

MINISTERIAL INTERIM PLANNING POLICY STATEMENT AND TECHNICAL ADVICE NOTE 8

CONSULTATION REPORT

This Consultation Report summarises the main comments and objections made to the Welsh Assembly Government as a consequence of its consultation exercise on the Ministerial Interim Planning Policy Statement (MIPPS) and Technical Advice Note 8, Planning for Renewable Energy (TAN 8). The consultation period finished on 5th November 2004 and by the end of the period just over 1640 responses had been received. In addition, a further 70 responses were received after the closing date which have been included in the analysis.

The Assembly Government has copied and scanned individual responses to the consultation and has amended them to conform to the Freedom of Information Act requirements. Copies of the scanned responses on CD can be made available on request.

The number of responses made, and the nature of the consultation, was such that many of the detailed responses made numerous comments/observations. In attempting to summarise the nature of the responses, the Assembly Government has adopted a thematic approach to the subsequent analysis. Responses have been considered in relation to the paragraphs of the draft MIPPS and TAN to which they refer. In considering the responses, the Assembly Government has produced a tabulated structure to outline a broad summary of the substantive responses, the Assembly Government's reaction to those responses, and any modifications proposed to the TAN as result.

Comments on the MIPPS

Paragraph Number(s)	12.8.1
What the MIPPS says	It is now widely accepted that climate change is occurring and the burning of fossil fuels, which generate greenhouse gas emissions, is a major contributor. Unless such emissions, particularly carbon dioxide, are brought under control, there will be severe and unpredictable global impacts that in turn will lead to a significant effect at a local level.
Summary of representations	The contribution of fossil fuels to global warming is uncertain. CO ₂ accounts for only 5% of greenhouse gases and electricity production only accounts for 1/3 of CO ₂ emissions. The MIPPS should also refer to the diminishing supply of fossil fuels
Assembly Government response	There is overwhelming evidence that climate change is occurring and that greenhouse gases are a major contributor to this. CO ₂ is one of these gases.
Proposed change to MIPPS	None.

Reason(s) for proposed change	Not applicable.
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Paragraph Number(s)	12.8.2
What the MIPPS says	At Kyoto in December 1997 the European Union agreed jointly to reduce emissions of a basket of greenhouse gases to 8% below 1990 levels by 2008-12. The UK government agreed to a 12.5% reduction and set a domestic goal of reducing emissions by 20% of 1990 levels by 2010. In an effort to deliver these targets, the Government and the devolved administrations in Scotland, Wales and Northern Ireland launched Climate Change – the UK Programme ¹² in 2000. A formal review of the programme will take place in 2004.
Summary of representations	Why has half the time to 2010 elapsed before the TAN and MIPPS have been issued? Why has there been no formal review of UK Climate Change? How does the Climate Change Programme affect the TAN?
Assembly Government response	The MIPPS is land use planning policy and is one of a number of policy areas that are seeking to address the issue of global warming.
Proposed change to MIPPS	None.
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	12.8.3
What the MIPPS says	The Energy White Paper, published in 2003, sets out the UK Government's aim to ensure a secure, diverse and sustainable supply of energy at competitive prices consistent with wider economic policies, the promotion of energy efficiency and health and safety and the full and proper protection of the local and global environment. This includes increasing the UK contribution of electricity supplied from renewable energy sources to 5% by the end of 2003 rising to 15% by 2015 ¹⁵ . It also announced the long term goal of reducing carbon emissions by 60% by 2050 with significant progress by 2020. The Welsh Assembly Government is committed to playing its part by delivering an energy programme which contributes to these carbon emission targets. This includes specific renewable energy targets of 4TWh per annum by 2010 and 7TWh per annum by 2020.

Summary of representations	<p>Wales is over-providing for English electricity needs.</p> <p>The TAN & MIPPS miss the point that the reduction in energy consumption is far more effective in reducing CO₂ emissions.</p> <p>There is no justification of Wales' contribution.</p> <p>The policy encourages over hasty infrastructure development up to 2010 rather than being an effective long term strategy.</p> <p>Onshore wind will not provide the 4TWh per annum by 2010.</p> <p>Insert 'minimum' before 'renewable energy targets'.</p> <p>The 5% target by 2003 has been dropped by the UK Government.</p> <p>The target has not been increased to 15% by 2015. It is necessary to achieve the target of 10% by 2010.</p>
Assembly Government response	<p>Energy production targets are determined outside of the land use planning system and are therefore not subject to modification through Planning Policy. Some minor amendments relating to energy efficiency are proposed.</p>
Proposed change to MIPPS	<p>Include reference to the Welsh Assembly Government's commitment to energy efficiency as well as renewable energy.</p>
Reason(s) for proposed change	<p>For clarity.</p>

Paragraph Number(s)	<p>12.8.4</p>
What the MIPPS says	<p>The Assembly Government's aim is to secure the right mix of energy provision for Wales through the next two decades, whilst minimising the impact on the environment. This will be achieved by strengthening renewable energy production, and through a greater focus on energy efficiency and conservation. This forms part of the Assembly Government's aim to secure the strongest economic development policies to underpin growth and prosperity in Wales, recognising the importance of clean energy, both as an economic driver and a commitment to sustainable development.</p>
Summary of representations	<p>Targets for energy efficiency and reduction in consumption should be established before setting renewable energy targets, which imperil the landscape.</p> <p>Energy efficiency is controlled through Building Regulations and local planning authorities should not be able to set higher standards through the planning system.</p>
Assembly Government response	<p>It is not the role of the land use planning system to establish energy efficiency targets; however, energy efficiency is an important element of the Welsh Assembly Government's energy policy and should be referred to. There should be no reference to the need to exceed Building Regulations standards, as this is not the role of the land use planning system.</p>

Proposed change to MIPPS	Amend TAN to remove reference to time limited nature of policy.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.5
What the MIPPS says	Renewable energy projects should generally be supported by local planning authorities providing environmental impacts are avoided or managed, and nationally and internationally designated areas are not compromised. In order to meet the 2010 renewable energy target, the Assembly's policy is that 800MW of renewables capacity should be provided from strategic on-shore wind energy development, with a further 200MW being provided from off-shore wind and other renewable technologies ¹ . This is based on Wales' abundant onshore wind resource and the state of the renewables industry at present, which is that onshore wind power is the most viable commercial technology available that will provide some surety of meeting the 2010 target. The 2020 target will require development of a wider range of renewable energy technologies, thus planning policy must also favour developments that support research, development and demonstration for these.
Summary of representations	The TAN refers to 1200MW, which is at variance with MIPPS. The 880MW onshore and 200MW Off-shore would result in 4.7TWh pa which is greater than the 4TWh stated. Off-shore wind is preferable to onshore wind development in Strategic Search Areas. There is no justification of either the 800MW or 200MW targets. There is no mention of the role of reducing energy consumption. Wind power is inefficient and too expensive. The policy implies that all development should be allowed as long as environmental impacts are managed, but the environment is worth protecting for its own sake. Insert 'subject to material considerations' after 'demonstration for these'.
Assembly Government response	There is a need to reconsider this section to ensure that there is consistency between the MIPPS and TAN.
Proposed change to MIPPS	Amend MIPPS accordingly.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.6
What the MIPPS says	It is also of considerable importance to do everything possible to reduce the overall demand for energy. The Assembly Government is committed to: <ul style="list-style-type: none"> ▪ achieving its specific targets for renewable energy (electricity) production; ▪ maximising the opportunities for renewable energy (heat); ▪ recognising that the benefits of renewable energy are part of its overall commitment to reduce greenhouse gas emissions.
Summary of representations	These bullet points relate to reducing demand <u>not</u> supply, the policy needs to say how demand will be reduced.
Assembly Government's response	Agreed that the bullet points relate to reducing energy demand.
Proposed change to MIPPS	Redraft paragraph to include an explanation of the renewable energy target and to remove confusion relating to the bullet points.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.7
What the MIPPS says	Combating climate change is be the major driver for the Assembly Government's renewable energy policy but economic and community regeneration is also a very important part of the rationale. The policy provides opportunities for: <ul style="list-style-type: none"> ▪ local income generation, ▪ direct and indirect employment, ▪ the alleviation of fuel poverty, ▪ retention of money in the local economy, and ▪ the establishment of locally-based energy supplies.
Summary of representations	The policy for onshore wind will not create economic benefits for local people. There is a need to refer to the diminishing supply of fossil fuels. What research has been done to identify how much local income is generated by wind turbines?
Assembly Government response	These comments generally refer to energy policy.

Proposed change to MIPPS	This paragraph needs to be reconsidered and amalgamated with subsequent paragraphs in order to provide more clarity.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.8
What the MIPPS says	For the purposes of this policy, renewable energy is the term used to cover those sources of energy, other than fossil fuel or nuclear fuel, which are continuously and sustainably available in our environment. This includes wind, water, solar, geothermal energy and plant material often referred to as biomass. Biomass is generally regarded as fuel (other than fossil fuel), at least 98 per cent of the energy content of which is derived from plant or animal matter or substances derived therefrom (whether or not such matter or substances are waste). This includes agricultural, forestry, or wood wastes or residues, see Assembly Government and energy crops.
Summary of representations	Biomass prices will increase as demand increases. Local planning authorities should encourage and support the growing/processing of energy crops. This paragraph refers to other forms of renewable energy but subsequent paragraphs refer only to onshore wind.
Assembly Government response	It is considered that this paragraph is misplaced in the MIPPS and should be moved nearer to the front of the document.
Proposed change to MIPPS	Move to earlier part of MIPPS.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.9
What the MIPPS says	It should be noted that consents and environmental assessments for offshore wind energy developments are required under UK legislation. Two options are available to developers: <ul style="list-style-type: none"> ▪ licences under section 36 of the Electricity Act 1989 and section 34 of the Coast Protection Act 1949; or ▪ a Transport and Works Order under the Transport and Works Act 1992. Both cases require a licence for construction under the Food and Environment Protection Act 1985 and an Agreement for Lease from the

	Crown Estate. Further permissions may also be required under the Town and Country Planning Act 1990, the Electricity Act 1989 and the Water Resources Act 1991. Environmental Impact Assessment will also be required.
Summary of representations	There is a need to mention that onshore ancillary structures need planning consent. The policy should be clarified by saying that applications over 50MW require consent under the Electricity Act and those under 50MW are dealt with by the planning process.
Assembly Government response	Agree that references to ancillary structures needs to be included. Agree that clarification is needed regarding the Electricity Act.
Proposed change to MIPPS	Include reference to the need for planning permission for ancillary structures and to clarify that proposal over 50MW need consent under the Electricity Act.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.10
What the MIPPS says	Wind-power is probably the most controversial of the renewable energy technologies being developed in Wales and yet, in the short-term, offers the greatest potential for an increase in the generation of electricity from renewable energy. The Assembly accepts that the introduction of new, often very large, structures into the open countryside is not always welcome other than to fulfil a particular and important need. However, the need for wind turbines is established in the short-term through environmental imperative and international treaty and is a key part of meeting the Assembly Government's targets for renewable electricity production. Therefore, there is a requirement for a more active participation of the land use planning system in steering developments to the most appropriate locations. Development of a few large scale (25MW+) wind farms in carefully located areas offers the best opportunity to meet the national renewable energy target.
Summary of representations	Wind power is only one possible source of renewable energy. There is no reason why development under 25MW cannot contribute towards meeting the renewable energy target. Wind power is a short-term fix. There is a need to clarify the 1 st sentence by adding 'in respect of public involvement in the development and use of land' before 'controversial'. Controversy is not a reason in itself to refuse planning permission and this statement should be removed. It is equally true to say that environmental imperatives forbid the development of wind turbines in many parts of Wales

Assembly Government response	Agree that the current terminology is rather emotive and needs reconsidering.
Proposed change to MIPPS	Remove reference to controversy.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.11
What the MIPPS says	<p>Whilst landscape and conservation constraints and electricity distribution issues are vital inputs, other technical and economic issues are critical to the wind energy industry. The most appropriate level at which to identify strategic search areas for on-shore wind energy developments is all-Wales. In the preparation of Technical Advice Note 8, Renewable Energy, consultants for the Welsh Assembly Government used a land-use sieve approach, which identified internationally and nationally designated environmental areas and other considerations to identify areas that were considered to be relatively unconstrained. This was then combined with information about the capacity of the existing and proposed grid network to produce a plan indicating broad strategic search areas for major wind energy developments together with a strategic assessment of their potential wind energy capacity to 2010 (Map 12.1).</p> <p>Development of a limited number of large-scale wind farms in these areas will be required to achieve this target. Additional electricity grid network infrastructure will be needed to support the strategic areas and local planning authorities should facilitate its development when appropriate proposals come forward. Within the strategic areas, whilst cumulative impact can be a material consideration, it must be balanced against the need to meet the national target and the conclusions reached fully justified in any decisions taken. Developers will need to be sensitive to local circumstances, including siting in relation to local landform and other planning considerations. The development of wind farms or other large scale renewable energy schemes will not generally be appropriate in internationally or nationally designated areas. However, both within and outside the strategic areas, smaller, domestic or community-based wind turbine developments may be suitable, subject to material planning considerations. More detail on the use of Map 12.1, and the methodology used to derive it is contained in the revised TAN 8.</p>
Summary of representations	<p>Buffer zones around national and international designations extend the presumption against renewable energy development over large tracts of land.</p> <p>Local planning authorities should not use landscape designations as the sole reason for the refusal of planning permission.</p>

	<p>This implies that outside Strategic Search Areas only smaller, domestic or community-based wind turbines will be permitted.</p> <p>There is a need to define 'smaller, domestic and community-based'. Strategic Search Area criteria are flawed and should not reinforce policy, particularly the grid assumptions in mid and north Wales. Some Strategic Search Areas contain major urban areas, farms and settlements and common land which are considered to be constraints against development.</p> <p>What is the appropriate scale of development outside Strategic Search Areas?</p> <p>The MIPPS and TAN contradict each other with regard to National Parks and AONBs, the TAN is more categorical.</p>
Assembly Government response	<p>Buffer zones were simply used as part of the sieve mapping approach and there is no assumption that there should be buffer zones. Advice on landscape considerations will be provided in an annex to the TAN. Outside SSAs local planning authorities should determine what is appropriate in their development plans. Grid assumptions were considered as part of the sieve mapping exercise. Local planning authorities will need to ensure that any adverse environmental impacts are minimised.</p>
Proposed change to MIPPS	<p>Modify MIPPS to reflect these concerns.</p>
Reason(s) for proposed change	<p>For clarity.</p>

Paragraph Number(s)	<p>12.8.12</p>
What the MIPPS says	<p>Local planning authorities should facilitate the development of all forms of renewable energy and energy efficiency and conservation measures which fit within a sustainable development framework. Specifically, they should make positive provision for such development to meet society's needs now and in the future by:</p> <ul style="list-style-type: none"> • considering the contribution that their authority area can make towards developing and facilitating renewable energy and energy efficiency and conservation, including a requirement for setting targets for energy efficiency that reflects their contribution and challenges developers to exceed minimum standards; ▪ ensuring that development control decisions are consistent with national and international climate change obligations, including contribution to renewable energy targets, having regard to emerging national and international policy on the levels of renewable energy required and on appropriate technologies; and ▪ recognising the environmental, economic and social opportunities that the use of renewable energy resources can make to wider planning goals and objectives and the delivery of renewable energy targets.

Summary of representations	<p>This section should be expanded to recognise the importance of renewable energy to rural economic development and farm diversification.</p> <p>Local planning authorities should not be able to set their own energy efficiency standards in relation to dwellings as this a consideration of the Building Regulations.</p> <p>Local planning authorities need more resources to undertake this work.</p> <p>This section undermines local decision making and democracy.</p>
Assembly Government response	Agree that references to Building Regulations need to be removed as these lie outside the land use planning system.
Proposed change to MIPPS	Remove reference to Building Regulations.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.8.13
What the MIPPS says	<p>At the same time local planning authorities should:</p> <ul style="list-style-type: none"> ▪ ensure that international and national statutory obligations to protect designated areas, species and habitats and the historic environment are protected from inappropriate development; and ▪ ensure that any detrimental environmental effects on local communities are minimised.
Summary of representations	The 1 st bullet point needs amending to show that it is the designated areas, which are to be protected from inappropriate development.
Assembly Government response	The paragraph refers to designated areas.
Proposed change to MIPPS	None.
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	12.9.1
What the MIPPS says	Local planning authorities should undertake an assessment of the potential of all renewable energy resources and the potential of renewable energy technologies and energy efficiency and conservation measures and include appropriate policies in reviews of adopted unitary

	development plans or local development plans (subsequently referred to as 'development plans').
Summary of representations	There is no indication of how the assessments should be undertaken. Local planning authorities need additional resources to do these assessments.
Assembly Government response	There is a need to make such assessments a consideration of the development plan.
Proposed change to MIPPS	Reword to make assessments a consideration of the development plan.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.9.2
What the MIPPS says	In undertaking such assessments local planning authorities should ¹⁹ : <ul style="list-style-type: none"> ▪ Take into account the contribution that can be made by the area towards carbon emission reduction and renewable energy production targets; and ▪ recognise that different approaches will be appropriate for the deployment of the different renewable technologies and energy efficiency and conservation measures.
Summary of representations	Clarification is needed about different approaches to energy efficiency and energy conservation.
Assembly Government response	The MIPPS is concerned with Planning for renewable energy, although it does provide guidance on energy efficiency, it is not considered appropriate to expand this further.
Proposed change to MIPPS	None.
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	12.9.3
What the MIPPS says	Development plans should, where practicable, indicate broad locations or specific areas in the strategic search areas where large wind energy developments are likely to be permitted, and similarly outside the

	strategic search areas where small scale schemes may be permitted. In defining such areas it will be important to ensure that the required generating capacity is enabled, whilst respecting the sensitivity of the receiving environment.
Summary of representations	This will lead to protracted local disputes relating to development plans and claims for compensation. Needs to clarify that local planning authorities without Strategic Search Areas will not be able to designate large scale wind farm developments. Since the MIPPS identifies Strategic Search Areas why should development plans indicate the location within these areas. As an alternative, development plans should set out policies indicating how the impact of schemes within Strategic Search Areas would be assessed, e.g. use of LANDMAP
Assembly Government response	Development plans are the vehicle for the identification of sites for wind farm developments both inside and outside SSAs. Outside SSAs, local planning authorities should devise appropriate criteria based policies for dealing with wind farms. The issue of impact on the landscape will be covered in an annex to the TAN.
Proposed change to MIPPS	None.
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	12.9.4
What the MIPPS says	Local planning authorities should seek opportunities to integrate energy efficiency and conservation objectives into the planning and design of new development in their areas. For example solar gain can be maximised through appropriate development design. The layout, orientation, mix of uses, density of development, including scope for light penetration, planting of shelter vegetation and optimal use of local topography can all influence energy requirements. Define small scale
Summary of representations	Local planning authorities should not avoid planning for renewable energy by relying on energy efficiency and conservation initiatives. This section should be cross-referenced to the Action Energy Reports mentioned in the TAN.
Assembly Government response	Energy Action Reports have been made a consideration of development plans.
Proposed change to MIPPS	None.

Reason(s) for proposed change	Not applicable.
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Paragraph Number(s)	12.10.1
What the MIPPS says	Local planning authorities should consider the effects of any scheme and its associated infrastructure in relation to sustainable development criteria relating to economic, social and environmental impacts and the need to meet national renewable energy targets. Where a development is likely to cause demonstrable harm to a designated area by virtue of having a significant adverse impact on the qualities for which the site was designated, consideration should be given to refusing the development if such effects cannot be overcome by mitigation measures, planning conditions or agreements. Conditions should also be attached to any planning permission specifying requirements for removal of the turbines and all associated infrastructure and remediation of the site as soon as their use ceases.
Summary of representations	MIPPS should make it clear that consent will definitely be refused where adverse impacts cannot be mitigated. What is meant by 'demonstrable harm'? There is no reference to the effects on human health and quality of life as reasons for refusal. Define 'sustainable development criteria'.
Assembly Government response	Wind farm development will be considered under the land use planning system and each proposal will be dealt with on a case by case basis. It is not the role of the MIPPS to define demonstrable harm as this will vary on a site specific basis.
Proposed change to MIPPS	None .
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	12.10.2
What the MIPPS says	Where large scale on-shore wind power projects will be licensed under section 36 of the Electricity Act 1989, local planning authorities containing strategic search areas should take the national imperative for renewable energy into account when they are consulted on an application.
Summary of representations	This should be extended to all local planning authorities.

Assembly Government response	Agree.
Proposed change to MIPPS	This section of the MIPPS will be modified to apply to all local planning authorities.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	12.10.3
What the MIPPS says	Whilst having regard to the contribution of renewable energy use to wider planning goals such as the diversification of the rural economy, local planning authorities should ensure that any detrimental environmental effects on local communities are minimised, to safeguard quality of life for existing and future generations.
Summary of representations	No comments received.
Assembly Government response	Not applicable.
Proposed change to MIPPS	None.
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	12.10.4
What the MIPPS says	In determining applications for any form of development local planning authorities should encourage developers to integrate energy efficiency and conservation measures as part of the design of new development.
Summary of representations	Replace 'encourage' with 'require'.
Assembly Government response	Many energy efficiency measures fall outside the remit of Planning Policy and there may be instances where measures cannot be included. It is therefore not appropriate to make it a requirement.

Proposed change to MIPPS	None.
Reason(s) for proposed change	Not applicable.

D01/04 DRAFT MINISTERIAL INTERIM PLANNING POLICY STATEMENT ON RENEWABLE ENERGY (as at 25 June 2004)

The following draft text will amend section 12.8 in Planning Policy Wales (March 2002).

The text gives existing PPW wording and paragraph numbers. New wording is shown in bold to indicate where the existing policy has been updated or amended, to allow comparison.

SUSTAINABLE ENERGY

12.8.1 It is now widely accepted that climate change is occurring and the burning of fossil fuels, which generate greenhouse gas emissions, is a major contributor. Unless such emissions, particularly carbon dioxide, are brought under control, there will be severe and unpredictable global impacts which in turn will lead to a significant effect at a local level.

12.8.2 At Kyoto in December 1997 the European Union agreed jointly to reduce emissions of a basket of greenhouse gases to 8% below 1990 levels by 2008-12. The UK government agreed to a 12.5% reduction and set a domestic goal of reducing emissions by 20% of 1990 levels by 2010. In an effort to deliver these targets, the Government **and the devolved administrations in Scotland, Wales and Northern Ireland** launched Climate Change – **the UK Programme¹² in 2000. A formal review of the programme will take place in 2004.**

12.8.3 **The Energy White Paper, published in 2003 sets out** the UK Government's **aim** to ensure a secure, diverse and sustainable supply of energy at competitive prices consistent with wider economic policies, the promotion of energy efficiency and health and safety and the full and proper protection of the local and global environment. This includes increasing the UK contribution of electricity supplied from renewable energy sources to 5% by the end of 2003 rising to **15% by 2015.¹⁵ It also announced the long term goal of reducing carbon emissions by 60% by 2050 with significant progress by 2020. The Welsh Assembly Government is committed to playing its part by delivering an energy programme which contributes to these carbon emission targets. This includes specific renewable energy targets of 4TWh per annum by 2010 and 7TWh per annum by 2020.**

12.8.4 **The Assembly Government's aim is to secure the right mix of energy provision for Wales through the next two decades, whilst minimising the impact on the environment. This will be achieved by strengthening renewable energy production, and through a greater focus on energy efficiency and conservation. This forms part of the Assembly Government's aim to secure the strongest economic development policies to underpin growth and prosperity in Wales recognising the importance of clean energy, both as an economic driver and a commitment to sustainable development.**

12.8.5 Renewable energy projects should generally be supported by local planning authorities providing environmental impacts are avoided or managed, and nationally and internationally designated areas are not compromised. In order to meet the 2010 renewable energy target, the Assembly's policy is that 800MW of renewables capacity should be provided from strategic on-shore wind energy development, with a further 200MW being provided from off-shore wind and other renewable technologies¹⁵. This is based on Wales' abundant onshore wind resource and the state of the renewables industry at present, which is that onshore wind power is the most viable commercial technology available that will provide some surety of meeting the 2010 target. The 2020 target will require development of a wider range of renewable energy technologies, thus planning policy must also favour developments that support research, development and demonstration for these.

12.8.6 It is also of considerable importance to do everything possible to reduce the overall demand for energy. The Assembly Government is committed to:

- **maximising the opportunities for renewable energy (heat);**
- **recognising that the benefits of renewable energy are part of its overall commitment to reduce greenhouse gas emissions.**

12.8.7 Combating climate change is to be the major driver for the Assembly Government's renewable energy policy but economic and community regeneration is also a very important part of the rationale. The policy provides opportunities for:

- **local income generation,**
- **direct and indirect employment,**
- **the alleviation of fuel poverty,**
- **retention of money in the local economy, and**
- **the establishment of locally-based energy supplies.**

12.8.8 For the purposes of this policy, renewable energy is the term used to cover those sources of energy, other than fossil fuel or nuclear fuel, which are continuously and sustainably available in our environment. This includes wind, water, solar, geothermal energy and plant material often referred to as biomass. Biomass is generally regarded as fuel (other than fossil fuel), at least 98 per cent of the energy content of which is derived from plant or animal matter or substances derived therefrom (whether or not such matter or substances are waste). This includes agricultural, forestry, or wood wastes or residues, sewage and energy crops.¹⁶

12.8.9 It should be noted that consents and environmental assessments for offshore wind energy developments are required under UK legislation. Two options are available to developers:

- **licences under section 36 of the Electricity Act 1989 and section 34 of the Coast Protection Act 1949; or**
- **a Transport and Works Order under the Transport and Works Act 1992.**

Both cases require a licence for construction under the Food and Environment Protection Act 1985 and an Agreement for Lease from the Crown Estate. Further permissions may also be required under the Town and Country Planning Act 1990, the Electricity Act 1989 and the Water Resources Act 1991. Environmental Impact Assessment will also be required.

12.8.10 Wind-power is probably the most controversial of the renewable energy technologies being developed in Wales and yet, in the short-term, offers the greatest potential for an increase in the generation of electricity from renewable energy. The

Assembly accepts that the introduction of new, often very large, structures into the open countryside is not always welcome other than to fulfil a particular and important need. However, the need for wind turbines is established in the short-term through environmental imperative and international treaty and is a key part of meeting the Assembly Government's targets for renewable electricity production. Therefore, there is a requirement for a more active participation of the land use planning system in steering developments to the most appropriate locations. Development of a few large scale (25MW+) wind farms in carefully located areas offers the best opportunity to meet the national renewable energy target.

12.8.11 Whilst landscape and conservation constraints and electricity distribution issues are vital inputs, other technical and economic issues are critical to the wind energy industry. The most appropriate level at which to identify strategic search areas for on-shore wind energy developments is all-Wales. In the preparation of Technical Advice Note 8, Renewable Energy, consultants for the Welsh Assembly Government used a land-use sieve approach, which identified internationally and nationally designated environmental areasⁱⁱ, and other considerationsⁱⁱⁱ to identify areas that were considered to be relatively unconstrained. This was then combined with information about the capacity of the existing and proposed grid network to produce a plan indicating broad strategic search areas for major wind energy developments together with a strategic assessment of their potential wind energy capacity to 2010 (Map 12.1).

Development of a limited number of large-scale wind farms in these areas will be required to achieve this target. Additional electricity grid network infrastructure will be needed to support the strategic areas and local planning authorities should facilitate its development when appropriate proposals come forward. Within the strategic areas, whilst cumulative impact can be a material consideration, it must be balanced against the need to meet the national target and the conclusions reached must be fully justified in any decisions taken. Developers will need to be sensitive to local circumstances, including siting in relation to local landform and other planning considerations. The development of wind farms or other large scale renewable energy schemes will not generally be appropriate in internationally or nationally designated

areas. However, both within and outside the strategic areas, smaller, domestic or community-based wind turbine developments may be suitable, subject to material planning considerations. More detail on the use of Map 12.1, and the methodology used to derive, it is contained in draft revised TAN 8.

12.8.12 Local planning authorities should facilitate the development of all forms of renewable energy and energy efficiency and conservation measures **which fit within a sustainable development framework. Specifically, they should make positive provision for such development to meet society's needs now and in the future by:**

- considering the contribution that their authority area can make towards developing and facilitating renewable energy and energy efficiency and conservation, **including a requirement for setting targets for energy efficiency that reflects their contribution and challenges developers to exceed minimum standards**^{iv}
- ensuring that development control decisions are consistent with national and international climate change obligations, including contribution to renewable energy targets, having regard to emerging national and international policy on the levels of renewable energy required and on appropriate technologies; and
- recognising the environmental, economic and social opportunities that the use of renewable energy resources can make to wider planning goals and objectives and the delivery of renewable energy targets.

12.8.13 At the same time local planning authorities should:

- ensure that international and national statutory obligations to protect designated areas, species and habitats and the historic environment are protected from inappropriate development; and
- ensure that **any detrimental environmental** effects on local communities are minimised.

12.9 Development Plans and sustainable energy

12.9.1 Local planning authorities should undertake an assessment of the potential of all renewable energy resources and the potential of renewable energy technologies and energy efficiency and conservation measures and include **appropriate** policies in **reviews of adopted unitary development plans or local development plans (subsequently referred to as 'development plans')**.^{17 18}

12.9.2 In undertaking such assessments local planning authorities should¹⁹:

- take into account the contribution that can be made by the area towards **carbon emission reduction** and renewable energy **production** targets; and
- recognise that different approaches will be appropriate for the deployment of the different renewable technologies and energy efficiency and conservation measures.

12.9.3 Development plans should, where practicable, indicate broad locations or specific areas in the strategic search areas where large wind energy developments are likely to be permitted, and similarly outside the strategic search areas where small scale schemes may be permitted. In defining such areas it will be important to ensure that the required generating capacity is enabled, whilst respecting the sensitivity of the receiving environment.

12.9.4 Local planning authorities should seek opportunities to integrate energy efficiency and conservation objectives into the planning and design of new development in their areas. For example solar gain can be maximised through appropriate development design. The layout, orientation, mix of uses, density of development, including scope for light penetration, planting of shelter vegetation and optimal use of local topography can all influence energy requirements.²⁰

12.10 Development control and sustainable energy

12.10.1 Local planning authorities should consider the effects of any scheme and its associated **infrastructure in relation to sustainable development criteria relating to economic, social and environmental impacts and the need to meet national renewable energy targets**. Where a development is likely to cause demonstrable harm to a designated area by virtue of having a significant adverse impact on the qualities for which the site was designated, consideration should be given to refusing the development if such effects cannot be overcome by **mitigation measures**, planning conditions or agreements. **Conditions should also be attached to any planning permission specifying requirements for removal of the turbines and all associated infrastructure and remediation of the site as soon as their use ceases.**

12.10.2 Where large scale on-shore wind power projects will be licensed under section 36 of the Electricity Act 1989, local planning authorities containing strategic search areas should take the national imperative for renewable energy into account when they are consulted on an application.

12.10.3 Whilst having regard to the contribution of renewable energy use to wider planning goals such as the diversification of the rural economy, local planning authorities should ensure that any detrimental environmental effects on local communities are minimised, to safeguard quality of life for existing and future generations.

12.10.4 In determining applications for any form of development, local planning authorities should encourage developers to integrate energy efficiency and conservation measures as part of the design of new development.

All numbering of endnotes will need to be amended.

¹² 'Climate Change – The UK Programme', DETR, 2000

ⁱ **Our Energy Future, Department of Trade and Industry, February 2003**

¹⁵ 'Prospects for New and Renewable Technologies – Prospects for the 21st Century', DTI, 1999

¹⁶ The Renewables Obligation Statutory Consultation, DTI, 2001

ⁱⁱ **National Parks, Areas of Outstanding Natural Beauty, Natura 2000 Habitat Directive**

Sites (Special Protection Areas, Ramsar sites, candidate and potential Special Areas of Conservation), National Nature Reserves, the Dyfi Valley Biosphere site and World Heritage Sites. Heritage Coasts, Scheduled Ancient Monuments, local nature reserves, RSPB reserves and country parks were also considered.

ⁱⁱⁱ **Windspeed less than 6m/sec, MOD ranges, low flying areas and air defence radar requirements, major urban areas, farms and settlements. Registered common land, civil and military airports and aerodromes, Met. Office radar and major broadcast towers and links were also considered.**

^{iv} **For example, the British Research Establishment's Energy Assessment Method (BREEAM).**

¹⁷ 'Planning for Passive Solar Design', BRECSU

¹⁸ Technical Advice Note (Wales) 8, 'Renewable Energy', **2004.**

¹⁹ Technical Advice Note (Wales) 8, 'Renewable Energy', **2004.**

²⁰ Technical Advice Note (Wales) 12, 'Design', 2002

Comments on TAN 8	
Paragraph Number(s)	5&6
What the TAN says	<p>Purpose of the TAN</p> <p>These paragraphs outline the purpose of the TAN. They set out a target of 4TWh to be produced by renewable energy in order to meet the UK national target of producing 10% of its electrical power production by 2010. They state that the TAN will be reviewed around 2010 in the light of the target of 20% of electricity generated by renewable energy by 2020.</p>
Summary of representations	<p>Most of the responses received relating specifically to this section of the TAN question the derivation of the 4TWh target. These representations come from a broad cross section of respondents. They criticise the TAN for the fact that no justification of this figure is given and that there is little information on how this target is translated into the subsequent renewable energy requirement targets. Without this justification, several respondents see the 2010 target as artificial and arbitrary.</p> <p>Another suggestion included having a similar target for renewable heat</p> <p>The TAN is also criticised for not indicating whether the 10% target is for the needs of Wales only or whether Wales could end up carrying a disproportionate number of the UK's wind farms.</p> <p>Responses from the wind power industry require the TAN to indicate that the targets are minimum requirements and not quotas and the 4TWh figure should be clarified as being an annual target. Some of the responses from the wind power industry also consider that TAN does not indicate a base date for the 4TWh figure and it needs to include consumption figures, and projected consumption figures for 2010 and 2020 to facilitate monitoring. Interim targets for 2015 should also be set.</p> <p>There is some concern that there would be a requirement for more frequent monitoring of development plans to ensure their conformity with national policy. Similarly, some responses mention the fact that the TAN would need to be reviewed before 2010 to reflect changes in agriculture which may generate greater interest in energy crops.</p>
Assembly Government response	<p>The TAN is being produced in order to provide technical advice to inform the production of development plans by local planning authorities and to assist with the consideration of planning applications. Energy policy is a separate Government function and is determined outside of the planning system. Although energy policy sets the context for the TAN it is not subject to consultation as part of the TAN and in this context it is taken as a fixed parameter. The TAN will contain cross-references to energy policy.</p> <p>The planning system has a role to play in monitoring the provision of</p>

	installed renewable energy capacity, and this should form part of the Annual Monitoring Report for LDPs. The TAN will include a reference to monitoring the installation of renewable energy capacity.
Proposed change to TAN	To be rewritten to clearly define the purpose of the TAN and the use to be made of it by the local planning authorities. To add information on energy policy as an annex.
Reason(s) for proposed change	To clarify the purpose of the TAN in the planning process.

Paragraph Number(s)	7,8 & 9
What the TAN says	<p>Current Production</p> <p>These paragraphs outline the current production of renewable energy in Wales from all sources and identifies a considerable gap between the electrical capacity installed and that necessary to hit the 4TWh target - based upon BWEA data and assuming energy efficiency factors of 30% for onshore wind power; 40% for offshore wind, 70% for biomass and 40% for hydroelectric power.</p>
Summary of representations	<p>There is little unanimity in the responses to this section of the TAN. The largest number of responses relate to the fact that there are no figures for the contribution that off-shore wind power generation could make. In particular it is mentioned by several individuals that the TAN ignores the significant contribution that the proposed Gwynt y Mor project off the north Wales coast could make to meeting targets. If this large project were included in the calculations then there would not be the requirement to generate so much on shore wind power. In a similar vein it is stated that the targets ignore the contributions from existing but unbuilt consents and from smaller wind farms in rural and urban/industrial areas.</p> <p>There is some criticism of the figures quoted in Table 1 in particular of the load factors assumptions. The reduction factors used to determine the target breakdown are said to be at variance with figures issued by DTI and Ofgem. One response from the industry suggests that Table 1 should be deleted to remove confusion.</p> <p>Paragraphs 8 and 9 are thought by some to be contradictory in that one says that no survey of solar power has been undertaken, whilst the other states that only a few localities have solar power. How is this known? Additionally there is no evidence to support the claim that the impact of wood pellet stoves is likely to be minimal.</p> <p>A small number of responses were disappointed that solar power was not given greater significance in the TAN; in particular it was stated that there was an opportunity to establish Wales at the forefront of solar technology development.</p>

Assembly Government response	The modal split of renewable energy production is determined by energy policy; the TAN's role is to provide advice for the planning implications of this.
Proposed change to TAN	To be refined so as to set targets, but to remove details of energy policy, to an annex and footnotes.
Reason(s) for proposed change	To clarify the purpose of the TAN in the land use planning process.

Paragraph Number(s)	10, 11, 12
What the TAN says	<p>Energy Efficiency and Renewable Energy in Major Projects</p> <p>These paragraphs consider the impact of energy efficiency and renewable energy in major projects. They seek to ensure that all new buildings are constructed to a high standard of energy efficiency and that renewable energy technologies are incorporated wherever feasible. The role of the Carbon Trust is outlined. It is in this section of the TAN that the requirement for Action Energy, Design Advice reports on new non-residential buildings over 1000sq m is contained, together with advice to LPAs that inadequate consideration of these reports by applicants/developers is reason for refusal of planning permission.</p> <p>The TAN indicates that these requirements should be rolled out to other forms of development on a phased basis with major office proposals implemented first, followed by industrial & retail developments over a 5 year period.</p>
Summary of representations	<p>This section of the TAN drew comments from a wide cross section of respondents and the prevailing opinion is that the current commitment to energy efficiency and renewable energy in major projects is too weak. Several responses indicated that they would like to see a statement instructing local planning authorities to include policies requiring that a proportion of energy to be used in new residential, commercial and industrial development should come from on site generation; furthermore the TAN should set energy efficiency targets. Most of the relevant responses wanted to see the requirements for Design Advice reports extended to all forms of development including residential and some felt the 5 year period to phase these in to be too long. The requirement should also extend to the conversion, redevelopment and refurbishment of buildings. One local authority suggests that not only should the requirement for Design Advice reports be extended to include all residential and non-residential construction but also there should be a nationally agreed method to ensure uniformity e.g. BREEAM for non-residential construction and Eco Homes for residential developments. Another local planning authority requests more</p>

	<p>guidance and training for local planning authorities to speed up the lead in time for statements. Several respondents from the public sector including some local planning authorities want the TAN to indicate the role that Building Regulations should play in determining energy efficiency.</p> <p>There is a need for a clearer definition of what constitutes a “major” office proposal and the time scale for extending Design Advice should be clarified. The TAN should also provide local planning authorities with clear guidance on dealing with planning applications. The TAN is unclear about who pays for works recommended in Design Advice reports and it is suggested by one respondent that the reports should outline the additional cost on the developer and the developers’ opinion on the viability of the proposals.</p> <p>The TAN needs to clarify if the grant referred to is for the Carbon Trust to produce the report or is it for applicants to assist with the report’s recommendations.</p> <p>The general role of local authorities as sign-posters is felt to be weak and there is concern about the specialist workload associated with appraising reports on development control officers.</p> <p>There are no references to other Assembly initiatives or policies. Typographically it is suggested that the term desirable be replaced with necessary.</p> <p>Responses from the agricultural sector indicate that many agricultural buildings under 100sq m threshold were already covered by IPPC regulations and there was concern that energy efficiency requirements would make agricultural establishments non-viable.</p>
<p>Assembly Government response</p>	<p>Energy efficiency is clearly an important issue, which requires some further consideration in the TAN. However the planning system has limited scope to impact upon this, as the issue is primarily one of energy policy. Where energy efficiency is relevant to the development process it is usually a legitimate consideration of the Building Regulations, which are not a devolved responsibility. The requirement for Design Advice is considered to be most appropriately dealt with as part of the development plan.</p> <p>General issues re energy efficiency are covered in the Design TAN - The Planning Officers Society for Wales is preparing a residential design guide, including energy efficiency, and WWF are working with Cardiff University to produce a Sustainable Housing Design Strategy for Wales with technical appendices.</p> <p>The Design Commission for Wales offers advice on individual schemes and will be providing training on these issues for local authorities in 2005.</p>
<p>Proposed change to TAN</p>	<p>Strengthen and clarify matters relating to energy efficiency and the planning system. Consider relating Energy Design Reports to development plan policy.</p>
<p>Reason(s) for proposed change</p>	<p>To clarify the purpose of the TAN in the planning process and ensure that it signposts other relevant statues and initiatives.</p>

Paragraph Number(s)	13,14
What the TAN says	<p>Domestic premises and energy efficiency</p> <p>The TAN acknowledges the role of Building Regulations in delivering energy efficiency standards but it encourages private and social sector house builders to exceed Building regulation requirements.</p> <p>The TAN refers to the Energy Savings Trust's Best Practice in Housing Programme to achieve energy efficiency in housing developments.</p>
Summary of representations	<p>There was little degree of unanimity in the responses to this section. Some individuals consider that the TAN should strengthen its commitment to domestic energy conservation by requiring all new dwellings to install solar/PV heating and insulation. Similarly developers should be required rather than encouraged to develop at standards higher than those in Building Regulations.</p> <p>It was pointed out that the Assembly has influence over the social housing sector through Social Housing Grant.</p> <p>Some individuals also feel that there should be some financial incentive in the form of grants or cheap loans to encourage the take up of energy efficiency initiatives. It is mentioned that this section of the TAN should refer to improving energy efficiency in the existing housing stock as well as focussing on new-build.</p> <p>The role of local planning authorities as sign-posters for further advice and best practice could also be highlighted.</p> <p>From the wind power industry there is a view that the Assembly should take a more joined up view of energy efficiency initiatives and local planning authorities should encourage energy self sufficient developments in their policies.</p> <p>Some local planning authorities feel that the roles of Building Regulations and Development Control should be dovetailed, and it is questioned how far the local planning authority should be involved in aspects not relating to the external fabric of the building.</p> <p>This section of the TAN could be cross-referenced with the Planning Officers' Society for Wales guidance on new housing developments.</p>

Assembly Government response	<p>Precise energy efficiency standards are established through Building Regulations, and these are not a devolved responsibility of the Welsh Assembly Government. TAN 8 can seek to encourage developers to adopt standards in excess of those prescribed in the Building Regulations but it cannot enforce this. The TAN cannot require all new developments to have solar/PV heating installed, as this may not be appropriate in all cases. It is a matter for the local planning authority to determine through development plan policy and on a case by case basis. Local planning authorities should be encouraged to actively engage in discussions, and provide positive advice to developers in this regard.</p> <p>The TAN does not have the scope to change energy efficiency in the existing housing stock, as this lies mainly outside the planning system and improvements would generally not require planning permission.</p> <p>Useful background work has been undertaken by the Planning Officers' Society for Wales and by the Centre for Research in the Built Environment, and this will be referenced in the TAN.</p> <p>On the subject of financial incentives to encourage the take up of energy efficiency schemes, electricity and gas suppliers have been under a requirement to have schemes to encourage their customers to adopt energy efficiency measures since 2001 (Electricity and Gas (Energy Efficiency Obligations) Order 2001).</p> <p>The Assembly Government currently encourages domestic energy efficiency in a number of ways.</p>
Proposed change to TAN	Strengthen and clarify energy efficiency as it relates to the land use planning system.
Reason(s) for proposed change	To strengthen references to the importance of energy efficiency in the TAN.

Paragraph Number(s)	15
What the TAN says	Given the target of 4TWh and the long lead in time for major projects wind power is the only realistic deliverable over the lifetime of the TAN.
Summary of representations	Responses to this section of the TAN came from a broad cross section of individuals and organisations. Of those objections received many strayed into energy policy debate by refuting the fact that wind power is the only realistic deliverable. More specifically, the TAN is criticised for not having the evidence to back this statement up. In addition there are many criticisms of the fact that wind power is neither reliable, efficient nor affordable, as it is subsidised artificially. Additional criticisms refer to the fact that wind farms require back-up from fossil fuel sources and the spinning

	<p>reserve of these back-up sources generates more CO₂ emissions than if they were working to full capacity.</p> <p>Responses from the wind power industry tend to support the position of the TAN but there is concern that the TAN does little to accelerate the time scale for approval of wind farm developments.</p>
Assembly Government response	<p>The origin of this part of the TAN is rooted in the governments' energy policy and should be cross-referenced to the statement on energy policy, which accompanies the TAN. The TAN will clarify that the underlying assumptions of this section are energy policy.</p>
Proposed change to TAN	<p>Paragraph to be removed.</p>
Reason(s) for proposed change	<p>To clarify that the TAN relates to land use planning policy.</p>

Paragraph Number(s)	<p>16,17</p>
What the TAN says	<p>On-shore wind</p> <p>In order to meet the 4TWh target, 800MW of additional capacity will be required to be provided by large scale on-shore wind by 2010, and a further 200MW will be obtained from offshore wind and other forms of renewable energy.</p>
Summary of representations	<p>Apart from comments on individual Strategic Search Areas, this section of the TAN drew the most comment and criticism. In particular there is a widespread critique from individuals and campaign groups of the perceived failings of wind power. In summary these criticisms include :</p> <ul style="list-style-type: none"> ▪ Adverse impact on the landscape caused by unsightly turbines and associated electricity infrastructure ▪ Blight impact on property values ▪ Negative impact on the tourist industry ▪ Effects of shadow flicker and noise on neighbouring communities ▪ Effects on health of additional over-head power lines ▪ Effects on hydrology as wind farm development will require deforestation ▪ Effects on air safety and RADAR ▪ Environmental damage caused by wind farm construction ▪ Countryside access issues and compliance with the Countryside Rights of Way Act 2000 ▪ Impacts on particular species, particularly squirrels, birds and bats ▪ Inability of local roads to carry turbine sections during construction <p>Another strand of criticism to emerge is the perceived over reliance on on-shore wind to the virtual exclusion of other forms of</p>

	<p>renewable energy technologies. The TAN is criticised for not providing any justification for the 800MW target or the split of renewable energy power sources, and the down-playing in importance the potential of off-shore wind development. There is also concern that the perceived over-reliance on onshore wind will discourage research and development in other forms of renewable energy technology.</p> <p>A few responses consider that the TAN should contain a target for energy efficiency along similar line to that for renewable energy generation.</p> <p>There is concern from both the wind power industry and individuals that the 800MW target is too ambitious and cannot be delivered within the time scale; specific problems with Strategic Search Areas such as access and particular localised topographical issues mean that the TAN will not deliver the 800MW capacity. Several responses including some local planning authorities feel that priority should be given to maximising the potential of existing wind farms with the TAN adopting a sequential approach concentrating on re-powering first and then looking for new sites.</p> <p>Specific representations from the wind power industry refer to the fact that the 800MW target should not be regarded as a ceiling, but rather it is a minimum and the TAN should be re-drafted to reflect this. Furthermore the industry is concerned should the 800MW be achieved ahead of schedule, that this should not be used as a reason for the refusal of permission for further wind farm development – but if it is apparent that the target is not going to be met then increased weight should be given to meeting the target when considering planning applications.</p> <p>As far as grid issues are concerned the wind power industry recognises that there are existing pressures on the grid and TAN 8 will hasten its reinforcement.</p> <p>The 200MW off-shore target should be referenced to anticipated sources of supply.</p> <p>The TAN indicates that 800MW is required yet the Map shows a 1200MW capacity, why the variance?</p>
<p>Assembly Government response</p>	<p>As noted earlier it is accepted that the onshore wind section of the TAN should make the scope of the TAN clearer.</p> <p>It is the role of local planning authorities to determine applications for windfarms (up to 50MW) and in so doing they should attempt to ensure that any adverse effects are mitigated as far as possible. Applications for larger windfarm developments may well require EIA assessment to assist with this process.</p> <p>The Assembly’s Energy Route Map illustrates the Assembly Government’s commitment to a wide range of options for renewable energy.</p> <p>The TAN has established the principles of Strategic Search Areas for delivering the majority of the renewable energy target, but this is not at the expense of established windfarm developments. The TAN will clarify that the re-powering of existing windfarms is to be</p>

	<p>encouraged provided there is no over-riding demonstrable harm associated with such proposals.</p> <p>The TAN will clarify that the 800MW target for onshore wind renewable energy production is not a ceiling but rather it is a minimum figure, as are the targets for each of the Strategic Search Areas. If such a clarification is made then it is not necessary to explain what should happen if and when the targets have been reached.</p>
Proposed change to TAN	Redraft onshore wind section of TAN to reflect comments made above.
Reason(s) for proposed change	To clarify the purpose of the TAN in the land use planning system and signpost the relevant research and sources relating to energy policy.

Paragraph Number(s)	18
What the TAN says	<p>Methodology for the strategic assessment of the opportunities for major wind power capacity in Wales</p> <p>Acknowledges that there are specific constraints on wind farm development and introduces the concept of sieve mapping to construct a map indicating the most suitable locations for strategic level wind farm development.</p>
Summary of representations	<p>There is relatively little comment on the sieve mapping approach adopted. Most of the criticisms relate to the assumptions, which underpin the methodology (see below). It is felt by a few respondents that the sieve mapping approach to identify Strategic Search Areas is too rigid and the TAN should simply allow local planning authorities to set criteria based policies to deal with renewable energy. Representations from the wind power industry concern the fact that the Strategic Search Area approach should not preclude development from occurring outside of the Strategic Areas which should be judged on its merits. Conversely there is concern amongst some campaign groups that the technique adopted leaves areas outside Strategic Search Areas vulnerable to wind farm development. The wind power industry responses also advocate that the TAN should contain a presumption in favour of strategic wind farm development within Strategic Search Areas.</p> <p>The sieve mapping technique is criticised for being too coarse, in particular the NOABL wind speed model may exclude some areas with sufficient wind speed to produce wind power whilst improvements to technology could make areas of low wind speed suitable locations for wind farm development. It is also criticised because it involves subjective assumptions which can skew the results.</p> <p>One local planning authority is concerned that the identification of Strategic Search Areas removes local democratic control over these</p>

	areas.
Assembly Government response	<p>Much of the technical explanation of the sieve mapping technique, whilst providing a useful background to the definition of the Strategic Search Areas does not provide land use planning advice. Consequently, it is considered that the detailed explanation should be contained in a technical annex to the TAN and it will be clarified in the light of further work.</p> <p>The approach adopted in the TAN is considered to be the most appropriate method of delivering the renewable energy targets through the planning system within the time frame already established.</p> <p>It is accepted that the TAN should provide more clarification regarding the situation outside Strategic Search Areas. It will indicate that it is for local planning authorities to devise appropriate policies in their LDPs for considering proposals outside Strategic Search Areas based on appropriate criteria; but it is not expected that a significant amount of large scale wind farm development will take place outside Strategic Search Areas and the TAN will allow local planning authorities to refuse planning permission for windfarm developments greater than 5MW outside Strategic Search Areas if they so wish.</p>
Proposed change to TAN	Amend the TAN and append the technical details of the sieve mapping exercise to an annex, and elaborate about the status inside and outside SSAs.
Reason(s) for proposed change	To make the TAN clearer about the approach to policy within and outside SSAs.

Paragraph Number(s)	19
What the TAN says	<p>National Parks and AONBs</p> <p>Large scale (25MW+) wind farms are not appropriate in National Parks AONBs although smaller scale domestic or community-based turbines may be suitable subject to planning considerations.</p>
Summary of representations	<p>This section of the TAN attracted adverse comments because it is felt by some that there are many other parts of Wales which are of equal merit to National Parks and AONBs but which will not be protected. Additionally there are strong opinions from several respondents that wind farm development of any scale in National Parks and AONBs is inappropriate.</p> <p>It is considered by some, particularly those involved in the planning profession, that the terminology in this paragraph is imprecise. There is no definition of “smaller scale” and it is not clear why 25MW is considered to be the large-scale threshold- it is suggested that a definition of size be introduced: e.g. more than 25MW is large, 10-</p>

	<p>25MW is medium, 5-10MW is small and under 5MW is community based. Several responses referred to the arbitrary nature of this cap; this is considered by some to be too large to be accommodated in National Parks or AONBs. Similarly the concept of “community-based” initiatives should be clarified, for example what happens if a community based wind farm proposal does not have the support of the whole community.</p> <p>There is concern that this paragraph does not give adequate protection to areas outside, but on the boundary of National Parks and AONBs, which can affect the setting and views both into and out of National Parks and AONBs. It is suggested by some that there should be a visual buffer around National Parks and AONBs. It has also been pointed out that the TAN and the MIPPS are potentially at variance because the MIPPS does not refer to a figure of 25MW and its meaning is much clearer.</p> <p>Some of the responses from the wind power industry suggested the TAN should stress clearly that there is a balance to be struck between visual impact and renewable energy production. Similarly, wind power industry responses thought that the TAN should encourage local planning authorities to include clear criteria based policies setting out where particular sizes and types of renewable energy developments would be acceptable.</p> <p>Some environmental groups consider that suitable areas outside Strategic Search Areas may have been excluded because of the arbitrary 25MW cap and they would like to see the 25MW cap outside of Strategic Search Areas deleted.</p>
Assembly Government response	<p>Outside Strategic Search Areas it is for the local planning authority to devise appropriate policies for the protection of landscape quality and this includes the impact on adjacent National Parks.</p> <p>It is accepted there is a balance to be struck between visual impact and renewable energy production which needs to be reconciled at a local level, and the TAN will be redrafted accordingly.</p> <p>The issue of wind farm development outside Strategic Search Areas will be clarified.</p>
Proposed change to TAN	Amend the TAN and append the technical details of the sieve mapping exercise to an annex, and to elaborate about the status inside and outside SSAs.
Reason(s) for proposed change	To make the TAN clearer about the approach to policy within and outside SSAs.

Paragraph Number(s)	20
What the TAN says	<p>National and international protection designation</p> <p>This paragraph precludes major wind power development in Natura 200 Habitat sites, Special Protection Areas, Candidate and possible Special Areas of Conservation and RAMSAR sites. It also excludes National Nature Reserves, the Dyfi Valley Biosphere site and World</p>

	Heritage sites.
Summary of representations	<p>Representations to this section reflect a concern that Sites of Special Scientific Interest are not afforded the same level of protection as other national designations and this is considered to be at variance with other government guidance e.g. PPW. There is also concern that other designations such as Heritage Coast, historic landscapes, parks and garden of national importance, strategic and local landscape designations have similarly been excluded.</p> <p>It has been pointed out that there is a possible contradiction between the first sentence of this paragraph and the MIPPS, does analysis preclude development or not, in protected sites?</p> <p>There is also a view that SACs and SPAs should not be excluded from wind farm development as a matter of course.</p> <p>There is strong criticism from some environmental organisations that the overall tenor of the TAN does not afford sufficient protection to the landscape of Wales. In particular there is criticism that the TAN ignores LANDMAP landscape character assessments which are the product of rigorous local assessments.</p>
Assembly Government response	<p>SSSIs and other designations are not considered to be absolute constraints on renewable energy development. Impacts need to be assessed on a case by case basis.</p> <p>The TAN will be redrafted for consistency and conformity with the MIPPS to indicate that sites of national and international importance should not be compromised by onshore wind proposals.</p> <p>LANDMAP studies produced for local authority areas do not override national policy and advice. Studies are produced for each local planning authority area and at present there is no uniformity or consistency in these studies across Wales. LANDMAP can, however, fulfil a useful function in assisting with the detailed refinement of the Strategic Search Areas and with the consideration of policies and proposals for renewable energy developments outside Strategic Search Areas.</p>
Proposed change to TAN	Clarification of SSA characteristics as well as re-written annex on SSA methodology.
Reason(s) for proposed change	To clarify the approach to SSA identification.

Paragraph Number(s)	21,22
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What the TAN says	Residential areas Recognition that turbines should be sited 500m or more from noise-sensitive properties. Sieve mapping excludes land within 500m of cities, towns and villages. There are some urban sites that are appropriate for wind power proposals.
Summary of representations	Most of the comments received in respect of this section question the underlying assumption that 500m is an appropriate buffer zone. Some respondents feel that sound from turbines travels further, and in rural areas where the level of background noise are lower the sound from turbines could be even more acute. There is concern that the sieve mapping exercise does not exclude isolated dwellings, which are just as noise sensitive as larger settlements. There are calls for the TAN to make it clear that the 500m buffer is not intended as a general guide in relation to noise and siting of wind farms. A comment from the wind power industry states that for proposals both within and outside Strategic Search Areas local planning authorities should include a criteria based policy which references best practice as set out in ETSU 1997 report on Wind Turbine and Noise Assessments.
Assembly Government response	This explanation will be moved to the technical annex of the TAN. There is no universally accepted standard for the appropriate separation of dwellings and wind turbines on noise grounds. The TAN adopts a 500m separation zone although this is not a general guide in relation to noise and the siting of wind turbines. Such considerations should be determined locally according to individual conditions and circumstances. The technical annex to the TAN will contain reference to the ETSU report of 1997 on wind turbine and noise assessments
Proposed change to TAN	To be considered in the annex of the TAN.
Reason(s) for proposed change	For clarity and simplification.

Paragraph Number(s)	23
What the TAN says	Wind speed Wind speed is not an absolute constraint, however, it must be generally accepted that larger wind power proposals are unlikely to come forward in areas where the average wind speed is less than 6m/sec.
Summary of representations	There are very few comments in relation to this section however one respondent in the wind power industry is concerned that 6m/s at 45m is too slow for commercial development. The NOABL database

	is not reliable enough for absolute boundaries to be drawn and the BWEA recommends wind speeds of 7m/s at 45m.
Assembly Government response	This explanation will be moved to the technical annex of the TAN.
Proposed change to TAN	To be considered in annex to the TAN.
Reason(s) for proposed change	For clarity and simplification.

Paragraph Number(s)	24
What the TAN says	MoD constraints Establishes that the MoD TTA in mid Wales is a constraint to wind farm development
Summary of representations	The comments relating to this section of the TAN originate mainly from the wind power industry, and in particular there is a view which is mentioned numerous times that the MoD TTA should not be considered as an absolute constraint. The reasons for this are that it may be technologically feasible to reduce or remove conflict between the TTA and wind power developments; furthermore it may be possible to effect a compromise with the MoD as has happened in other parts of the country. Another opinion stressed that it is unacceptable that the MoD should have an influence over Welsh energy policy. The accuracy of the Mapping of the TTA is questioned as it appears to overlap the Strategic Search Area C. It is suggested that should it be found that the Strategic Search Areas are unable to yield the capacity necessary to meet the renewable energy target, the TTA should be designated as a 'grey area' for further wind power consideration.
Assembly Government response	The TAN is a strategic document. The Welsh Assembly Government has agreed with the MoD that for the purposes of this document the TTA should not be compromised and therefore should be excluded from the search areas capable of accommodating large scale windfarms.
Proposed change to TAN	This section will be moved to a technical annex in order to simplify and clarify the TAN. The maps in the TAN will be redrafted to avoid any confusion or potential conflict with the TTA.
Reason(s) for proposed change	For clarity and simplification.

Paragraph Number(s)	25
What the TAN says	Lakes and reservoirs Assumption that developers would not consider siting wind turbines physically within lakes and reservoirs as this would add to the operational costs.
Summary of representations	This paragraph received few comments. Those recorded came from individuals and they support the view that lakes and reservoirs should be exempted from wind farm development due to potential impacts on the environment and tourism.
Assembly Government response	Support is noted.
Proposed change to TAN	To be included in the annex to the TAN which considers the sieve mapping technique.
Reason(s) for proposed change	For clarity and simplification.

Paragraph Number(s)	26
What the TAN says	Other constraints Other issues that restrict the siting of wind farms include: <ul style="list-style-type: none"> ▪ Civil airports & airfields ▪ Meteorological Office RADAR, telecommunication masts and re-broadcast links; ▪ SSSIs, nature and bird reserves, registered common land, scheduled ancient monuments & other important archaeological features, registered historic parks and gardens and the settings of the foregoing sites ▪ Country Parks and Heritage Coastlines
Summary of representations	There is little consensus about this section of the TAN. Representations from individuals reflect concerns that the constraints listed are not detailed enough to provide adequate protection. There is a call for the TAN to justify why wind farms could be appropriate in historic parks and gardens, on common land or in SSIs. There is also some concern that Listed Buildings and Conservation Areas have been excluded from the list of constraints. There is debate over the term “settings”, as it is considered by several respondents to be too vague. The term needs clarification and an explanation of how they are being considered for this exercise, in addition, there is concern that the settings of SSIs have been considered yet those of National Parks and AONBs have not.

	<p>Responses from the wind power industry and associated consultants question the underlying assumptions; in particular, the constraint surrounding civil airports and airfields, feeling it should be removed and the position re-evaluated as the situation varies with each location. Some responses from the wind power industry feel that constraints of SSIs should only be considered if they are relevant to the specific wind farm proposal. There is also a widespread view from the wind power industry that common land should not form the basis of a constraint, especially as open access land is not viewed in a similar way, yet the under CRow Act 2000 open access land includes common land.</p> <p>There is a specific request that the word “landscapes” be inserted after registered. Some local planning authorities on the other hand consider that the importance of common land should not be underestimated and any losses of common land could be reduced by the reinstatement of vegetation after construction. There is also a criticism from a local planning authority that the TAN has an inconsistent methodology as no impact on landscape conservation areas selected by LANDMAP or historic landscapes are considered in this section.</p> <p>There is an opinion that the sieve mapping exercise should have used regional Historic Environmental Records to inform the process.</p>
<p>Assembly Government response</p>	<p>The onus must be on local planning authorities to decide upon individual applications based upon site-specific evaluations. Reference should be made by local planning authorities to the annexes on methodology and landscape issues to help inform the production of appropriate criteria within local development plans, as a guide to the evaluation of specific applications.</p> <p>Common land carries particular legal rights and has an important role to play in terms of access and amenity but it is not necessarily an absolute constraint, and does not represent a significant constraint to the development of large wind farms. The issues associated with common land should be fully considered at the time a planning application is made for wind farm development. Common land often has other environmental features (such as an open landscape/high biodiversity) and these are often the reason common land is raised as an environmental issue.</p> <p>There is no validated consistency in the use of LANDMAP landscape quality classifications across local planning authority boundaries. It is up to the decision-maker to decide the weight that should be given to the various methodological landscape assessments in any particular case, and whilst LANDMAP is a tool to assist this, it should not override national policy.</p>
<p>Proposed change to TAN</p>	<p>Remove Common land as an absolute constraint in the annex.</p>
<p>Reason(s) for proposed change</p>	<p>For clarity and simplification.</p>

Paragraph Number(s)	27
What the TAN says	<p>Conclusions from consideration of environmental and technical constraints</p> <p>Results of the methodology show that a large proportion of Wales is heavily constrained and is not considered suitable for large scale wind farm development.</p>
Summary of representations	<p>Of those responses made in respect of this paragraph there is concern from within the wind power industry that the assertion that wind power developers will have produced similar results as a consequence of their own work is unsubstantiated and refuted. Responses from individuals who oppose the philosophy of the TAN, and the underlying assumptions, see this paragraph as a demonstration of a flawed methodology that fails to identify viable wind energy sites and is a product of an ill conceived set of constraint assumptions.</p> <p>There is also a body of opinion which expresses concern about the coarse nature of the GIS sieve mapping which may exclude a number of sites that might merit further detailed analysis before being rejected for large scale wind power development. Local planning authorities should be required to undertake further detailed analysis of their areas to produce a more robust basis for wind power proposals. If local planning authorities rely on the Strategic Search Areas map it is likely to lead to an increase in planning by appeal.</p>
Assembly Government response	<p>The methodology used to define the capacity of the 7 SSAs to meet the renewable energy targets set is considered to be broadly sound, although it is acknowledged that, given various constraints, capacity will need to be closely monitored.</p> <p>It is not intended that any further SSAs be identified.</p> <p>Local authorities are encouraged to undertake further work at local level to inform development plan policy. If a local planning authority feels that a site adjacent to an SSA is suitable it could allow development in this area.</p>
Proposed change to TAN	References to developers will be deleted as inappropriate. More information for SSA refinement will be provided in an annex.
Reason(s) for proposed change	For clarity

Paragraph Number(s)	28,29,30,31
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<p>What the TAN says</p>	<p>Electricity distribution issues. -</p> <ul style="list-style-type: none"> ▪ Considers the importance of the capacity of the existing electricity distribution network to absorb new generation. ▪ Advises that impacts on the landscape of overhead distribution lines should be minimised where possible. ▪ Indicates that there is very restricted capacity for new generation in north and mid Wales but that there is some potential spare capacity in south Wales, and states that this spare capacity should be fully utilised rather than looking to new power lines. ▪ States that Manweb/Scottish Power is considering a proposal to construct new 132kV lines in mid and north Wales needed to improve capacity of the grid in these areas.
<p>Summary of representations</p>	<p>Responses to this part of the TAN fall into three broad categories:</p> <ul style="list-style-type: none"> ▪ Concerns about overhead power lines and associated ancillary infrastructure; ▪ Detailed comments about grid assumptions; and as a consequence of the previous discussions, ▪ Suggested typographical amendments. <p>Concerns about overhead power lines and associated ancillary infrastructure come almost entirely from environmental organisations, campaign groups and individuals. Detailed comments register worries about the impact of additional overhead power lines associated with wind farm development on the landscape as well as concerns about the potential health impacts. There are calls for the TAN to issue stronger guidance on the need to fully utilise existing capacity before new overhead power lines are considered; as well as to allow local planning authorities to refuse proposals for wind farm development should the associated overhead power lines and other infrastructure be unacceptable. There is also the suggestion that the TAN should encourage the burying of power lines as a priority before overhead power lines can be considered.</p> <p>The majority of detailed comments about the grid assumptions come from the wind power industry and from district network operators. There is unanimity that the grid capacity is crucial to the success of the TAN and failure to strengthen the grid will render major renewable energy projects nonviable. There is a criticism that the grid assumptions are too simplistic and should be re-examined and that opportunities to develop outside Strategic Search Areas should be positively encouraged by adequate grid reinforcement. It is pointed out that small developments of around 1MW are unlikely to require significant grid reinforcement, 10-15MW installations are likely to be connected to the existing 33kV network while installations of 25MW or more are likely to be restricted to the 66 and 132kV networks. The statement in the TAN about spare capacity in the grid should be qualified by the fact that where spare capacity does exist as a consequence of the decline of heavy industry, this tends not to be in areas with the greatest wind resource. The TAN does not make reference to the national grid's</p>

	<p>high voltage transmission system. There is concern from within the industry about the need for associated overhead power lines and other infrastructure because overhead power lines require consent under s37 of the Electricity Act and substations may require planning permission from the local planning authority as well as landowner agreement. This means that wind farm developments require a long lead in time and the planning system should recognise this. There is therefore a need for speedier preparation of development plans and the consideration of planning applications. Responses from the industry confirm that the mid Wales distribution network is at saturation point and will require significant investment but proposals for renewable energy generation will hasten plans for reinforcement.</p> <p>Detailed suggestions for typographical amendments to this section include:</p> <p>Changing the heading to “Electricity transmission and distribution issues”</p> <p>Paragraph 28 Change distribution to “transmission”</p> <p>Paragraph 29 delete “where possible” after generation insert “from sites both more and less than 25MW installed capacity”</p> <p>Paragraph 30 Insert “in the national grid” after capacity</p> <p>There is concern from a local planning authority that this section of the TAN does not provide local planning authorities with enough guidance on dealing with overhead power lines etc or how the impact of infrastructure should be considered.</p> <p>The overall balance of the TAN is held to be in favour of onshore wind, so the grid issues are given too much importance. If the TAN adopted a more balanced approach to renewable energy generation by, for example encouraging biomass fuelled solid state generation located close to the grid, there would not be the necessity for new 132kV overhead power lines</p>
<p>Assembly Government response</p>	<p>The TAN is a land use planning document and electricity distribution issues need to be covered separately. These paragraphs are to be removed from the TAN and reference made to Annex A Energy Policy Statement and the Energy Route Map.</p>
<p>Proposed change to TAN</p>	<p>See response above.</p>
<p>Reason(s) for proposed change</p>	<p>Planning issues relating to the grid need to be considered separately and on a case by case basis.</p>

<p>Paragraph Number(s)</p>	<p>32,33,34,35,36,37</p>
<p>What the TAN says</p>	<p>Conclusions from the strategic assessment Combines the results of the sieve mapping with the network capacity study to produce a map of Strategic Search Areas capable of accommodating large scale (25MW+) wind farm development. This section also outlines the criteria used to determine the extent of the Strategic Search Areas. It identifies 1220MW of potential generating capacity in the Strategic Search Areas. Whilst cumulative impact can be a material consideration it must be balanced against the need to meet the national target. Developers need to be sensitive to local circumstances including siting and other planning considerations. Development of wind farms or other large renewable energy schemes will not generally be appropriate on internationally or nationally designated areas. Within and outside Strategic Search Areas smaller, domestic or community based wind turbine developments may be suitable, subject to material planning considerations.</p>
<p>Summary of representations</p>	<p>As mentioned above, because this section of the TAN identifies individual Strategic Search Areas, it attracted a very large amount of comment from all sectors. The responses generally fall into a number of categories which include:</p> <ul style="list-style-type: none"> a) General critiques of the Strategic Search Area approach adopted in the TAN b) Comments on the merits of particular Strategic Search Areas c) Detailed comments on the criteria and methodology used d) Concerns about the status of the Strategic Search Areas e) Concerns about the status of areas outside of Strategic Search Areas f) Other concerns <ul style="list-style-type: none"> a) The identification of Strategic Search Areas has drawn out objections from numerous organisations, campaign groups and individuals about the strategic approach of concentrating major wind farm development in Strategic Search Areas. The approach is criticised as being untenable and unnecessary because other forms of renewable energy should be encouraged as well as an increased emphasis on energy efficiency. Strategic Search Areas are criticised because they will destroy the landscape, will require new road access, impact negatively on the tourist industry, impact of deforestation in reducing CO₂ absorption, increase flood risk, lack of long term sustainable employment opportunities etc. b) Associated with this theme of objections many campaign groups and individuals have made representations about specific Strategic Search Areas seeking to get them withdrawn from the TAN due to perceived impacts on the local environment and

quality of life. There is also a body of opinion from the wind power industry and developers that the Strategic Search Areas are too heavily constrained by local issues (such as topography, individual dwellings, access) to deliver the 800MW target.

- c) There are many detailed responses relating to the criteria and methodology used to define the Strategic Search Areas. There is unease about the assumption that Forestry Commission land should be considered as a positive siting factor due to the potential impact on forestry related recreation and there is a call for clarification about the status of private forestry in Strategic Search Areas. There is also a range of issues associated with the assumption that there would have to be clear felling of trees in forests in order to develop wind farms. Deforestation would require EIA impact assessment and there is concern about potential conflicts with the use of Forestry Commission land and the CRoW Act 2000. Some responses advocated that the 4km buffer zone from National Parks should be extended to AONBs and other designations, whilst a few others feel that the 4km buffer is inadequate and should be much greater. On the other hand there is a call from the wind power industry to remove this arbitrary buffer and allow each proposal for wind farm development to be determined on its own merits in line with guidance contained in PPS22 using criteria based policies. There is a call for clarification as to why the Strategic Search Areas have to include an existing wind farm or be within the cumulative impact buffer of one because it is felt that existing wind farms should not skew the requirements to meet the renewable energy output targets. There are also calls for a definition of what a cumulative impact buffer is and how it should be applied. There is some concern about data gaps and use of proxy information in the methodology. There is a certain degree of confusion surrounding the terminology of “smaller, domestic and community based wind turbine developments” these are not defined in the TAN and domestic and community based wind farms do not have to be small scale. Reference to cumulative impact within Strategic Search Areas has caused some confusion, with calls for clarification about what is meant and how it is defined. Some wind power industry responses would like the TAN to give local planning authorities more clarity about how to consider this issue.
- d) There is a request, which comes from across the spectrum for greater clarification about what the designation of Strategic Search Areas means, in terms of obtaining planning (or Electricity Act) consent. Responses from within sections of the wind power industry and developers indicate that they want the TAN to issue a clear presumption in favour of major wind farm development within the Strategic Search Areas and that they should be renamed as Preferred Areas of Search. Conversely there are many other respondents who are anxious that the Strategic Search Areas already give carte blanche to the wind

	<p>power industry to develop major wind farms. There is concern at the perceived arbitrary nature of the 25MW definition of large scale wind farms and there are numerous calls for the TAN to issue clear guidance about how to deal with proposals below 25MW both within and outside Strategic Search Areas. One particular response was concerned that all a developer had to do was to keep proposals slightly under 25MW and offer a tiny proportion of operating profits back to the host community in order to be allowed to develop wind farms anywhere in Wales. There are calls for the Strategic Search Areas to be subject to SEA.</p> <p>e) There are numerous calls for the TAN to clarify how wind farm proposals outside Strategic Search Areas should be dealt with and the TAN should therefore be more specific about the type and scale of development that is permissible outside these Areas. Some local planning authorities seek guidance on dealing with applications outside Strategic Search Areas; for example could wind farm proposals be refused if the national target has been met? Should there be a presumption against wind farm development outside Strategic Search Areas? How should LANDMAP be assimilated in to the process? On the development side there is concern about the status of major wind farm proposals in the pipeline outside Strategic Search Areas where a considerable amount of investment has already taken place. Developers are also seeking reassurance that should the 800MW target be met this is not a reason for refusal either in or outside Strategic Search Areas.</p> <p>f) Other miscellaneous issues to arise include requests for clarification of the relationship between Strategic Search Areas and the Wales Spatial Plan. There is a need for a statement in the TAN encouraging the re-powering of existing wind farms whether they are inside Strategic Search Areas or not. There is also a need to reconsider the references in paragraphs 14-21 in 1st bullet point of paragraph 33, as it should refer to paragraphs 18-25, and paragraph 22 should be paragraph 26</p>
<p>Assembly Government response</p>	<p>This section of the TAN will be revised to indicate the parameters for the selection of the SSAs, and an Annex will contain a detailed description of the sieve mapping process undertaken to arrive at the 7 Search Areas.</p> <p>The specific points raised can be answered as follows:</p> <p>a) The SSA approach deliberately seeks to concentrate the majority of the installed capacity into a limited number of suitable sites. The intention is to ensure that wind development is located in the best position environmentally and economically.</p> <p>The TAN emphasises the importance of other renewable energy technologies, and includes a Technical Annex. Energy efficiency is allocated an independent section at the very start of the TAN, after the introductory paragraphs and elaborated in later paragraphs.</p>

	<p>Statistics from Scotland and Wales indicate there are very few negative effects on tourism over the time that wind farms have been built and operating over the last 10 years.</p> <p>b) It should be pointed out that benefits can accrue to areas through increased employment opportunities, allocated community benefits (see Annex C), and in some instances through development of the sites for tourism.</p> <p>c) There is no presumption that clear felling of forestry should be undertaken. Each case must be viewed on its merits in the light of local circumstances.</p> <p>It was not intended to imply that there is to be any buffer around National Parks. The TAN will be redrafted to clarify this.</p> <p>With regard to the cumulative impact of developments within the SSAs, LPAs will need to consider the advantages/disadvantages of dispersing or concentrating the turbines within each SSA.</p> <p>d) The TAN aims to support LPAs in introducing policies that confine all large wind energy developments to within SSAs and urban/industrial/brownfield sites. The local development plan should form the basis for local discussion both inside and outside SSAs. Authorities may wish to consider commissioning further work to help in preparing their local policies including landscape considerations.</p> <p>25MW is indicative of the larger wind farms that are considered most suitable to be accommodated in SSAs. If wind farms below that size are developed in SSAs they could prejudice achievement of the capacity identified.</p> <p>e) The TAN does not preclude wind farm developments outside the SSAs e.g. larger wind farms could be practicable in urban/industrial/ brownfield sites; elsewhere smaller schemes particularly those involving the local community should be favoured by LPAs.</p> <p>The 800 MW national target of additional installed capacity set is the minimum requirement from on-shore wind resources, and developments should not be refused by LPAs just because the 'target' has been reached.</p>
Proposed change to TAN	<p>The TAN will be amended to include a reference to the need to encourage the re-powering and/or extension of existing wind farms provided that environmental and landscape impacts are acceptable. Further advice on LANDMAP and local refinement for development plan policy will be produced in an annex to the TAN.</p>
Reason(s) for proposed change	<p>To assist local planning authorities in considering issues when developing local policies.</p>
Paragraph Number(s)	<p>37,38,39,40,41,42</p>

<p>What the TAN says</p>	<p>The role of local planning authorities</p> <p>Encourages local planning authorities to undertake more detailed mapping and landscape assessment work in order to formulate policies for onshore wind within Strategic Search Areas. These should be incorporated into development plans, supplementary planning guidance or renewable energy assessments as appropriate.</p> <p>Outside Strategic Search Areas each local planning authority should encourage development for relatively small, possibly community-based proposals.</p> <p>Encourages potential wind turbine development within urban and industrial areas. There may also be opportunities for re-powering of or extensions to existing wind farms.</p> <p>Local planning authorities need to include appropriate conditions for the decommissioning of wind farms or wind turbines and restoration of their foundations. Wind farm operators need to set aside sufficient finance to meet restoration obligations. Local planning authorities may require guarantees via s106 to ensure restoration.</p> <p>Residential properties in Strategic Search Areas are generally widely dispersed and should not prove to be a decisively limiting factor. Registered Historic Landscapes similarly are not considered to be decisive constraints but need to be given consideration by developers and local planning authorities. It commends Cadw's good practice guide on assessing impacts on historic landscapes. Special Landscape Areas, settings for national trails are material but not over-riding constrains on wind farm development.</p>
<p>Summary of representations</p>	<p>Responses to this section of the TAN can be summarised as falling into a number of discreet areas:</p> <ul style="list-style-type: none"> a) General observations b) Comments on the decommissioning of wind farms c) Comments regarding definitions of terminology d) Comments on the status of Registered Historic Landscapes and National Trails <p>a) Some of the comments of a general nature took the opinion that the approach outlined is too dictatorial and undermines the democratic powers of local planning authorities; this does not emerge from the local planning authorities themselves, rather it is the view of a few individuals. Local planning authorities are more concerned about the status that any local mapping or landscape assessment might have, particularly as it could further reduce the capacity of Strategic Search Areas to meet the renewable energy target, and there is a concern that any such work could be futile if the target is not being met. The Planning suggests that creating additional policies in Strategic Search Areas runs counter to the creation of LDPs which encourages simplicity and fewer policies and discourages repetition of national guidance. Clearer advice on what is sought in policy terms is needed e.g. is it more appropriate for local planning</p>

	<p>authorities to develop methods of assessing landscape impact, possibly using LANDMAP. Local planning authorities are also concerned that they do not have adequate resources to undertake work of the nature suggested and there are calls for greater support to those authorities that contain a Strategic Search Area. Cadw has pointed out that the footnote to para 42 needs updating. There is some disagreement that the settlement pattern in Strategic Search Areas is dispersed as they contain sizeable towns and villages. The reference to the conversion back to broad-leafed tree species could have an impact on the timber industry and it is suggested that this be removed. There are some welcoming comments about the section on habitat improvements but it is suggested that this could be extended to include amenity and landscape improvements. One cautionary observation from the wind power industry states however that local planning authorities could be open to legal challenge if unrelated benefits are sought.</p> <p>b) On the issue of decommissioning of redundant wind farms, several individuals are of the opinion that the TAN is not strong enough. There are several people who have suggested that developers should be required, as matter of course, to place sufficient funds in escrow to allow for all decommissioning costs and claims for compensation, and that these funds should allow for inflation. Some responses in the wind power industry take the opposing view and consider the requirement of the TAN to be too onerous in this regard.</p> <p>c) There are widespread requests that come from several sectors of respondents, for clarification of some of the terms used in this section of the TAN. In particular there are calls for clarification about what is meant by the terms "relatively small" and "community-based" in para 38. Similarly the term "decisive constraints" in para 42 should be explained, is this the same as an absolute constraint? If so there is need for consistent terminology. There is confusion about references to "restoration of wind farm foundation" in para 41; does this mean just the topsoil or the whole structure and why doesn't the requirement extend to the whole wind farm site rather than just to its foundations?</p> <p>d) There are concerns about the status of Registered Historic Landscapes, the settings of national trails and the impacts on Special Landscape Areas which are not considered in the TAN to be "decisive constraints", whereas Heritage Coast and other designations are afforded protection; the approach is therefore criticised for being inconsistent.</p>
<p>Assembly Government response</p>	<p>The intention has never been to undermine the input of local planning authorities particularly those with experience of wind power. LPAs will continue to determine planning applications for wind farm proposals under 50MW, and they have a right to object to proposed projects over 50MW in their area. The valuable experience gained at the local level should be used to refine the</p>

	<p>approach within and outside of the SSAs to reflect local circumstances. Similarly, local planning authorities could seek to include amenity and landscape improvements</p> <p>It is accepted that local assessments including landscape considerations could increase or decrease the capacity of individual search areas to meet the renewable energy targets set for each, but every effort should be made to try to meet the targets set.</p> <p>Additional resources have been made available to all LPAs in Wales for the past 2 years. Additional resources amounting to £68,000 per local planning authority are being made available for 2005/06 to help improve the planning service in Wales in line with the Planning: delivering for Wales programme.</p> <p>The specific location of each large-scale wind farm within the SSAs is a matter for local determination.</p> <p>Strategic landscape assessment work did form part of the sieve mapping exercise which informed the TAN e.g. exclusion of National Parks and AONBs and the exclusion of internationally protected designations, but it could not incorporate all local landscape designations. The reasons why some landscapes are considered constraints and others not in the sieve mapping process undertaken is covered in an Annex.</p>
Proposed change to TAN	<p>Reference to the acceptable de-commissioning of any development and the need to secure funds to undertake same is to be retained, with local authorities charged with responsibility to address these issues through development plan criteria.</p> <p>The TAN will be redrafted to refer to “restoration of the site at the end of its life” rather than just its foundations as in the earlier draft. Terms regarding scale will be clarified.</p>
Reason(s) for proposed change	For clarity and simplification of the TAN.

Paragraph Number(s)	43,44
What the TAN says	<p>Community Involvement</p> <p>Developers are encouraged to consider ways to involve local communities e.g. enabling people to buy shares, or the establishment of trust funds to invest in energy conservation or small-scale renewable energy projects in the locality. Local planning authorities should make clear in development plans the scope of possible ‘planing contributions’ but these should not enable planning permission to be given on otherwise unacceptable proposals.</p>
Summary of representations	Several individuals consider that wind farms are divisive and split communities, and any attempt to provide community benefit is tantamount to bribing host communities. Others took a different view and feel that the TAN is not strong enough and that it should require

	rather than encourage developers to involve the local community. Where community benefit is sought the TAN should make it clear that it should be for the benefit of the whole community. There are calls from local planning authorities for more clarification about the scope of community benefits and for a broadening of the nature of such benefits to include environmental education, tourism and community development initiatives. Responses from both the wind power industry and local planning authorities advocate that additional and separate guidance on community benefit should be produced.
Assembly Government response	This topic will be strengthened to give adequate emphasis to the potential benefits that could accrue to local communities from wind farm developments.
Proposed change to TAN	Examples of and advice on community benefits will be drafted as an Annex detailing examples of best practice from across Wales.
Reason(s) for proposed change	For greater clarity and to assist with the provision of community benefits.

Paragraph Number(s)	45,46
What the TAN says	Off-shore wind Off-shore wind farms lie outside of the land use planning system. The electricity generated by off-shore wind farms will count towards the Assembly's renewable energy target and a specific target of 200MW for off-shore wind is established. Local planning authorities are consultees on the off-shore decision making process. Planning permission may be required for onshore installations associated with off-shore wind farms. Local planning authorities should plan positively for such installations and minimise environmental impact.
Summary of representations	Responses to this section query the derivation of the 200MW target and there are several requests to explain how both the off-shore and onshore targets have been arrived at. There are statements to the effect that if off-shore wind farms are more efficient than onshore developments, then why aren't they given a higher priority in the TAN. A few of responses from the wind power industry refute the statement in the TAN that off-shore wind developments are more efficient as they tend to be more productive but not necessarily more efficient. The TAN does not contain any guidance to local planning authorities about making comments on off-shore wind developments and the Assembly is encouraged to develop an integrated approach to both off-shore and onshore wind policy.
Assembly Government response	As TAN 8 is a land use planning document it is not relevant to include offshore wind farm advantages/disadvantages.

Proposed change to TAN	None.
Reason(s) for proposed change	Not applicable.

Paragraph Number(s)	47,48,49,50,51,52,53
What the TAN says	<p>Woodfuel</p> <p>Here the Tan identifies the potential of small diameter timber and Wales' production capacity. Such timber is also the by-product of forest thinning which in itself has environmental benefits. The TAN outlines the status of woodfuel technologies as they currently exist. Woodfuel burning plants can be established on the edges of urban settlements and will rarely require EIA. Adequate consideration must be given to likely sources of fuel supply and associated impacts of vehicle movements. Most woodfuel systems only deliver heat. Consideration will also need to be given to the storage of fuels for these systems but this can often be a minor issue.</p>
Summary of representations	<p>There is a view that this section of the TAN should be re-titled Biomass and that woodfuel should be a sub-heading. There is also concern at the seeming reliance on the unproven technologies of gasification and pyrolysis, these are relatively untried technologies and the TAN should concentrate on simple biomass steam technology. Local planning authorities are critical of this part of the TAN for offering little in the way of planning guidance for dealing with these technologies and there is seen to be little discussion of land use planning issues. The TAN is criticised for not mentioning biomass grasses and other dedicated biomass fuel crops, and for giving the impression that small diameter timber is of little commercial value. There are calls for a target for woodfuel energy outputs demonstrating how this technology is helping to meet the overall renewable energy target. The reference to EIA should be removed because EIA will determine impacts and it is not for the TAN to take a view. British Biofuel produce guidelines on short rotation crops and this should be promoted as a minimum standard. The TAN should also provide firmer guidance that woodfuel combustion plants should be located close to sources of production to reduce long distance transportation. There is a suggestion that areas of forestry in Strategic Search Areas should also be promoted as pilot areas for a range of renewable energy projects including energy saving and the use of wood fuel.</p>
Assembly Government response	<p>Woodfuel should remain as the primary heading. Detailed explanations of the use of wood chip and pellet stove and boiler systems, gasification and pyrolysis technologies are covered in an Annex, as all are products of the timber industry, being used to</p>

	<p>produce heat and power.</p> <p>The TAN is intended to be as comprehensive as possible, covering all technologies, as this is a highly innovative area subject to regular improvements in the types of engines, turbines and boilers available on the market, led by developments abroad.</p> <p>Biomass grasses and other crops are covered under the next section as “Other Fuel Crops”.</p> <p>It is not possible to set targets for this sector, as the rate of take up is too unpredictable to quantify at the present time.</p> <p>Care in the selection of suitable sites for plants/power stations due to the scale of enterprises, emissions and transport links are covered in the Technical Annex, with the onus placed on local planning authorities to steer developers to suitable locations.</p>
Proposed change to TAN	The need for EIA for large-scale developments is to be removed from the TAN, as few developments will impact sufficiently on their surroundings to warrant an EIA, and separate guidance is available on EIA.
Reason(s) for proposed change	To simplify and clarify the TAN.

Paragraph Number(s)	54
What the TAN says	<p>Other fuel crops</p> <p>Other crops grown for energy generation may be grown but they will not be as important as timber in the short term. Solid bio-fuels, particularly agricultural waste or by-products may be used.</p> <p>Guidance does not cover the growth and conversion of biomaterials into vehicle transport fuels.</p>
Summary of representations	There is a call for this section to be redrafted to alert local planning authorities to the production of energy crops. This section is also criticised for not containing any assessment of the land use planning implications.
Assembly Government response	It is accepted that the section needs redrafting so that local authorities are made aware of this sector, involving the utilisation of energy grasses and energy crops as fuel sources, but the development of this sector through the specific planting of such fuel crops lies outside the remit of the planning system. Its development will be dependent on commercial viability.
Proposed change to TAN	Further advice will be provided in an annex to the TAN.
Reason(s) for proposed change	For clarity

Paragraph Number(s)	55,56
What the TAN says	<p>Utilising methane</p> <p>Methane is an excellent fuel. Methane production anaerobically is often of considerable value in environmental protection terms. It is the main gas at landfill sites and landfill gases pose a threat to public health and are unpleasant. It is desirable that they should be burnt at high temperatures. Burning occurs in a flare where energy is wasted or it is used as fuel to generate electricity. Although not strictly a renewable energy source it is eligible for ROC support. Methane can also be pumped from coalbeds that are not necessarily working and this would have environmental advantages if the gas is likely to find its way into the atmosphere.</p>
Summary of representations	<p>The TAN should make it clear that landfill gas is a finite resource and that the use of methane as fuel far away from its source is unlikely to be cost effective. There is a call for the deletion of the reference to the fact that methane is not strictly a renewable energy source as this is said to be contrary to the European Directive on support for electricity from renewable energy sources. There are also requests to quantify the potential energy production capacity of methane gas and its contribution to meeting the renewable energy target. Several local planning authorities have made the criticism that this section does little to explain the land use planning implications. Furthermore the TAN is considered to be weak as it ignores the link to Regional Waste Plans. The TAN should therefore be redrafted to provide a national framework for linking waste management and renewable energy.</p>
Assembly Government response	<p>The TAN will be revised to reflect the fact that opportunities for utilisation of methane are site specific e.g. landfill or coal mines. More information is provided in the Technical Annex.</p> <p>It is accepted that landfill derived methane is a finite resource and the TAN will be amended to reflect this.</p> <p>It is impossible to quantify the potential energy production capacity of methane gas at the present time, as this will be entirely dependent upon take up by developers, which local planning authorities are encouraged to promote.</p> <p>Land use planning implications are limited as potential generating plants would occupy only small plots of land, at landfill sites or coal mines.</p>
Proposed change to TAN	Further advice will be produced in an annex to the TAN.
Reason(s) for proposed change	For greater clarity.

Paragraph Number(s)	57
What the TAN says	Anaerobic digestion Methane can be created intentionally e.g. by the fermentation of animal waste. Careful management is required to ensure that anaerobic digestion technology achieves its potential. Anaerobic digestion can produce corrosive gases, which impact on the economics of smaller scale systems. Local planning authorities should look to promote opportunities for this technology and should adopt policies for large sewage treatment facilities to include anaerobic digestion facilities and have a positive utilisation of methane. Intensive livestock units should also be required to demonstrate responsible waste management practices and anaerobic digestion could form part of that system.
Summary of representations	There is some concern at the statement referring to corrosive gases as this is either refuted or felt to be scaremongering. The TAN should also refer to the possibility of building larger, centralised co-digestion plants where a mixture of manure and organic waste streams from different suppliers are treated as exemplified at the Holdsworthy Plant in Devon. From within the agricultural sector there is concern that not all intensive livestock units are capable of accommodating anaerobic digestion technology and that local planning authorities should be advised to use discretion.
Assembly Government response	This section within the TAN will be rephrased and local planning authorities encouraged to seek opportunities to promote this technology, by adopting policies for larger sewage treatment works to include anaerobic digestion facilities. Details will be provided in the technical annex. It is accepted that not all intensive livestock units can accommodate anaerobic digestion technology but all should be required to demonstrate responsible waste management practices.
Proposed change to TAN	See response above.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	58,59,60
What the TAN says	Solar Photo-Voltaic (PV) Local planning authorities will need to clearly justify refusal of planning permission for PV installations. PV panels usually only have a visual impact. It is important that technologies are promoted

	as economies of scale and technological developments should bring costs down, especially for publicly funded buildings or development. Local planning authorities should examine ways to introduce policies for specific categories of use e.g. offices, retail and industrial premises. Solar technology will play a significant role in reducing carbon emissions from buildings in urban areas.
Summary of representations	There are only a few substantive observations on this part of the TAN. Some local planning authorities are concerned about the impact that PV panels may have in Conservation Areas or on traditional buildings. There is also a call to strengthen this section by stating that failure to include suitable PV technology is a reason for refusal of planning permission. The term sunlight should be replaced with daylight. The TAN could also refer to the availability of grants to assist PV installation.
Assembly Government response	As the implications to the planning system from both solar photovoltaic and solar thermal are similar, involving visual impact, guidance about possible negative impacts to listed buildings, ancient monuments and conservation areas is included under the next section in the TAN on solar thermal. It is not reasonable at the present time to demand the installation of solar PV technology as a prerequisite of planning permission. Local planning authorities can encourage installations of PV, and other means of exploiting renewable energy sources, as part of the planning process.
Proposed change to TAN	The term daylight rather than sunlight has been used in the annex detailing these two technologies.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	61,62,63
What the TAN says	Solar water heating Proposals for solar water heating should be supported unless they critically damage listed buildings, ancient monuments or conservation areas. Local planning authorities are expected to interpret the GPDO as constructively as possible. They should consider ways to encourage this technology including the introduction of policies for building types with a high demand for hot water especially in the summer months. Design guides and SPG should refer to the use of this technology in residential developments. Panels fitted to buildings at the time of construction are preferable and cheaper than retrofitting.

<p>Summary of representations</p>	<p>It is felt by a couple of individuals that this is too limited and adverse visual impact should be avoided in all sensitive areas. Conversely, CCW advises that the TAN should support domestic solar energy provided that careful attention is paid to design and material even in National Parks and AONBs. There are calls for financial incentives to be made available to subsidise this form of technology. Critics of the TAN maintain that it is inconsistent that visual impact is considered in terms of solar water heating yet it is not applied to major windfarm development. The TAN confuses the role of Design Guidance and SPG and Design Guidance is SPG, furthermore SPG needs to be cross-referenced to development plan policies. The TAN should therefore refer to SPG and development plan policy. Some local planning authorities are calling for more guidance to development control officers about the circumstances when a planning application would be needed and what constitutes a material alteration to the shape of a building. The TAN should not advocate DIY installation of solar technology this outside of the land use planning system and the supply and installation of commercially viable solar hot water systems should only be undertaken by Solar Trade Association accredited personnel. The terms “critically” and “vista” should be deleted.</p>
<p>Assembly Government response</p>	<p>The TAN does not preclude the use of solar thermal in National Parks and AONBs, but considers them inappropriate where visual impact on listed buildings and ancient monuments is detrimental to the appearance of the buildings and individuals’ enjoyment of same. Indeed, the majority of buildings in Wales are suitable for solar thermal and local authorities should encourage the adoption of solar panels on all public and private buildings.</p> <p>Visual impact is a key criterion in the consideration of wind farm applications. One of the reasons for selecting SSAs was to concentrate large-scale wind farms in prime areas and so ensure preservation of the landscape of Wales.</p> <p>The terms “critically” and “vista” have been retained in the final version to demonstrate the strong support for this technology.</p>
<p>Proposed change to TAN</p>	<p>The TAN and accompanying annex have been amended to give the facts about this technology but not to encourage DIY installations.</p>
<p>Reason(s) for proposed change</p>	<p>For clarity.</p>

<p>Paragraph Number(s)</p>	<p>64,65,66,67,68</p>
<p>What the TAN says</p>	<p>Hydro-power Most, but not all potential for significant hydro-power in Wales has been realised. The majority of opportunities for micro hydro-power schemes are “run of river”; the most significant planning problems</p>

	will be associated with the abstraction of water from rivers or streams. This may cause loss of amenity in attractive areas and have ecological/wildlife implications. There is a need for close liaison with CCW and EAW. Policies will probably be criteria based rather than site specific, but local planning authorities are encouraged to consider ways in which they can encourage investment in small hydro-power schemes.
Summary of representations	There is a view held by some individual respondents that Wales offers the potential for small, medium and large-scale hydro-power schemes given its high rainfall and sparsely distributed population and the Assembly should do more to encourage this. There is criticism of the EA from some hydro-power developers as they are considered to be unhelpful in respect of water abstraction licenses. There is a call for an estimate of the contribution hydro-power could make towards Wales' renewable energy target.
Assembly Government response	The Assembly Government supports the utilisation of hydro power, but urges developers and LPAs to liaise closely with the Countryside Council for Wales on planning applications, and the Environment Agency on abstraction licences, to ensure no ecological damage occurs. No estimate of the potential scale of the electrical energy to be generated from hydro is available, but it is judged to be limited to the year 2010 due to the need to evaluate ecological impacts of individual schemes over a number of years.
Proposed change to TAN	Further advice and detail will be contained in an annex to the TAN.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	69,70,71
What the TAN says	Tidal and wave energy Local planning authorities should not rely on this technology to make any significant contribution towards meeting the 2010 renewable energy target: it is a long-term prospect. Should such developments come forward there will be onshore infrastructure requirements associated with them and local planning authorities should seek to accommodate such development in appropriate locations.
Summary of representations	There are criticisms that the role of tidal and wave power has been downplayed in the TAN. Tidal power is considered to be more reliable than wind power and the Assembly should fund research into its development. The TAN should therefore be strengthened in this respect. There is a debate about the costs and benefits of a proposed barrage across the Severn Estuary and there are calls from developers to remove references to it in the TAN because its costs need to be carefully balanced against the benefits. The TAN is

	not the appropriate place to do this. There is also concern that the TAN underplays the huge environmental consequences of such a development.
Assembly Government response	Further work on tidal and wave power is supported by the Assembly Government. Any land use planning implications will require early consultations with local planning authorities.
Proposed change to TAN	References to Severn Estuary will be removed from the TAN, and detailed consideration of the technology will be incorporated into an annex.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	72,73,74
What the TAN says	Heat pumps Heat pumps extract latent heat from soil and water. There are unlikely to be any significant implications for planning policy or development control. Most significant opportunities for this probably come in combination with community heating networks installed as part of new residential or mixed-use developments.
Summary of representations	The volume of responses to this part of the TAN is negligible. There is a call for the TAN to ensure that heat pumps are powered by renewable energy sources to fulfil their maximum potential. There is also a request that the TAN includes a mention of air-to-air heat pump technology
Assembly Government response	The TAN already stresses the desirability of using renewable energy sources such as woodfuel to power heat pumps in preference to that generated from fossil fuels, and to select applications based on this criterion. Limited planning implications.
Proposed change to TAN	Air source heat pump technology has been added to ground and water as natural heat sources for heat pump technology in an annex.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	75,76
What the TAN says	Large scale geothermal There is no significant prospect of geothermal energy in Wales without drilling to a considerable depth to reach the high temperatures needed. Unless information to the contrary becomes

	available, there is little scope for any significant contribution to even local renewable energy generation and targets.
Summary of representations	Apart from the fact that the TAN omits reference to small scale geothermal energy potential, there were no substantive comments offered in respect of this section
Assembly Government response	Small scale geothermal is a misnomer for ground source heat pumps
Proposed change to TAN	The phrasing in the TAN will be reconsidered.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	77,78
What the TAN says	Energy from waste The TAN does not seek to revise any of the processes in train relating to this matter.
Summary of representations	There is a view expressed by a local planning authority that the TAN has missed an opportunity to link with Regional Waste Plans because refuse derived fuel could provide nearly half of the renewable energy shortfall. A converse view to emerge from an environmental organisation wishes to see an explicit presumption against mass-burn incineration to ensure the future viability of recycling. There is also a call to exclude waste incinerators from this consideration.
Assembly Government response	While complementary to TAN 8, the amount of energy that is appropriate to derive from waste is governed by appropriate waste management principles rather than energy generation potential.
Proposed change to TAN	A reference to energy from waste will be included in the TAN.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	79
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What the TAN says	Combined heat and power (CHP) CHP is a particularly efficient way of generating electricity whilst using waste heat for productive purposes. The Assembly supports proposals to include CHP. Development Briefs should also require that CHP be investigated.
Summary of representations	There is concern from the development industry that Development Briefs for CHP will lead to additional costs for builders. The planning system should not be used to secure matters dealt with under other legislation.
Assembly Government response	The Assembly Government wants to encourage innovative ideas from developers in this highly fuel-efficient technology.
Proposed change to TAN	None.
Reason(s) for proposed change	The current wording is considered appropriate.

Paragraph Number(s)	80,81
What the TAN says	Community (or district) heating Encourages the development of centralised boilers and networks of supply to mixed users. Local planning authorities are expected to facilitate community heating networks and CHP and should encourage developers to do the same. Development Briefs for larger sites should consider the need to investigate community-heating options. Heating options should also be considered where development plan allocations have suitable uses in close proximity.
Summary of representations	There is very little comment on this section other than that it is considered by some to be overly optimistic in terms of the overall contribution to renewable energy production. Developers consider it would be useful to give an estimation of size when authorities would be requesting community heating to be investigated.
Assembly Government response	From evidence from other parts of Europe it would appear to be perfectly feasible.
Proposed change to TAN	None. Further details are provided in an annex to the TAN
Reason(s) for proposed change	The current wording is considered appropriate.

Paragraph Number(s)	82
What the TAN says	Biofuels for vehicles It is likely that some capacity for bio-diesel will be developed in Wales. Production installations will probably be small and require little special consideration from the planning system, although they will require advice from the HSE and EAW on safety and pollution issues. There is probably no need to anticipate larger scale bio-fuel developments in development plans.
Summary of representations	Some greater clarity is called for by a couple of individuals who consider it unsatisfactory to say that bio-fuel units “probably” fall outside of the planning system, more definitive guidance is needed.
Assembly Government response	The draft TAN does not state that such units fall outside the planning system, only that development plans need not devote much attention, if any, to them.
Proposed change to TAN	None. Further advice will be contained in an annex to the TAN
Reason(s) for proposed change	The current wording is considered appropriate.

Paragraph Number(s)	83,84
What the TAN says	Renewable energy technologies Reviews of UDPs and the production of LDPs need to address the Assembly’s commitment to renewable energy. Local planning authorities should carry out assessments of the appropriate renewable energy technologies for their area and develop policies to support their implementation. Local planning authorities need to adopt positively worded policies and specific locational advice. Strategic Search Areas should be incorporated into development plans.
Summary of representations	There is a suggestion that the issues of renewable energy targets should be considered at a regional scale, whereby a regional target is established for apportioning to local planning authorities and inclusion in their development plans. Opinions from the renewable energy industry indicate that there should be a firmer obligation set for local planning authorities to ensure that every effort is made to commit fully to the adoption of renewable energy technologies. Furthermore, Strategic Search Areas <u>must</u> be incorporated into development plans. Local planning authorities are not considered to be the appropriate organisations to undertake assessments of renewable energy technologies, this should be left to the market to determine. A view from a local planning authority suggests that it is

	inappropriate for local planning authorities to carry out such assessments, rather it would be better use criteria based policies as outlined in PPS22. Some concerned individuals consider this section needs to be strengthened by dropping the term “where feasible”. There is a suggestion that the term “locational advice” be replaced with “and where appropriate, to identify specific sites”
Assembly Government response	The need to incorporate SSAs in development plans is endorsed and authorities encouraged to co-operate and work together to define local requirements where SSAs cross the boundaries of more than one local planning authority.
Proposed change to TAN	The TAN will be revised to commit local planning authorities to the promotion of renewable energy technologies in development
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	85,86
What the TAN says	Housing land allocations and climate Climate cannot be an over-riding consideration in choosing land for housing (& other appropriate land uses). North facing slopes should not usually be allocated for housing development unless there are good reasons that would point to it being necessary.
Summary of representations	There is some limited concern that this paragraph is open to misinterpretation and aspect should not be used as a criterion to subvert development.
Assembly Government response	It is not felt that this paragraph is open to misinterpretation as the advice to avoid building housing on north facing slopes states “unless there are good reasons that would point to it being necessary”. However the section of the TAN will be reviewed.
Proposed change to TAN	Review of sections on design and energy.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	87,88
What the TAN says	Passive solar gain Reinforces the guidance in TAN 12. Consideration should be given to the inclusion of policies in development plans or SPG to encourage good design and implement practice for passive solar design. Better siting and sizing of fenestration can improve energy efficiency in buildings. Conservatories should not be used inappropriately.
Summary of representations	This section and the previous one (paras 85-87) deal with the same subject matter and should be amalgamated. There is also a suggestion that an additional paragraph be added to 88 to bring TAN 8 into line with TAN 12 : 'Design, infrastructure and site layout is key to maximising passive solar gain in domestic and non-domestic buildings. The main aspects to consider are the orientation of the buildings, the overall site layout to avoid overshadowing and maximise sunlight penetration. Energy efficiency should be considered at planning stages and submission of planning applications. Evaluation of new schemes should consider whole lifetime costs i.e. initial capital costs and maintenance, particularly energy costs.'
Assembly Government response	Accept that there is a need to align TAN 8 with TAN 12.
Proposed change to TAN	A new paragraph to be added to cross reference TAN 8 with TAN 12.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	89,90,91
What the TAN says	Supplementary planning guidance (SPG) Considers the role of SPG and states that some of the more detailed aspects of the TAN could be incorporated into SPG.
Summary of representations	This section is criticised because it needs to conform to guidance on UDPs in Wales. SPG only amplifies development plan policies and it must have a policy basis and this is not clear from this section of the TAN. There is other guidance produced by the Assembly Government on the use of SPG and this should be referenced. There is a call from one local planning authority for the Assembly to circulate examples of good practice, whilst it is pointed out that the Planning Officers Society in Wales could have role to play in producing guidance. There is a need for the TAN to refer to schools

	as well as office development in this section. There is some concern that fenestration is given undue consideration in terms of heat saving, there is no mention of insulation. Related to this is a call for local planning authorities to be given a timetable to produce SPG covering energy efficiency which must not be delayed whilst awaiting UDPs.
Assembly Government response	Guidance regarding the production of SPG was produced by the Assembly Government in 2001, but it can only be used where there is a policy basis in the development plan.
Proposed change to TAN	The TAN will be revised to emphasise the need for detail on renewable energy to be incorporated into supplementary planning guidance.
Reason(s) for proposed change	For clarity.

Paragraph Number(s)	92,93,94
What the TAN says	Planners as “sign-posts” Development control staff can identify opportunities for the inclusion of energy efficiency and renewable energy in schemes. Pre-application discussions are encouraged and it is important officers are aware of basic information relating to energy issues. The Assembly is preparing a leaflet that could be available with planning applications to form an easy guide for energy efficiency and renewable energy advice.
Summary of representations	There is a view within the renewable energy industry and elsewhere that local planning authority planners’ experience and knowledge of renewable energy and energy efficiency is not uniform and the Assembly should highlight the need for local planning authorities to invest in appropriate education and training for planning staff. The need for pre-application discussions needs to be expanded and given greater prominence. There is no Annex B and there is an “is” missing from paragraph 94.
Assembly Government response	It is thought that development control staff are usually the best placed staff in LPAs to identify opportunities for the incorporation of energy efficiency and renewable energy elements into proposed schemes. The TAN emphasises the value of preliminary enquiries and pre-application discussions. Additional technical information to be annexed to the TAN to help inform local planning authorities. Specific education or training for planning staff should be at the discretion of the authorities and it is not for the TAN to comment on.
Proposed change to TAN	An annex to the TAN will highlight some of the non land-use planning issues.

Reason(s) for proposed change	For clarity.
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Paragraph Number(s)	95
What the TAN says	Environmental impact assessment Some forms of renewable energy development will require EIA. EIA regs should be properly interpreted. Advice from local planning authorities should be sought at the earliest opportunity.
Summary of representations	There is a view from within the renewable energy industry that EIA requirements are a barrier to small scale development and are often used by planners to delay developments with unreasonable requests for detail. The TAN should refer to DETR circular 02/99 on EIA and to the fact that the thresholds for EIA may be lower in sensitive locations. More fundamentally, one response from the industry holds that the meaning of this section is incorrect. Schedule 2 is indicative of projects likely to incur EIA if they give rise to significant environmental effects. EIA is likely to be required for community developments of 5 or more wind turbines or 5MW+.
Assembly Government response	Advice on EIA can be found under the EIA regs and it is not the role of this TAN to explain them.
Proposed change to TAN	This section is to be deleted from the revised TAN.
Reason(s) for proposed change	For clarity.

CONSULTATION DRAFT PLANNING POLICY WALES DRAFT TECHNICAL ADVICE NOTE 8 RENEWABLE ENERGY [July 2004]

INTRODUCTION

1. This draft Technical Advice Note (TAN) provides technical guidance which supplements the policy set out in Planning Policy Wales (PPW)¹ and the draft Ministerial Interim Planning Policy Statement (MIPPS) on Renewable Energy² D/01/04, which amends PPW, and should be read in conjunction with both documents. These documents should be taken into account by local planning authorities in Wales in the review of any adopted unitary development plans and preparation of local development plans. They may be material to decisions on individual planning applications and will be taken into account by the Assembly's Planning Decision Committees taking decisions on called-in planning applications and Inspectors in the determination of and appeals in Wales. The TAN may also be relevant to the authorisation of electricity generation schemes by the Department of Trade and Industry under section 36 of the Electricity Act 1989.

2. The Welsh Assembly Government's aim is to secure the right mix of energy provision for Wales whilst minimising the impact on the environment. This will be achieved by strengthening renewable energy production, and through a greater focus on energy efficiency and conservation.

Consultation

3. The period for public consultation will last **for 12 weeks closing on 8th October**. All responses, and any questions about this consultation should be sent to the Welsh Assembly Government, marked **TAN 8 Renewable Energy Consultation**, at the address below:

Andrew Adcock
Planning Division
Welsh Assembly Government
Cathays Park
Cardiff
CF10 3NQ

4. The draft Technical Advice Note and Draft Ministerial Interim Planning Policy Statement D/01/04 will also be made available on the Assembly's website at:

<http://www.wales.gov.uk/subiplanning/content/tans/tan08/mipps-index-e.htm>

PURPOSE OF THE TAN

5. The Welsh Assembly Government has set a target of 4TWh to be produced by renewable energy in order to meet the UK national target of producing 10% of its electrical power production by 2010. This draft TAN considers current production, the capacity required to hit renewable energy targets, and specific issues for a range of available technologies.

The draft TAN is aimed primarily at local planning authorities, but will also be of interest to developers, Government agencies, environmental groups and members of the public. It is intended to provide guidance on national planning policy for renewable energy in support of PPW, as amended by the draft MIPPS, which will be issued for consultation at the same time as the TAN. It will provide an objectively developed land use planning framework to support the development of renewable energy schemes that will go towards meeting the target.

6. Technologies associated with renewable energy are developing rapidly, and the draft TAN is primarily concerned with proven technologies that are most likely to be brought forward in development applications. The final version of this TAN is expected to apply until around 2010, when it will be re-examined in light of progress towards Wales' renewable energy target, the need to consider the further target of 20% of electricity generated by renewable means by 2020, and the proving of renewable technologies that are currently in development.

BACKGROUND

Securing the Required Renewable Energy Capacity

Current Production

7. As at May 2004, the installed and approved capacity of the renewable energy (electricity) installations in Wales was approximately 615MW and the annual electrical output from those installations was in the region of 1.88TWh, summarised in Table 1. There is clearly still a considerable gap between the electrical capacity installed and that necessary to hit the 4TWh target.

Table 1. Current and approved renewable electricity production₃

	Current Installed	Additional Approved
Offshore Wind	60MW (0.21TWh)	90MW (0.32TWh)
Onshore Wind	173MW (0.45TWh)	120MW (0.32TWh)
Other (e.g. Hydroelectric/ biomass)	148MW (0.52TWh)	10MW (0.06TWh)
TOTAL TWh	1.18TWh	0.70TWh

8. Installations providing heat only are far more difficult to quantify as there are a far greater number of much smaller individual units. They mainly constitute solar water heating panels and wood-burning stoves and boilers. Whilst there is currently no reliable survey information of renewable energy

(heat) production in Wales, there is likely to be significant opportunity for increase.

9. Solar water heating has been installed in only a tiny proportion of the potential locations and the number of automated woodchip and wood pellet stoves and boilers is in little more than single figures in Wales. There is substantial potential for the latter technology, particularly in rural Wales, and the development control implications are likely to be minimal.

Energy Efficiency and Renewable Energy in Major Projects

10. The Assembly Government is keen to ensure that all new buildings being constructed in Wales are to a high standard of energy efficiency and that suitable renewable energy technologies are incorporated wherever reasonably feasible.

11. Carbon Trust Wales already offers a service to developers of new non-residential buildings that provides design advice on energy efficiency. This "Design Advice" service delivered under the Action Energy programme is already extensively used on larger commercial and industrial buildings. The Assembly Government considers it desirable and entirely appropriate that LPAs should require that planning applications (other than outline) for new non-residential buildings of 1000 m² or more must be accompanied by an Action Energy, Design Advice (or equivalent) report. A response to that report from the developer should also accompany the application. The report will also include recommendations relating to appropriate renewable energy technologies that could be incorporated into the development. If LPAs consider that insufficient weight has been given to the energy report in finalising the project design and/or the reasons given for not implementing recommendations are weak, then consideration should be given to refusing planning permission.

12. As the expertise base for the necessary work will probably need to be expanded it is considered appropriate that such policies should be introduced on a phased basis with major office proposals implemented first, followed by industrial and retail developments. The whole process might be phased in over 5 or more years but further advice will be given once the experience of the earlier developments has been assessed. The level of grant on the production of Design Advice reports will need to be reviewed as the demand for the service grows.

Domestic premises and energy efficiency

13. Building Regulations determine minimum energy efficiency standards in buildings, both new build and those existing buildings that are the subject of building work. The Welsh Assembly Government encourages private and social sector house builders to develop properties which offer energy efficiency and renewable energy measures which exceed the requirements of the Building Regulations.

14. The Energy Savings Trust's Energy Efficiency Best practice in Housing Programme provides the tools and training to achieve the best in energy efficiency in housing⁴. The Design Advice Service is also available for larger scale domestic developments. Local planning authorities could play an active role in signposting housing developers to advice and information on best practice, and promoting Design Advice.

Contributing to the renewable energy targets for electricity

15. Even assuming that all of the undeveloped but permitted capacity comes on stream, Wales is still less than half way towards the 4TWh target for 2010. The lead in time for major projects tends to be measured in years rather than months and thus urgent attention needs to be given to the development of those projects that could contribute towards meeting the targets for both 2010 and 2020. In considering Wales' renewable resources and mature renewable technologies, wind power is the only clear and realistic deliverable over the lifetime of the TAN.

ON-SHORE WIND

16. The Assembly Government has therefore decided that in order to meet its 4TWh target, 800MW of additional capacity will be required to be provided by large-scale on-shore wind by 2010. A further 200MW will be obtained from offshore wind power and other renewable technologies. Extensive work has been undertaken on behalf of the Assembly Government by consultants in order to assess, at a strategic level, the best way of achieving this target. It has been concluded that Wales has the resource and landscape capacity to deliver the renewable energy capacity that we vitally need. The engagement of local planning authorities and other stakeholders in planning for this is critically important to ensure that sufficient wind energy development is brought forward to meet the target.

17. The capacity of the electricity distribution system to accommodate sufficient wind energy developments is a key influence on the shape and distribution of proposals in Wales. The Distribution Network Operators (Scottish Power and Western Power Distribution) need to be able to plan strategically in order to strengthen the network. Proposals for reinforcement and new network development, to strengthen Wales' infrastructure and serve renewable energy developments, should be encouraged where environmental implications are minimised.

Methodology for the strategic assessment of the opportunities for major wind power capacity in Wales

18. The strategic assessment of the opportunities for major wind power capacity in Wales is based on the premise that there are environmental, landscape, technical, national security and economic constraints that will determine the location of major wind power proposals.

Sieve mapping techniques were used to construct a map indicating areas considered most suitable at a strategic level for large scale wind farms. The constraints and conclusions used in the basic methodology are described below.

National Parks and Areas of Outstanding Natural Beauty

19. The Welsh Assembly Government does not consider that the siting of large scale (25MW+) wind farms is appropriate in National Parks and AONBs, recognising their designation as areas of value as a result of the landscape they protect, although smaller scale domestic or community-based turbines may be suitable, subject to local planning considerations.

National and international protection designation.

20. Whilst it is not necessarily the case in every circumstance, the analysis undertaken in relation to the 2010 renewable energy target precludes major wind power developments from within Natura 2000 Habitat Directive sites, specifically: Special Protection Areas, candidate and possible Special Areas of Conservation and Ramsar sites as being incompatible with the reasons for the designations. National Nature Reserves, the Dyfi Valley Biosphere site and World Heritage Sites are also excluded.

Residential Areas

21. It is generally accepted that commercial scale wind turbines should be sited 500m or more from noise-sensitive properties. The sieve mapping exercise therefore excluded land within 500m of cities, towns and villages.

22. However, there are some sites within urban areas (remote from noise sensitive properties) that are appropriate for wind power proposals, these have been the subject of separate examination (see paragraph 39).

Wind speed

23. Wind speed is not an absolute constraint, however, it must be generally accepted that larger wind power proposals are unlikely to come forward in areas where the average wind speed is less than 6m/sec.

Ministry of Defence (MoD) constraints

24. The MoD ranges in Wales are currently excluded from consideration, as is the Tactical Training Area (TTA) in mid Wales. Whilst there has been some flexibility in the past that has allowed a number of developments to proceed, the MoD is currently of the view that there is very limited capacity for the further erosion of the TTA. There are also constraints imposed by the air defence radar located on Anglesey, and by other military installations, including airfields.

Lakes and reservoirs

25. It is assumed for the purpose of the methodology that developers would not consider siting wind turbines physically within lakes and reservoirs, as this would add significantly to construction and operational costs.

Other Constraints

26. Other issues that would significantly restrict the siting of wind turbines have been considered as constraints to wind farm development, although in some cases this would only be within the wind farm area itself. The considerations taken into account include:

- civil airports and airfields;
- Meteorological Office radar, telecommunication masts and re-broadcast links;
- SSSIs, nature and bird reserves provide site-specific restrictions, registered common land, scheduled ancient monuments and other important archaeological features, registered historic parks and gardens, and the settings of all the foregoing sites; and
- Country parks and Heritage Coastlines.

Conclusions from consideration of environmental and technical constraints

27. The first part of the methodology reveals that a very large proportion of Wales is heavily constrained and not considered suitable for the development of large-scale wind farms. This is shown in Map 1. Exercises similar to this will have been undertaken by wind power developers and consultants in their search for sites, and therefore this methodology and the resulting map should contain few, if any, surprises to either local planning authorities, potential applicants or infrastructure providers.

Electricity distribution issues

28. Examination of the capacity of the electrical distribution system to support or facilitate new generation needs to concentrate on proposals for wind farms of 25MW and above. Developments of this scale will be needed to ensure that Wales meets the renewable electricity target for 2010.

29. It is of critical importance to the strategic assessment, and thus to the land use planning process, that there is a clear understanding of the capacity of the existing electricity distribution network to absorb new generation. The principles of sustainable development suggest that we should ensure that we make the most efficient use of current resources before looking to provide new infrastructure. New overhead distribution lines will be needed to meet the Assembly Government's renewable energy policy, but potentially adverse impacts on the landscape should be minimised where possible.

30. The analysis of the current situation in Wales indicates that there is very restricted capacity for new generation in north and mid Wales and that there is some spare capacity in the south, caused partly by the closure of heavy industry processes, and which could potentially be used by renewable energy proposals. It would be desirable to fully utilise this spare capacity where it exists in South Wales, rather than looking to develop new power lines.

31. The future electricity infrastructure investment plans for south Wales are currently uncertain. The situation in north and mid Wales is somewhat clearer, and without new infrastructure, the prospect for additional electricity generation, above that already granted development consent, is very restricted. With this in mind, Manweb/Scottish Power, the district network operator, is considering a proposal to construct new 132kV lines in mid and north Wales. This development, if implemented, would provide vital capacity for further generation, as well as providing a stronger, more reliable network for electricity users in the western mid Wales area. The Assembly Government strongly supports the principle of this scheme. The investment in the form currently proposed, however, will be dependent on there being a reasonable level of certainty that the additional capacity will be absorbed by renewable energy electricity generation schemes.

Conclusions of the strategic assessment

32. When the information from the environmental and technical constraints mapping and the network capacity study are combined, it becomes clear that there are only a few unconstrained areas in Wales that are capable of accommodating large (25MW+) wind power developments. These strategic areas are set out in Map 2.

33. The criteria used to determine the location and extent of the draft strategic areas is as follows:

- Each should comprise a broad area (>10km²) that has no absolute constraints (as defined in the project methodology, paragraphs 14-21); each area should have relatively few 'variable' or second order constraints (as defined in project methodology, paragraph 22) or such constraints are limited in spatial extent;
- Each area has a 'land capacity' for a minimum of 100MW of onshore wind (at a density of between 4 and 9MW/km²);
- Each area has at least 2 separate prospective wind farm sites within it;
- Each area generally encompasses either an existing wind farm or at least is within the cumulative impact buffer distance of one;
- Each area includes some positive siting factors (defined in the project methodology as Forestry Commission woodland, due to single ownership and the presence of existing access tracks; or open access land, identified by CCW's open access land dataset) in at least part of the area;
- Each area has either existing grid capacity of >100 MW or it has been demonstrated that either a) the area is within economic connection

distance for a private developer to an area with grid and with capacity >100MW or b) the regional distribution operator is proposing to provide grid capacity of >100 MW to the area by 2010;

- The edge of the area is greater than 4km from the boundary of a National Park; Contains significant areas with very few isolated dwellings.

34. Map 2 indicates approximately 1200MW of renewable energy that could be developed within the strategic areas. This allows for any modification or fine-tuning that could occur through the consultation process and also offers some scope towards addressing the 2020 renewable energy target.

35. Within the strategic areas, whilst cumulative impact can be a material consideration, it must be balanced against the need to meet the national target and the conclusions reached fully justified in any decisions taken. Developers will need to be sensitive to local circumstances, including siting in relation to local landform and other planning considerations.

36. The development of wind farms or other large scale renewable energy schemes will not generally be appropriate in internationally or nationally designated areas. However, both within and **outside** the strategic areas, smaller, domestic or community-based wind turbine developments may be suitable, subject to material planning considerations.

The role of local planning authorities

37. The strategic assessment that has been undertaken sets out the strategic search areas into which it is anticipated that all major (larger than 25MW) wind power development in Wales will be located. The Draft MIPPS on renewable energy (D/01/04) and this TAN provide a context for decision-making and policy formulation, and local planning authorities are encouraged to undertake more detailed mapping and landscape assessment work in order to formulate policies for on-shore wind power developments within the areas identified in the strategic assessment. These policies should be incorporated into development plans, Supplementary Planning Guidance or Renewable Energy Assessments, as appropriate.

38. Outside the identified strategic areas, each local planning authority should encourage proposals for relatively small, possibly community-based, proposals for wind turbines to come forward.

39. There is also some potential for the development of wind power within urban and industrial areas that is so far untapped. A number of urban/industrial sites were identified as having some potential based on strategic assessment in a report prepared for the Assembly Government by the Powys and Swansea Energy Agencies⁶. Site-specific evaluations would be needed to confirm the report's findings. There may also be opportunities for re-powering or the extension of existing sites across Wales in the future.

40. In all cases and with all scales of development, local planning authorities are encouraged to secure the best possible scheme and should look beyond

the immediate physical proposals. Opportunities often exist, for instance, to negotiate wildlife habitat improvements as part of the overall scheme. Moorland improvements through livestock management might be appropriate in some cases. The conversion of all or part of a conifer plantation to broadleaf trees may be possible. Advice is available from the Countryside Council for Wales about appropriate actions over the life of the windfarm.

41. Local planning authorities will need to include appropriate conditions for the decommissioning of windfarms or individual turbines and the restoration of their foundations when they reach the end of their design life, taking into account any proposed after-use of the site. In addition, wind farm operators should ensure that sufficient finance is set aside to enable them to meet restoration obligations. An authority may require financial guarantees by way of a Section 106 planning obligation/agreement, as part of the approval of planning permission to ensure that restoration will be fully achieved.

42. Residential property in the strategic areas is generally widely scattered and would not thus provide a decisively limiting factor. Registered historic landscapes⁷ were also not considered to be decisive constraints in creating the strategic areas as they are nonstatutory designations, however, they will still need to be given consideration by developers and by local planning authorities when they are consulted on applications. Cadw has developed a good practice guide containing a methodology for assessing impacts on historical landscapes that should be used⁸. Impacts on Special Landscape Areas and the settings of national trails, whilst material considerations, should not be seen as overriding constraints on windfarm development.

Community Involvement

43. Developers are encouraged to consider ways in which their proposals may include the active involvement of the local community. At least two recent proposals in Wales have included the opportunity for local people to be able to buy shares in the development. This is considered to add value to project from a local economic and social perspective, as does the inclusion of the establishment of trust funds (arising from profits from electricity generation) that are able to invest in energy conservation and small-scale renewable energy projects in the locality. Local planning authorities, where reasonably practical, should facilitate and encourage such proposals; the Welsh Development Agency, the Carbon Trust and the Energy Savings Trust can support and advise on community involvement. Local planning authorities should make clear in their development plan the scope of possible “planning contributions”. However, such contributions should not enable permission to be given to a proposal that otherwise would be unacceptable in planning terms.

44. Annex A gives the addresses of key consultees and information sources.

OFF-SHORE WIND

45. Off-shore wind farms are more efficient generators of electricity than onshore installations but they lie outside the land use system, so it is not appropriate for this TAN to include detailed guidance for them. The electricity they generate, however, will count towards meeting the targets for renewable energy and reducing carbon emissions, and a target of 200MW from offshore wind power and other renewable energy sources has been established.

46. Local planning authorities are consultees in the offshore decision-making process. Planning permission may be required for onshore installations associated with offshore windfarms. Local planning authorities should plan positively for such installations and minimise their environmental impact.

OTHER TECHNOLOGIES

Woodfuel

47. This subject would usually have appeared under a “biomass” heading in previous policy or discussion documents. Other aspects of “biomass” are discussed separately, but woodfuel is seen to be a specific and significant opportunity for Wales and warrants a separate section.

48. Small diameter timber, largely from conifer plantations, is a fuel source that is readily and currently available. Thinning and felling operations will produce some timber that is too small in diameter for construction purposes but suitable for paper manufacture, fencing stakes/posts or the raw product of fibre board. The quantity of such material that is already produced in Wales exceeds that required by the industries described and there is further potential from currently un-thinned forests. As thinning benefits the forests in several respects, establishing an additional market for this product would be highly beneficial. Forestry Commission Wales has established the Wood Energy Business Scheme (WEBS)⁹ that utilises EU Objective 1 and 2 funding and seeks to support small and medium sized enterprises to become established and expand into the provision of energy from woodfuel.

49. The establishment of a woodfuel supply industry based upon this readily available small diameter softwood resource would provide confidence for land-owners to manage their woodlands better and/or grow wood specifically for fuel. Short-rotation coppicing of willow and poplar species has been long mooted but has suffered unfortunate set-backs.

50. The technologies involved in combusting small diameter timber in an automated plant usually involve an initial chipping or shredding process. The comminuted timber may then be burnt directly or put through a gasification or pyrolysis process first. For domestic and smaller scale systems, pelletised wood waste may be an attractive option.

51. Gasification and pyrolysis technologies convert the timber into combustible gas and oil respectively and are developing all the time. They offer the prospect of cleaner and more efficient conversion of the timber to energy in the long term. They, along with technical improvements in the steam and gas turbine options, will also offer a widening of the range at which electricity generation may be viable. In its various forms the fuel can be used to generate electricity via engines or steam turbines, or can provide heat as the primary or secondary output. It is the availability of fuel at a reasonable distance from the plant, rather than the available technology that is likely to limit electricity generation units to little more than 10MW in the next decade or so. With this scale of operation there should be an expectation that waste heat from any electricity generation scheme should be productively used. The emissions from larger plant should be of such a limited impact as to allow siting on the edge of an urban area. The scale of the development and the anticipated impacts are such that only rarely will EIA be required. It is clearly critical that adequate consideration is given to likely sources of fuel and the impacts associated with the necessary vehicle movements. There are no examples of larger scale electricity generation from woodfuel yet in the UK.

52. By far the most common form of woodfuel system will deliver heat only. Log stoves are already reasonably common in rural areas and automated log boilers are now readily available. Automated stove and boiler systems are available with wood chips or pellets as their feedstock and the Welsh Assembly Government is determined to see such systems widely deployed particularly in rural areas. Wood pellets are manufactured from clean dry wood waste and represent a convenient and easy to use fuel. The only manufacturing facility in Wales at present is at Bridgend.

53. Planning considerations will also need to be given to the storage of fuel for these systems, however the implications for the development control system are relatively minor with these systems often not constituting development or being housed within an extension that constitutes permitted development.

Other Fuel Crops

54. It is possible that other crops will be grown specifically for electricity or heat generation systems but these may not be as important as timber in the short term. It is also possible that solid biofuels, particularly agricultural wastes or by-products, may be used. The planning implications of the processing and combustion plant are similar to those described under "woodfuel". Although briefly mentioned below, this guidance note does not cover the growth and conversion of bio-materials into vehicle-transport fuels.

Utilising Methane

55. Methane is a powerful greenhouse gas (approximately 20 times more effective than carbon dioxide) but it is also an excellent fuel. Utilising methane that is produced naturally when bacteria decompose organic waste in the absence of oxygen (anaerobically) is often of considerable value in

environmental protection terms. At landfill sites for instance, methane is usually the majority gas that arises through the anaerobic decomposition process. Although methane itself is odourless, landfill gas is often offensive in smell and in public health and amenity terms, as well as climate change considerations, it is highly desirable that it is burnt at high temperature. That burning either occurs in a flare where the energy is simply wasted or it is utilised as a fuel, usually in an engine that is used to generate electricity. Whilst this is not considered to truly constitute renewable energy, it is eligible for Renewable Obligation Certificates¹⁰ and it is very much encouraged where feasible. It is not, of course, a justification for poor waste management practice but should be utilised where landfill gas is being produced and needs to be burnt.

56. Methane is present within coal seams and this is capable of being safely removed from underground mines and used for electricity/heat generation. Methane extracted from Tower Colliery working areas is productively used for energy generation. There are, however, also significant opportunities for the pumping of methane out of coalbeds that are not necessarily being worked. Whilst this gas would not be seen as being a renewable resource, it may well be of significant environmental benefit to productively utilise this gas if the alternative is that it is likely to find its way into the atmosphere through cracks and fissures.

Anaerobic Digestion

57. There are other occasions where anaerobic conditions are deliberately created specifically to generate methane. Animal wastes for instance can be fermented in a closed vessel in order to generate methane for use as a fuel. This process provides an effective treatment for manure, rendering it far less of a potential pollutant when it is subsequently spread over agricultural land as a fertiliser/soil improver. Careful management is required to ensure that the anaerobic digestion technology achieves its potential. Most organic wastes are potential feedstock to anaerobic digestion plant, including human sewage but there are often technical problems that revolve around the generation of other unwanted and often corrosive gases. These issues impact upon the economics of smaller-scale systems in particular. Local planning authorities should look for opportunities to promote this technology and should adopt policies for larger sewage treatment facilities to include anaerobic digestion facilities with a positive utilisation of the methane fuel. Intensive livestock units such as large poultry or pig units should also be required to demonstrate responsible waste management practices and anaerobic digestion could well form part of that system.

Solar Photo-Voltaic (PV)

58. Local planning authorities will need to very clearly justify any refusal of planning permission for PV installations in the light of strong government support for this technology.

59. Photovoltaic (PV) panels produce an electrical output when exposed to sunlight. They can take the form of free-standing units, roof mounted or integrated panels, external wall cladding or roof “slates”. There are no moving parts and they make no noise so the impact is almost entirely visual. They can be expensive in pure electricity generation terms at present but not necessarily when considered as alternative building cladding/window. It is important that the technology is promoted as economies of scale and technological developments should bring down the costs. This is particularly relevant for any publicly funded new buildings and developments.

60. Local planning authorities should be examining ways in which they might introduce policies for some categories of development. Office and food retail developments use large quantities of electricity. PV capacity for new office, retail and industrial floor space would be a reasonable objective as there is a good correlation between likely peak periods of electricity consumption and peak PV production. Solar technologies are likely to play a significant role in the drive to reduce carbon emissions from building stock in urban areas.

Solar Water Heating

61. Solar water heating panels make a useful contribution to the hot water demands of houses, hotels, hospitals and wide range of other buildings. The technology simply involves using solar radiation to warm water, which then transfers its heat to the property’s hot water cylinder. There are various levels of sophistication ranging from the central heating type radiator in a glass fronted insulated box through to evacuated tubes. A standard solar water heating installation in a domestic situation should provide 50-60% of hot water needs. It is a technology that is reasonably easily installed on a DIY basis and several “Solar Clubs” exist in Wales.

62. Other than in circumstances where visual impact is critically damaging to a listed building, ancient monument or a conservation area vista, proposals for appropriately designed solar water heating systems should be supported.

63. Local planning authorities are expected to interpret the provisions of the General Permitted Development Order as constructively as possible and specific advice in respect of houses has already been issued to this effect. Planning authorities should consider ways in which additional encouragement can be given to this technology including the introduction of planning policies for building types with a high demand for hot water, especially during the summer months. The residential sector is particularly appropriate for the utilisation of solar water heating and design guides and supplementary planning guidance should make reference to this. Panels integrated into the roof covering at the time of construction are visually better and the installation costs are reduced as compared to retrofitting.

Hydro-power

64. The generation of electricity from flowing water is possible at almost any scale but the available power is a function of the volume of water and “head”

(the vertical distance through which the water falls from the intake to the turbine). Water storage reservoirs offer an opportunity for the generation of electricity from the “compensation flow” i.e. the water that must be allowed to flow through the dam in order to protect the downstream watercourse and the wildlife that depends upon it.

65. Most, but not all, of the opportunities for the generation of significant amounts of hydropower associated with existing dams within Wales have now been realised. The Welsh Assembly Government, with its agencies, will be seeking information from the water companies on any unrealised opportunities and will look to co-operate with them in the provision of an inventory of such locations, information on the barriers to implementation and, where appropriate, an action plan for overcoming those barriers.

66. The majority of the opportunities for new micro hydro-power schemes in Wales are “run-of-river”. This means that water enters a pipe at a weir and re-enters the river some distance downstream having been used to drive a turbine that would be situated in a small building close to the re-entry point. The pipelines are usually underground, the weirs are not significant features and the turbine houses usually no bigger than a domestic garage.

67. Whilst there may be visual or ecological issues associated with the structures and engineering parts of the scheme, it is more likely that any significant planning problem will be associated with the abstraction of water from a length of the river/stream. On some occasions this might involve a significant loss of visual amenity on an attractive area of rapids or waterfall but there may also be implications for wildlife in and/or adjacent to the watercourse.

68. Close liaison will need to be undertaken with the Countryside Council for Wales, and particularly the Environment Agency (the abstraction licensing authority) over these issues. Whilst a precautionary approach is a relevant consideration under the various water abstraction regimes, climate change will impact on the ecosystems and some of the species under threat, so renewable energy projects are essential in light of climate change. Planning policies will probably be criteria based rather than site specific but for many local planning authorities it will be appropriate that they consider ways in which they may encourage investment in small hydro schemes. The Assembly is supportive of such schemes provided EA licence requirements are met and environmental impacts managed appropriately.

Tidal and Wave Energy

69. There is potential for extracting energy from tidal flows and waves. The notion of constructing a tidal barrage across the Severn Estuary was first debated many years ago and such a scheme should not be ruled out in the long term. The cost of such a scheme would be large, and the environmental impacts, both positive and negative, would be very significant. More localised tidal ‘ponds’ are an interesting idea but so far have not been demonstrated as

feasible in engineering terms at a reasonable cost from the energy generation perspective.

70. Trials are underway for the development of underwater tidal stream turbines (not forming part of a barrage or other enclosure) to extract energy from tidal flows. The engineering challenges associated with this developing technology are significant and local planning authorities should not rely upon it to provide any significant contribution to 2010 renewable energy targets. It, along with wave power, however, may offer very significant energy and economic prospects for Wales in the long term.

71. Wave power machines also lie within the category of developments that show promise but cannot be relied upon to deliver large contributions to the nation's power supply by 2010.

Although wave and tidal power schemes are off-shore, there will be infrastructure requirements on land and local planning authorities should accommodate such developments in appropriate locations.

Heat Pumps

72. Heat pumps are not usually described as lying within the renewable energy technologies but there does appear to be good reason to include them for consideration in this TAN.

Heat pumps are able to extract heat from soil or water by a process that is similar to the operation of a refrigerator. The heat source could be a large area of ground or a river, stream, lake, the sea or body of groundwater. They require electricity from another source to operate but will extract much more energy than is input. If however the electricity used to power the heat pump is generated from fossil fuels and an alternative heat source such as woodfuel or even natural gas or LPG is available, the use of heat pumps will be likely to generate little, if any carbon saving. There are occasions when heat pumps are an appropriate carbon saving technology but applications need to be carefully selected.

73. Heat pump technology has been utilised to extract energy from water that accumulates in abandoned coal mines, sometimes under circumstances where the water has to be pumped to the surface for safety reasons. There may well be significant opportunities of this sort in Wales and these should be investigated further.

74. Although heat pumps may well provide excellent opportunities for carbon reduction programmes in Wales, there are unlikely to be significant implications for planning policy or development control. The most significant opportunities would probably come in combination with community heating networks installed as part of new residential or mixed use developments.

Large scale geothermal

75. Energy is sometimes practically and economically available from natural sources of heat from below the Earth's crust. There are no significant geothermal energy plants in Wales at present and it is likely that any such plant in the future would involve drilling to some considerable depth if high temperatures are to be reached.

76. The possibilities in the longer-term should not be ignored but, unless information comes forward to the contrary, there is probably little scope for a significant contribution to even local renewable energy generation and targets.

Energy from Waste

77. "Energy from waste" covers a wide range of possibilities, some of which have already been discussed under "anaerobic digestion" and "woodfuel".

78. Advanced waste conversion technologies can qualify for Renewable Obligation Certificates, as can any power generation that derives only from the biomass fraction of the waste stream. Energy plant that is based upon gasification or pyrolysis may well comply with the definition of 'advanced technologies' (see description under 'Woodfuel'.)

TAN 21 has established Waste Planning Groups for North, South-East and South-West Wales and the processes for establishing best waste management options are established. This TAN does not seek to revise any of the process already in train.

Combined Heat and Power (CHP)

79. Combined heat and power is a particularly efficient way of generating electricity whilst using the waste heat for productive purposes. Even if fossil fuels are utilised, the added efficiencies mean that significant carbon savings can be achieved. CHP can be implemented on a wide range of outputs and in a variety of circumstances. Systems can operate at the level of a single building or site, or can involve heat mains and power cables to other users. CHP in combination with community heating is a particularly valuable approach and the Welsh Assembly Government would very much support proposals that include it. Development briefs should also require that CHP be investigated.

Community (or District) Heating

80. The most efficient way of utilising renewable heating fuels (e.g. woodchips) is utilising one or more centralised boilers and heat distribution network. This might be in a block of flats, a hospital complex or perhaps an estate of houses, or a small community. The ideal heat load for a community heating network will include a variety of users with a good spread of demand throughout the day and week. A combination of residential, leisure and commercial/industrial users would be excellent. Such networks can also

provide energy for cooling and this is a valuable summer load displacing energy intensive alternatives.
Central government grant aid is currently available for suitable developments to be led by the public sector in homes, schools, hospitals and other public buildings.

81. Local planning authorities are expected to help facilitate community heating networks and CHP, and should encourage developers to consider such options. Development briefs for larger sites should consider including the need to investigate community heating options.
Where development plan allocations have suitable uses in close proximity, there should again be reference to the investigation and integration of community heating options.

Bio-Fuels for Vehicles

82. Whilst not every LPA in Wales will be faced with the need to determine an application for manufacturing plant (refinery) for bio-diesel or the like, it is likely that at least some capacity will be developed in Wales over the next 5 years or so. One of the advantages of fuels such as bio-diesel is that it can be made in relatively small quantities in relatively small buildings. These units probably need little particularly special treatment from a planning policy point of view although advice will clearly be needed from the Health and Safety Executive/Environment Agency on safety and potential pollution aspects of the development. It is also possible that developments might be at a much larger scale, but even here, the likelihood is that they will be attached to or incorporated within existing vehicle fuel refineries and thus there is probably no need to anticipate such proposals in development plans. There is great potential for carbon savings arising from this technology and the Bio-Fuels Directive¹² from the European Union has set targets for use in vehicles.

IMPLICATIONS FOR DEVELOPMENT PLANS

Renewable Energy Technologies

83. Reviews of any unitary development plans, and local development plans (hereafter referred to generically as 'development plans') will need to address the planning policy of the Assembly Government which reflects its commitment to strong support for renewable energy technologies. Local planning authorities should carry out assessments of the appropriate renewable energy technologies for their area and develop policies that support their implementation. When considering their potential contribution towards renewable energy targets local planning authorities will need, at the very least, to adopt positively worded policies, and where appropriate specific locational advice.

84. The strategic search areas identified on Map 2 are clearly of key importance to the development of on-shore wind energy developments in Wales; they should be incorporated into development plans.

Housing Land Allocations and Climate

85. Climatic considerations have been largely ignored when housing sites have been chosen to date. Energy has been seen as readily available and passive solar gain was apparently unimportant, as was the avoidance of windy or otherwise exposed locations.

86. Whilst climate and, particularly, aspect cannot be over-riding considerations in choosing land for housing (and other appropriate land uses) north facing slopes should not usually be allocated for housing development unless there are good reasons that would point to it being necessary.

Passive Solar Gain

87. The TAN 12: Design refers to the need to improve the layout of housing in respect of passive solar gain and this is reinforced here. Consideration should be given to the inclusion of policies in the development plan or SPG to encourage good design and implementation practice for passive solar design. There is substantial scope for the improvement in energy efficiency of domestic buildings through the better siting and sizing of fenestration. Advice on this is available from Action Energy¹³ and the Energy Efficiency Best Practice in Housing Programme.

88. Conservatories can be used to great effect to capture solar energy but they may be poorly insulated and should not be used inappropriately. If used simply as extra rooms to the house they can require significant amounts of heat in winter to keep them warm.

Supplementary Planning Guidance (SPG)

89. Whilst many of the actions highlighted in this TAN will be translated into development plan policy, more detailed issues could be incorporated into supplementary planning guidance.

90. Examples of the issues for SPG may be housing fenestration, estate layout relating to passive solar gain or the requirement of renewable energy generating capacity on new office developments, the utilisation of heat pumps and community heating networks.

91. Some Welsh local planning authorities are planning valuable guidance on “green” building technologies and techniques and their wide circulation should be encouraged. The incorporation of energy issues into a wider document such as this may be very valuable. Energy issues of relevance are passive

and active renewable energy technologies, energy efficiency and “embedded energy”.

15

Planners as “Sign-posts”

92. Development Control (DC) staff are in a good position to identify opportunities for the incorporation of energy efficiency and renewable energy elements into schemes.

93. Preliminary enquiries and pre-application discussions are encouraged in order to suggest innovation or alternatives and thus it is important that development control officers are aware of the basic information with respect to energy issues.

94. Appendix B provides a useful list of contacts where advice is available (often free of charge) to potential developers. The most appropriate contact varies according to the sector under consideration and the technology. The Assembly Government, in collaboration with Carbon Trust Wales, Energy Savings Trust and Renewable Energy Advice Line (REAL) Cymru, are preparing a leaflet that could be available with planning application forms to provide an easy guide to renewable energy and energy conservation advice.

ENVIRONMENTAL IMPACT ASSESSMENT

95. Some forms of renewable energy may fall within Schedule 2 if they are above a certain scale and will therefore require Environmental Impact Assessment. Care is needed to ensure that the EIA Regulations are interpreted correctly. Advice should always be sought at the earliest possible stage from the local planning authority. However, the following table indicates schemes that are likely to be classed as EIA development where an assessment will be required:

Industrial installations for the production of electricity, steam and water	Area exceeds 0.5Ha
Industrial installations for carrying gas, steam and hot water	Area exceeds 1Ha
Installations for hydroelectric energy production	Installation designed to produce more than 0.5MW
Installations for the harnessing of wind power for energy production	1) The development involves the installation of more than 2 turbines; or 2) the hub height of any turbine or any other structure exceeds 15m.

