

Our business model

Systems Thinking

Underpinning the improvements in our operational performance is our drive toward Systems Thinking. This means thinking of our entire network of assets as one big system, and managing it as such.

In this regulatory period, we are investing in our new wholesale operating model and are progressing the roll-out of this unique capability. Our production line model is well established, and we opened our Integrated Control Centre (ICC) in April 2015. This has increasingly become a central hub for planning and control of our operations and proved to be a tremendous asset during our handling of the major incidents we had to address last year.

Our new telemetry backbone has been successfully installed across our estate with only a small number of sites to complete. This provides the 'data highway' between our sites and the ICC, enabling enhanced monitoring and intervention.



Watch our short video at unitedutilities.annualreport2017.com

We have full regional production planning up and running for both water production and sludge processing, supported by more enhanced decision-making systems capability at site level.

We are in the final stages of testing of our new maintenance system, providing more effective tasking of field engineering, and we have improved asset availability.

We are using more sensors in our network and better analysing other data, such as weather forecasting, to help reduce costs, improve operational performance and, importantly, prevent issues before they impact the customer.

This is all supported by our digital strategy, in which we have already seen our IT systems overhauled, and for which data and its exploitation becomes central to our thinking. Our Systems Thinking approach is expected to deliver benefits of over £100 million across the 2015-20 regulatory period, which were already built into our business plan assumptions.

Business insight

Taking a system-wide approach to sludge treatment

We have a number of sludge treatment facilities across our wastewater production line. These facilities take the sludge produced at our wastewater treatment works, either delivered by road tanker or via a sludge pipe network that connects East Manchester and Liverpool to our strategic facilities in Manchester and Widnes, and treat it to recover renewable energy and make the sludge safe for disposal back to the environment, typically as a fertiliser.

Traditionally, this operation was managed in a reactive manner, with decisions based on little data and made locally at individual sites. Few facilities had the right tools to be able to optimise their activities, meaning we had no capability to plan or manage our sludge operations optimally across the region. This often led to capacity bottlenecks and sub-optimal logistics activities.

The Regional Sludge Operations Management (RSOM) Project has built on the existing technical capabilities available to our Integrated Control Centre (ICC), and site operations teams, to deliver new tools, process and skills. It has also delivered a modelling tool that enables regional throughput and asset utilisation to be optimised through visibility of both current performance and availability of sludge treatment facilities. This enables system-wide choices to be made about where sludge, from across the region, is sent for treatment and energy recovery.

The technical capabilities mean that our Sludge Production Planning team in the ICC is able to visualise and understand the capacity of each of our sludge treatment facilities and the forward looking forecast information from local operations teams. The team then matches production forecasts with available capacity and performance to ensure that decisions about where sludge is sent for treatment are balanced between the costs of sludge transportation and the cost of sludge treatment and disposal and take into account the efficiency of specific energy recovery methods.

Taking this system-wide approach, and optimising our regional operations from our ICC, means we are able to maximise the value of the sludge produced at our wastewater treatment works whilst ensuring that we meet the strict environmental standards for sludge disposal. It also helps maximise the amount of renewable energy generated, an important contribution to helping us meet our carbon reduction targets.



Pictured: dashboard showing real-time gas consumption at our sludge treatment facilities.