

Addressing the challenges and opportunities of AMP7 and the WINEP

As if the pandemic hasn't caused enough disruption over the past year, the UK water industry also has some major work to do when it comes to meeting its responsibilities as outlined both in AMP7, and by the Water Industry National Environment Programme. Water Active talks with Eliquo Hydrok to find out how the company has responded to the demands of Covid-19 and the role its innovative technology has to play in helping water companies meet its many environmental and financial obligations.

The impact of the pandemic would seem to be an appropriate place to start. Can you tell us what life has been like for ELIQUO HYDROK over the past year?

No doubt almost everyone has felt huge changes to their working routines, at ELIQUO HYDROK we have experiences of a wide spectrum of the changes! At one extreme we have our project and administration staff now working entirely from home and re-inventing their internal communications to ensure our projects continue to run smoothly. Then we have our production staff who continue to be based at our head office factory in Cornwall – this team have changed shift patterns to minimise the number of staff in the factory at one time for social distancing and extend the working hours of the factory to suit. Our site staff, both installation and our Service & Maintenance crews have seen huge changes in how they can travel and lodge, but I have to say we've been very impressed with how well everyone has adapted and persevered.

And what impact has Covid-19 had on the water industry more generally?

Of course initially the pandemic caused a lot of slow down, but as we've all become more adept at delivering this key infrastructure within new norms, it feels as though our industry has adapted quickly and minimised the impact. Without a doubt, the COVID hesitation will have delayed a lot of work to later within what will already be a challenging AMP7 programme and so now more than ever, we should be looking to capitalise on all 'early AMP' unused capacity ahead



of the surge in 'late AMP' demand. We're yet to really see the industry jumping on the opportunity to capitalise on the 130% super deductions offered by the chancellor, but this should certainly be a factor getting some attention in spending plans.

It's been a while since we've talked, so it would be good to catch-up with what's been happening at ELIQUO HYDROK over the past few months. Perhaps we could start with the emphasis you've been placing on the importance of properly planned asset maintenance?

Indeed! The continued pressures to make more effective use of capital expenditure and to drive towards lower carbon all emphasise the need to keep exist-



ing assets in optimum condition. The cost/benefit part of this assessment is certainly there, but we feel the industry has some way to go to realise the carbon/benefit element of maximising existing asset usefulness to minimise new embodied and operational carbon impacts.

ELIQUO HYDROK have been manufacturing water treatment equipment for more than 25 years, historically the technologies had previously been supplied to clients without the expectation for any form of servicing requirement. With the development of the Integrated Fixed-film Activated Sludge (IFAS) and Fixed Bed Diffused Aeration (FBDA) process treatments, plus the Mecana tertiary filtration sys-

tems, it became clear that offering a service and maintenance package would be essential for the client Water Companies, and would provide additional reassurance that the product would meet its forecast, expected life span.

Many ELIQUO HYDROK clients who purchased equipment stated that maintenance would be carried out by their in-house personnel, they have subsequently found that, even after the training supplied by the OEM, the tasks have proven time consuming, less efficient and costly. This has led to a recognition that reverting to the OEM for service tasks is not only desirable, but in some cases, imperative. Leaving valuable assets to deteriorate can not only result in potential damage to the equipment, but also result in the failure to comply with discharge permits. Once serviced, the units are returned to good working order with minimal disruption to the treatment process.

As a solution, ELIQUO HYDROK have spent time and investment developing a service team format that allows a service package to be offered requiring minimal input from the water company whilst offering maximum efficiency in the maintenance process. Having teams carrying out the tasks in line with Reliability Centred Maintenance is cost effective. The ELIQUO HYDROK teams are proficient in these tasks and able to reduce the down time required of the assets.

The cost efficiencies mean that the water companies can concentrate their resources on the day to day tasks required to keep the plants running, leaving the equipment OEM to specialise in the tasks that they understand.

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SLUDGE TREATMENT

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Using the OEM service teams, who are trained and equipped to carry out the task, also reduces the requirements for the temporary supply of specialist equipment such as pumps and pressure washers.

Specifically, you've issued best practice guidance for cleaning of your cloth media filters?

Yes, being the market leading Pile Cloth Media Filter with our Mecana solutions it's inevitable we'll carry a target on our back for anyone thinking they could emulate our successes. Unfortunately, many of these emulations require different and more onerous servicing than the original and when our brand has become so synonymous with the product genre, just like 'Hoover' or 'Velcro' we have to work hard to not be tarred with the same brush as those following our wake.

In addition to the regular backwashes, it is recommended that occasionally the cloths are removed for a clean with a pressure washer, ideally every twelve months. This not only keeps the cloth in tip-top condition and hence delivering the excellent effluent quality to which our customers have become accustomed, but also maximises their life expectancy, often well beyond the accepted 7? years working life.

The annual cleaning procedure had been specially developed and is unique to Mecana; it involves a special attachment for a standard pressure washer which comes free with every contract (plus a support stand to hold the cloth segment while it is being cleaned), along with appropriate training and support. As an alternative, the ELIQUO HYDROK Service and Maintenance Team, a dedicated group of specialists using a fleet of self-sufficient service vans, can undertake this cleaning process for the customer; an



increasing number of customers are taking advantage of this professional service.

It is notable that the source of water for this cleaning can often be the high-quality effluent produced by the Mecana installation itself. If this is not possible then a suitable source of 'site water' can be utilised, or (and particularly for the smaller installations) the water and power for the pressure washer can be provided from the service van. Further, the product of the pressure washing process can be discharged into the



Mecana feed channel, which makes the whole process self-contained for the customer, very sustainable and planet friendly, as there is no waste product to dispose of.

Product-wise, the company has launched the EloVac pilot plant for sludge degassing?

EloVac is a superb technology that's really coming to fruition now. With major deployments in Germany and now our first large scale trials in the UK, it's an exciting time for the process. Previously its benefits in terms of prevent of struvite formation and improved dewatering of sludge were key drivers, but as the industry grows in its intentions to achieve Net Zero Carbon by 2030, EloVac's capture of biogas emissions from digested sludge have taken on heightened significance.

The ELIQUO EloVac® pilot plant has been designed and built to provide a fully functional unit to pilot and demonstrate ELIQUO's vacuum degassing technology. Self-contained in a 40' container, the pilot unit comprise a complete plug-and-play plant capable of processing approximately 20 m3/hour of digested

sludge which gives a realistic indication of what can be expected from a full-sized installation. The only connections to the container are: sludge in, sludge out, wash-down water and 11kW of power.

Initial laboratory scale tests take one or two days and are conducted at the customer's site by our trained staff. The lab scale test will provide an initial business case and then can determine whether it is worth the customer considering scaling up to a pilot plant trial. We are taking bookings for lab scale tests right now.

And you've recently sold your first CWF Storm Flush in Ireland?

Yes this was a really great project for us to secure and exciting to be seeing this new product starting to gain attention in Ireland. Irish Water had made visits to a number of our UK reference sites and the initial plan was for a trial installation to be effected. This evolved into a permanent install without trial, so really pleasing to witness the confidence our references inspired.

The innovative 'Flushing Bell' storm tank cleaning system requires no external power, water supply, is self-regulating and requires minimal maintenance; the collected storm water itself becomes the flushing water. Coffey will be installing an ELIQUO HYDROK 3m x 3m gr.316 Stainless Steel 'Flushing Bell' storm tank cleaning system in a newly constructed storm tank at Monread Pumping station, Co. Kildare. This will be the first installation of the 'Flushing Bell' in the Irish Water industry and is consistent with the commitment by Coffey to progressing sustainability within the water industry.

Combining technology and business, ELIQUO HYDROK is part of Royal Haskoning DHV's phosphorous removal solution – a key focus for AMP7?

The WINEP programme and

Network and asset digitalisation, low temperature anaerobic treatment and priority substances are just some of the destinations on our roadmap

Phosphorus removal is a substantial element of the work to be undertaken in AMP7. We're working to ensure that we provide a wide variety of P removal solutions to suit the wide variety of site situations there are to be handled. Our close connection with RHDHV is one such area, where the provision of Package and Mini Nereda systems and of 'full scale' Nereda internals ensure we are able to provide these strong options to the industry. Mecana are an approved recommended technology to partner Nereda systems and ELIQUO HYDROK are unique in being able to supply that technology pairing to the UK market.

Nereda Package Plants have been developed to provide a competitive and sustainable solution, offering the lowest whole-life cost solution for small works. In addition to meeting the tightening phosphorous removal requirements, the plants can achieve high levels of ammonia and total nitrogen removal too. A key benefit of the plants is the potential for speedy implementation. It is possible for a Package Plant to progress from award to full operation within just 24 weeks, with onsite assembly, testing and process start-up taking just four weeks. The Nereda Aquasuite controller will ensure a leading digital solution for efficient, automatic operation and control with the support of a virtual operator that never sleeps.

We are delighted to be part of this initiative to deliver standardised and sustainable wastewater treatment plants for small works, and we're looking forward to discussing the solution with our customers.

Talking of AMP7, the company has been awarded a Framework Agreement by Yorkshire Water?

Asset maintenance is now an important part of our service. Yorkshire Water have awarded us a framework for the service and replacement of fine bubble diffused aeration systems as not only can we service the many high efficiency aeration systems we installed for YWS across AMP4



and AMP5, but we also offer legacy support for systems from other manufacturers too.

Yorkshire Water (YW) has multiple Activated Sludge Plants (ASPs) located throughout the region. The ASPs range from small rural sites comprising a handful of diffusers, to large scale sites treating some of the UK's largest cities and industries, incorporating 600+ diffusers in each lane. ASPs are a key part of the waste water treatment process. The incoming effluent is a mix of both domestic and industrial waste at varying strength.

The scope for each site will vary with the services generally involving:

- like for like replacement of existing systems, where only the diffusers and minimum pipework would be replaced.
- more substantive upgrades where the diffusers plus below and above water level air pipework, valves and blower configuration may require replacement or alteration to maximise efficiency.



During the AMP7 delivery period there will be an expected requirement for new installations or upgrades to existing diffuser systems. The works will consist of upgrades and/or replacements and will include a full design and build service.

And you have a new finance director?

Yes, With Dave Armstrong stepping back from his role as MD from January '21, Lewis O'Brien takes up the reigns as MD and CEO and is joined by Peter Wroe as Joint MD and CFO. The new leadership pairing brings both long standing industry experience with strong financial stewardship to position the company well for the demands of AMPs to come.

And the company as a whole has undergone some restructuring?

Certainly some fine tuning of our operational roles, set to tie in with our work to standardise core technology items and in turn drive lower costs and reduced lead times. This just another of

the building blocks we're putting in place to help meet the challenges in delivering AMP7!

Looking ahead (not that easy in these uncertain times), what are the challenges which the water industry faces over the next year or so?

Without a doubt it's the challenge to get the WINEP programme out of concept and into delivery. Managing AMP7 as per previous will leave too much to do in too little time, typically years four and five seeing exceptional activity but with very slow build up. But also, Net Zero Carbon by 2030 is something that will require sincere activity earlier rather than later if it's to become reality.

And how do you think that Eliquo Hydrok can help water companies meet these challenges?

We're working hard with the UK WaSC's to enable early procurement in bulk of standardised kit, thereby capitalising on unused early-AMP supply chain capacity whilst avoiding the risks of procuring the wrong solutions. Working collaboratively with all of the UK's WaSC's to achieve one common specification for our kit is a huge step towards achieving these aims. For NZC2030, our EloVac plant is already proving highly effective and efficient in capturing residual biogas (and hence a major source of carbon emissions) from digested sludge. With our first full scale UK pilot underway, we're on a promising path to widespread adoption of carbon reduction technology.

Before we finish, are you able to share any plans for ELIQUO HYDROK's roadmap – whether that be technology, products or service developments?

As part of SKion Water, ELIQUO HYDROK is forever alert to new demands and trends within the industry. Network and asset digitalisation, low temperature anaerobic treatment and priority substances are just some of the destinations on our roadmap.

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