

CASE STUDY 6

British Telecom (Kinloch Hourn)

Location:

Kinloch Hourn,
Highlands

Site Overview:

Kinloch Hourn is a fairly standard telecoms application that offers good exposure due to its remote location.

Many telecoms are remote, well exposed and far from a grid connection. Historically, a diesel / battery charging system provided the power for this type of application. The main down sides to this approach are the cost and environmental implications as well as the maintenance & re-fuelling problem since the locations are often naturally hard to reach.

Grid connection is usually out of the question due to high costs involved with running a cable from the nearest transformer – sometimes running into hundreds of thousands.

Kinloch Hourn is a hybrid site that enjoys solar (PV) panel input as well as wind turbine input; this helps to ensure a balanced supply of power throughout the year.

Access Restrictions:

Public access site that requires no permissions / Authorisations prior to any visits.



Equipment:

WT600/024 battery charging wind turbine.
TM550 5.5m tilt-up, self-supporting tower.
1kW PV array
Installation: 1997
Guide Cost: £8,000GBP - £10,000GBP

Performance:

Annual Average wind-speed: 6m/s
Carbon Displacement:
838kg/CO2 per annum
Projected Annual Output: 1,948kWh
Approximate Annual Savings: £1200GBP*
ROC's revenue generated: £78GBP

Technical Specifications (per turbine):

Rated kW output (at 12m/s): 600Wp
Cut in wind speed: 2.5m/s
Cut out wind speed: n/a
Inverters: 1off Trace 'pure sine' inverter
Blade Diameter: 2.55m
Rotor Thrust: 2.5kN
Noise @ 5m/s: 35dBA
Hub Height (centre): 5.5m
Head Weight: 70kg
Tower Weight: 120kg
Main Foundation Dimensions:
1000mm x 1000mm x 1000mm

*N.B. annual savings is based upon the approximate cost of running the site from a diesel generator consuming just over a barrel of diesel a month at £70GBP per barrel.

*If the site were to have a grid connection, the costs could quite easily run into tens of thousands, if not hundreds of thousands.

