noise are put in place to ensure that the potential impacts are controlled both internally and externally for neighbouring dwellings.
101. The further issue is vibration being transmitted through a building’s structure and posing potential safety and annoyance issues in neighbouring dwellings. As Entec recognised, building-mounted turbines will transmit some energy to their support structure. Issues of structural stability would be covered under the Building Regulations. However, in relation to annoyance, work has been undertaken with Defra to determine what level of vibration is unlikely to cause annoyance. The Government proposes a level deemed acceptable for vibration at the threshold of perception. Current research suggests that perception of vibration is directly linked to the onset of annoyance. Further detail on this criterion is provided in Annex 2, paragraph 4.

102. Although, as section 3 recognises, there is the potential for development generally to impact on protected sites and species, Entec highlighted possible concerns in particular in relation to bats and turbines. They did, however, acknowledge that evidence did not exist to assist in determining the possible level of risk. All bats and their roosts are already afforded legal protection under the Conservation (Natural Habitats, &c.) Regulations 1994 and the Wildlife and Countryside Act 1981 (as amended), which has been enhanced through the Countryside and Rights of Way Act 2000. This legislation has led to the development of a range of procedures to minimise potential effects on bats through development, if their presence is known or suspected; the Government believes this affords sufficient protection.

103. **As Entec’s recommendations as a starting point, the Government is now proposing that wind microgeneration is permitted subject to:**

Wind on Building	Limitation
Height (including blade) above highest part of roof	3m
Blade Diameter	2m
Noise	As outlined at Annex 2
Vibration	As outlined at Annex 2
Number of turbines	One on a building 15m or less in height. Four on buildings above 15m.
Restriction in conservation areas and World Heritage Sites	No permitted development
Wind Stand Alone	
Height (including blade)	11m
Blade Diameter	2m
Noise	As outlined at Annex 2
Vibration	As outlined at Annex 2
Restriction in conservation areas and World Heritage Sites	Development facing on to and visible from a highway

Question 17 – Do you agree with the recommendations for wind turbines?

Question 18 – Do you agree that the likely impact of noise from turbines should be dealt with by specific noise restrictions in the way proposed?

Biomass – Background

104. The term biomass covers all plant and animal material, although in domestic applications it most commonly refers to wood. The most frequent application is direct heating. Fuel sources are now readily available including wood from forests, urban tree pruning, farmed coppices, or farm and factory waste, and fuel can now be commercially sourced in the form of wood chips or pellets. Traditional logs can also be used.

105. Biomass has the advantage that it can be grown, stored and transported and although it emits carbon dioxide when burnt, it is considered close to carbon-neutral because the amount of carbon emitted when it is burnt is the same as that which is absorbed during growth. It is effectively recycling the carbon and preventing consumption of carbon stored in fossil fuels.
106. Typically in domestic applications biomass heating is installed in the form of a single room heater or for multiple rooms as a boiler which feeds into a central heating system.
107. Biomass stoves are one of the most traditional methods of domestic heating to a living area, usually as a background source of heating. Stoves can accept logs, wood chips or pellets and a variety of other biomass sources. Usually stoves are used for heating a single room, but some models now come with a 'back boiler' provision, which is essentially a small water tank fitted at the back. These can almost always be accommodated within a property and so do not need further permitted development rights.
108. Biomass boilers can be fed automatically from fuel hoppers. Pellets and chips are appropriate for these systems, however, pellets are perhaps better suited to small domestic applications as the uniform size and density provides a consistent heat output. This typically requires a daily addition of bagged fuel to the hopper. A silo is usually needed for biomass combined heat and power because of the quantities of fuel needed to operate these systems. Typically these boilers are larger than existing standard boilers and are likely to require more space.

Issues and Recommendations

109. As much of the work related to the installation of biomass into a home is internal, planning will generally not be an issue for the boiler or stove itself. However, two issues did arise during Entec's work connected to the technology.
110. First, many biomass schemes may also require construction of a small extension, lean-to or an outhouse because they need a reasonable amount of storage space for the fuel, and appropriate access for service vehicles. The amount of space needed will depend on the type of fuel, fuel demand, handling system and the reliability of delivery. Pellet fuel should be handled as little as possible and all wood should be stored in a dry location. A hopper is a common method of wood storage which can be located just outside the building, or alternatively an underground lined pit can mean less visual intrusion.
111. Entec, therefore, suggested that, given the desire to promote the take-up of microgeneration generally, there was a case for providing an additional allowance in the GPDO in addition to the allowances already provided for extensions to a building or for stand-alone buildings in the curtilage of a property. The recommendation was for an additional 10m³, with further restrictions, for example, in terms of height and with a specific provision to ensure it must be used for the storage of biomass fuel to prevent the possibility of it being used as a way to extend ordinary householder permitted development rights.

112. However, while the Government wants to promote microgeneration it believes that it would not be appropriate to propose additional permitted developments rights for extensions and outbuildings in the way recommended in advance of the current wider review of householder permitted development rights.
113. The second issue is around the need for an external flue for the release of combustion gases. In line with the Entec recommendation, the Government proposes that it should be made clear in the GPDO that a flue of up to 1m above the ridge line is permitted.

Biomass	Limitation
Flues	No more than 1m above the ridge line of the highest part of the roof.
Restriction in conservation areas and World Heritage Sites	Development facing on to and visible from a highway

Question 19 – Do you agree with the recommendations for biomass?

Combined Heat and Power – Background

114. A combined heat and power (CHP) device simultaneously generates both heat and power and, when the device is an internal combustion engine, it is a mature technology widely used in industry. Recovering the heat from a power generating process leads to high overall efficiencies and, in a domestic situation, using micro-CHP means no electrical losses over transmission lines. Typically a micro-CHP unit will be operated on the heating demand rather than the electricity demand of a household, and can provide space and water heating in residential or commercial buildings, similar to a conventional boiler.
115. Biomass CHP units are available but are more difficult to scale from community size units down to individual household size and on a domestic scale it is generally more effective to use biomass for direct heating to maximise the efficiency and minimise the cost. Micro-CHP is now a relatively straightforward replacement for the domestic boiler and because of the small size can be ‘dropped-in’ to most homes. Because micro CHP is typically heat-led the sizing of a unit is driven by a house’s annual heat demand.

Issues and Recommendations

116. Entec recognised there were few planning considerations in relation to CHP. The report did recognise that if CHP were to be used to supply the needs of a number of flats that the CHP unit would inevitably need to be quite large and that it was likely that additional space would be needed to accommodate the unit (perhaps the size of a garage). The report therefore recommended that a permitted development allowance be provided to allow a structure to house the CHP unit without the need for planning permission. Again, given the wider review being undertaken in relation to permitted development, the Government believes that this should not be proposed at this stage.

117. As with biomass, the issue of flues is also relevant and the Government similarly proposes a provision so as to allow the necessary installation of flues up to 1m above the ridge line.

CHP	Limitation
Flues	No more than 1m above the ridge line of the highest part of the roof.
Restriction in conservation areas and World Heritage Sites	Development facing on to and visible from a highway

Question 20 – Do you agree with the recommendations for CHP?

Hydro – Background

118. Hydroelectricity generation operates by converting the potential energy stored in water to turn a turbine that then produces electricity.

Issues and Recommendation

119. As the Entec report recognises, these schemes are rare in a domestic context and very few would be sited within the curtilage of a dwellinghouse. Where there is the need to provide a building to house a turbine, householders might be able to utilise existing permitted development rights. The evidence collected by Entec suggests that there is little scope to provide additional permitted development rights for this technology that would either encourage and/or ease its take-up. While Entec suggest that above ground pipes might be made permitted development if less than 50cm in height, on balance, the Government is not persuaded that such a change would achieve anything in practice.

Question 21 – Do you agree there should be no additional permitted development rights for hydro?

Annex 1

Summary of Recommendations

	Normal Buildings	Buildings in Conservation Areas and World Heritage Sites
Solar on building	Permitted for the roof & walls unless it protrudes more than 150 mm above roof plane.	Permitted as normal, except on principal elevation fronting a highway.
Solar stand alone	Permitted if less than 4 metres height. At least 5 metres to any boundary. Area of array a maximum 9m ² .	Permitted as normal except in front of principal elevation.
Ground Source Heat Pumps	Permitted.	Permitted.
Air Source Heat Pumps	Permitted if – internal noise <30dB, external noise <40dB, “garden” noise <40dB.	Permitted as normal except on principal elevation fronting a highway.
Water Source Heat Pumps	Permitted.	Permitted.
Wind Turbines on building	Permitted if <3m above ridge (including the blade) and diameter of blades <2m. Also internal noise <30dB, external noise <40dB, “garden” noise <40dB. Up to 4 turbines on buildings >15m (as with antennas). Vibration <0.5mm/s.	Not Permitted.
Wind Turbines (Stand Alone)	Permitted if <11m (including the blade) high and diameter of blades <2m. At least 12m from a boundary. Also internal noise <30dB, external noise <40dB, “garden” noise <40dB. Vibration <0.5mm/s.	Permitted as normal except in front of principal elevation.
Bio Mass	Permitted – Limit of Flue height 1m above ridge.	Flues permitted as normal except on principal elevation fronting a highway.
Combined Heat and Power	Permitted – Limit of Flue height 1m above ridge.	Flues permitted as normal except on principal elevation fronting a highway.
Hydro	No change.	No change.

Annex 2

Detailed Noise and Vibration Proposals

1. The design and installation of a MWT should cause the internal noise level, due to noise from the MWT alone, in any mode of operation not to exceed a level of 30dB $L_{AEQ, 5min}$ when measured 1m from any acoustically reflecting surface within a habitable room with windows closed of any dwelling within the same structure upon which the MWT is mounted;
2. The design and installation of a MWT should cause an external noise level, due to noise from the MWT alone, in any mode of operation not to exceed 40dB $L_{AEQ, 5min}$, measured 1m from the façade at the window to a habitable room of any neighbouring residential property;
3. The design and installation of a MWT should cause the external noise level due to noise from the MWT alone, in any mode of operation not to exceed 40dB $L_{AEQ, 5min}$, measured under free-field conditions, over an area of not less than 50% of a private outdoor space not solely associated with the host dwelling; and
4. The design and installation of a MWT should cause the vibration level from the MWT alone, in any mode of operation, not to exceed a level of 0.5mms^{-1} (PPV), in the vertical (z-axis) direction, when measured on the floor towards the centre of any habitable room of any dwelling within the same structure upon which the MWT is mounted.

Annex 3

STATUTORY INSTRUMENTS

2007 No.

TOWN AND COUNTRY PLANNING, ENGLAND

The Town and Country Planning (General Permitted Development) (Amendment No. 2) (England) Order 2007

<i>Made</i>	- - - -	2007
<i>Laid before Parliament</i>		2007
<i>Coming into force</i>	- -	2007

The Secretary of State, in exercise of the powers conferred by sections 59, 60, 61, 74 and 333(7) of the Town and Country Planning Act 1990(a), makes the following Order:

Citation, commencement and application

1.—(1) This Order may be cited as the Town and Country Planning (General Permitted Development) (England) (Amendment No. 2) Order 2007 and shall come into force on 2007.

(2) This Order applies in relation to England only.

Amendment of the Town and Country Planning (General Permitted Development) Order 1995

2.—(1) The Town and Country Planning (General Permitted Development) Order 1995(b) shall be amended in accordance with paragraphs (2) and (3).

(2) In article 1(2) (interpretation) in paragraph (a) of the definition of “building”, for “25 and 33” substitute “25, 33 and 40”.

(3) In Schedule 2 after Part 39 (temporary protection of poultry and other captive birds) add—

“PART 40

Installation of domestic microgeneration equipment

Class A

Permitted development

A. The installation, alteration or replacement of solar PV or solar hot water equipment on—

(a) a dwellinghouse, or a building containing a flat; or

(a) 1990 c.8; to which there are amendments not relevant to this Order. The functions of the Secretary of State under sections 59, 71, 74, 78 and 33(7) were, so far as exercisable in relation to Wales transferred to the National Assembly for Wales by article 2 of and Schedule 1 to the National Assembly for Wales (Transfer of Functions) Order 1999, S.I. 1999/672: see the entry in article 2 of and Schedule 1 for the Town and Country Planning Act 1990 (c.8).

(b) S.I. 1995/418. Relevant amendments were made by S.I. 2007/406.

- (b) a building situated within the curtilage of a dwellinghouse, or a building containing a flat.

Development not permitted

A.1. Development is not permitted by Class A, in the case of solar PV or solar hot water equipment installed on an existing wall or roof of a dwellinghouse, if the solar PV or solar hot water equipment would protrude more than 150mm beyond the external surface of the wall or roof line.

A.2. Development is not permitted by Class A, in the case of a building containing a flat if—

- (a) the solar PV or solar hot water equipment would be installed on any part of the external walls of the building; or
- (b) in the case of solar PV or solar hot water equipment installed on the roof of the building, it would result in the highest part of the solar PV or solar hot water equipment being higher than the highest part of the roof (excluding any chimney).

A.3. Development is not permitted by Class A, in the case of land within a conservation area or which is a World Heritage Site, if the solar PV or solar hot water equipment would be installed on a wall or roof slope—

- (a) forming the principal elevation of the dwellinghouse or of the building containing the flat; and
- (b) which faces onto or is visible from a highway.

Conditions

A.4. Development is permitted by Class A subject to the following conditions—

- (a) solar PV or solar hot water equipment installed on a building shall, so far as practicable, be sited so as to minimise its effect on the external appearance of the building;
- (b) solar PV or solar hot water equipment shall, so far as practicable, be sited so as to minimise its effect on the amenity of the area; and
- (c) solar PV or solar hot water equipment no longer needed for domestic microgeneration shall be removed as soon as reasonably practicable.

Class B

Permitted development

B. The installation, alteration or replacement of stand alone solar within the curtilage of a dwellinghouse or within the curtilage of a building containing a flat.

Development not permitted

B.1. Development is not permitted by Class B if it would result in the presence within the curtilage of more than one stand alone solar.

B.2. Development is not permitted by Class B if any part of the stand alone solar—

- (a) would be installed on a building;
- (b) would exceed 4 metres in height; or
- (c) would be situated within 5 metres of the boundary of the curtilage.

B.3. Development is not permitted by Class B if the surface area of the solar panels forming part of the stand alone solar would exceed 9 square metres.

B.4. Development is not permitted by Class B, in the case of land within a conservation area or which is a World Heritage Site, if the stand alone solar would face onto or be visible from a highway.

Conditions

B.5. Development is permitted by Class B subject to the following conditions—

- (a) stand alone solar shall, so far as practicable, be sited so as to minimise its effect on the amenity of the area;
- (b) stand alone solar, so far as practicable, be sited so as to minimise its effect on the external appearance of the dwelling house or building containing a flat; and
- (c) stand alone solar which is no longer needed for domestic microgeneration shall be removed as soon as reasonably practicable.

Class C

Permitted development

C. The installation, alteration or replacement of a ground source heat pump within the curtilage of a dwellinghouse or a building containing a flat.

Class D

Permitted development

D. The installation, alteration or replacement of an air source heat pump on, or within the curtilage of, a dwellinghouse or building containing a flat.

Development not permitted

D.1. Development is not permitted by Class D if—

- (a) in the case of an air source heat pump installed on a dwellinghouse or building containing a flat, the external noise level due to noise from the air source heat pump alone, in any mode of operation, would exceed 40dB $L_{AEQ, 5 \text{ mins}}$ when measured one metre from the facade at the window of a habitable room of any dwellinghouse or flat;
- (b) in the case of an air source heat pump installed on a building containing a flat, the internal noise level due to noise from the pump alone, in any mode of operation, would exceed 30dBa $L_{AEQ, 5 \text{ mins}}$ when measured one metre from any acoustically reflecting surface within a habitable room, with the windows closed, of any dwellinghouse or flat ; or
- (c) in the case of an air source heat pump situated within the curtilage of a dwellinghouse or building containing a flat, the external noise level due to noise from the pump alone, in any mode of operation, would exceed 40dBa $L_{AEQ, 5 \text{ mins}}$ when measured under free-field conditions over an area of not less than 50 per cent of a private outdoor space of any dwellinghouse or flat.

Conditions

D.2 Development is permitted by Class D subject to the following conditions—

- (a) an air source heat pump installed on a dwellinghouse or building containing a flat shall, so far as practicable, be sited so as to minimise its effect on the external appearance of the building;
- (b) an air source heat pump shall, so far as practicable, be sited so as to minimise its effect on the amenity of the area; and

- (c) an air source heat pump which is no longer needed for domestic microgeneration shall be removed as soon as reasonably practicable.

Class E

Permitted development

E. The installation, alteration or replacement of a water source heat pump within the curtilage of a dwellinghouse or building containing a flat.

Class F

Permitted development

F. The installation, alteration or replacement of a wind turbine on a dwellinghouse or on a building containing a flat.

Development not permitted

F.1. Development is not permitted by Class F if—

- (a) it would result in the presence on the dwellinghouse or the building containing the flat of—
 - (i) more than one wind turbine in relation to a building of 15 metres in height or less; or
 - (ii) more than four wind turbines in relation to a building exceeding 15 metres in height;
- (b) the internal noise level due to noise from the wind turbine alone, in any mode of operation, would exceed 30dBa $L_{AEQ, 5 \text{ mins}}$ when measured one metre from any acoustically reflecting surface within a habitable room, with the windows closed, of any dwellinghouse or flat ;
- (c) the external noise level due to noise from the turbine alone, in any mode of operation, would exceed 40dB $L_{AEQ, 5 \text{ mins}}$ when measured one metre from the facade at the window of a habitable room of any dwellinghouse or flat;
- (d) the external noise level due to noise from the turbine alone, in any mode of operation, would exceed 40dBa $L_{AEQ, 5 \text{ mins}}$ when measured under free-field conditions over an area of not less than 50 per cent of a private outdoor space of any dwellinghouse or flat;
- (e) the vibration level from the wind turbine alone, in any mode of operation, would exceed 0.5mm/s (PPV) in the vertical (z-axis) direction when measured on the floor towards the centre of any habitable room of any dwellinghouse or flat;
- (f) the length of any blade of the wind turbine would exceed one metre when measured from its tip to the axis of the turbine;
- (g) in the case of an installation on a roof, the highest part of the wind turbine (including any blade) would protrude more than three metres above the highest part of the roof (excluding the chimney);
- (h) the development would be in a conservation area or at a World Heritage Site.

Conditions

F.2. Development is permitted by Class F subject to the following conditions—

- (a) a wind turbine shall, so far as practicable, be sited so as to minimise its effect on the external appearance of the building;
- (b) a wind turbine shall, so far as practicable, be sited so as to minimise its effect on the amenity of the area; and

- (c) a wind turbine which is no longer needed for domestic microgeneration shall be removed as soon as reasonably practicable.

Class G

Permitted development

G. The installation of a stand alone wind turbine within the curtilage of a dwellinghouse or a building containing a flat.

Development not permitted

G.1. Development is not permitted by Class G if—

- (a) it would result in the presence within the curtilage of more than one stand alone wind turbine;
- (b) the stand alone wind turbine would be installed on a building;
- (c) the highest part of the stand alone wind turbine (including any blade) would exceed 11 metres in height;
- (d) the length of any blade of the stand alone wind turbine would exceed one metre when measured from its tip to the axis of the turbine;
- (e) the internal noise level due to noise from the stand alone wind turbine alone, in any mode of operation, would exceed 30 dB $L_{AEQ, 5 \text{ mins}}$ when measured one metre from any acoustically reflecting surface within a habitable room, with windows closed, of any dwellinghouse or flat;
- (f) the external noise level due to noise from the stand alone wind turbine alone, in any mode of operation, would exceed 40dB $L_{AEQ, 5 \text{ mins}}$ when measured one metre from the facade at the window of a habitable room of any dwellinghouse or flat;
- (g) the external noise level due to noise from the stand alone wind turbine alone, in any mode of operation, would exceed 40dBa $L_{AEQ, 5 \text{ mins}}$ when measured under free-field conditions over an area of not less than 50 per cent of a private outdoor space of any dwellinghouse or flat;
- (h) the vibration level from the wind turbine, in any mode of operation, would exceed 0.5mm/s (PPV) when measured in the vertical (z-axis) when measured on the floor towards the nearest habitable room of any dwellinghouse or flat;
- (i) any part of the wind turbine would be within 12 metres of the boundary of the curtilage.

G.2. Development is not permitted by Class G, in the case land within a conservation area or which is a World Heritage Site, if the stand alone wind turbine would be—

- (a) installed in front of the principal elevation of the dwellinghouse or building containing the flat; and
- (b) visible from a highway.

Conditions

G.3 Development is permitted by Class G subject to the following conditions—

- (a) a stand alone wind turbine shall, so far as practicable, be sited so as to minimise its effect on the amenity of the area; and
- (b) a stand alone wind turbine which is no longer needed for domestic microgeneration shall be removed as soon as reasonably practicable.

Class H

Permitted development

H. The installation, alteration or replacement of a flue, forming part of a biomass heating system, on a dwellinghouse or building containing a flat.

Development not permitted

H.1 Development is not permitted by Class H if—

- (a) the height of the flue would protrude in excess of one metre above the highest part of the roof;
- (b) in the case of land within a conservation area or which is a World Heritage Site, the flue would be installed on the principal elevation of the dwellinghouse, or building containing a flat, and would be visible from a highway.

Class I

Permitted development

I. The installation, alteration or replacement of a flue, forming part of a combined heat and power system, on a dwellinghouse or building containing a flat.

Development not permitted.

I.1 Development is not permitted by Class I if—

- (a) the height of the flue would protrude in excess of one metre above the highest part of the roof;
- (b) in the case of land within a conservation area or which is a World Heritage Site, the flue would be installed on the principal elevation of the dwellinghouse, or building containing a flat, and would be visible from a highway.

Interpretation of Part 40

J.1. For the purposes of Part 40—

“habitable room” means a room in a dwelling house or flat other than a bathroom, shower room, water closet or kitchen;

“microgeneration” has the same meaning as in section 82(6) of the Energy Act 2004(a) and “domestic microgeneration” means the production of electricity or heat for domestic consumption using microgeneration equipment;

“solar PV” means solar photovoltaics;

“stand alone solar” means solar PV or solar hot water equipment which is not installed on a building; and

“stand alone wind turbine” means a wind turbine which is not installed on a building.

J.2. In class D, F and G, a reference to “any dwellinghouse or flat” does not include a reference to—

- (a) the dwellinghouse on which, or within the curtilage of which, the microgeneration equipment is installed; or
- (b) in the case of microgeneration equipment installed on, or within the curtilage of, a building containing a flat, the flat for which the equipment is provided.”.

(a) 2004 c.20

Signed by authority of the Secretary of State

	<i>Name</i>
	Parliamentary Under Secretary of State
Date	Department for Communities and Local Government

EXPLANATORY NOTE

(This note is not part of the Order)

This Order amends Part 2 of Schedule 2 to the Town and Country Planning (Permitted Development Order 1995 (“the 1995 order”). Part 2 confers permitted development rights in respect of certain development. Where such rights apply, no specific application for planning permission is needed.

Article 2(3) inserts new Part 40 of Schedule 2 into the 1995 Order. It provides permitted development rights for the installation of specified types of microgeneration equipment on or within the curtilage of dwellinghouses or flats subject to certain criteria. Article 2(2) makes a consequential change.

A regulatory impact assessment has been prepared in relation to this Order. The assessment has been placed in the Library of each House of Parliament and copies may be obtained from Shayne Coulson, Department for Communities and Local Government, Bressenden Place, London, SW1E 5DU (Telephone 020 7944 3567).

Annex 4

Partial Regulatory Impact Assessment

TITLE OF THE PROPOSAL

1. This is a Partial Regulatory Impact Assessment⁷ of the likely impacts of proposals to amend the Town and Country Planning (General Permitted Development) Order 1995 (the GPDO) to give permitted development rights to categories of microgeneration equipment.
2. The partial RIA has been prepared to inform the public consultation about the implications of amending the regulations. After the consultation closes the assessment will be refined by taking account of the comments received and a full Regulatory Impact Assessment will be prepared that will accompany any subsequent legislation.

PURPOSE AND INTENDED EFFECT

Objective

3. The Government's objective is to promote the take-up of domestic microgeneration by classifying categories of microgeneration equipment as permitted development under the GPDO. Equipment falling into the category of permitted development may be installed without first requiring a planning application.
4. The intended effects of the proposals include:
 - the reduction in cost to the householder of obtaining planning consent (the perceived barrier to take-up);
 - potential energy savings to householder (and commensurate reduction in demand from traditional non-renewable sources);
 - wider direct and indirect effects including a reduction on the burden to local planning authorities;
 - stimulation of the market demand for renewable technologies;
 - increased uptake of renewable sources of power relative to non-renewable sources leading to knock on effects on carbon savings; and
 - contribution towards national (and local) targets for renewable energy.

⁷ The study has been undertaken in accordance with the Cabinet Office's Better Regulation Executive guidelines for preparing partial RIAs <http://www.cabinetoffice.gov.uk/regulation/ria/>

Background

5. Microgeneration is the small-scale production of heat and/or electricity from low carbon sources⁸. Some microgeneration technologies produce energy using renewable resources such as solar, wind or biomass (e.g. wood) and some, like combined heat and power (CHP), may use fossil fuels but are much more efficient than conventional systems.
6. The current uptake of domestic microgeneration is estimated to be very low with just 82,000 installations across the UK by the end of 2004⁹. In recent times¹⁰, the average number of planning applications received per authority, has been around:
 - 0-3 per year for wind technologies;
 - 2-4 per year for PV and solar thermal panels; and
 - Negligible records of other forms of microgeneration such as heat pumps and hydro.
7. Microgeneration offers a practical response to some deep-seated problems that face the nation regarding climate change, national energy security and energy poverty. The Government's Microgeneration Strategy intends that microgeneration should become a realistic alternative or supplementary energy generation source for the householder, the community and for small businesses.
8. However, the Microgeneration Strategy identifies that the application of the regime governing planning permission for microgeneration equipment acts as a barrier to the wider take-up of newly emerging technologies. There is a lack of clarity about whether specific planning permission is required for some technologies and as a result individual local authorities interpret the regulations differently. In addition, the often complex, costly, time consuming and uncertain process of seeking planning permission for microgeneration equipment is also perceived to be a barrier to take-up.

RATIONALE FOR GOVERNMENT INTERVENTION

9. The regime for planning application fees is currently under review, but the current cost of applying for planning permission for domestic scale microgeneration equipment is £135. This may seem at first to be more a nuisance cost than a genuine economic cost compared to the cost of the microgeneration technology equipment itself. However, it becomes more significant once the additional costs of producing scaled drawings, the time and effort in filling in the application form and the potential 8 week waiting period cost before a decision is made. This can be a real economic and time deterrent to the uptake of microgeneration technologies.

⁸ <http://www.dti.gov.uk/energy/sources/sustainable/microgeneration/strategy/page27594.html>

⁹ EST, Potential for Microgeneration Study and Analysis Final Report. Nov 2005

¹⁰ Figures taken from the wider GPDO and microgeneration study commissioned by Department for Communities and Local Government to look at proposals for amendments to the guidance; this included a survey of 22 local authorities and national park authorities. It should be noted that there is a possibility that some households have installed microgeneration technologies such as solar panels without planning permission and therefore not recorded in this survey.

10. The Town and Country Planning (General Permitted Development) Order 1995 grants rights (known as permitted development rights) to carry out specified forms of development without the need to make an application for planning permission. Inclusion of appropriate categories of microgeneration technologies within the GPDO can directly eliminate these costs.
11. This will also have significant benefits if the demand and uptake for microgeneration technologies lead to reductions in price through economies of scale and in improvements to the effectiveness of these technologies. It will encourage companies to research and develop more energy effective equipment and mass production will drive prices to levels that are more affordable for more householders which will in turn stimulate further demand.
12. On the other hand, by doing nothing, the national energy generating capacity and cost effectiveness of microgeneration equipment will suffer.
13. More generally, these proposals represent a deregulatory initiative and are in line with the government objective of reducing the regulatory burden on households and industry and to improve the overall efficiency of the planning system.

CONSULTATION

Within government

14. In preparing the proposals for consultation we have consulted the Department for Trade and Industry; the Department for Environment, Food and Rural Affairs, the Department of Culture Media and Sport, the Department for Transport, the Ministry of Defence, and the Welsh Assembly.

Public consultation

15. There has been no previous full public consultation exercise on this proposal.
16. However, in developing these proposals we have held a series of workshops and consultations with key stakeholders, including:

The Micropower Council,	Institute of Acoustics
British Hydropower Assoc.,	Building Research Establishment (BRE)
British Photovoltaic Assoc.	Planning Officers Society
CHP Association	Town and Country Planning Association
British Wind Energy Association	Planning Aid
Energy Saving Trust	Royal Town Planning Institute
Carbon Trust	Royal Institute of British Architects
Renewable Energy Association	Royal Institute for Chartered Surveyors
Friends of the Earth	CABE
Green Alliance	Renewables East
English Nature	DTI
English Heritage	DEFRA
National Trust	Planning Inspectorate
Council for National Parks	MOD Defence Estates
Bats Conservation Trust	Civil Aviation Authority
Council for the Protection of Rural England	National Air Traffic Services
Royal Society for the Protection of Birds	English Nature

OPTIONS

Development of the options

17. A Regulatory Impact Assessment requires that a number of options are evaluated together with a 'do nothing' scenario. In this instance, three options have been identified based on possible actions which could reasonably be undertaken to achieve the objectives set by the Microgeneration Strategy.
18. The options vary in the extent to which different technologies would require specific planning consent and each option is examined for its impact.
19. The option testing process does not take into account external events that might affect the take up of microgeneration technologies (such as an increase in the relative price of non-renewable fuels) or different methods of intervention to address the overall objectives set out in Government policy (such as financial incentives for households, although we note that grants to help install technologies are already available).

Option 1 – 'Do nothing'

20. Under the present regulations all domestic wind turbines require express planning consent while, in the absence of clear statutory provision for them, Local Planning Authorities have been free to decide for themselves whether or not to require an application for other technologies. The 'Do nothing' option assumes that this situation remains, but that unless indicated otherwise, planning authorities insist upon a planning applications for all categories of equipment covered by these proposals.

Option 2 – Permit all microgeneration technology

21. Option 2 would provide 'full exemption' for all technologies defined as 'microgeneration' in Section 82 of the Energy Act 2004 – that is all electricity generating equipment with a capacity of less than 50 kilowatts and all heat production technologies with a capacity of less than 45 kilowatts thermal would be treated as permitted.

Option 3 – Permit where impact is acceptable

22. The GPDO would generally permit domestic households to install microgeneration without applying for planning permission subject to limits in respect of size, positioning, noise etc to control impacts on neighbours and the wider community. To reflect different levels of impact, tighter controls would exist in conservation areas.

SECTORS AND GROUPS AFFECTED

23. The sectors most likely to be affected by the proposals are:
 - Microgeneration equipment manufacturers (e.g. experience greater demand as barriers to uptake are removed);
 - Microgeneration equipment retailers (e.g. experience greater demand as barriers to uptake are removed);

- Direct supply chain (e.g. experience greater demand as barriers to uptake are removed); and
- Households wishing to purchase microgeneration technologies (e.g. reduced costs and increased utility as barriers to uptake are removed).

24. There may also be secondary effects to:

- Planning services/staff at local authorities (e.g. need to obtain training to better understand implications of proposals);
- Local authority department(s) that deal with enforcements relating to nuisance (e.g. if greater number of complaints are received from neighbouring households);
- Non-renewable energy suppliers – power generation, oil/gas companies as well as other indirect supply chain effects (e.g. experience reduced demand as barriers to uptake are removed); and
- Neighbours and surrounding occupiers. (eg potential impact from noise or vibration or loss of visual amenity).
- As required by the Race Relations (Amendment) Act 2000 we have also examined whether any of the options would affect any groups or communities (e.g. black and ethnic minority [BME] groups) differentially. We believe that they would not.

COSTS AND BENEFITS

Benefits

25. There are four main categories of quantified benefit, which will be examined in turn:

- Savings from reduced cost of planning applications
- Fuel cost savings
- Reduced carbon emissions
- Energy security

Average savings per householder from reduced cost of planning applications

26. Making a planning application incurs the following costs:

- Direct cost: the planning fee
- Indirect costs: transaction costs such as professional fees, production of scaled drawings etc.

27. If the requirement to seek planning permission were removed these costs would no longer be incurred. The saving per application would be as follows:
- Planning fee is £135
 - Transaction cost is £725¹¹
28. This produces a saving of £860 per installation.

Aggregate savings for householder from reduced cost of planning applications

29. Average estimated savings for individual householders can be used to compute aggregate savings to households in England and Wales. The Energy Savings Trust has published detailed forecasts of the overall up-take up of the new technologies in 2005. For the categories of development for which consent is now required EST's estimates are as follows:

Table 1: Cumulative growth in the number of microgeneration installations						
Year	Wind	Solar Hot Water	PV	Hydro	GS heat pumps	Total Installed Units
2009	1,025	51,071	2,402	334	2,250	57,082
2015	48,599	51,071	30,751	519	100,838	231,778
2020	620,830	54,974	95,112	1,773	537,900	1,310,589
2040	944,917	59,017	160,542	9,910	1,000,000	2,174,386

30. These forecasts of the cumulative totals for each technology may now be considered rather low. They are based on the assumption that there would be no Government support or interventions to promote microgeneration whereas Government intervention has already commenced. Also the forecasts take no account of the publicity that has surrounded some significant Government announcements with regard to climate change and on energy policy or of the high profile mass marketing by major domestic retailers of the new technologies. There is strong anecdotal evidence that increased public awareness is leading to more rapid take-up than EST had initially anticipated.
31. On the other hand EST's forecasts do not distinguish between installations on existing buildings for which an application is required, and those on new buildings which it may be assumed will be included as part of the planning application that grants consent for the development as a whole. For the purpose of this exercise EST's estimates need to be adjusted to provide that just 90% of installations will be on existing homes.

¹¹ Based on the PwC Administrative Burdens Measurement Project. The transaction cost of a minor application was calculated as £1450. It was assumed that a householder consent would cost half of this, or £725.

32. Table 2 provides adjusted forecasts of the growth in the number of installed units of microgeneration equipment:

Table 2: Cumulative growth in the number of microgeneration installations (Adjusted)						
Year	Wind	Solar Hot Water	PV	Hydro	GS heat pumps	Total Installed Units
2009	923	45,964	2,162	301	2,025	51,375
2015	43,739	45,964	27,676	467	90,754	208,600
2020	558,747	49,477	85,601	1,596	484,110	1,179,531
2040	850,425	53,115	144,488	8,919	900,000	1,956,947

33. However many microgeneration installations are already allowed as permitted development. The following table, based on research by Entec¹², shows the share of applications for each technology that do not require planning permission.

Table 3: Share of applications allowed as permitted development.				
Wind	Solar Hot Water	PV	Hydro	GS heat pumps
0%	90%	50%	0%	100%

34. The take-up forecasts in table 2 can then be adjusted once more to produce the number of installations requiring planning permission.

Table 4: Number of microgeneration installations requiring planning permission						
Year	Wind	Solar Hot Water	PV	Hydro	GS heat pumps	Total Installed Units
2009	923	4,596	1,081	301	0	6,901
2015	43,739	4,596	13,838	467	0	62,640
2020	558,747	4,948	42,801	1,596	0	608,091
2040	850,425	5,312	72,244	8,919	0	936,900

35. By applying the saving per installation of £860 to the number of cases that would otherwise have required planning permission in table 4, cumulative savings for option 2 can be calculated as follows:

Table 5: Cumulative aggregate Savings to 2015 against 'Do nothing' Option (£m)						
	Wind	Solar Hot Water	PV	Hydro	GS heat pumps	Total saving against 'Do Nothing' Option
Option 2	38	4	12	0	0	54
Option 3	<38	<4	<12	0	0	<54

¹² fnsfngsnrg

36. Option 2 produces savings of £54m up to 2015. Because we do not know the number of applications in conservation areas it is difficult to estimate the savings under Option 3. Those installations of microgeneration technologies that occur within conservation areas will likely still require planning permission less householders would make savings under Option 3. Therefore the aggregate savings from reduced planning applications will be lower under Option 3.

Reduced fuel bills for householders

37. To the extent that the reduced costs of installation encourage greater take-up of microgeneration technology there may be a benefit from the reduction in fuel bills for some households. If households get some or all of their energy requirements from microgeneration technologies then their fuel bills would be reduced. However these savings are only relevant for those households that install microgeneration technologies as a consequence of removing the requirement to obtain planning permission.
38. Since option 2 produces the highest savings it is likely to boost take-up the most. Therefore the savings from reduced fuel bills are likely to be highest.

Carbon savings

39. Microgeneration provides a more environmentally sustainable form of energy production than non-renewable sources. A greater use of this technology would lead to lower emissions of carbon dioxide. However just as with reduced fuel bills, these savings are only relevant for those households that install microgeneration technologies as a consequence of removing the requirement to obtain planning permission.
40. Since option 2 produces the highest savings it is likely to boost take-up the most. Therefore the savings from reduced fuel bills are likely to be highest.

Energy security

41. Microgeneration can contribute positively towards renewable energy targets, increasing the overall stock of UK energy supply and adding to long term energy security.
42. Option 2 represents least constraints to development resulting in higher uptake and therefore the greatest effect.

Costs

43. The costs of removing the requirement to seek planning permission for the installation of microgeneration technologies are more difficult to place a monetary value on. This is because many of the costs concern non-marketed goods such as: landscape, noise pollution and the environment. Because these goods are not bought and sold in conventional markets it is very difficult to put a money value on them.

Costs to conventional energy providers

44. If more households get some or all of their energy requirements from microgeneration technologies there will be a reduced demand for energy from other sources. This imposes costs on more conventional energy providers in terms of lost business.

Landscape and amenity

45. Specific planning permission provides an effective control on the location and by implication visual impact and amenity of the development domestic of microgeneration. Removal of planning control may result in some microgeneration being developed at inappropriate locations, such as conservation areas (option 2).
46. Option 3 protects conservation areas so helps to mitigate this potential impact.

Increased need for enforcement and regulations

47. Express planning permission provides an effective control on the location and by implication enforcement of the development of domestic microgeneration
48. Removal of planning control results in microgeneration installed with little consideration for the impact on neighbours and the wider community in terms e.g. of noise and visual nuisance. This may lead to complaints from neighbours or surrounding occupiers as well as enforcement (improvement) notices served by environmental health departments of local authorities. These effects would result in an increase in costs to the local authority dealing with the enquiry/procedures and may off set some potential monetary cost savings associated with options 2 & 3.

Summary of costs and benefits

49. Table 8 below summarises the results of our cost-benefit analysis.

Table 8: Summary costs and benefits		
Option	Benefits	Costs
Option 1 Do Nothing	<ul style="list-style-type: none"> No change. 	<ul style="list-style-type: none"> No change.
Option 2 Permit all microgeneration	<ul style="list-style-type: none"> £54m householder saving from not having to obtain planning permission. Reduced fuel bills. Reduced carbon emissions. Increased energy security. 	<ul style="list-style-type: none"> Possible visual amenity costs, particularly in conservation areas. Possible noise pollution costs. Costs to conventional energy providers.
Option 3 Permit all microgeneration except in conservation areas.	<ul style="list-style-type: none"> Less than £54m householder saving from not having to obtain planning permission. Reduced fuel bills. Reduced carbon emissions. Increased energy security. 	<ul style="list-style-type: none"> Possible visual amenity costs. Possible noise pollution costs. Costs to conventional energy providers.

50. As required by the Race Relations (Amendment) Act 2000 we have also examined whether any of the options would affect any groups or communities (e.g. black and ethnic minority [BME] groups) differentially. We have concluded that they would not.

Small firms impact test

51. The Micropower Council, which represents the industry and which is still characterised by smaller firms, were closely involved in steering the research output that informed the preferred approach. While they are keen for action to be taken to facilitate the take-up of microgeneration, they are also keen to ensure that suitable restraints are put in place so as to prevent development that could impact adversely on others and therefore undermine the acceptable use of these technologies.
52. There are clearly a number of different types of small firms that may be affected (in terms of demand for goods and services) as a result of an increase in uptake of microgeneration technologies at domestic locations, these include:
53. In Option 1 which maintains the current planning requirement there are a number of small firms that may be involved such as:
- Surveyors/consultants who may provide advice to local planning authorities and households;
 - Architects/drafting firms to prepare scale drawings for planning permission.
54. In Option 2 and, to a lesser extent, Option 3 there may be a reduction in demand for the small firms described above and a potential increase in demand for microgeneration units – having a knock-on effect on the supply chain, such as manufacturers, suppliers (including firms such as biofuel feedstock producers) and installers.
55. Given that the illustrative measures considered in this report are not finalised and that any measure that is taken forward would be subject to a full RIA, the small business assessment should be considered preliminary.
56. The Small Business Service were consulted as part of this process and acknowledge our approach and findings.

Competition assessment

57. The possible competition impacts of the options within this review have been assessed. The approach adopted is as set out by the Cabinet Office¹³, referring in turn to more detailed Guidelines for competition assessment set out by the Office of Fair Trading¹⁴.

¹³ http://www.cabinetoffice.gov.uk/regulation/ria/ria_guidance/index.asp.

¹⁴ <http://www.offt.gov.uk/NR/rdonlyres/A7138977-6FE2-45DE-BE32-3AB6E767664A/0/oft355.pdf>

58. The assessment has been undertaken through applying the 'competition filter' set out in the OFT's Guidelines and a more detailed investigation into key specific issues where any competition effects may be likely to arise. However, it has not been practicable to undertake a full, detailed competition assessment across all affected markets. Therefore, the likely competition impacts have been assessed in mainly qualitative terms based on an understanding of the affected markets, the current market structure and nature of competition and the likely positive and negative impacts of the possible policy measures. The analysis has been driven by the availability and detail of the data and information.
59. Given that the illustrative measures considered in this report are not finalised and that any measure that is taken forward would be subject to a full RIA, the competition assessment should be considered preliminary.
60. Consideration has been given both to effects upon competition in the UK (relating to potential reductions in market distortions) and to effects upon UK competitiveness. For the latter, the analysis relates to the potential for economies of scale in production for UK firms as compared to those in other EU firms and also in non-EU firms. In both cases, the results of improvements in the economies of scale in production may result in more activity (and knock-on job creation) in the UK. In the subsequent sections, consideration is given in turn to competition issues and the question of potential impacts on competitiveness.

Competition effects

61. An assessment of the potential competition effects of the options has been undertaken. The main conclusions that can be drawn at this stage:
 - Household electricity and gas are supplied mainly by large energy supply companies. The options discussed in this RIA section are likely to have relatively negligible effects on their operations. If uptake of domestic microgeneration were to rapidly increase, however, this may potentially result in increasing activity in this sector from such companies (indeed, a number of major energy supply companies are already active in the microgeneration industry). Furthermore, increased uptake of microgeneration may provide price competition with the more conventional fossil fuels.
 - Fewer restrictions to planning regulation are likely to make microgeneration products more competitive. Option 2 is likely to be more beneficial to smaller companies, whereas options 1 and 3 are likely to preserve the current market structure.
 - Fewer restrictions may stimulate greater demand for their products. This in turn may allow these companies to benefit from economies of scale in their production techniques with greater mechanisation and worker productivity. The result may be a reduction in costs to microgeneration products which in turn may stimulate further demand. This will be especially relevant for microgeneration technologies under 12.5kW (or those that are 'small' and ready for the domestic market).

- However given large(er) scale microgeneration technologies will still require planning permission under all options (except Option 2), there may be the possibility of added costs to such larger technologies. This may occur as manufacturers concentrate on those technologies below the energy thresholds to exploit the developing market. Larger microgeneration technologies may therefore come at a premium and may become less competitive in the market. It is difficult to estimate whether this will occur due to uncertainties at this stage.
 - ‘Larger’ microgeneration technologies above the energy threshold are also likely to be less popular at the margin. A consumer may opt for a stand alone biomass heater below 12.5kW than say a 20kW pellet boiler due to the time, nuisance and cost savings from not having to get planning permission. This may create some distortion in the microgeneration market. It is worth noting this will not occur under Option 2.
 - It is possible that more short term research and development and efforts will be focused on smaller scale microgeneration technologies rather than creating efficient and affordable large scale microgeneration technologies. This may hinder the achievement of renewable energy targets (again this will not occur under Option 2), depending on the level of uptake of smaller scale microgeneration technologies.
 - Fewer planning restrictions may reduce barriers to market entry for new businesses. Smaller microgeneration manufacturers may face a more favourable environment compared to the current situation. However existing firms who are already more efficient in their production methods may be able to create barriers to entry through competitive pricing (thereby reducing the profitability of entry).
62. In relation to effects on competitiveness with countries outside the UK, the following conclusions have been drawn:
- UK based companies are likely to benefit from fewer restrictions. All other factors being equal, increased demand may help these companies reduce their production costs through economies of scale. A reduction in their price might make them more competitive in the international market, with potential knock on effects of increasing demand and further reductions in price. This may also mean more available funds for innovation and R&D.

Enforcement, sanctions and monitoring

63. It is anticipated that the current regime of enforcement, sanctions and monitoring of planning applications will be maintained and not need significant alteration in light of the proposals. Proposals will need to provide specific guidance to local authorities outlining what can be considered under the GPDO.
64. The assessment has considered some of the potential effects of different options on the amount of enforcement that might be required (e.g. disputes which could lead to more work for local authority Environmental Health Officers), although the level of impact is hard to quantify at this stage. As proposals are adopted there may be an initial need to increase the level of inspections and monitoring to ensure that they are workable. Depending on the way the new technologies develop, local authorities may also need to develop a capacity to monitor noise levels and vibration to ensure that conditions relating to these potential nuisances are complied with.

Annex 5

Summary of Questions

QUESTION	YES	NO	COMMENTS
Question 1 – Do you agree with the principle of an impact approach for permitted development?			
Question 2 – Do you agree with a restriction on development facing onto and visible from a highway in conservation areas and in World Heritage Sites?			
Question 3 – Should the restriction apply in the same way to the other types of designated area?			
Question 4 – Do you agree that the impact of noise should be dealt with by specific noise restrictions based on decibel levels at/in neighbouring dwellings in the way proposed in Annex 2?			
Question 5 – If not, what alternative approach would best address this issue?			
Question 6 – Do you support a general restriction on permitted development (as proposed at paragraph 50 above) so as to require that visual impact is minimised in exercising the rights?			
Question 7 – Do you agree that local planning authorities should be able to restrict permitted development rights for microgeneration where the benefit from the technology is outweighed by its impact?			
Question 8 – Do you agree that the existing protection is adequate?			
Question 9 – Is guidance sufficient to address the potential impact on archaeologically sensitive areas?			
Question 10 – In addition to providing advice as to the scope of the changes to the GPDO, what could guidance also usefully cover?			
Question 11 – Do you agree with the recommendations for solar microgeneration?			
Question 12 – Do you agree that there should be no restriction in terms of the coverage of roofs and walls by solar panels? If not, what would be an acceptable percentage?			
Question 13 – Generally, should the same level of permissiveness apply to solar panels on a wall as on a roof?			

QUESTION	YES	NO	COMMENTS
Question 14 – Do you agree with a minimum separation distance of 5m to the boundary of a highway or neighbouring property for a stand-alone solar unit?			
Question 15 – Do you agree with the recommendations for heat pumps?			
Question 16 – Do you agree that the likely impact of noise from ASHPs should be dealt with by specific noise restrictions in the same way as proposed for domestic wind turbines?			
Question 17 – Do you agree with the recommendations for wind turbines?			
Question 18 – Do you agree that the likely impact of noise from turbines should be dealt with by specific noise restrictions in the way proposed?			
Question 19 – Do you agree with the recommendations for biomass?			
Question 20 – Do you agree with the recommendations for CHP?			
Question 21 – Do you agree there should be no additional permitted development rights for hydro?			