PLANNING STATEMENT

DATE : 05 March 2023

PROJECT :

Proposed wind turbine, land at rear of Grindal House, St. Bees

Statement

This proposal follows on from the approval for the change of use of Grindal House from a school boarding house to an apart hotel. The works to carry out the conversion have started and are due to be complete towards the end of 2023.

This proposal is for a 20KW wind turbine which will generate electricity for direct use in the hotel with storage facility in peak generation times by TESLA batteries which will be houses in the rear of the building.

Given the cost of energy and the uncertain future costs it is essential that the business explores alternative energy to ensure it can remain viable in perpetuity and ensure the important building at the centre of St.Bees continues to have a viable end use. Since the agreement was made to purchase the building energy costs have doubled over what was predicted and given that the building is listed has single glazing and poor levels of insulation it is essential that any possibilities for self-generated energy are maximised.

The investment into the turbine and battery system is considerable but given the hike in electricity costs the potential return period on the investment has improved considerably.

The proposal is to position the turbine at the far end of the recreation field (which is currently used by a local farmer for grazing). The turbine would be pole mounted and face down the field to make best use of wind movement up the valley. The turbine will be enclosed by a security fence for safety reasons and also to prevent unauthorised access. An image of the type of fencing is inserted in this document.

The turbine is situated outside of the conservation area boundary and away from the main curtilage of the listed building so does not require a heritage statement.

For full details of the turbine see the following data sheets and the submitted Turbine drawing.

Access to the turbine will be across the existing field, there are no plans to make a formal track.

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DATA SHEET

GENERATOR	Type	Permanent Magnet
	Maximum Power	20 kW
	Rated Power	18 kW
ROTOR	Configuration	Horizontal Axis
	No. of Blades	3
	Blade Material	Glass fibre
	Blade Length	4.5 m
	Rotor Diameter	9.8 m
	Swept Area	75.4 m2
	Nominal Rotor Speed	120 rpm
	Pitch/Yaw	Downwind active pitch with assisted yaw
WIND	Cut-In Speed	2 m/s
	Rated Wind Speed	9 m/s
	Cut-Out Speed	30 m/s
	Survival Speed	70 m/s
WEIGHTS	Nacelle/Rotor	1,000 kg
TOWERS	Lattice	15 – 36 m
	Monopole	18 – 27 m
	Tilt-Up	18 – 27 m
DESIGN PARAMETERS	Turbine Design Class	IEC 61400-2 Class I
	Temperature Range	-20° to 50°C
	Lifespan & Servicing	20 years, subject to regular maintenance

APPLICATIONS

- Industrial
- Agricultural
- Off-Grid
- Micro-Grid
- Remote & Island Communities
- Built-Up Environments

The E-20 is capable of supplying electricity to 13 homes each year

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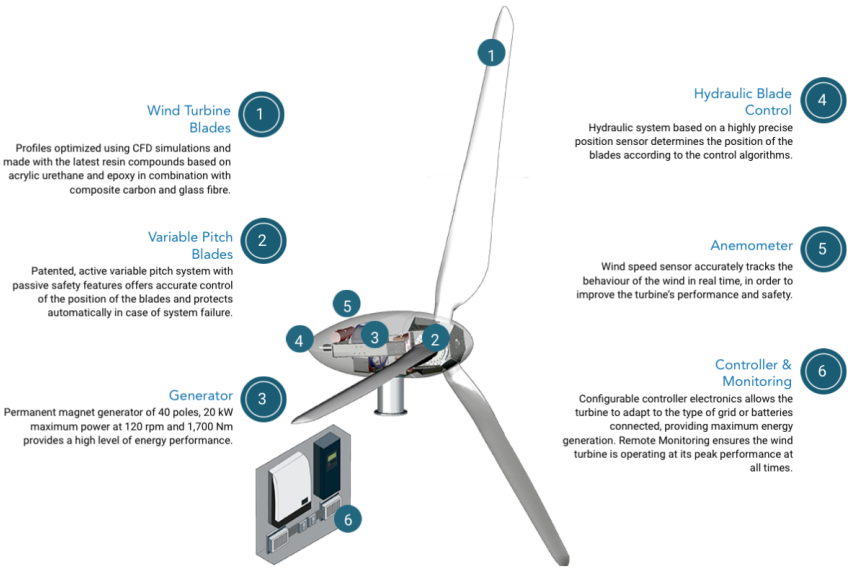
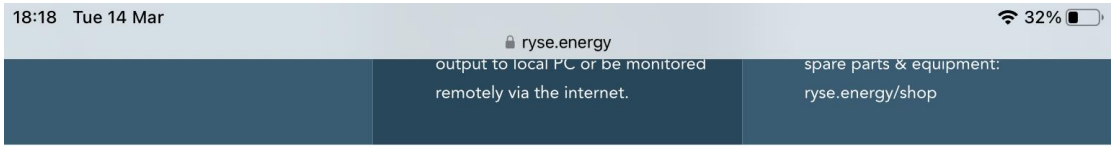
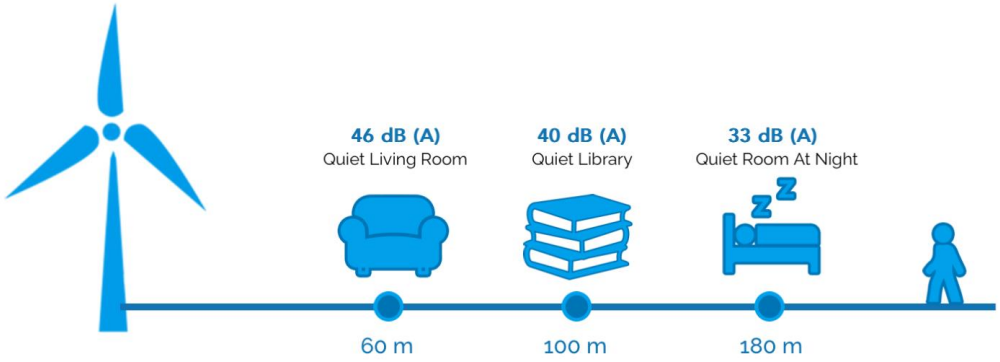
OVERVIEW

DESIGN CHARACTERISTICS





NOISE



CASE STUDIES

GALLERY

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1 of 2

E-20

DATA SHEET

The E-20 is capable of supplying electricity to 13 homes each year.

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	Swept Area	75.4 m^2
	Nominal Rotor Speed	120 rpm
	Pitch/Yaw	Downwind active pitch with assisted yaw
WIND	Cut-In Speed	2 m/s
	Rated Wind Speed	11 m/s
	Cut-Out Speed	30 m/s
	Survival Speed	70 m/s
WEIGHTS	Nacelle/Rotor	1,000 kg
TOWERS	Lattice	15 – 36 m
	Monopole	18 – 27 m
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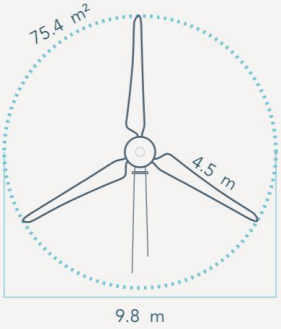
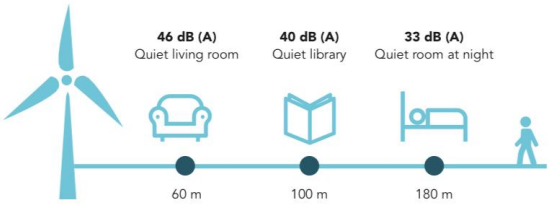
TECHNICAL PROFILE



CLASS I

ACTIVE REGULATION

NOISE



Approx. Data

01

Above: security fence type to enclosure