Peat in the Context of Environmental Impact Assessment (EIA) and an Instructive Tale from Scotland

Peatlands can be an important influence on the hydrology of catchments, and maintaining peatlands is important for ecology and carbon storage. UK and international law recognises the conservation importance of types of peatland habitat and the associated species they can support. Some peat habitats are designated under international law as protected sites (e.g. Natura 2000 – typically Special Areas of Conservation designated under the EC Habitats Directive) or under UK law (Site of Special Scientific Interest). Lowland raised bog and blanket bog (both types of peatland) are also protected habitats that were originally identified as being threatened habitats and requiring conservation action under the UK Biodiversity Action Plan. UK BAP habitats were used to help draw up protected habitats lists that have now been adopted under Natural Environment and Rural Communities Act 2006 (England and Wales) and Nature Conservation (Scotland) Act 2004.

In the context of EIA (i.e. the assessment of impacts and consideration of effect significance), the disturbance or removal of peat could result in impacts to the following:

- Catchment responses to precipitation (e.g. changes to run-off patterns and erosion and alteration of flood risk down catchment);
- Water quality (e.g. increase in suspended solids or alteration to water chemistry);
- Ecology/habitats (e.g. disturbance or removal of protected habitats and species, reduction in biodiversity, loss of connectivity between habitats);
- Rapid carbon release and carbon storage losses; and
- Landslide potential (i.e. increased by changes in vegetation cover, erosion and water content).

The more understanding we have of the peat at a development site and its hydrology, the more we can understand the potential impact that a development might have and how we can limit or avoid the most significant effects.

In order to understand if a development could result in an impact to peat you need to know if there is peat at your site; where is it located, how deep is it, what the slope of the bedrock beneath the peat is; and if the peat is active (i.e. currently forming and accumulating or supporting peat forming vegetation) or inactive (currently lacking peat forming vegetation). Sources of desk study information typically include:

- British Geological Survey mapping of superficial deposits;
- Soil mapping;
- Previous ground investigation reports and publications;
- Aerial imagery (i.e. from which drainage channels, cut faces and slide scars can often be identified); and

The Scotland, peat is defined as an organic layer, or layers, that exceed 50 cm deep from the soil surface and have an organic matter content of more than 60%, and “deep peat” is typically considered to be “a peat soil with a surface organic layer greater than 1.0m deep”. If peat is present and a proposed development has the potential to impact it through disturbance or removal then it may need to be considered within the EIA (subject to scoping). For most EIA developments in Scotland, the advice given by regulatory parties is that developments should be designed to avoid the areas of deepest peat and minimise the impacts on peat and peatland environment as much as possible.
Information from landowners and local residents.

Desk study effort can identify potential areas of peat, but there is no substitute for field survey. Peat could be more or less widespread than indicated on mapping, and peat depth and type will rarely be available from desk study sources. Fieldwork options to identify the presence of peat and determine peat depth include:

- National Vegetation Classification (NVC) mapping;
- Peat probing;
- Hand augering with description (e.g. active, degraded, Von Post classification); and
- Geophysics (e.g. ground penetrating radar).

However, caution should be taken even if mapping, NVC work and/or peat probing indicate peat is present. Experience tells us that all the available information needs to be considered in combination and that hand augering, as a minimum, should be used to support peat depth probing to confirm the presence of peat. An example of this was at a prospective wind farm site in Scotland where soil and geological mapping did not suggest peat was present, but NVC survey results indicated the likely presence of peat. Peat depth probing also indicated that soft ground (potentially peat) was present in some areas. However, hand augering showed that the peat probe was penetrating saturated mineral and organo-mineral soils (e.g. sandy organic soils and soft clays) and not peat. Peat was subsequently eliminated as a sensitive receptor for the site and did not need to be considered in the EIA.

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