River water quality (phosphorus)

Purpose: The purpose of this performance commitment is to incentivise the company to improve water quality in the rivers within its area by reducing the amount of phosphorus entering rivers from water company activities.

Benefits: Phosphorus is a significant reason why rivers fail to be classified as having good status. Reducing phosphorus is a key part of improving rivers.

Version control

Version	Date of issue	Performance commitment changes
0.1	21 December 2022	Published at final methodology
0.2	14 June 2023	Removal of red text. We have made three changes following a report we commissioned by Jacobs and discussion with stakeholders. Change to the metric, from reduction of phosphorus per head of population to percentage reduction from phosphorus discharged in the 2020 baseline, as this is more readily understandable. Change from assessing the reduction in phosphorus against a base period calculated as the annual average of 2020-22, to the amount of phosphorus discharged from treatment works in 2020, as this is the approach taken by the Environment Agency when measuring company performance against the waste water target set out in regulation 10 of the Environmental Targets (Water) (England) Regulations 2023. It is also simpler.

		Change from requiring a calculation of median flow at treatment works to mean flow in line with the available historical data. There is also a lack of evidence that the median flow would result in a more appropriate value. We have also corrected minor typographical errors and provided minor clarifications.

Performance commitment definition and parameters

1.1 Detailed definition of performance measure

The performance measure is the percentage reduction in phosphorus emissions to river catchments as a result of water company activities when delivering their functions relative to the load of total phosphorus discharged by all wastewater treatment works in the baseline which is 1st January 2020 to 31st December 2020.

Phosphorus can be removed at wastewater treatment works and/or through partnerships, including catchment working, where, in the course of delivering its functions, the water company collaborates with others to reduce phosphorus emissions.

Percentage reduction in phosphorus emissions =

(Phosphorus emitted by relevant discharges from treatment works in 2020 minus phosphorus emitted by relevant discharges in the year) **+** **(Phosphorus prevented from entering rivers from partnership working in the year minus phosphorus prevented from entering rivers from partnership working in 2020)**

The 2020 baseline

For both elements the company must only report reductions in phosphorus that result from plans that represent the best value long-term approach for customers and the environment. This should take into account a wide range of factors including the long-term resilience of the supply chain.

"The 2020 baseline" means the cumulative total load of phosphorus from relevant discharges of all of the company's waste water treatment works from 1st January 2020 to 31st December 2020; "relevant discharges" means discharges of treated waste water from the company's waste water treatment works into freshwaters. The 2020 baseline will not change from that assumed at the time of final determinations in 2024.[1]

Phosphorus emitted from treatment works

Phosphorus emitted from treatment works is the sum across all treatment works with a phosphorus limit that was in place for the latest whole year 1 January to 31 December in the latest year. Corresponding treatment works must be included for both the latest year and 2020. The number of treatment works that are included for 2020 will change over time.

[1] Note - we expect to use the method and information that the Environment Agency is using at the date of our PR24 final determinations, subject to the outcome of the PR24 determinations process, when measuring company performance against the waste water target set out in regulation 10 of the Environmental Targets (Water) (England) Regulations 2023. We will work with Dŵr Cymru and Hafren Dyfrdwy to utilise a similar method.

The phosphorus emitted from each treatment works is calculated as follows:

- regulatory final effluent samples taken across the period 1 January to 31 December are used to calculate the annual mean concentration of phosphorus;
- regulatory flow measurement (Monitoring Certification Scheme) data is used to calculate mean daily flow across the year; and
- phosphorus discharged (kg/year) = mean concentration x mean daily flow x 365.

All regulatory final effluent samples should be used in the calculation of the mean phosphorus concentration. For example, for a works where regulatory composite samples are taken and regulatory spot samples are taken, both should be included in the calculation of the mean.

For some treatment works, companies may not have information to calculate annual values as set out above. In particular, this will be the case where a treatment works did not have a limit on phosphorus in its discharge permit for 2020, but now does. Where annual values cannot be calculated for a treatment works (including where regulatory final effluent samples were not required to be taken for the whole of the year), then the company will assume:

- in the case where the mean phosphorus concentration of the discharge cannot be calculated, a concentration of 5mg/l; and
- in the case where the mean daily flow cannot be calculated for a year, a discharge flow equal to 1.2 x dry weather flow in the initial permit that also has a phosphorus limit. This may have been specified for a later year than 2020. For example if a phosphorus limit is first specified for a permit in 2025, the 1.2 x dry weather flow from this permit should be used for 2020 where regulatory flow measurement (Monitoring Certification Scheme) values are not known for this year. Where there is no dry weather flow specified alongside a phosphorus limit in a permit for any year, then the flow will be assumed to be zero.

For the purposes of reporting this performance commitment the phosphorus discharged from treatment works across a catchment will not be less than that expected by the appropriate agency[2] in the long term. If it is less, the load expected by the appropriate agency will be used instead.

Phosphorus prevented from entering rivers from partnership working

The method to estimate the reduction in phosphorus from partnership working that can be attributed to the company must be agreed with the appropriate agency and

[2] "appropriate agency" means Natural Resources Wales in so far as relating to Wales, and the Environment Agency in so far as relating to England.

assurance provided by an appropriately qualified third party. The method used should consider the specifics of the partnership work and so can vary on a partnership-by-partnership basis. The appropriate agency can vary the method for future years, before the start of a calendar year. Once a calendar year has started, the method can only vary by agreement between the company and the appropriate agency.

1.2 Additional detail on measurement units

Where the company was involved in partnerships that prevented phosphorus from entering rivers in 2020, the company should measure the phosphorus prevented from entering rivers using the methods that have been agreed by the appropriate agency. An estimate for 2020 is not required for activities where it is not reasonably practicable to estimate phosphorus reduced in 2020. However, the reduction in phosphorus from partnership working in 2020 should be a fair comparison with the estimate in the latest reporting year.

1.3 Specific exclusions

None.

1.4 Reporting and assurance

The company will provide external third-party assurance to verify that its reported performance follows this definition. This will include that reported reductions in phosphorus resulting from plans representing the best value long-term approach for customers and the environment, taking into account a wide range of factors including the long-term resilience of the supply chain.

Where phosphorus is prevented from entering rivers from partnership working, assurance will include that:

- the company has followed the method agreed with the appropriate agency;
- all data used in the method, unless otherwise stated in the method, has been accurately inputted from measured sources where practicable or otherwise are robust estimates; and
- the reduction in phosphorus from partnership working in the base period is a fair comparison with the reduction of phosphorus in the latest reporting year.

The company shall ensure that its outcome delivery incentive payments only relate to real performance changes and not definitional, methodological or data changes in performance commitments.

Table 1 Definition parameters

Parameters	
Measurement unit and decimal places	Percentage reduction in phosphorous to two decimal places.
Measurement timing	Calendar year
Incentive form	Revenue
Incentive type	Outperformance and underperformance payments
Timing of underperformance and outperformance payments	In-period
Price control allocation	100% wastewater network plus
Frequency of reporting	Annual, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, and 2029-30 assessment will be based on the calendar year 2029.
Any other relevant information	Outcome delivery incentives will be applied on a kg of phosphorus basis. The performance commitment levels expressed as percentage reduction will be applied to the 2020 baseline. The difference between this value to one decimal place and the actual reduction will be used to calculate outcome delivery incentives.
Links to relevant external documents	N/A