

BIO1- Bioresources sludge data		
Line description		Commentary
1	Total sewage sludge produced, treated by incumbents	<p>Data updated since October 2023</p> <p>SW commentary: October 2023</p> <p>For 2022/23, the forecast sludge production was 112.8 ttDS, however operational issues, meant raw sludge produced during this tax year was stored onsite and treated in the 2023/24 tax year. Hence 111.2 was reported for 2022/23. The difference in these two numbers (e.g., 1.6 ttDS) is equal to the total quantity of stored sludge that was produced in 2022/23 but is being treated in the 2023/24 tax year. The original forecast sludge production in 2023/24 was 114.1, however this was uplifted by the quantity of stored sludge from tax year 2022/23.”</p> <p>SW commentary: August 2024</p> <p>From 2024/25 to 2029/30, all sludge produced is expected to be treated ‘by incumbent’.</p> <p>Since the BIO1 submission in October 2023, APR24 has been submitted which reported 110.4 ttds/year undershooting the October forecast. In part, this was due to an uplift in sludge treated by 3rd party sludge service providers (0.2 ttds in 2022/23 to 0.4 ttds 2023/24) and a reduction in CESS imports from 6.0 ttds in 2022/23 to 4.9 ttds/year in 2023/24 due to wet weather limiting imports. In addition, the ratio between actual and theoretical sludge production has declined slightly from 0.81 in 2022/23 to 0.80 in 2023/24.</p> <p>Following APR24, the BIO1 value for 2023/24 has been aligned with the APR and the forecast for future years (2024/25 – 2029/30) has been updated using a new baseline (2023/24) and an updated ratio between actual and theoretical sludge production. As a result, growth has been downgraded from 116.9ttds to 113.4 ttds for 2024/25. The 2023 commentary adjusted the first years forecast to include treatment of the temporary sludge backlog; however this backlog has been treated and no adjustments were necessary.</p> <p>The confidence banding of this line has been reduced from B2 to B3 (explanation in line 3).</p>
2	Total sewage sludge produced, treated by 3rd party sludge service provider	n/a
3	Total sewage sludge produced	<p>Data updated since October 2023</p> <p>1. APR calculation</p> <p>For APR submissions total sludge treatment was measured through daily sampling at our 16 sludge treatment centres. To calculate sludge production at each wastewater treatment works (WWTW), each sites population equivalent is multiplied by process- specific theoretical sludge makes (g/h/d) detailed in our asset standards (PSWWT 4019). A correction factor is calculated by dividing measured sludge treatment by the total theoretical sludge make. This factor is then applied onto the theoretical sludge make for each site.</p> <p>Regarding metering of sludge treated at each STC: Sludge Density meters have been installed at our 16 STCs which will allow us to measure the total amount of sludge processed more accurately, compared to our current</p>



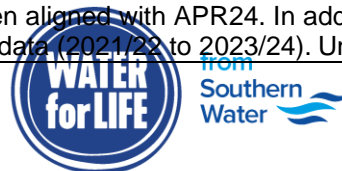
		<p>daily sludge sampling and analysis method. Commissioning issues and data acquisition/processing have delayed the project, but outputs should be validated over the next year and automatic measurements should then become BAU.</p> <p>2. Sludge Forecast: Growth</p> <p>EDGE analytical provide Southern Water with a population equivalent for each WWTW, the methodology used has been specifically developed to meet water industry guidelines and includes demographic trends and the impact of policy interventions (e.g. house building). The total population equivalent is calculated as a sum of household, tourist, trade and Cess population equivalents. To account for growth, the year-on-year change in total population equivalent for each WWTW is calculated and applied directly onto the preceding year. The base year (2022/23) is derived from the sludge estimate for each WWTW.</p> <p>3. Sludge Forecast: Process</p> <p>As detailed above ('APR calculation') the 'sludge make' for each WWTW is used to estimate sludge production. However, over time, the processes used on WWTWs change (e.g. to meet new consents) and the estimated sludge make must be updated. To account for these process changes, the percentage difference in estimated sludge make is applied onto the forecast tDS. For example, if site sludge make is expected to increase 5%, this increase is applied onto the year the process change occurs.</p> <p>Following APR24, the BIO1 value for 2023/24 has been aligned with the APR.</p> <p>Our October 2023 BIO1 submission forecast sludge production of 115.3 tds for 23/24. Following the APR24 submission, actual sludge production was 110.8 ttDS which represents an error of 3.9% over a one-year time frame. This falls within an accuracy banding of 2 (1-5%). However, sludge forecasting is complex because of the impact of latent variables that are difficult to measure and incorporate into forecasting methodology, these include inter-year:</p> <ul style="list-style-type: none"> • Variance in weather patterns • Variance in solid removal efficiency • Variance in wastewater operation practices • Storm overflows and interventions to reduce their occurrence. <p>To account for this uncertainty the accuracy banding of the sludge forecast lines have been downgraded from B2 (1-5%) to B3 (5-10%).</p>
4	Total sewage sludge produced from non-appointed liquid waste treatment	<p>Data updated since October 2023</p> <p>In 2022/23 and 2023/24, the values reported in our APR were 6.0 and 4.9 tds/year respectively for this line. In APR24 we state "8A.4 lower than previous year because of wet weather limiting CESS imports". From 2024/25 onwards, we expect 6.2 tds/year, closely aligning with the reported value in 2022/23 with some increase due to forecast population growth.</p> <p>Following the submission of APR24, the calculation for this line was updated to reflect the decrease in the ratio of actual and theoretical sludge production from 0.81 in 2022/23 to 0.80 in 2023/24.</p>



5	Percentage of sludge produced and treated at a site of STW and STC co-location	<p>Data updated since October 2023</p> <p>All data (2022/2023 to 2029/2030) has been calculated according to the following interpretation of the guidance document:</p> <ul style="list-style-type: none"> - The word 'produced' is taken to mean indigenous sludge that is produced at a site of STW and STC co-location. - The guidance states 'The percentage of the sludge quantity reported in BIO1.3 that is produced at co-located sites. "co-located" includes sites where the STC is physically separate, but the sludge is transferred from a wastewater treatment site by pipeline'. Our interpretation is that only sites where the WWTW and STC are co-located (e.g., on the same site) should be included, except for Slowhill Copse and Millbrook where sludge is transported across Southampton Water via pipeline to Millbrook. In this case, only the indigenous sludge produced at Slowhill Copse is included. - The guidance states 'STC means any site where sludge is treated to a standard such that it can be recycled to the environment or disposed of without any further treatment' since STCs are the only sites we operate that produce such a material only these sites were included. The previous incorrect calculation included sludge, that had been dewatered at WWTWs (e.g. physio-chemical treatment) but was not suitable for recycling because it had not been digested yet and needed to be imported by truck to STCs for further treatment. <p>BMA's Decisio model is used to support forecasting of this line. As per Technical Assurance recommendation, we will be looking at whether an audit of the model can be undertaken by a third party in order to assess accuracy of the data.</p> <p>There are no material changes in stated values for line BIO1.5 in the BIO1 table. Following APR 23/24, the BIO1 value for 23/24 has been aligned with the APR, however no further updates were considered necessary.</p> <p>Confidence Grade: B2</p>
6	Total sewage sludge disposed by incumbents	<p>Data updated since October 2023</p> <p>In APR24, a methodology updated was undertaken for this line (APR commentary):</p> <p>"8A.6 Previous method used extrapolation for sludge disposed from digestate produced, however the estimate excluded impacts of (i) Polymer solids addition (ii) Centrifuge solids losses. The new method is directly measured as disposed tonnage".</p> <p>This leads to a misalignment between 8A.6 in the 2022/23 and 2023/24 APR:</p> <p>2022/23: 66.0 ttds/year</p> <p>2023/24: 61.6 ttds/year</p>



		<p>However, the updated methodology (e.g. direct measurement of sludge disposed) had already been applied in 2022/23 for the Bioresources Market Activity and equalled 62.2 ttds/year which closely aligns with 2023/24.</p> <p>Therefore for BIO1, the 2022/23 line has been updated to the 62.2 ttds/year as reported in Bioresources Market Activity and the 2023/24 value has been aligned with the APR submission for table 8A.</p> <p>In accordance with the method statement for this line, the forecast for 2024/25 to 2029/30 is based on a three-year run rate between sludge “produced and treated” and “sludge disposed”. An adjustment has also been made for the higher dried solids destruction expected from Goddards Green having been upgraded from conventional to advanced digestion.</p> <p>Confidence Grade: B2</p>
7	Total sewage sludge disposed by 3rd party sludge service provider	<p>Data updated since October 2023</p> <p>Confidence Grade: B2</p>
8	Total sewage sludge disposed	<p>Data updated since October 2023</p> <p>Confidence grade: B2</p>
9	Total measure of intersiting 'work' done by pipeline	<p>Data updated since October 2023</p> <p>BMA's Decisio model is used to support forecasting of this line. As per Technical Assurance recommendation, we will be looking at whether an audit of the model can be undertaken by a third party in order to assess accuracy of the data.</p> <p>Over the past three-years, annual pipeline availability has ranged between 81-100%. For example (as per annual reporting):</p> <ul style="list-style-type: none"> • 2021/22, annual pipeline availability was 100%. • 2022/23, pipeline intersiting was temporarily reduced because of closures and repairs in Feb 2023 • 2023/24, further issues closed the pipeline for 10 weeks <p>The forecast for this line uses a baseline calculated from the performance over the past 3-years multiplied by forecast growth in pipeline intersiting between Millbrook to Slowhill Copse. The average availability over the past three years is 90%, to account for variability in pipeline availability the confidence grade for this line has been downgraded from B2 (+/- 5%) to B3 (+/- 10%).</p>
10	Total measure of intersiting 'work' done by tanker	<p>Data updated since October 2023</p> <p>BMA's Decisio model is used to support forecasting of this line. As per Technical Assurance recommendation, we will be looking at whether an audit of the model can be undertaken by a third party in order to assess accuracy of the data.</p> <p>The BIO1 value for 2023/24 has been aligned with APR24. In addition, the run rates used to forecast this line were updated using the previous 3-years data (2021/22 to 2023/24). Under our existing waste recycling contract work is</p>



		<p>payable by radial mileage, and the measure of actual distances travelled are not available. Therefore, the radial distances (reported in miles) are converted to an estimate of the 'actual' distance using a factor (1.6 (representing the approximate ratio of radial to actual distances). We are actively exploring the potential to amend this methodology and improve data accuracy.</p> <p>Confidence grade: B2</p>
11	Total measure of intersiting 'work' done by truck	<p>BMA's Decisio model is used to support forecasting of this line. As per Technical Assurance recommendation, we will be looking at whether an audit of the model can be undertaken by a third party in order to assess accuracy of the data.</p> <p>The BIO1 value for 2023/24 has been aligned with APR24. In addition, the run rates used to forecast this line were updated using the previous 3-years data (2021/22 to 2023/24). Under our existing waste recycling contract work is payable by radial mileage, and the measure of actual distances travelled are not available. Therefore, the radial distances (reported in miles) are converted to an estimate of the 'actual' distance using a factor (1.6 (representing the approximate ratio of radial to actual distances). We are actively exploring the potential to amend this methodology and improve data accuracy.</p> <p>Material changes were identified if year-on-year variance minus sludge tDS growth equals more than (+/-) 3%. Using this definition, a minor but material (3.39%) change occurs between 2023/24 and 2024/25. This was caused by lower truck intersiting because of significant tankering operations at Chickenhall, Newhaven, Portswood which are raw sludge dewatering sites that typically transport sludge by truck. This reduction in truck intersiting is expected to be temporary.</p> <p>Confidence grade: B2</p>
12	Total measure of intersiting 'work' done (all forms of transportation)	<p>Data updated since October 2023</p> <p>Confidence grade: B2</p>
13	Total measure of intersiting 'work' done by tanker (by volume transported)	<p>Data updated since October 2023</p> <p>BMA's Decisio model is used to support forecasting of this line. As per Technical Assurance recommendation, we will be looking at whether an audit of the model can be undertaken by a third party in order to assess accuracy of the data.</p> <p>The BIO1 value for 2023/24 has been aligned with APR24. In addition, the run rates used to forecast this line were updated using the previous 3-years data (2021/22 to 2023/24). Under our existing waste recycling contract work is payable by radial mileage, and the measure of actual distances travelled are not available. Therefore, the radial distances (reported in miles) are converted to an estimate of the 'actual' distance using a factor (1.6 (representing the approximate ratio of radial to actual distances). We are actively exploring the potential to amend this methodology and improve data accuracy.</p> <p>Material changes were identified if year-on-year variance minus sludge tDS growth equals more than (+/-) 3%. Using this definition, minor but material changes occur between 2023/24 and 2024/25 with decreased tankering</p>

		<p>volumes expected despite growth in overall “sludge produced” and tanker “work”. Several of the sites mentioned in line 11 are within densely populated urban areas and nearby STCs so tankering operations may have disproportionately increased tankering volume compared to tankering work between 2022/23 and 2023/24. The forecast therefore estimates a decline in tankering volume between 2023/24 to 2024/25) as volumes align to longer-term (3-year) run rates.</p> <p>Confidence grade: B2</p>
14	Total measure of 'work' done in sludge disposal operations by pipeline	N/A
15	Total measure of 'work' done in sludge disposal operations by tanker	N/A
16	Total measure of 'work' done in sludge disposal operations by truck	<p>Data updated since October 2023</p> <p>BMA's Decisio model is used to support forecasting of this line. As per Technical Assurance recommendation, we will be looking at whether an audit of the model can be undertaken by a third party in order to assess accuracy of the data.</p> <p>The BIO1 value for 2023/24 has been aligned with APR24. In addition, the run rates used to forecast this line were updated using the previous 3-years data (2021/22 to 2023/24).</p> <p>Material changes were identified if year-on-year variance minus sludge tDS growth equals more than (+/-) 3%. Using this definition, a minor but material (3.39%) change occurs between 2023/24 and 2024/25. This was caused by lower truck intersiting because of significant tankering operations at Chickenhall, Newhaven, Portswood which are raw sludge dewatering sites that typically transport sludge by truck. This reduction in truck intersiting is expected to be temporary.</p> <p>Confidence grade: B2</p>
17	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	Same as above
18	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	N/A
19	Chemical P sludge as % of sludge produced at STWs	<p>Data updated since October 2023</p> <p>There is a degree of uncertainty in AMP8 whether the sites identified as requiring ferric dosing to meet effluent consents will ultimately adopt this process. For example, biological P removal may be implemented instead. Likewise, sites not currently being considered for ferric dosing, may implement the process if required.</p> <p>Confidence grade: B2</p>

BIO2- Water resources asset and volumes data

Line description		Commentary
	Sludge transport method	
1	Power	
2	Income treated as negative expenditure	
3	Discharge consents	
4	Bulk discharge	
	Other operating expenditure	
5	Renewals expensed in year (Infrastructure)	
6	Renewals expensed in year (Non-Infrastructure)	
7	Other operating expenditure excluding renewals	
8	Total functional expenditure	
9	Local authority and Cumulo rates	
10	Total operating expenditure (excluding 3rd party)	
	Sludge treatment type	
11	Power	
12	Income treated as negative expenditure	Our 2024-25 budget has been used as a baseline for our base opex.
13	Discharge consents	
14	Bulk discharge	Efficiencies budgeted to be received have been taken from to the relevant years.
	Other operating expenditure	
15	Renewals expensed in year (Infrastructure)	Any further changes to opex will therefore be caused by principal use asset recharges, AFCs (arising from capital expenses) and enhancement.
16	Renewals expensed in year (Non-Infrastructure)	
17	Other operating expenditure excluding renewals	
18	Total functional expenditure	
19	Local authority and Cumulo rates	
20	Total operating expenditure (excluding 3rd party)	
	Sludge disposal route	
21	Power	
22	Income treated as negative expenditure	
23	Discharge consents	
24	Bulk discharge	
	Other operating expenditure	
25	Renewals expensed in year (Infrastructure)	
26	Renewals expensed in year (Non-Infrastructure)	
27	Other operating expenditure excluding renewals	
28	Total functional expenditure	

29	Local authority and Cumulo rates	
30	Total operating expenditure (excluding 3rd party)	

BIO3a- Bioresources energy analysis

Line description		Commentary
	Energy	
1	Energy consumption - bioresources	
2	Energy generated by and used in bioresources control	
3	Energy generated by bioresources and used in network plus control	
4	Energy generated by bioresources and exported to the grid or third party	
5	Energy generated by bioresources that is unused	Our bioresources submetering plan has now been completed, hence an update in our meter coverage.
6	Energy bought from grid or third party and used in bioresources control	
	Energy (AMP 7 shadow reported values)	Gas metering is still carried out by spot samples, which is permitted under the guidance.
7	Energy consumption - bioresources	No impact expected by implementation of AAD in Kent as no beneficial use expected until the very end of AMP8 beginning of AMP9
8	Energy generated by and used in bioresources control	
9	Energy generated by bioresources and used in network plus control	
10	Energy generated by bioresources and exported to the grid or third party	
11	Energy generated by bioresources that is unused	
12	Energy bought from grid or third party and used in bioresources control	

BIO3b- Bioresources; income, liquors and metering analysis

Line description		Commentary
	Income from renewable energy subsidies	
1	Income claimed from Renewable Energy Certificates (ROCs)	Forecast subsidy are not impacted by our PR24 bio expenditure and overall strategy as ROCs are fixed and decreasing based on data presented in BIO3.b. We are not forecasting to obtain any other subsidies (e.g. RTFO) as – as explained in our SRN36 Bioresources Strategy Technical Annex, the economics currently do not favour Biogas upgrade to Biomethane (with injection into the grid for example).
2	Income claimed from Renewable Heat Incentives (RHIs)	
3	Income claimed from [other renewable energy subsidy (1)]	
4	Income claimed from [other renewable energy subsidy (2)]	
5	Income claimed from [other renewable energy subsidy (3)]	
6	Total income claimed from renewable energy subsidies	
7	% of total number of renewable energy subsidies due to expire in the next 2 financial years	
8	This year's value of renewable energy subsidies due to expire in the next 2 financial years	
	Bioresources liquors treated by network plus (shadow reported)	
9	BOD load of liquor or partially treated liquor returned from bioresources to network plus	We assessed whether material changes occurred when year-on-year variance minus sludge tDS growth was equal to more than (+/-) 3%. Using this definition, no material changes occurred. Although not material (using the above definition), in 2029/30 BOD and ammonia increases more than in other years. This is due to several WINEP schemes completing which is forecast to increase the sludge generated that year. The sludge forecast shows that approximately 50% of sludge growth in AMP8 is due to schemes rather than population growth.
10	Ammonia load of liquor or partially treated liquor returned from bioresources to network plus	In 2024/25, the increase in BOD generated is largely due to population changes, with EDGE estimating a 2.1% increase in pe growth compared to an average increase of 0.9% between 2022/23 and 2029/30. Confidence grade: B2
11	Recharge to Bioresources by network plus for costs of handling and treating bioresources liquors	Calculated using the shadow method
	Metering	
12	Percentage of bioresources energy consumption that is metered	See BIO3a.1 commentary above

BIO4- Bioresources sludge treatment and disposal data

Line description		Commentary
	Sludge treatment process	
1	% Sludge - untreated	N/A
2	% Sludge treatment process - raw sludge liming	N/A
3	% Sludge treatment process - conventional AD	The reduction in percentage from 2023/24 to 2024/25 is due to our Goddards Green Advanced AD plant coming on line in 2024. Confidence grade: B2
4	% Sludge treatment process - advanced AD	The increase in percentage from 2023/24 to 2024/25 is due to our Goddards Green Advanced AD plant coming on line in 2024. Confidence grade: B2
5	% Sludge treatment process - incineration of raw sludge	N/A
6	% Sludge treatment process - other (specify)	N/A
	(Un-incinerated) sludge disposal and recycling route	
7	% Sludge disposal route - landfill, raw	N/A
8	% Sludge disposal route - landfill, partly treated	N/A
9	% Sludge disposal route - land restoration/ reclamation	N/A
1	% Sludge disposal route - sludge recycled to farmland	Confidence grade: B2
11	% Sludge disposal route - other (specify)	N/A
12	% Sludge disposal route - Total	N/A

BIO5- Bioresources - additional treatment and storage data		
Line description		Commentary
Bioresources data		
No change to data since October 2023 submission, commentary retained		
1	Tonnes of dry solids treated via main sludge treatment	Nil reported for Southern
2	Tonnes of dry solids undertaking thickening/dewatering	
3	Additional sludge storage - tank volume (pre-thickening/pre-dewatering/untreated sludge)	
4	Additional sludge storage - tank volume (thickened/dewatered/treated sludge)	
5	Additional sludge storage - cake pads/bays area or equivalent (cake)	2 schemes related to additional cake storage are part of Bioresources WINEP (1. Hants/Sussex (incl. IoW) and 2. Kent). Whilst the phasing of one of the schemes (1. Hants/Sussex) is believed to be carried out over the last 4 years of AMP8, the material year-on-year variation is linked to the phasing of the Kent scheme, which is linked to other non-WINEP schemes (namely 2x AAD plants in Kent). The large change in year 2029-30 is due to the Ham Hill & Ashford cake pads coming online. Quality of data provided: B4 NOTE: The figures presented here are the WINEP element of each scheme (e.g. excluding the Growth element which is part of BOTEX)
6	Total number of sludge treatment schemes providing sludge storage	The assumption is that "sludge treatment schemes providing sludge storage" includes additional cake storage (cake pads/bays area or equivalent) "1" is added at the year each scheme starts delivering (2 schemes for cake storage in total in Bioresources WINEP). For phasing, see comment for line 5 above. Quality of data provided: B4
7	Total number of sludge treatment schemes providing sludge thickening and dewatering	Nil reported for Southern
8	Total number of sludge treatment schemes providing main sludge treatment enhancement	
9	Volume of sludge processed via thickening or dewatering	
10	Landbank availability	From National Landbank study (Grieve Strategic/ADAS), we assume AMP8 follows Scenario 3 and each year, landbank available remains the same as previous years. Although Scenario 3 indicates enough landbank is available for SWS and the rest of the industry, it suggests a larger distance to be travelled (compared to Scenario 2 - Current

		<p>situation) which suggests an increased stress on landbank, hence the decision to stay at 100% instead of using higher %.</p> <p>As this is a national study, the quality of the outputs depends on the quality of the data given by each WaSC during this collaborative work.</p> <p>There is also a significant risk that Scenario 3 becomes obsolete if and how EA/DEFRA decide to full apply Farming Rules for Water as early as 2025, potentially reducing the available landbank for Biosolids across the UK by 2/3 (leading to Scenario 4).</p> <p>Quality of data provided: B4</p>
11-15	Sludge management/sludge treatment/Bioresources cost drivers	BLANK as no information to add.

BIO6- Bioresources - NMEAV for capital enhancement schemes

Line description	Commentary	
Sludge storage -Tanks (pre-thickening, pre-dewatering or untreated); (WINEP/NEP)		
1	CPIH / CPIH lagged	Not applicable
2	NMEAV (Opening)	Not applicable
3	Capex	Not applicable
4	CCA Depreciation	Not applicable
5	Disposal adjustment	Not applicable
6	Other adjustments	Not applicable
7	NMEAV (Closing)	Not applicable
Sludge storage - Tanks (thickened/dewatered or treated); (WINEP/NEP)		
8	CPIH / CPIH lagged	Not applicable
9	NMEAV (Opening)	Not applicable
10	Capex	Not applicable
11	CCA Depreciation	Not applicable
12	Disposal adjustment	Not applicable



13	Other adjustments	Not applicable
14	NMEAV (Closing)	Not applicable
	Sludge storage - Cake pads / bays; (WINEP/NEP) bioresources	
15	CPIH / CPIH lagged	Calculated based on PD1
16	NMEAV (Opening)	Nil
17	Capex	Additions used in the table are at outturn prices as indicated. These figures are derived by taking the relevant input from CWW3 (at 2022-23 price base) and indexing using CPIH average from table PD1.
18	CCA Depreciation	We have one scheme driving value under the heading 'Sludge storage - Cake pads / bays; (WINEP/NEP) bioresources' which covers multiple sites across the region. We have assumed a continuous delivery across AMP8 in calculating the CCD figure. This assumes 50% of spend in the year is added to the historic cumulative.
19	Disposal adjustment	As these are new assets, there are no entries for disposals related to them in the time period covered.
20	Other adjustments	None
21	NMEAV (Closing)	CCD has been calculated on a straight-line basis using 28.5 years as the average asset life. This asset life is consistent with data supplied in September 2022 as part of the OFWAT data collection exercise update.
	Sludge treatment - Anaerobic digestion and/or advanced anaerobic digestion; (WINEP/NEP) bioresources	
22	CPIH / CPIH lagged	Not applicable
23	NMEAV (Opening)	Not applicable
24	Capex	Not applicable
25	CCA Depreciation	Not applicable
26	Disposal adjustment	Not applicable
27	Other adjustments	Not applicable
28	NMEAV (Closing)	Not applicable
	Sludge treatment - Thickening and/or dewatering; (WINEP/NEP) bioresources	
29	CPIH / CPIH lagged	Not applicable
30	NMEAV (Opening)	Not applicable
31	Capex	Not applicable
32	CCA Depreciation	Not applicable
33	Disposal adjustment	Not applicable
34	Other adjustments	Not applicable

35	NMEAV (Closing)	Not applicable
	Sludge treatment - Other; (WINEP/NEP) bioresources	
36	CPIH / CPIH lagged	Calculated based on PD1
37	NMEAV (Opening)	Nil
38	Capex	Additions used in the table are at outturn prices as indicated. These figures are derived by taking the relevant input from CWW3 (at 2022-23 price base) and indexing using CPIH average from table PD1. Although IED (Industrial Emission Directive) is not covered by WINEP, it was included within this line as it is considered as an environmental enhancement and has been included in CWW3.
39	CCA Depreciation	The schemes included under the heading 'Sludge treatment - Other; (WINEP/NEP) bioresources' are major undertakings beginning in 2024-25 completing construction at the end of 2026-27. CCD for these starts at 1 st April 2027.
40	Disposal adjustment	As these are new assets, there are no entries for disposals related to them in the time period covered.
41	Other adjustments	None
42	NMEAV (Closing)	CCD has been calculated on a straight-line basis using 28.5 years as the average asset life. This asset life is consistent with data supplied in September 2022 as part of the OFWAT data collection exercise update.
	Sludge investigations and monitoring (WINEP/NEP) bioresources	
43	CPIH / CPIH lagged	Not applicable
44	NMEAV (Opening)	Not applicable
45	Capex	Not applicable
46	CCA Depreciation	Not applicable
47	Disposal adjustment	Not applicable
48	Other adjustments	Not applicable
49	NMEAV (Closing)	Not applicable