

ENERGY GENERATION – SOLAR FARMS

ADVICE FOR PLANNING OFFICERS AND APPLICANTS SEEKING PLANNING
PERMISSION FOR SOLAR FARMS WHICH MAY IMPACT ON
NATURAL HERITAGE

ISSUE 02 APRIL 2017

Introduction

Solar farms have the potential to impact on Natural Heritage. This standing advice indicates where impacts can occur and provides advice on assessment and mitigation that should be applied for all solar farm proposals. This advice only relates to non Environmental Impact Assessment (EIA) developments.

Solar panel electricity systems, or solar photovoltaics (solar PV), capture the sun's energy using photovoltaic cells. In solar farms the panels are placed on the ground on a mounting system. They can be either static or moving and the mounting system can sit on or be driven into the ground. Shading of the panels can affect their output overall but they will work without direct sunlight. Sites usually require security fencing and some security lighting.

Legislation

The Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 places a duty on public bodies *'In exercising functions relating to land under any statutory provision to have regard to the need to conserve the natural beauty and amenity of the countryside'*.

The Habitats Directive (92/43/EEC), transposed by the Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended), requires that every public body consider the implications of a proposal, such as solar farms on European designated sites and make an appropriate assessment where there are any likely significant effects.

The Wildlife and Natural Environment Act (Northern Ireland) 2011 (known as the WANE Act) introduced a biodiversity duty on public bodies in Northern Ireland. It states that *'it is the duty of every public body, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions'*.

Some species that should be considered are specifically protected under the Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended) and others under the Wildlife (Northern Ireland) Order 1985 (as amended).

Planning Policy

In addition to Planning Policy Statement 18, Renewable Energy, Planning Policy Statement 2, Natural Heritage (Policies NH1, NH2, NH3, NH5 and NH6) and the Strategic Planning Policy Statement apply to all cases that have the potential to impact on designated sites, protected species, priority habitats and AONBs.

Environmental Impacts

Landscape and Visual

The European landscape Convention defines landscape as: “*An area as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*” (Council of Europe 2000).

Free standing solar PV developments can occupy substantial areas of land and may impact on both the visual amenity and landscape character of an area. Landscape effects may include the following:

- (i) Solar PV developments may be particularly visible in open landscapes or on elevated land, especially where covering significant areas.
- (ii) The perceived urban/industrial character of solar PV developments can increase the perceived human influence on the landscape and erode the intrinsic rural character of an area.
- (iii) Solar PV developments will change the land use and appearance of fields, affecting land cover patterns and landscape character.
- (iv) Screen planting around solar PV developments can have a detrimental impact on the landscape character, creating an inappropriate sense of enclosure in open landscapes.
- (v) Structures, including panels, security fencing and other built elements can appear out of place in landscapes that are perceived as wild, natural or remote, and that are valued for these qualities.

The Northern Ireland Regional Landscape Character Assessment (2016) and the Northern Ireland Landscape Character Assessment (2000) provide information on the sensitivity of landscapes to development.

Habitat

Whether proposals are within designated sites or priority habitat, they have the potential for direct loss of habitat from the footprint of the proposal and associated access roads. Cabling has the potential to create new drainage pathways if present within a wet habitat or peatland. There can also be indirect impacts on sensitive habitat outside the development footprint from construction activities.

Species

In general solar arrays are not considered to significantly impact on wildlife. However, there are some specific concerns from the associated works.

Ground nesting birds are at risk from works through disturbance and possible long term displacement. All ground nesting birds are priority species so must be carefully considered if present. Birds are also at risk from collision from powerlines which must be considered when development is near Special Protection Areas (SPAs) and important flyways.

There is the potential for impacts on bats if significant lighting is introduced into a dark site. There may also be loss of tree roosts if trees need to be felled, or loss of foraging if hedgerows are removed.

As with any proposal with ground works there is the potential to impact directly on badgers and their setts if present. Additionally solar farms usually require a security fence which can restrict access to foraging areas of a family group.

Survey Requirements

The survey requirements for solar farms are dependent on the location and size of a proposal.

Landscape and Visual Impact Assessment (LVIA) is a key part of assessing the impact of proposed solar PV developments. The level of detail required will be dependent upon the sensitivity of the site and the nature of the proposal and its potential effects. The significance of impacts should be assessed by reference to the sensitivity of the landscape or viewer and the magnitude of the change that is expected to occur.

All solar PV development applications affecting an **Area of Outstanding Natural Beauty** (AONB) or the **World Heritage Site** (WHS) and/or its distinctive setting will require an LVIA.

If a proposal is located within or near a designated site, there is greater potential to impact on designated features. A habitat survey is highly likely to be required for proposals within a designated site. In addition breeding and wintering bird surveys will be required where birds are a feature of the designated site. There may be other specialist surveys dependent on the designated features.

The Northern Ireland Environment Agency (NIEA) Biodiversity Hazard mapping highlights those areas where priority habitats are more likely to occur. Where a proposal is located within the Biodiversity Hazard mapping, the Priority Habitat standing advice should be followed.

The Biodiversity Hazard mapping also highlights locations where ground nesting birds (breeding waders) are more likely to be present. Where a previous record of a breeding wader or wetland habitat, including wet grassland, is present, an assessment of likelihood of ground nesting birds must be undertaken by a suitably experienced ecologist. Where

likelihood is established, a breeding bird survey will be required.

The Northern Ireland Biodiversity Checklist <https://www.daera-ni.gov.uk/topics/environmental-advice-planners> should be referred to when deciding if a survey is required for protected species.

Where mature trees are to be felled, an assessment of bat roost potential must be undertaken by a suitable ecologist. The Bat standing advice must be followed.

Where a large solar farm is proposed it is best practice to request an extended phase 1 survey of the site as this ensures all the above issues are considered by an experienced ecologist.

Sources of Information

Spatial information

- **NIEA Protected Sites**
 - Designated sites
 - Special Areas of Conservation (SACs)
 - Special Protection Areas (SPAs)
 - RAMSaR sites
 - Areas of Special Scientific Interest (ASSIs)
 - Areas of Outstanding Natural Beauty (AONBs)
- **Landscape Character Series**
 - Northern Ireland Regional Landscape Character (2016)
 - Northern Ireland Landscape Character Assessment (2000)
- **NIEA Biodiversity Hazard Mappings** showing areas likely to be of significance for priority habitats containing
 - Local Wildlife sites
 - Mapped priority habitats
 - Some sensitive birds sites including ground nesting birds (often displayed as 1km² area grids)

Mitigation - Landscape

Generic Guidance on siting Solar PV Developments

The following provides some generic guidance on siting solar PV developments, focussing on minimising landscape and visual impacts;

- (a) Site solar PV developments on flat sites or on lower slopes/within folds in gently undulating lowland landscapes rather than on highly visible slopes or coastal headlands.

- (b) Site development in landscapes with a sense of enclosure rather than in open and unenclosed landscapes.
- (c) Site development away from undeveloped areas with semi-natural landcover and give preference to PV arrays on previously developed land, land perceived as of a developed nature or land adjacent to groups of rural buildings that are themselves well-sited.
- (d) Consider views from local viewpoints, popular routes, recognised/iconic views and designated landscapes when considering the siting of solar PV development.
- (e) Avoid siting field-scale PV development in areas valued for their remoteness from human influence and perceived “untamed” naturalness.
- (f) Consider the landscape impacts of transmission infrastructure when siting development.
- (g) Ensure siting of solar PV development does not adversely affect the landscape character and quality of AONBs or other designated landscapes.
- (h) Ensure siting of solar PV development does not damage the special qualities of the landscape as recorded in the landscape character area descriptions outlined in the Northern Ireland Regional Landscape Character Assessment (2016) and the Northern Ireland Landscape Character Assessment (2000)

Mitigation – Habitats and Species

The following would be considered to be standard mitigation which would reduce its impacts on habitats and species.

- Avoid designated sites and priority habitats
- Retain hedgerows and trees and ensure no works within the root protection zone. This will help to limit impacts to wildlife associated with trees and hedgerows and additionally provides screening.
- Avoid sites with ground nesting birds
- Ensure powerlines are sensitively located in relation to birds and landscape
- Provide mammal gates or space under security fencing for movement of mammals
- All security lighting should be on automated sensors so they are on only when required

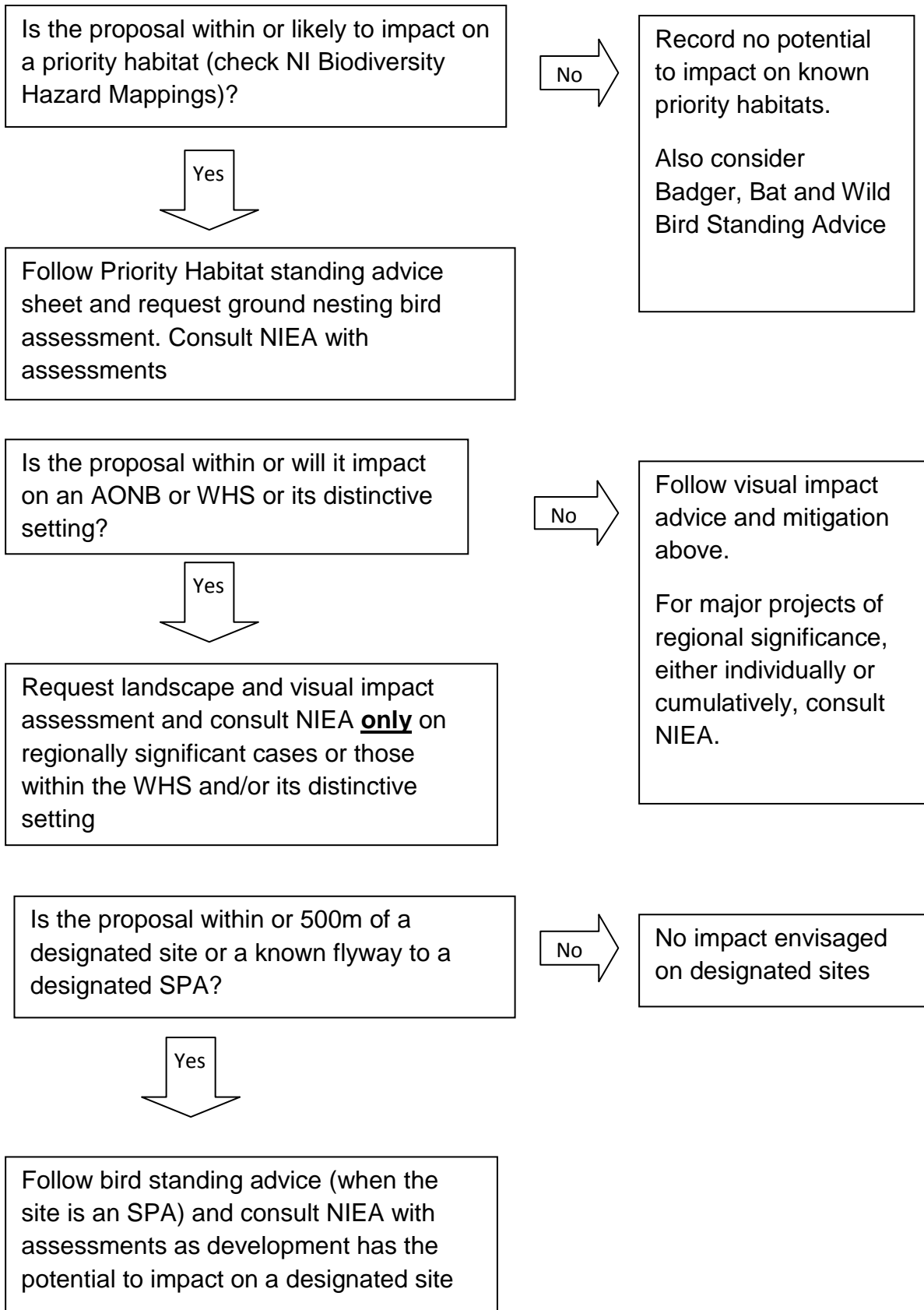
Opportunities

There are opportunities for biodiversity gain where proposals are located away from sensitive habitats and species. The BRE guidance (2014) provides advice on realising biodiversity opportunities on a solar farm.

References

BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker and L Greene
Guidelines for Landscape and Visual Impact Assessment Third Edition 2013 published by
the Landscape Institute and the Institute of Environmental Management & Assessment

Process to consider for applications when dealing with Solar Farms for non-EIA development





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EMFG Planning Response Team
Klondyke Building
Cromac Avenue
Malone Lower
Belfast
BT7 2JA
T: (028) 9056 9604
E: PlanningResponse.Team@daera-ni.gov.uk