The bioresources sector in England and Wales will be worth almost £3.5 billion in asset management plan period 7 (AMP 7) 2020-2025. With 175 treatment centres and 94 thickening and dewatering centres, the industry will:

- Treat 7.7 million tonnes dry solids of sewage sludge
- Generate energy through over 300 megawatts of installed capacity (the potential to power up to 80,000 homes)
- Return 4.5 million tonnes dry solids of soil improver to agricultural land, contributing to the circular economy

Until now bioresources has shared revenue with the larger wastewater treatment price control. By giving each water company its own bioresources revenue limit set in pounds (£) per tonne of dry solids treated, Ofwat (the water industry’s economic regulator for England and Wales) has laid the groundworks to drive greater efficiencies. For some of the companies, the limit equates to a total expenditure value (TOTEX) much lower than they were expecting.

To achieve the efficiency required to hit this new revenue limit, water companies are being asked to consider competitive market solutions. The bioresources price control aims to supercharge these markets, making sludge treatment more competitive than ever before. We expect to see an increase in activities such as:

- Much more cross-border trading to take advantage of geospatial efficiencies and to avoid building new assets
- Gate fee (external capital)solutions for new treatment capacity through Design, Build, Finance, Operate, Maintain (DBFOM)-style arrangements
- New revenue generation opportunities, probably around new fertiliser products and renewable energy technologies

Our review of water company business plans has revealed that some water companies have adopted a narrower definition of the market than ours. Some have tried to “test” the market. Others have done little examination of its potential.
How do we know if the market price for treatment is good?

The new price control is in £ per tonne dry solids, so companies are increasingly thinking of treatment cost in terms of £ per tonne dry solids. The ideal market-sourced solution for treatment would have a gate fee (cost for the service) set the same way. In practice, our experience is that the value of any market solution is tricky to evaluate, because the internal cost of treatment is difficult to determine. It is influenced by:

- **Geospatial complexity**: The average internal cost to treat is not necessarily useful for determining whether a gate fee is good value. Treatment costs vary geographically and we see ranges anywhere from negative values – where it pays to treat sludge – to figures in the thousands of pounds per tonne. Cost to treat must be for a specific geospatial location. This means all bioresources businesses need cost and price modelling.

- **Asset-rich incumbents**: Existing capital costs are a huge factor. Undertaking a short-term sludge trade across a border (“mutual aid”) on marginal cost to treat (i.e. direct operational cost) can be done. But this does not account for all costs, particularly indirect and capital costs that a water company is already paying.

- **Timeframe complexity**: AMP 7 “efficiency” is a snapshot in time. Some assets may require renewal in the medium term. Innovations could be developed. Market risks could materialise. Subsidies will end. Also, critically, there is uncertainty around contaminants and the long-term viability of sludge to land. Water companies need to model their long-term projected efficiency before delving into contracts with external providers.

How much should efficient treatment cost?

There is an economic theory that suggests we will only know what the maximum efficiency of a bioresources business is when a provider reduces their revenue so low that they go out of business. We do not think that is a likely effect of the new pricing control, because incumbent bioresources businesses have large existing asset bases which makes them difficult to outcompete.

Instead, we believe that the effects of a revenue allowance on the low side could primarily fall on the assets through deferred investments, asset-sweating, increased operational risk, increased sludge to landfill due to operational failure and also loss of profit. If these are the signs of declining service levels, they are an important factor in measuring the sector’s efficiency. Pounds spent and dry solids treated do not tell the whole story.

Where companies do not have the capital allowance to invest in needed capacity, we expect to see uptake of deferred-payment schemes. These will be competitively tendered, which could help with increasing efficiency if managed well. However, poorly-designed contractual arrangements risk increased costs in the long term.

Some ideas to stimulate market participation

We believe the bioresources price control brings an exciting focus to the sector and could enable more efficiency if it is managed well, despite the risks outlined above. Below we share some thoughts on how the market can be utilised to fuller extent.

For the Regulator:
A Common Framework for Sharing Pricing

We have spent the last three years working on pricing models. What is clear from our work is that there is no readily available pricing information to assist water companies in understanding the cost of a trade and give them a pricing point for the delivery of direct procured DBFOM or other third-party services. This lack of information has almost certainly stifled trade in sludge between water companies and has given potential third-party suppliers very little to work on in understanding their own competitiveness. We believe that a common framework detailing what should be included and excluded within pricing would accelerate progress and give the water companies the confidence to share their price data.

Negotiating a price is complex. But with sludge, there is a precedent to go on – the minimum possible price is the cost for the service. Water companies, at a minimum, need to know their cost to treat and should add margin which is acceptable within their business and in competition law. This generally requires modelling.

For the Water Companies:
Better Incentivisation of the Supply Chain

Let’s face it, a sludge centre is not always the best project for investors. There are contractual challenges around incoming and outgoing material quality and quantity, outsourcing part of the treatment train leaves questions about risk responsibility, and renewables subsidies are disappearing. In addition, some of the upfront feasibility work in a fledgling sector with complicated considerations may be cost-prohibitive.

We believe that companies that want to access the market will need to move away from traditional procurement approaches focussed on “lowest cost bidder” and consider how they incentivise a partner that they really want to work with over the course of a 15 to 20-year relationship. This may require a departure from the preconception that the suppliers unit cost to treat will be significantly lower than the price review allowance (at least in the short term). So the companies instead enter into true partnerships with their supply chain which allow business benefit to both parties.

Measuring success

We believe that reducing revenue allowances will not always have the impact of increasing long-term efficiency. Deferred investment, asset and service deterioration, or increasing future risk may be the result. We believe that in order to measure the success of the new price control, better measurement of these issues is required. Proposed AMP 7 performance commitments typically focus on producing 100% compliant product (already usually achieved) at efficient cost, but we would like to see companies monitoring asset health and using that as a supplementary measure of their efficiency. Allowing the assets to deteriorate cannot be in the customer’s best long-term interests, no matter how low the cost to treat.

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