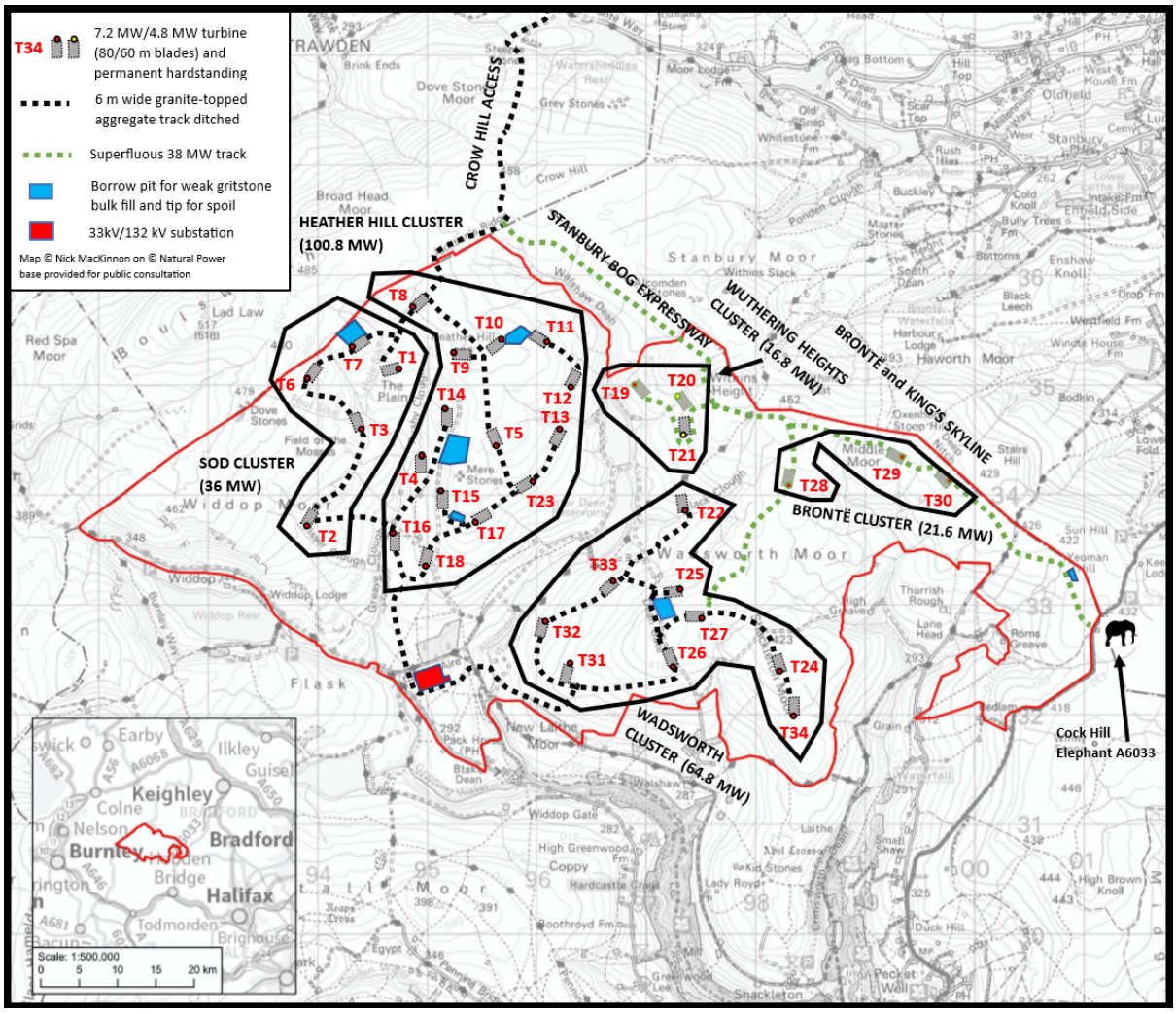
Our response to the proposal for Calderdale Energy Park (240 MW)

The 34-turbine proposal which we call CEP (240 MW), launched on 3 February 2026, should not be the proposal for the Direct Consent Order (DCO) application. It is a quick fix to try to get through the next stages of the planning process. The reason the developers have had to do so much work in a short time is that the Scoping Report was a disaster and has caused a five-month delay already.

The Scoping Report should be abandoned and the consultation process begun again with a correctly designed wind farm.

CWF Ltd have not yet published a proper map of the proposal, and they have not given exact positions for the turbines. All maps are © WTRG.



[Analysis map for CEP 240 MW. © WTRG]

The turbines are modelled as 32 Vestas 7.2 MW/160 m RD and 2 Vestas 4.8 MW/120 m RD.

We analyse the proposal as five clusters (Heather Hill (100.8 MW) Sod (36 MW) Wadsworth (64.8 MW) Brontë (21.6 MW) and Wuthering Heights 16.8 MW). The total installed power is exactly 240 MW. The actual annual generation will be about 80 MW because the wind does not blow all the time. The small modular nuclear reactors, which may be part of the future of reliable electricity in the UK, are 300 MW constant.

We call the new track running outside the turbine area from Crow Hill to Alcomden Stones the **Stanbury Bog Expressway**. The continuation to the graffiti elephant on Cock Hill is the **Brontë and Kings Skyline.** The track from T27 past T28 is on the **Wadsworth Watershed.**

CEP 240 MW is grossly overcrowded

Every wind farm design statement begins by explaining the spacing. The spacing unit is rotor diameters (about twice the blade length) and every wind turbine type gives the maximum power and the rotor diameter. The turbines used by the developers to model CEP in the Scoping Report are Vestas 7.2 MW/ 160 metres.

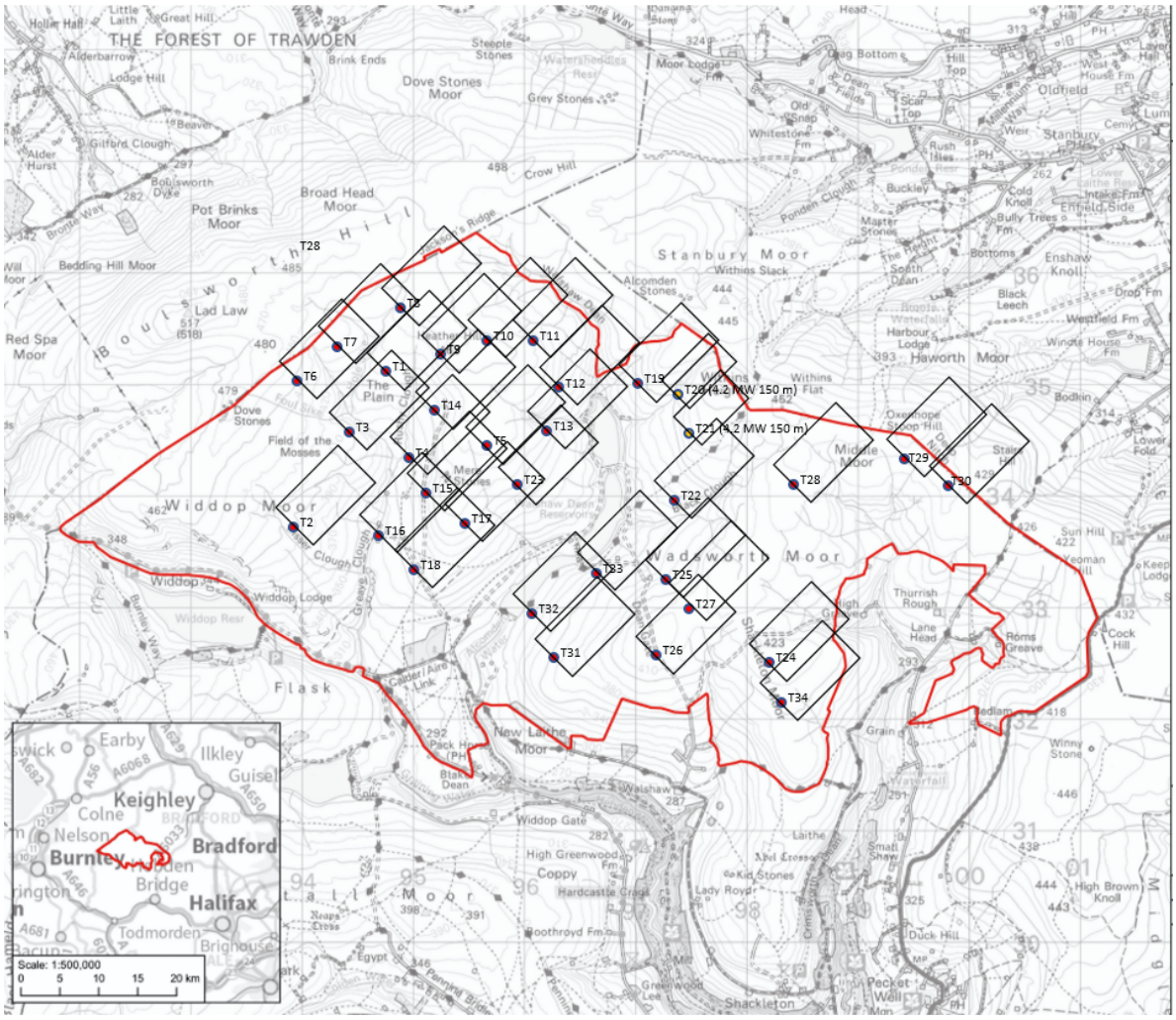
A typical design statement is that for Garn Fach WF in Powys. Garn Fach was designed by EDF while Christian Egal, the CEP Project Director, was CEO of EDF Renewables.

"4.3.3. Wind Turbine Spacing – the wind turbines need to be spaced far enough apart to ensure that whatever the wind direction, the energy losses associated with the wind turbines are minimised.

4.5.11 The Applicant has applied a minimum separation distance between each of the wind turbines, in general 5 times the rotor diameter (RD) when perpendicular to the predominant wind direction, and 3 times the rotor diameter for other wind directions. This creates an elliptical shape around the wind turbines orientated in the direction of the predominant wind direction. This is to protect turbines from the wake effects caused by other wind turbines in the scheme so that they do not hinder performance."

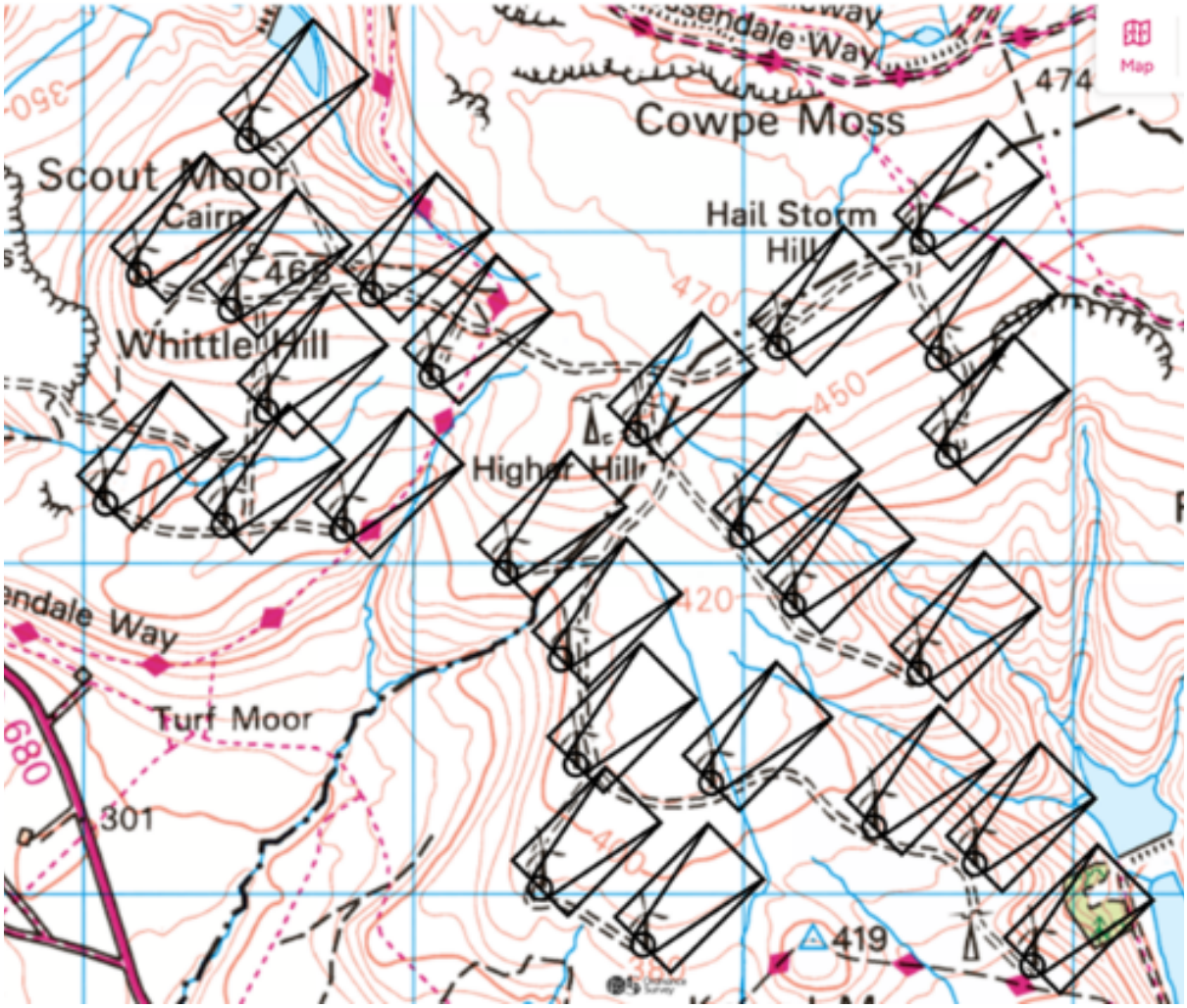
This 3 RD by 5 RD spacing is the minimum used in the UK. In Europe and the US, a 6-15 RD spacing is used downwind because 5 RD is too short to reduce the wake losses. All UK onshore wind farms are less efficient than those elsewhere. The point is that 5 RD downwind is a bare minimum.

The diagram below shows the 3 RD by 5 RD spacings for CEP 240 MW. These rectangles should not overlap.



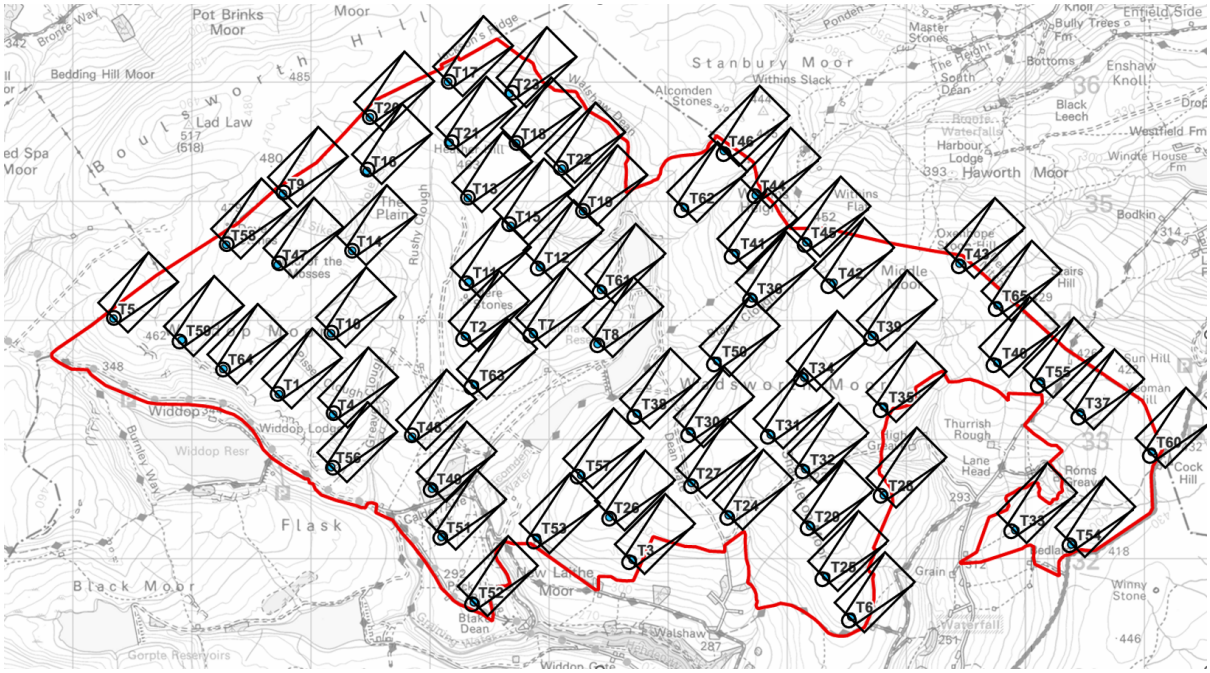
[CEP 240 MW is grossly overcrowded. The rectangles are 3 RD by 5 RD downwind, and a SW prevailing wind is assumed. © WTRG]

Here is the same diagram for Scout Moor.



[Reputable Scout Moor on identical Pennine terrain is even more efficiently spaced than the 3 RD by 5 RD UK minimum. WTRG]

It is worth looking at the original 65-turbine layout of Calderdale Wind Farm, which has been described by the lead consultant of CEP, Donald Mackay, as “worse than useless”. It was designed by reputable Natural Power who have ceased to be the CEP consultants and was correctly spaced. This means that CEP 240 MW could be described as **much** "worse than useless".



[The original 65-turbine CWF (312 MW) with Vestas 4.8 MW/ 120 m turbines was correctly designed by reputable Natural Power using a 3 RD by 5 RD spacing. WTRG]

Were it permitted, the gross overcrowding of CEP 240 MW will be paid for by the British electricity billpayer. Since every Environmental Statement for a wind farm design begins with a statement on spacing, the layout given for CEP 240 MW is not viable.

Stone

CEP 240 MW will need about 800,000 tonnes of crushed stone (aggregate) to build the tracks, permanent crane hardstandings, compounds and turbine foundations. It has been known since at least 1970 that West Yorkshire gritstones when crushed to aggregate are too weak, porous, and susceptible to frost to be used for road stone or concrete. This fact is printed on the British Geological Survey Sheet 77 (Huddersfield) containing the CEP site. Such is the problem for construction that the five West Yorkshire councils publish an annual Aggregate Assessment in which they work out how to deal with the aggregate problem for the next year. Although these facts are known to every builder in West Yorkshire, the developers only acknowledged them on 21 May 2025, having been shown BGS Sheet 77 (Huddersfield) by a member of the public on 17 May 2025.

Most windfarms in Scotland and Wales are constructed from stone quarried in onsite borrow pits. The geology means that the stone can be used for all purposes. Any stone quarried inside the CEP red boundary can only be used as bulk fill. This bulk fill is available from all reputable West Yorkshire stone quarries as a waste product from the extraction and cutting of high-quality building stone blocks, for which gritstone has always been highly suitable and attractive.

The strong aggregates will have to be imported from out-of-county. Limestone from the North Yorkshire Dales cannot be used as a roadstone on Walshaw Moor because the reaction between limestone and the strongly acid bog will release bicarbonate, which is poisonous to peat-forming sphagnum. Granite or another inert stone must be imported for the track surfaces. The onsite bulk fill can only be used in the deep sub-base, beyond the reach of frost. Where the peat is deeper than 1.5 metres and flat (less than 5% gradient) it is possible to float he track. A floating track will be made entirely of imported granite. Granite from Loch Linnhe south of Fort William in Scotland is exported by ship all over Europe. The CEP granite would be brought by lorry from the nearest port, probably Ellesmere.

So, unlike Scottish and Welsh wind farms, huge quantities of stone must be imported to the site. It was announced on 3 February 2026 at the Hebden Bridge meeting of the Hilltop Parishes that all the stone will go via the Lancashire Moor Road and onto site via the Crow Hill Access. The aggregate deliveries will be far more disruptive to people on the stone routes than the turbine component deliveries which will happen at night.

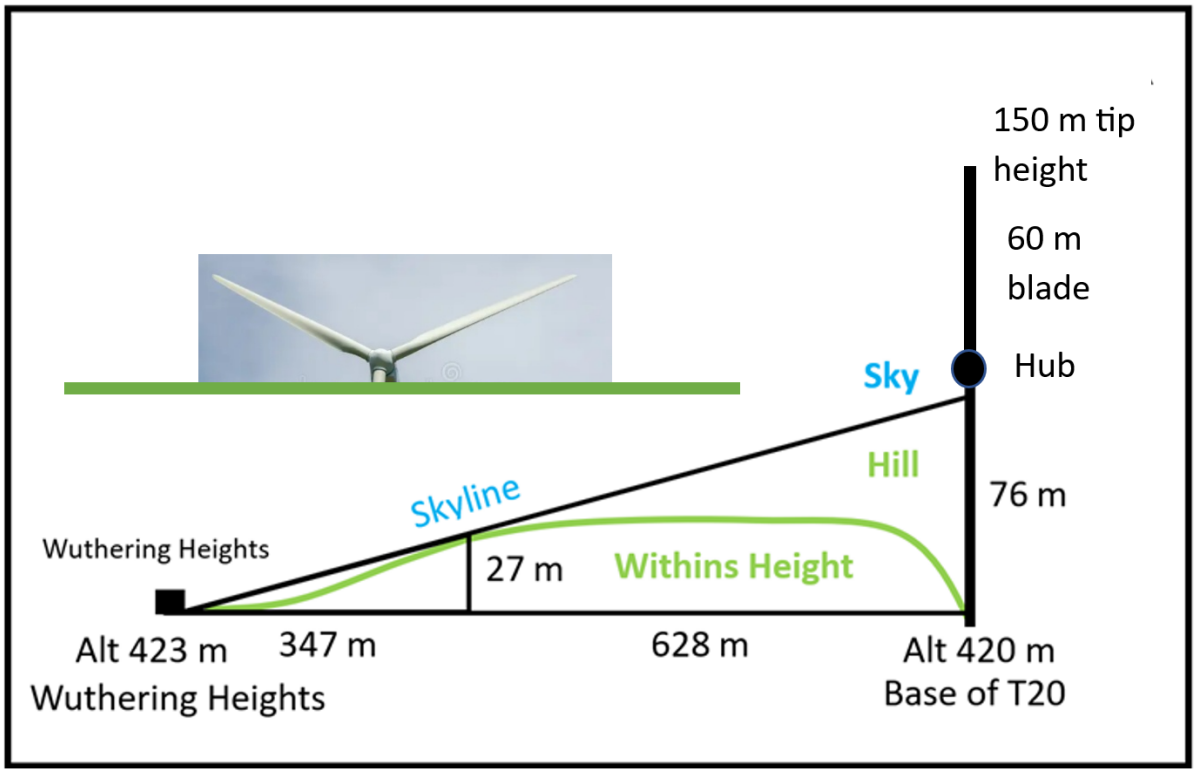
Brontë Skyline and Wadsworth Plateau tracks

This track (marked in green on the map) is 10 km long and only serves the Bronte Cluster, T28, T29 and T30. The track continues to the Elephant on the A6033. Donald Mackay said that the purpose of the track is to reduce heavy traffic on the Colne side by delivering some HGV loads via Halifax, past Ovenden Moor WF. The example given was “a drum of cable”. He also observed that the track connects with the search area for the connection from the onsite 33kV/132 kV substation to the grid.

The pain for people on the stone routes can be hugely reduced by taking out the Brontë Cluster and this 10 km of track, which, since it is all on at least 2-metre deep peat, will be made of imported granite. This huge improvement for people, ecology, pollution, peat, and cultural heritage comes at a cost of only 21.6 MW. We will discuss the 132 kV cable and the cultural heritage implications later.

Wuthering Heights Cluster

The Wuthering Heights cluster remains highly controversial. T20 and T21 are now reduced height turbines, with a tip height of 150 metres. They will be Vestas 4.8 MW/ 120 m turbines. The tip height reduction is to attempt to hide the turbines (but not the blades) from somebody standing at Top Withins. This has failed. The diagram shows the appearance of T20 from Top Withins itself. T21 will also be similarly visible.



[Analysis of the visibility of T20 from Top Withins. WTRG]

Of course, visitors to the most famous literary landscape in the UK will only have to walk up the desire path behind Top Withins for one minute before they

are confronted with the full Wuthering Heights cluster and a view of the whole of Calderdale Energy Park.

Furthermore, it has been noted that the reduced rotor diameter of T20 and T21 will make them spin faster than the other turbines so that more attention would be drawn to them. Julie Martin notes in her reports on siting wind turbines in the South Pennines that this effect is undesirable and contrary to good practice.

Culling the Brontë and Wuthering Heights clusters

Culling the clusters (six turbines: T19, T20, T21, T28, T29, T30) and the associated very long tracks (Brontë Skyline, Stanbury Bog Expressway, Wadsworth Plateau) reduces the total power by only 38.4 MW but reduces the total track length by 30%. Since these tracks are all floating, all this stone would be imported granite, not bulk fill. Since the whole area is the most controversial for cultural heritage, this culling is inevitable on the narrowest understanding of the purpose of the King's Pennine Gateway at Penistone and the immortal literary landscape of the Bronte Moors, for which the UNESCO listing process has begun. Five much less sensitive turbines have rightly already been culled from the Scout Ridge and Dove Stones on visual grounds. The developers have left in these six turbines only so that they can be culled.

We are really dealing with CEP (202 MW), formed of the grossly overcrowded Sod, Heather Hill and Wadsworth clusters.

The track system

Note: The destructive effect of the track systems might be reduced were the clusters correctly spaced, as they must be before the DCO application. We can only deal with what is in front of us.

Because it is so overcrowded, CEP (240 MW) has been forced to use steep sites on the edges. This is particularly so in the Heather Hill cluster. Sod Cluster is all steep as it lies in the funnel that feeds the Greave Clough sluice and tunnel.

There is a hierarchy for route selection when building tracks on deep peat. The one below was used by SSE to decide route selection on Viking WF on Shetland.

Preference	Level	Ground type	Track design strategy
STRONGLY PREFERRED	1	Watershed without peat ('mineral'); may have patchy re-vegetation but not complete or almost-complete cover (at which stage it becomes Type 9).	Minimal imported materials, low sediment generation, appropriate mineral/nutrient level, allow free water movement. Route ideally follows watershed, but deviation from this line (bends, junctions etc. to suit operational requirements) permissible. Removal of any vegetation that would otherwise be buried for re-use in restoration elsewhere.
STRONGLY PREFERRED	2	Watershed with eroded peat, selecting bare peat, bare peat with fragmented haggs, heavy anastomising erosion, heavy dendritic erosion etc. in that order; in general, the more bare peat and the shallower it is, the better.	As for 1, although deviation from line of watershed, bends, junctions etc. becomes less acceptable as peat becomes thicker. In thicker peat, becomes cut track; strip off peat and hagg tops for use in restoration.
PREFERRED	3	Follow existing drainage line (e.g. linear erosion gully perpendicular to contours) on sloping ground.	Track will remain a drainage line. Will probably require low-permeability batters and trackside ditches, plus a means of dispersing water at downslope end of section. Water management required at junctions with watershed (Type 1 and 2) and contour (Type 4) routes.
PREFERRED	4	Follow contour perpendicular to linear erosion gullies, choosing thinnest (hagg) peat available.	Hybrid 'floating'/"peat replacement' design with appropriate arrangements for retaining/transmitting water; different hydrological considerations for near-summit and slope-foot locations.
AVOID IF POSSIBLE	5	Thick peat edges alongside burns/soakways.	Peat here appears to be up to 4m thick, but can often be avoided by moving slightly upslope. Track construction as for 4 but may present additional technical challenges.
AVOID WHEREVER POSSIBLE	6	Routes that run at an angle to both flow lines and contours. Acceptable where essential on steep access routes with thin peat.	Design to ensure that track does not become additional drainage pathway. Cable trenching to incorporate barriers to preferential drainage through cabling sand.
AVOID	7	Re-vegetated mineral watersheds with no sphagnum or peat formation yet.	It should not be necessary to put tracks here. If essential, procedure would be as for 1 and 2; strip vegetation and use for restoration elsewhere.
STRONGLY AVOID	8	Watersheds with recovered Sphagnum carpets; very wet, often with small pools, and usually with one or more decimetres of acrotelm/peat.	It should not be necessary to put tracks here. If essential, procedure would be more or less as for 1 and 2; strip vegetation and use for restoration elsewhere.
STRONGLY AVOID	9	Watersheds that retain intact mesotype centres, even if erosion gullies have reached them.	It should not be necessary to put tracks here; use Type 4 tracks to skirt intact peat.

[Route hierarchy for tracks on peat. WTRG following SSE Viking]

Stanbury Bog Expressway

Level 8: STRONGLY AVOID for first 2 km after leaving Crow Hill.

Wadsworth Plateau watershed

Level 9: STRONGLY AVOID. The peat here is deep and luxurious to run on because it is so uneroded. The erosion gullies are well away from the watershed. This area is prime for golden plovers, some of which even over-winter.

Heather Hill Cluster

Watershed T8-T9-T5-T15 is type 2: STRONGLY PREFERRED

T11-T12 is Level 6: AVOID WHERE POSSIBLE. It is caused by the very unusual position of T12 which should be culled; note it is in the wake shadow of T13.

Sod Cluster

T2-T3 is Level 6 AVOID WHEREVER POSSIBLE. It also runs along the only feature mentioned in the Scoping Report as a locus for surface flooding: Cross Dike and Waterfall Syke (given as Waterfall Skye on the completely incompetent Logika hydrology map Scoping Report Fig 8-1). We discussed this particular traverse with Donald Mackay at Trawden. He said, “No. No. You don’t go sideways there.”

T1-T8. This is very deep peat on a 10% slope. Although it is technically Level 4 it is not possible to avoid the thick haggs.

T6-T7-T8 This requires major crossings of Upper Greave Clough and Hole Syke. Bridges will not work here; the developers will ask the Environment Agency to build huge embankments in the two watercourses. The EA should hold firm on the grounds of flood risk in the most dangerous section of the turbine area.

Wadsworth Cluster

The watersheds T34-T24-T27-26 are perhaps Level 2. The steep descent to the bridge T33-T32-T31-Alcomden Water bridge is unusual on a UK wind farm. The route crosses the contours at an angle so Level 6: AVOID WHERE POSSIBLE but the link is essential to the proposal as it is effectively a “steep access route with thin peat”. It cannot be avoided because the total power would drop below 100 MW if Walshaw Dean is not crossed. It is a consequence of poor site choice and the need to over-exploit the terrain to get to 100 MW.

T33-T22 is a contour across three watercourses followed by a drop into Black Clough. This is a difficult traverse. The EA will insist on bridges, and these are possible. Yorkshire Water are likely to be opposed to embanked crossings above their reservoirs.

Summary

Culling the last 38 MW as above removes the Stanbury Bog Expressway and Wadsworth Plateau watershed track.

The track system in Heather Hill Cluster would resolve if the turbines were fewer and correctly spaced.

Sod Cluster has immense difficulties to do with drainage and this catchment which feeds the Greave Clough sluice and tunnel; this is the most dangerous catchment for flooding Hebden Bridge because in storm conditions the water bypasses the tunnel over the sluice wall and goes directly to Hebden Bridge. If the EA remains firm on the flood risk Sod Cluster is completely culled. Sod Cluster is grossly overcrowded but unlike Heather Hill, the difficulties do not resolve when it is correctly spaced.

In general, the contouring tracks generate more spoil and peat removal than the same length track on flat ground.

Borrow pits

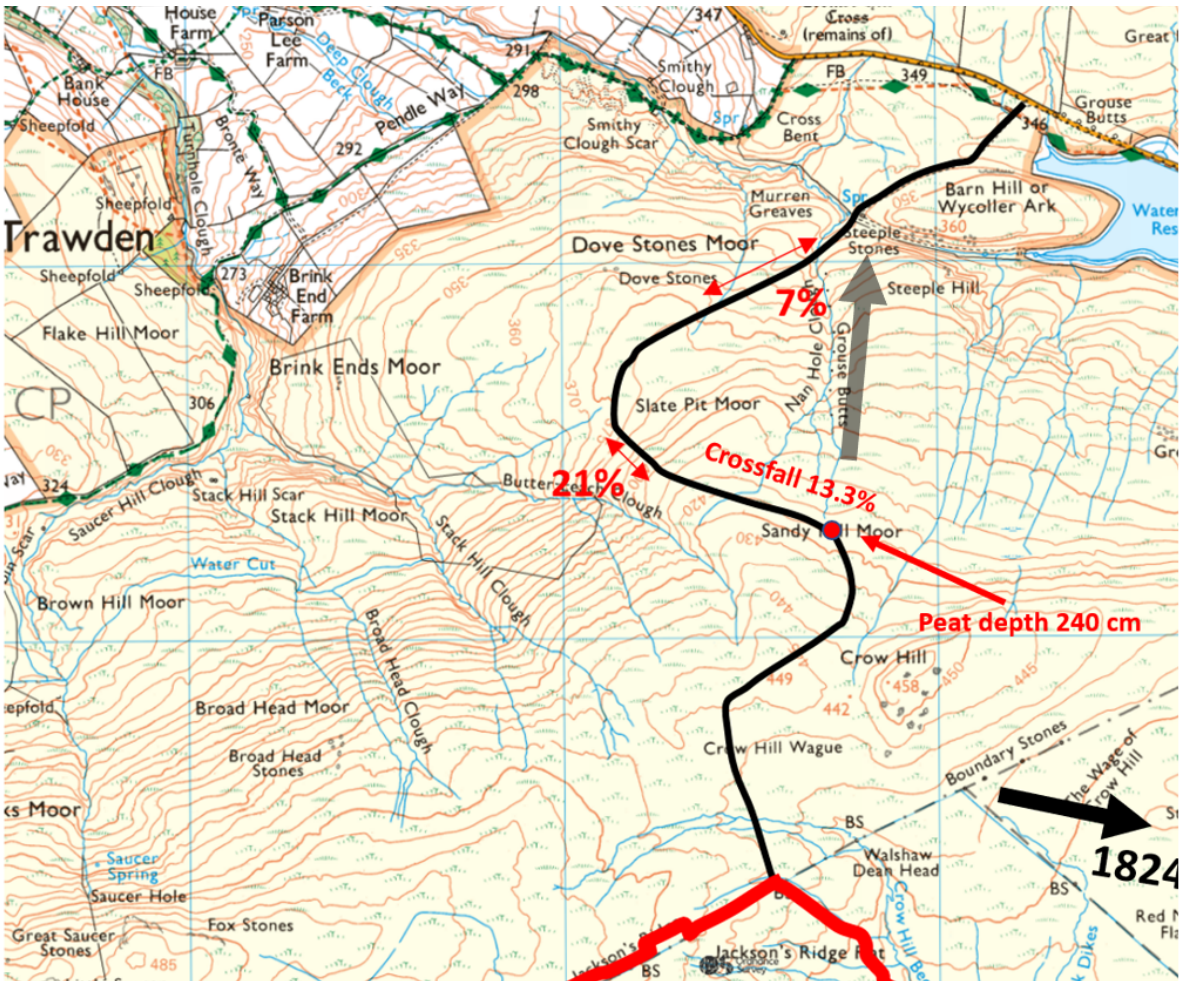
The material that comes out of the borrow pits can only be used for bulk fill. It is effectively the same as the quarry waste found in spoil tips at all West Yorkshire quarries, where the product is high-quality blocks. Since the site is inside the South Pennines SAC it should not be quarried just to extract such poor material. The bulk fill should be imported from the surrounding quarries in West Yorkshire and Lancashire. Of course this means more lorry movements, but these are a consequence of the unsuitable site choice of an internationally designated SAC.

The material in the borrow pits will have to be blasted out because there is no horizontal access to the rock. We cannot find an SAC that has ever been dynamited so extensively, but the developers may be able to give a precedent.

The problem is that the developers don't need the bulk fill, but they do need the borrow pit voids to dump extracted spoil and the peat. The first thing Ashley Robinson (who runs the DCO process) said at the Hebden meeting was "Nothing can leave the site. We must deal with what we excavate onsite." Again, the choice of an SAC was a mistake because the wind farm cannot be bult without borrow pits to dump the spoil, and nobody has ever dynamited an SAC.

Crow Hill peat slide

The Stronger Together response to the Scoping Report contains an extensive analysis of the peat slide risk on Crow Hill, the scene of the catastrophic bog burst of 1824. This work is published on the Planning Inspectorate website in the Scoping Opinion and begins on p 384. Our work has evidently caused a rethink because the access track now goes straight up the danger area, rather than traversing it on very deep peat. This change of route does not excuse the developers from proving that the peat will not slide in the Nan Hole Clough drainage fan, and because this access route is existential to the proposal, consultees should be told that the safety of Crow Hill has been independently demonstrated by soil engineers before time and effort is spent on the internal issues.



[Analysis of the peat slide risk on original Donald Mackay Crow Hill Access. The access track now goes directly up Nan Hole Clough. WTRG]

Conclusions

- Some of the proposal should be culled at once, reducing the power to 202 MW.
- What remains is grossly overcrowded by the standards of all reputable UK wind farms and of the Project Director himself. The proposal must be thinned out before the DCO, and this should happen before the consultees waste more time on a non-viable layout.
- Thinning out may resolve some of the Heather Hill track problems.
- Sod Cluster is not viable and should be rejected by the EA. It is grossly overcrowded, but thinning out will not resolve its high flood risk.
- The borrow pits problem is insoluble and is caused by the very poor site choice.

Only when all these matters, which are common to any wind farm proposal, are resolved can we begin to assess a correctly designed 140 MW wind farm that is proposed for a site that is:

an internationally designated SPA/SAC;

a cultural landscape of world renown;

and a wonder of the world that is of stated national significance, the gateway to which has been sponsored by His Majesty the King.