

# Installing ceramic membrane filters at Hampton Loade water treatment works

South Staffordshire Water PLC green recovery submission  
For the year ended 31 March 2024

27 July 2024

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# Introduction

Following the widespread social and economic upheaval caused by the COVID-19 pandemic, the UK Government launched a number of initiatives in the second half of 2020 to encourage economic growth post-COVID, with an emphasis on green recovery.

As part of this, government and sector regulators encouraged water companies in England and Wales to revisit their investment programmes for 2020 to 2025 by:

- accelerating the delivery of their existing plans, including measures to protect the environment;
- bringing forward proposals from 2025 and beyond; or
- Submitting green recovery proposals that provide benefits to local communities and the environment.

In light of this, and also the water sector's commitment to achieve net zero carbon emissions by 2030, we decided to revisit our proposals to upgrade the largest water treatment works in our South Staffs region – Hampton Loade.

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# Our treatment works upgrade

As part of our business plan proposals for 2020 to 2025 (AMP7), we submitted a successful cost adjustment claim for funding to enable us to carry out an ambitious upgrade programme at the two largest water treatment works in our South Staffs region – Hampton Loade and Seedy Mill.

These are strategically important works for us as they supply water to around 60% of South Staffs Water customers.

In the cost adjustment claim, we set out our plans to introduce an enhanced second stage filtration at both works during AMP7 and also enhance the clarification stage in the following five years between 2025 and 2030 (AMP8).

At the same time, we said we would improve the operational resilience at each site by minimising the risk of single points of failure.

We also said we would carry out a trunk mains cleaning programme for around 100 km of strategic trunk mains to ensure customers quickly feel the benefits of the upgrade programme in terms of the quality of the water they receive from us.

The cost adjustment claim allowed for the installation of primary Rapid Gravity Filters (RGFs) near the existing clarifiers and the introduction of a new mains connection from the primary RGFs to the existing RGFs.

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# Our treatment works upgrade (continued)

These would then be converted into Granular Activated Carbon (GAC) adsorbers, creating a second filtration stage downstream of the RGFs.

In our PR19 final determination, Ofwat allowed £68 million of enhancement expenditure, which was 92% of the funding we requested in our April 2019 business plan.



# Our green recovery solution

Our green recovery submission related to specific changes we wanted to make to the plans for our Hampton Loade works.

Instead of our plans to install new RGFs and clarifiers at the works over a ten-year period, we decided to pursue an innovative ceramic membrane-based solution called CeraMac®.

We consider this will deliver a number of benefits for our customers and the environment, including:

- enhanced water quality – this is consistently the top priority for our customers, and the most important area in which they want us to invest;
- a reduction in carbon emissions of around 1,000 tonnes a year;
- improved operational flexibility and resilience; and

- the potential for increased local employment opportunities.

Once complete, it will be the largest deployment of this technology by volume globally. It will also be the first retrofit of its kind in an existing water treatment works.

In July 2021, Ofwat confirmed its decision to allow additional funding of **£17.6 million** (2017/18 prices) under the green recovery initiative to accelerate the installation of CeraMac® at Hampton Loade.

We will contribute **£9.7 million**, while Severn Trent Water, which shares the resource, will contribute **£7.9 million**.

This expenditure is part of an overall upgrade programme at Hampton Loade.

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# Progress during 2023/24

We have made significant progress with this programme of work during 2023/24.

Our civil engineering partners completed the principal construction work in September 2023. The assembly of the new filtration units was completed offsite in December 2023, and these have now been installed.

The total value of the work to the year ended 31 March 2024 was **£64 million** (outturn prices) – or around **90%** of the total construction costs.

We have started work to bring the new plant into commission. The individual membranes were loaded in early April 2024 and passed the necessary tests.

At the time of writing, we expect to have 10 of the 20 filters running by the end of June 2024. We expect all 20 to be running by the end of September 2024.

As a result of this progress, we are pleased to confirm that we are still on track to deliver the upgrade at Hampton Loade in line with the original target date of 31 March 2025, as agreed with the Drinking Water Inspectorate and Ofwat.

In November 2023, our Managing Director Andy Willicott hosted Iain Coucher, Ofwat's Chair, and gave him a tour of the project site. They discussed the challenge of integrating a new water treatment solution in pre-existing infrastructure, and how much more sustainable and environmentally friendly the new treatment process will be.

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# Progress during 2023/24 (continued)

The installation of ceramic membrane technology is an integral part of the total Hampton Loade upgrade programme.

As a result, it is not feasible to identify the separate components of expenditure that related specifically to the green recovery funding.

So, we have assumed that green recovery funding is spent in the same proportion as the total upgrade and have assigned a South Staffordshire Water share of **£5.455 million** for the 2023/24 reporting year and **£11.643 million** in total (both in outturn prices).

