

Planning Policy Wales

Technical Advice Note

8: Planning for Renewable Energy



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

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This document is one of a series of Technical Advice Notes (Wales) (TANs) which supplement "Planning Policy Wales". Technical Advice Note 8 Planning for Renewable Energy is being published in English only, and not bilingually.

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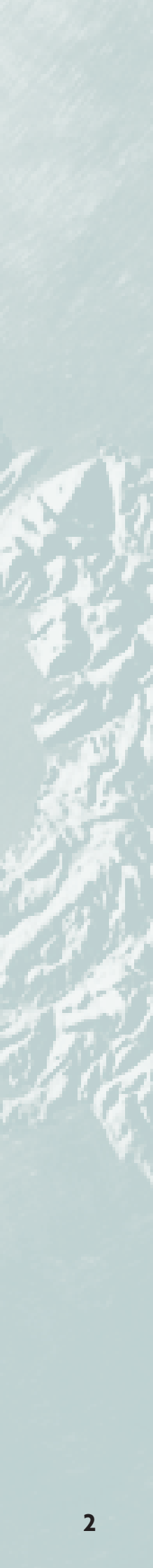
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PLANNING FOR RENEWABLE ENERGY

1. Introduction and Context

- 1.1 This Technical Advice Note (TAN) provides technical advice to supplement the policy set out in Planning Policy Wales (PPW) and the Ministerial Interim Planning Policy Statement (MIPPS) on Renewable Energy, 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 consideration of unitary development plans that have not yet progressed to Inquiry, and preparation of local development plans. They may be material to decisions on individual planning applications and appeals and will be taken into account by the Assembly's Planning Decision Committees when taking decisions on called-in planning applications and by Planning Inspectors in the determination of appeals in Wales. The TAN will also be relevant to the authorisation of electricity generation schemes by the UK Government under section 36 of the Electricity Act 1989. It will also be relevant to Transport and Works Act Orders.

UK and Welsh Energy Policy

- 1.2 This TAN is a replacement for TAN 8 Renewable Energy 1996. It has been developed with partners and stakeholders and included commissioning a series of research contracts to provide the technical basis for the policy.
- 1.3 This TAN relates to the land use planning considerations of renewable energy, however UK and national energy policy provide its context. Energy policy is a reserved function that is not devolved to the Assembly Government. Nevertheless, all decisions relating to renewable energy in Wales must take account of the Assembly Government's policy. Details of Assembly Government energy policy are available elsewhere¹ but a summary statement on energy is contained in Annex A to this TAN. A number of other annexes to this TAN also provide background to the development of planning policy for renewable energy in Wales.
- 1.4 The provision of electricity from renewable sources is an important component of the UK energy policy, which has an established target of producing 10% of electricity production from renewable energy sources by 2010². The Assembly Government has a target of 4TWh of electricity per annum to be produced by renewable energy by 2010 and 7TWh by 2020. In order to meet these targets the Assembly Government has concluded that 800MW of additional installed (nameplate) capacity is required from onshore wind sources and a further 200MW of installed capacity is required from off shore wind and other renewable technologies^{3 4}.
- 1.5 Delivering these targets through the planning system is therefore at the core of this TAN. The planning and locational implications of many forms of renewable energy are not as strategic or challenging for local planning

¹Joint Ministerial Assembly Government Energy Statement, July 2004

²Energy White Paper. Our Energy Future - creating a low carbon economy. DTI 2003

³Joint Ministerial Statement *ibid*

⁴A detailed assessment of the potential of wind power and a bibliography on the subject can be found in the Sustainable Development Commission's Report *Wind Power in the UK 2005*. www.sd-commission.org.uk

authorities as onshore wind. Nevertheless this Note covers a number of other potential technologies. Local planning authorities should develop appropriate policies so that they put in place a comprehensive framework for other forms of renewable energy, as well as wind power.

Energy Efficiency

- 1.6 As well as developing new sources of renewable energy which are essential to meeting the targets set by energy policy, the Assembly Government is fully committed to promoting energy efficiency and energy conservation⁵. The land use planning system is one of a number of mechanisms which can help deliver improved energy efficiency and local planning authorities are expected to consider matters of energy efficiency when considering planning policy and applications. More details of how energy efficiency and energy conservation can be incorporated into planning can be found in TAN 12: Design and in paragraphs 4.1-4.5 below. Recent and forthcoming publications by the World Wildlife Fund (WWF), Planning Officers Society for Wales (POSW)⁶, Office of the Deputy Prime Minister (ODPM)⁷ and Countryside Council for Wales (CCW)⁸ may also be of interest.
- 1.7 Detailed energy efficiency standards for new buildings are established through Building Regulations, which are not a devolved function. Details of Building Regulation standards are produced by ODPM⁹ and will be amended in 2006.

2. Renewable Energy and Planning

- 2.1 The Planning system has an important role to play in achieving the Assembly Government's commitment to enabling the deployment of all forms of renewable energy technologies in Wales. This section of the TAN outlines the major land use planning aspects of these technologies, with an emphasis on the strategic national planning issues raised by their development. Further detailed descriptions of these technologies are contained in Annex C.

Onshore Wind

- 2.2 As noted above and in the Ministerial Interim Planning Policy Statement on Renewable Energy 2005, onshore wind power offers the greatest potential for an increase in the generation of electricity from renewable energy in the short to medium term. In order to try to meet the target for onshore wind production the Assembly Government has commissioned extensive technical work¹⁰, which has led to the conclusion that, for efficiency and environmental reasons amongst others, large scale (over 25MW)¹¹ onshore wind developments should be concentrated into particular areas defined as Strategic Search Areas (SSAs).

⁵Additionally the Energy Savings and Carbon Trusts can provide independent assistance on renewable energy and energy efficiency

⁶Work by WWF and CRiBE (Cardiff University), 'Building a Future for Wales: A Strategy for Sustainable Housing' February 2005 and by POSW 'A Model Design Guide for Wales: Residential Development' April 2005

⁷The Planning Response to Climate Change – Advice on Better Practice. ODPM 2004

⁸Building in Green. CCW

⁹http://www.odpm.gov.uk/stellent/groups/odpm_buildreg/documents/page/odpm_breg_609257.pdf

¹⁰Facilitating Planning for Renewable Energy in Wales: Meeting the Target. Review of Final Report Arup June 2005.

¹¹for the purposes of this TAN developments of 25MW or more are considered to be large scale

2.3 SSAs have been identified through a variety of means as outlined below in paragraphs 2.4-2.9 and in the Arup Final Report 2004. This approach addresses the issue of location of onshore wind facilities at a strategic all-Wales level. Local planning authorities are best placed to assess detailed locational requirements within and outside SSAs in the light of local circumstances.

Strategic Search Areas (SSAs)

- 2.4 The 7 Strategic Search Areas (SSAs) are shown on Maps 1-8. The SSA boundaries are at a “broad brush” scale. Not all of the land within the SSAs may be technically, economically and/or environmentally suitable for major wind power proposals; however the boundaries are seen as encompassing sufficient suitable land, in one or more sites, to deliver the Assembly Government’s energy policy aspirations. It is a matter for local planning authorities to undertake local refinement within each of the SSAs in order to guide and optimise development within each of the areas. If there is robust evidence that land outside (but close to) the SSA is suitably unconstrained local planning authorities might wish to consider the possibility of development of wind farms in these areas as well.
- 2.5 For each of the SSAs there are indicative targets of installed capacity (in MW), outlined in Table 1 below, compiled on the basis that the majority of technically feasible land for wind turbines in each area is utilised. Although the Assembly Government has an established target of 800MW of installed onshore capacity, Table 1 indicates that SSAs may be capable of accommodating up to approximately 1120MW of additional capacity. This degree of flexibility is necessary to ensure that the proposals for a total of 800MW come forward by 2010. The installed capacity targets are intended to assist the planning process and are not to be seen as the definitive capacity for the areas. There may be practical, technical and/or environmental reasons why the capacity may be more or less than that indicated.

Table 1: Indicative Capacity targets for SSAs

<i>Strategic Search Area</i>	<i>Capacity</i>
A Clocaenog Forest	140MW
B Carno North	290MW
C Newtown South	70MW
D Nant-y-Moch	140MW
E Pontardawe	100MW
F Coed Morgannwg	290MW
G Brechfa Forest	90MW
Total	1120MW

The above figures represent a 1/3 reduction on the maximum capacities identified by Garrad Hassan as reviewed by Arup in their 2005 Report. These figures will allow local discretion in identifying the best sites.

- 2.6 Limited clear-felling of trees will be required if a wind farm is sited in a woodland within an SSA. The clear-felling should be the minimum area required to facilitate the construction of the wind farm and the efficient operation of the turbines but sympathetic to the surrounding landscape and environment.
- 2.7 Large areas of Wales were excluded from consideration as SSAs by features that militate against larger wind power developments. In particular large wind power proposals within a National Park or designated Area of Outstanding Natural Beauty would be contrary to well established planning policy and thus SSAs have not been considered for these areas. Similarly, the highest level of nature conservation and heritage designations, and thus Natura 2000 sites, the core area of the Dyfi Biosphere Reserve, and the World Heritage Site at Blaenafon were all excluded from consideration as SSAs.
- 2.8 Details of the extensive assessment used to derive the SSAs together with the various constraints are contained in Arup's Final Report of 2004.
- 2.9 SSAs display all of the following characteristics. They are:
- extensive areas with a good wind resource (typically in excess of 7 metres per second).
 - upland areas (typically over 300m above ordnance datum) which contain a dominant landform that is flat (plateau) rather than a series of ridges.
 - generally sparsely populated.
 - dominated by conifer plantation and/or improved/impoverished moorland.
 - has a general absence of nature conservation or historic landscape designations.
 - of sufficient area to accommodate developments over 25MW, to achieve at least 70MW installed capacity and to meet the target capacity.
 - largely unaffected by broadcast transmission, radar, MoD Mid Wales Tactical Training Area (TTA) and other constraints.
- 2.10 Local planning authorities should take an active approach to developing local policy for SSAs in order to secure the best outcomes. Further advice is contained in Annex D. Some of the local issues, which could be addressed in this way are:
- The extent to which tree felling in the SSA is considered desirable. Whilst the clear felling of an area of conifer plantation might be preferable from an economic point of view (retaining the trees is likely to reduce the energy yield from the turbines) there is no requirement that this should be the case. There may be a range of reasons why clear felling should be considered unwarranted e.g. if the woodland provides habitat for rare species. If clear felling is required, then it should be the minimum required subject to environmental and landscape needs and the requirements of the Forestry Act 1967.

- The extent to which alternative wildlife habitat creation is desirable. There could be opportunities to enhance, extend or re-create habitats of significant wildlife or landscape value. These opportunities should be grasped.
- The geo-technical implications of any proposals, especially with regard to ground conditions.
- The possible impact on tourism and recreational opportunities in the SSA. Developers and local authorities are encouraged to enter into constructive dialogue over the positive provision for visitors to wind power projects and ways in which any negative impacts can be minimised or mitigated.
- Local historic and landscape considerations and micro-siting in relation to issues of local importance.
- Safeguarding wind farm sites. Local planning authorities should be aware that other developments could sterilise land for wind power proposals, and bear this in mind during policy formulation and decision making.
- Access considerations, including the acceptability of new and existing roads for access and construction.
- The de-commissioning of wind farm development, the restoration of the site at the end of its life and ensuring that sufficient finance is available to implement these requirements.

Onshore Wind in Other Areas

- 2.11** The potential for the development of wind power within urban/industrial brownfield sites is so far largely untapped. A number of urban/industrial sites have been identified as having some potential based on strategic assessment in a report prepared for the Assembly Government¹². Local site-specific evaluations are needed to confirm the findings. There may be further opportunities for the development of wind farm or other renewable energy schemes on urban/industrial brownfield sites up to 25MW within Wales and these should be encouraged.
- 2.12** The Assembly Government expects local planning authorities to encourage, via their development plan policies and when considering individual planning applications, smaller community based wind farm schemes (generally less than 5 MW). This could be done through a set of local criteria that would determine the acceptability of such schemes and define in more detail what is meant by “smaller” and “community based”. Local planning authorities should give careful consideration to these issues and provide criteria that are appropriate to local circumstances.
- 2.13** Most areas outside SSAs should remain free of large wind power schemes. Local planning authorities may wish to consider the cumulative impact of small schemes in areas outside of the SSAs and establish suitable criteria for separation distances from each other and from the perimeter of existing wind power schemes or the SSAs. In these areas, there is a balance to be

¹²The Potential for Wind Power in urban, industrial and commercial sites in Wales. Powys Energy Agency Report 2003

struck between the desirability of renewable energy and landscape protection. Whilst that balance should not result in severe restriction on the development of wind power capacity, there is a case for avoiding a situation where wind turbines are spread across the whole of a county. As a result, the Assembly Government would support local planning authorities in introducing local policies in their development plans that restrict almost all wind energy developments, larger than 5MW, to within SSAs and urban/industrial brownfield sites. It is acceptable in such circumstances that planning permission for developments over 5MW outside SSAs and urban/industrial brownfield sites may be refused.

- 2.14 There will also be opportunities to re-power and/or extend existing wind-farms which may be located outside SSAs and these should be encouraged provided that the environmental and landscape impacts are acceptable.

Community Involvement and Benefits

- 2.15 Developers, in consultation with local planning authorities, should take an active role in engaging with the local community on renewable energy proposals. This should include pre-application discussion and provision of background information on the renewable energy technology that is proposed.
- 2.16 Experience has shown that there are opportunities to achieve community benefits through major wind farm development. Some benefits can be justified as mitigation of development impacts through the planning process. In addition, developers may offer benefits not directly related to the planning process. Annex B provides further information and examples about the types of community benefit which have been provided. Local planning authorities, where reasonably practical, should facilitate and encourage such proposals. The Welsh Development Agency, and others¹³ can support and advise on community involvement in developing renewable energy and benefiting from it. Local planning authorities should make clear in their development plans 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.

3. Offshore Wind and Other Onshore Renewable Energy Technologies

Offshore Wind

- 3.1 The development of offshore wind farms provides the prospect of additional renewable energy production. The consent processes lie outside the land use planning system. However, local planning authorities are consultees in the offshore decision-making process and wherever practicable proposals for offshore wind developments should be supported. Planning permission may be required for onshore installations associated with offshore wind farms. Local planning authorities should plan positively for such installations and minimise their environmental impact.

¹³Energy Savings Trust, Carbon Trust for example

Other Onshore Renewable Energy Technologies

3.2 Other onshore technologies provide energy in the form of electricity and heat. Some of the 2010 renewable electricity target will be met from these technologies, but the likelihood is that it will only be a small proportion. This is, however, neither to underestimate their value nor a sign of any lack of the Assembly Government's commitment to their implementation. The technologies are described below and their planning implications identified. Many can be accommodated through standard planning policies on design and rural and employment development. Annex C provides more technical detail and definitions to assist local planning authorities and the public in understanding their characteristics.

Anaerobic Digestion (Biogas)

3.3 The siting of biogas plant and the associated energy generation equipment is dependent upon the source of the digestate. That material might be human sewage, in which case the plant is almost certain to be within the sewage treatment works. Animal wastes are more likely to be transported into a central site from the surrounding area and kitchen and catering wastes could come from further afield again. Criteria based policies should be supportive subject to appropriate siting, adequate vehicular access etc. Planning applications will need to be carefully assessed and planning permissions adequately conditioned to ensure good practice is followed and nuisance avoided.

3.4 Local planning authorities 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 (which might include anaerobic digestion).

Bio-Fuels for Vehicles

3.5 Whilst not every local planning authority in Wales will receive an application for manufacturing plant (refinery) for bio-diesel or other bio-fuel, it is likely that additional capacity will be developed in Wales by 2010. Bio-diesel can be produced from waste vegetable oil and can be made in small quantities in relatively small buildings. Advice on proposals should be sought from the Health and Safety Executive and Environment Agency on safety and potential pollution aspects. Developments at a larger scale will normally be attached to, or incorporated within, existing vehicle fuel refineries and thus unlikely to require separate policies in development plans

Combined Heat and Power

3.6 A Combined Heat and Power (CHP) plant is an installation where there is simultaneous generation of usable heat and power (usually electricity) in a single process. The basic elements of a CHP plant comprise one or more prime movers usually driving electrical generators, where the heat generated in the process is utilised via suitable heat recovery equipment for a variety of purposes including: industrial processes, community heating and space heating. CHP plant allows "waste" heat produced from electricity production through thermal processes to be put to valuable use thus providing an

opportunity for significant savings in carbon emissions. Local planning authorities should take an active role in facilitating CHP systems through development plan and development brief processes.

Community (or District) Heating

- 3.7 It is sometimes more appropriate to install a community heating main and central boiler house rather than a CHP system. This may often be the only sensible or even possible way of introducing woodfuel heating to a group of buildings. Such installations will require collaborative working between developers, energy companies and planning authorities in order to achieve significant results. In circumstances where design briefs are being prepared for larger developments, community heating networks utilising CHP or low-carbon fuels should be thoroughly investigated. The encouragement of community heating solutions using low carbon technologies should also be introduced into development plans and supplementary planning guidance.

Energy from Waste

- 3.8 All three regional waste plans have adopted mechanical and biological treatment (MBT) plants as their preferred option with some specifically stating that this would be in combination with energy from waste. A possible, or even likely, output from the MBT process would be refuse derived fuel which could be burnt to generate heat and/or electricity. Local planning authorities are urged to take sound expert advice on such matters as emissions and to deal with the issues in an objective manner. Some of the output from energy from waste plants is deemed to be "renewable" but the Assembly Government's priority is to see the amount of waste reduced with the energy recovery usually only coming after recycling and composting (anaerobic digestion is covered under the "composting" heading).

Fuel Crops, including Woodfuel

- 3.9 Local authorities should encourage the use of modern woodfuel heating systems and their necessary fuel stores.
- 3.10 Whilst development plan policies should be supportive of the generation of electricity from woodfuel, there is no particular need to identify sites for power stations. The locational criteria are not so specific as to justify special consideration through the planning system. The fuel supply will clearly be an important locational factor as will the availability of a good transport infrastructure, and connection to a suitable electricity system with available capacity.
- 3.11 There is likely to be a close locational relationship between the energy generation plant and the growing of crops specifically for fuel in rural areas. The growing of the fuel crop is an issue that lies outside of planning control; the planning process can only directly influence the development of plant and associated infrastructure.

Hydro-Power

- 3.12 Most new hydro-power structures involve “run-of-river” schemes, by far the most likely for developments in Wales. These are relatively small, with some flexibility in siting along a length of river or stream, although as with any power generation scheme, there should be cost-effective access to the electricity network.
- 3.13 Though generally supported, there could be occasions where some hydro schemes are unacceptable because of potential ecological damage. All of the parties involved should work constructively to find acceptable solutions. Adequate technical advice on the relevant issues should be sought when a proposal is being considered. A water abstraction licence is also required to operate a hydro scheme and close liaison with the Environment Agency, as the licensing authority, is strongly advised.

Methane

- 3.14 Opportunities may arise to include measures to generate energy from landfill gas or other facilities where methane might otherwise escape into the atmosphere. The generation plant will usually only occupy a small piece of land, usually on land already forming part of a landfill site or mine. These opportunities should be encouraged, will be usually site specific and can be covered by criteria based local policy. Close liaison with the Environment Agency is essential.

Solar Thermal and Solar Photo-Voltaic (PV)

- 3.15 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 thermal and PV systems should be supported.
- 3.16 Local planning authorities should interpret the provisions of the General Permitted Development Order as constructively as possible when these systems are proposed; specific advice in respect of houses has already been issued¹⁴. They should also consider ways in which further encouragement can be given to these technologies, including the introduction of planning policies for building types with a high demand for hot water, especially if this is likely to occur mainly during the summer months.
- 3.17 Housing of all types is appropriate for the utilisation of solar water heating. Local design guides and supplementary planning guidance should encourage this, and incorporate appropriate advice.

4. Design and Energy

- 4.1 Design and energy should be considered when development plan policy is produced, in supplementary planning guidance such as design briefs, and during the submission of planning applications. Local planning authorities should actively consider the inclusion of design guidance in their development plans or Supplementary Planning Guidance (SPG see paragraphs 5.6-5.7), which consider the issues of solar panels, CHP and other forms of renewable energy technology (micro-generation).

¹⁴Planning: A Guide for Householders. Welsh Assembly Government 2003

- 4.2 TAN 12: Design provides advice on national planning design policy including considerations such as resource efficient layout and resource efficient buildings. Welsh research has been published on residential design and sustainable development in 2005¹⁵. The WDA published “Creating Sustainable Places” in April 2005, which provides advice for those engaged with WDA developments, while the CCW publication ‘Building in Green’ is also appropriate.
- 4.3 Design, infrastructure and site layout are key to achieving energy efficient development by optimising passive solar gain in domestic and non-domestic buildings. The main aspects to consider are the orientation of the buildings and the overall site layout, to avoid overshadowing and exposed locations and to optimise sunlight penetration.
- 4.4 The Assembly Government considers that the standards established under the EcoHomes¹⁶ scheme for residential development and BREEAM¹⁷ scheme for non-residential development form a useful framework for energy efficiency consideration. These include the use of whole lifetime costs (i.e. initial capital costs, maintenance and running costs and, in particular, energy costs) in evaluating schemes.
- 4.5 In order to further promote energy efficiency and energy conservation, local planning authorities should consider requiring in development plan policies or supplementary planning guidance that planning applications (other than outline) for new non-residential buildings over 1000 sq. m should be accompanied by an Energy Design Advice Report if appropriate. The report should include recommendations relating to energy efficiency and appropriate renewable energy technologies that could be incorporated into the development. A response to that report from the developer should also accompany the application. If local planning authorities feel that insufficient consideration has been given to energy issues in project design, they should consider refusing planning permission.

5. Implications for Development Plans

- 5.1 The local implications of TAN 8 including the SSAs, should be incorporated into Local Development Plans (LDP) in line with the requirements of the LDP process, including sustainability appraisal, and Strategic Environmental Assessment (SEA).
- 5.2 Local Development Plans should promote high standards of energy efficiency, energy conservation and the use of renewable energy as a part of the national and international response to climate change, and this should be reflected in the strategy of development plans. Local planning authorities should consider the local availability of renewable energy resources and develop suitable policies that promote their implementation. Additionally, local planning authorities should consider the specific requirements of individual renewable energy technologies, outlined in this TAN, which are likely to come forward during the plan period.

¹⁵Work by WWF and CRiBE (Cardiff University), ‘Building a Future for Wales: A Strategy for Sustainable Housing’ February 2005

¹⁶EcoHomes - The Environmental Rating for Homes. www.bre.co.uk

¹⁷BREEAM - the BRE Environmental Assessment Method. www.bre.co.uk

- 5.3 Local planning authorities should seek to maximise the potential of renewable energy by linking the development plan with other local authority strategies including the community strategy. They should also develop generic development control policies which might include housing, employment, and rural development proposals and consider the implications for landscape protection, the re-use of previously developed land and waste management. Local development plans should also be clear about the issues that would be covered by planning obligations and/or planning conditions for the various forms of renewable energy. Local planning authorities, particularly those with SSAs, should involve the Countryside Council for Wales in refinement work or landscape assessment in relation to local development plans and planning applications at the earliest possible stage.
- 5.4 The SSAs for onshore wind as identified on Maps 1-8 are of key importance to the achievement of energy policy targets; they must be referred to in local development plans and, if refined, incorporated into local development plan proposal maps. Further advice is contained in Annex D. Where SSAs cross the boundaries of more than one local planning authority those authorities affected will need to co-operate and work together to develop any locational refinements or criteria based policies in a consistent manner. The Assembly Government will scrutinise local development plans to ensure that SSA installed capacity targets are capable of being met and that there is consistency across administrative boundaries.
- 5.5 Climatic considerations need to be addressed in LDPs' land allocations and whilst climate and particularly, aspect, should not be over-riding considerations in allocating land in LDPs, these factors need to be considered from the outset.

Supplementary Planning Guidance (SPG)

- 5.6 The inclusion of a large amount of detail relating to renewable energy and energy efficiency is not appropriate in local development plans, and local planning authorities should consider producing complementary SPG to cover detailed technical guidance on the various forms of renewable energy. The Assembly Government has produced guidance in relation to the production of SPG¹⁸.
- 5.7 Design and energy SPG could cover such wide ranging topics as housing fenestration and estate layout relating to passive solar gain or the requirement of renewable energy generating capacity for new office developments, such as the utilisation of heat pumps, microgeneration systems and community heating networks. Development briefs for major development should also incorporate requirements regarding renewable energy, energy efficiency and conservation.

6. Development Control

- 6.1 Consideration of renewable energy sources, energy efficiency and conservation measures at the outset of any new development is vital. This TAN and relevant development plan policy should alert developers to the need to consider these at an early stage.

¹⁸Unitary Development Plans Wales, National Assembly for Wales 2001

- 6.2 Preliminary enquiries and pre-application discussions are also crucial to the success of integrating these elements into any proposed schemes. Local planning authorities should be acquainted with, and have an understanding of the various forms of renewable energy technology currently available and should have access to experts when necessary. It is helpful to be able to discuss options for the inclusion of a range of renewable energy technologies into developments and to direct developers to the variety of sources of advice available to facilitate renewable energy and energy efficiency measures. Developers and local planning authorities should endeavour to enter into discussions with local communities at the earliest possible opportunity when formulating proposals.
- 6.3 The paragraphs above and Annex C provide a brief overview of the main forms of renewable energy technology in Wales, which could come forward over the next few years.
- 6.4 Local planning authorities should consider including appropriate conditions for the decommissioning of wind farms or individual turbines and their restoration when they reach the end of their design life, taking into account any proposed after-use of the site. In addition, 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.

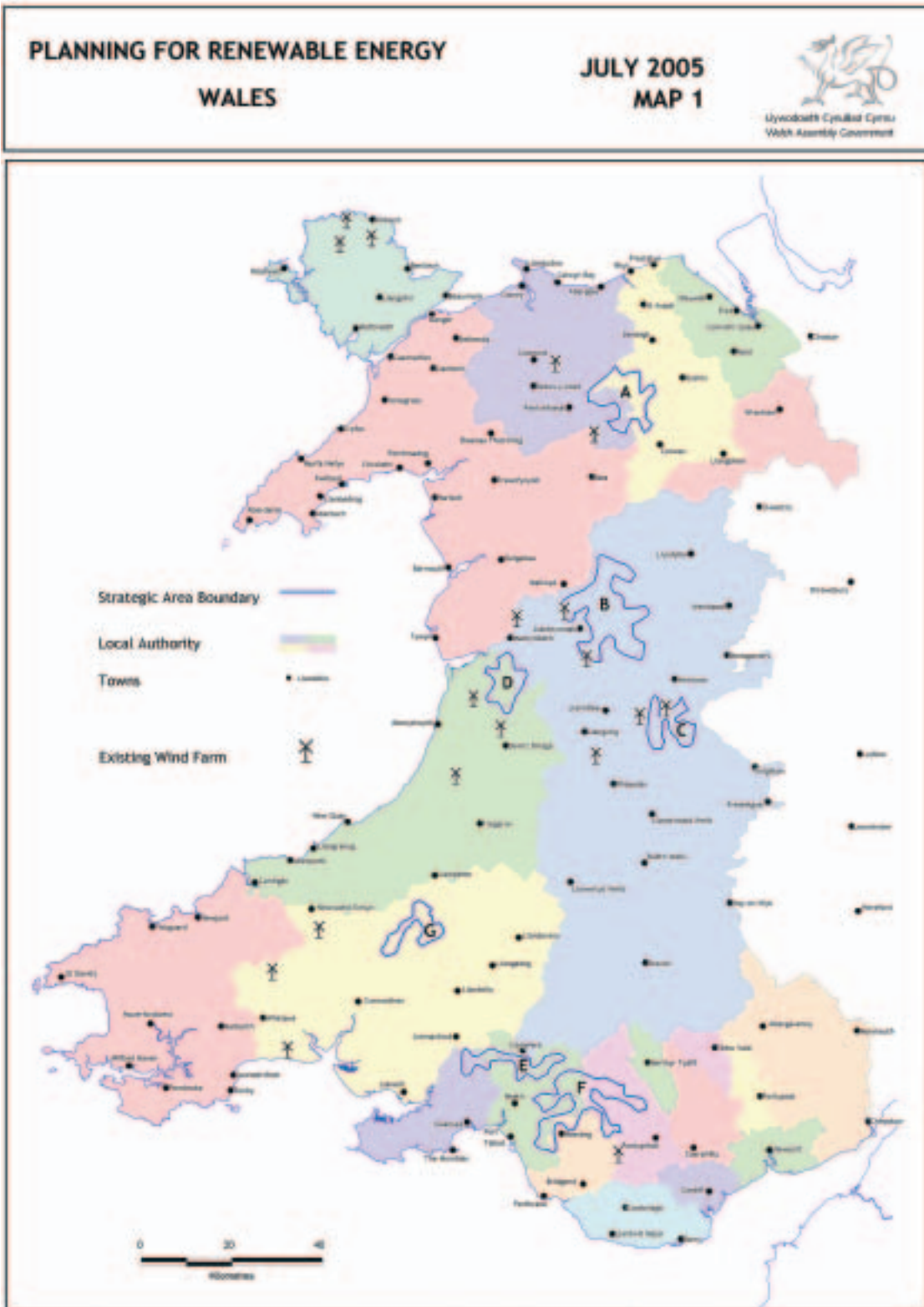
7. Monitoring

- 7.1 Local planning authorities should ensure that they monitor the deployment of renewable energy technologies. It is a matter for each local planning authority to devise systems that are most appropriate for technologies other than onshore wind. However, the specific monitoring of the provision of installed onshore wind capacity will be sought through Development Control returns to the Assembly.
- 7.2 Those local planning authorities which contain all or part of a SSA should monitor the provision of installed capacity from onshore wind within the parts of the SSA for which they are responsible on an annual basis commencing at 1st April 2006. Such installed capacity within SSAs should be clearly identifiable within the overall monitoring of renewable energy deployment.
- 7.3 In monitoring such provision local planning authorities should maintain data on developments which have been completed over the previous year, proposed developments which have full planning permission but which have yet to be implemented and developments which are under construction.
- 7.4 Once Local Development Plan Annual Monitoring Reports are in place, headline figures for wind power development should be included in these.

8. Cancellation

- 8.1 This Technical Advice Note cancels Welsh Office Technical Advice Note (Wales) 8 Renewable Energy November 1996.

Map 1

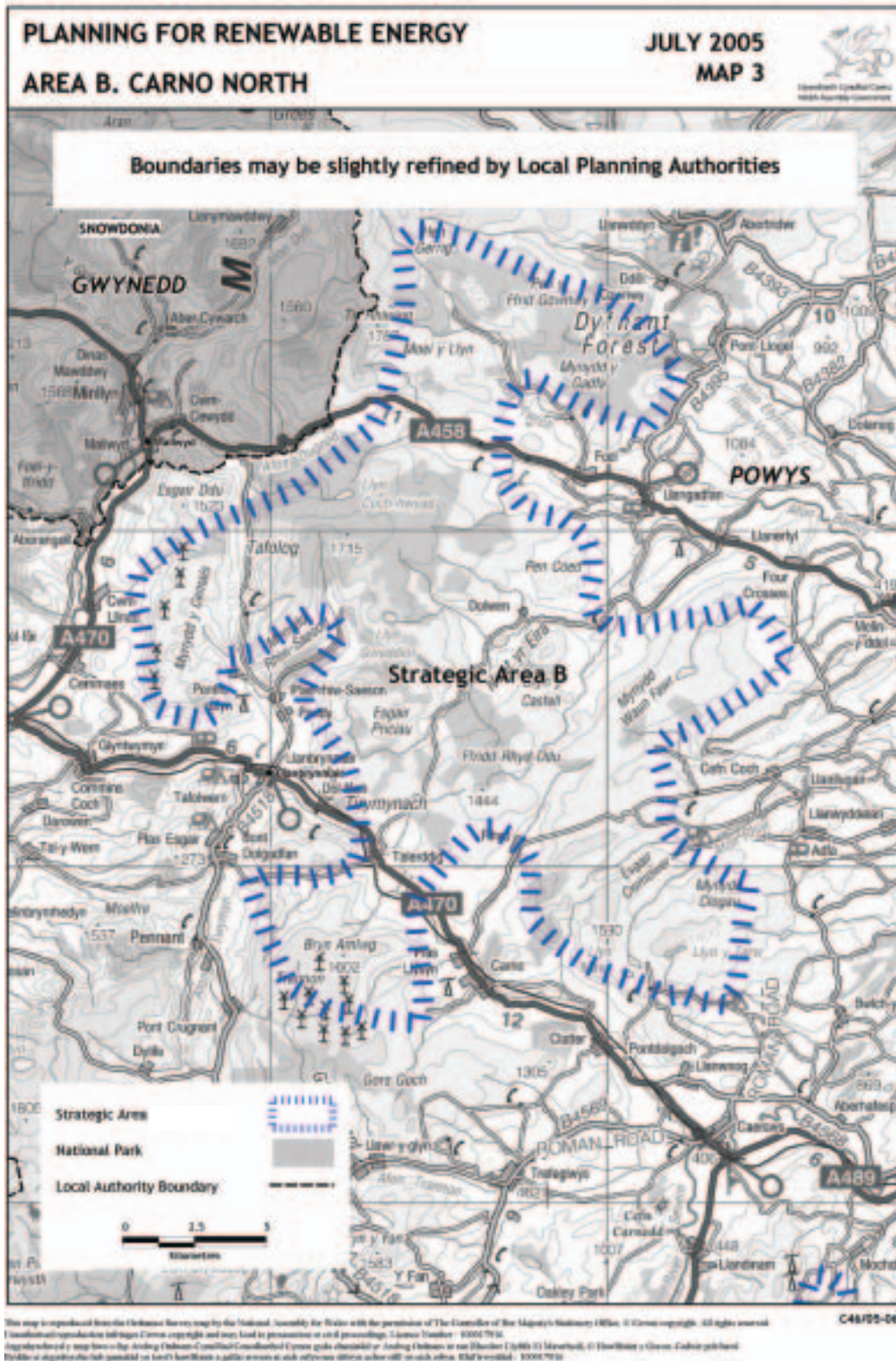


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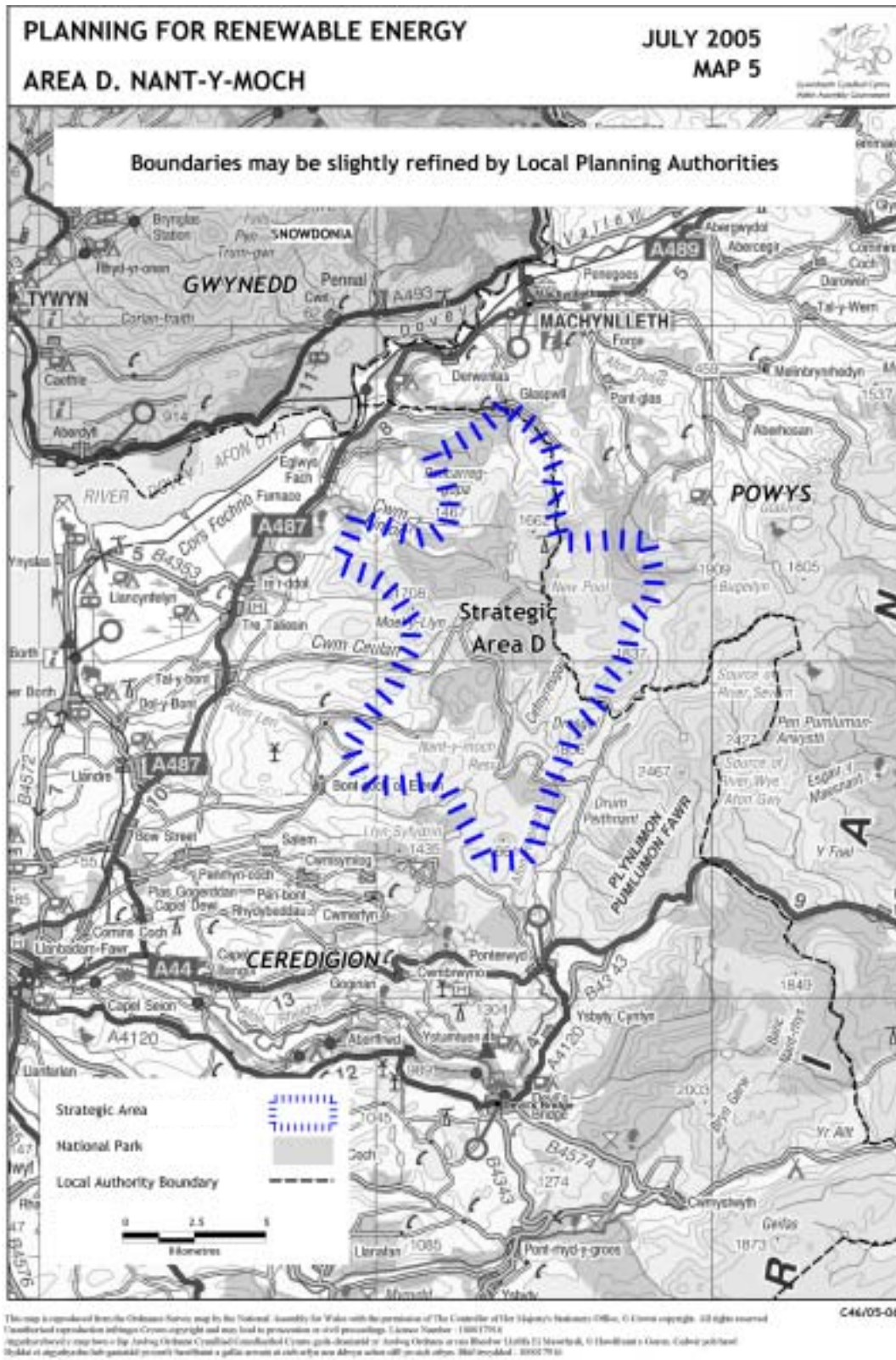
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Map 3



Map 5



Map 6



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