

April 2019

Trust in water

PR19 draft determinations: Severn Trent Water – Allowed revenue appendix

PR19 draft determinations: Severn Trent Water – Allowed revenue supplementary appendix

This Appendix provides supporting information on the calculation of allowed revenue as set out in section 4 of the draft determination. It sets out for each year and for each price control:

- The calculation of allowed revenue;
- Pay as you go (PAYG) rates and PAYG allowed income;
- Weighted average cost of capital and return on capital;
- Regulatory capital value (RCV) run off rates and RCV run off allowed income;
and
- RCV.

All values are stated in 2017-18 prices unless otherwise stated.

1. Calculation of allowed revenue

The following tables set out the build up of allowed revenue for each wholesale price control for each year of the price review period as set out in tables 4.1 (wholesale price controls) and 4.2 (retail price controls) of the draft determination.

Table 1.1: Water Resources (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Pay as you go	52.0	53.8	53.4	53.7	55.7	268.7
RCV run-off	17.8	18.1	18.6	19.4	20.4	94.4
Return on capital	10.7	10.8	11.0	11.3	11.6	55.3
Revenue adjustments for PR14 reconciliations	0.0	0.0	0.0	0.0	0.0	0.0
Fast-track reward	0.0	0.0	0.4	0.4	0.0	0.8
Tax	0.8	1.5	1.5	1.5	1.5	6.8
Grants and contributions (price control)	0.0	0.0	0.0	0.0	0.0	0.0
Deduct other income (non-price control)	-6.5	-6.5	-6.5	-6.5	-6.5	-32.4
Revenue re-profiling	0.1	-0.2	-0.5	-0.1	0.8	0.1
Final allowed revenues	74.9	77.5	77.9	79.7	83.5	393.6

Table 1.2: Water network plus (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Pay as you go	286.0	292.8	294.0	289.1	292.2	1,454.2
RCV run-off	195.7	196.0	198.0	200.5	202.7	992.9
Return on capital	115.7	116.6	118.2	119.6	120.5	590.6
Revenue adjustments for PR14 reconciliations	1.3	1.3	1.4	1.4	1.5	6.8
Fast-track reward	0.0	0.0	4.5	4.5	0.0	8.9
Tax	5.5	5.3	6.3	8.3	10.6	36.0
Grants and contributions (price control)	47.0	42.7	27.7	27.0	27.1	171.5
Deduct other income (non-price control)	-10.1	-10.1	-10.0	-10.0	-10.0	-50.2
Revenue re-profiling	1.9	0.4	-5.2	-2.3	5.8	0.6
Final allowed revenues	643.1	645.1	634.7	638.1	650.4	3,211.5

Table 1.3: Wastewater network plus (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Pay as you go	289.0	295.1	293.6	292.0	291.4	1,461.0
RCV run-off	209.5	209.4	211.0	212.9	214.0	1,056.8
Return on capital	112.0	113.9	116.7	119.4	120.8	582.7
Revenue adjustments for PR14 reconciliations	16.1	16.7	17.2	17.8	18.4	86.1
Fast-track reward	0.0	0.0	4.3	4.3	0.0	8.6
Tax	17.9	16.5	16.0	16.3	17.9	84.6
Grants and contributions (price control)	32.6	18.3	14.0	13.2	19.7	97.8
Deduct other income (non-price control)	-5.7	-5.6	-5.6	-5.6	-5.5	-28.0
Revenue re-profiling	1.5	-0.1	-5.1	-2.1	6.6	0.7
Final allowed revenues	672.8	664.0	662.1	668.2	683.2	3,350.4

Table 1.4: Bioresources (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Pay as you go	35.3	35.2	33.1	33.1	33.0	169.6
RCV run-off	36.6	37.1	37.8	38.6	39.1	189.2
Return on capital	14.8	15.6	16.5	17.2	17.8	81.9
Revenue adjustments for PR14 reconciliations	0.0	0.0	0.0	0.0	0.0	0.0
Fast-track reward	0.0	0.0	0.0	0.0	0.0	0.0
Tax	4.5	3.5	3.2	2.9	2.9	17.0
Grants and contributions (price control)	0.0	0.0	0.0	0.0	0.0	0.0
Deduct other income (non-price control)	0.0	0.0	0.0	0.0	0.0	0.0
Revenue re-profiling	-0.3	-0.7	-0.1	0.3	0.9	0.1
Final allowed revenues	90.8	90.8	90.4	92.2	93.7	457.9

Table 1.5: Residential retail control (nominal price base)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total wholesale revenue - nominal (£m)	1,491.9	1,539.0	1,578.7	1,627.2	1,690.5	7,927.3
Proportion of wholesale revenue allocated to residential (%)	76.1%	76.0%	76.2%	76.0%	75.2%	
Residential retail costs (£m)	95.1	96.6	98.1	99.6	101.1	490.5
Total retail costs (£m)	1,229.7	1,266.5	1,301.6	1,337.1	1,372.5	6,507.3
Residential retail net margin (%)	1.0%	1.0%	1.0%	1.0%	1.0%	
Residential retail net margin (£m)	12.4	12.8	13.2	13.5	13.9	65.7
Residential retail adjustments (£m)	0.2	0.3	0.3	0.3	0.3	1.4
Residential retail revenue (£m)	107.7	109.6	111.5	113.4	115.3	557.6

2. Pay as you go (PAYG) rates

Companies recover expenditure in line with our totex allowances either in period from current customers using pay-as-you-go (PAYG) or add it to the regulatory capital value (RCV) and recover from future generations of customers using the RCV run-off rates.

The PAYG revenue for each year of the price control is based on the totex allowance for each year multiplied by the relevant PAYG rate plus an allowance for pension deficit recovery costs.

Table 4.3 of the draft determination sets out the five year PAYG allowances for each of the wholesale controls and table 4.4 sets out the unweighted average PAYG rates for each of the wholesale controls. The following tables set out the totex, PAYG rates and resultant PAYG revenue allowance for each wholesale control for each year of the price review.

Table 2.1: Water resources

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Totex allowance (£ million)	68.6	70.3	73.4	78.9	82.9	374.1
PAYG (%)	75.1%	75.7%	72.1%	67.4%	66.5%	
Totex PAYG (£ million)	51.5	53.2	52.9	53.2	55.1	265.9
Pension deficit repair costs (£ million)	0.5	0.5	0.5	0.5	0.5	2.7
Total pay as you go (£ million)	52.0	53.8	53.4	53.7	55.7	268.7

Table 2.2: Water network plus

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Totex allowance (£ million)	433.0	475.9	486.5	476.7	471.6	2,343.6
PAYG (%)	65.1%	60.6%	59.6%	59.8%	61.1%	
Totex PAYG (£ million)	281.8	288.6	289.8	285.0	288.1	1,433.4
Pension deficit repair costs (£ million)	4.2	4.2	4.2	4.2	4.1	20.9
Total pay as you go (£ million)	286.0	292.8	294.0	289.1	292.2	1,454.2

Table 2.3: Wastewater network plus

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Totex allowance (£ million)	474.1	528.8	540.6	533.4	471.2	2,548.1
PAYG (%)	60.4%	55.3%	53.8%	54.2%	61.3%	
Totex PAYG (£ million)	286.2	292.4	290.8	289.2	288.7	1,447.2
Pension deficit repair costs (£ million)	2.8	2.8	2.8	2.8	2.7	13.8
Total pay as you go (£ million)	289.0	295.1	293.6	292.0	291.4	1,461.0

Table 2.4: Bioresources

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Totex allowance (£ million)	88.9	89.3	88.0	84.9	76.2	427.3
PAYG (%)	38.8%	38.5%	36.6%	38.0%	42.2%	
Totex PAYG (£ million)	34.5	34.3	32.2	32.3	32.2	165.6
Pension deficit repair costs (£ million)	0.8	0.8	0.8	0.8	0.8	4.1
Total pay as you go (£ million)	35.3	35.2	33.1	33.1	33.0	169.6

3. Regulatory capital value (RCV)

Tables 4.6 and 4.7 of the draft determination set out the opening RCV balance at 1 April 2020 and closing RCV balance at 31 March 2025. During that period the RCV balance is adjusted by adding totex not recovered in period through PAYG and subtracting the amortisation of RCV through RCV run off.

The PR19 methodology confirmed we will transition to CPIH as the primary inflation rate from 2020. At 1 April 2020, we will index 50% of RCV to RPI; the rest, including new RCV, will be indexed to CPIH. Through the price control period, we will maintain separate balances for RCV inflated by RPI and RCV inflated by CPIH. The PR19 methodology also confirmed our protection of the value of the RCV as at 31 March 2020 across each of the wholesale price controls. New investment that is allocated to the RCV from 1 April 2020 and which does not benefit from the protection is maintained separately as ‘post 2020 investment’ and is indexed to CPIH.

The following tables set out the movement on each component of RCV for each wholesale control for each year of the price control. We also set out below the average RCV balance for each component of the RCV as this is used for the calculation of the return on capital.

3.1 Water resources

Table 3.1: RPI inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	190.5	183.8	177.3	170.8	164.0
Less : RCV run off	9.6	9.3	8.9	8.6	8.3
Closing RCV	180.9	174.5	168.4	162.1	155.7

In tables in this appendix, the opening RCV values have been inflated (by either RPI or CPIH) and then deflated to 2017-18 prices using CPIH. This is consistent with Tables 4.1 to 4.4 in this appendix, and allows the correct calculation of return on capital.

Table 3.2: CPIH inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	189.4	181.8	174.4	167.4	160.6
Less : RCV run off	7.7	7.4	7.1	6.8	6.5
Closing RCV	181.8	174.4	167.4	160.6	154.1

Table 3.3: Post 2020 investment RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	0.0	16.6	32.2	50.0	71.7
Add : Post 2020 investment RCV	17.1	17.1	20.5	25.7	27.7
Less : RCV run off	0.5	1.5	2.6	4.0	5.6
Closing RCV	16.6	32.2	50.0	71.7	93.8

Table 3.4: Total RCV and average for each element of RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Total Opening RCV	379.9	382.1	383.9	388.1	396.2
Total Closing RCV	379.2	381.1	385.8	394.4	403.6
Average RPI inflated RCV	185.7	179.1	172.8	166.4	159.8
Average CPIH inflated RCV	185.6	178.1	170.9	164.0	157.3
Average post 2020 investment RCV	8.3	24.4	41.1	60.9	82.7

3.2 Water network plus

Table 3.5: RPI inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	2,076.5	2,001.4	1,929.0	1,855.7	1,780.0
Less: RCV run off	106.8	103.0	99.2	95.5	91.6
Closing RCV	1,969.7	1,898.5	1,829.8	1,760.3	1,688.5

Table 3.6: CPIH inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	2,065.2	1,979.4	1,896.4	1,815.7	1,736.7
Less: RCV run off	85.8	83.0	80.8	78.9	77.3
Closing RCV	1,979.4	1,896.4	1,815.7	1,736.7	1,659.5

Table 3.7: Post 2020 investment RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	-	148.0	325.2	503.8	669.4
Add : Post 2020 investment RCV	151.2	187.3	196.7	191.7	183.5
Less : RCV run off	3.1	10.1	18.0	26.1	33.9
Closing RCV	148.0	325.2	503.8	669.4	819.0

Table 3.8: Total RCV and average for each element of RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Total Opening RCV	4,141.7	4,128.8	4,150.6	4,175.2	4,186.2
Total Closing RCV	4,097.1	4,120.1	4,149.3	4,166.4	4,167.0
Average RCV RPI	2,023.1	1,949.9	1,879.4	1,808.0	1,734.2
Average RCV CPIH	2,022.3	1,937.9	1,856.1	1,776.2	1,698.1
Average RCV post 2020 investment	74.0	236.6	414.5	586.6	744.2

3.3 Wastewater network plus

Table 3.9: RPI inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	2,001.5	1,918.9	1,839.8	1,760.6	1,679.8
Less: RCV run off	113.0	108.3	103.8	99.4	94.8
Closing RCV	1,888.6	1,810.6	1,735.9	1,661.2	1,585.0

Table 3.10: CPIH inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	1,990.6	1,898.4	1,811.2	1,728.3	1,649.2
Less : RCV run off	92.2	87.2	82.9	79.1	76.1
Closing RCV	1,898.4	1,811.2	1,728.3	1,649.2	1,573.1

Table 3.11: Post 2020 investment RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	0.0	183.6	406.2	631.7	841.3
Add: Post 2020 investment RCV	188.0	236.4	249.8	244.1	182.5
Less: RCV run off	4.4	13.9	24.3	34.5	43.0
Closing RCV	183.6	406.2	631.7	841.3	980.8

Table 3.12: Total RCV and average for each element of RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Total Opening RCV	3,992.1	4,000.9	4,057.1	4,120.5	4,170.4
Total Closing RCV	3,970.6	4,028.0	4,095.9	4,151.8	4,139.0
Average RCV RPI	1,945.0	1,864.8	1,787.9	1,710.9	1,632.4
Average RCV CPIH	1,944.5	1,854.8	1,769.7	1,688.8	1,611.2
Average RCV post 2020 investment	91.8	294.9	518.9	736.5	911.1

3.4 Bioresources

Table 3.13 RPI inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	257.8	242.7	228.5	214.7	201.2
Less : RCV run off	18.9	17.8	16.8	15.8	14.8
Closing RCV	238.9	224.9	211.7	199.0	186.4

Table 3.14: CPIH inflated RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	256.4	240.1	224.9	210.6	197.3
Less : RCV run off	16.3	15.2	14.3	13.4	12.5
Closing RCV	240.1	224.9	210.6	197.3	184.8

Table 3.15: Post 2020 investment RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Opening RCV	-	53.0	103.9	152.8	196.0
Add: Post 2020 investment RCV	54.4	54.9	55.8	52.6	44.0
Less: RCV run off	1.4	4.1	6.8	9.5	11.8
Closing RCV	53.0	103.9	152.8	196.0	228.2

Table 3.16: Total RCV and average for each element of RCV (£ million)

	2020-21	2021-22	2022-23	2023-24	2024-25
Total Opening RCV	514.2	535.9	557.3	578.2	594.5
Total Closing RCV	532.0	553.7	575.2	592.2	599.4
Average RCV RPI	248.3	233.8	220.1	206.8	193.8
Average RCV CPIH	248.3	232.5	217.8	203.9	191.0
Average RCV post 2020 investment	26.5	78.5	128.4	174.4	212.1

4. Return on capital

Companies are allowed a return on the RCV, equal to the Weighted Average Cost of Capital (WACC).

The return on capital is calculated by multiplying the annual average RCV for each component of RCV (RPI inflated, CPIH inflated and post 2020 investment) by the wholesale WACC for each control. Our PR19 methodology set out an ‘early view’ cost of capital for all wholesale controls at 3.3% - CPIH deflated (2.3% - RPI deflated). The CPIH deflated cost of capital is applied to the CPIH inflated RCV and the post 2020 investment RCV. The RPI deflated cost of capital is applied to the RPI inflated RCV.

Table 4.9 of the draft determination sets out the five year return on capital for each component of RCV for each wholesale control. The following tables set out the return on capital for each year of the price review and the WACC applied to each element of the RCV.

Table 4.1: Water resources return on capital and weighted average cost of capital

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
RPI inflated RCV (£ million)	4.3	4.1	4.0	3.8	3.7	19.9
CPIH inflated RCV (£ million)	6.1	5.9	5.6	5.4	5.2	28.3
Post 2020 investment (£ million)	0.3	0.8	1.4	2.0	2.7	7.2
Other adjustments (£ million)	0.0	0.0	0.0	0.0	0.0	0.0
Total return on capital (£ million)	10.7	10.8	11.0	11.3	11.6	55.3
Weighted average cost of capital applied to RPI inflated RCV (%)	2.3%	2.3%	2.3%	2.3%	2.3%	
Weighted average cost of capital applied to CPIH inflated and post 2020 RCV (%)	3.3%	3.3%	3.3%	3.3%	3.3%	

Table 4.2: Water network plus return on capital and weighted average cost of capital

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
RPI inflated RCV (£ million)	46.5	44.8	43.2	41.6	39.9	216.0
CPIH inflated RCV (£ million)	66.8	64.0	61.3	58.6	56.1	306.8
Post 2020 investment (£ million)	2.4	7.8	13.7	19.4	24.6	67.9
Other adjustments (£ million)	-	-	-	-	-	-
Total return on capital (£ million)	115.7	116.6	118.2	119.6	120.5	590.6
Weighted average cost of capital applied to RPI inflated RCV (%)	2.3%	2.3%	2.3%	2.3%	2.3%	
Weighted average cost of capital applied to CPIH inflated and post 2020 RCV (%)	3.3%	3.3%	3.3%	3.3%	3.3%	

Table 4.3: Wastewater network plus return on capital and weighted average cost of capital

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
RPI inflated RCV (£ million)	44.7	42.9	41.1	39.3	37.5	205.6
CPIH inflated RCV (£ million)	64.2	61.2	58.4	55.8	53.2	292.8
Post 2020 investment (£ million)	3.0	9.7	17.1	24.3	30.1	84.3
Other adjustments (£ million)	-	-	-	-	-	-
Total return on capital (£ million)	112.0	113.9	116.7	119.4	120.8	582.7
Weighted average cost of capital applied to RPI inflated RCV (%)	2.3%	2.3%	2.3%	2.3%	2.3%	
Weighted average cost of capital applied to CPIH inflated and post 2020 RCV (%)	3.3%	3.3%	3.3%	3.3%	3.3%	

Table 4.4: Bioresources plus return on capital and weighted average cost of capital

	2020-21	2021-22	2022-23	2023-24	2024-25	2020-25
RPI inflated RCV (£ million)	5.7	5.4	5.1	4.8	4.5	25.4
CPIH inflated RCV (£ million)	8.2	7.7	7.2	6.7	6.3	36.1
Post 2020 investment (£ million)	0.9	2.6	4.2	5.8	7.0	20.5
Other adjustments (£ million)	-	-	-	-	-	-
Total return on capital (£ million)	14.8	15.6	16.5	17.2	17.8	81.9
Weighted average cost of capital applied to RPI inflated RCV (%)	2.3%	2.3%	2.3%	2.3%	2.3%	
Weighted average cost of capital applied to CPIH inflated and post 2020 RCV (%)	3.3%	3.3%	3.3%	3.3%	3.3%	

5. RCV run off rates

RCV run off is the proportion of the RCV which is recovered each year during the price review period. Companies are able to propose different run-off rates for RPI inflated and CPIH inflated RCV and also, for the water resources and bioresources controls, for post 1 April 2020 investment.

Table 4.9 of the draft determination sets out five year total of the RCV run-off revenue for each component of RCV for each wholesale control. The following tables set out the RCV run off rates for each wholesale control for each year of the price review period and the resultant total RCV revenue for each year.

Table 5.1: Water resources

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Run off on RPI inflated RCV (%)	5.04%	5.04%	5.04%	5.04%	5.04%	
Run off on CPIH inflated RCV (%)	4.04%	4.04%	4.04%	4.04%	4.04%	
Run off on post 2020 investment RCV (%)	5.83%	5.99%	6.22%	6.43%	6.60%	
Total RCV run-off (£ million)	17.8	18.1	18.6	19.4	20.4	94.4

Table 5.2: Water network plus

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Run off on RPI inflated RCV (%)	5.14%	5.14%	5.14%	5.14%	5.14%	
Run off on CPIH inflated RCV (%)	4.15%	4.19%	4.26%	4.35%	4.45%	
Run off on post 2020 investment RCV (%)	4.15%	4.19%	4.26%	4.35%	4.45%	
Total RCV run-off (£ million)	195.7	196.0	198.0	200.5	202.7	992.9

Table 5.3: Wastewater network plus

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Run off on RPI inflated RCV (%)	5.64%	5.64%	5.64%	5.64%	5.64%	
Run off on CPIH inflated RCV (%)	4.63%	4.59%	4.58%	4.57%	4.62%	
Run off on post 2020 investment RCV (%)	4.63%	4.59%	4.58%	4.57%	4.62%	
Total RCV run-off (£ million)	209.5	209.4	211.0	212.9	214.0	1,056.8

Table 5.4: Bioresources

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Run off on RPI inflated RCV (%)	7.34%	7.34%	7.34%	7.34%	7.34%	
Run off on CPIH inflated RCV (%)	6.34%	6.34%	6.34%	6.34%	6.34%	
Run off on post 2020 investment RCV (%)	4.98%	5.05%	5.16%	5.28%	5.43%	
Total RCV run-off (£ million)	36.6	37.1	37.8	38.6	39.1	189.2

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales. Our vision is to be a trusted and respected regulator, working at the leading edge, challenging ourselves and others to build trust and confidence in water.

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