

Water – a new start

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Whatever the rights and wrongs of privatisation, and whatever the twists and turns of the last 30+ years of privatised water utilities in England and Wales, the water sector has reached a very unhappy and unsustainable state of affairs, of drought, sewage overflows, hosepipe bans and public outrage about executive pay.

The outgoing Chair of the Environment Agency (EA) called for the option of prison sentences for directors of the water companies in serious pollution cases, and OFWAT has launched formal inquiries into five water companies regarding possible breaches of their licences in respect of sewage disposals in rivers. The new Office for Environmental Protection (OEP) is investigating DEFRA, the EA and OFWAT in respect of licence enforcements, and the House of Lords has an inquiry into what has gone wrong at OFWAT.

Add in rising interest rates starting to bite into all the debt taken on by mortgaging the assets of the businesses rather than investing, and it is hard to avoid the conclusion that the wheels are beginning to fall off the original privatisation model, and that it is no longer fit for purpose.

No amount of lobbying and buck-passing will get the industry and its regulators off the hook. There are elements of truth in the arguments of some water companies that environmental problems are the fault of regulators who have not allowed enough capital expenditure (CAPEX) in the periodic reviews, and the fault of others who cause pollution but do not pay for the consequences – notably the farmers. To this are added housing developments in inappropriate places and new houses that are not net nutrient-neutral, all leading to costly end-of-pipes solutions to clean up the pollution. But together they will not wash. The water companies have not been monitoring what has been going on at their sewerage works properly, and both the companies and OFWAT have turned a blind eye, for fear of the affordability consequences to customer bills. Leakage targets have been soft, profits have not been reinvested, and the law has even been broken. The water companies have not all fulfilled the letter and not many

can claim to have fulfilled the spirit of their licences, and OFWAT has chosen not to set stretching targets and not to rigorously enforce the licences and, in the most egregious case, not to take them away from the incumbents. The relationships between the industry and the regulators have been close, with revolving doors common place. Regulatory capture has been pervasive.

A more serious and more convincing response is to recognise that, whatever the merits and demerits of the last 30 years and of the behaviour of the companies and the regulators, yet more sticky plasters will not only add to the mindboggling complexity of the regulatory regime, but probably result in repeated crises. Late in the day smacking a few companies over the wrists, talking tough and threatening prison will work only if the sector itself is set up in a way that is capable of delivering what is now required. It isn't, it hasn't and it won't. Repeated crises and failures will encourage a simplistic argument that if only the companies were renationalised, all would be well.

What is needed is something much more systematic, in keeping with the *25 Year Environment Plan*¹ and the Environment Act statutory targets, not just for water but for waste, biodiversity and carbon too. It will take a new approach to land-use planning, including housing and commercial buildings, roads and transport infrastructures. It requires us to ask again what it is we want from our water sector and to take a look at the next 30 years with fresh eyes. Failing to do so will not make the problems go away, but rather delay the reckoning. Failure to overhaul the regulatory regime won't make the companies behave any better, because it will not change the incentives they face.

Going backwards by watering down the statutory targets, rolling back the protections in the EU transposed legislation, rolling back on the environmental land management schemes (ELMS) and on nutrient neutrality, and putting off solving the sewage overflow problems for a couple of decades will just make matters even worse. What is not sustainable will not be sustained. The upshot for the companies of the current trajectory will most likely be a gradual collapse back into the public sector. Rising costs of debt on the highly leveraged structured, plus continued public hostility, and greater legal and

¹ Defra and The Rt Hon Michael Gove (2018), "[A Green Future: Our 25 Year Plan to Improve the Environment](#)" sets out what we will do to improve the environment, within a generation.

regulatory pressures will most likely bring the whole edifice crumbling down. In the meantime, biodiversity and other natural capitals will continue their downward paths.

A cleaner slate

Reforming the water sector and its regulators needs to start with defining what “good” is, and then to work out how to get from here to there. It is a very different approach to asking how to make what currently exists a bit better. Standing back from the current turmoil, the starting point is to revisit the objectives.

What are the questions to which the water sector (and the current regulatory regime) is supposed to be the answer? What do we want? It is not hard to provide an answer.

First, as now, everyone should have access to clean wholesome drinking water on tap for drinking, cooking and related household activities. This might seem obvious, but much more is currently provided. At the moment, everyone has access to drinking water quality supplies, *for everything*, including watering the garden, cleaning the car and to cool ICT data hubs. When, for example, there is a drought, the constraints on supply are exacerbated by hosepipes, swimming pools and a host of other non-drinking water requirements. Worse, it is still the case that, in the absence of hosepipe bans, customers can tap unlimited supplies without extra costs, because most customers are not metered and do not pay for volume. There is no good reason in principle why anyone starting from scratch would be so profligate, and with all the costs of water treatment it entails.

The drinking-water-for-everything requirement leads to a highly centralised system, with large-scale reservoirs and other central storage, and large water abstractions from rivers at times of water stress and drought. The corollary of this centralisation is that there is little or no incentive for household and local storage. There are no decentralised systems, and a constraint on recycling because the recycled water has to be of drinking water quality.

Imagine if drinking water was for drinking and related uses only, and its use was metered with volume-related charges. All sorts of opportunities open up. Imagine a world where drinking water was separated from grey water. Imagine new houses with

a water efficiency requirement to store water, and where strong incentives encouraged all houses to store water and recycle for gardening and other non-drinking water use because the metered price was high and reflected scarcity over different periods. It could eventually be real-time pricing.

Leave aside for the moment the implications for new pipe systems and the reconfiguration of centralised water storage by or at buildings. The key point about the above is that in this imaginary world there would not be a scarcity of water supplies. Demand for drinking water would be much lower, and real-time pricing would incentivise much more efficient storage and use of grey water. There is, after all, no shortage of rain in England and Wales over the full year (except perhaps in the far eastern areas). It is not water that is short: it is the storage for water that is lacking and the misuse of that water. Large-scale storage, in reservoirs, is how it is currently done. There may need to be more of this. But there are other complementary ways of storing water too. Done properly, the water supply system could be much more robust.

Second, everyone should have access to sewage disposal. For most people this means connections to the sewerage system, but there remain a lot of houses still using their own (decentralised) septic tanks. This can present a serious environmental hazard. Though it is impractical to incorporate all houses, it is far from obvious that the current connectivity is optimal.

For those connected to the sewerage system, many people assume they can flush almost anything down the toilet. Many of the problems in the sewerage systems are caused by wet wipes, congealed fats, pharmaceuticals, and a host of plastics.

Imagine a system in which some of these wastes were disposed of otherwise, and never got into the sewerage system in the first place, that the sewerage system was for sewage only. Suppose too that these other waste routes came with their own prices. For example, suppose that wet wipes had a polluter-pays charge attached to their use; suppose that they required separate disposal through the bin collections; suppose that it was made illegal to dispose of cooking fats into the sewers. Some of these measures are currently impractical, but the key point is that there is no obvious reason why we should take the “open sewer” approach to waste disposal. And if we did not, all sorts of

recycling, re-engineering packaging, replacements of plastics, and management of pharmaceuticals would come into play.

Third, no water company should be allowed to generally dispose raw sewage into rivers full stop. To do so should be treated as a serious, notifiable pollution incident. On rare occasions this might happen, but it would be in genuinely very exceptional circumstances, not in the ordinary course of the water company's activities. Backing this up would be a river monitoring system that picked up any such event.

To these three requirements on the narrow activities of water and sewerage companies, there are broader characteristics of a sustainable water sector, and particularly the state of the rivers. There should no longer be a decline in their ecological states, properly measured. Given a baseline assessment of the state of each river system, there should be a requirement for full capital maintenance to prevent any further declines, and especially in respect of renewable natural capital.

This would hardly be a great achievement and it would not be great to bequeath to the next generation a state of the rivers that continues in the current sorry situation. Rather, we should define what "good" looks like and then put in place the measures to get from here to there.

The state of the rivers does not lie wholly in the hands of the water companies. Farming is responsible for at least as much pollution as the water companies. The modern farming techniques, with the use of artificial fertilisers and pesticides, and the soil run-off from crops like maize, cause at least as much damage to rivers and the coastal seas. But unlike water company pollution, farming techniques also significantly damage air quality (and hence cause biodiversity damage indirectly). They do a lot of damage directly to biodiversity, and agriculture is by far the most carbon-polluting sector of the economy relative to its size.

This outcome is produced not because farmers set out to damage, but because the incentives and regulations allow it to happen, and sometimes positively encourage environmentally damaging practices. This is a sector overwhelmingly dependent on subsidies. Farming is just 0.5% of the UK economy, and at least one-third of its total value of output is direct subsidies. Farming also has subsidised red diesel, exemption

from business rates and most planning laws, and a large number of other services and supports are provided by the state. Given that taxpayers pay for much of this, it is remarkable how environmentally bad the outcomes generally are. Put another way, there are few sectors where the scope for improvements for the same subsidies is greater.

Farmers are not the only polluters alongside the water companies of our rivers. Concrete flood defence strategies cause damage to rivers and river systems; new houses and developments damage rivers in multiple ways, as do a host of leisure activities. New houses should be net nutrient-neutral, transport should pay for the pollution it causes, including accelerating storm run-offs, and flood defence should prioritise natural solutions that improve river quality rather than damage it.

Finally, rivers and water systems should be transitioning to net zero in carbon terms. This means not only that water treatment and sewage disposal should use renewable energy, but also that the river catchments should contribute in aiding carbon sequestration. That might mean lining river banks with trees, which would cool the rivers and provide shade, improve biodiversity, sequester carbon, provide a buffer for agricultural run-off, and enhance leisure opportunities.

The river catchment approach

A water system that places fewer demands on drinking water supplies, where sewerage systems are used to handle sewage only, where sewage is not discharged into rivers, and where farming and flood defences take account of the wider natural capitals is not utopian: it is within our grasp, provided we take a holistic approach. The question is how to design a system to meet these objectives, ignoring for the moment the way the water, agricultural and flood defences are currently set up, and the transitional arrangements.

The obvious way to address this is the river *catchments*. These are systems, and everything in a system tends to depend upon everything else. These are the units within which to achieve the objectives. The river catchments are all unique, and there will be some areas of the country that do not lend themselves perfectly to this geographical

topography. But then there is no perfect set of units, and catchments will grab most of the relevant land area and land use.

Flooding, water supplies, river quality, food production and leisure all happen in catchments. Given that they are all interdependent, it would be very surprising if integrated solutions are not significantly more efficient (and therefore much cheaper) than treating each separately. Put another way, the above objectives could be much better achieved for the existing amount spent on them on a catchment basis.

There is nothing revolutionary about this: indeed, that is why the water companies are catchment-defined, and why the EA (and its predecessor, the National Rivers Authority) are similarly structured, and why there are catchment management plans. The key difference between an integrated catchment approach and what we have now is that it is actually integrated, rather than each bit (water companies, farmers, and flood defence) taking the other two as given.

Within each catchment there are land-use issues – where best to put houses and industry, where best to grow crops, and where to plant trees. Each catchment needs a land-use plan. This need not – and should not – be a Soviet tractor plan. It is a general map of what roughly might go where, and it identifies the best locations to pursue opportunities and where especially to avoid pollution.

This is the opposite, for example, of the current approaches to carbon offsets and net biodiversity gain approaches, where each party is left bottom-up to decide on a project-by-project basis where to do what, independent of the total impacts of the ecosystems that make up the river catchment.

With a land-use planning framework, the public goods for public money approach to farming subsidies identifies where the maximum system benefits are most likely to arise.

The catchment perspective, integrating the land-use plan, best delivers the overarching objectives not by detailed state planning, but rather by utilising digital technologies, and carrying out a round of bidding invitations. A catchment system operator (analogous to the Future System Operator being carved out of National Grid) puts up the

requirements on its website and invites all and anyone to offer to carry out the necessary works.

Quite a lot of this is imperfectly embedded in the current periodic review in the water industry. OFWAT invites the water companies to come forward with business plans to meet their licence obligations, and provides a steer by getting guidance on priorities from the Secretary of State. But there are critical differences. It is not the licence conditions of the water companies that dictate what the companies do in the catchment system operator model. It is the overarching river catchment requirements in the plan (our overall objectives). It is not only water companies that can bid. River Trusts, farmers and a host of other players can bring forward their own ideas.

There would be an iterative process and the catchment system operator would then let contracts for the various works. These might include carbon offsets and net biodiversity projects too, and these could then be resold to polluting companies to help meet their net zero objectives and developers in the net biodiversity gain cases.

The way this would work is set out in detail in [“Floods, water company regulation and catchments: time for a fundamental rethink”](#) and [“Water Catchment management, abstraction and flooding: the case for a catchment system operator and coordinated competition”](#).²

Costs

All of the above runs into the obvious rejoinder: it is just too expensive. In particular, reconfiguring water into drinking and grey water would, it is claimed, require separate pipes, and the waste dimension would require households to face the costs of their waste and other pollution. It is us as consumers who are ultimately the cause of the pollution, which water companies are charged with dealing with.

Let’s start with the separation of drinking and grey water. It is true that some extra pipes might be needed. New system networks, like car-charging systems, underground

² Helm, D. (2020), [“Floods, water company regulation and catchments: time for a fundamental rethink”](#), 2nd March; Helm, D. (2015), [“Water Catchment management, abstraction and flooding: the case for a catchment system operator and coordinated competition”](#).

power cables, and fibre optic networks have these costs too. These are unduly high because there is little or no coordination between them.

When the roads are dug up, each utility does its own thing. There are few general deliberately over-sized utility tunnels to future-proof and combine network systems. Indeed, roadworks for transport, cabling, and water and gas pipelines are on separate planets when it comes to the physical works. This is a stupid waste of money, for the purposes of short-term cost minimisation, but maximising long-term costs, and it shows a remarkable lack of imagination that it cannot be practically solved – especially at the local level. Each utility network lives in its own silo, and regulators make little effort to coordinate the network systems.

A system separation would not be in place overnight. Water companies are forever digging up the road, replacing pipes and trying to patch and mend an often antique network of pipes. There are major works required in any event to address the chronic leakage. The important point is that the switch to the dual system could be done over time.

It is not even clear that the grey water requires a major pipeline system in its own right. Much grey water can and should be recycled at the household level, and there can be localised urban networks too. At the most basic level, houses can install water butts to collect rainwater – and in the process limit storm event overflows too. New buildings can add tanks and larger-scale storage. The point of separating grey water is not simply to replicate the existing clean water systems.

How fast this happens depends upon the incentives on households. The practical way to do this is to set time deadlines for the gradual switchover. If say it takes ten years, then households have ten years to prepare themselves. Early switchers can be given bill discounts (and with metering this would have an automatic element), and as the dual system develops, the price of water during droughts can be ramped up. Imagine a metering system with a social tariff that gives each household a block of cheap water, but then increases the price progressively. This initial social tariff might be very low, and then the very high consumption levels could come with much higher prices.

The point here is that there is no need to stand idly by and wait until a new infrastructure is in place. Social tariffs, metering and special incentives can help to make it gradually happen.

As the separation builds momentum, there will be cost savings for the water companies. The demand for drinking water will go down, as gardening and other grey water uses no longer require the same level of treatment. The pressure on the existing pipes goes down, and hence costs should be lower. Leakage (though it should be reduced) is a less immediate and critical issue. In addition, the new and additional costs of extra drinking water supplies may be avoided. At the limit these costs might otherwise require desalination plants and other more extreme ways of getting new supplies, or yet more abstraction damage and stresses to sensible river ecosystems. Major capital works, like new reservoirs, might not be needed. The important point is that continuing with the status quo will require a lot more clean drinking water infrastructure and supplies, and with lots of additional costs, some of which could be avoided.

Over a 25-year horizon, in line with the *25 Year Environmental Plan*, there will be lots and lots of additional technological developments to speed this process along. The water industry at present is still remarkably analogue. It does not even track properly what comes out of some of its sewers and has no comprehensive monitoring system for rivers. Remarkably, too, the EA is even further behind. Digitalising the water industry should yield a vastly greater understanding of it and the river systems, and with it large efficiency gains and cost savings.

The water companies are not fit for purpose

In resetting the objectives and putting plans in place to get from here to a sustainable water and sewerage system, the next question is whether the current privatised water companies are fit for these purposes, and whether they can be the vehicle for financing the necessary CAPEX. To see whether they are, we need to take a step backwards, and look at what the privatised water industry has and has not done over the last 30 years. I

detailed the history in my article [“Thirty years after water privatization—is the English model the envy of the world?”](#)³

There are worrying signs from the companies, as they struggle to hold their finances in reasonable order as interest rates rise, and to tackle just their current obligations. Two – Southern Water and Yorkshire Water – have required big capital injections to keep them afloat, and Thames Water has been unable to meet its obligations satisfactorily notwithstanding it having passed on dividend payments for several years.

The way to think about the performance of the water companies since privatisation, and their capacity to carry a further investment programme, is to rebase the accounts and then work out what has happened to the revenues since 1990. They were privatised with a green dowry (£1 billion), and the purpose of the balance sheets at privatisation was to finance privately the investments that were not being paid for by current customers.

The assets at privatisation had been built up on a pay-as-you-go basis, and hence these assets should have had an opening value of zero. They had been paid for by past customers and taxpayers. The balance sheets should have reflected this. Instead they reflected the assumption that the new investors would be paid a return on the value of the companies as reflected at privatisation by the share price multiplied by the number of shares plus the £1 billion green dowry cash injection. This was a first massive mistake, giving the companies a return on assets already paid for, and since the accounting is on a current-cost basis (no historical-cost depreciation), this is in effect a return in perpetuity.

This much more generous arrangement was made all the more generous to shareholders by the actions of the first regulator, who entered an opening regulated asset base (RAB) value based upon the share price over the first 200 days of trading. In other words, the regulator allowed for a return on a further inflated value and then locked this in in perpetuity.

³ Helm, D. (2020), [“Thirty years after water privatization—is the English model the envy of the world?”](#), Oxford Review of Economic Policy, 36(1), pp. 69–85.

Whatever the initial flaws, the RAB then expanded to include the efficient CAPEX not paid for by current customers. The debt-raising capacity should have been aligned with this actual CAPEX, and the current gearing level should then be the borrowing which reflects that, and only that, extra CAPEX. This is the pro-forma balance sheet that the regulators should be using for their price caps, notably in the forthcoming periodic review in 2024 (known as “PR24”). It would tell a very different story, and reveal that the companies should have quite a lot of capacity still to fund the investment needed to meet our objectives.

Instead, the regulators allowed the companies to gear up the balance sheet to exploit the combination of low interest rates and to arbitrage between the cost of equity and the cost of debt, given that they are regulated on the weighted average cost of capital (WACC). The average is higher than the cost of debt, and lower than the cost of equity, making the arbitrage a very profitable open goal for the companies. In effect, the companies mortgaged their assets and then paid out the cash from the mortgaging in the form of dividends, share buybacks and special dividends. There followed the great financial engineering.

Instead of stopping this, regulators decided that there would be a notional gearing allowed in price caps, based on what they thought the level of gearing would be for an efficient company.

The next mistake was to repeatedly, over 30 years, overstate the expected interest rate, allowing the companies to profit also from the arbitrage between the assumed rate and the actual rate. This turned out to be one of the primary sources of profit to the companies over 30 years, added to the financial engineering benefits above.

Instead of indexing the cost of debt to the market rates, the regulators allowed this to continue for the first 20 years.

Some of the above is easily remedied at PR24. There should be pro-forma balance sheets on the basis of actual CAPEX not paid out of current bills, and of the actual cost of debt. (An efficient company should have been able to map the actual cost of debt pretty closely.)

To see whether in the process the companies have been good stewards of the assets, the accounts also need to be restated. The basic idea is that the assets (in particular the assets necessary for the continuity of the services) should be treated as assets-in-perpetuity. Accounts should follow current-cost accounting (CCA), and capital maintenance should be provided equal to that level needed to maintain those assets (and the services from them) at least intact. Capital maintenance should come in advance of profits, and any asset failures should be recouped against profits.

Given the evidence that many of the sewers have not been properly maintained, the costs of making good these failures should fall to the companies. This is what was supposed to happen with the accounting, but again there has been a serious regulatory and company failure.

In reply, the companies might say that the regulators failed to provide enough customer monies to do the full capital maintenance. However it is the duty of the companies to fulfil their licences, and if they think they do not have enough money allowed in price determinations, they can and should appeal to the Competition and Markets Authority (CMA). If in turn they think the CMA has not given them enough, they should undertake a judicial review against the duty to finance their functions placed on the regulators, and if that fails, the directors of those companies should resign.

It is apparent that there has been large-scale regulatory failure on the part of OFWAT. This has been compounded by the failures of the EA to enforce the environmental standards and regulation, and by company directors in failing to deliver the full requirements of the licences. The bottom line is that the licences have not been properly enforced. Against this backdrop, the fact that some companies have paid large executive salaries and bonuses understandably excites public criticisms.

Whether, had the licences been properly enforced and had OFWAT prevented the abuse of balance sheets and indexed the cost of debt from the start, the current situation would have been satisfactory is open to doubt. But at least it would be much better than it actually is.

What even a properly enforced licence and proper financial regulation would still not have overcome is the chronic short-termism that a five-year price review period causes,

and the absence of the sort of longer-term planning that the catchment system model provides.

System regulation

The system regulation model, on a catchment basis, is likely to deliver the lowest-cost way of achieving the objectives. The current system cannot and will not do more than make marginal improvements. It is unlikely that this will be tolerable given the public and customer pressures, and with more development, and with climate change, the strains will break the company and regulatory structures, even if the companies can cope with higher interest rates, and especially the highly geared ones, and will continue, like Southern and Yorkshire, to inject capital and to take dividend holidays. Without significant reforms, along the lines of the catchment system model, a serious collapse into Network Rail-type forms may otherwise emerge.

The system regulatory model is based upon land-use and catchment planning. It takes on the obligations and auctions the contracts to do the necessary works and the contracts to operate the day-to-day systems.

Having set this model out in detail in my paper “[The Systems Regulation Model](#)”,⁴ one response has been to question how auctions can work when the companies own the assets, sold to them at privatisation, and where they hold rolling 25-year licences. Should the companies decide to play hardball, this is indeed a big obstacle to the system regulatory model.

Yet it is not overwhelming. Recall that the RABs represent the monies invested at privatisation plus the CAPEX not paid for by customers. It is guaranteed through the duty to finance functions, and hence has no equity risk (see below). It is an accounting number, and since the companies have a CPI indexation too, it approximates a government index-linked gilt. The fact that it is also interest rate-indexed makes this even more cast iron.

⁴ See Helm, D. (2019), [The Systems Regulation Model](#), 12th February.

These RAB-debt assets are mainly owned by pension companies and related funds who also invest in gilts. They do so in the current system by owning the water company debt and investing in the companies directly. It would be more efficient if there were separate RAB assets, and then the pension and other funds could trade these RAB assets separately from the day-to-day activities of the companies.

I set out the tradeable RAB model over a decade ago. It would essentially separate out in the private sector the ownership of the assets as represented by the RABs. The rest of the water company business would be in those aspects that would be subject to competitive auctions, run by the system regulator.

The two further challenges to address are whether the RABs have any equity risk, and whether the companies could be persuaded to allow their RABs to be tradeable.

Some companies claim that there is equity risk in the RABs, and point to the equity injections in Southern Water and Macquarie, and the fact that Welsh Water was sold into its not-for-dividend model at a value of 80% of its RAB. They argue that this proves that investors cannot rely on retaining 100% of the RAB.

This is nonsense. If the company loses its licence, it sells its licence on to another company, either voluntarily (as in the case of Southern Water), or compulsorily through the special administrator process. The acquiring company buys the RAB, but also the obligation to make good on any failures to deliver the functions as per the licence. So, in the Welsh Water case, the new entity acquired the RAB, but also had the liability of the shortcomings of the previous owners. The RAB is still there in the regulatory accounts and it enters into the periodic review calculations. In the case of Southern, the seller had to face up to the liabilities it could not escape as its side of the regulatory bargain, and in particular at PR19.

Companies could of course refuse to allow their RABs to be detached and made tradeable. In doing so they would need to think through the consequences. They could refuse to allow competitors to use the assets and hence inhibit competitive tendering and the auctioning by the system regulator. This however would have consequences and legislation to establish system regulators might lead to a stand-off. The companies might claim compensation as a result of legislation and this is straightforward. They

could either accept that the tradeable RAB represents the value of the RAB, and hence the investors get to keep the RAB assets in the form of an ownership in respect of the tradeable RAB, or the RAB could be taken from them and sold to a new “tradeable RABCO”, and the payment made would be equal to the value raised by the RABCO. The key point is that the RAB itself is not expropriated, but rather accurately and fairly valued.

It is important to recognise that the splitting-off of the RAB into the tradeable format short-circuits the question of compensation that arises in the nationalisation case. The tradeable RABs are private, representing the debts funded and financed by pension funds.

The companies retain their operational activities and CAPEX businesses, and they bid in the auctions for contracts offered by the system regulator. The key difference in the system regulator model is that the incumbents now face competition. There may well be residual areas where the incumbent is the only bidder. This is handled, as in all single-bidder contracts, by contract negotiations, and in the early years of the system regulatory model there may be some similarities with the periodic review process. However the contracts are unbundled and there is no presumption of a five-year fixed-period contract format for all the activities. Some contracts auctioned will be shorter-term, some will be longer-term.

The catchment system regulator creates the scope over time to integrate agriculture and flood defence. Its catchment plans have in any event to take these into account. On flooding, it could immediately take over the contracting for new flood installations and for the development of natural capital projects. This is an easy win, and would enable flooding to be taken out of the EA, so that it could focus on a core role as an environmental protection agency. The flood defence workforce could be hived into a new entity to bid for the works, whilst some of the catchment planning skills in respect of flooding could be transferred to the catchment system regulators.

On agriculture, there are various possible models. One simply has the system regulator setting out the public goods in the catchments, so that the ELMS can be guided towards integrated catchment options. More radically, the system regulator could auction contracts against the funding that the ELMS should provide. The key advance would be

to identify the impacts on a catchment system basis, rather than a farm-by-farm bottom-up approach favoured by DEFRA, and most notably George Eustice when he was Secretary of State.

New housing developments would come under the scope of the system regulator, in that it would advise on catchment consequences, acceptable nutrient loads and water supplies. Where catchments are water-stressed, such as the Test and Itchen, the system regulator would be able to act to ensure that water metering, separation of grey water and agricultural pollution were implemented. A sharply rising price schedule on a metered basis would act to limit the abstractions at points of stress.

The objectives would be embedded in the statutory duties of the system regulators. They would have to make sure their catchment plans met the shift towards grey water local storage and separation, the management of private sewers, the enforcement of rules on what can and cannot be put into the sewerage system, and the prevention of sewage discharges into rivers. These would be backbones to the system plans. A clear legal framework would be required – a new Water Act – embedding the objectives and linking them to the statutory targets in the Environment Act.

Affordability

The proposal set out above has additional costs, but it also incorporates major savings. The present water arrangements are high-cost and highly inefficient. In the catchment system regulation model, OFWAT is abolished, and with it the whole complex morass of the five-year periodic reviews. The total spending on the catchment is integrated, and absurdities like paying polluters to pollute and then customers paying higher bills to eliminate the pollution would go.

For the large CAPEX items – like upgrading storm overflows and building new reservoirs – the measures suggested here reduce the impact of storm overflows by addressing the household and local storage, and could be augmented by further measures taken by the catchment system regulators through requirements on new and existing properties to make holding water more effective. Similar steps would reduce run-off speeds from roads and other industrial infrastructure. The most cost-effective measure is to reduce storm run-off at source. For new water storage, and particularly

reservoirs, the separation of grey water changes demand, and household and local storage of grey water is a significant shock absorber. It is not clear that the current approach to estimating water demand, and predicting and providing new water resources, is what is needed. Add a fully metered pricing system for drinking water, and the costs of water treatment works should decline.

These fundamental changes of direction should mean that the costs of managing sewage, and preventing sewage spills, should be reduced, and the costs of water supply should fall too. Population increases push in the opposite direction, although properly water-efficient new houses would reduce the impact. In any event, population increases spread the fixed costs more widely and hence should be self-funding. The cost savings are all in addition to those that come from an integrated approach.

It remains the case that some people will always struggle to pay water and sewerage bills. Since water (and sewerage) is a basic social primary good which citizens must have in a civilised society, there is a strong case for the social tariff discussed above. A basic block of drinking quality water should be available at a very low cost.

Some large families and some with special needs will require more to reach a basic level of provision. The social tariff is a big improvement on not having a social tariff at all, but it could be further improved through an adjustment for household size. Everyone gets the basic block, and this could then be adjusted on a household size basis generally, or it could be targeted to those claiming benefits already.

There will also be costs in promoting a gradual grey water separation and household storage, and the widespread fitting of meters. Some of this can be achieved through changes to the planning law, but, as has been discovered in attempts to improve energy efficiency in the home, there are significant barriers, requiring some support mechanisms – and associated costs.

With these measures it is perfectly possible to move towards a “good” twenty-first century water and sewerage system, and to improve natural capital more generally without breaking affordability barriers. Those who wish to use more water, and especially grey water, will either have to pay more or invest in their own storage facilities.

What happens if we don't do the above?

Sadly the most likely outcome is to continue with the status quo, with a few nods in the environmental direction. Ministers might conclude that this has worked in the past, and pray that it goes on doing so. Their prayers are unlikely to be answered: more of the same will result in repeated crises. The current creaking water infrastructure leaks a lot and cannot cope with droughts. Water supplies are stretched, and the upshot will be expensive large-scale capital projects like reservoirs. In the meantime the performance of the industry will get worse. There will be further declines in river quality. Biodiversity will continue downhill, and, paradoxically, the bills will go up to deal with the repeated crises.

Add to this the outrage at the executive salaries and bonuses, and the consequences of rising interest rates on debt-laden structures, and a vicious circle kicks in. Indeed, it already has. Perhaps people just stop paying their water bills, and the whole system may come crumbling down.

The most likely outcome from continuing with the status quo is that the industry ends up back in the public sector, as it is throughout much of Europe and in Scotland. After thirty years the great privatisation experiment may come to a gradual end. Public ownership would put an end to the financial engineering and the outrageous salaries and bonuses. But simply nationalising the sector would not solve the fundamental issues: nationalised industries would also have to address the water supplies, the sewerage systems and river pollution. A newly renationalised water industry would have to join the queue for state funding. The public financial controls on the EA's flood defence spending do not auger well for longer-term investment.

Public control is not the same thing as public ownership. The key control mechanism is the catchment system regulator, and competition for contracts through auctioning is a much better way to ensure efficiencies. It has proved remarkably successful when it comes to renewables and capacity contracts in the electricity sector, and the nationalised industries would in any event want to contract out much of the works – just as the privatised companies do now. Detaching the RABs, and making them tradeable, reduces costs and facilitates competition. For the customers, for the

environment and for the companies, a bit of enlightened self-interest would encourage a rethink, before the deluge overwhelms them.



[Net Zero: How we stop causing climate change](#)

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