Policy Title:

LP26 - Renewable and Low Carbon Energy Systems

Existing Policies Which adopted Core Strategy or Policies Sites and Places (PSP) policy would eventually be replaced	**Policy CS3 – Renewable and low carbon energy generation** **Policy CS4 – Renewable or low carbon district heat networks (partial replacement)**
Non-Strategic / Strategic	**Non-Strategic**

Purpose

South Gloucestershire has significant opportunities to increase renewable energy generation and facilitate development that enables a smarter and more flexible energy system.

Accelerating the transition to a zero-carbon heat and a zero-carbon electricity system is essential to addressing the climate emergency. It can also bring wider environmental, public health and economic benefits, and improve the security of our energy supply.

Policy support is therefore provided to development proposals which generate energy renewably or recover waste heat; and the infrastructure that goes alongside this.

Policy wording

1. **Proposals for the generation of renewable energy and associated infrastructure; or the recovery of waste heat or cooling; and proposals that support the transition to a smart, flexible, and zero carbon energy system will be supported in the context of sustainable development and climate change. The contribution of the proposals, in light of the Council's climate and nature emergency declaration and national carbon reduction targets, to cutting greenhouse gas emissions and decarbonising our energy system, is a material consideration.**
2. **When assessing proposals:**
    a. **Great weight is to be given to the conservation of heritage assets and their setting. The impact of any proposal on the significance of any non-designated heritage assets should also be taken into account; and**
    b. **Landscape and visual impact; conservation of and impact on designated ecological assets; impact on amenity; cumulative impact; and other considerations as relevant (including those specific to each technology) should be taken into account.**
3. **Proposals must include measures to enhance and enable nature and biodiversity in scheme design for the lifetime of the development.**
4. **Opportunities for the co-location of renewable energy generation with energy demand and storage for local need, will be encouraged. Where a proposal is linked to an existing use, is located in close proximity (to that use) and is designed to displace otherwise imported energy (to that use); this will be considered an additional benefit.**
5. **Proposals to re-power wind and solar PV farms at the end of their operational life can make efficient use of land and in principle will be considered favourably, provided the turbines and/ or solar panels are replaced with new equipment of either the same or larger installed capacity (when this has no significant change on off-site impact), and subject to compliance with statutory, site-specific, and other constraints.**
6. **Proposals require appropriate plans and a mechanism in place for the removal of the technology on cessation of generation. Site restoration should maintain or enhance the sites ecological value.**

In addition to the above, the following will be considered for the specific technologies outlined:

7. **Wind Energy**
    a. **Areas safeguarded for wind energy development are defined on the Policies Map.**
    b. **Proposals within these safeguarded areas are subject to the assessment of the other criteria as set out in this policy and other relevant policy.**

c. **Wind energy development will need to demonstrate through Habitats Regulations Assessment of the proposals that there will be no adverse effects on the integrity of SAC, SPA or Ramsar sites, for example through impacts on the flight paths and habitat corridors of protected mobile species such as birds and bats, or at functionally linked habitat associated with protected sites.**

d. **Proposals for development that is not associated with wind energy within these safeguarded areas will only be acceptable where:**

   i. **it can be demonstrated that they would not prejudice or interfere with the operation of any installed, permitted, proposed or future potential wind energy installation or its enabling infrastructure; or**

   ii. **the use proposed would be temporary, and would not restrict the potential future use of the area (or adjacent land) to be developed for wind energy; or**

   iii. **it can be demonstrated that due to permanent technical generation related constraints, there is no reasonable likelihood of a wind energy installation ever coming forward on or within reasonable proximity to the application site or that an exception should be made based on substantial public benefits arising from the proposal.**

   iv. **It is also considered that large new development sites or safeguarded employment sites may be suitable in principle for wind energy development subject to the assessment of the other criteria as set out in the policy, all other relevant policy, and any further material considerations.**

8. **Ground mounted Solar**

   a. **Proposals for ground mounted solar developments should avoid being sited on the best and most versatile agricultural land unless significant benefits can be shown which would outweigh the temporary loss of the land.**

9. **Mine-water**

   a. **Proposals should not have an unacceptable impact on the water regime and water quality impacts are assessed and mitigated.**

10. **Energy balancing including storage and generation**

   a. **Proposals for new energy generation or storage installations/ proposals, that support the transition to a smart energy system are considered an integral part of a low carbon energy system and will be acceptable when;**

      i. **They demonstrate that the lowest emission technology available has been utilised;**

      ii. **They are in an appropriate location;**

      iii. **There has been satisfactory resolution of issues in relation to fire risk.**

b. Our strong preference is for the inclusion of energy storage technology alongside energy deployment (for large scale energy development (over 1MW).

c. Fossil fuel-based energy installations in which greenhouse gas emissions are not captured and sequestered, are not considered compatible with a net zero energy system and as such will only be acceptable where no other alternative is available and for a temporary period. Full justification should be set out in the Energy and sustainability statement.

Supporting text

1. Increasing renewable and low carbon energy generation and storage within the local authority area is an important means of delivering both our local and national carbon dioxide emissions reductions targets.

2. Renewable energy generation covers a range of technologies such as solar photovoltaic generation, wind and tidal power, and heat produced by air, ground, or water source heat pumps. Low carbon energy supplies include waste heat and coolth (cooling) from commercial and industrial processes and heat or coolth (cooling) recovered within or from buildings, neighbourhoods and developments.

3. This policy sets out how stand-alone renewable energy projects are to be assessed. Proposals over 50MW, other than for battery storage, are considered Nationally Significant Infrastructure projects and are determined by the Planning Inspectorate with the local authority as a consultee.

Renewable Energy Resource Assessment for South Gloucestershire (RERAS)

4. To ensure we had the technical information to underpin this policy, we undertook a study to develop an evidence base for the potential of renewable energy technologies in the district. The full Renewable Energy Resource Assessment for South Gloucestershire (RERAS) can be found on our website alongside a Landscape Sensitivity analysis.

General considerations

5. Accelerating the decarbonisation and decentralisation of the energy system in the UK is essential to mitigating climate change. Renewable energy generation will assist us in meeting our local and the national climate targets and this should be a consideration in determining planning applications.

6. The general criteria as set out in this policy should be considered against all types of technologies that may come forward within the plan process, including new and evolving technologies such as hydrogen (which has potential uses including for storage). The general criteria are to be considered alongside all other statutory considerations. Criteria to consider can include (but are not limited to): ecological assets, including local, national, and international designated sites and impacts on biodiversity; the historic environment, including heritage assets and their settings; townscape and landscape character; living conditions from vibration, noise, shadow flicker, glint, glare and air quality; and infrastructure assets including power lines, roads, rail and aircraft safety.

7. National guidance and the RERAS can give further information as to considerations and constraints.

Designing to enhance nature and biodiversity

8. Where designed appropriately renewable energy installations can offer opportunities to maintain and enhance site biodiversity and help meet our green infrastructure objectives. Applications are expected to show how measures to enhance biodiversity and maintain it have been incorporated into the design and how measures have been incorporated (the use suitable planning conditions can ensure these outcomes). For example, with solar panels, the specification of the panels in terms of height and cabling should be suitable to allow biodiversity measures such as wildflowers under panels. Current best practice in relation to this is NCBPG-Solar-Energy-UK-Report-web.pdf (solarenergyuk.org).

Location of energy and re-powering

9. Where renewable energy installations are being developed to specifically provide power to meet the needs of an existing development, in particular if they are privately connected, this can make efficient use of land and this is considered a benefit. The same principle applies to locating heat users and heat producers in close proximity.

10. Re-powering existing turbines also making efficient use of land and existing resources and infrastructure.

11. As renewable energy applications are temporary a consideration of site restoration should be undertaken at the planning application stage. Due to their temporary nature and the definition of previously developed (brownfield) land in the current NPPF being ‘land which is or was occupied by a permanent structure’ we do not consider land previously used for renewable energy to be previously developed (or brownfield) land.

Community Energy

12. Community developed energy schemes contribute towards carbon reduction and renewable energy generation targets. It is considered that all communities, including those within the Cotswold National Landscape and Green Belt, should be able to benefit from, and bring forward, community led renewable energy schemes; as communities live within their local landscape and will be most impacted by both the benefits and impact of any scheme. With this in mind, we have a specific policy relating to Community Energy (LP27 - Community Energy).

Technology specific policies

13. The REREAS reviewed a series of principal constraints to assess how much resource there might be for a variety of technologies and provided information as to how large these potentially suitable areas might be as well as giving some further policy recommendations.

14. These technology specific criteria are in conjunction with all other criteria in this policy and the wider local plan. Design policy LPS12 - Creating Well-Designed Places, which contains specific considerations for all development which would include for supporting infrastructure, is particularly relevant.

Wind

15. The data from the RERAS showed a limited number of potentially suitable areas where large scale wind installations could effectively operate within South Gloucestershire. Therefore, this Local Plan identifies and safeguards those areas potentially suitable for wind turbine development from the RERAS, to protect this limited resource from sterilisation by other uses and to allow the potential for wind energy development within these areas to be considered further.

16. There are a variety of other issues that would need to be considered when a planning application is put forward (see Table one below) and paragraph 4.2.3 in the RERAS.

17. These issues are likely to vary significantly depending on the specifics of the exact area and the nature of the proposal within the safeguarded areas and as such are considered best balanced at the planning application stage when a proposal can be considered. For additional clarity Table two below sets out some particular key considerations for each safeguarded area.

Table one: Wind Safeguarding area RERAS and planning application considerations

Stage	Considerations
Planning application stage (planning balance)	• Impact on the Cotswold National Landscape (AONB) and Green Belt • Wider impact on protected onshore and adjacent habitats • Impact on the setting of designated heritage assets and impact on non-designated heritage assets • Climate and Nature Emergency • Cumulative impact and all other considerations as set out in the criteria-based policy or national guidance • Policy from other regimes and other material considerations
Primary constraints removed as set out in the RERAS	Special Protection Areas (SPA) and foraging buffers; Special Areas of Conservation (SAC); RAMSAR sites; National Nature Reserves (NNR); Sites of Special Scientific Interest (SSSI); Scheduled Monuments; Listed Buildings; Registered Historic Parks and Gardens; Ancient Woodlands; Broadleaved Woodland; Existing buildings; Existing buildings; Watercourses; Active mines/quarries; Local Nature Reserves; Major and minor transport infrastructure; Ministry of Defence (MoD) sites and Ministry of Defence (MoD) Low Flying Zones * *Some constraints have buffers, some of which can change due to turbine size, see RERAs for further detail

Table 2: Wind safeguarding area key specific area considerations

Area	Key Considerations (to be considered alongside all other considerations as set out within this policy and plan)
Area One	• Located immediately adjacent to the Severn Estuary Special Protection Area/Special Area of Conservation/RAMSAR, as such, a site-specific Habitats Regulations Assessment is likely to be required. • Area is within the flood plain.
Area Two	• Area within the flood plain.
Area Three	• Area within the Green Belt and flood plain.
Area Four	• Grade I Horton Court is located to the west of the area, as such siting within the area in relation to this asset and its setting should be considered. • Area is in the Cotswolds National Landscape.
Area Five	• Grade I Dyrham Park is located to the south of the area, as such siting within the area in relation to this asset and its setting should be considered. • Area is in the Cotswolds National Landscape.
Area Six, Nine and Ten	• Areas are in the Cotswolds National Landscape.
Area Seven	• N/A

Area Eight	• Grade I Badminton Court is located to the east of the area, as such siting within the area in relation to this asset and its setting should be considered. • Area is in the Cotswolds National Landscape.
Area Eleven	• Area is located within a narrow area of the Greenbelt, siting to ensure the purpose of the Green Belt is maintained, including in relation to cumulative impact of developments, should be considered.

18. All applications for wind turbines, including those within safeguarded areas, will be assessed against the detailed policy criteria set out in this policy, and all other relevant policies in this Local Plan, policies in any relevant Neighbourhood Plan, National Policy and any further material considerations. Aviation will need to be considered and the advice of relevant agencies should be sought. Several safeguarded areas are in close proximity to each other and the areas themselves are large therefore cumulative impact should be a particular consideration.

19. Policy LP28 - Ecology and Biodiversity Net Gain requires development to be informed by 'appropriate ecological survey' and 'be designed to avoid any harm to identified habitats and species of importance'.

Solar

20. The RERAS showed that the ground mounted solar resource is widespread across the South Gloucestershire area and as such no specific safeguarding of areas is proposed.

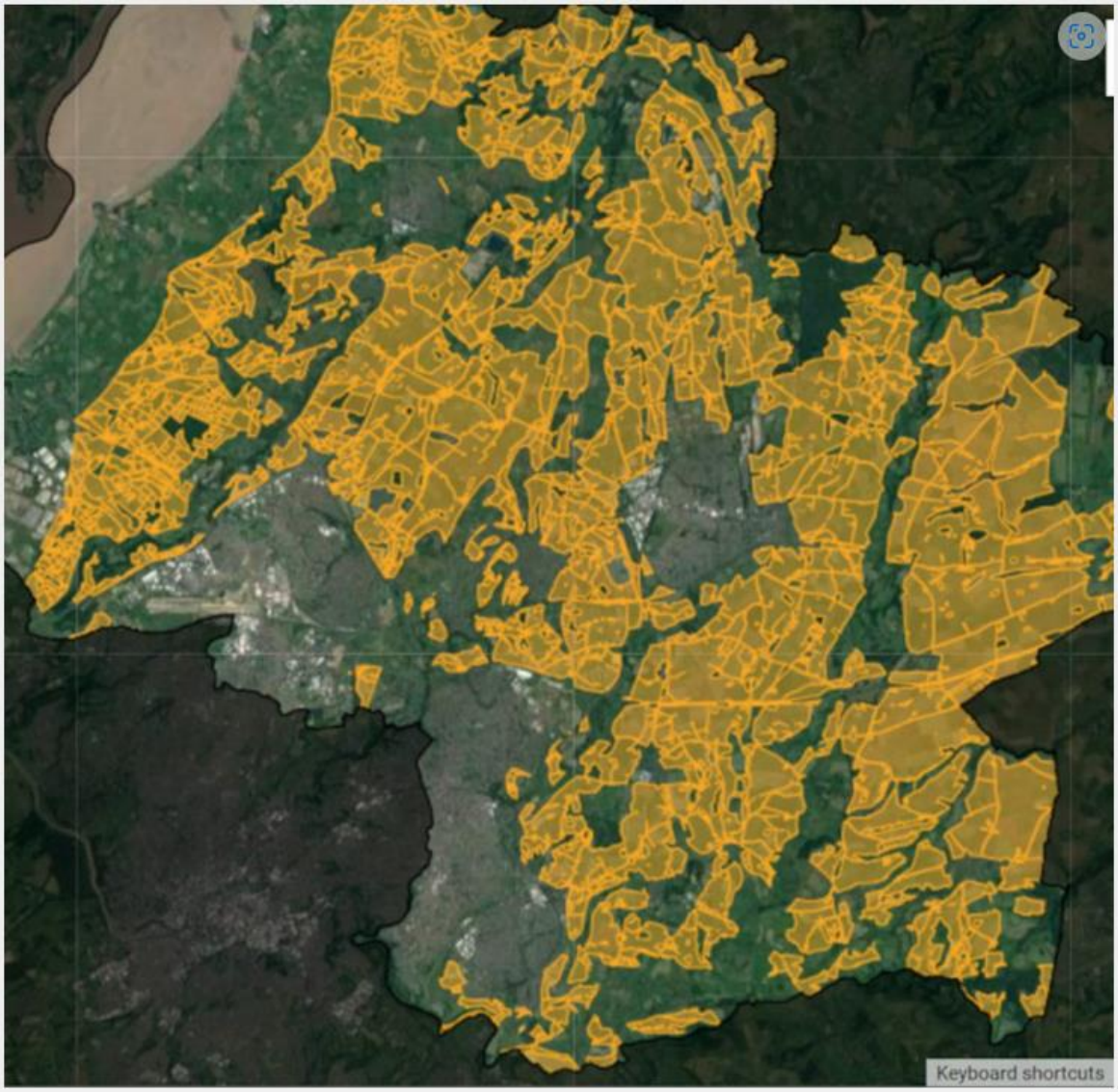


Figure 3. Solar PV Potential resource in South Gloucestershire (data from RERAS, 2021)

21. As the solar resource is widespread and best and most versatile agricultural land is limited, it is considered that it should be avoided unless justification is provided as set out in the policy. As more solar is developed it is considered that cumulative impact is a topic that needs particular consideration.

Mine-water heat

22. South Gloucestershire has an extensive network of former mine workings. These were worked for the extraction of coal over a period of 150 years up to the 1920's. Mine workings flood when no-longer used and this floodwater is warmed by natural geological processes. This provides a potential heat resource, that in combination with heat pumps, can supply heat networks delivering space heating and hot water. Mine water can also be used to provide cooling in new and existing buildings. Ensuring the water regime is protected is a particular additional consideration for this technology.

Biomass

23. For biomass to be a sustainable fuel source it is important that electricity generators are committed to sustainable sources for fuels at the planning stage and that such sources are utilised once the energy plant is operational. If such plants do not use sustainable sources clearly this undermines the benefits of this source of energy and its contribution to responding to the climate emergency, contrary to the 2008 Act.

Energy balancing, including storage and generation

24. As renewable generation accounts for an increasing proportion of electricity generation, and fossil fuel generating plant such as coal and gas, are decommissioned, the requirement for grid balancing services is increasing. These are needed to ensure that energy supply always matches demand and to respond to inherent fluctuations in the output from wind and solar and variations in electricity demand.

25. Grid balancing will be achieved by measures including shifting demand peaks (such as winter evenings) through special energy tariffs, and the use of smart appliances including electric vehicles, and energy storage. Electric vehicles and storage can be charged with electricity when supply exceeds demand, and then supply electricity when demand exceeds supply.

26. Applications for grid balancing services align with the council's climate declaration, however, applications for services using fossil fuels (e.g., gas turbines) are not encouraged and will need to provide a full justification for why this technology, rather than alternatives such as battery storage are proposed.

27. Unlike other renewable energy technologies, battery energy storage does not make use of natural resources that are constrained by location. Stand-alone battery storage facility proposals will therefore need to show how they have considered their choice of location to reduce their overall impact on the natural and historic environment. Co-location with energy demand or new renewable generation is also encouraged as set out below.

28. As set out in the RERAS study when storage is provided alongside large-scale generation it can provide direct balancing benefits storing excess energy when it is not needed by the grid. It also helps to make the best and most efficient use of storage technologies and the embodied energy within them. Therefore, locating storage alongside generation is our strongly preferred approach and for renewable applications

over 1MW energy storage options should be investigated alongside renewable energy generation.

29. Fire risk is an area for consideration, and as set out in the current 'Renewable and low carbon energy' planning practice guidance to the NPPF, the views of the local fire and rescue service will be sought through the development management process.

Additions	
Key evidence	
Other relevant policies to cross-reference?	