

Gate three query process

Strategic solution(s)	SESRO
Query number	SER009
Date sent to company	22/09/2025
Response due by	24/09/2025

Query

This query relates to the A3 Cost Report.

1. In Section 5, you have outlined your methodology for calculating whole life costs, noting this has been spread over an 80 year period and includes development costs to operational costs as expected. However no figure has been provided. Can you please provide this figure as well as a breakdown of the calculation and each components associated cost? This should include the total capital expenditure, operating expenditure and replacement expenditure.
2. Within the context of the assessments made for Price Review 2024 (PR24), including the major projects incentives framework and commercial delivery allowance, the whole life totex provided to us for SESRO was calculated over a 250 year period. As published in the final determinations, this equated to £7.5 billion.

In order for us to understand how the costs of the project have evolved and make a direct comparison, please could you provide us a whole life totex figure with the same asset life assumptions used for PR24? Alongside this please provide a breakdown of the calculation and each component's associated cost including capital expenditure, operating expenditure and replacement expenditure as well confirming assumptions on asset life and any other relevant assumptions.

Solution owner response

This response covers part 1 of the query only. The requirements set out in part 2 did not form part of our Gate 3 submission and as such needs to be produced and assured before being shared.

Query Part 1: Wholelife cost over 80 year period: In Section 5, you have outlined your methodology for calculating whole life costs, noting this has been spread over an 80 year period and includes development costs to operational costs as expected. However no figure has been provided. Can you please provide this figure as well as a breakdown of the calculation and each components associated cost? This should include the total capital expenditure, operating expenditure and replacement expenditure.

Response Part 1: Our response to Part 1 of this query is presented in two sections. The first section presents the values for Capex, Opex and Replacement Capex . The second section provides a further breakdown of these calculations.

Section 1: Values for Capex, Opex and Replacement Capex

The values for wholelife costs for the 80 year period have been provided. These are contained in Appendix A to our A3 Cost Report in line with the RAPID Gate Three Guidance (version 3 January 2024) requirement to submit WRMP24 Table 5 as an Annex to our report. The WRMP24 table format is designed to meet Ofwat's WRMP requirements and is populated in accordance with prescribed instructions¹. A series of and methodologies were developed in collaboration with Ofwat by the ACWG to make sure that Ofwat's requirements were met and that all water companies followed a consistent approach. These methodologies extend to calculations of Capex components (such as Costed Risk and Optimism Bias), Opex components and Replacement Capex components.

For ease, values have been extracted from these tables and are summarised below. The WRMP table requirement referenced in the RAPID Gate 3 Guidance is to evaluate wholelife cost over 80 years. Therefore with a development and delivery period of 15 years, the operational period is 65 years.

Table 5a:

¹ <https://www.ofwat.gov.uk/publication/water-resources-planning-tables-wrmp24/>
<https://www.ofwat.gov.uk/publication/water-resources-planning-tables-instructions/>

Item	Rows	Period	Cost (£m FY22/23 prices)
Capex	1, 6 & 7	2025-26 to 2039-40	6,604.03
Opex	9	2040-41 to 2104-05	418.68
Replacement Capex	1 & 7	2040-41 to 2104-05	1,492.50
Total			8,515.21

Table 5b:

Item	Rows	Period	Cost (£m FY22/23 prices)
Capex	3 to 35	2025-26 to 2039-40	6,604.04
Opex	1 & 2	2040-41 to 2104-05	418.68
Replacement Capex	3 to 35	2040-41 to 2104-05	1,492.50
Total			8,515.21

Section 2: Further breakdown of calculations for each component:

Capex:

The Capex comprises of the estimate, Costed Risk (P50 QCRA) and Optimism Bias calculated in line with RAPID Gate 3 guidance, Ofwat WRMP24 requirements and associated ACWG methodologies. The Capex is the point used within the advised range of £5.5bn to £7.5bn.

The Capex expenditure is forecast for the development & delivery period from 2025-26 to 2039-40 and summarised in rows 1, 6 & 7 of Table 5a.

Table 5a row number	Cost for period 2025-26 to 2039-40 (£m 22/23 prices)
Row 1 - Capex	4,293.84
Row 6 - Capex: Costed Risk	1,212.03
Row 7 - Capex: Optimism Bias	1,098.17
Total (£m 22/23 prices)	6,604.04

To meet Ofwat WRMP24 requirements, the same Capex expenditure is presented slightly differently in Table 5b. The estimate and OB are combined and allocated to asset categories (rows 3-34) and Costed Risk is shown separately (row 35) in accordance with ACWG methodologies.

Table 5b row number	Cost for period 2025-26 to 2039-40 (£m 22/23 prices)
Rows 3-34 - Capex & Optimism Bias	5,392.01
Row 35 - Capex: Costed Risk	1,212.03
Total (£m 22/23 prices)	6,604.04

Opex:

The Opex comprises of Fixed Opex (Operational Expenditure which remains the same regardless of utilisation) and Variable Opex (Operational Expenditure which varies dependent on how much the asset is utilised).

The Opex expenditure is forecast for an operational period from 2040-41 to 2104-05 and summarised in row 9 of Table 5a. The Ofwat WRMP24 requirement referenced in the RAPID Gate 3 Guidance is to evaluate wholelife cost over 80 years. Therefore with a development and delivery period of 15 years, the operational period is 65 years.

Table 5a row number	Cost for period 2040-41 to 2104-05 (£m 22/23 prices)
Row 9 – Opex (Fixed and Variable)	418.68
Total	418.68

To meet Ofwat WRMP24 requirements, the same Opex expenditure is presented slightly differently in Table 5b. The Fixed and Variable Opex are split into rows 1 & 2.

Table 5b row number	Cost for period 2040-41 to 2104-05 (£m 22/23 prices)
Row 1 - Fixed Opex	271.57
Row 2 - Variable Opex	147.11
Total	418.68

As previously mentioned, within Table 5a these costs are forecast over an operational period of 65 years. The following table demonstrates these calculations. Further information on these rates is set out in section 2.3 of the A3 Cost Report.

Item	Qty	Unit	Rate	Cost (£m FY22/23 prices)
Fixed Opex	65	Years	4.18	271.57
Variable Opex	65	Years	2.26	147.11
Total				418.68

Further build-ups to the Fixed and Variable Opex rates have been provided within our response to RAPID Gate 3 query number SER004, and are repeated for ease of reference.

Fixed Opex Rate Build-up	Cost per annum (£m FY22/23 prices)
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Electricity Consumption – fixed	0.26
Operational Staff	0.26
Abstraction licence	1.13
Maintenance	2.53
Total	4.18

Variable Opex Rate Build-up	Cost per annum (£m FY22/23 prices)
Electricity Consumption: variable for filling	1.74
Electricity Consumption: variable for transfer	0.78
Electricity Generation	(0.25)
Total	2.26

As outlined in the A3 Gate 3 SESRO Cost Report and to align with WRMP24 table assumptions, the variable opex is calculated on a ‘theoretical high utilisation’ of the maximum deployable output of 271Ml/day and equates to a rate of £22.9/Ml.

Replacement Capex

The ACWG methodology dictates that Replacement Capex cost calculations are based on the estimate and Optimism Bias, but exclude Costed Risk. Within Table 5a the Replacement Capex costs are in rows 1 & 7 for the operational period only (2040-41 to 2104-05).

Table 5a row number	Cost for period 2040-41 to 2104-05 (£m 22/23 prices)
Row 1 - Capex	1,181.29
Row 7 - Capex: Optimism Bias	311.21
Total	1,492.50

Within Table 5b, Replacement Capex costs are split into the different types of assets which comprise SESRO in accordance with ACWG methodology and to meet Ofwat WRMP24 requirements. The asset types are detailed under the Cost Metric column of Table 5a. The Replacement Capex estimate and Optimism Bias are combined and reflected in rows 3 to 34 for the operational period only (2040-41 to 2104-05). For further detail please refer to section 5 of the A3 Cost Report.

Table 5b Cost Metric (Asset Description)	Table 5b Row Number	Cost for period 2040- 41 to 2104-05 (£m 22/23 prices)
Land (Non depreciating)	Row 3	0.00

Planning and Development (Non depreciating)	Row 4	0.00
Other Non-Depreciating Assets (Non depreciating)	Row 5	0.00
Process-Related Carbon Media Including GAC (4)	Row 6	0.00
Vehicles (4)	Row 7	0.00
Computers and Data Logging (4)	Row 8	0.00
Fencing (10)	Row 9	49.55
Sunk costs	Row 10	0.00
Building Services (10)	Row 11	27.11
Membranes (10)	Row 12	0.00
ICA (Instrumentation, Control & Automation) (10)	Row 13	154.06
Plant and Machinery (15)	Row 14	1.46
M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)	Row 15	300.08
Raw Water and District Meters (20)	Row 16	0.00
Power Supply (25)	Row 17	44.85
Steel/Timber/GRP Structures (30)	Row 18	77.09
Landscaping/Environmental Works (30)	Row 19	281.62
Borehole Screening and Casing (30)	Row 20	0.00
Bridges (40)	Row 21	9.12
Brick/Concrete Office Structures (50)	Row 22	60.63
Treatment and Pumping Station Civils (incl. Intakes) (60)	Row 23	254.94
Roads and Car Parks (60)	Row 24	220.49
Client Indirect Delivery Costs - ND, OB added	Row 25	0.00
Borehole Installation (60)	Row 26	0.00
Headworks/Valves (60)	Row 27	11.52
Underwater Assets (60)	Row 28	0.00
Reinforced Concrete Tanks / Service Reservoirs (80)	Row 29	0.00
Weirs (100)	Row 30	0.00
Pipelines (100)	Row 31	0.00
Tunnels (100)	Row 32	0.00
Aqueducts (100)	Row 33	0.00
Embankment Works (250)	Row 34	0.00
Total		1,492.50

In accordance with ACWG methodologies and to meet Ofwat WRMP24 requirements referenced in the RAPID Gate 3 Guidance, Replacement Capex costs are calculated using the Capex estimate and Optimism Bias for the development and delivery of the scheme as their basis. The Capex estimate and Optimism Bias is allocated to different types of asset. Each asset type has a set expected usable life prescribed by ACWG methodologies before its value is fully depreciated, at which point the methodology considers it needs replacing. The ACWG expected usable life of each asset type is detailed in the Asset Life column of Table 5b. This Asset Life is used to calculate the frequency at which different

types of asset need replacing during the operational period. Certain assets are “non-depreciating” which means they don’t need replacing in the operational period, such as Land acquisition. Other assets don’t form part of the SESRO scheme, such as Boreholes. The calculations have been replicated in the following table:

Table 5b Cost Metric (Asset Description)	Asset Life (in years)	Qty (replacements in 65-year period)	Rate (cost per replacement based on initial Capex estimate & OB)	Total Replacement Capex (£m 22/23 prices) (for 65-year period)	Comment
Fencing (10)	10	6	8.26	49.55	
Building Services (10)	10	6	4.52	27.11	
ICA (Instrumentation, Control & Automation) (10)	10	6	25.68	154.06	
Plant and Machinery (15)	15	4	0.37	1.46	
M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)	20	3	100.03	300.08	
Power Supply (25)	25	2	22.42	44.85	
Steel/Timber/GRP Structures (30)	30	2	38.54	77.09	
Landscaping/Environmental Works (30)	30	2	140.81	281.62	
Bridges (40)	40	1	9.12	9.12	
Brick/Concrete Office Structures (50)	50	1	60.63	60.63	
Treatment and Pumping Station Civils (incl. Intakes) (60)	60	1	254.94	254.94	
Roads and Car Parks (60)	60	1	220.49	220.49	
Headworks/Valves (60)	60	1	11.52	11.52	
Reinforced Concrete Tanks / Service Reservoirs (80)	80	0	0.66	0.00	Assets not replaced in 65 years
Pipelines (100)	100	0	181.75	0.00	
Tunnels (100)	100	0	207.53	0.00	
Embankment Works (250)	250	0	1,682.80	0.00	
Non-Depreciating Assets	n/a	n/a	3,633.97	n/a	
Total				1,492.50	

Date of response to RAPID	24 September 2025
Strategic solution contact / responsible person	