

WIND FARM FEASIBILITY

Finding level ground in the hills

Drone LiDAR survey of a 1,000 hectare site, giving a renewable energy developer the terrain data behind every turbine, crane pad and access track decision.



Wind farm feasibility starts with the ground. Before anyone commits to a layout, a developer needs to know where turbines can physically go, how kit gets to them and what it'll cost to build. On 1,000 hectares of moorland and forestry, we answered that in one survey.

1 WHAT FEASIBILITY NEEDS TO KNOW

Turbines, crane pads and assembly areas all want gentle, stable ground. Access tracks need gradients that delivery vehicles can handle. Get the terrain wrong and the cost shows up later in earthworks, redesign and delay. Get it right and the best positions stand out from day one.

2 SURVEY GRADE DATA, ANYWHERE

We flew drone mounted LiDAR over the whole site in a matter of days. Minimal mobile signal made things harder, as network RTK wasn't reliable. We still got the job done properly, setting out our own ground control and using PPK corrections for survey grade results.

LiDAR's big advantage here is that it sees through vegetation. Laser pulses get between branches and through heather to the ground beneath, mapping the true terrain under dense forestry where photogrammetry only sees treetops.

3 READY TO DESIGN WITH

- Ground classified point cloud, tiled for easy handling
- Bare earth DTM for slope and cut and fill analysis
- DSM showing trees, structures and obstructions
- TIN surface model ready for CAD and civils
- Ready to open GIS project, so screening could start straight away

PROJECT AT A GLANCE

CLIENT

Renewable energy developer

SITE

c. 1,000 ha of moorland and forestry, Scottish Lowlands

PURPOSE

Wind farm feasibility · Turbine siting · Slope analysis

METHOD

Drone LiDAR · Ground control · PPK corrections

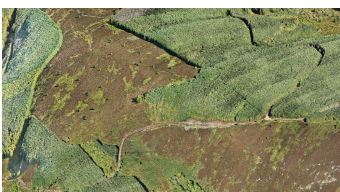
DELIVERABLES

Point cloud · DTM · DSM · TIN

FORMATS

LAZ · GeoTIFF · DXF · QGIS project

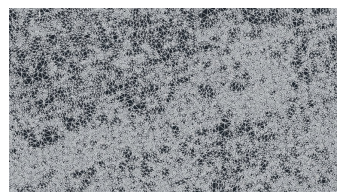
Seeing the ground, even under the trees.



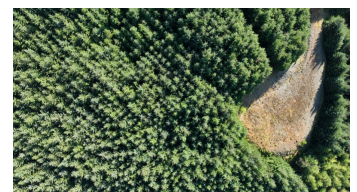
Point cloud · moorland, forestry and existing tracks



Bare earth DTM · the terrain turbine siting depends on



TIN model · surface ready for CAD and civils



Forestry · LiDAR sees through to the ground

1,000 ha

Mapped in days, not weeks of ground survey

Below the canopy

True terrain under forestry and vegetation

Remote, no problem

Minimal signal, still survey grade with GCPs and PPK

Design ready

Straight into GIS, CAD and civils software