

Alan Goforth
Ryedale District Council
Development Control
Ryedale House
North Yorkshire
YO17 7HH

29th June 2022

Re: Application Ref. 22/00602/FUL

Dear Mr. Goforth,

Following your visit to the farm on Tuesday, I'm writing to explain why we need to repower our wind turbines.

As you'll be aware, there's been a sharp increase in the cost of electricity, and this looks to be repeating itself again in October, when Ofgem are due to raise the electricity cap that restricts price increases to the public.

Boythorpe Farm has many large buildings which it rents out to local company *Be&F Potatoes Ltd.*, and their operations include processing and cold storage which use large amounts of electricity.

Unfortunately, the rise in the cost of electricity has in the last twelve months seen charges increase from around 14p per kw to more than 47p per kw. This large price rise is a concern to our tenant and ourselves, and we are looking to reduce this burden by generating more electricity at lower wind speeds.

As the example invoices showed, we have always passed on the benefits of low-cost renewable electricity to our tenant — and going forward we would like to do this with another neighbouring farm too.

Attached is a diagram showing the current V27 wind turbine and the proposed V47 wind turbines 'power curve'.

A power curve is how much electricity a wind turbine can generate at various wind speeds, normally starting at about 3ms (three meters per second) up to 25ms — at which time they automatically pause until the wind drops slightly.

Both turbines will generate a maximum of 225kw, but as you can see the proposed larger blade wind turbines power curve rises far faster. This is due to the 'swept area' being greater and catching more wind—the increase in size allows more electricity to be produced at lower wind speeds.

As the average wind speed throughout the year at Boythorpe farm is 7ms, it will make a considerable difference.

At 7ms the current wind turbine generates just over 50kw... while the proposed wind turbine will produce about 160kw.

The additional electricity generated at lower wind speeds will help considerably, by reducing the amount of imported electricity consumed by the farm and its tenant and neighbouring farm.

I hope this explains the need for the larger blades, but if you have any queries please don't hesitate to contact me.

Kind regards,

Edward Ravis
Boythorpe Farm

Vestas V27 versus V47 Power Curve

