



Angus Local Development Plan 2016

RENEWABLE AND LOW CARBON ENERGY DEVELOPMENT SUPPLEMENTARY GUIDANCE

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- 1. Introduction3
- 2. Renewable and Low Carbon Energy Development5
 - Policy Context 5
 - Community Ownership/Benefit..... 5
- 3. Guidance for Applicants: Development Management Considerations7
 - 3.1 Development Principles7
 - 3.2 Traffic Access 8
 - 3.3 Public Access..... 8
 - 3.4 Cumulative Assessment 9
 - 3.5 Amenity..... 9
 - 3.6 Noise 9
 - 3.7 Network Links..... 9
 - 3.8 Landscape 10
 - 3.9 Designated Sites..... 10
 - 3.10 Water Environment 12
 - 3.11 Soils..... 13
 - 3.12 Environmental Assessment 14
 - 3.13 Safeguarding Zones..... 15
 - 3.14 Cumulative Impact..... 15
 - 3.15 Site Restoration 15
 - 3.16 Energy Generation and Emissions, and/or Local Socio-Economic Impact..... 16
- 4. Wind Energy 17
 - 4.1 The Spatial Framework for Wind Energy..... 17
 - 4.2 Guidance for All Wind Energy Developments 19
- 5. Other Renewable and Low Carbon Energy Proposals Guidance 24
 - 5.1 Solar/Photovoltaics 24
 - 5.2 Hydro 25
 - 5.3 Biomass 26

- 5.4 Anaerobic Digestion (AD) and Other Energy From Waste27
- 5.5 Heat Pumps28
- 5.6 Other Technologies.....29

APPENDIX 1: LOCAL AND NATIONAL PLANNING COMPATIBILITY30

AC	Angus Council	RSPB	Royal Society for the Protection of Birds
CAA	Civil Aviation Authority	SAC	Special Area of Conservation (designated under EU Habitats Directive).
FCS	Forestry Commission Scotland	SEPA	Scottish Environment Protection Agency
HES	Historic Environment Scotland	SNH	Scottish Natural Heritage
HSE	Health and Safety Executive	SPA	Special Protection Area (designated under EU Birds Directive).
LAs	Local Authorities	SPP	Scottish Planning Policy
MOD	Ministry of Defence	SWT	Scottish Wildlife Trust
Nats	National Air Traffic Services	SW	Scottish Water
NPF	National Planning Framework	TBAP	Tayside Biodiversity Action Programme

Angus Council	Planning http://www.angus.gov.uk/info/20281/planning_and_building
	Development Plan http://www.angus.gov.uk/info/20307/environment_and_development_planning/957/development_plan/
	Capacity Studies http://www.angus.gov.uk/meetings/meeting/239/development_standards
Scottish Government	https://beta.gov.scot/?utm_source=gov.scot&utm_medium=betabanner&utm_content=notification-banner-text-button&utm_campaign=beta
	Planning Policy https://beta.gov.scot/policies/planning-architecture/development-plans/
SEPA	http://www.sepa.org.uk/
SNH	Guidance and information on planning and renewable energy http://www.snh.gov.uk/docs/A1666404.pdf
HES	https://www.historicenvironment.scot/
HSE	http://www.hse.gov.uk/pipelines/
SW	http://www.scottishwater.co.uk/business

1. Introduction

This Supplementary Guidance (SG) has been prepared to support the use and implementation of the Angus Local Development Plan (ALDP) Policy PV9: Renewable and Low Carbon Energy Development.

It establishes a [Spatial Framework](#) for onshore wind energy and detailed criteria to assist the preparation and assessment of proposals for renewable and low carbon energy development, facilitating consistent interpretation and application of the policy by:-

- Providing advice on the interpretation of ALDP Policy PV9 to develop a consistent approach to decision-making for all renewable and low carbon energy development;
- Guiding new development to appropriate and sustainable locations where impact, including on landscape quality, amenity, and natural and built heritage can be minimised; and
- Develop policy guidance from the Scottish Government on development management considerations for renewable and low carbon energy development.

Applications should meet the terms of this SG as appropriate, and information submitted with an application should be proportionate to the proposed development as agreed with the planning service. Early discussion with council officers will help applicants submit proposals which meet the policy criteria.

Links to guidance, advice and legislation are included throughout to help the user access relevant information, but these are not exhaustive and it is the responsibility of the applicant to ensure all current advice/guidance is consulted.

Policy PV9: Renewable and Low Carbon Energy Development

Proposals for renewable and low carbon energy development* will be supported in principle where they meet the following criteria:

- the location, siting and appearance of apparatus, and any associated works and infrastructure have been chosen and/or designed to minimise impact on amenity, landscape and environment, while respecting operational efficiency;
- access for construction and maintenance traffic can be achieved without compromising road safety or causing unacceptable change to the environment and landscape;
- the site has been designed to make links to the national grid and/or other users of renewable energy and heat generated on site;
- there will be no unacceptable impact on existing or proposed aviation, defence, seismological or telecommunications facilities;
- there will be no unacceptable adverse impact individually or cumulatively with other existing or proposed development on:
 - landscape character, setting within the immediate and wider landscape (including cross boundary or regional features and landscapes), sensitive viewpoints and public access routes;
 - sites designated for natural heritage (including birds), scientific, historic, cultural or archaeological reasons;
 - any populations of protected species; and
 - the amenity of communities or individual dwellings including visual impact, noise, shadow flicker.
- during construction, operation and decommissioning of the energy plant there will be no unacceptable impacts on:
 - groundwater;
 - surface water resources; or
 - carbon rich soils, deep peat and priority peatland habitat or geodiversity.

Where appropriate mitigation measures must be supported by commitment to a bond commensurate with site restoration requirements.

Consideration may be given to additional factors such as contribution to targets for energy generation and emissions, and/or local socio-economic economic impact.

Supplementary guidance will be prepared to set out a spatial framework to guide the location of onshore wind farm developments, consistent with the approach set out in Table 1 of Scottish Planning Policy. It will also provide further detail on the factors which should be taken into account in considering and advising on proposals for all types of renewable energy development.

Prior to the adoption of that supplementary guidance, the Council will apply the principles and considerations set out in Scottish Planning Policy in assessing the acceptability of any planning applications for onshore wind farms.

**infrastructure, activity and materials required for generation, storage or transmission of energy where it is within the remit of the council as local planning authority (or other duty). Includes new sites, extensions and/or repowering of established sites for onshore wind.*

This SG qualifies for the requirements of a Strategic Environmental Assessment (SEA) under the Environmental Assessment (Scotland) Act 2005. An Environmental Report (ER) has been prepared which illustrates the SEA process and all potentially significant environmental effects associated with the SG, and should be read in conjunction with the parent ER submitted with the ALDP which provides the initial assessment of policy PV9.

Interactive Map

The SG is supported by an [online interactive mapping facility](#) designed to allow different features and/or designations to be viewed and overlain providing an indication of factors for consideration in preparing and assessing development proposals.

Please note that the map is indicative and any information must be confirmed from source for example planning applications should be viewed on the Council's website, natural heritage designations should be checked on the SNHi website to confirm accuracy at the time of application and detail of boundaries and designation.

2. Renewable and Low Carbon Energy Development

Renewable and low carbon energy development is increasingly common across Angus providing a growing input to green energy targets. There are a number of innovative projects constructed or in the pipeline and a developing supply chain contributing to and diversifying Angus' economy. Changes to support measures for renewable energy projects have had an impact on new projects coming forward, both in terms of numbers and timing. The longer term impact of these changes is not yet clear but will affect the sector during the life of the ALDP. We need to be flexible and responsive to emerging opportunities and how to accommodate them.

Planning permission will normally be required for most renewable energy developments. Who determines what scale of application is shown below:

DETERMINING AUTHORITY	RESPONSIBILITY
Local Planning Authority	<ul style="list-style-type: none"> proposals <50MW capacity comment on onshore proposals >50MW
Scottish Ministers http://www.gov.scot/Topics/Business/Industry/Energy/Infrastructure/Energy-Consents/	<ul style="list-style-type: none"> electricity generating stations in excess of 50MW capacity large oil and gas pipelines overhead power lines and associated infrastructure
Marine Scotland http://www.gov.scot/Topics/marine/Licensing/marine	<ul style="list-style-type: none"> offshore wind turbines tidal generation wave generation

The installation of micro-generation equipment (section 82(6) of the Energy Act 2004 - equipment with an output of up to 50 kilowatts of electricity or 45 kilowatts of thermal (heat) energy), outwith Conservation Areas, is likely to be exempt from planning permission but may require other permissions, such as Listed Building Consent. These exemptions are outlined in Section 6 of the Scottish Government Circular 1/2012 'Guidance on Householder Permitted Development Rights'¹ and for non-domestic permitted development rights².

The Scottish Government provides [a range of online planning advice](#) for renewables which provides a good starting point for developers and applicants in addition to this SG.

Policy Context

[ALDP](#) Policy PV9 establishes the criteria against which individual renewable energy proposals will be assessed providing the basis for the more detailed development management guidance contained within this SG. It should be noted that some developments will also require to be considered under other legislation such as noise, emissions, or pollution control which are not part of the planning process and may therefore require additional consents or licences. Certain proposals may also trigger the threshold for Environmental Impact Assessment or Habitats Regulation Appraisal.

Community Ownership/Benefit

Although community owned renewable energy generation is supported in principle where proposals are compatible with development plan policy, it must be made clear that negotiating or securing local community benefit is wholly separate from the

¹ <http://www.gov.scot/Resource/0038/00388268.pdf>

² <http://www.gov.scot/Publications/2015/11/2264>

planning application process and will not be considered as part of any planning application. Such local community benefit initiatives will therefore not fall within the obligations required under Section 75 Planning Agreements and will require to be managed by other means. Further information on Community Benefit for on and offshore wind energy development and Community Ownership can be found at <http://www.localenergyscotland.org/goodpractice>

3. Guidance for Applicants: Development Management Considerations

There is a wide range of renewable energy infrastructure and in most cases the scale, type and location of a proposal will determine potential planning matters that may arise including:

- Development Principles
- Traffic Access
- Public Access
- Cumulative Assessment
- Amenity
- Network Links
- Landscape
- Sites Designated for Natural and Built Heritage
- Water Environment
- Soils
- Environmental Impact Assessment
- Safeguarding Zones
- Cumulative Impact
- Site Restoration
- Energy Generation and Emissions and or local socio-economic impact

3.1 Development Principles

- Many renewable energy schemes tend to be located within the rural landscape and their design should reflect this.
- Design statements can help applicants preparing development proposals to consider and articulate the processes undertaken in reaching final layout, siting and design and help inform the decision making process. Historic Environment Scotland, Architecture and Design Scotland

(A&DS) and the local planning authority can advise on the built environment.

- Well sited and designed developments can, at best, enhance their setting or at least minimise potential impacts. Poorly sited or designed development can do the opposite – and may have an adverse impact on amenity for decades to come. Appropriate landscaping and planting can help a building or other appropriately scaled structure to blend into the landscape.
- Development proposals should identify enhancement opportunities and provide information on associated benefits such as improving public access, parking provision, visitor facilities on site such as interpretative facilities and amenities.
- The choice of equipment may be of particular importance - wind turbines for example should be chosen to reflect the scale of the landscape, light and visibility conditions and should respect residential amenity including noise and shadow flicker. The method of generation may also raise specific considerations - hydro-electric dams for example should be designed to respect the scale, colours and contours of the surrounding landscape. Technology is advancing rapidly and it is recognised the final equipment may change.
- Early discussions with the planning service can establish what supporting information is required, if an EIA will be necessary, and agree methodologies and parameters for assessments such as noise, habitat surveys, visual representations etc.
- Where a specific proposal has been approved by the Council any alteration to that project must be agreed in writing with the Council prior to implementation. The selected site should be compatible with existing land uses and economic activities including tourism, leisure and recreation (particularly outdoors); tourist routes and viewpoints, forestry and woodland and quiet or remote places valued for their tranquillity.

- Where a planning consent lapses or is extended or repowering proposed a re-application will be assessed against Policy PV9 and relevant planning policy, legislation and capacity current at the time of resubmission.

Applicants should present their rationale for site selection including technical, environmental, amenity issues; visual and landscape impact; and mitigation where feasible, including ancillary works.

While overhead power lines will normally be determined by Scottish Government, transmission of electricity from the site should form part of any renewable energy development proposal for EIA purposes. Where possible the undergrounding of cables and pipe work should be considered.

Proposals to fell significant quantities should address how forestry waste will be disposed of as part of the planning application

Further Information

- Health and Safety Executive; Land Use Planning Methodology – Planning Advice Web App:
<http://www.hse.gov.uk/landuseplanning/methodology.pdf>
- Contact:- Planning Service, at Place, Angus Council, Angus House, Orchardbank, Forfar, Angus, DD8 3LG (email PLANNING@angus.gov.uk)
- SEPA-SNH-FCS position statement: Use of Trees Cleared to facilitate Development on Afforested Land - https://www.sepa.org.uk/media/143799/use_of_trees_cleared_to_facilitate_development_on_afforested_land_sepa_snh_fcs_guidance- april 2014.pdf

3.2 Traffic Access

Any project proposal may be required to prepare and submit a route assessment and traffic management plan, which demonstrates:-

- How access is to be achieved;
- Selected routes have been assessed and are capable of accommodating traffic generated;

- Traffic management over the construction phase; and
- Longer term access requirements.

If road improvements are required, these must be approved by Angus Council Roads. Site access should allow all vehicles visiting the site to have space to manoeuvre to ensure safe access and egress.

The formation of new or upgrading of existing tracks over open countryside/uplands should be designed to avoid generating run off/surface water flooding and be re-instated on completion of construction, where they will not be regularly in use to service the development.

Provision must be made for the re-instatement of any existing and proposed tracks when the site is decommissioned.

Further Information

- SNH Constructed Tracks in the Scottish Uplands 2015:
<http://www.snh.org.uk/pdfs/publications/heritagemanagement/Constructedtracks.pdf>
- Contact:- Planning Service, at Place, Angus Council, Angus House, Orchardbank, Forfar, Angus, DD8 3LG (email PLANNING@angus.gov.uk)

3.3 Public Access

Public rights of access under the Scottish land reform legislation exist over most land. Linear access may take place over core paths or public rights of way, or over other paths and tracks, which are generally within access rights. Access rights also generally apply to areas of land such as farmland, woodland and open land, regardless of the presence of paths or tracks. Recreational water access to rivers and lochs is also within access rights and may be a particular consideration for hydro-electric schemes.

Appropriate consideration of access will depend on the nature and location of the proposed development and existing patterns and levels of public use. New development should not significantly

reduce people's ability to take recreational access. Where proposals will result in restrictions to access over core paths, public rights of way or other linear access routes, there will normally be a requirement for provision of an alternative route. Solar farms can remove large areas of land from public access, and may significantly affect people's ability to take access in their local area or to pass through an area, even in locations where there are no linear access routes and levels of public access are generally low. In such cases there may be a need to provide access corridors through or around the development. Visual impacts and other impacts on the amenity of the area will be a consideration where there is a well-used route such as a core path or an area of land which has a high recreational amenity value

Recreational water access may be an issue for some schemes and affect availability of access or have significant safety for access users should be considered where relevant.

3.4 Cumulative Assessment

Depending on scale, type and location of the proposal there may be a requirement to assess impact in conjunction with other existing or proposed development. Development proposals will be considered in the context of:

- Water quality;
- Protected species;
- Natural and built heritage designations;
- Amenity; and
- Noise.

3.5 Amenity

Proposals should assess potential impact on wider residential amenity. Amenity is protected under a number of regulatory

regimes and Policy DS4 Amenity in the ALDP addresses potential impacts of all proposed development. Where issues are identified these should be discussed with Angus Council Regulatory and Protective Services to ensure assessment of nuisance during construction, operation and decommissioning (including noise, dust, fumes, air quality etc) is undertaken to agreed standards.

3.6 Noise

Assessment methodology and cumulative considerations must be agreed with Angus Council Environmental and Consumer Protection Service. Failure to agree the methodology or to provide sufficient information may result in the application being recommended for refusal on the basis of lack of information.

Further Information

- *Technical Advice note on Assessment of noise:*
<http://www.gov.scot/Publications/2011/02/28153945/0>
- *Contact:- Environmental Health, at Place, Angus Council, Angus House, Orchardbank, Forfar, Angus, DD8 3LG (email ENVHEALTH@angus.gov.uk)*

3.7 Network Links

Grid connections do not fall within the remit of the planning system and should be confirmed with the grid operator.

Increasingly energy storage, heat exchange and reuse is seen as an opportunity to reduce costs, emissions, fuel poverty and to make better use of resources and provide opportunity to meet government targets for emission reduction and decarbonisation of heat. Such schemes will be supported in principle and assessed on their individual merits. Whilst district heating may not be financially viable for all development, new development can make provision to accommodate the necessary physical infrastructure in future. Carbon based district heating may be installed in advance of

conversion to renewable sources and may be considered where generating plant is renewed.

Angus Council is developing heat mapping and the emerging Strategic Energy and Climate Action Plan (SECAP) is aligned with the East Scotland Sustainable Energy Action Plan. This will support the transition to a resilient, low carbon economy with the associated economic, environmental and social benefits. Renewable and low carbon energy proposals should enhance efficacy of energy generation proposals by maximising their contribution to the Angus SECAP.

Further Information

- SG Heat Policy Statement <http://www.gov.scot/Topics/Business-Industry/Energy/Energy-sources/19185/Heat>
- Angus Heat Demand can be viewed on the SG Interactive Map – [online interactive mapping facility](#)

3.8 Landscape

Impact varies with the location, scale and type of renewable energy scheme proposed. Supporting information and accompanying visual/graphic information should be commensurate with the scale, location and potential impact (individually and cumulatively) of the proposal and should include options for mitigation where appropriate.

All forms of renewable energy development should be considered within their landscape context taking account of relevant ALDP policies and advice and guidance from Scottish Natural Heritage and Historic Environment Scotland on assessing the impact of renewable energy developments on the landscape. The Council will seek advice from SNH and HES as appropriate.

Landscape and Visual Representation

Landscape and Visual Representation VIA or LVIA may be required for larger structures depending on scale, type and location of the proposal. Landscape and Visual Impact (LVIA) should address the sensitivity, magnitude and significance of landscape and visual impact and include. Prior to the undertaking of an LVIA, the proposed assessment viewpoints, shown on a 1:50k Ordnance Survey base, should be submitted to Angus Council for approval prior to undertaking the assessment. The level of information should reflect the scale of development and should be agreed with planning officers.

Further Information

- SNH Guidance on landscape impact of energy development: <http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/landscape-policy-and-guidance/landscape-planning-and-development/landscape-and-energy/>
- SNH Guidance on Assessing the Cumulative Impact of Onshore Wind Farm Developments <http://www.snh.gov.uk/docs/A675503.pdf>

3.9 Designated Sites

Designated Sites are safeguarded for present and future generations, through legislation. The integrity of such designations may be affected by activity beyond site boundaries and even into other authority areas. Much will depend on the individual proposal – scale, location and type. In assessing development proposals, priority will be given to the maintenance of the quality of the built and natural heritage.

3.9.1 NATURAL HERITAGE AND SCIENTIFIC DESIGNATIONS

International and National Designation –

There is a hierarchy of designated sites, habitats and species ranging from international to local significance with levels of protection proportionate to status. International sites

- Designated under the European Habitats and the European Birds Directives for their significance to birds (Natura 2000 sites; and
- Flight paths of protected species; and those protected under the Convention on Wetlands of International Importance (Ramsar sites).

As well as these, there are a number of nationally important sites such as Sites of Special Scientific Interest (SSSIs).

The protection afforded to these sites extends beyond their boundaries to allow for foraging, roosting and flight paths. Further information can be found on SNHi Sitelink <http://gateway.snh.gov.uk/sitelink/index.jsp>

Renewable energy proposals should protect and/or enhance sites designated for natural heritage reasons in accordance with Policy PV4 of the Angus Local Development Plan. Development outwith designated sites may affect such sites and relevant assessment should be undertaken to ensure integrity of designated sites.

There are currently no local landscape or nature conservation sites designated in Angus but their preparation is timetabled in the ALDP Action Programme. In the interim sites identified by the Scottish Wildlife Trust, RSPBS, locally important habitats, landscapes and geodiversity sites identified at site selection and appraisal should be afforded appropriate protection.

European 'Natura 2000' sites are identified as 'areas of significant protection' within the onshore wind spatial framework. LDP Policy PV4 includes the requirement to ensure no proposal will be approved that would have an adverse effect on the integrity of any European site. A project level HRA will be required for any development proposal which may affect any European site. Specific advice for developers in relation to the River Tay Special

Area of Conservation (SAC) and River South Esk SAC has been prepared and is also provided through the links in 3.9.2 below.

3.9.2 RIVER TAY SAC AND RIVER SOUTH ESK SAC

These river systems drain much of Angus. Renewable energy proposals should consider potential impacts of development, decommissioning and associated activities throughout the catchment area, including tributaries and groundwater.

Further Information

- Scotland's Geodiversity Charter: <https://scottishgeodiversityforum.org/charter>
- IEM Guidelines for Ecological Impact Assessment in the United Kingdom 2006: http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terrestrial_Freshwater_Coastal.pdf
- Forestry Commission Scotland – Native Woodland Survey of Scotland <http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/native-woodland-survey-of-scotland-nwss>
- River Tay Special Area of Conservation (SAC) – Advice to Developers; SNH, Perth and Kinross Council, SEPA and Angus Council: <http://www.snh.org.uk/pdfs/publications/designatedareas/River%20Tay%20SAC.pdf>
- River South Esk Special Area of Conservation (SAC) – Advice to Developers; SNH, SEPA and Angus Council: <http://www.snh.org.uk/pdfs/publications/designatedareas/River%20South%20Esk%20SAC.pdf>

3.9.3 PROTECTED SPECIES

Protected species are identified through the Habitats Regulations 1994 (as amended for Scotland) which make provision for the implementation of the EU habitats Directive as it applies to protected species in Scotland. Current protected species and degrees of protection can be found on the SNH website. Development proposals are required to demonstrate that they will not cause unacceptable impacts on protected species or

measures to mitigate such impact or to enhance habitat of protected species e.g. timing of works;

- habitat management plans;
- habitat creation or enhancement; and
- enhanced existing and degraded habitats, and provided interpretation and educational opportunity.

3.9.4 SITES AND AREAS DESIGNATED FOR HISTORIC AND ARCHAEOLOGICAL REASONS

No World Heritage Sites have been identified within Angus. Historic Environment Scotland (HES) and Angus Council share responsibility for the protection of sites of national and international status.

Angus Council is responsible for determining applications for Listed Building Consent (LBC) and the identification of Conservation Areas and their subsequent protection. Protection of the built heritage extends beyond the actual property and curtilage to encompass its character and setting. This includes Historic Gardens and Designed Landscapes; all listed buildings; and scheduled monuments.

HES and the Council's Archaeological Service are consulted on all applications as appropriate. Where local archaeological sites and areas are known, or suspected, the Council will seek advice on the assessing and recording of any features.

Supporting information should identify

- Historic and archaeological sites affected by the proposal and associated works;
- Potential effect on the integrity of a site and its setting;
- Requirements for archaeological survey and recording; and
- Any proposed mitigation measures.

Further Information

- Historic Environment Scotland Policy Statement 2016 and Historic Environment Circular 1 <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/historic-environment-scotland-policy-statement/>
- Environmental Assessment: <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/environmental-assessment/>
- Gardens and Designed Landscapes: <https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/gardens-and-designed-landscapes/>
- Managing Change in the Historic Environment Guidance Notes: www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment-guidance-notes/
- HES spatial data: <http://portal.historicenvironment.scot/spatialdownloads>

3.10 Water Environment

The water environment - including coastal waters, water courses, standing water, peat soils, wetlands, transitional and ground water – is an important environmental and commercial asset in Angus. The condition of the water environment has been assessed and through river basin management planning measures put in place to protect and enhance its quality. Applicants must demonstrate their proposal maintains or enhances ground and surface waters features, does not cause deterioration throughout the life time of the proposal, and include mitigation and restoration where appropriate. Development proposals should not lead to the deterioration in the condition of any water body, in accordance with the Tay Area Management Plan.

Where proposals are within the source catchment area or supply network of any private water supply potential impact must be considered and, if necessary, mitigation measures implemented. Supporting information should include a drainage assessment and flood risk assessment as appropriate. Scottish Water and SEPA provide a wide range of advice on the water environment, flood risk and water/drainage management.

Groundwater wetlands should be incorporated in Phase 1 Habitat Surveys and where appropriate should include a buffer zone of 100m between features and roads, tracks and trenches, increasing to 250m for borrow pits and foundations.

Further Information

- *SEPA Technical Flood Risk Guidance for Stakeholders:* <http://www.sepa.org.uk/media/162602/ss-nfr-p-002-technical-flood-risk-guidance-for-stakeholders.pdf>
- *SEPA Water Environment:* <http://www.sepa.org.uk/environment/water/>

3.10.1 WATER SUPPLY

The protection of drinking water, both public and private supplies, will be a priority. Where proposals are within the source catchment area or supply network of any private water supply potential impact must be considered and, if necessary, mitigation measures implemented. This may include the requirement for a buffer zone of 100m between features and roads, tracks and trenches, increasing to 250m for borrow pits and foundations. Any works within these distances should demonstrate (e.g. through a hydrogeological assessment) that impacts on abstractions are acceptable.

3.10.2 FLOODING

SPP establishes a risk framework incorporated into the ALDP against which development proposals will be assessed and referred to SEPA where necessary. Angus Council Roads is the Flood Prevention Authority and advise on flood prevention and flood risk standards for new roads, car parks and footpaths.

Development proposals will be considered within the context of Local Flood Risk Management Plans which are in place throughout Scotland. These aim to avoid and reduce risk of flooding. SEPA have produced an Indicative River and Coastal Flood Map which can be viewed at www.sepa.org.uk/flooding/flood_map/view_the_map.aspx.

Flood risk assessment may be required depending on location and details of the proposal.

3.10.3 WATER QUALITY

The water environment is a potential constraint to renewable energy development, particularly in relation to construction works. Applicants should demonstrate that:-

- any development will protect and/or enhance the water environment;
- all pollution risks and mitigation measures during construction, operation and decommissioning have been identified;
- developments are designed to avoid engineering activities (such as culverts) in the water environment; and
- project management is in place to mitigate potential adverse impacts during the construction phase.

3.10.4 COASTS

Integration of marine and terrestrial planning should result in better assessment of on and offshore renewable energy proposals and their potential impacts on the environment and economic activity around our coasts. Development proposals must recognise the need to maintain the quality of coastal environment and the Angus Shoreline Management, Marine Plan and in due course Regional Marine Plans will inform the assessment of such applications.

Further Information

Marine Planning: <http://www.gov.scot/Topics/marine/seamanagement>

3.11 Soils

Development should minimise disruption to soils in accordance with the Scottish Soils Framework, identify presence of consider Impact

on peat deposits and consider permanent loss of prime agricultural land, and effects on farm viability.

3.11.1 CARBON RICH SOILS, DEEP PEAT AND PRIORITY PEATLAND HABITAT

Peat soils are a key natural carbon store and in some cases an important and fragile habitat. Where carbon rich soils, deep peat and priority peatland habitat soils are affected by potential renewable energy development applicants should consider:-

- possible ground water contamination;
- potential damage to peatland habitat, especially on or adjacent to designated sites. Early consultation with SNH and SEPA is advised where a proposed development is likely to affect peatland or mire systems;
- working in/with peat, particularly re-use/disposal of excavated peat in line with SEPA guidance
- in relation to wind energy proposals, Scottish Government advice on calculating carbon savings should be used when preparing applications;
- measures to minimise soil disturbance during construction, operation and decommissioning to maximise carbon balance savings through the use of both site and peat management plans;
- potential for slippage;
- need for a peat depth survey to demonstrate that the layout and design of the proposal avoids areas of deep peat and minimises disturbance to other areas of peat; and
- procedures for any extraction and disposal of peat during construction.

Applicants should consult SNH and SEPA at an early stage where proposed development is likely to affect carbon rich soils, deep peat and priority peatland habitat.

Further Information

SEPA guidance on development affecting peat:
<http://www.scottishrenewables.com/publications/guidance-assessment-peat-volumes-reuse-excavated/> and
<http://www.scotland.gov.uk/Resource/0044/00445028.doc>

3.11.2 GEODIVERSITY

Geodiversity is the variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes which form and alter them. Applicants should consider potential impact on geodiversity outwith designated sites which have statutory protection and work with SNH and Angus Council to ensure development impact is avoided, managed or minimised.

3.12 Environmental Assessment

Environmental Impact Assessment (EIA) may be required under the terms of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017

- scoping for the Environmental Report should be prepared in accordance with Planning Circular 1/2017;
- an EIA will demonstrate potential impacts, including length and significance of effect and mitigation measures for all components of an application; and
- where EIA is not required, environmental information may still be needed to consider agreed impacts.
- Formal screening requests and determination will be publically available. Screening Determinations are valid for 12 months.

Applicants can request a screening opinion from the planning authority to determine whether a formal EIA is required if the fall within or affect:

- Sites of Special Scientific Interest
- Land subject to Nature Conservation Orders
- International Conservation Sites
- Scheduled Monuments and their settings
- National Parks.

Where a development is of a scale or in a location where a formal EIA is deemed not necessary, the applicant must submit a planning statement on impact, including any proposed mitigation measures. The level of detail should also reflect the scale and location of the proposal.

Where proposals may have a significant individual or cumulative effect on European Sites (SAC or SPA), they should be screened in accordance with the Habitats Regulations Directive and the Habitats Regulation Appraisal process.

There is also potential for the combined effect of development to increase impact on sensitive habitats and/or protected species to an unacceptable level. Where existing development already affects a protected or vulnerable habitat, applicants must demonstrate subsequent proposals through the combined effect of development, will not cause impacts to be intensified to an unacceptable level. This will be particularly important where sites are designated as of international or national importance, but damage to all vulnerable habitats and species should be avoided.

The Scottish Government's online renewables advice identifies EIA and SEA requirements for different technologies.

Further Information

- *Town and Country Planning Environmental: Impact Assessment)(Scotland) Regulations* - <http://www.legislation.gov.uk/ssi/2017/102/contents/made>

- *Planning Circular 1 2017: Environmental Impact Assessment regulations 2017-* <http://www.gov.scot/Publications/2017/05/6292/downloads#res-1>

3.13 Safeguarding Zones

Oil and gas pipelines must be respected in all instances and any necessary consultations undertaken for all renewable and low carbon development and associated infrastructure.

Scottish Water should be consulted where proposed development affects water or waste water pipes.

Further Information

United Kingdom Onshore Pipeline Operator's Association (UKPOA): Guidance for the Siting of Wind Turbines close to High Pressure Pipelines - <http://www.ukopa.co.uk/wp-content/uploads/2013/02/UKOPA-13-006.pdf>

3.14 Cumulative Impact

Applies to various forms of development and includes effects on landscape character, designated sites and protected species, amenity and other land uses. Development proposals should consider the potential for cumulative impact in its widest sense.

3.15 Site Restoration

Where mitigation measures are proposed and agreed, these will be subject to the application of conditions or legal agreement as appropriate. Post operational monitoring of impact on habitat and species may be required and will be subject to the application of conditions or legal agreement as appropriate.

The applicant will be required by planning conditions or legal agreement to ensure acceptable re-instatement standards. Applications should be accompanied by a Restoration and Decommissioning Plan (RDP) based on Best Practical Environmental

Options. The RDP should be regularly reviewed. The RDP should detail removal of all extant apparatus and associated works; restoration of the site and any after care arrangements; and timescale. It should be updated prior to the cessation of energy generation.

Financial guarantees should be agreed (for example a bond and ESCROW deposit) and monitored to demonstrate risk minimisation. A financial bond is required by Angus Council to ensure restoration is implemented should the applicant/operator cease to trade. Waste management licensing requirements will be applied as appropriate.

Further Information

The Scottish Opencast Coal Task Report 'Surface Coal Mine Restoration – Towards Better Regulation. Recommendations can provide advice applicable for other activities - <http://www.gov.scot/Publications/2015/11/1267>

3.16 Energy Generation and Emissions, and/or Local Socio-Economic Impact

SPP identifies the need for renewable energy proposals to be assessed on their net economic, and contributions to electricity generation and emissions targets. Depending on the scale of the proposed turbine, applicants will be should information on:

- local socioeconomic impact including effects on local business (positive and negative), employment (permanent and temporary FTEs; and direct and indirect supply chain effects;
- potential output (megawatts/ kilowatts and anticipated performance based on wind monitoring studies); potential contribution to energy targets and potential number of households which might be supplied by electricity generated by the project; and

- potential contribution to meeting the Scottish Government's targets for greenhouse gas reduction.

4. Wind Energy

4.1 The Spatial Framework for Wind Energy

Policy framework to guide the location of onshore wind farm developments, consistent with the approach set out in Table 1 of Scottish Planning Policy.'

The Spatial Framework applies the approach established in Scottish Planning Policy 2014 (Page 39) and is illustrated in MAP 1. The spatial framework for the ALDP area applies to all wind turbines greater than 50m. Turbines less than this height will be considered within the context of the spatial framework as appropriate.

SPATIAL FRAMEWORK		
Group 3 (Map 1): Areas with potential for wind farm development	Group 2: Areas of Significant protection	Group 1: Areas where wind farms will not be acceptable
Areas where wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.	In these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting design or other mitigation.	National parks and National Scenic Areas

The [online interactive mapping facility](#) illustrates the individual mapped layers which are amalgamated to create the Spatial Framework. Again the layers and their component parts elements can be viewed in more detail.

Areas of Significant Protection in Angus

National and International Designations

- 9 Natura 2000 and Ramsar sites
- 36 SSSIs within ALDP area
- 14 sites identified in the Inventory of Gardens and Designed Landscapes

Other Nationally Important Mapped Environmental Interests

- Angus Glens within the ALDP area include part of wild land area 16, Lochnagar-Mount Keen
- Carbon rich soils, deep peat and priority peatland habitat as defined by Scottish Natural Heritage.

Community Separation for the Consideration of Visual Impact

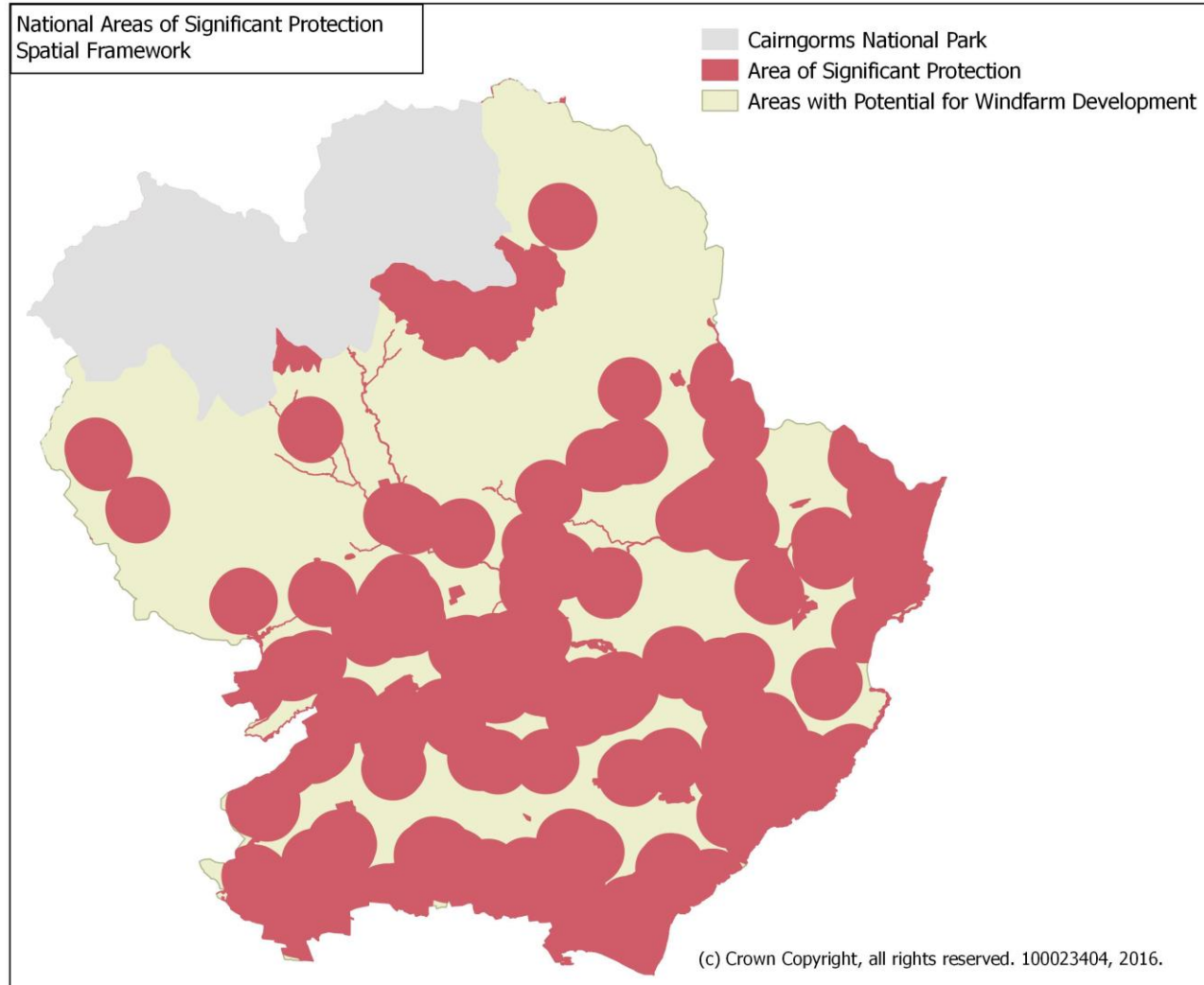
- 2km from development boundaries as identified on the Local Development Plan with an identified settlement envelop or edge.

As there are no Group 1 (National Parks and National Scenic Areas) within Angus the Spatial Framework divides Angus between:

- 'Areas of significant protection where wind farms may be appropriate in some circumstances' and
- 'Areas with potential for wind farm development where wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria'.

MAP 1: The Spatial Framework

see [online interactive mapping facility](#) for detail.



Given the extent of these areas, the siting and characteristics of wind energy developments will be important in assessing planning applications.

Areas with potential for wind farm development cover approximately half of Angus. The ALDP and this SG provide advice and policy context for specific proposals and there may be parts of Areas with Potential for Wind Turbines which are not able to accommodate wind energy development. Equally within areas of significant protection sites may have capacity to accommodate wind energy development of suitable scale, location and design.

STRATEGIC LANDSCAPE CAPACITY

The Tayside Landscape Character Assessment (TLCA) is part of a series of assessments for Scotland prepared on behalf of SNH and the local authorities. It develops a landscape classification which identifies and describes a range of character areas and provides guidance on accommodating development and land use change. The series is being updated and the definition of the landscape character areas and their vulnerability to some types of development should be used in conjunction with current SNH guidance. In 2017 SNH revised, amended and co-ordinated LCAs across Scotland and this is the version that should be used. It informs and is refined in the [Assessment of Strategic Capacity for Wind Energy in Angus \(2014\)](#) and updated 2016 which establishes a landscape analysis and classification for wind turbines defining available capacity for further wind turbines and including cumulative impact limitations. This technical report provides information on landscape capacity for wind energy development and the potential cumulative impact of proposals in the context of operational and consented developments and is a material consideration in the development management process for the assessment of wind energy development proposals and planning applications.

4.2 Guidance for All Wind Energy Developments

Onshore commercial wind turbines in Angus range from medium individual farm turbines to wind farms comprising three or more turbines. Whilst farm turbines have been widely approved and constructed across the ALDP area, wind farm development proposal have focussed on the Sidlaw Hills and the Angus Glens. Wind energy applications that fall within the Cairngorms National Park will be referred to the Park Authority for determination. Those within the ALDP area which might affect the integrity of the National Park will be referred to the Cairngorms Park Authority for comment.

LANDSCAPE AND VISUAL IMPACTS

Wind turbines require exposed locations and are often visible over a long distance. The potential landscape and visual impacts of wind turbines are addressed in Strategic Landscape Capacity Assessments for Wind Energy jointly commissioned by SNH, Angus Council and Aberdeenshire Council (published 2014). The [Angus Study](#) was approved as a material consideration in the assessment of planning applications for wind turbines in November 2013 and baseline data and residual capacity map (See Figure 6.4 Of the Study) updated in September

Cumulative landscape and visual impact will be different for each application and over the passage of time. Major landscape features such as the highland boundary fault extend across Council boundaries and should be addressed where a proposed development may/will impact on any neighbouring authority.

SPP Spatial Framework approach identifies within 2km of a development boundary as 'areas of significant protection' for consideration of visual impact of wind farms. Within the 2km community separation zone applicants may demonstrate that factors such as scale, location and topography will allow turbine development without unacceptable detrimental effect. Views from

garden ground and principal rooms looking towards a proposed turbine, together with approaches will be factors in considering potential impact on residential amenity. It is expected that the visualisations from the most affected houses will typically be included as part of the visual assessment.

Impact on the historic environment in terms of landscape and setting should be included in assessments where appropriate.

Landscape and Visual Impact Assessment (LVIA)

Should assess the sensitivity, sensitivity, magnitude and significance of landscape and visual impact. The level of information should reflect the scale of development and should be agreed with planning officers. For proposals under 50m it may include and turbines over 50m will require:

- ZTV map covering an area appropriate to the height and extent of the turbine(s);
- Wireline drawings and/or photomontages from agreed viewpoints;
- Assessment of landscape sensitivity, magnitude of change and residual impacts;
- Viewpoints to be agreed with Angus Council, and SNH where appropriate;
- Design statement identifying design objectives and process; and
- Eight figure Ordnance Survey grid reference for each proposed turbine.

Cumulative Landscape and Visual Impact Assessment (LVIA)

Should be produced on a clear and legible 1:50k Ordnance Survey Base plan. The CZTV would typically have a radius of up to 60km, in accordance with SNH guidance. The CZTV should:-

- include all consents and operational turbines over 50m to blade tip;
- include extant planning consents and submitted applications which pre-date the submission and which are assessed by the Council to have a realistic expectation of a decision within 12 months;
- include turbines under 50m (applications at an advanced stage, consents or operational) depending on their scale and location in relation to the application site i.e. visual interaction. This will only apply in specific circumstances;
- include consented and proposed offshore proposals;
- other relevant proposals in the public domain;
- consider potential impact on viewpoints and access routes;
- viewpoints for cumulative assessment, selected to provide representative views of all intervisible turbines, not from viewpoints selected to assess the application site. For example, a viewpoint may provide views in succession as defined by SNH (SNH Cumulative Effect of Windfarms (revised 2005)); and
- cumulative assessments should include combined or simultaneous visibility; successive or repetitive visibility and sequential effects and perceived in accordance with SNH guidance.

Following the production of a CZTV, proposed viewpoints should be added and submitted to Angus Council for approval prior to carrying out the assessment. Angus Council does not use file share software. All submissions should be provided in a format which permits high resolution images to be provided. The use of CDs is advised.

Cumulative assessments have not normally been required where turbines are 25-50m to blade tip, but as more turbines under 50m are constructed, a cumulative assessment may be required if

turbine density within the area of a ZTV map is deemed to have a potentially unacceptable cumulative impact.

Further Information

- ³SNH Good Practice during Windfarm Construction;
<http://www.snh.gov.uk/docs/A1168678.pdf>
- SNH 'Visual Representation of Wind Farms' Good Practice Guidance:
<http://www.snh.gov.uk/docs/A305436.pdf>
- SNH Assessing the Cumulative Impacts of Onshore Wind Energy Developments
<http://www.snh.gov.uk/docs/A675503.pdf>
- HES Managing Change in the Historic Environment:
<https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549>

Birds

There is a growing body of experience on the specific management and design of wind farms to reduce or prevent unacceptable impact on birds which may help in the design and layout of a proposed wind farm.

Further Information

RSPB 2050 Energy Vision spatial data <http://www.rspb.org.uk/our-work/conservation/conservation-projects/details/350939-the-energy-futures-project#downloads>

AMENITY

Shadow Flicker

Wind Turbines can cause moving shadow flicker through a narrow window opening. This can be predicted and Scottish Government on-line guidance for Onshore Wind Turbines advises that in most cases the problem can be resolved through separation between wind turbines and nearby dwellings (as general rule 10 rotor diameter).

An assessment should be done taking account of all properties within a zone of 10x rotor diameter + 1Km and a mitigation scheme should be proposed for all developments. Assessment methodology should be agreed with Angus Council Environmental and Consumer Protection.

Turbines can also cause flashes of reflected light, which can be visible for some distance. It is possible to ameliorate the flashing but not to eliminate it. Careful choice of blade colour and surface finish can help reduce the effect. Non-reflective finished and Agate Grey (RAL 7038) should be used unless otherwise agreed with the planning service.

Noise

There are two sources of noise from wind turbines: the mechanical noise from the turbines and the aerodynamic noise from the blades.

Mechanical noise can be reduced through engineering design. Good acoustical design and siting of turbines is essential to ensure there is no significant increase in ambient noise levels as they affect the environment and any nearby sensitive property/receptors. Where appropriate planning conditions will be imposed to control any impact to within reasonable levels. Applicants preparing noise assessments should agree the methodology with the Council's Environmental Health Officers.

Visual

SPP Spatial Framework approach identifies within 2km of a development boundary as 'areas of significant protection' for consideration of visual impact of wind farms. Angus Council will use 2km as a guide to determine potential for visual impact on residential properties. Applicants should be able to demonstrate that factors such as scale, location and topography will allow the development without unacceptable detrimental effect. Views from

garden ground and principal rooms looking towards a proposed turbine, together with approaches will be factors in considering potential impact on residential amenity. It is expected that the visualisations from the most affected houses will typically be included as part of the assessment.

Air Quality

Whilst turbines in themselves do not generate emissions on site, there is a need to consider effect on the dispersal of plumes from any industrial sites regulated under the Pollution Prevention and Control (PPC) regime in the proximity of proposed wind turbine sites.

AVIATION, DEFENCE, SEISMOLOGICAL OR TELECOMMUNICATIONS FACILITIES

Renewable energy proposals affecting such facilities are referred to standard consultees by the planning authority as appropriate, primarily wind turbines.

Telecommunications

ATKINS for TAUWI (The Telecommunications Association of the UK Water Industry)

- Ofcom microwave fixed links managed and assigned by Ofcom;
- Joint Radio Company for UK Fuel & Power Industry and the Water Industry in north-west England

Military Aircraft

Wind turbines may create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations. If identified as a potential constraint and effective mitigation measures have been agreed with the MOD, these must be submitted in writing to Angus Council. Only where a scheme is demonstrated to be deliverable or can be secured through application of a condition, will planning permission be

granted. The MOD may request wind turbines be fitted with aviation safety lighting.

Civilian Aircraft

The CAA advises on aircraft safety, including lighting and Nats for NERL Safeguarding Office on management of en route air traffic.

There is an international civil aviation requirement for all structures of 91.4 metres or more to be charted on aeronautical charts. However, on behalf of other non-regulatory aviation stakeholders, in the interest of Aviation Safety, the CAA requests that any feature/structure 70 feet in height, or greater, above ground level is notified to the Defence Geographic Centre

Any structure of 150 metres or more must be lit in accordance with the Air Navigation Order and should be appropriately marked. Smaller structures may also be required to be lit by aviation stakeholders particularly if they fall under Section 47 of the Aviation Act.

CONSTRUCTION AND OPERATION

Forestry

Wind farm proposals on forested land - key-holing should be carried out where possible as large scale felling can result in a peak release of nutrients which can affect local water quality. Fell to waste processes raise concerns where waste will be managed by techniques such as chipping, mulching or spreading and appropriate waste management options should be considered and adopted where appropriate. Felling operations should be undertaken with a view to preventing and reducing waste arisings.

Pipelines

Wind turbines proposals should take cognisance of pipeline corridors and comply with guidance from the Health and Safety Executive.

DECOMMISSIONING

Where a wind turbine site has been inactive for six months, the planning authority will require the instigation of the decommissioning process within the six months of the site being confirmed inactive. The anticipated lifespan of a wind farm/turbine is currently around 25 years and is likely to be subject to repowering if the site is productive.

Upgraded turbines can increase the output from an existing serviced site making a greater contribution to renewable energy generation. Extension of existing consents will be assessed in accordance with legislation and guidance pertaining at that time, and continued use of an existing location may be an appropriate option. Where time of operation is extended, the decommissioning statement and re-instatement plan will also be reviewed, updated to contemporary standards, and extended.

Further Information

SNH Decommissioning and Restoration plans - guidance for onshore wind:
<http://www.snh.gov.uk/docs/A1434319.pdf>

5. Other Renewable and Low Carbon Energy Proposals Guidance

5.1 Solar/Photovoltaics

Solar/Photovoltaics P/V use energy from the sun to generate hot water (solar thermal) or electricity (solar p/v). Roof or ground mounted domestic arrays are common and large agricultural buildings provide opportunity for on-site generation for on farm use or export to the grid network.

Solar farms can contribute to biodiversity and maintenance of land fertility through environmental management programmes, such as planting species that encourage and foster bee populations and allowing hive placement; contribute to the green network and interconnectivity of habitat and foster soil fertility. Solar farms may be located on good quality agricultural land and where possible grazing options should be considered.

LDP POLICIES

PV9 Renewable and Low Carbon Energy
DS1-5: Creating High Quality Places
PV1-6: Natural Environment;
PV8: Built Environment;
PV9-11: Heat and Energy networks
PV12-16: Water Environment
PV20 Soils and Geodiversity
PV21 Pipeline Consultation Zones
and other policies as relevant.

Planning Considerations

The scale and location of the proposal (individually and cumulatively) will influence likely effects including:-

- landscape and visual impacts;
- soil quality and farm viability;
- biodiversity including disturbance, displacement, habitat loss and/or habitat fragmentation;
- cumulative effects;
- public access;
- disturbance, displacement, habitat loss and/or habitat fragmentation and
- reinstatement.

Development Checklist

Does this planning application require supporting information on any of the following?

- A Landscape & Visual Assessment
- EIA Screening
- Traffic management plan
- Design and access statement
- Environmental statement/ecological appraisal – including water bodies; natural and built/cultural heritage
- Amenity Assessments – glint and glare
- Economic benefit/ community ownership/ tourism assessment/public access
- Cumulative Assessment
- Landscaping
- Flood Risk Assessment
- Provision for future energy storage/district heating opportunities.
- Pipeline Corridor review

- Site management plan – including peat/soil removal and storage; watercourse protection; amenity issues;
- Restoration and decommissioning plan; bond and escrow deposit.

Guidance

Landscape and Visual	Angus Council has approved as a material consideration a Strategic Landscape Capacity Assessment for Solar Energy in Angus. It provides a technical assessment of the landscape capacity to accommodate solar farms.
Biodiversity	Solar farms can provide biodiversity gains through appropriate management such as planting of species that provide winter food for birds.
Bird and Bat Roosts	Installing solar panels on rooftops can disturb roof-nesting or roosting birds and bats; installation should therefore take place outside of the breeding season and avoid blocking access points.
Public Access	Given the scale of solar farms and the need for secure fencing has potential to significantly affect public access which can remove large areas of land from public access and there may be a need to maintain or enhance access corridors through or around the development.
<ul style="list-style-type: none"> • SNH <i>Large Scale Solar Photovoltaic Installations:</i> http://www.snh.gov.uk/docs/A1859348.pdf • SEPA Solar: http://www.sepa.org.uk/environment/energy/renewable/#solar • RSPB : Solar farms – planting advice http://www.rspb.org.uk/our-work/conservation/conservation-and-sustainability/farming/advice/details.aspx?id=367959 	

5.2 Hydro

Run of river schemes where water is abstracted from a water course, diverted through pipes to a turbine and returned to the water course is the primary hydro plant installed in Angus. Most are very small, and often make use of existing infrastructure such as managed fishing lochs and Scottish Water installations.

Where dams are constructed these are likely to be small scale and in addition to the above may raise issues relating to the scale and location and hydrogeology.

LDP POLICIES
 PV9 Renewable and Low Carbon Energy Development
 PV1-6: Natural Environment
 PV8: Built Environment
 PV9-11: Heat and Energy networks
 PV12-16: Water Environment
 PV20 Soils and Geodiversity
 and other policies as relevant.

Planning Considerations

Likely effects include:

- water abstraction (usually by a low, ground or underwater intake weir) and return (usually in the form of a tailrace);
- ancillary works such as pipeline, turbine house and access;
- effect on the water course and its ecology;
- transmission of power, construction works/compound and access routes, and environmental impact should be considered by the applicant; and
- landscaping and planting proposals to reduce landscape and/or visual impact and improve biodiversity

Development Checklist

Does this planning application require supporting information on any of the following?

- Landscape & Visual Impact
- EIA Screening
- Traffic & Access
- Peat & Soils
- Water Environment
- Noise
- Amenity
- Economic benefit/ community ownership

Guidance

Tay and Esk Special Conservation Areas	Rivers Tay SAC and Rivers S Esk SAC guidance for developers produced jointly by Angus Council, SNH and SEPA. These provide detailed advice on the information required for developments including hydro which may affect these SACs and should be referred to when developing renewable energy proposals.
Fish	The upstream and downstream movement of fish such as salmon, lamprey and eel can be affected, particularly in low head schemes, which can prevent access to spawning or feeding grounds and threaten lifecycle completion. This impact can be mitigated by locating developments in sites with existing in-river barriers such as weirs and incorporating a fish pass and fish-friendly turbine design.
Bryophytes	If significant volumes of water are abstracted, this can result in depleted stretches of water which can have consequences for ecosystem function and habitat connectivity; the impact of flow depletion on bryophytes is a particular concern.
<ul style="list-style-type: none"> • A Policy Statement on Hydropower and Water Environment Protection: www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/17851-1/HydroPolicy 	

- SNH Hydro: <http://www.snh.gov.uk/planning-and-development/renewable-energy/hydro/>
- SEPA Hydro: <http://www.sepa.org.uk/environment/energy/renewable/#hydro>

5.3 Biomass

Ranges from small scale domestic boilers up to major commercial generators. The main issues will relate to commercial electricity generation, but proposals for domestic bio-energy facilities will still require to demonstrate there are no unacceptable adverse effects, particularly emissions. The Scottish Government has indicated that fuel source over the life of the plant will be a valid planning consideration to ensure sustainable bio-energy can be sourced. While woody biomass is the major source, there are increasingly projects based on other carbon based materials such as straw, distillery and food processing waste etc. (See section on Anaerobic Digestion (AD) and other Energy from Waste).

Planning Considerations

For large biomass plants will include:

- Scale, design and location;
- Emissions/ air quality;
- Sustainable fuel source;
- Access;
- Storage;
- Ecological impacts e.g. designated sites and semi-natural/woodland habitats; and
- Sustainability of sourcing/transport of biomass

Development Checklist

Does this planning application require supporting information on any of the following?

- Landscape & Visual Impact
- EIA Screening
- Traffic & Access
- Peat & Soils
- Water Environment
- Noise
- Amenity
- Economic benefit/ community ownership

Guidance

Amenity	Air quality may be an issue and early discussions with Environmental Health can address such issues and agree methodology for air quality assessment. Contact
Fuel Source	The ecological risks of bioenergy generation will strongly depend on the type of feedstock used and the management system applied, but all have the potential to increase greenhouse gas emissions and cause habitat loss.
<ul style="list-style-type: none"> • SNH Bioenergy: http://www.snh.gov.uk/planning-and-development/renewable-energy/bioenergy/ • SEPA Biomass: http://www.sepa.org.uk/environment/energy/renewable/#bio 	

5.4 Anaerobic Digestion (AD) and Other Energy From Waste

Potential interest to the agriculture and food processing sectors in Angus, where biodegradable waste, farm slurry and energy crops such as maize are broken down by micro-organisms (digestion) in the absence of oxygen (anaerobic). This generates a bio-gas comprising methane and carbon dioxide methane and if treated can be injected into the gas grid or used as a vehicle or used directly in combined heat and power gas engines to produce electricity and heat. It is a constant and manageable process with a product that can produce energy for onsite or offsite use and the residue (digestate) provides a nitrogen rich fertiliser.

Limited landfill sites in Angus, current waste to heat plant arrangements with Dundee and improved recycling and waste management restrict potential.

Planning Considerations

- Siting and location;
- Fuel source and transport implications of importing material;
- Disposal of digestate;
- Landscape and visual impact; and
- Proposed management and mitigation measures.

As a method of waste treatment and as such may also require to meet regulations relating to emissions, odour and noise; The main planning issues will relate to location, design and emissions.

Development Checklist

Does this planning application require supporting information on any of the following?

- Odour management
- Drainage
- Air Quality
- Noise
- EIA Screening
- Traffic and Access

Early contact with SEPA is advised.

Energy from Waste (EfW) facilities and the use of the biogas produced from Anaerobic Digestion (AD) plants require to comply with The Thermal Treatment of Waste Guidelines 2014 and are a material planning consideration in determining relevant planning applications. When consulted on EfW facilities SEPA will consider energy efficiency of the; potential to site new plants close to existing; and potential users of heat and power.

- SEPA Energy from Waste <http://www.sepa.org.uk/regulations/waste/energy-from-waste/>
- SEPA Zero Waste Plan Guidance (Planning Authority) Guidance on input to development management consultations in relation to Zero Waste Plan issues <http://www.sepa.org.uk/environment/land/planning/advice-for-planning-authorities/>

5.5 Heat Pumps

There are three types: Ground, Air and Water.

Heat pumps basically extract and discharge latent heat from one of these three sources. Ground source is an extensive, external installation requiring network of underground pipes and a ground level pump. The water/antifreeze in the pipes is pumped round the loop; extracting heat which is then transferred by the pump to a

domestic heating. The pump itself further increases the water temperature. These systems require planning permission, but are relatively uncommon with minimal above ground works once installed and tend to relate to an individual property. Air source take heat from outside air and boost it to a higher temperature using a heat pump. Water source heat pumps work to the same principle, extracting heat from a water body through a pipe loop through a compressor (heat pump) providing hot water and heating. The installation, alteration or replacement of a ground, water or air source heat pump within the curtilage of a house or a building containing a flat is permitted development.

Planning Considerations

- Commercial - additional environmental, access, ancillary development and pipework issues.
- Impacts on protected species and areas.
- Waste water treatment works heat extraction and AD should also be addressed under waste management policies, legislation and licensing.

Development Checklist

Commercial scale heat pumps are not normally permitted development except for buried or immersed pipework. Does this planning application require supporting information on any of the following?

- Noise
- Water Environment
- Noise
- Amenity
- Access

Heat pumps can cause localised impacts such as disturbance of habitats during installation, or small changes to ground temperature in the case of

ground source heat pumps. Open loop systems have the potential to affect groundwater.

- [Guidance on Householder Permitted Development Rights - www.gov.scot/Publications/2016/06/2685/8](http://www.gov.scot/Publications/2016/06/2685/8)

5.6 Other Technologies

CCS Proposed reuse of existing pipeline – Local Planning Authority responsible for change of use and above ground works.

Tidal Responsibility of Marine Scotland – Angus Council comments on/inputs into the process

Scottish Government Marine Plan:
<http://www.gov.scot/Resource/0047/00475466.pdf>
SNH Marine:
<http://www.snh.gov.uk/planning-and-development/renewable-energy/offshore-renewables/>
SEPA Marine:
<http://www.sepa.org.uk/environment/energy/renewable/>

Deep Geothermal Scottish Government investigating potential – unlikely to be economic resource in Angus

Unconventional Oil and Gas Geological surveys indicate no unconventional oil and gas resource in Angus.

British Geological Survey – The carboniferous shales of Midland Valley of Scotland:
<http://www.bgs.ac.uk/research/energy/shaleGas/midlandValley.html>
SG, Independent Expert Scientific panel – Report on Unconventional Oil and Gas:
<http://www.gov.scot/Resource/0045/00456579.pdf>
Independent Review of Underground Coal Gasification:
<https://beta.gov.scot/publications/independent-review-underground-coal-gasification-report/>

Hydrogen Fuel Early stages with prototype manufacture and storage

SEPA Hydrogen (green source):
<http://www.sepa.org.uk/environment/energy/renewable/#hydrogen>

NON LOCAL AUTHORITY

Microrenewables Normally permitted development if outwith a Conservation Area, but other consents may be required eg if the property is listed contact PLANNING@angus.gov.uk for advice.

SNH Microrenewables: <http://www.snh.gov.uk/planning-and-development/renewable-energy/micro-renewables/>
Scottish Government Householder Permitted Development Rights: <http://www.gov.scot/Resource/0038/00388268.pdf>
Scottish Government Non-Domestic Permitted Development Rights: <http://www.gov.scot/Resource/0048/00489640.pdf>
HES Short Guides 1 Fabric Improvements for Energy Efficiency in Traditional Buildings and 8 Micro-renewables in the Scottish Environment https://www.historicenvironment.scot/archives-and-research/publications/?audience=5&language=en&publication_type=41&q=
HES Managing Change in the Historic Environment: Micro-renewables <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=7604a41c-077c-42ab-941f-a60b009a4f95>

Transmission Most overhead transmission proposals are determined by the Scottish Government, but are included in an EIA if required.

The Electricity Works (Environmental Impact Assessment) (Scotland) Amendment Regulations 2008 (Revised 2009):
<http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Guidance/EIA-Amendment-Regs-2008>

APPENDIX 1: LOCAL AND NATIONAL PLANNING COMPATIBILITY

Angus Local Development Plan 2016

PV9: Renewable and Low Carbon Energy Development (and other relevant policies)

Consideration may be given to additional factors such as contribution to targets for energy generation and emissions, and/or local socio-economic economic impact.

There will be no unacceptable adverse impact individually or cumulatively with other existing or proposed development on:

- landscape character, setting within the immediate and wider landscape (including cross boundary or regional features and landscapes), sensitive viewpoints and public access routes;
- sites designated for natural heritage (including birds), scientific, historic, cultural or archaeological reasons;
- any populations of protected species; and
- the amenity of communities or individual dwellings including visual impact, noise, shadow flicker.

Other relevant ALDP policies
 Policy DS4 Amenity
 Policy PV4 Sites Designated for Natural Heritage and Biodiversity Value
 Policy PV5 Protected Species
 Policy PV6 Development in the Landscape
 Policy PV7 Woodland, Trees and Hedges



Scottish Planning Policy 2014

Development Management Considerations (para 169) – proposals for energy infrastructure development

Net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities;
 The scale of contribution to renewable energy generation targets;
 Effect on greenhouse gas emissions;

Planning authorities should be clear about likely cumulative impacts arising from all of the considerations below, recognising that in some areas the cumulative impact of existing and consented energy development may limit the capacity for further development;

Impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;

Landscape and visual impacts, including effects on wild land;

Effects on the natural heritage, including birds;

During construction, operation and decommissioning of the energy plant there will be no unacceptable impacts on:

- groundwater;
- surface water resources; or
- carbon rich soils, deep peat and priority peatland habitat or geodiversity.



Impacts on carbon rich soils, using the carbon calculator;

Other relevant ALDP policies
Policy PV20 Soils and Geodiversity

There will be no unacceptable adverse impact individually or cumulatively with other existing or proposed development on:

- landscape character, setting within the immediate and wider landscape (including cross boundary or regional features and landscapes), sensitive viewpoints and public access routes;



Public access, including impact on long distance walking and cycling routes and scenic routes identified in the NPF;

Other relevant ALDP policies
Policy PV3 Access and Informal Recreation

There will be no unacceptable adverse impact individually or cumulatively with other existing or proposed development on

- sites designated for natural heritage (including birds), scientific, historic, cultural or archaeological reasons;



Impacts on the historic environment, including scheduled monuments, listed buildings and their settings;

Other relevant ALDP policies
Policy PV8 Built and Cultural Heritage

Consideration may be given to additional factors such as contribution to targets for energy generation and emissions, and/or local socio-economic economic impact.



Impacts on tourism and recreation;

There will be no unacceptable impact on existing or proposed aviation, defence, seismological or telecommunications facilities;



Impacts on aviation and defence interests and seismological recording;
Impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised;

Access for construction and maintenance traffic can be achieved without compromising road safety or causing unacceptable change to the environment and landscape;
Other relevant ALDP policies
Policy DS5 Developer Contributions



Impacts on road traffic;
Impacts on adjacent trunk roads;

During construction, operation and decommissioning of the energy plant there will be no unacceptable impacts on:

- groundwater;
- surface water resources; or
- carbon rich soils, deep peat and priority peatland habitat or geodiversity
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Effects on hydrology, the water environment and flood risk;

Other relevant ALDP policies

- Policy PV12 Managing Flood Risk
 - Policy PV14 Water Quality
 - Policy PV16 Coastal Planning
 - Policy PV20 Soils and Geodiversity
 - Policy PV21 Pipeline Consultation Zones
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Where appropriate mitigation measures must be supported by commitment to a bond commensurate with site restoration requirements.



The need for conditions relating to the decommissioning of developments, including ancillary infrastructure, and site restoration;

Proposals for renewable and low carbon energy development* will be supported in principle



Opportunities for energy storage;

Other relevant ALDP policies

- Policy PV10 Heat Mapping and Decarbonised Heat
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Where appropriate mitigation measures must be supported by commitment to a bond commensurate with site restoration requirements.



The need for a robust planning obligation to ensure that operators achieve site restoration.

Other relevant ALDP policies

- Policy PV17 Waste Management Facilities
- Policy PV10 Heat Mapping and Decarbonised Heat
- Policy PV11 Energy Efficiency - Low and Zero Carbon Buildings