Hilson Moran

25 July 2023

Environmental Incentives

OFWAT CONSULTATON RESPONSE

Consultation Response

TO:	charging@ofwat.gov.uk
FROM:	Hilson Moran Partnership Limited
DATE:	24 July 2023
SUBJECT:	**Environmental incentives to support sustainable new homes**

Dear Sir/Madam.

Please find below our response to the proposed changes to your [environmental incentive] charging rules, which are intended to provide a common framework for water companies to offer stronger and more standardised environmental incentives to developers to encourage them to build new homes that are more water efficient and with sustainable drainage.

Our primary responses and suggestions related to Ofwat's proposed changes to the current environmental incentives are captured in our bulleted summary below. Some of these bullets are **also captured in the July 23 edition of Building Magazine, which we authored.**

- We fully recognise that water efficiency is a key issue as there will be a potable water supply/demand headroom imbalance of between 800 million to 3 billion litres of potable water a day by 2050, which will require an investment of approximately £20 billion to mitigate.

- Water resources – and particularly groundwater resources – are finite and the depletion of our aquifers will likely have very significant impacts on natural habitats as identified by the EA and Natural England, which is already having a significant impact on development in Greater Cambridge (ongoing Planning Inquiry and moratorium on 'significant' development) and parts of Sussex where water neutrality needs to be proven before planning will be granted.

- Abstraction licenses are granted for a finite duration, and many will not be renewed.

- New housing supply is a key Government priority with an estimated 389,000 new homes needed each year until 2030 and the built environment is already the biggest user of water resources.

- We are fully cognisant and supportive of using "low-regret" supply-side options as defined in Water Resources East recent draft Water Resources Management Plan 2024 (WRE state that "low-regret" options are used in early parts of planning and normally defer the use of more costly options such as desalination – desalination being expensive in financial and carbon terms).

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- Leakage and universal metering outcomes need to be significantly improved. The mean average for per capita consumption (PCC) across the UK lies marginally below 140 litres per head per day and it is imperative that water undertakers move this to 110 litres PCC by 2050.

- To date, water efficiency and water neutrality have not played a major role in the UK's sustainability journey. Some Local Planning Authorities are considering a step change in water efficiency (for example Greater Cambridge Shared Planning are looking to 80 litres per capita consumption (PCC) in their emerging draft Local Plan), but otherwise the Home Quality Mark is not proving successful (and the Code for Sustainable Homes long since being withdrawn), leaving Part G of the Building Regulations with 125 litres PCC, with an option for 110 litres PCC.

- **We understand that the DEFRA Environmental Improvement Plan 2023 will consider a new Building Regulation standard of 105 litres PCC, with 100 litres PCC where there is a more acute regional need – we support this – as we are supportive of improvements to Part L in 2021, and Part L's proposed reincarnation post 2025 under the 'Future Homes Standard'.**

- A recent Welsh Water study of 80 newly constructed homes built to Part G of the Building Regulations demonstrated that all homes had a PCC of >140 litres in occupation and one had a PCC >190 litres. We are supportive of improved labelling of water fittings but are aware that occupier owned/supplied fittings can be removed/bypassed and do not change behaviour.

- **Developers and those in the built environment already perform a delicate balancing act when it comes to sustainable placemaking. On top of carbon neutrality and biodiversity net gain, there is nutrient neutrality to consider as well as a proposed Infrastructure Levy. Is it equitable and fair for developers to achieve water neutrality by themselves? What is certain is that the current stewards of the water cycle, and those with the ability to change domestic behaviour on a wholesale basis need to be at the forefront of the change, incentivising lower water usage or investing in water re-use systems including rainwater harvesting and grey water recycling.**

- Currently water re-use systems at a building integrated scale typically place the burden of ownership and operation on consumers and the capital cost wholly on developers – and let's be fair, a number of these are probably not used, or easily removed. There is a slightly variant incentive for social housing and build to rent housing compared with market-sale housing.

- **We believe water re-use at a community, development or place-making scale should be a priority and should be offered by water, sewerage, and NAV undertakers under applications for adoption (and ultimately legislated under the Water Industry Act), where these prove viable (which will clearly depend on wholesale and retail tariff structures). Hilson Moran were engaged at Northwest Cambridge (University of Cambridge) where South Staffs water adopted a recycled [surface] water network reducing water use to c. 86 litres PCC.**

- We have set-out the reasons that water re-use at a community, development or place-making scale should be a priority and offered by water, sewerage and NAV undertakers as below;

    1. Ricardo Report for Waterwise dated 4 September 2020 titled "Independent review of the costs and benefits of rainwater harvesting and grey water recycling options in the UK" states…

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2. ***"Overall, it is concluded that large RWH systems present an attractive opportunity, both privately and socially, which is likely why they are currently being installed in larger developments (such as the Southbank development in London). However smaller installations are not privately beneficial for the installer and are therefore unlikely to see large scale uptake until they become so, either through falling prices or government backed schemes and interventions."***
3. ***"GWR systems can also be integrated with RWH systems, these can bring notable benefits when planned strategically for larger scale, especially mixed use, developments. However, at the individual building level, the benefits of an integrated GWR and RWH need to be considered as the added efficiency from the rainwater depends on the building use".*** Adding that smaller and building integrated owner/tenant operated systems with individual pumps will likely require more energy and emit more CO_2 in their operation than potable mains water.
4. Smaller and building integrated owner/tenant operated systems place a burden on the consumer/owner/tenant to operate these systems, which ultimately may not be maintained and may be removed thus wholly negating their benefit. Should the burden of water re-use infrastructure and their environmental benefit be on building occupiers or water undertakers?
5. Smaller and building integrated owner/tenant operated systems do not benefit the considerably problematic nutrient neutrality issue (nitrates and phosphates) whereby larger scale community and district systems can provide much benefit in support of this serious environmental issue.
6. Greywater Recycling (GWR) systems can recycle much more water as more treatment technologies are introduced. The primary example being membrane-based technology which can recycle much more recovered water but would likely not be viable at an individual building or dwelling level and needs to be part of a community system, likely adopted by an undertaker.
7. Non-potable water re-use systems (harvested rainwater or recycled greywater) at a community or district level must be considered ahead of small standalone building integrated systems. Large scale developments and hybrid developments that might benefit from these systems should be tested for techno-economic viability upon application. An equitably apportioned capital contribution should then be derived and offered to large scale residential and mixed use or hybrid developments. The community non-potable water re-use system would then be adopted by the incumbent water and sewerage undertaker(s) or via an embedded network operator under an Ofwat approved NAV appointment. This is how heat networks work. An Energy Services Company (ESCo) is approached – as a NAV of water undertaker could be approached – and a network developed where the ESCo, water undertaker or NAV would recharge consumers for heat and non-potable water resources (heat networks are about to be regulated but currently rely on self-regulation – The Heat Trust) - water would be regulated at the outset.

- **Any development or place-making scale water re-use system creates a stewardship and governance risk. The simplest way of mitigating this risk is through water company adoption.**

- Currently Thames Water offer 'rewards' to housing developers in the guise of infrastructure charge rebates: There is a Tier 1 rebate of £400 per dwelling for reducing PCC to 110 litres; a slightly improved Tier 2 rebate for providing water re-use systems (£600 per dwelling);

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and up to £1800 per dwelling for [Tier 3] water neutrality. Reviewing the consultation document, we understand Southern Water offers a mere £300 for a Tier 3 intervention.

- **Following attendance at Thames Water's most recent Developer Day, we understand the take-up of the 'environmental incentive' is very poor, which is perfectly understandable given other commitments on developers. For example S106 contributions (soon to be replaced with the Infrastructure Levy), Biodiversity Net Gain at +10%, Part L 2021 of the Building Regulations (a reduction of operational carbon by 31% compared with the previous Regulation), plus the incoming Future Homes Standard after 2025 will likely require a switch to electrical heat pumps, EV charging infrastructure for every dwelling (Part S), a ban on gas and mandatory solar PV. In addition, housebuilders are navigating the removal of mandatory housing numbers [in some cases] by Local Planning Authorities as well as reductions in mortgage applications. Therefore, a very small 'environmental' contribution by a water company to support very expensive rainwater harvesting and/or grey-water recycling systems is not going to gain traction – and at a dwelling-by-dwelling scale is not the right answer.**

- **We believe that reduced water use in new homes will only be achieved through a further improvement to Building Regulations AND a much more equitable investment in water re-use infrastructure by the water industry. This will include the ability to procure (requisition, self-lay or otherwise) water re-use infrastructure, perhaps on a Discounted Aggregate Deficit basis as per water distribution mains under S41/42 of the Water Industry Act.**

- **We recognise that this step-change will require the regulated sale of potable and non-potable water as two distinct products with non-potable water being more affordable.**

- Now is the time to change the way we think about the water we are using, and how we can design out bad practice. Creating buildings and places that are mindful of water consumption and starting to better appreciate the value of wastewater. **These measures can work hand-in-hand with biodiversity net gain, introducing natural measures such as wetlands, basins and wet woodlands to recharge groundwaters.**

- **The real gamechanger however will be to take water on a similar journey to carbon, not just by reducing water use but reusing and recycling water onsite. This would ideally take place at community or placemaking scales and be adopted by water companies - perhaps even offsetting any residual water demand created in our new developments by equivalent reductions in the existing built environment. In addition, this would be in conjunction with water companies who can fund water efficiency audits, leak detection and retrofitting in local schools, social housing, and small businesses under platforms similar to those being developed for carbon offsetting.**

- But – as per the energy hierarchy – water efficiency and water reuse technologies need to be implemented before any offsetting can be considered. To maximise the wastewater recovered from homes and businesses, there needs to be large-scale investment generated. Again, this should be through part-funded infrastructure solutions from water companies.

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Ultimately we feel that the environmental incentives offered in the three examples provide in the consultation will not change developer behaviour, will not create a step-change in water efficiency and water re-use, will not persuade developers to deliver water neutrality.

A step-change in water efficiency will be achieved through Building Regulation Change and the ability for water companies to invest in and secure a return from the design, construction, operation and management of rainwater, greywater and blackwater re-use systems.

We have read the consultation document titled 'Environmental incentives to support sustainable new homes' and feel that we have answered many of the consultation questions 1 to 13 in the bullets above and trust that our opinions will be captured as provided.

Hilson Moran is a leading international environmental design and engineering consultancy supporting all built environment sectors. Our design led strategic thinking puts health & wellbeing and the protection of the environment at the heart of everything we do, embracing creativity, innovation, and technical rigour. We are committed to creating buildings, urban spaces and places which enhance social outcomes and provide environmental betterment for all.

We operate across the UK and internationally from offices in London, Manchester, Cambridge, and Farnborough. We are recognised as educators and influencers within the Built Environment, and we sit on numerous professional bodies and panels including (UKGBC, LETI, CIBSE, Better Building Partnership) and have our own carbon manifesto.

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