PROJECT DESIGN DOCUMENT (PDD)

Compilation of Evidence for Validation

Version 1.1, March 2017

Project Name:	Websters Meadow & Langden Head
Registry ID:	0027/1020
Location:	Bleasdale, Lancashire, England
Grid Reference:	SD 5924 4874
Gross Area (ha):	250 ha
Project Developer:	Yorkshire Peat Partnership
PDD Completed by:	Christopher Miller, Project Officer
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All statements made in this document are correct to the best of my knowledge at the time of completion. **I agree**

NOTE:

1. When completing each section of this document please refer to the requirements set out in the relevant section of the Peatland Code. Boxes for text can be expanded if not large enough.
2. Your Project Design Document will be made available on the publically available Peatland Code Registry upon achievement of validation.
3. Additional evidence to support the statements made within this document will be required by the certification body.

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1. Eligibility and Governance

1.1 Eligible Activities

1) Please provide a short summary of the project including as a minimum reference to peatland type, peatland condition and restoration and management activities which shall be implemented.

The site comprises actively eroding gullies and hags with flat bare peat, and dendritically eroded areas. It will be restored using a combination of techniques including reprofiling and revegetating of gullies and hags; blocking eroding gullies using peat dams, timber and stone sediment traps, and peat bunds; using coir logs to slow the flow in shallower gullies and on bare peat; revegetating all bare peat areas (including reprofiled gully and hag sides) using heather brash, a moorland seed mix, lime, phosphate based fertiliser, cotton grass plugs, crowberry plugs and sphagnum. There will be a comprehensive management and maintenance plan to ensure the restoration is effective.

2) Is a minimum peat depth of 50cm present within the project area? Yes

2) Please provide details of any current land management agreements, including any statutory designations, in existence within the project area .

The project area forms part of the Bowland Fells SPA, Bowland Fells SSSI, and sits within the Forest of Bowland AONB.
Websters Meadow & Langden Head are in Countryside Stewardship (Higher Tier)
Hareden Fell is in Countryside Stewardship (Higher Tier). Neither agreement includes capital peatland restoration works.

3) Please state any identified conflicts between planned restoration and management activities and existing land management agreements and how these shall be mitigated.

Currently there are no identified conflicts. However the existing land management agreements (Countryside Stewardship) are for a maximum of 10 years which is shorter than the project duration. The landowner will be advised to check for conflicts with the Peatland Code if they or their tenants decide to enter into any future land management agreement.

1.2 Project Duration

1) Please state the project duration (years).

30

2) If the project duration exceeds 55 years please state the peat depth within the project area.

1.3 Eligible Land

1a) Please state the owner(s) and if applicable, the tenant(s), of the land within the project area

Land Owner: United Utilities PLC

1b) Please state the land registry number, if known

2) Has any new activity to drain and/or remove vegetation taken place on the peatland within the project area since November 2015? No

1.4 Consultation

1) Please state all identified stakeholders (or their representatives), the consultation method and the consultation period.

Stakeholder	Consultation Method	Consultation Period
SE & HB Robinson (Tennants)	Verbal	Not adversely affecting people consulted
EW & JR Parkinson (Tennants)	Verbal	
Forest of Bowland Area of Natural Beauty	Written and Verbal	11th Feb 2020 – 31st March 2020
Environment Agency	Written and Verbal	11th Feb 2020 – 14th Sep 2020
Natural England	Written and Verbal	11th Feb 2020 – 31st March 2020

3) Please state all negative impacts of the project identified by stakeholder(s) and the action taken to mitigate, where feasible and/or relevant

Negative Impact Identified	Action taken to mitigate? (Yes/No - *If No, provide details*)

1.5 Additionality

1) Is there a legal requirement specifying that peatland within the project area must be restored? No

2) Please state the proportion of the project restoration and management costs that Carbon Finance will be required to fund.

00 %

3) Please describe the economic alternatives for the peatland within the project area and describe the influence of Carbon Finance on the project's economic viability over its duration (Internal Rate of Return (IRR) or Net Present Value (NPV) should be used to demonstrate comparison).

As the majority of the site is actively draining and/or eroding, there are no possible economic alternatives for the land other than the small benefits currently obtained from sheep grazing & grouse shooting. However, post restoration a range of ecosystem services are expected to improve including carbon storage, biodiversity, & water quality over the 30 year duration of the project. In addition to the carbon saved from the current intense erosion, restoration will reduce the amount of sediment and help slow the flow of water into the area's catchments. Biodiversity will also benefit as will the protection of the site's archaeological records. Following NPV analysis the project in the absence of carbon finance is not an economically viable investment. Taking into account carbon finance, the NPV becomes a positive figure, and improves by 90%.

4) If applicable, please describe how barriers that prevent the implementation of the project (legal, practical, social, economic or environmental) have been overcome.

1.6 Avoidance of Double Counting

1) Please state all parties with a legal right to make statements about the emissions reduction benefits of the project (the 'owner(s)') and the amount/proportion of units (tCO_2e) for which they have a right.

Owner	Contact Email	Units (tCO_2e or %)
United Utilities		100%

1.7 GHG Statements

1) If applicable, please state where any statements about the predicted emission reduction benefits of the project have been made to date.

Signage onsite	No
Websites	No
Publicity leaflets etc.	No
Other media (*provide details)*	No

2) Please state how buyers were/will be informed of Peatland Code requirements regarding GHG statements

Buyers will be made aware of Peatland Code requirement 1.7 (V1.1) at the time of sale with a clause within the sales contract committing the buyer to compliance.

2. Project Design

2.1 Management Plan

1) Does the project have a restoration management plan for the duration of the project? Yes

2) Please provide a short overview of the project objectives and activities to be implemented.

For detailed breakdown of restoration work, please see the restoration plan. In summary, the restoration objectives for Forest of Bowland are:

1. To improve the **1.72ha** of *Actively Eroding Flat Bare peat* (AU1) to a *Drained Revegetated* status by:-

- Brashing, reseeding, planting of cotton grass, crowberry plugs, and Sphagnum plugs on all flat bare peat areas.

2. To improve the **4.13ha** of *Actively Eroding Hagg/Gully* (AU2) to a *Drained Revegetated* status by:-

- Reprofiling & revegetating the eroding sides of **53,746m** of gully and eroding peat hags. To revegetate the bare peat will be brashed, reseeded, and planted with of cotton grass, crowberry, and Sphagnum plugs.

3. To improve the **243.2ha** of *Drained Hagg/Gully* (AU3) to *Modified* by:-

- Reprofiling and blocking **12642m** of eroding gully (≤2m wide) with peat dams
- Reprofiling and Blocking **5777m** of eroding gully (>2m≤3m wide) with peat bunds
- Blocking **6127m** of vegetated gully with timber sediment traps
- Blocking **19727m** of eroded gully with stone sediment traps
- Using coir logs to dam **1.28ha** of dendritic gullied areas

4. To ensure the elevated status in each category is achieved, and potential for the whole site to realise a *Modified/Near natural* is maximised, a follow-up management programme will supplement seed, cotton grass, crowberry plugs, and sphagnum to areas still vulnerable to erosion; and continue work on the site's hydrology to optimise water retention and sediment capture enabling eroded gullies to refill to the level of the surrounding landscape.

3) Were legal compliance and best practice guidance considered in the preparation of the restoration management plan? Yes

4) Please provide a short overview of the expected environmental and social impact of the project.

Environmental:

1. Aside of the carbon benefits of the project the condition of 250 ha of degraded blanket bog habitat will be significantly improved which also supports populations of the red listed Hen Harrier & Merlin as well as populations of Peregrine Falcon.
2. Langden Brook is a key spawning ground for Atlantic Salmon which will benefit from the reduced quantity of sediment and organic material entering the water course. Further downstream both Trout & Grayling may also benefit from the reduced sediment load and quantity of organic material entering the river.
3. The planned restoration work will help slow the flow of water coming from the catchment reducing erosion and the amount of particulate organic carbon entering the Langden Brook.
4. Rewetting the site and raising the water table will also help to make the site more resilient to climate change, helping to preserve the wide range of species which rely on this habitat.
5. The planned rewetting works will also reduce the risk of wildfire across the site helping protect the biodiversity of the area and its carbon store.

Social:

1. Restoration works will bring in excess of £900,000 worth of work to the local area, supporting local contractors, timber and coir merchants, retailers of seed, moorland grasses and shrubs, and regional helicopter companies.
2. A reduction in the area of bare peat will benefit the two graziers by adding at least 5ha to the area that can be sustainably grazed.
3. A public footpath crosses part of the site along with a number of well used walking tracks which will allow visitors to the area to benefit from the enhanced biodiversity and aesthetics of the area.
4. The project will also contribute towards preserving the distinctive character and natural beauty of the Forest of Bowland AONB, and may be of financial benefit to the wider community through tourism.
5. The project will also help lower the amount of DOC and POC entering the Langden Brook which will benefit United Utilities who abstract water from the catchment.
6. The improved water quality in the Langden Brook will benefit local fishermen.
7. The higher water table and lower fuel load will also increase the site's ability to resist wildfire avoiding the social costs that fire across the site could bring.

2.2 Monitoring Plan

1) Does the project have a monitoring plan for the duration of the project? Yes

2.3 Management of risks and permanence

1) Has a Risk Assessment been undertaken to identify potential risks to the maintenance of improved condition category and appropriate mitigation strategies?
Yes

3. GHG emission reduction

3.1 Establishment of Baseline Emissions

1) Please insert a completed *Table 2* from the *Peatland Code Emissions Calculator*.

Assessment Unit	Area (ha)	Pre-Restoration (Baseline) Condition Category	Post-Restoration Condition Category
AU1	1.72	Actively Eroding Flat Bare Peat	Drained: Re-Vegetated AE
AU2	4.13	Actively Eroding Sloping Bare Peat	Drained: Re-Vegetated AE
AU3	243.2	Drained: Hagg/Gully	Modified
AU4			
AU5			
AU6			
AU7			
AU8			
AU9			
AU10			
Total	**249.05**		

3.2 Leakage

1a) Please state the current land use or management and describe how it will be affected by the project.

The land is currently managed for livestock grazing (sheep), and grouse moor shooting. The livestock numbers are restricted/controlled by two Countryside Stewardship agreements, and the grouse moor shooting is carried out at a low level of intensity with no evidence of deliberate burning having taken place in the past 10 years.

1b) Will the project lead to change of land use or management elsewhere within the same agricultural/land holding (e.g. peatland degradation or intensification of land use in another area)? No

1c*) If Yes*, Is the change in land use or management significant (i.e. will GHG emissions ≥ 5% of project emissions reductions over the duration)? *Yes/No [Delete as applicable]*

2) *If significant*, please state the emissions (tCO_2e) of the displaced activity for the duration of the project. *(If no leakage or not significant*, leakage =0).

leakage = 0

3.3 Net Project GHG emission reduction

2) Please insert a completed *Table 5* from the *Peatland Code Emissions Calculator*.

Period (Year)	Total Emissions Reduction (tCO2e)	Total Emissions Reduction less 10% model precision (tCO2e)	Total Emissions Reduction adjusted for Leakage (tCO2e)	Cumulative Risk Buffer Contribution (tCO2e)	Cumulative Total Claimable Emissions Reduction (tCO2e)
0-5	6218	5596	5596	839	**4757**
5-10	12436	11192	11192	1679	**9513**
10-15	18654	16788	16788	2518	**14270**
15-20	24872	22385	22385	3358	**19027**
20-25	31090	27981	27981	4197	**23784**
25-30	37308	33577	33577	5037	**28540**
30-35	43526	39173	39173	5876	**33297**
35-40	49744	44769	44769	6715	**38054**
40-45	55962	50365	50365	7555	**42811**
45-50	62180	55962	55962	8394	**47567**
50-55	68398	61558	61558	9234	**52324**
55-60	74616	67154	67154	10073	**57081**
60-65	80833	72750	72750	10913	**61838**
65-70	87051	78346	78346	11752	**66594**
70-75	93269	83942	83942	12591	**71351**
75-80	99487	89539	89539	13431	**76108**
80-85	105705	95135	95135	14270	**80865**
85-90	111923	100731	100731	15110	**85621**
90-95	118141	106327	106327	15949	**90378**
95-100	124359	111923	111923	16788	**95135**

3) If necessary, use this space to clarify any details of your calculation