



NEWSLETTER

Summer 2022

In This Issue:

- *Export prices hit record high*
- *Selling my wind turbine to Arena Capital Partners*
- *Condition monitoring: Shaft failure case study*

“Selling your wind turbine to Arena Capital Partners releases tied up capital that can be used to buy machinery or fund projects on the farm such as building holiday lets...”



Want to release capital tied up in your wind turbine?

Earthmill Maintenance parent company Arena Capital Partners Ltd are actively seeking to buy turbines having successfully raised funds to grow their fleet to 100 turbines. If you are interested in selling your turbine get in touch today.



ARENA CAPITAL PARTNERS LTD.

Call today:

01937 581011

Arena Capital Partners Ltd is the parent company of Earthmill Maintenance Ltd.

Foreword...

Welcome to the Summer 2022 edition of the Earthmill Maintenance Ltd newsletter.

As life is returning to normal following the pandemic, here at Earthmill we have been busier than ever.

Given rising energy prices, we've seen a sharp increase in inquiries for new turbine sites. With opportunities for refurbished turbines becoming available we anticipate 2022 will be the year that Earthmill once again start installing wind turbines.

We will, of course, keep you all posted with new developments.

We'll be at the usual summer shows and this year will be hosting a client drinks reception from 2pm on each day. I hope to see you all there.



Steve Milner, Managing Director



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High offers for PPAs but it's still worth shopping around

The situation in Ukraine has pushed fuel and electricity prices to record highs. While this has been unwelcome news for most, wind turbine owners stand to benefit from increased returns for energy that is exported back to the grid.

Prices remain volatile, changing on an hourly basis. At the time of writing offers stood between 15 and 19p/kWh.

Earthmill Maintenance's Oliver Thorp commented, "while generator owners might be pleasantly surprised by their renewal offer it is still worth shopping around to get the best price. What we are seeing is that some PPA providers are being far more conservative than others with their offers. There can be up to 5p/kWh difference between offers for the same site. Over the course of 12 months this amounts to a very significant difference."

As always, Earthmill Maintenance strongly recommend that generator owners do a degree of due diligence on PPA providers before signing up to ensure they are comfortable they have a strong financial footing.

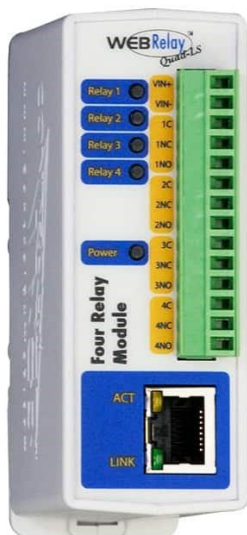
Advice: be sure to submit REGOs

The value of Renewable Energy Guarantees of Origin (Rego) certificates has increased considerably in recent years. In May 2022 prices at auction for REGOs from wind energy were £4.80 per MWh.

Ofgem issues generators of renewable electricity one Rego certificate for every megawatt hour (MWh) of eligible renewable output, with certificates usually sold to the electricity company alongside any power exported to the grid.

Many energy suppliers buy their power from wholesale markets and demonstrate their green credentials by buying REGOs. This process has pushed up the value of Rego certificates as more corporate customers want to demonstrate they are doing their bit with renewable energy.

Oliver Thorp added, "previously the amount you would get for submitting your REGOs was negligible but its worthwhile now the value has increased. Generator owners need to submit them on the Renewables and CHP register on the Ofgem website. It is a simple task and only takes a few minutes to do. If anyone needs assistance, they can call the Earthmill team on 01937 581011 to be guided through it."



Turbine communication improvement with web relays

In a drive to improve turbine communications Earthmill engineers have been trialing 4-way web relays on turbines across the country. The relays connect to the internet to give the office-based operations team the ability to restart both the PLC and MHAS condition monitoring system without the need for a site visit or landowner intervention.

Tech support engineer, James Drake commented, "Web relays have been proven to allow our team to monitor turbines more effectively by getting them back online faster when comms go down. When a turbine goes 'PLC Unreachable' it is essentially like a computer crashing and a power cycle is required to wake it back up. Many clients will have received emails and phone calls from me asking them to power-cycle their turbine by flicking the blue CB3 trip switch. By installing a web relay we can save landowners the hassle by power cycling the turbine remotely."

The relays were successfully tested on Earthmill's own fleet over the last year and are now being rolled out to clients.

By combining the installation of a web-relay with your next service or site visit supply and installation costs only £350. The relays come highly recommended for anybody with condition monitoring or anybody who frequently must reset the turbine at the base of the tower.



Earthmill Maintenance set to gain internationally recognised accreditation

This Summer, Earthmill Maintenance is aiming to gain accreditation to the ISO 9001 & 14001 schemes.

ISO certifications are part of a globally recognised scheme designed to improve quality, safety and efficiency. Specifically, ISO9001 sets standards for quality management & ISO14001 standards for environmental management. The company will undergo audits to ensure standards are met.

Compliance manager Lucy McMahon said "while this is not the most glamorous area of our business, it is great news for all our customers and stakeholders alike. The whole point is to set the bar for quality and to constantly seek to improve. Gaining the accreditation is just the start, we will then undergo periodic assessments to ensure that standards remain high. We hope to announce the results of our audit later this summer."



£2m invested in stock parts



Increased office resource



More field engineers

Nobody can repair your Endurance turbine faster

As a turbine owner you will understand that the longer your machine is out of action, the more costly a repair becomes because if it's not generating, it's not earning you an income. At Earthmill Maintenance we have taken a number of steps to reduce the time it takes to repair a wind turbine.

We have invested heavily in spare stock

We can say with confidence that no other O&M provider holds more stock for Endurance wind turbines than Earthmill Maintenance. We have invested over £2m in spares including major components such as gearboxes, bedframes, generators, shafts and complete blade sets. We even keep a spare refurbished nacelle for our largest client so if and when necessary we can perform a 'hot-swap' removing the old nacelle and replacing it with a fully refurbished one the very same day.

If your turbine breaks down it's likely we already have a replacement part on the shelves meaning we can get your turbine back up and running right away.

More engineers for a faster response

We have recently employed 2 more turbine engineers. We now have 15 highly skilled turbine technicians dedicated to Endurance wind turbines that operate 7 days a week. We also have additional resource operating nationwide with our network of approved subcontractors.

Our teams are strategically based out of Yorkshire, Wales, Scotland and the South West so if you require reactive maintenance the likelihood is, an Earthmill Maintenance engineer won't be far away.

Out of hours support

We operate a dedicated central mailbox for tech support enquiries which is manned by 18 members of staff so if you have an issue on an evening or weekend, you can easily get in touch with a member of our team by sending an email to: techsupport@earthmill.co.uk.

Improved office-based support

Our Harrogate based office is the heartbeat of our operation where we monitor the

health and performance of over 350 turbines. The office has a bank of television screens displaying the remote monitoring software Windsync so we can react fast as soon as a turbine needs attention. We also monitor the movements of our field engineers so we can direct the closest team to a break down.

To effectively manage our growing fleet, we have recently recruited 3 new recruits to join our office team.

We pride ourselves on good customer service which is why we go above and beyond to help our clients with FIT & PPA queries or ad-hoc enquiries such as if they are subject to an Ofgem audit.

Due to investment we have the capacity to take on new customers.

If you want to get the most from your turbine, speak to a member of the Earthmill Maintenance team today on 01937 581011.



Fixed wire inspections under way

Earthmill engineers are currently in the process of visiting all rental turbine sites to undergo fixed wire inspections. This involves checking the integrity of the electrical installation at the base of the turbine as well as the continuity of the underground cables. These are routine works which form part of Earthmill's comprehensive health and safety programme.

There will be no interruption to electricity supplies however engineers will require access to the grid cabinet and distribution board for testing. These are often located within the farm buildings so landlords may notice an Earthmill Maintenance engineer working away from the turbine. Earthmill staff therefore kindly ask for cooperation in allowing engineers access to perform the necessary testing.

Our team will of course call you as usual ahead of the site visit so you know when to expect engineers on site. .

While Earthmill are currently undertaking these works to all rental turbines, it is recommended as 'best practice' for all sites to undergo fixed wire inspections every 5 years. Inspections can be carried out for just £875. If you would like to book your fixed wire inspection call 01937 581011.

If you have any questions or concerns, please contact us at your earliest convenience by telephoning 01937 581011



Drinks receptions at 2022 summer shows

It's show season again. The sun will (hopefully) be shining and we can't wait to see our customers both old and new for a good catch up.

This year Earthmill will be hosting a drinks reception for all current and prospective clients each day from 2pm. We've got beers brewed using electricity generated by Earthmill installed wind turbines from the fantastic Raven Hill Brewery as well as tea, coffee and something fizzy!

We'll have the Resolve bedplate and shaft solution on display as well as information on all the latest turbine upgrades and condition monitoring. We will also be providing valuations should you wish to sell your turbine.

Unfortunately we won't be at this year's Royal Welsh Show due to a clash of dates but visitors can check out our Resolve bedframe and shaft solution at Total Generation Limited's stand, number CCA778.

Make sure to pop by the EMM stand at the following shows:

	<p>12th—15th July Stand 386</p>
<p>20th—21st July Stand N219</p>	



“We invested the money into converting some of the farm buildings into holiday lets. We still have access to cheap energy from the turbine....We also receive a quarterly payment for continuing to host the turbine on our land.”



ARENA CAPITAL PARTNERS LTD.

Q&A: Selling my wind turbine to Arena Capital

Cornish farmer Nick sold his Endurance E-3120 turbine to Arena Capital Partners in March last year. Talking to Earthmill Maintenance’s Oliver Leake, he explained how he found the process and how he feels now the turbine has been sold.

Tell me about your farm...

The farm is located in mid Cornwall. It was passed down from my grandfather but has been operating as a tenanted farm. We are now taking a change in direction and focusing on tourism.

When did you have your turbine installed?

It was installed in December 2012 by Bristol based TGC Renewables which was subsequently taken over by Earthmill Maintenance.

And how did the turbine perform?

We have a windy site and the turbine had paid for itself within 5 years. For the first few years it performed really well however after Endurance folded, insurance cover became tricky and the maintenance costs also began to rise as some components failed.

We had a number of costly repairs carried out, most notably, we had to replace the blades with a refurbished set that were supplied and installed by Earthmill Maintenance.

So how did you come to sell your turbine to Arena Capital Partners?

I had met Ed Kenny-Levick from Arena around 12 months before we began the process. He explained that they would buy the turbine for fixed lump sum and then pay a ground rent going forward but at that point in time it wasn’t the best option for us.

Fast forward a year and our plans for the farm had changed – we wanted to make the most of the tourism industry here in Cornwall. That combined with the turbine having had the issues mentioned and insurers reluctant to pay out, I decided to give Ed a call.

How simple was the process to sell to Arena Capital Partners?

There was a large amount of paperwork and information gathering involved as you would expect as due diligence needs to be done. Luckily I have plenty of experience in dealing in this kind of thing through my work so it was reasonably straight forward – Ed from Arena was very helpful in providing guidance and direction, the team at Earthmill Maintenance were a great help too, extracting data relating to the turbine's historical performance.

“I’m certainly less stressed when the turbine breaks down it’s no longer my responsibility to fork out for repairs and there are no financial worries.”

How long was the process from start to finish?

In total it took around 12 months for the sale to be completed however it would have been much faster if not for us having an issue with the refurbished blade set which needed resolving before the sale could be completed.

What did you use the money for?

We invested the money into converting some of the farm buildings into holiday lets. We still have access to cheap energy from the turbine; we pay Arena the export rate for the electricity that we use on site. We also receive a quarterly payment for continuing to host the turbine on our land.

How do you feel now the turbine has exchanged hands?

I’m certainly less stressed when the turbine breakdowns it’s no longer my responsibility to fork out for repairs and there are no financial worries.

Would you recommend selling to Arena?

If selling a turbine suited somebody’s needs like it did for me, then I would definitely recommend selling to Arena. They were always helpful and straight forward to deal with and gave me what I believe was a competitive price.



ARENA CAPITAL PARTNERS LTD.

Arena Capital Partners Ltd is the parent company of Earthmill Maintenance Ltd.

If you would like quoting on the value of your wind turbine...

Call Oliver Leake today:

01937 581011

Or Email

oliver.leake@earthmill.co.uk



The logo for Turner ICENI, featuring the word 'TURNER' in white and 'ICENI' in blue, set against a dark blue background with a white and blue wave graphic below it.

**TURNER
ICENI**

Condition Monitoring Systems

For Endurance
Wind Turbines

Are you protecting your wind turbine?

- Protect your most valuable asset from major failures
- Condition monitoring systems for only £825 per year
- Talk to the Earthmill Maintenance team to enquire

Email: Info@earthmill.co.uk Tel: 01937 581011

Case Study: Condition Monitoring

Shaft Failure

Location	Fault	Detection Method	Turbine
East Yorks	Shaft Failure	Proximity Sensor	E-3120

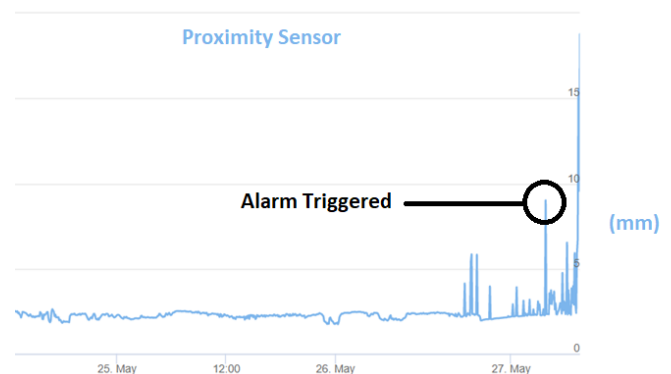
High localised stress on certain areas of the main shaft can result in cracks which most commonly begin at the keyway. These will continue to propagate and will eventually lead to complete shaft failure and loss of the rotor making early detection vital. To the human eye these cracks are rarely visible however can be detected by the shaft and proximity sensors which form part of the MHAS condition monitoring system.

In this example the system alarmed after the proximity sensor measured an increase in distance between the front bearing housing and the lightening protection ring which is mounted on the rotor.

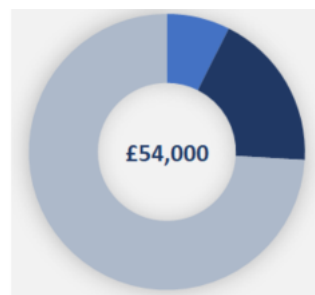
Upon inspection, Earthmill engineers found no obvious cause for the alarm and arranged a non destructive test (NDT) to check the integrity of the main shaft.

Results of the NDT inspection found that there was a 40% failure of the main shaft propagating from the keyway. Had condition monitoring not picked up on this, the failure that was not visible to engineers working in the nacelle, would have resulted in complete failure of the shaft and ultimately the entire rotor assembly detaching. Subsequently, the turbine was decommissioned and a new shaft and bedframe was installed.

Earthmill's David Smith commented "replacing a shaft & bedplate is a major project however had condition monitoring not been installed to identify the failure at this early stage the rotor and blade assembly would have ended up on the ground. This would have added around £50,000 to the repair bill.

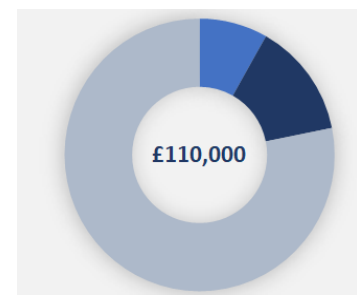


Estimated Repair Cost
with MHAS



Downtime	£4,000
Labour	£10,000
Parts & Hire	£40,000

Estimated Repair Cost
without MHAS



Downtime	£9,000
Labour	£15,000
Parts & Hire	£86,000



01937 581011

info@earthmill.co.uk



Earthmill Maintenance Ltd is part of the Arena Capital Partners group

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