Key Messages

- Welsh Government (WG) policy recognises both the need for large-scale renewable deployment to achieve decarbonisation and the importance of protecting and restoring biodiversity. Recent changes to *Planning Policy Wales 12* (PPW 12), citing all *peatlands* as irreplaceable habitats risks **pitting these priorities against one another**.

- The classification of **all peatlands as "irreplaceable" is scientifically unsound and counterproductive.** Peatlands vary greatly in depth, quality, and condition – from near-natural active bogs to heavily degraded, drained, or afforested areas. Treating all peat as equally irreplaceable ignores scientific evidence and prevents nuanced, evidence-led decision-making.

- Degraded peatlands can and are being **successfully restored** through government-funded programmes such as Natural Resources Wales' (NRW) National Peatland Action Programme (NPAP), demonstrating that they are ***not irreplaceable***. The continued funding for these programmes demonstrates acceptance that evidenced restoration measures are effective.

- **Renewable energy development and peatland restoration can, and already do, coexist.** The renewable energy industry has pioneered peatland restoration techniques, many of which are now widely adopted. Modern wind farm design follows the "step-wise" approach delivering environmentally sound projects and increasingly delivering net benefits for biodiversity, reducing pressure on public peatland restoration funding and contributing to national restoration targets.

- A strict interpretation of Chapter 6 of PPW 12 effectively rules out development on any peat, even shallow peaty soils or degraded peat. This:
  - Removes large areas of high wind resource from consideration – jeopardising WG's own 2035 renewable energy and Net Zero targets;
  - Blocks private investment that currently funds significant habitat restoration, especially funding higher risk or novel restoration that will help move restoration science forward at scale;
  - Delays national peatland recovery, as public programmes alone (e.g. NPAP) cannot restore degraded areas at scale.

Peatland restoration is achievable and ongoing – proving peatlands are not "irreplaceable."

- WG itself funds restoration of 600–800 ha/year of degraded peatland, aiming to reverse carbon loss and improve biodiversity. Restoration techniques (rewetting, drain blocking, re-profiling, vegetation translocation) are well-established, evidence-based, and effective within practical timeframes. This directly contradicts the policy assumption in PPW that peatlands cannot be restored once impacted (see 'Changes to Planning Policy' section).

A pragmatic, evidence-led approach is essential.

- Developers, government, and scientific experts should collaborate to refine PPW policy to distinguish between high-quality, near-natural peatlands, which should be protected, and degraded peatlands, which can host well-designed renewables projects and benefit from private sector funded restoration. This would ensure both climate and nature targets are delivered, aligning with WG's broader ambitions for a sustainable, prosperous, and nature-positive Wales.

- The renewable industry urges WG to **revisit the "irreplaceable" classification**, adopting a **tiered, condition-based framework for peatlands**.

- Working together, WG, NRW, and developers can deliver clean energy and restore nature simultaneously – achieving the integrated vision both emergencies demand.

Peatlands and Renewable Energy – The Developer Position

Wales has declared both a nature and a climate emergency[1]. Deployment of renewable energy at scale, both onshore and offshore, is a key part of Welsh Government's (WG) strategy for mitigating the climate emergency[2], and habitat restoration and enhancement is a key tool in addressing losses in biodiversity[3]. However, policy wording on 'irreplaceable habitats' introduced by Planning Policy Wales 12[4] (PPW 12) lacks nuance and has the potential to substantially impede both the deployment of renewables and the funded restoration and enhancement of key habitats. Because climate change is a threat to peatlands[5], and renewable energy is a vital tool in combatting climate change, pragmatism is required in reconciling biodiversity impacts with renewable energy developments.

This position paper, authored by ecology and peat experts supporting the sector in their environmental impact assessments, sets out a more practical position on peatlands and planning policy, explaining why a pragmatic, evidence-based approach is urgently needed and highlights potential impacts on reaching WG climate targets with associated harm caused to efforts to tackle biodiversity loss in Wales.

What are Peatlands?

Peatlands are a relatively common habitat in the United Kingdom (c. 12% of its land area[6]), comprising highly organic soils formed of slowly decaying plant matter (**BOX 1**). In Wales, current estimates are that they occupy 4.3%[7] of the land surface (c. 90,000 ha), based primarily on the Peatlands of Wales Evidence maps[8]. As soils, they are unusual in locking in large volumes of carbon, hosting specialist plant communities, and helping regulate river flows in peat covered catchments. These are critical ecosystem services.

Peatlands began forming in the UK several thousand years ago under cooler and wetter conditions than today, in many areas following the felling of woodland by early humans[9]. Although the climate is warmer now, many peatlands persist, and in cool and wet areas (such as northern Scotland) they continue to thrive and accumulate. Further south, in parts of England and Wales, many peatlands are at their climatic limit and have been degraded through both natural processes and land management. Forestry, drainage for land improvement, cutting for fuel, burning, and grazing by animals have all acted to degrade peatlands, which until recently were regarded as unproductive land of little value[10].

Deeper peats are more likely to have a fully developed acrotelmic and catotelmic system, with the acrotelmic layer reaching up to 60 cm in depth. In contrast, shallow peats and shallow peaty soils (<30 cm in depth), while providing carbon storage and supporting peatland habitats are less likely to have the characteristic hydrological layering of deeper bogs. Degrading peatlands are typically drier and more species poor than active (accumulating) peatlands and release, rather than sequester (take in) or store, carbon[11]. Restoring peatlands helps them to store rather than lose carbon, returns their hydrological function and encourages greater biodiversity[12], benefitting both nature and climate. Over longer timescales, it may be possible to restore peatlands such that they begin to actively sequester carbon again[13].

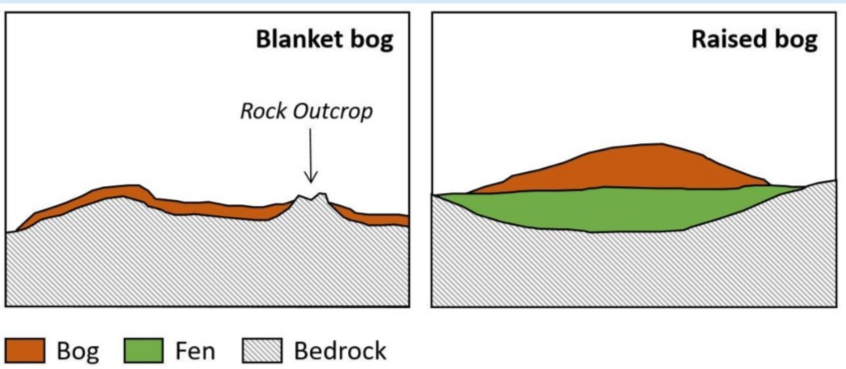
WG has recognised this through funding Wales' National Peatland Action Programme (NPAP) which aims to restore 600-800 ha of degraded peatland per year[14]. Natural Resources Wales (NRW) state that over 90% of Wales' peatlands are degraded in some way (c. 81,000 ha)[15]. With current WG funding levels (£700,000 for delivery in 2026-2027)[16] at an average cost of c. £1,500/ha[17] (equivalent to funding for 466 ha at this low average rate), it will take over 170 years to restore Wales' peatlands, during which, as the climate continues to warm, much of the remaining resource may become sufficiently degraded that it cannot be restored[18] (which the continued release of carbon from peat contributes to). It is noted that NPAP published a competitive grant of £700,000 (equating to 466 ha based on the above costs), which vary between £10,000 and £250,000 in individual awards, in late October 2025 for projects which can implement between April 2026 and March 2027.

BOX 1 What is peat, what are peatlands and why are they important?

Peat comprises dead and partially decomposed plant remains that have accumulated *in situ* under waterlogged conditions. Peat differs from other organic soils in having a higher organic matter content and a minimum depth for its definition. WG use the Soil Survey of England & Wales definitions for peat[19], i.e. 30 cm where present over bedrock or weathered rock and 40 cm within the upper 80 cm of non-rock material. Unusually for a soil, some 90% of saturated peat (by volume) may be made of up water held within and between the decomposing plant material[20].

Peatlands are landscapes with a peat deposit that may currently support a vegetation that is peat-forming, may not, or may lack vegetation entirely. The presence of peat or vegetation capable of forming peat is the key characteristic of peatlands[21]. While WG consider mire, heath and some grassland communities to represent peatland, only a small subset of mire vegetation communities are typically regarded as being peat forming (see **BOX 3**).

Peatlands that receive their water from rain or snow alone are nutrient poor and are termed bogs. Lowland raised bogs are domed while blanket bogs drape the landscape, particularly in the uplands. Both are generally nutrient poor[22]. Where peatlands receive water from runoff over the land, they may be more nutrient rich and are termed fens (see below [23]).

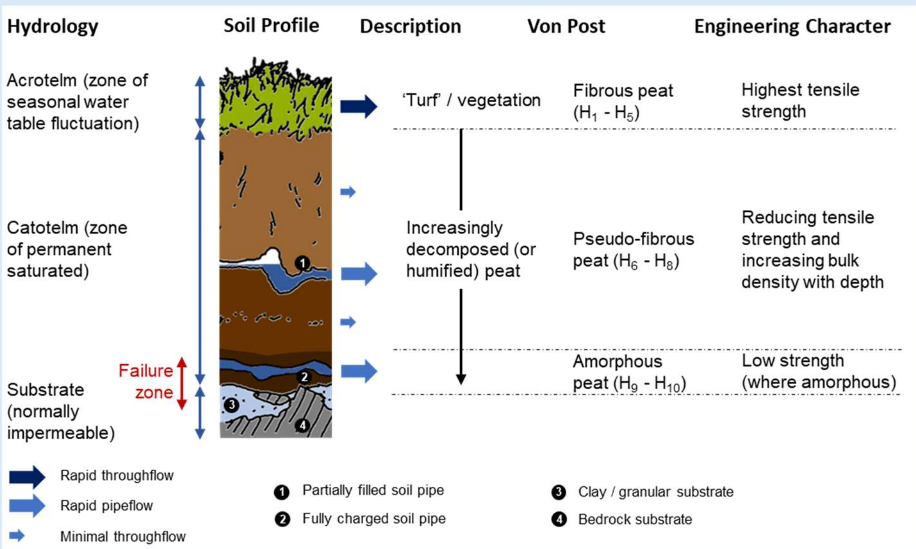


Schematic representation of blanket bogs and raised bogs

Peat stores large volumes of carbon, deeper peats holding more carbon than shallower peats. Deeper peats are often wetter and may have higher quality vegetation, particularly if they are too wet or nutrient poor to be suitable for, and therefore modified by other land uses.

While peat accumulates in layers, it is the uppermost 'acrotelmic' layer which determines how long rain is 'stored' near the ground surface and how quickly water runs off into rivers[24]. Natural peatlands with healthy vegetation and a hummocky surface slow water more effectively than bare peat, drained peat, burnt peat or peatlands dominated by monocultures of grasses (such as purple moor-grass (Molinia caerulea)). The deeper 'catotelmic' peat stores a majority of the carbon but does not host living vegetation, and has a smaller effect on runoff.

Physical characteristics of peat soil profiles including hydrology, humification and engineering characteristics



Peatlands and Renewables

Wind energy is one of a suite of renewable energy technologies that provide low carbon energy to support our daily lives, helping to mitigate climate change which in and of itself is a threat to UK peatlands. Wind resource (or power) tends to be at its greatest in uplands parts of the UK, away from population centres. These areas also happen to host much of the UK's peatland resource, and as a result wind farms proposed in Scotland, England and Wales can correlate with areas of peatland.

Because of this, the UK Renewable Energy industry has invested significant time and effort in establishing how best to build infrastructure in harmony with these environments, and many peatland restoration techniques in use in the UK are drawn from methods developed on wind farm projects in recent years[25] [26]. As planning policy has changed, public scrutiny has increased and biodiversity has risen up the policy agenda, the pressure to do ever better has mounted. As a result, planning applications for modern wind farms, in particular those submitted in the last 5 years, have significantly increased the scope, breadth and ambition of measures to compensate for impacts that inevitably occur when constructing in more sensitive peatland environments.

In short, wind farm developments have never been better formulated to protect and enhance the environments they occupy than they are now.

Changes to Planning Policy

The suitability of the Welsh landscape to accommodate wind farms was first assessed by the Welsh Government in 2005 in technical advice note (TAN) 8 which sought to guide developers to the least constrained parts of Wales for development. These Strategic Search Areas (SSAs) [27] were superseded by Pre-Assessed Areas (PAAs) for wind farms identified in "*Future Wales: the national plan to 2040*" that was published in 2021[28]. Peat (not peatlands) was explicitly considered as a constraint in the development of the PAA areas, and was shown to be present in the PAAs, based on the now superseded Unified Peat Map of Wales.

In 2023, in response to the declared nature emergency, WG strengthened policy protection for habitats through changes to Chapter 6 of PPW 12. These changes indicated that certain habitat types – "irreplaceable habitats" (see **BOX 2**) - should be considered as having equivalent protection to European and Nationally designated sites such as SSSIs, SACs and SPAs, despite lacking the underlying assessment of their condition and quality that normally underpin such designations.

In Chapter 6 of PPW 12, it is suggested that all peatlands, regardless of condition, are afforded equivalent status to designated sites, meaning that, for example, a small area of degraded bog within a forest plantation might be given equivalent value to the Migneint-Arenig-Dduallt SAC (a high-quality designated peatland site in Wales). Unlike designated sites however, habitats only have definable boundaries once mapped following site surveys, and therefore planning to avoid them or minimise impacts cannot take place until such survey work has been undertaken.

Welsh Government's soil advisers, the Soil Policy and Agricultural Land Use Planning Unit (SPALUPU) have adopted a very strict interpretation of policy, despite the lack of scientific justification for doing so, and objected to any and all infrastructure on any depth of peat, regardless of condition, in all submissions to the Planning Environment Decisions Wales (PEDW) since 2023[29] [30] [31] [32] [33] [34]. SPALUPU also takes the view that if there is any peatland present within a development site boundary (even if it is completely unaffected by the development) then the development should not take place. A recent Freedom of Information (FOI) request to WG indicated that Welsh Government's peatland caseworkers in SPALUPU support strict reinforcement of this policy, rather than pragmatism and collaboration with industry informed by WG's technical advisors, NRW[35].

BOX 2 What are irreplaceable habitats?

Irreplaceable habitats are defined in PPW 12 Chapter 6 as follows:

"*habitats, including the natural resources which underpin them, which would be* ***technically very difficult*** *(or* ***take a very significant time****) to restore, recreate or replace once* ***destroyed****, taking into account their* ***age, uniqueness, species diversity or rarity***"[36]. Peatland, incorporating its characteristic vegetation and the peat soil that provides its substrate, are listed as one of many irreplaceable habitats in Wales, other examples including ancient woodland, sand dunes and salt marshes. Examples of these habitats are shown in the photographs below.

Examples of irreplaceable habitats a) saltmarsh, b) ancient oak woodland, c) sand dunes

Many of these habitats are not spatially defined, and some lack any formal definition, e.g. long undisturbed soils. Some of these habitats are geomorphologically dynamic and change naturally over time (e.g. sand dunes and salt marshes), while others, while having formed over long periods (much like peatland) are less resilient to change, e.g. ancient woodland, which once felled cannot be 'regrown' to be ancient.

Peatlands are not geomorphologically or ecologically static landscape features, and have accumulated through phases of differing vegetation covers and under evolving climate. Many peatlands have undergone periods of erosion and recovery (or revegetation), or have previously been degraded by other land uses (burning, draining, cutting, forestry).

The suggested strict application of PPW Chapter 6 in this way has led to projects being approved under "wholly exceptional circumstances". SPALUPU has suggested within the aforementioned FOI that this is not a tenable approach for the protection of peatlands. However, exclusion of wind farms from all peatlands in Wales, regardless of quality, would remove large areas of land with the greatest wind resource from development. It would significantly impact WG's own climate targets as well as the objectives of Trydan Gwyrdd Cymru[37] (TGC, the Welsh Government owned renewable energy developer), and also prevent habitat restoration that accompanies wind farm construction from being delivered. This latter activity is key in supplementing NPAP's public funding and enabling restoration of peatlands in other areas.

Are peatlands irreplaceable?

WG defines irreplaceable habitats as those "*habitats, including the natural resources which underpin them, which would be* ***technically very difficult*** *(or* ***take a very significant time****) to restore, recreate or replace once* ***destroyed****, taking into account their* ***age, uniqueness, species diversity or rarity***". Peatland habitat and the peat soil that provides its substrate are listed (in PPW 12) as one of many irreplaceable habitats in Wales, other examples including ancient woodland, sand dunes and salt marshes.

In order to define peatlands as irreplaceable, there is a requirement that:

1. They are **technically very difficult** to restore, recreate or replace, or
2. It would take **a very significant time** to restore, recreate or replace them.

Therefore, habitats that can be **recreated, restored or replaced** are unlikely to be irreplaceable, particularly if this were to be achievable in a reasonable timeframe. In the context of a reasonable timeframe, for wind farm applications this is whether restoration, recreation or replacement can be undertaken within the operational period of the project, typically 35 years or more. Environmental consultants working in the renewable energy sector acknowledge that in some cases, peatlands may be truly irreplaceable by the definitions above, examples being actively forming blanket bog with complex macro-topography (such as bog pool complexes, ladder and saddle fens) and raised bogs. Reconstruction of bog pool systems is likely to be extremely challenging, while the domed morphology of raised bogs would be very difficult to reproduce.

As noted above, the Welsh Government through NPAP[38] [39] is currently recreating, restoring and replacing peatland, which suggests that it is not always technically very difficult nor necessarily takes a very significant time. Such restoration is commonly undertaken, reasonably well evidenced, and therefore while challenging, is unlikely to be considered 'technically very difficult'. On many Welsh sites, notably in forest and in undeveloped ground around infrastructure, the same techniques are being applied on wind farm sites as are applied in non wind-farm restoration[40].

The reuse of peat in restoration is undertaken less frequently and evidence of success is perhaps less clearly publicised, often being captured within habitat management plan monitoring reports that do not reach the public domain. Nevertheless, the techniques draw on similar principles to those used in conventional restoration, using the same materials, with outcomes more closely monitored and typically for longer than is the case for publicly funded restoration projects.

Age, uniqueness, species diversity or **rarity** indicate that condition (or more simply 'quality') must also be considered. Habitats that have formed recently, are common, or are species poor examples are unlikely to be irreplaceable using these terms.

Finally, the word '**destroy**' is also important in this definition, since destruction implies complete loss, rather than *damage*, *impact* or *disturbance*, these latter terms being more representative of on-the-ground changes during construction projects than *destruction*.

The 'quality' of peatland habitats is usually determined by the composition of plant species growing at the ground surface, with a small handful of key species indicating 'active' (accumulating) and **functional** bog (**BOX 3**). In addition, evidence of natural erosion (gullies and bare peat) and management (drains, burning, grazing impacts, forestry) indicate how far a peatland may deviate from a 'near-natural'[41] condition (see **BOX 4**). Peatlands that are in poor condition are unlikely to offer the full range of ecosystem services that near-natural peatlands provide, while deeper peats hold more carbon, are usually wetter and often support the highest quality habitat.

The wording of PPW 12 allows for no discrimination between shallow or deeper peat, condition or functionality, and therefore, in contrast to nearly all other environmental receptors assessed in Environmental Impact Assessment (EIA)[42] assumes that all peatland is of the highest value, and therefore irreplaceable. This is scientifically unsound and counterproductive.

It is the view of the authors of this paper, in particular those working to assess peatlands and identify restoration opportunities, that PPW's current unqualified position that all peatlands are irreplaceable habitats is both unscientific and obstructive to WG's own climate and biodiversity targets[43] [44] [45].

BOX 3 NVC communities and peatland quality

In EIA, the plants that make up a landscape are mapped as Phase 1 Habitats (e.g. 'blanket bog', ' acid grassland') where habitat quality is low or habitats are homogenous, or where more detail is required due to variability or quality as National Vegetation Classification (or NVC) communities. Different combinations of plants indicate differing soil conditions, management impacts and habitat health. Ecologists use NVC communities to help identify the condition of a habitat, calculate impacts from infrastructure and identify habitat management measures that may improve habitats in poor condition.

In peatlands, a subset of NVC communities is generally regarded as indicating the best condition, i.e. that bog which is functional in actively sequestering carbon, moderating hydrology and supporting the highest quality vegetation. Semi-aquatic species indicating standing water (bog pools), bog mosses (*Sphagnum*) and cotton grass (*Eriophorum)* are widely accepted as indicators of high quality bogs. The rootless bog mosses ultimately provide much of the 'soil' in peat and hold water within their cell structures, while the roots of cotton grass hold the bog surface together. Both are generally understood to be required to allow peat to accumulate, bogs in this state being described as 'active' and functional carbon sinks (i.e. actively sequestering). The associated NVC communities are 'mire' NVC, pre-fixed 'M' and the highest quality mire habitats are M1 - M3 (bog pools), M17 (characteristic blanket bog vegetation of more oceanic parts of Britain, and rich in cotton grass[46]), M18 (characteristic of lower altitudes, more typically in raised bogs) and M19 (characteristic of blanket bog in the uplands of Wales and northern Britain, again with ample cotton grass). These are regarded as 'priority peatland habitats' in Scotland because they are considered to best indicate 'actively peat forming'[47]. Degraded forms of these communities, notably M15, M16, M20 and M25 are still considered priority peatland habitats in Scotland and often considered good candidates for enhancement (i.e. restoration) measures[47].

Examples of peatland NVC communities: a) bog pool community M3, b) Ling heather - cotton grass mire community M19, c) cotton grass dominated mire M20, d) sphagnum mosses synonymous with intact, wetter NVC communities

Dominance of grasses and sedges to the exclusion of cotton grass and sphagnum, or worse, the absence of peatland plants, is indicative of bog in poorer condition, likely no longer active and emitting rather than sequestering carbon. Heath NVC communities (prefixed H) and grassland communities (prefixed U) typically indicate drier or more nutrient rich environments respectively, and are not generally indicative of active peat formation.

This view is supported by three fundamental arguments:

1. That not all peatlands are the same – those in degraded condition offer room for development and opportunity for restoration;
2. That not all peatlands are irreplaceable – if they were, WG would not fund NPAP to restore and recreate degraded peatlands;
3. That the exclusion of development from areas of degraded peatlands would significantly compromise WG's own targets to address the nature and climate emergencies.

The basis for argument 1 is provided in **BOX 3** and **BOX 4**, argument 2 in **BOX 5** and the planning case for argument 3 is provided in **BOX 6** and **BOX 7**.

BOX 4 Peatland Condition

NatureScot has prepared guidance on 'peatland condition assessment' which reflects their view that not all peatlands are equal, and combines observations of vegetation with other indicators (e.g. drains, burning, erosion) to categorise peatlands of 'near-natural', 'modified', 'drained', and 'actively eroding' condition. The purpose behind the guidance is to help inform changes in management or restoration that might be required to improve condition, and it generally undertaken to inform peatland restoration proposals funded under Peatland ACTION. Typical examples of peatland condition are shown in the photographs below illustrating that there is high variability in peatland, and accordingly, impacts from land management will have different ramifications dependent on their peatland setting.

Examples of peatland condition: a) near-natural peatland with continuous vegetation, a high water table and bog pools, b) drained peatland with vegetation modified by long term dewatering, c) modified peatland now dominated by purple moor grass following grazing, burning and nitrogen deposition, d) actively eroding peatland with bare and oxidising (carbon emitting) surface

In England, Natural England note that degraded habitats no longer exhibit the "typical flora and fauna expected in that habitat", detailing a similar range of management pressures to those identified in NatureScot's guidance and indicating that restoration is achievable to blanket bog from degraded peatlands[48].

When proposing wind farms on peatlands, developers typically try to avoid peat, and if this is not possible, target areas of poorer quality or condition in order to minimise impacts and offer habitat restoration in compensation for impacts that are unavoidable.

In contrast, the Welsh Government's SPALUPU see no reason to differentiate peatlands on the basis of condition or habitat quality. The current condition of the Welsh peatland resource reflects a long-legacy of human modification and management and also well over half a century of site safeguarding and increasingly positive management supported by statutory designation and a succession of environmental land management schemes and restoration initiatives. Current pressures upon the semi-natural peatland habitat resource were assessed most recently for the 2019 Article 17 reporting round and the most prevalent include atmospheric nutrient deposition, under-grazing or inappropriate grazing management, diffuse and point source pollution to surface and groundwaters, drainage, and dominance of problematic native and non-native species.

How do renewable energy developers approach peatlands in design?

Noting the potential overlap between peatlands and areas of high wind energy resource, where they do overlap it is rarely the case that peatlands can be entirely avoided when selecting a site and when designing a layout for an individual scheme.

Renewable energy developers typically look to avoid peatlands of the highest quality as part of the mitigation hierarchy, or if unavoidable, to minimise overlap and impact upon them. PPW 12 mandates the "step-wise" approach, which has within it a sequence intended to protect key environmental receptors such as peatlands (**BOX 6**).

BOX 5 Approaches to Peatland Restoration

The objectives of peatland restoration are: i) to 'rewet' peat, ii) to improve biodiversity, and iii) to reverse carbon loss. Because peat soil only loses carbon when it oxidises or dries out, keeping peat wet minimises carbon loss while creating the right conditions for the building blocks of peatlands (bog mosses and cotton grass) to grow and for peat to accumulate.

'Rewetting' is generally achieved by blocking artificial drains, removing forest[49] or by reprofiling gullies (in effect larger, natural drains)[50]. Other techniques such as surface bunding can help hold water at the surface or slow water flows, and in severe cases vegetation transplants ('translocation') and seeding may be undertaken to bring bog species back to bare peatlands. Examples are shown in the photographs below.

Examples of peatland restoration: a) plastic pile dams used in drain blocking, b) gully reprofiling by low ground pressure excavators, c) hand repair of bare gully sides with geotextile and stone dams to slow the flow in gully floors

(b and c by kind permission of McGowan Environmental Engineering Ltd)

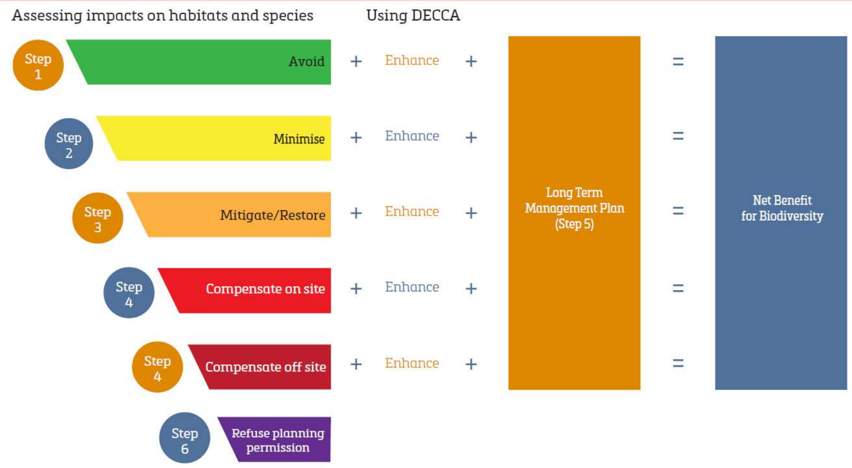
It is clear that higher quality bogs can be restored from poorer quality peatlands[48], though the process is not necessarily rapid (and may take decades). The investment in national peatland restoration schemes (such as NPAP in Wales, Peatland ACTION in Scotland and Nature for Climate funding in England) indicates that there is confidence in the effectiveness and value of restoration methods. Importantly, it demonstrates that peatland habitats *can* be restored and in some cases, where vegetation was previously absent, *can* be recreated, *and* in timescales considered sufficiently short to justify government funding.

Restoration activities in association with wind farm construction include the full suite of techniques outlined above but these may also be supplemented by methods that use peat generated during excavation for specific elements of infrastructure. These methods are not documented in restoration guidance because standard forms of restoration do not have donor peat available. Typical restoration targets might include repair of actively eroding gullies or areas of open ground, translocation of peat into areas of peat cuttings (where peat has been cut to burn for fuel) or forest-to-bog restoration (using excavated peat to reinstate a felled peatland ground surface).

Where peat isn't used for restoration, it may need to be relocated to make way for foundations. In these cases, key requirements of successful reinstatement using peat are i) that the peat soil is not 'lost' (i.e. it does not dry out), ii) it is able to support peatland vegetation, and iii) in being removed and either reinstated or placed elsewhere the overall function of the hydrological bog unit in which it is located is maintained. Habitat Management Plans and Peat Management Plans have in very recent years become more ambitious, more detailed and better secured (by planning conditions, including the use of specialist peat clerks of work during construction) than those produced for wind farms a decade ago (many of which were constructed relatively recently). As a result, improvements in approach are not yet best evidenced by as-built schemes.

BOX 6 The Step-wise Approach

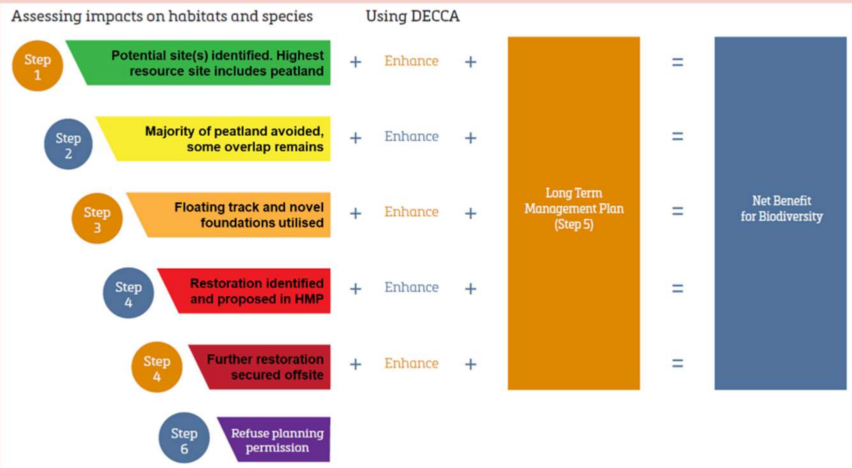
In UK planning, the potential impacts of infrastructure are typically minimised through the use of mitigation hierarchies. In Wales, this is referred to as 'the step-wise' approach (see figure below). The use of multiple 'steps' instead of a single go / no-go decision gate allows pragmatism in planning, accepting that there may be uncertainties in the data and methodologies supporting decision-making at each step and that judgement of costs and benefits is rarely a black and white process.



The Step-wise Approach (excerpt from PPW12 Chapter 6)

While the first step is to 'avoid', this is generally considered the ideal, and the availability of subsequent steps ('minimise', 'mitigate/restore', 'compensate') indicates that planning does not end at 'avoid' but can employ the remainder of the hierarchy to achieve a planning balance. Refusing planning permission is a last step, once all other options have been exhausted.

For any given wind farm project, application of the step-wise approach might be interpreted and delivered as below:



The Step-wise Approach (modified to show the approach taken at each step in its application to a typical wind farm application)

At Step 1, it is incumbent on developers to demonstrate why the chosen Site is preferable to alternatives. At Step 2, developers must demonstrate that overlap with peat and peatlands has been minimised if it cannot be avoided – this is demonstrated through evidence of sensitive layout design in which peat and peatlands together are part of a wider constraints story. At Step 3, mitigation must be put in place to reduce the impacts of the scheme insofar as practicable – this may include use of lower impact construction methodologies such as floating track, piled foundations and double use footprints (e.g. borrow pits becoming site compounds). At Step 4, compensation for unavoidable impacts may be achieved by restoring substantially more land than impacted, ideally replacing like for like. The amount of compensation required may depend on the quality / condition of peatland impacted and / or the amount of peat soil disturbed. If there is insufficient opportunity within the site to fully compensate for impacts, then off-site compensation (i.e. funded restoration in other locations) provides a potential way forward, i.e. Step 5. If sufficient compensation cannot be achieved through a combination of within site and offsite compensation, then planning permission may be refused.

The approach suggested by NRW and WG's SPALUPU suggests that any site with peatland within it should be avoided. However, this would mean that a project with no impact on peatland could not maintain and enhance peatland as it would have to exclude that area from its red line boundary. This is not a logical position.

Once a site is designed, it is incumbent on developers to offer mitigation and compensation for adverse environmental effects and to deliver a net benefit for biodiversity. In peatlands, this comes in the form of habitat restoration. Restoration is typically proposed using a combination of established techniques derived from the peatland restoration community[50] and from more innovative reuse of peat that may be excavated during construction. Good practice guidance on excavation and reuse of peat has been available for c. 13 years[51] and is currently under revision reflecting industry experience since that time[52]. Developers can control how land within their projects is managed and farmed (usually through habitat management plans, which can be conditioned).

Restoration proposals address peatland directly impacted by development, but also tend to benefit the peatlands that surround (and are untouched by) proposed infrastructure, potentially over a substantially larger footprint than that disturbed by a development. Such restoration uses reliable, evidenced techniques, and reduces the burden on WG's NPAP, allowing it to divert financial support and resources elsewhere. Where restoration is more challenging, the conditions attached to an approved wind farm (i.e. peat and habitat management plans) enable innovation to be identified, trialled and monitored in a way that might not be securable through WG funding when other easier and more reliable opportunities sit higher in the national priority list of sites.

From a Lose-Lose to a Win-Win

The Renewable Energy industry has over three decades of experience in bringing clean energy to the UK and Wales. At the same time, as the value of peatlands has become clear, so industry has stepped up to innovate and develop restoration methods that are used within wind farm developments and more widely, restoring peatlands and contributing to clean energy targets.

Current planning policy risks bringing an end to this success story, as well as threatening the future growth of the green economy in Wales by jeopardising the delivery of a significant number of projects with many years of investment and planning behind them – including those proposed by Trydan Gwyrdd Cymru (**BOX 7**). In contrast to the intended outcomes, this policy may also deprive the areas for which they are proposed a meaningful opportunity for habitat restoration alongside development.

It is strongly recommended that WG, industry and scientific advisors from the academic community work together to identify a pragmatic way forward that delivers on WG's commitments to addressing both the nature and climate emergencies. This would be a win-win for all concerned.

BOX 7 The implications of precluding development from peatlands

In a recent briefing note to Welsh Government by SPALUPU, a summary of the overlap of wind farms with peatlands was provided based on a review of all consented and operational schemes and schemes within the planning system[53]. An estimated 22 of these wind farms overlap with peat to some extent, with a further 35 of 45 applications potentially having peat impacts, 5 of which are being developed by TGC. It is clear from these numbers that peatlands and wind farms have co-existed in delivery of renewable energy in Wales in the past, and they will need to continue to do so if Welsh Government is to achieve its Net Zero targets in the future.

It is also important to remember that peat / peatlands are collectively one of a suite of constraints that determine the suitability of a site for development, including landscape visual impacts, cultural heritage, terrestrial ecology, traffic and access, noise, hydrology, ornithology, shadow flicker, telecommunications and aviation. The sites consented to-date and those currently in planning have taken account of all constraints in being selected as their respective preferred locations, not just peat and peatlands.

A note on authorship

This position paper was prepared for Renewables UK Cymru (RUKC) by Dr Andy Mills of OWC, with contributions from BSG Ecology, Avian Ecology, Dulas, Savills and additional third parties. The paper was not commissioned by RUKC, nor by the developer community and represents the independent views of its authors.

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