

Appendix D: SA Methodology and scoring assumptions for Renewable Energy (RE) Sites

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Description of Sustainability Objectives

The following list identifies the 14 sustainability objectives used for this appraisal, the factors that will be addressed alongside each of these and, their corresponding SEA topics:

A. Natural environment

Objective: To conserve and enhance the habitat and wildlife and landscapes of our natural environment.

Factors:

- Natural habitats and biodiversity; flora and fauna
- Recreational and leisure opportunities compatible with conservation, and creation of multi-functional green infrastructure

SEA Topic(s) covered:

- Biodiversity, fauna, flora
- Population/human health (recreation)

B. Landscape

Objective: To conserve and enhance the landscapes/seascapes of our natural environment.

Factors:

- Landscapes and landscape character
- Coast

SEA Topic(s) covered:

- Landscape
- Water (coast)

C. Historic and built environment

Objective: To conserve and enhance our built and historic assets and promote high quality architecture, design and accessibility in new build development.

Factors:

- Conservation of heritage assets within their setting, including Listed Buildings, Conservation Areas, Archaeological sites and Scheduled Monuments
- Safeguard cultural heritage and local character by conserving and enhancing existing built environment, and creating new high quality built environment, including streets, spaces, public realm and detailing of new buildings.

SEA Topic(s) covered:

- Cultural heritage

D. Climate change mitigation

Objectives: To minimise greenhouse gas emissions

Factors:

- Development that minimises the need to travel by providing access to public transport, cycle and walking links to help reduce use of private car
- Energy efficient developments and buildings, which make the best use of renewable and low carbon energy generation.
- Multi-use green infrastructure which supports or creates transport networks

SEA Topic(s) covered:

- Air
- Climatic factors

E. Climate change adaptation

Objective: To adapt to the possible effects of climate change.

Factors:

- Flood risk and the threat to people and property, and coastal change and adaptation.

SEA Topic(s) covered:

- Climatic factors

F. Land resources

Objective: To utilise our land resources efficiently and minimise their loss or degradation.

Factors:

- Soil quality
- Safeguard mineral resources
- Reuse of previously developed land
- Minimise waste (reuse, recycle, recover)

SEA Topic(s) covered:

- Soil
- Material assets (land, minerals)

G. Water resources

Objective: To utilise our water resources efficiently and minimise their loss or degradation.

Factors:

- Water quality and quantity

SEA Topic(s) covered:

- Water

H. Homes

Objective: To provide and maintain a sufficient supply of good quality, financially accessible homes of mixed type and tenure, suitable to meet the needs of Teignbridge.

Factors:

- Supply of housing (accommodating population growth and changes in household composition)
- Housing mix (tenure and size)
- Housing delivery and diversity of supply (e.g. Housing Association affordable, volume builder and small builder open market, custom and self build)
- Housing affordability

SEA Topic(s) covered:

- Population

I. Health

Objective: To support healthy and active communities where people can enjoy positive, safe and healthy lives with access to attractive environments and opportunities to enjoy and experience them.

Factors:

- Cycle and walking networks
- Open space and green space infrastructure in new developments and existing settlements
- Public recreational, play and leisure opportunities

SEA Topic(s) covered:

- Population
- Air

J. Wellbeing

Objective: To support positive, safe and healthy communities.

Factors:

- Social deprivation
- Air quality, noise and light pollution
- Safe and secure environment with reduced fear of crime

SEA Topic(s) covered:

- Population
- Air

K. Access to services

Objective: To provide accessible and attractive services and community facilities for all ages and interests.

Factors:

- Access to area wide services (nursery and pre-school, primary, secondary, further and higher education; healthcare; etc.)

- Community facilities (local shops, meeting venues, public houses, places of worship)
- Cultural buildings and facilities (e.g. libraries, museums, cinemas)
- Access to high speed broadband

SEA Topic(s) covered:

- Population
- Human health

L. Jobs and local economy

Objective: To foster a strong and entrepreneurial economy and increased access to high quality skills training to support improved job opportunities and greater productivity in Teignbridge.

Factors:

- Employment land supply to cater for businesses of all sizes
- Mix of employment offer
- Productivity of local economy and access to labour supply
- Access to education and skills training
- Protect existing tourism businesses and offer

SEA Topic(s) covered:

- Population
- Material assets

M. Town centres

Objective: To safeguard and strengthen the vitality and viability of our city and town centres.

Factors:

- Diverse town centre economy
- Strengthen and safeguard the vitality and viability of centres
- Effect of new development on existing centres
- Access to existing centres

SEA Topic(s) covered:

- Population

N: connectivity and transport

Objective: To connect people and businesses digitally and physically through the provision of broadband, walking, cycling, public transport, road networks and other transport infrastructure both within Teignbridge and beyond.

Factors:

- Access to services – links between homes, services and businesses by active modes of transport (e.g. cycling and walking)

- Access to public transport (e.g. distance to and frequency of bus and rail services)
- Estimated car reliance and use
- Access to local road network
- Effect on Strategic Road Network (eg. A30; A380; A38)

SEA Topic(s) covered:

- Air
- Climatic factors
- Population/material assets (in terms of benefits for economy)

Sustainability Objective: Natural Environment

Scoring Assumptions:

Renewable energy development can have effects on the natural environment, including species, habitats and connectivity between habitats. However, it is assumed that wildlife corridors will be included on all sites, where required, and no development will be permitted on nationally or internationally designated wildlife sites.

Development sites that are within close proximity of an international, national or local designated conservation site still have the potential to affect the biodiversity or geodiversity of those sites/features, (e.g. through fragmentation, disturbance to species, etc). Conversely, there may be opportunities to promote habitat connectivity if new developments include green infrastructure mitigation. Therefore, while proximity to designated sites provides an indication of the potential for an adverse effect, uncertainty exists for all effects (shown with '?'), as appropriate mitigation may avoid adverse effects and may even result in beneficial effects for some species or habitats.

As a starting point for the assessment, sites within 400m of a European designated site, within the South Hams Sustainment Zone or within 250m of a nationally designated site are considered to have the greatest potential for significant negative effects. Although, as explained above, these effects are uncertain. A buffer zone of 400m is often used between European designated sites and urbanisation influences, so this approach is repeated, although it is noted that potential for significant negative effects may extend further. A smaller buffer of 250m is used for nationally designated sites, although potential for significant negative effects may again extend further. The 10km from international wildlife sites which are affected by recreational impact has also been used as an indication of proximity.

The uncertainty of effects is affected by the unknown details of the development. For example, a smaller wind turbine could have a greater effect on some bat species than a larger one, due to the distance above ground that different species fly at.

Uncertainty is also affected by the fact that not all Functionally Linked Land is known. Some FLL associated with the Exe Estuary SPA/Dawlish Warren SAC is designated as County Wildlife Sites, but not all. Effects in the zone around Exe SPA/Warren SAC may arise from non-recreation disturbance including noise, pollution, lighting, etc during construction and operation, noise and 'flicker' from turbines and reflection/glare from PVs both day and night, and risk of SPA birds flying into turbines.

Uncertainty is further affected as some locally designated sites may be of nationally designated standards. Without further survey work on sites, the sensitivity of them to renewable energy development remains uncertain.

As marine sites for renewables are not proposed there will be no effects on the Lyme Bay to Torbay Marine SAC. East Devon Pebblebed Heaths SPA/SAC would be too far away to be affected by renewable energy developments within Teignbridge. Therefore, for the purposes of this SA:

Internationally designated sites include:

- Exe Estuary SPA/Ramsar Site and its Functionally Linked Land
- Dawlish Warren SAC
- South Hams SAC, including Sustainment Zones, Mitigation Measures Sites, Pinch Points and roosts.

- Dartmoor SAC
- Dartmoor Woods SAC

Nationally designated sites include:

- National Nature Reserves
- SSSIs
- Ancient Woodland

Locally designated sites include:

- County Wildlife Sites
- Local Nature Reserves
- Unconfirmed Wildlife Sites
- Regionally Important Geological Sites and potential RIGS

Priority habitats include:

- Non-recent woodland, parkland and wood pasture and traditional orchards;
- Rivers and streams – in their own right and for Euro protected species such as otters.
- Wetland including marsh, swamp, reedbed, bog, fen, ponds, lakes, with buffers indicated by their hydrology/catchment areas;
- Unimproved and good/diverse semi-improved grassland;
- Heathland/related habitats;
- Moorland, bog and other upland habitats if this search is extending into Dartmoor;
- Coastal habitats including estuaries, maritime cliffs/slopes, saltmarsh, beaches, intertidal areas, rockpools, Sabellaria reefs, etc;

All renewable energy development will be subject to the policies contained within the Local Plan 2020-2040 that protect European Wildlife Sites, Legally Protected and Priority Species, Important Habitats and Features and the South Hams Special Area of Conservation. Certain development will also be subject to Habitats Regulations Assessment.

The following assumptions are used:

- Sites that are **within 400m** of the **Exe Estuary SPA, Dawlish Warren SAC, Dartmoor SAC, or Dartmoor Woods SAC** may have a significant negative (-?) effect.
- Sites **within the South Hams SAC Sustainance Zone** may have a significant negative effect (-?).
- Sites **within 250m** of a **nationally designated** site may have a significant negative effect (-?).
- Sites that are **between 400m and 10km** of the **Exe Estuary SPA, Dawlish Warren SAC, Dartmoor SAC, or Dartmoor Woods SAC** or, are **within the South Hams Landscape Connectivity Zone**, may have a minor negative effect (-?).
- Sites that are **between 250m and 10km** from **nationally designated** sites may have a minor negative effect (-?).
- Sites that are **within 250m** of a **locally designated site** may have a minor negative effect (-?).
- Sites that **contain UKBAP Priority Habitats or habitats that would support protected species** (including cirl buntings, Great Crested Newts or bats) may have a minor negative (-?) effect.

- All other sites could have a negligible (0?) effect.

All site options are assumed to have opportunities for the provision of green infrastructure, with larger sites more likely to be able to provide a range of multi-functional green infrastructure. However, this effect is uncertain in the absence of further investigation into green infrastructure opportunities/requirements.

Therefore:

- Sites of **more than 5ha** could have a minor positive effect as space may be available to provide a range of multi-functional green infrastructure (+?).
- Sites of **less than 5ha** could have an uncertain negligible effect (0?).

However, in some instances, existing green infrastructure may already be present on site and these assets may be lost if not incorporated into the new development. Therefore:

- Development sites that **contain an existing green infrastructure asset**^[1] that could be lost as a result of new development may have a minor negative effect (-?) although this is currently uncertain as it may be possible to conserve or even enhance that asset through the design and layout of the new development.

[1] National Planning Practice Guidance defines green infrastructure networks as including parks, open spaces, playing fields, woodlands, but also street trees, allotments and private gardens. It can also include streams, canals and other water bodies and features such as green roofs and walls.

Sources of data:

Priority Habitat Inventory
 HRA sensitivity work
 GIS data layers for:
 Ancient Woodland
 County Wildlife Sites
 Unconfirmed Wildlife Sites
 County Geological Sites (RIGS) and potential sites (pRIGS)
 Local Nature Reserves (LNR)
 National Nature Reserves (NNR)
 Special Area of Conservation (SAC)
 Special Protection Area (SPA)
 Ramsar sites
 Sites of Special Scientific Interest (SSSI)
 Cirl bunting breeding territories and wintering zones
 Selected Priority Species mapping
 Great Crested Newt consultation zones
 Aerial imagery

Sustainability Objective: Landscape

Scoring assumptions:

Renewable energy development in sensitive locations could have adverse effects on the character and quality of the landscape through the introduction of utilitarian structures that are at odds with natural features. These effects will differ in extent, but are most likely to be negative or negligible, rather than positive. Effects will depend on the sensitivity of the landscape within which developments are sited, but will also be uncertain as factors such as the design, scale, height, local topography and mitigation of the development are not known at this stage.

All development would be subject to the landscape protection policies of the Local Plan 2020-2040, which provide protection for the landscape, including Undeveloped Coast, Strategic Open Breaks, setting of Dartmoor National Park, the Exeter Urban Fringe and the historic designed landscapes around the Haldon Hills of Mamhead, Oxtou, Powderham and the Haldon Estate.

The purpose of the SA is not to offer a definitive assessment of the detailed effects of each possible development on the landscape, but is a tool to compare the sustainability of different sites and to highlight the potential for significant negative effects.

Sites that are included within the Proposed Submission version of the Local Plan will be subject to further assessment and SA, and effects on the landscape would further be considered should specific proposals for a site and submitted as part of a planning application, through a formal Landscape and Visual Impact Assessment.

The following base assumptions will be used:

For **all renewable energy developments**, irrespective of type, area of solar/pv array, height/number of turbines:

- Sites that are **within** the **Undeveloped Coast** designation could have a significant negative (--?) effect, although this is uncertain as it is dependent on specific siting, design, size/height and mitigation.
- Sites that are **within 5km** of the **Dartmoor National Park** boundary could have a significant negative (--?) effect, although this is uncertain as it is dependent on specific siting, design, size/height and mitigation.

In addition, for **solar or photovoltaic** proposals, the landscape sensitivity to solar/pv development assessment contained in table 5.1 of the Solar Photovoltaic Development SPD will be used. However, effects will be unknown as they will also depend on factors such as the design, scale, local topography and mitigation of the development.

- Developments identified as having high, high-moderate or moderate sensitivity could have a significant negative effect on the landscape (--?)
- Developments identified as having low-moderate or low sensitivity could have a minor negative effect (-?)

For **wind renewable energy** proposals, the landscape sensitivity to a 1MW wind turbine is used as a guide. It is acknowledged that some sites will be suitable for smaller or for larger turbines, and that actual landscape sensitivity may be greater or less depending on the specific wind turbine, which can vary in height and design depending on manufacturer.

The landscape sensitivity is based on the assessment contained in table 4.1 of “An Assessment of the Landscape Sensitivity to Onshore Wind Energy Developments in Teignbridge District”. All Landscape Character Areas are either of high or moderate – high sensitivity to 1MW turbines, which would likely fall within the “large” size category. Therefore the scoring assumptions do not differentiate between these two levels of sensitivity, which could both have potential significant negative effects on the landscape. However, effects will be unknown as they will also depend on factors such as the height, number of turbines, local topography and mitigation of the development.

- Developments identified as having moderate- high or high sensitivity could have a significant negative effect on the landscape (--?)

In addition, **cumulative negative effects** on the landscape could result from proposed renewable energy schemes if they are close to other similar development, whether existing, under construction, with planning permission, or under consideration (via a current planning application). This information is not readily available and a disproportionate level of time would be needed to map all existing, proposed or approved renewable energy development in order to analyse cumulative effects at this stage. However, assessment can easily be made as to whether any of the current sites being assessed has the potential for greater negative effects if developed alongside each other. As such, the following will also be used:

- Sites that are **within 1km of other sites** under consideration could have a significant negative effect on the landscape (--?). The effect is unknown as the size, or height and scale of the proposed developments are not yet known.

Sources of data:

GIS data layers for: Dartmoor National Park boundary

Undeveloped Coast designation: Teignbridge Local Plan 2013-2033

An Assessment of the Landscape Sensitivity to Onshore Wind Energy Developments in Teignbridge District – LUC March 2017

Solar Photovoltaic (PV) Developments in the Landscape - Supplementary Planning Document July 2018

2021 Low Carbon Evidence Base by Exeter University/Centre for Energy and the Environment – NEEDS HYPERLINK

Solar/pv size guide is shown below:

Size	Area of solar/pv development
Very small	<1ha
Small	1-5ha
Medium	5-10ha
Large	10-15ha
Very Large	15-20ha

Sustainability Objective: Historic and Built Environment

Scoring assumptions:

Local Planning Authorities have a legal duty to conserve and enhance heritage assets. However, renewable energy development has the potential to negatively affect heritage assets, both directly and indirectly.

It could directly affect a heritage asset by physically altering or damaging it, or could have an indirect effect by changing its setting. Direct effects are easier to assess, and sites that contain or lie immediately adjacent to a designated heritage asset have a degree of likelihood of resulting in significant negative effects on that heritage asset.

Indirect effects are harder to assess. Historic England's definition of the setting of a heritage asset is contained in the National Planning Policy Framework Glossary in Annex 2, which states

"The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance, or may be neutral".

Effects on the setting of individual heritage assets are difficult to determine at this early stage of site assessment. Although we will know the type of renewable energy development and the size of the site, all other details about the development remain unknown. In addition, although it is possible to identify heritage assets that could be affected, it is not possible to assess the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated. Renewable energy developments will not have a positive effect on heritage assets and their settings – effects will be negative. However, it is assumed that there will be a difference in magnitude of negative effects between solar/pv development and wind turbine development, as effects from wind turbines are difficult to mitigate. It is also assumed that development will involve mitigation to avoid or minimise harm to heritage assets and their settings. Given the above, all effects are uncertain (?). In addition to effects being uncertain, they will also be temporary, with wind and solar/pv renewable energy developments being removed once no longer in use.

This SA assumes that effects on heritage assets and their settings are harder to mitigate for wind turbine developments, due to their height and the presence of moving blades, than solar/pv development. Therefore, a greater distance has been used to identify the potential for significant negative effects from wind generated renewable energy development than for solar/pv. This SA also assumes that the potential for harm to the setting of a Registered Park and Garden could extend further than that for effects on the settings of Listed Buildings, Conservation Areas and Scheduled Monuments. This is because such designed landscapes often rely on their surroundings – the concept of a "borrowed landscape".

The SA assumes that all development will be subject to the policies contained in the Teignbridge Local Plan (EN16: Heritage Assets and EN17: Conservation Areas), which ensure that development protects and enhances Teignbridge's designated heritage assets, as well as guidance contained within the NPPF. In addition, this objective of the SA takes account of other measures that are being undertaken to positively affect climate change, including policies in the Draft Local Plan 2020-2040 Part 1 that require carbon neutral development, electric vehicle infrastructure and sustainable travel

networks, and those that support energy storage. Further protection of the historic designed landscapes around the Haldon Hills of Mamhead, Oxtun, Powderham and the Haldon Estates is provided within Policy EN4: Landscape Protection and Enhancement.

The purpose of the SA is not to offer a definitive assessment of the detailed effects of each possible development on the historic environment, but is a tool to compare the sustainability of different sites and to highlight the potential for significant negative effects.

Sites that are included within the Proposed Submission version of the Local Plan will be subject to further assessment and SA, and effects on the historic and built environment would further be considered should specific proposals for a site and submitted as part of a planning application.

For the purposes of this SA, the following scoring assumptions will be used:

For any renewable energy development:

- A **likely significant negative effect** (--) will be identified where a site **contains/lies within or lies immediately adjacent to** a designated heritage asset including any Listed Buildings (and their curtilages), Scheduled Monuments, Registered Parks and Gardens, and Conservation Areas.

For solar renewable energy development:

- An **uncertain significant negative effect** (--?) will be identified where a site is **within 3km** of a designated heritage asset including any Listed Buildings, Conservation Areas, Scheduled Monuments or Registered Parks and Gardens.
- An **uncertain minor negative effect** (-?) will be identified where a site lies **more than 3km** from a designated heritage asset including any Listed Buildings, Conservation Areas, Scheduled Monuments or Registered Parks and Gardens.

For wind generated renewable energy development:

- An **uncertain significant negative effect** (--?) will be identified where a site is **within 5km** of a designated heritage asset including any Listed Buildings, Conservation Areas or Scheduled Monuments or, is **within 10km** of a **Registered Park and Garden**.
- An **uncertain minor negative effect** (-?) will be identified where a site lies more than **5km** from a designated heritage asset including any Listed Buildings, Conservation Areas or Scheduled Monuments or **more than 10km** from a **Registered Park and Garden**.

In addition, renewable energy development can affect the quality of the existing built environment if poorly located or designed or not sufficiently mitigated. Therefore, the following additional scoring assumptions have also been made:

- A **potential significant negative effect** (--?) will be identified where a **medium, large or very large** renewable energy development site is within **1km of a Settlement Limit**.
- A **potential minor negative effect** (-?) will be identified where a **small or very small** renewable energy development site is within **1km of a Settlement Limit**.

Sources of data:

Devon Environment Viewer

GIS data layers for:

Settlement Limits

Conservation Areas

Listed Buildings

Registered Parks & Gardens

Scheduled Monuments

Aerial Imagery

Sustainability Objective: Climate Change Mitigation

Scoring assumptions:

The number of suitable and developable renewable energy generation sites in the district are finite in number. Whilst renewable energy development, and in particular wind generated renewable energy development can be challenging to deliver and, it is important that deliverable sites are maximised.

This methodology applies an assumption that, with regard to solar/pv development, the larger the site, the greater the potential of the site for achieving a larger scale of renewable energy generation (ie equating to the potential amount of renewable solar/pv energy resource *and* the scope for flexibility in the planning and design of that site).

For wind generated renewable energy, it assumes that the larger the site, the larger the turbine (with an assumed more powerful output) or greater number of wind turbines could be accommodated within it. The exact size, power output or number of turbines that sites could accommodate is not known, so for the purposes of this methodology, larger sites are assumed to have a greater positive effect in relation to climate change mitigation.

On this basis the following assumptions will be applied:

For **any renewable energy** development:

- Sites of **more than 5ha** will have a known significant positive effect (++) on climate change mitigation
- Sites of **5 ha or less** will have a known minor positive effect (+) on climate change mitigation

Sources of data:

Assumed capacity of each site (stated in the appraisal matrices or 2021 Low Carbon Evidence Base)

Sustainability Objective: Climate change adaptation

Scoring assumptions:

Where site options are located in areas of high fluvial (river) flood risk, renewable energy development could increase the risk of flooding in those areas (particularly if the sites are not previously developed) and could increase the number of assets at risk from flooding. In addition, they could be susceptible to flooding themselves.

National Planning Practice Guidance identifies which types of land uses are considered to be appropriate in Flood Zones 2, 3a and 3b.

- ❖ Depending on its type, design and form, renewable energy infrastructure can be classified as: 'Essential Infrastructure' which is suitable in flood zones 1 and 2 (but requires an exception test for locations in zone 3a and 3b) (eg wind turbines) , or
- ❖ a 'more vulnerable use', which is suitable in areas of flood zone 1 and 2 but would require an exception test in flood zone 3a, and is unsuitable in flood zone 3b (eg solar farms).

A sequential approach should be followed to steer new development to areas with the lowest probability of flooding (i.e. flood zone 1) and local planning authorities will need to undertake a flood risk sequential test when allocating sites. Where there are no reasonably available sites in flood zone 1, local planning authorities in their decision making should take into account the flood risk vulnerability of land uses and consider reasonably available sites in flood zone 2. Only where there are no reasonably available sites in flood zones 1 or 2 should the suitability of sites in flood zone 3 (areas with a high probability of river or sea flooding) be considered, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required. (Essentially, the Exception Test requires proposed development to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall.) However, effects are uncertain as the flood risk may be able to be mitigated (?).

In addition, sites could be susceptible to flooding from predicted increases in tide levels.

A Critical Drainage Area (CDA) is an area that has critical drainage problems and which has been notified to the local planning authority as such by the Environment Agency in line with the NPPF. In these locations, there is a need for surface water to be managed to a higher standard than normal to ensure any new development will contribute to a reduction in flooding risks in line with NPPF. Renewable energy development in these areas could lead to an increase in surface water run-off and negative effects on climate change adaptation if surface water is not managed properly.

Therefore, the scoring assumptions below are used:

- **Solar/pv** renewable energy development sites that are entirely or mainly (i.e. >50%) on greenfield land that is within **Flood Zone 3b** will have a likely significant negative effect (--)
- **Wind** generated renewable energy development sites that are entirely or mainly (i.e. >50%) on greenfield land that is within **Flood Zones 3a or 3b** will have an uncertain significant negative effect (--?) dependent on the proportion of hard

surfacing within the site, SuDS provision made and whether the design of development brought forward could avoid areas of flood risk.

- **Solar/pv** renewable energy development sites that are entirely or mainly (i.e. >50%) on greenfield land that is within **Flood Zone 3a** will have uncertain significant negative effects (--?) dependent on the proportion of hard surfacing within the site, SuDS provision made and whether the design of development brought forward could avoid areas of flood risk.
- **Solar/pv or wind** generated renewable energy development sites that are entirely or mainly (i.e. >50%) on greenfield land that is within **Flood Zones 1 or 2** will have uncertain minor negative effect (-?) dependent on the proportion of hard surfacing within the site, SuDS provision made and whether the design of development brought forward could avoid areas of flood risk.
- **Solar/pv or wind** generated renewable energy development sites that are entirely or mainly (i.e. >50%) within the **tidal extent of 2052** or that lie entirely or mainly (i.e. >50%) within a **CDA** will have an uncertain significant negative effect (--?) dependent on the proportion of hard surfacing within the site, SuDS provision made and whether the design of development brought forward could avoid areas of flood risk.
- Sites that are on **brownfield land** (and/or have significant areas of hard surfacing) outside of flood zones 3a and 3b are likely to have a negligible (0) effect.

Sources of data:

GIS data layers for:

Flood Zones

Tidal extent 2052

Critical Drainage Areas

Aerial imagery

Sustainability Objective: Land Resources

Scoring assumptions:

It is recognised that all of the renewable energy site options are greenfield sites as there are not sufficient previously developed (brownfield) sites within the area. As such, there is limited opportunity for the reuse of previously developed land, which represents more efficient use of land in comparison to the development of greenfield sites.

The development of greenfield land could result in the removal of high quality agricultural land out of agricultural production, although it should be acknowledged that renewable energy developments (such as wind turbines and ground mounted solar panels) are not necessarily a permanent use and the agricultural land (and soils) is not necessarily sterilised as a result of the development, meaning there will always be uncertainty of effect (?).

Therefore, the following assumptions are used:

- Sites containing **more than 5 ha of Grade 1[1], Grade 2 or Grade 3a / 3b** agricultural land would have a uncertain significant negative (--?) effect.
- Sites containing **between 1 ha and 5 ha of Grade 1 or Grade 2 or Grade 3a / 3b** agricultural land would have an uncertain minor negative (-?) effect.
- Sites containing **less than 1 ha of Grade 1 or Grade 2 or Grade 3a / 3b** agricultural land would have a negligible (0) effect
- Sites that comprise mainly or entirely of **Grade 4** or lower agricultural quality land would have a negligible (0) effect.

In addition, as part of a mixed effect:

- Sites with **up to 1ha of previously developed land** would have a minor positive (+) effect
- Sites with **more than 1ha of previously developed land** would have a significant positive (++) effect

This assessment does not consider that renewable energy developments sterilise minerals, because renewable energy development such as wind turbines and ground mounted solar have a limited lifespan. Therefore sites within Mineral Safeguarding Areas would be considered suitable subject to confirmation that the minerals are not required in the short to medium term, as determined by the Mineral Planning Authority / Mineral owner. Whilst the temporary use of land, which is required in the longer term for mineral extraction, could be regarded to have positive effects on land resources, without knowing the intended timescale for mineral extraction, this positive effect is uncertain. Therefore, all assessments would have an uncertain negligible (0?) effect on minerals at this stage.

^[1] Where detailed Agricultural Land Classification was not available for the entirety of a site, the National Agricultural Land Classification was used.

Sources of data:

GIS data layers for:

Agricultural Land Classification

Mineral Safeguarding Areas

Aerial imagery

Sustainability Objective: Water Resources

Scoring assumptions:

The renewable energy developments considered in this assessment (wind generated and solar/PV) will not have any permanent effects on water consumption or quality. However, the location of renewable energy development sites could affect water quality in nearby waterbodies during construction.

The extent to which water quality is affected would depend on construction scale and techniques and therefore effects are uncertain at this stage, although they would be controlled through a Construction and Environmental/Ecological Management Plan should planning permission be granted. On this basis all assessments for water quality will be considered to have an uncertain effect (?). However, given the potential for sites containing or lying immediately adjacent to watercourses to be affected negatively during the construction phase of the development if not managed properly, the following scoring assumption is used:

Sites **containing or lying adjacent to a watercourse** are assumed to have an uncertain minor negative effect (-?).

Sites that **do not contain or lie adjacent** to a watercourse will have an uncertain negligible effect (0?).

Sources of data:

OS mapping of watercourses

Sustainability Objective: Homes

Scoring assumptions:

Wind turbine development could have a negative effect on new housing proposals (yet to be developed or allocated) as buffers that may be required could reduce its potential capacity for residential development. In addition, even if the proximity of the renewable energy development would not reduce the capacity of the site, there may be developer concerns that prospective house purchasers would not want to live in close proximity to such development, which may prejudice its delivery.

Potential effects in relation to the amenity of existing residential development is addressed in the Wellbeing Chapter.

Therefore;

- Renewable energy development sites **within 1km of a housing site option** (as identified within the draft Teignbridge Local Plan 2020-2040 Part 2 – Site Options consultation) would have an uncertain significant negative effect (--?)
- Renewable energy development sites **within 2km of a housing site options** (as identified within the draft Teignbridge Local Plan 2020-2040 Part 2– Site Options consultation) would have an uncertain minor negative effect (-?)
- Sites more than 2km will have a negligible effect (0).

Sources of data:

Teignbridge Local Plan 2020-2040 Part 2 – Site Options consultation

Sustainability Objective: Health

Scoring assumptions:

Public health will be influenced by the proximity and accessibility of green infrastructure and open spaces, walking and cycle paths, which can encourage participation in active outdoor recreation and active travel.

It is anticipated that larger sites might provide an opportunity to deliver active transport links and in some circumstances possibly open space. Larger sites close to existing settlements are more likely to be able to provide useful active travel routes or open spaces. However, at this stage there is no guarantee that the provision of open space or sustainable travel routes will be provided, so effects are uncertain (?).

The following scoring assumptions are used:

- Sites of **3 ha or more** and **within 3 km of a Settlement Limit** will have an uncertain minor positive (+?) effect.
- Sites of **less than 3 ha** or **more than 3km from a Settlement Limit** will have an uncertain negligible (0?) effect.

Sources of data:

GIS data layers for: Settlement Limits as shown in the adopted Local Plan 2013-2033

Sustainability Objective: Wellbeing

Scoring assumptions:

The primary effect of wind generated renewable energy development for this criteria relates to noise and potential flicker from spinning blades. Where new wind generated renewable energy site options are within close proximity (450m) of sensitive receptors (e.g. existing houses, schools, hospitals etc.) there may be negative effects on amenity. However, this will depend on the size of the turbine and the topography of the land and, as such, effects are uncertain.

Therefore, in relation to **wind generated renewable energy** development:

- **Wind** generated renewable energy sites that are in close proximity (**within 450m**) to **existing residential development, existing residential allocations** (in the adopted Local Plan 2013-2033) or **other sensitive receptors** could have a significant negative (--?) effect.
- **Wind** generated renewable energy sites **more than 450m from sensitive receptors** would have an uncertain negligible effect (0?).

In addition, solar/pv development can result in glint and glare. This could affect sensitive receptors (e.g. existing houses, schools, hospitals etc.) and residential amenity. The level of glare will depend on orientation towards the sun and the specific relationship between the receptor and the development and cannot be determined accurately at this stage, making effects unknown (?).

The following assumptions are made in relation to **solar/pv renewable energy** development:

- **Solar/pv** renewable energy development sites that are **within 1km** of **existing residential development, existing residential allocations (in the adopted Local Plan 2013-2033)** or **other** sensitive receptors could have a significant negative (--?) effect.
- **Solar/pv** renewable energy sites that are **more than 1km** from **sensitive receptors** would have an uncertain negligible effect (0?).

In some cases there may be positive effects from the installation of a wind turbine, if it is a community asset and used to contribute towards the energy required by a community, which could help to reduce fuel poverty in more deprived areas. However, it is not possible to know at this stage whether such community benefits would result, and this cannot be scored.

Sources of data:

GIS data layers for:

Residential allocations

Schools

Hospitals

Aerial imagery

Sustainability Objective: Access to services

Scoring assumptions:

This form of development has no effect on the objective and all sites should score a negligible effect (0).

Sustainability Objective: Jobs and the local economy

Scoring assumptions:

The development of renewable energy infrastructure in the plan area will create job opportunities during both the construction phase and operational lifetime of infrastructure. However, the location of sites is driven by the location of renewable energy resources meaning sites may not be able to be located close to sources of labour.

The jobs density resulting from renewable energy development (ie the relationship between the size of a site and the amount of jobs created) is unclear, as it does not necessarily follow that more jobs are generated by development of a larger site in relation to a smaller site - for example, a large wind turbine may not result in more jobs compared to a smaller wind turbine. Therefore effects are uncertain.

In summary, both **wind generated and solar/pv renewable energy** development are considered to have a minor positive or negligible effect on this criteria and sites will be scored as follows;

- Sites of **5+ ha** will have an uncertain minor positive effect (+?)
- Sites of **0 – 5 ha** will have a negligible effect (0)

Where sites are **currently used or allocated for employment** development, renewable energy development may prevent the further use of the land for this purpose, resulting in a negative effect on jobs and the local economy. However, this effect is uncertain as only part of the site may be required. Therefore, in these cases,

- Sites which would result in the **loss of 1 ha or more existing or allocated employment land** would have an uncertain minor negative effect (-?).

In addition sites that are **used for, or lie adjacent to, a tourist business**, including a tourist attraction or caravan park, may have a negative effect on the business. This effect is uncertain, so in these cases:

- Sites that are **used for or lie adjacent to a tourism business** will have an uncertain minor negative (-?) effect.

GIS data layers for:

Employment sites

Employment allocations

Aerial imagery

Sustainability Objective: Town centres

Scoring assumptions:

Although the use of large roofs within town centre buildings for solar/pv energy generation would result in minor positive effects on the running costs of individual businesses, it would do little in relation to the wider vitality and viability of town centres. Sites have not been identified on existing buildings and therefore, all sites score a negligible effect (0) in relation to the vitality and viability of town centres.

Sustainability Objective: Connectivity and transport

Scoring assumptions:

All the sites are at least 150m away from existing railways, motorways and other 'A' roads. However, large renewable energy infrastructure can provide a distraction to drivers, and solar/pv can cause glint and glare to drivers of both vehicles and trains. The level of glare will depend on orientation towards the sun and the specific relationship between the receptor and the development and cannot be determined accurately at this stage, making effects unknown (?). However, for the purposes of this SA, the following assumptions are made:

- Renewable energy developments **within 500m of "A" Class roads, motorways or railway lines** could have a minor negative effect (-?).
- Renewable energy developments **more than 500m from "A" Class roads, motorways or railway lines** could have a negligible effect (0?).

The potential for sites to provide green infrastructure for sustainable transport is assessed under the Health Objective.