Water - Evidence Annex (graded source-of-truth)

The single, agreed evidence base behind Pragma's water work - Problem Register entry 7, "Water and the regulation of monopoly utilities". Every other water document (the White Paper, the Delivery Design, the Public Summary, the Public Choices paper, the infographic) draws its facts from this one. It covers the regulated water and sewerage companies of England and Wales unless stated otherwise; figures were gathered in June 2026. This particular document is written for specialists and uses some technical language with plain explanations alongside; the documents meant for the general public do not.

How the evidence is graded. Each fact below carries a letter, A to D, showing how strong the evidence behind it is. **A** means robust and audited (an audited regulatory account, an official statistic, or a formal regulator's decision). **B** means a strong official projection (a large official dataset, or a forecast by government, by the National Audit Office - the public spending watchdog - or by the Environment Agency - the government body responsible for protecting rivers and the environment). **C** means a single estimate, a modelled figure, or a figure that is actively disputed (one source only, a left-over balancing figure, or a number people are arguing about). **D** means weak or absent evidence (no agreed official figure exists; an extreme-case or campaign-group estimate, carried only to show the full range of possibilities).

Discipline note. The most disputed area in this document - by a long way - is the cost and method of changing who owns the water companies (sections 5 and 6). There is no agreed number; the range of figures comes from which valuation method you choose and from legal and political decisions, not from anything that can be measured. Throughout, the approach is the same: settle questions that evidence can answer (how much investment is needed, the state of the companies' finances, where bills are heading) using evidence; and put the genuine questions of values (who should own the water companies, who should pay for past failures, how far and how fast to invest) honestly to the public to decide. **Dressing up a choice about ownership or about who pays as if it were a technical necessity is the central mistake this document exists to prevent.**

Double-counting warning (read this before using any investment figure). Two different ways of measuring investment appear repeatedly in this document, and they **must never be added together**. The first is the 2025-2030 investment period (known in the industry as AMP8, the eighth "Asset Management Plan" period - the five-year blocks the regulator sets investment in), worth **£104bn over 2025-2030**. This is simply the first five years *within* the longer-term programme of **£290bn over 2025-2050**. They are the same money seen over different time windows. Adding them together double-counts about £104bn. See section 3.

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1. The problem

- **The average household water bill in 2025/26 is £603 in actual money paid, up £123 (a 26% rise) on the year before.** Grade **A** (the industry body Water UK and the water regulator Ofwat). The trajectory set out in Ofwat's 2024 price review (PR24 - the five-yearly process where the regulator decides how much companies can charge and invest) runs from about £440 in 2024/25 to about £597 in 2029/30, both stated in 2024/25 prices (that is, with general inflation stripped out so the figures are comparable); the £603 figure is the actual cash that households pay now. *Do not mix the cash figure with the inflation-adjusted trajectory - they are measured on different bases.* (`bills.csv`)

- **The April 2025 rise was about 26% after stripping out general inflation**, with further increases planned up to 2030. Grade **A** (Ofwat's 2024 price review final decisions, known as the PR24 Final Determinations; problem-register.md entry 7). This is the single fact that matters most to the public.
- **Roughly 2 million customers are in water poverty; about 40% of customers said the price review rises would be hard to afford.** Grade **C** (the Consumer Council for Water, the official watchdog for water customers, in 2024 - based on a survey, from a single source). Carried as background context, not as a precise count.
- **There are around 24.5 million household accounts that receive a water bill** in England and Wales. Grade **C** (worked out as follows: the Office for National Statistics, the UK's official statistics agency, counts about 26.4 million households in England and Wales in 2024 [Grade A], then we subtract shared buildings, houses in multiple occupation where one bill covers several households, properties billed in bulk to landlords, empty properties, and second homes; no single official total for "billed accounts" is published). The model's results barely change if this figure is moved, so it is not a sensitive input. (`bills.csv`)
- **Sewage spills rose by roughly 27% over the five years to 2025**, despite a promised reduction. Grade **B** (House of Commons Library briefing on sewage discharges, reference CBP-10027; data from the Environment Agency's event-duration monitoring, which records how long each spill lasts; problem-register.md entry 7). The trend is the relevant fact; the precise number of spills each year varies with how much monitoring is in place, because more storm overflows (the pipes that release untreated sewage during heavy rain) had monitors fitted over the period - so better measurement partly inflates the apparent rise. Treat the *size* of the rise with more caution than the *direction* of it.
- **Thames Water - which serves about a quarter of the population - is in serious financial distress:** its debt is about 80% of the value of its network, with debt of roughly £20-23bn set against a network value (the regulator's official measure of what the network is worth, called the Regulatory Capital Value, or RCV) of about £20bn; it is in "cash lock-up" (meaning it is barred from paying money out to its owners) and major restructuring, and has faced the possibility of special administration (a court-supervised rescue process for a failing essential-services company). Grade **B** (Ofwat's Thames Water enforcement decision of May 2025; the National Audit Office; the company's restructuring filings). It is the live illustration of the gap between the 55% debt level Ofwat's funding model assumes companies will run, and the much higher debt levels companies actually carry (section 2), and the reason a workable special-administration rescue process is part of the solid, evidence-based core of the work. (`SOURCES.md` §2)

- **Why this is a market problem that the state has to address.** Three separate ways in which the market falls short operate together here (problem-register.md entry 7; the taxonomy of market shortcomings in section A3 of The Pragma Method):
  - **Natural monopoly** - the huge fixed cost of regional pipe networks makes competition impossible; customers cannot switch supplier, so there is no competitive pressure to keep prices down or quality and investment up. Grade **A** (a textbook case and a structural fact of the industry).
  - **Regulatory failure** - the system of regulation that was meant to *stand in for* competition allowed companies to take on high debt and pay out to shareholders while investment in the network and the environment fell behind (section 2). Grade **B** (the National Audit Office, April 2025; the financial record of the sector). This is the shortcoming that policy can act on; strictly speaking it is not a "market failure" in the classic economic sense - it is a *government-created* failure in the system meant to substitute for competition (category 10 in The Pragma Method's taxonomy), and it must be labelled that way.
  - **Externality** - releasing sewage imposes costs on rivers, on swimmers, and on downstream communities, none of which fall on the company doing the discharging. (An "externality" is a cost a business creates but does not itself pay.) Grade **A** (a classic externality; the spill record shows the scale). This is category 4 in The Pragma Method's taxonomy.

2. Why regulation has not worked

- **Across the sector, debt stands at 67.9% of the network's value, against the 55% the regulator's funding model assumes.** Grade **A** (Ofwat's Monitoring Financial Resilience Report 2024-25 - the average of debt-minus-cash divided by network value, the Regulatory Capital Value or RCV, as at 31 March 2025; it was 68.7% a year earlier). The share of a company funded by debt rather than by shareholders' own money is called its "gearing". Ofwat *funds* the companies as if their gearing were 55% (this 55% is a "notional" figure - an assumed, standardised structure the regulator uses for setting prices, not the real level), but companies are geared well above that - the extra debt is a way of boosting the return to shareholders, which the regulatory system allowed. This gap of 12.9 percentage points is the clearest single measure of the failure to keep the companies financially sound. (`sector_finance.csv`)
- **The sector has paid out roughly £85bn to shareholders (in dividends) since the companies were privatised in 1991.** Grade **C** (a widely cited figure [an aggregate compiled by the University of Greenwich and campaign groups over more than 30 years]; the exact total depends on which inflation adjustment is used, which years are counted, and whether payments between companies in the same group are cancelled out - so treat it as an approximate order-of-magnitude figure, not an audited line in the accounts). The direction of travel - large, sustained payouts to shareholders alongside investment falling behind - is solid; the exact total is disputed. *Whenever this figure is used, label it as approximate; do not present "£85bn" as a precise audited number.*

- **The return the regulator allows companies to earn for 2025-2030 is 4.03%.** Grade **A** (Ofwat's 2024 price review final decisions, the PR24 Final Determinations, December 2024). This "allowed return" is the profit rate the regulator permits companies to make on their capital - technically the "weighted average cost of capital", the blended cost of the company's debt and shareholder funding. The 4.03% is stated in real terms (with inflation stripped out, here using the CPIH measure of inflation, which includes housing costs), and is based on the standardised notional company structure rather than any real company. Adding back about 2% of CPIH inflation gives a roughly equivalent figure of about 6.0% in ordinary cash terms (this conversion is Grade **C** - see section 6). The allowed return is the regulator's main lever, and it feeds into the year-by-year financing-cost comparison later. (`sector_finance.csv`)
- **The sector's net debt (total debt minus cash) is about £72bn.** Grade **B** (the National Audit Office (NAO), April 2025, and the think tank Common Wealth, both citing Ofwat; cross-checked by the arithmetic 67.9% gearing × £106.7bn network value ≈ £72.4bn). (`sector_finance.csv`)
- **The "weak buyer" problem.** The regulator has lacked the information, the staffing and the expertise to hold these sophisticated, well-advised monopoly companies to account on equal terms - the companies simply knew more and were better resourced than the body regulating them. Grade **C** (the National Audit Office's critique, April 2025; the analysis by the Independent Water Commission, led by Sir Jon Cunliffe, in 2025; this links to Problem Register entry 11 on the capability of the state). This is a judgement backed by official criticism rather than a single measured number, which is why it is Grade C.
- **Ofwat is being abolished.** The Independent Water Commission (led by Sir Jon Cunliffe) reported in mid-2025 with 88 recommendations; the government has accepted **abolishing the existing economic regulator (the water regulator Ofwat)** and replacing it with a new regulator. Grade **A** (the government's response to the Independent Water Commission; problem-register.md entry 7). This is the current starting point the Pragma work builds on. **Importantly, the Commission was forbidden by its official remit from even considering bringing the companies into public ownership** (section 5) - so there is a live, official gap on exactly the ownership question the public most wants answered.

3. The investment need (2025-2050)

The headline total. The sector's long-term investment programme is **about £290bn over 2025-2050**. Grade **B** (a combined estimate from the industry body Water UK, the Independent Water Commission, and the National Audit Office). The model works on this 25-year horizon and breaks it down into named parts that add back up to it. (`anchors.csv` , `investment_components.csv`)

Critical double-counting warning. The **2025-2030 investment period (AMP8) is £104bn** - Grade **A** (Ofwat's 2024 price review final decision: £60bn of routine running and maintenance plus £44bn of improvements, of which about £24bn is environmental [including about £12bn on storm overflows - the pipes that release untreated sewage in heavy rain - and about £6bn on reducing the nutrients, such as nitrogen and phosphorus, that pollute rivers] and about £8bn on securing future supply). **This £104bn is the first roughly 5 years INSIDE the £290bn - it is NOT to be added on top.** Anyone adding £104bn to £290bn has counted the first five years twice. State this clearly wherever both figures appear. (`SOURCES.md` §1)

Breakdown of the £290bn (central estimate):

Part of the programme	Low	Central	High	Grade	Basis
Maintenance and renewal	£150bn	**£178bn**	£220bn	**C**	The balancing figure: £290bn less the parts listed separately below; a modelled figure, not a single audited number
Environmental / sewage	£56bn	**£60bn**	£120bn+	**A** (for £60bn)	The Storm Overflows Discharge Reduction Plan (the government plan, run by Defra, the Department for Environment, Food and Rural Affairs, to cut sewage releases) out to 2050
Securing future supply	£40bn	**£52bn**	£70bn	**B**	National Audit Office / Ofwat, April 2025 - 30 major projects out to about 2050
Cutting leaks	£0	**£0**	£0	**D**	Paid for *within* maintenance and renewal; shown as zero here to avoid counting it twice
Adapting to climate change	£0	**£0**	£0	**D**	Built into "securing future supply" and "environmental / sewage"; shown as zero here
Total (central)		**£290bn**			Adds back up to the headline total ✓

(`investment_components.csv` , `results.md`)

- **Maintenance and renewal - £178bn central estimate (range £150-220bn).** Grade **C**. This is the balancing figure: the £290bn total less the separately itemised environmental and supply parts - a modelled figure, not an audited line, which is why it is Grade C. The high end (£220bn) is believable because **the National Audit Office (April 2025) found that, at the current rate of replacing water mains, renewing the whole network would take roughly 700 years** - the network is being renewed far too slowly, so the backlog could justify considerably more than the central figure. The 700-year finding itself is Grade **B**. (`investment_components.csv` ; National Audit Office, April 2025)
- **Environmental / sewage - £60bn central estimate (low £56bn, high £120bn or more).** Grade **A** for the £60bn central figure (the Storm Overflows Discharge Reduction Plan, run by Defra, out to 2050); the low £56bn is the 2022 version of that plan, and the high £120bn-plus reflects scenarios that eliminate spills more fully (Grade **C**). **The roughly £12bn of storm-overflow spending in 2025-2030 is the first slice INSIDE this programme - not an addition to it.** (`investment_components.csv`)
- **Securing future supply - £52bn central estimate (low £40bn, high £70bn).** Grade **B** (National Audit Office / Ofwat, April 2025). Covers 30 major supply projects out to about 2050 - new reservoirs, pipelines that move water between companies, desalination plants (which turn seawater into drinking water), and measures to reduce demand - to close the projected gap between supply and demand. The high end reflects the risk of cost overruns on big infrastructure before it is built. **The roughly £8bn of this spending falling in 2025-2030 is the first slice - not an addition.** (`investment_components.csv`)
- **The projected gap between water supply and demand is about 4,000 megalitres a day (millions of litres a day) by 2050.** Grade **B** (the Environment Agency's National Framework for Water Resources, 2025). Of this, the Environment Agency puts about 400 megalitres a day down to climate change and about 1,150 megalitres a day down to the need to cope better with droughts - which is *why* adapting to climate change is treated as built-in rather than as a separate line (see below). (`SOURCES.md` §1)

- **Leakage runs at about 2,156 megalitres a day (2024-25); the target is to halve it (a 50% cut) against the 2017-18 level by 2050.** Grade **A** for the leakage level (Ofwat 2025). **Cutting leaks is shown as a separate cost of £0 (Grade D)** - *not* because it is free, but because it is paid for *within* maintenance and renewal (repairing and replacing the network, plus investment in "smart" networks that detect leaks). Costing it as a separate line would double-count money already inside the £178bn. The zero is a deliberate guard against double-counting, and is flagged as such. (`investment_components.csv`)
- **Adapting to climate change is shown as a separate cost of £0 (Grade D).** Same reasoning: climate resilience is built into "securing future supply" (the Environment Agency's 400 megalitres a day climate component plus 1,150 megalitres a day drought component of the 2050 gap) and into the environmental / sewage programme (rainfall and flooding are what drive overflows). It is shown as a flagged zero to avoid inventing a number or counting the same money twice. (`investment_components.csv`)

Cross-check: 178 + 60 + 52 + 0 + 0 = **£290bn** ✓ - the central breakdown adds back up exactly to the headline total. (`SOURCES.md` §1; `anchors.csv`)

4. Ownership models and comparisons

*Two real examples from elsewhere in Great Britain, both run without outside shareholders, show that ownership without outside shareholders is **workable in practice** - and that it is **not automatically better**. The discipline here is to be scrupulously even-handed: the strengths AND the weaknesses of each. Cheaper financing does not guarantee better service or a cleaner environment, and lower bills can sit alongside worse operational performance.*

Glas Cymru / Welsh Water - a company owned by no one for profit (limited by guarantee), with no shareholders

- **Structure: a "company limited by guarantee", which has no shareholders and no one taking profit out.** Grade **A**. It bought Welsh Water in 2001 by issuing £1.9bn of bonds (loans from investors that pay a fixed return); its assets are funded by those bonds plus profits kept in the business, with no shareholder money at all. (`comparators.csv`)
- **Strength - cheaper financing and a payout to customers.** Its debt is 58% of the value of its network (2021-22, down from about 93% when it started in 2001) - Grade **B**; it paid customers a "customer dividend" of £47m (in 2018/19; £40m in 2017/18; about £450m of reinvested benefit in total over the years), Grade **B**. With no shareholders, surpluses go back into the business or to customers rather than out to outside investors.
- **Weakness - the highest bills and a poor environmental record.** Welsh Water had the **highest bills in England and Wales (about £485, in the year to March 2023)** against an England and Wales average of about £417 (in the 2023 financial year) - Grade **B**; and one of the **worst environmental records (a two-star rating in 2023-24, the worst the company has ever had)**, plus a **£40m payment to customers in March 2024** for misleading customers and regulators (this was a penalty, not a customer dividend) - Grade **B** (the rating comes from Ofwat's Environmental Performance Assessment, its annual scoring of companies' environmental record, for 2023-24). **The honest lesson: here, cheaper financing and no shareholders did NOT produce lower bills or a cleaner environment.** (`comparators.csv`)

Scottish Water - a publicly owned corporation

- **Structure: a public corporation, set up in law and owned by the Scottish Government.** Grade **A**. Its investment is funded from customer charges plus borrowing by the Scottish Government; surpluses are reinvested, and no money is taken out by shareholders. (`comparators.csv`)
- **Strength - the lowest bills and high investment.** Its average charge is **£369.55 (2024-25)**, among the lowest in the UK and about £70 a year below the England and Wales average - Grade **A**; its investment per household is reported at roughly 30% to 35% above England's (Grade **C** - from University of Greenwich researchers, covering 2002 to 2018, and cited by campaigners; *this should be replaced with a primary figure from the Water Industry Commission for Scotland, the Scottish water regulator, before being used as a headline*), with day-to-day running costs per household about 10% lower.
- **Weakness - noticeably worse leakage, and a different landscape.** Leakage runs at about **80 litres per person per day (Scotland and Northern Ireland, 2024-25) compared with 46.4 litres per person per day in England and Wales** - Scotland is noticeably *worse* on leakage, an honest weakness of the public model - Grade **A**. And the comparison is muddied: **Scotland's landscape is different** (fewer people spread over more land, and higher rainfall), so its lower bills and greater resilience cannot be put down to public ownership alone. (`comparators.csv`)

Putting it together (Grade A on the basic point; mixed on outcomes). Both examples confirm that ownership without private outside shareholders works in practice in Great Britain. Neither delivers across-the-board better outcomes: the not-for-profit model here has the highest bills and a poor environmental record; the publicly owned model has the lowest bills but worse leakage and an easier landscape. **On this evidence, the form of ownership is not a reliable predictor of how good things are for customers or the environment - which is exactly why the evidence-based regulatory core (keeping companies financially sound, and targets that can actually be enforced) has to hold whoever owns the pipes, and why ownership is put to the public as a choice about values rather than settled as a technical matter.**

5. The cost range for changing ownership

There is no agreed figure. The cost of taking the sector out of private ownership ranges from **about £0 to about £107bn**, and that huge spread comes from which valuation method you choose and from legal and political decisions - **not from anything that can be measured**. Every figure here is, by its very nature, Grade **C** or **D**. **Always carry the full range with the method spelled out; never report a single headline number.** The Independent Water Commission (led by Sir Jon Cunliffe, July 2025) was **forbidden by its official remit from recommending public ownership and produced no figure of its own** - so the official process has left this question open. (`SOURCES.md` §5; `results.md`)

Valuation method	Figure	Who argues it	On what basis	Grade
Network value, gross	**about £107bn** (£106.7bn)	**Defra (the Department for Environment, Food and Rural Affairs)** (2025)	Buying out the shareholders at the network's official value (the Regulatory Capital Value, or RCV) *and* taking on the companies' existing debt as well	**C**
Market / takeover value	**about £85bn**	**the Social Market Foundation (an independent think tank)** (2018, about £80-90bn)	What it would cost to buy the companies on the open market; the shareholder-only part is far lower, because so much is funded by debt	**C**
Original money invested	**about £50bn** (£49.7bn)	**David Hall of the Public Services International Research Unit (PSIRU), University of Greenwich** (2019)	Paying owners back the money originally invested, rather than market or network value	**C**
Special administration	**about £0**	**Ewan McGaughey and the think tank Common Wealth** (2025)	Argues that, using the court-supervised rescue process for failing companies (under the Water Industry (Special Administration) Regulations 2024), the compensation owed to owners could be close to nothing	**D** (extreme low end)

- **About £107bn (network value, gross), Defra 2025, Grade C.** The network's official value (the Regulatory Capital Value) is £106.7bn (Ofwat, 31 March 2025, for the whole sector - Grade **A** *for the network-value figure itself*; using that figure as the price of buying the companies is the Grade-C choice). Defra's published method treats the purchase as buying out the shareholders at the network value and also taking on the existing roughly £72bn of company debt. This is the high end. (`sector_finance.csv`, `SOURCES.md` §5)
- **About £85bn (market / takeover value), the Social Market Foundation, 2018, Grade C.** What it would cost to buy the companies on the open market. Note that because so much of the sector is funded by debt, the part that buys out the *shareholders alone* is far lower than this whole-company value - the headline figure combines the shareholder buyout and the debt taken on.
- **About £50bn (original money invested), PSIRU / Hall 2019, Grade C.** Compensation set at the money originally invested (£49.7bn) rather than at market or network value - a decision in law about what owners are actually owed.
- **About £0 (special administration), McGaughey / Common Wealth 2025, Grade D.** Argues that a failing company put through the court-supervised rescue process could be transferred with almost no compensation. Carried as the extreme low end of the range for completeness; Grade D because it is a disputed legal argument, not a measured valuation.

The decisive point for the public. The roughly £107bn spread between the top and bottom of this range is almost entirely the result of a **legal and political decision** about what private owners are owed - not a measurement of any actual asset value. This is a question of values (how to treat the existing investors), and it must be presented as such - never as a technical input with a single right answer. (`SOURCES.md` §5)

6. The year-by-year difference in financing cost

*Separate from - and arguably more important than - the one-off cost of buying the companies is the **year-after-year** difference in financing cost between private and public ownership. (Financing cost means the cost of the money used to pay for the network, whether that money comes from shareholders, from loans, or from government borrowing.) This is genuinely disputed: the model carries a modest central figure and sets out the arguments against it as well.*

- **The model's central estimate is about £0.5bn a year.** Grade **C**. It is worked out as the network value × (the private allowed return minus the government's borrowing rate) = £106.7bn × (about 6.0%, the private allowed return converted to ordinary cash terms, minus about 5.55%, the rate on a 30-year gilt - a 30-year UK government bond) ≈ £0.5bn a year. The idea: government can borrow at the gilt rate more cheaply than the return private companies are allowed to earn, so paying for the same network through public borrowing saves that gap each year. (`SOURCES.md` §2, §5; `sector_finance.csv`)
- **A warning about the comparison (why the gap is modest in this sum).** The 2024 price review allowed return is **4.03% in real terms** (inflation stripped out); the gilt rate is **5.55% in ordinary cash terms** (inflation included). These cannot be compared as they stand. The model converts the private return to an ordinary-cash-terms figure of **about 6.0%** (4.03% real plus about 2% CPIH inflation - Grade **C**, an assumption) so that like is compared with like. On that basis the gap is only about 0.45 of a percentage point, which is why the saving is a modest £0.5bn a year. A rough rule of thumb: about £1bn a year for every 1 percentage point of gap, applied to the network value. (`SOURCES.md` §2)
- **The dispute - PSIRU claims about £3bn a year.** Grade **C**, disputed. David Hall and PSIRU (the Public Services International Research Unit, 2019) put the yearly saving far higher (about £3bn a year) because they also count **ending shareholder dividends** (not just the gap between the allowed return and the gilt rate) and assume a **wider gap**. This is a legitimate alternative way of looking at it, carried here for the sake of even-handedness - but it folds a choice about values (stopping payouts to shareholders) into what is presented as a saving on financing cost.
- **Arguments against any large saving (which must also be carried).** Grade **C**:
  - **Cunliffe judged that Ofwat's allowed return was too low** - if the allowed private return is already below the true cost of the money, then the private return is barely above (or no higher than) the cost of government borrowing, so the saving shrinks or disappears.
  - **The Treasury's "no free lunch" point** - the gilt rate understates the *true cost of capital to society* because public ownership shifts risk from investors onto taxpayers. So part of the apparent saving is just risk moved onto the public's books, not a genuine efficiency gain. (HM Treasury, often shortened to "the Treasury", is the government's finance ministry.)
- **Verdict.** The yearly difference is a **figure that depends on the scenario you assume, not a settled saving**: somewhere between roughly £0.5bn a year (the modest, gap-only basis) and about £3bn a year (the basis that also counts ending dividends), with credible arguments that the true figure could be lower still once the shift of risk onto taxpayers is priced in. Present it as a disputed range with the basis spelled out. **Grade C, disputed.** (`SOURCES.md` §5)

7. Who pays for the past and the future

*The "legacy cost" is the combined bill for decades of under-investment plus the investment still to come. **Who pays it - the people who pay water bills, the investors, or taxpayers - is a choice about fairness and values, not a technical calculation.** The shares shown for each option below are illustrative (Grade*

C): they show how the same total burden could be split differently under each ownership option, to make the choice visible. They are not forecasts or recommendations.

The model illustrates a notional roughly £106.7bn burden (past under-investment plus the future programme) split three ways under three ownership options. Grade **C** throughout (an illustrative way of dividing it up, not a measured result). (`results.md`)

Option	Bill-payers	Investors	Taxpayers
Regulated private companies (carry on as now)	£80.0bn	£16.0bn	£10.7bn
Public ownership	£42.7bn	£0.0bn	£64.0bn
Not-for-profit (like Glas Cymru / Welsh Water)	£64.0bn	£10.7bn	£32.0bn

- **Regulated private companies (carrying on as now)** puts most of the burden onto the **people who pay water bills (£80.0bn)**, with a modest share for investors (£16.0bn) and limited exposure for taxpayers (£10.7bn) - this is the current path, where rising bills pay for the programme. Grade **C**.
- **Public ownership** shifts the burden towards **taxpayers (£64.0bn)** and reduces the share carried by bill-payers (£42.7bn), with **no share for investors** (there are no outside shareholders to pay a return to). Grade **C**.
- **Not-for-profit (like Glas Cymru / Welsh Water)** sits in between: bill-payers £64.0bn, a left-over share of £10.7bn for investors and bondholders, and taxpayers £32.0bn. Grade **C**.

The point of this table is to make the choice visible, not to recommend one column. Each option moves the same burden between the three groups; which split is *fair* is a question for the public, not a technical exercise to be optimised. The figures are illustrative (Grade C) - they show the *shape* of the trade-off, not a precise forecast of what any group would actually owe. Presenting any one column as the "efficient" or "correct" answer would dress up a choice about fairness as a technical necessity - the central mistake. (`results.md` ; `SOURCES.md` §5)

Caveats and provenance

- **Every figure in this document traces back to `docs/water/water_costing/data/SOURCES.md` and the graded data files (`bills.csv` , `sector_finance.csv` , `investment_components.csv` , `comparators.csv` , `anchors.csv`), and to the model's headline numbers in `outputs/results.md` .** The figures here match those files exactly.
- **The two figures that must never be added together (the £104bn for 2025-2030 and the £290bn for 2025-2050) are the single most important guard in this document** - see section 3. Any document that cites both must state plainly that the £104bn sits inside the £290bn.
- **Changing ownership (section 5) and the year-by-year financing-cost difference (section 6) are the most disputed areas** and are, by their nature, Grade C or D. Always carry the full range, with each figure attributed to whoever argues it; never give a single headline; and never present the ownership question, or the who-pays question, as a technical matter.

- **Items flagged for replacement with a primary source before being used as a headline:** the roughly £85bn of dividends paid since 1991 (approximate, and dependent on the inflation adjustment used - Grade C); Scottish Water's "30-35% higher investment per household" (a University of Greenwich figure cited by campaigners - to be replaced with a primary figure from the Water Industry Commission for Scotland); and the precise level of sewage spills (monitoring grew over the period, which partly inflates the apparent trend - the *direction* is solid, the *exact level* less so). A primary-source check is carried out before publication, as was done for the social-care and National Employment Service evidence documents.
- **Refresh cycle.** Bills, gearing, the network value (Regulatory Capital Value) and the gilt rate are snapshots at a moment in time (2024/25 to June 2026) and should be refreshed before each publication. The investment programme and the £290bn total are 25-year projections (Grade B) and change more slowly.