



## NET ZERO ENERGY 2030

### REDUCE OUR ENERGY DEMAND

We will reduce our energy demand by focussing on energy efficiency, reducing water demand and deploying intelligent control systems.

#### ENERGY EFFICIENCY

Energy efficiency is critical to achieving net zero and sits at second on our decarbonisation hierarchy on page 15. Not only can it help deliver cost efficiencies, but it can help to offset the increase in energy consumption arising from the demands of population growth on our services.

We have several initiatives underway across our Energy Reduce Use Programme. We have developed a fully automated energy platform (ISO 50001 certified), enabling reduced cost of operation and energy efficiencies. Initiatives across our water and wastewater production lines include the rollout of 'real time control', source optimisation, process and control at wastewater sites, wastewater pump optimisation work, completion of air bleeding work at wastewater treatment works and LED lighting.

These initiatives are helping us to reduce our consumption, use more sustainable sources of energy and deliver cost efficiencies.

#### LIGHTING UP THE WAY

Drumaroad water treatment works is one of our largest sites and produces water for around 25% of our population served. Drumaroad was selected as part of a wider initiative to review sites in terms of energy usage and performance. The LED installation on site will assist in realising energy efficiency of around 107,000kWh/year as well as improving the lighting inside and outside the building, which will result in a safer working environment.



*Energy efficiency LED lighting at Drumaroad water treatment works, County Down.*

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### REDUCE WATER DEMAND

By using less water, customers can reduce the stress on our natural resources and reduce the energy that NI Water needs to provide drinking water and in the treatment of wastewater. Climate change, whether in times of drought or times of flooding, is likely to create challenges and increase our energy demand. Reducing water demand will help to make us resilient to climate change as well as help us to achieve net zero. Read more about water efficiency on page 44.

### INTELLIGENT OPERATIONS

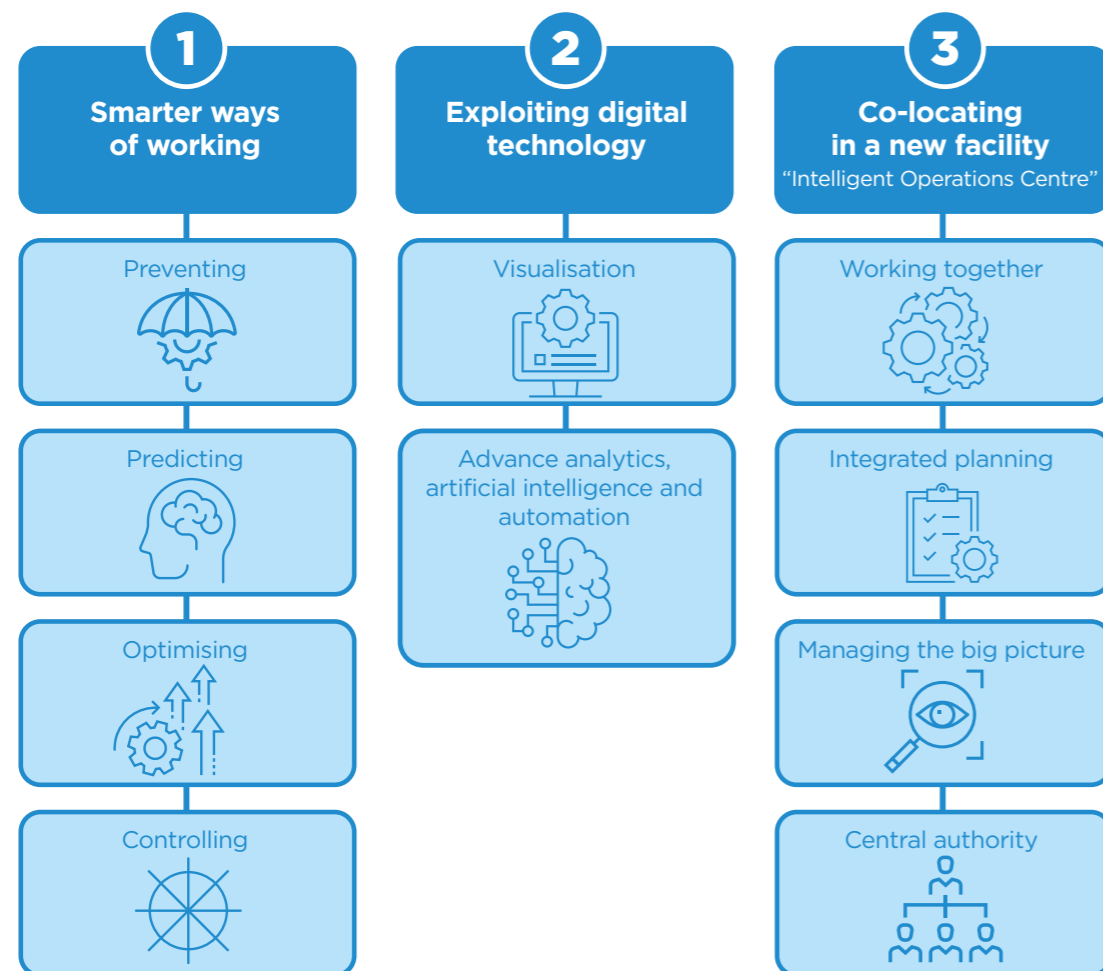
Intelligent Operations is a new approach to how we operate. It comprises smarter ways of working that:

- ensure a more preventative approach to maintenance of assets instead of fixing when they fail;

- predict when issues are about to occur and intervene sooner – so reducing our reliance on customers having to tell us that issues have occurred;
- set up and tune our end-to-end water and wastewater system to run at its optimum state; and
- establish more central control of assets and the work we do on them.

This is enabled through the deployment of digital and visualisation technology and a new Intelligent Operations Centre. The centre opened in 2021/22 and brings together around 180 of our dispersed operational staff to work together in a more collaborative and intelligent way.

### Intelligent Operations



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In an exciting innovation to the benefit of Northern Ireland, we are exploring the potential to operate our assets to support development of the electricity grid. We are modelling how our assets can offer flexibility across our 3,000 geographically dispersed electricity grid connected sites. The aim is to demonstrate how our use of electricity

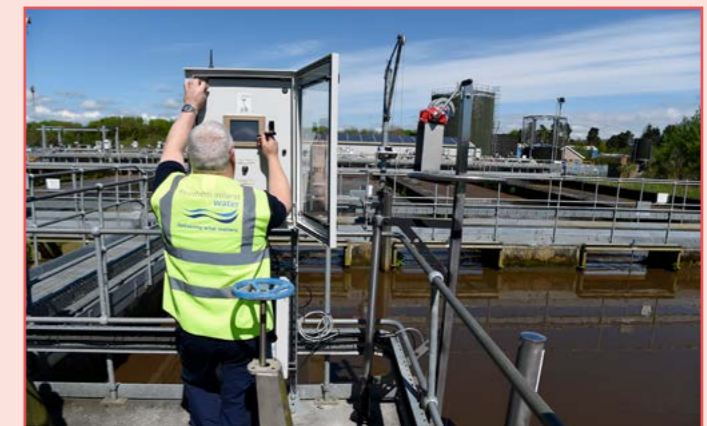
can be lowered at peak periods by the intelligent and automated control of large pumps, blowers, and sludge dewatering equipment. Two pumping stations are being used in a pilot project with NIE Networks. By acting as a pathfinder with NIE Networks, this work has potential to help support a more resilient and affordable energy system.

### POWER PLAY

Pumping and blowing accounts for around two thirds of our electricity needs. We are deploying intelligent controls to our treatment processes, including major pumps and blowers, to minimise energy usage and to operate at times of lower power prices.

We have implemented real time control technology and process control measures at our wastewater treatment works. Various chemicals are used in the secondary treatment stage process to remove harmful substances from the water. Real time control technology enables modifications to the process, such as altering the levels of dissolved oxygen, to minimise the energy usage whilst ensuring compliance with discharge consents. The technology not only helps us deliver energy efficiencies, it also provides the ability for the treatment works to quickly respond to any change in demand, to ensure compliance is not compromised.

The data from meters and sensors is made available to our Intelligent Operations Centre, allowing more central control of our assets and supporting reductions in our energy demand. 2022/23 marks the installation of over 80% of the meters and sensors required to bring dashboards to life that will provide the insight into pump efficiency, optimise the use of blowers, reduce use in peak charging periods and increase night-time running.



Real time control technology at Antrim wastewater treatment works, County Antrim.