

# Cut the crap: accounting for clean water

June 2023



## Cut the Crap

### Accounting for Clean Water

Richard Murphy

June 2023

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#### Publishing data

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The data underpinning the report is available for use by serious researchers and environmental campaigners on request.

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## Summary

England's rivers and beaches are being polluted. Some of that pollution comes from farms, industrial outlets and other sources. But the issue of greatest concern is the sheer volume of human waste reaching our rivers and beaches, making them dangerous for human use and threatening wildlife.

The source of this problem is easy to identify. England's sewers are old, worn out, too small and unable to handle current volumes of sewage output. Solving this problem requires three things. Firstly, money. Secondly, assessment of the scales of the issues that the required amount of money to solve the problem gives rise to. Thirdly, political will to deliver clean water - a basic human right - to the people of England.

Having reviewed the available evidence, this report argues that the House of Lords is correct to assume that it will cost at least £260 billion to solve the problem of storm overflow sourced pollution which lies at the core of the issue. We suggest that given the urgency and scale of this issue the water industry's current proposal to invest £10 billion over seven years is inadequate. The Department of the Environment's plan to invest £56 billion over 27 years is likewise inadequate: our estimate is that it would only eliminate sixty-five per cent of pollution, at best.

What seems clear is that the official response to this crisis is primarily intended to guarantee the continued solvency of the nine companies that manage sewage in England. As our accounting analysis of their financial statements for the last twenty years shows, these companies have made no net investment of shareholder's funds in the water industry over this period. Investment has been funded by borrowing. All profits (amounting to £24.8 billion over that period) have been withdrawn from the industry by way of dividends. Less than £4.6 billion a year has been invested in the water sector on average over a twenty-year period. We suggest that £26 billion a year is required.

Using an accounting methodology known as sustainable cost accounting we show that all of England's water companies are environmentally insolvent. In other words, they are unable to raise the required financial capital to continue in operation and meet the requirement that they deliver clean water to people in England while avoiding pollution of waterways, rivers and beaches from untreated storm overflows. Such is the scale of their deficiency that we suggest that they be nationalised.

This proposal does not, by itself, solve the problem of the additional funding that this industry requires. We recommend that once the industry has been nationalised the government make available savings bonds to the public on which competitive rates of interest will be paid without tax being charged, in a fashion similar to ISA accounts, with the funds saved in this way being used to finance the necessary

investment in the water industry. £700 billion is saved in ISA accounts. There is £7,500 billion of financial wealth in the UK. Finding the £260 billion required to deliver safe water to the people of England should be perfectly feasible.

This said, we argue that a subsidy might be required to prevent household water bills increasing for all customers, some of whom, will undoubtedly be unable to bear that burden. If this subsidy is to be avoided a form of progressive charging for water, with rates per litre increasing as consumption does, would be a fairer way of increasing revenues. This would also provide a valuable incentive to save water.

We demonstrate that there are ways to solve England's water pollution problems. What is lacking is the political will to adopt the necessary solutions.

## Background

England's rivers and beaches are being polluted. Some of that pollution comes from farms, industrial outlets and other sources. But the issue of greatest current concern is the volume of untreated human waste reaching our rivers and beaches, making them dangerous for use and harming wildlife habitats.

The source of this problem is easy to identify. England's sewers are old, worn out, too small and unable to handle the number of people living in the country. England's population<sup>1</sup> has grown by at least 14.8% (7.3 million people) since 2000. In that time there has been little investment in sewage systems. The result is that when it rains hard many sewers cannot handle the volume of water flowing through them. What are called storm overflows then come into use. These dump untreated raw sewage into our rivers and onto our beaches.

There are thought to be 14,580 storm overflows in England. On average, over the last five years they have released raw sewage about 303,000 times a year. The average number of sewage emissions a year for those storm overflows for which data is available has been 28.8 per annum over the last five years. This means that these storm overflows are mis-named. They do not only operate during storms. A bit of rain seems to be sufficient to bring many of them into action, giving rise to raw sewage in rivers and on beaches.

The Environment Secretary said<sup>2</sup> in April 2023 that the cost of addressing this problem would be £56 billion, with that sum to be spent between 2023 and 2050. She made it clear that in her opinion it was the responsibility of England's nine combined waste and water companies to sort this out.

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<sup>1</sup> <https://www.statista.com/statistics/975956/population-of-england/>

<sup>2</sup> <https://www.gov.uk/government/speeches/the-plan-for-water>

England's water companies said in response that they would invest £10 billion over a seven-year period, arguing that this was triple their previous rate of investment<sup>3</sup>.

## Our research response

To investigate this issue and prepare this report we did five things:

1. We summarised the accounts of the English water and sewage companies for the past twenty years.
2. We prepared an overall set of accounts for the water and sewage companies in England for 2022, reflecting their combined income, expenditure, profit, and loss, assets, and liabilities.
3. We found the best estimate we could locate of the cost of stopping raw sewage being emitted from storm overflows into English rivers and onto English beaches.
4. Using a methodology called sustainable cost accounting we reviewed the ability of the UK's water companies to finance the amount of investment required to deliver clean rivers and beaches in England.
5. We then reviewed the resulting financial data to assess whether it was likely that England's water companies could eliminate this problem in a reasonable period.

Based on this data we propose recommendations for how to address this issue over a reasonable time scale rather than the generous one provided by the Environment Secretary.

## Financial data

England's nine water companies are:

- Anglian Water Services Limited
- Northumbrian Water Limited
- Severn Trent Water Limited
- South West Water Limited
- Southern Water Services Limited
- Thames Water Utilities Limited
- United Utilities Group plc
- Wessex Water Services Limited
- Yorkshire Water Services Limited

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<sup>3</sup> <https://www.water.org.uk/news-item/apology-transformation-programme/>

We obtained the accounts for all these companies except United Utilities from 2003 to 2007. United Utilities changed its regulated entity for water supply purposes in 2008 and so it alone is included only from that year.

We focussed our attention when undertaking our review on the regulated entities that supply England’s water and take away its sewage, which are noted above. We did not review the accounts of the groups of companies of which those regulated entities are members because to do so would have involved a review of unregulated activity, and that is not appropriate in this case.

Based on this work we compiled an overall income and expenditure account<sup>4</sup> of the UK’s water companies in 2022 as follows:

	2022	Average 2003 - 2022	Total 2003 - 2022
	£'m	£'m	£'m
Turnover	11,094	8,755	175,104
Administration Expenses	(8,440)	(5,363)	(107,265)
Other Operating Income/Costs pre operating profit	120	(362)	(7,233)
Operating Profit	2,774	3,030	60,606
Total Other Income & expenditure	(1,590)	291	5,819
Profit / (Loss) before Interest paid	1,184	3,321	66,425
Interest Received	291	316	6,314
Interest Paid	(2,727)	(2,109)	(42,184)
Profit / (Loss) before Tax	(1,251)	1,528	30,555
Taxation	(1,493)	(286)	(5,730)
Profit / (Loss) after Tax	(2,745)	1,241	24,825
Dividends	(765)	(1,334)	(26,689)
Retained Profit / (Loss)	(3,510)	(93)	(1,863)

Comparative information is provided for the twenty-year period to the end of 2022 plus average data for each year based on that aggregate information.

As is apparent, as a result of interest paid plus tax costs incurred (despite overall trading losses that were suffered) the supply of water and sewage was a deeply unprofitable activity for these companies when taken as a whole in 2022.

<sup>4</sup> Or profit and loss account

This contrasts with the average result for the twenty-year period which shows:

- An exceptional 37.9% profit rate before financing costs, which might better than that of many banks.
- An extraordinary 24% of income spent on financing costs.
- Profits after financing costs exceeding £1.5 billion a year.
- Average tax charges of 18.7%, which was below the expected tax rate over this period when rates were at 30% at the start of this period.
- Dividends that distributed all the profits earned leaving nothing overall for reinvestment in the businesses of these companies.

Individual company's results vary. The above representation is intended to indicate the performance of the industry as a whole over this extended period.

Turning to the balance sheets of the companies, the combined balance sheet for 2022 is as follows:

**English water and sewage companies**  
**Consolidated accounts**  
**Balance sheet**

	2022	
	£'m	£'m
Fixed Assets		
Tangible Assets	77,373	
Intangible Assets	1,304	
Investments	6,075	
Total Fixed assets		<u>84,751</u>
Current Assets		
Trade debtors	1,582	
Other current assets	3,806	
Bank balances	1,658	
Total Current Assets		<u>7,046</u>
Current Liabilities		
Trade creditors	568	
Loans & overdrafts	3,970	
Corporation Tax	154	
Sustainable cost provision	0	
Other Current Liabilities	3,145	
Total Current Liabilities		<u>7,837</u>
Net Current Assets		<u>(791)</u>
Long Term Liabilities		
Long Term Debt	50,947	
Other Long Term Liabilities	10,723	
Deferred Tax	8,411	
Pension Liabilities	497	
Sustainable cost provision	0	
Total Long Term Liabilities		<u>70,578</u>
Net assets		<u>13,383</u>
Shareholders Funds		
Ordinary Shares	992	
Other Share Capital	1,955	
Profit and loss account	8,195	
Total Reserves	2,241	
Sustainable cost reserve	0	
Total Shareholders Funds		<u>13,383</u>



The picture here is dominated by three issues:

- Investment in tangible (i.e. physical) assets.
- Borrowings.
- Shareholders' funds.

Other figures are relatively small in comparison.

The story over twenty years, created by comparing the data on these key variables with that in 2002 is as follows:

### Fixed asset investment

In 2003 fixed asset investment of the water companies was £24.8 billion. In other words, over twenty years it would appear that £52.6 billion of investment had taken place. However, this understates the true level of investment as depreciation of £38.9 billion had been charged in the income statements of these companies over those years to measure the wearing out of the value of these fixed assets as a result of their use. This implies, assuming that the value of assets sold was relatively modest, that total investment exceeding £91.5 billion had taken place over this period.

### Borrowing

The total borrowing of these companies, taking into account both long term loans and shorter-term loans and overdrafts amounted to about £54.9 billion in 2022.

In 2003 the equivalent figures were approximately £11.9 billion of long-term loans and £2.5 billion of loans and overdrafts, or £14.4 billion.

Borrowing increased by £40.5 billion (approximately fourfold) over this period. However, the increase in other long-term liabilities, including sums due to pension funds, increased that total growth in borrowing by another £10.4 billion, or to £50.9 billion in total.

### Shareholder funds

Total shareholder funds in 2022 were £13.4 billion. In 2003 they were £9.5 billion. This is an increase of £3.9 billion over the period. Of this sum approximately £1.8 billion appears to relate to share issues. A further £1.7 billion appears to relate to asset revaluations. The rest relates to movement between reserves, but the overall small sums involved supports the view presented by the income statement that there was little or no reinvestment of profits made in the business over this period.

## How water companies' investment was funded

The funding for the total apparent investment in fixed assets over the period of £91.5 billion that the above, albeit brief, analysis suggests took place in the English water industry as a whole between 2003 and 2022 would appear to have been supplied in the following ways:

- a. £1.7 billion relates to assets being revalued rather than acquired. This is an accounting entry with no cash being involved.
- b. £50.9 billion was funded by borrowing.
- c. £38.9 billion was covered by operating cash flows that effectively offset the depreciation charge and was generated from income over the period.

These sums together come to £91.5 billion. Looking for further explanation on sources of funding appears unnecessary.

The share capital raised did not appear to fund investment. Instead, it appeared to almost exactly compensate for the over-payment of dividends made during this period.

## Sustainable cost accounting

We have reinterpreted the above data within the context of sustainable cost accounting.

The essence of sustainable cost accounting is simple. It requires that a company prepare a plan to show how it would manage the consequences of its pollution and environmental, climate and biodiversity change. That plan would have to state how it might remove its harmful impacts by a specified date, both within its own business and within its supply chain.

The plan would have to be specific as to what the business must do to achieve this goal, or alternatively state that this is not yet known.

A precautionary principle would apply: in other words, the plan could only rely upon existing technologies that have been proven to work.

The plan would have to be costed.

Sustainable cost accounting requires that the full cost of the changes needing to be addressed by the company should be included in its accounts. Annual reappraisal

would be required thereafter to demonstrate progress towards achieving the stated goals.

If the inclusion of this cost in the accounts of a company resulted in it being shown to be insolvent then the company would have to address the issue in order to restore solvency. For example, it could end dividend payments to shareholders and retain profits over time to fund the required changes. Alternatively, solvency could be achieved by raising additional equity or loan capital. In either case the plan must be deemed credible by the company's auditors. We stress that all sustainable cost accounting data would require financial audit since the intention is to include it in the company's audited financial statements.

Alternatively, if a company is unable to show how it could finance the cost of the transition to being sustainable in its activities, or it could not estimate the cost of completing that process, or it concluded that it simply could not make the transition, then it is suggested that it would have to be declared 'environmentally insolvent'. This would not necessarily mean that it was immediately financially bankrupt. However, this status would make clear that the company was not going to survive into the era that we want to live in. As a result an orderly winding up of its affairs would be required, and carbon insolvency administrators would have to be appointed to achieve that goal. But it is stressed: this is not about an immediate winding up of the reporting entity's affairs: it is instead about managing an orderly transition for all involved including, most especially, its employees.

### Applying sustainable cost accounting to water companies

We note the following based on analysis made above:

- a. That the English water companies are currently proposing investment of an additional £10 billion over seven years.
- b. That the government's Plan for Water suggests that investment of £56 billion is required by 2050 to reduce sewage leaks to no more than ten per storm overflow per annum, which might eliminate 65 per cent of existing emissions. We presume that this would include the £10 billion noted above.
- c. The House of Lords has estimated that it will cost £260 billion to eliminate storm overflow pollution, as would seem to be essential if the water quality of UK rivers and beaches is to be restored.
- d. This last cost does not cover the cost of making the English water industry net carbon neutral, which is likely to be significantly higher.

In the remainder of this note we consider the consequences of the English water companies having to invest £260 billion over a reasonable time period of, say, ten years to eliminate the pollution they currently cause. The basis for the estimate of

£260 billion is discussed in an appendix to this note. We dismiss the other options because:

- i. An investment of £10 billion over seven years is a lower rate of investment than these companies have actually delivered on average over the last twenty years (average, approximately £4.5 billion per annum).
- ii. £56 billion over 27 years is an investment rate of just over £2 billion a year, again lower than these companies have actually achieved. In that sense it is not a target at all. In addition, it does not solve the problem that exists: one third (at least) of the pollution would remain. The timescale is also far too long to satisfy any reasonable demand.

For this reason, we think that a provision of £260 billion to cover the cost of eliminating existing polluting working practices should be made in the collective accounts of these companies. We think that a realistic target of ten years should be adopted to achieve this goal. This pollution needs to be eliminated as soon as possible, and not at some time in the distant future.

### Which water companies should make what provision?

We have seen estimates of how the £56 billion cost of the Plan for Water investment programme would be allocated between companies which suggest an unbalanced apportionment. There would have been a bias to companies in the north of England and little cost incurred by companies serving the south coast of England despite the substantial pollution issues arising there. We have not seen explanation for this. As a result, we suggest it likely that the apportionment should be proportional to weighted measures of activity by company because we see no reason why consumers in some parts of the country should be penalised for the failing of their water company more than others might be.

Based on the weighted turnover (sales), asset investment and number of employees the apportionment of the £260 billion would be as follows:

	Weighting	Apportioned investment required	Net asset worth 2022	Deficit of assets after sustainable cost accounting provision
		£'m	£'m	£'m
Anglian Water	13.1%	34,108	2,314	(31,794)
Northumbrian Water	7.1%	18,504	519	(17,985)

Severn Trent Water	15.6%	40,647	2,743	(37,904)
South West Water	4.6%	12,038	575	(11,463)
Southern Water	7.4%	19,141	589	(18,552)
Thames Water	20.0%	52,102	1,831	(50,272)
United Utilities	15.8%	41,147	2,957	(38,190)
Wessex Water	5.5%	14,316	747	(13,569)
Yorkshire Water	10.8%	27,998	1,108	(26,890)
Total	100.0%	260,000	13,383	(246,617)

As is apparent, if a provision of £260 billion was made then these companies would potentially be environmentally insolvent in the sum of £246 billion.

The fact that every company would be in this position is clear indication of how little the shareholders of these companies have invested in this industry and its resilience.

### The impact of providing for costs of £260 billion in the accounts of English water companies

The initial balance sheet impact of providing for the costs of eliminating systemic pollution of England’s rivers and beaches from the working practices of these water companies is relatively easy to appraise. The key issue to appraise is whether these companies have the means to fund the level of investment required to achieve the goal of no pollution from storm outlets.

The question here does not relate to the combined balance sheet of these companies but instead to their income statement. The key issues are the ability of these companies to service the debt they will incur to fund this programme of work given that debt would appear to be their chosen method of financing, and their ability to support the additional depreciation charges this programme will give rise to.

It is not possible to predict future income statements, but the following is a forecast based upon the data already noted of what that statement might look like ten years hence if the required investment of £260 billion was made:

	Ten years hence £000
Turnover	11,100,000

Administration Expenses	(8,500,000)
Additional sustainable cost accounting depreciation	(2,600,000)
Other Operating Income/Costs pre operating profit	(100)
Operating Profit	(100)
Total Other Income & expenditure	100
Profit (Loss) before Interest paid	0
Interest Received	0
Interest Paid	(2,700,000)
Additional sustainable cost accounting interest paid	(13,000,000)
Profit (Loss) before Tax	(15,700,000)
Taxation	0
Profit (Loss) after Tax	(15,700,000)
Dividends	0
Retained Profit/(Loss)	(15,700,000)

The following notes are important:

- Income is assumed to be as for 2022 i.e. inflation is not allowed for.
- Administration expenses are as for 2022.
- The additional depreciation charge on new assets allows for expenditure on new infrastructure to last for 100 years before requiring replacement, which may well be too generous.
- Routine interest paid is as per 2022.
- The additional interest is at 5% on £260 billion of borrowing. The interest rate paid on borrowings by the English water companies was at an average rate of 4.91% in 2022. It may be generous to assume that rates will remain at around this level.
- There is no tax liability on the loss and dividends will not be capable of being paid because of that loss.

A loss of £15.7 billion is shown. For reasons noted, this may be an underestimate.

To break even the average charge by a water company would need to increase by 240%. That would increase an average household bill from £455<sup>5</sup> to about £1,100, an increase of £645 per annum.

### Conclusions based on sustainable cost accounting analysis

On the basis of these projections we conclude:

1. That the capital required to eliminate storm overflow pollution cannot be raised by the water and sewage companies in England.
2. The companies in question are, therefore, environmentally insolvent as defined in this note: they cannot meet their obligations to society to operate in a sustainable fashion within the financial resources available to them.
3. The level of charges for water and sewage that meeting this objective would require are not socially sustainable without government support.
4. Therefore support is required from the government to make this industry environmentally sustainable (as well as in due course, carbon neutral, the costs of which have not been allowed for).

### The policy options currently available

This report suggests that:

- A. The environmental objective of eliminating water pollution from sewage emitted from storm overflows is most unlikely to be secured under existing arrangements for ownership of water and sewage companies in England.
- B. It seems plausible that the modest levels of capital investment proposed by the water companies themselves (£10 billion over seven years) and the Secretary of State for the Environment (£56 billion over 27 years) were chosen not because they achieved environmental goals, which they do not, but because the water companies are unable to afford the level of investment required to address the problem. Environmental considerations have been deemed secondary to maintaining the solvency of the water industry.
- C. If the environmental goal of clean water is to be achieved nationalisation of English water companies is required, not least to ensure that unreasonable regional variations in cost burdens are not imposed on those having to bear that cost.
- D. It is suggested that no compensation to the shareholders of water companies is required: for many years they have not been able to meet their obligations to supply water without polluting the UK's rivers and beaches and tangibly harmed the wellbeing of the people and physical environment of England.

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<sup>5</sup> According to Southern Water in 2022 <https://www.southernwater.co.uk/account/average-water-use-and-cost>

Their business model has failed and any reasonable alternative leaves them insolvent.

### Alternative funding sources

The UK is not short of financial wealth. The following table summarises that wealth as reported by the UK Office for National Statistics<sup>6</sup>:

Aggregate household total wealth and components, Great Britain

		<i>£ billion and percentage</i>		
		July 2006 to June 2008	April 2018 to March 2020	Increase since 2008 %
<b>Aggregate wealth (£ billions)</b>	Property Wealth (net)	3,537	5,458	54%
	Financial Wealth (net)	1,043	1,933	85%
	Physical Wealth	961	1,385	44%
	Private Pension Wealth	2,886	6,445	123%
	<b>Total Wealth (including Private Pension Wealth)</b>	<b>8,426</b>	<b>15,221</b>	<b>81%</b>
	<b>Total Wealth (excluding Private Pension Wealth)</b>	<b>5,540</b>	<b>8,776</b>	<b>58%</b>
<b>Percentage of Total Wealth</b>	Property Wealth (net)	42	36	
	Financial Wealth (net)	12	13	
	Physical Wealth	11	9	
	Private Pension Wealth	34	42	
	<b>Total Wealth (including Private Pension Wealth)</b>	<b>100</b>	<b>100</b>	
<b>Percentage of Total Wealth (excluding pensions)</b>	Property Wealth (net)	64	62	

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<https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/datasets/totalwealthwealthingreatbritain>

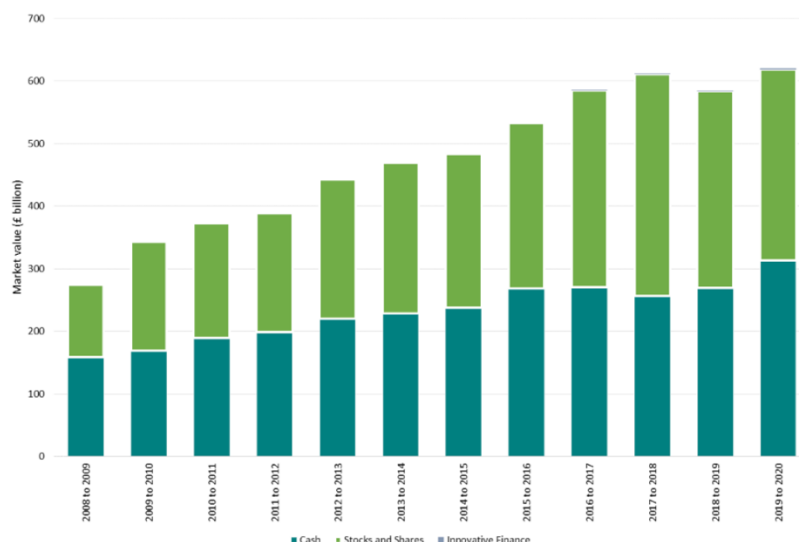


Financial Wealth (net)	19	22
Physical Wealth	17	16
<b>Total Wealth (excluding Private Pension Wealth)</b>	<b>100</b>	<b>100</b>

Research has shown that 81 per cent of financial assets are held in tax incentivised accounts e.g. pension funds, ISAs, and the like<sup>7</sup>. The sum in question amounts to around £7,500 billion. It would be surprising, and a failure on the part of the UK financial services industry, if some of these savings could not be used to fund the programme of work required to provide clean and safe water supply in England.

To achieve this outcome, we suggest that lessons be learned from the Individual Savings Account (ISA) programme that the government makes available. A UK resident person can under this programme save up to £20,000 a year on which the income is tax free, as are any associated capital gains. A simple arrangement of this sort has attracted substantial funds<sup>8</sup>:

**Adult ISA fund market values**



The cash funds saved in ISA accounts usually sit stagnant in High Street bank accounts. They do not directly contribute to the capital made available for productive investment in the UK, not least because approximately 85 per cent of all UK bank lending is for the purposes of property acquisition.

With appropriate care and planning we suggest that it would be entirely possible to create a savings market offering tax free bonds paying competitive rates of interest to encourage savers to invest funds for use by the government to make water supply in the UK safe again. National Savings & Investments (NS&I) has the infrastructure

<sup>7</sup> Baker, A., & Murphy, R. (2020). Modern monetary theory and the changing role of tax in society. *Social Policy and Society*, 19(3), 454-469.

<sup>8</sup> <https://www.gov.uk/government/statistics/annual-savings-statistics/commentary-for-annual-savings-statistics-june-2021>

to create and market such a product. Many people looking for a secure savings scheme into which they could place funds above the level guaranteed when held with commercial banks may well find this a highly attractive proposition. A variation that would be attractive to pension funds could also be made available.

As the ISA data shows, there have been almost continual net inflows into ISA accounts and aggregate withdrawals are rare. The same is likely to be true of the proposed product in aggregate, making it a suitable source of long-term capital for the water sector. It would have the added advantage of letting people know that their savings are being put to good use.

The result would be that the apparently insurmountable problem of finding the capital for this purpose would be overcome, albeit that the state would have to subsidise the interest cost of delivering safe water for the UK. However, using savings in this way might considerably reduce that cost: the state can borrow at far lower rates than commercial companies.

### The subsidy required from the government

The forecast income statement for the combined English water companies noted above suggests that a substantial deficit will be suffered by English water companies if clean water is to be supplied to households and pollution is to be eliminated from the England's rivers, waterways and beaches. Nationalisation will not avoid the fact that many of the costs of this sector will still be incurred whoever owns it, although there might be some savings from that process, particularly relating to the cost of borrowing, which is always cheaper for a government than for a private company.

We propose that this issue be addressed by reducing the cost of borrowing, currently one of the largest costs incurred by the water industry. Our suggestion, already made, does that.

In addition, we suggest that the fact that a subsidy will be required has to be accepted: the meeting of a basic obligation is a role of government and the cost of meeting it is something that it might reasonably expect to incur.

Thirdly, the basis of charging in the industry might need to change. The idea that all water be charged to consumers at the same rate seems inappropriate. There is a basic right to water. There is not a basic right to unlimited amounts of water. As such progressive charging for water, with the rate increasing as water consumption per household increases, would be appropriate, with suitable adjustment being made for the number of people living in each such household. This would have the advantage of encouraging water conservation, which is already vital.

## Conclusion

Safe water is an achievable goal for England. This is not possible, however, within the existing structure of the English water industry. Nor is it possible without state intervention, including nationalisation of the existing water companies. What is lacking is the political will to tackle these issues.

## Appendix 1

### The cost of cleaning up our rivers

The cost of cleaning up England's rivers has been the subject of several estimates in recent years.

Most of the data on this issue comes from the independent Storm Overflows Taskforce<sup>9</sup>. Based on their wide-ranging work the House of Lords concluded in a report published<sup>10</sup> in March 2023 that:

*the elimination of discharges from storm overflows by separating rainwater drainage from wastewater in the sewer network would cost between £350 billion and £600 billion and would cause significant disruption. The Taskforce said that reducing discharges to zero in an average year through other options, such as building storage tanks to capture excess water during heavy rainfall, would cost between £240 billion to £260 billion.*

Having reviewed the source data used by their Lordships and having acknowledged that the first stated figures are explicit within the Storm Overflows Taskforce's work and the latter figures involve a degree of aggregation of estimates, the conclusions reached by their Lordships appears reasonable.

In August 2022 the Storm Overflows Discharge Reduction Plan<sup>11</sup> was published by the Department for Environment, Food and Rural Affairs. This plan also drew on the work of the Storm Overflows Taskforce and suggested the same cost for differentiating rainwater drainage from wastewater (sewage) which would eliminate the use of storm overflows. Aggregating data in different fashions to the House of Lords, it was estimated that the cost of redesigning overflows to deliver zero discharges was between £121 billion and £216 billion. However, as the House of Lords report noted, this was not a sufficient goal in itself in the way defined by the Department for the Environment and it seems that their Lordships' estimate is a better indicator as a result.

Having made their estimate of the cost of eliminating storm overflow discharges the Department for the Environment's Storm Overflows Discharge Reduction Plan did not accept that the goal of eliminating storm overflows was realistic, stating

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<sup>9</sup> Department for Environment, Food and Rural Affairs, 'Storm overflows evidence project': <https://www.gov.uk/government/publications/storm-overflows-evidence-project>

<sup>10</sup> <https://publications.parliament.uk/pa/ld5803/ldselect/ldindreg/166/16602.htm>

<sup>11</sup> Department for Environment, Food and Rural Affairs, Storm Overflows Discharge Reduction Plan: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1101686/Storm\\_Overflows\\_Discharge\\_Reduction\\_Plan.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1101686/Storm_Overflows_Discharge_Reduction_Plan.pdf)

that this conclusion was reached on grounds of cost. Instead, it set a goal to reduce discharges so that “no storm overflows will be permitted to operate outside of unusually heavy rainfall or to cause any adverse ecological harm.” In practice this was interpreted as meaning there should be no more than ten spills (or 'rainfall events' as they were described in the report) per overflow, per annum, which would cost £56 billion to achieve. It then suggested that this cost be spread between 2023 and 2050. In April 2023 it was announced that this plan would be subject to legislation, being described as ‘The Plan for Water’<sup>12</sup>.

Quite what the new target means in term of reducing storm overflow spillage takes a little working out. The following data is based on Environment Agency data<sup>13</sup> on long term trends on spills:

EDM Annual Return: long-term trends	2016	2017	2018	2019	2020	2021	2022	Average 2018 - 2022	Estimate based on a maximum of ten 'rainfall events' per storm overflow	Percentage change from 2018 – 2022 average
Total number of storm overflows listed	-	-	-	-	-	14,470	14,580			
Total no. storm overflows with EDM commissioned	-	-	-	-	-	12,707	13,323			
Total no. storm overflows with spill data	862	2,515	6,182	8,276	12,092	12,393	13,080			
Total number of monitored spill events	12,637	33,159	146,930	292,864	403,375	372,533	301,091	303,358.	105,089	35%
Total duration (hrs) of monitored spill events	100,533	170,269	898,784	2,489,167	3,101,150	2,667,452	1,754,921	2,182,295	756,641	35%
Average number of spill events per storm overflow with spill data	14.7	13.2	23.8	35.4	32.6	29.4	23.0	28.8	7.2	25%
Average duration (hrs) of each spill event per storm overflow	8.0	5.1	6.1	8.5	8.1	7.4	5.8	7.2	7.2	0%

<sup>12</sup> <https://www.gov.uk/government/speeches/the-plan-for-water>

<sup>13</sup> <https://environment.data.gov.uk/portalstg/home/item.html?id=d456bf40b7a94530953a378e5d814d32>

The data for each year was supplied by the Environment Agency. The average is a simple calculation over the more recent years where the data is likely to be more reliable due to the increasing sample sizes.

It is assumed that if the maximum number of ‘rainspill events’ that might happen at each site was capped at 10 per site then not all sites would reach this figure. It has therefore been assumed that the number of storm events would be reduced by 75%. Estimates of the total likely spoil events and their duration then follow from this assumption. As is noted, although the number of spills might reduce by 75% the likely impact in terms of spill events and hours duration is smaller. Those sites that do overflow do so seriously. The impact of spills might be reduced by 65%, or approximately two thirds, by 2050.

In terms of achieving environmental sustainability this plan from the Department for Environment, Food and Rural Affairs is considered inadequate. It has been adopted solely on the basis of financial savings to the water companies. The claim made by the Department of the Environment that another reason for adopting it, which is that it would reduce the carbon emissions involved in addressing storm overflows, is considered unacceptable.

In that case, accepting that the separation of wastewater and rainwater is not possible, the estimate made by the House of Lords of the cost of achieving zero storm overflow emissions has been accepted. Their higher estimate of £260 billion has been used to allow for inflation since the estimate was prepared.