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Health and Environment Committee

Water Matters

Efficient water management in London

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Foreword

At the beginning of spring 2012 and following two consecutive dry winters London was in a drought situation, and most areas in London under a hosepipe ban. So it was timely that the Health & Environment Committee discuss effective water management as its first investigation. Water is one of the most precious resources we have, and one we can take for granted.

Significantly there are two long term factors likely to increase the pressure on water resources in London, those of population growth and climate change. London population is expected to grow, from about 8 million to possibly 9 million or more by 2031. Clearly more people will mean London will need more water. London's climate is also expected to change: summer is expected to be dryer but autumn, winter & spring wetter. This could mean more water available across the year but will require better water collection during wetter seasons and storage for the dryer summer.

It is harder to meet water needs when a quarter of London's treated drinking water is lost to leakage. Furthermore, targets set by Ofwat, the water industry regulator, don't require water companies to reduce leakage any further in the period up to 2014/15. Ofwat needs to improve its methodology for assessing the true value of water to residents of London, and this must be reflected in its targets.

On the demand side, water meters have a role to play in reducing our daily consumption of water. However, we must support essential water use for those with special needs like vulnerable elderly people and those in large households. Proposals for social tariffs need to be made clear before water utility companies commence any compulsory metering roll out.

Thankfully, exceptionally heavy rainfall in spring and early summer ended the threat of the drought but London saw a post code lottery as to when the hosepipe ban was lifted, depending upon who the local water supplier happened to be. Water trading between the water utility companies needs to be encouraged to get rid of such inequalities.

Government consultations apart, its good that the Committee has addressed this critical issue of how we manage a precious

environmental resource like water. London had a lucky escape from drought in 2012. We will press for the adoption of our recommendations, and return to the water issue to follow up those responses.

Murad Qureshi AM,

Chair of the Health & Environment Committee

Summary

London's water demand is high and its rainfall is relatively low. In the wider Thames catchment area, a large percentage of the available water is used by people and industry, putting pressure on the water environment. After dry winters, groundwater reserves can be low, placing London at risk of summer water shortage – this happened in spring 2012 and a long period of drought and water restrictions was only averted by the wettest summer for a hundred years. These challenges are likely to increase in future, as London's population grows and climate change raises temperatures and changes rainfall patterns.

To cope with these future challenges, London must use water more efficiently, starting now and increasing progressively in the future. London's water use per person is among the highest in the country, and a quarter of London's treated water is wasted in leakage from supply pipes. Therefore efficient water use will mean cutting leakage, reducing the water demanded by domestic appliances, and people changing their behaviour to use less water.

This much has been widely recognised for some years. Achieving change is more difficult than identifying the problem though, and specific decisions are driven by calculations of business cases and household economy.

Therefore this report examines how decisions are made in the water business, and how the social and environmental costs and benefits are reflected alongside the obvious financial elements.

It looks at the calculations, by water companies and Ofwat, of the 'sustainable economic level of leakage' and finds that there is a strong risk that they do not reflect well the environmental or social benefits of reduced leakage. The report therefore recommends that Ofwat should use its forthcoming methodology review to include all the long-term economic, social and environmental costs and benefits of water management options.

More broadly, the report finds that a full reflection of these costs and benefits should inform regulatory policies and decisions across the water industry.

The report also considers specific measures on water efficiency. Householders need to use water more wisely, and the GLA's RE:NEW

programme has been helping to do this through its home visits promoting energy and water efficiency measures. However, the national Green Deal, which is to be the framework for such work in future, excludes water efficiency measures other than hot water, threatening half of the expected efficiencies from the programme. The Committee asks DECC to reconsider this exclusion, and the Mayor to say how water efficiency work will be continued in London.

Finally the report considers water metering and the potential impact on household financing. To incentivise water efficiency, it advocates a rapid roll-out of water meters to all London households. This must go alongside the introduction of social tariffs to protect vulnerable users and support essential water use.

Introduction

Water scarcity and uncertainty in London

London is a city of low rainfall, high demand for water and high utilisation of available water. Each summer, it relies on stored water to meet its needs, and so after one or two dry winters it can be at risk of water shortage.

London's own rainfall is comparatively low – at 590mm/year, less than Sydney, Rome, Mexico City, Istanbul or Jerusalem.[1] If Greater London had to rely on its own rainfall to meet its needs, it would have to capture and use nearly all of it.[2]

In fact, London relies heavily on water from the rest of the Thames catchment area (and some other neighbouring areas), where rainfall is somewhat higher[3] and the area of ground gathering the water is much greater. Two thirds of the rain that falls in the Thames catchment evaporates back into the air directly or via plants. Of the rest, nearly half must be left in the environment to maintain river levels and protect aquatic and waterside plants and animals.[4] After a fraction is taken directly from the environment for agricultural and industrial use, the public water supply goes half to domestic use, a quarter to business and other use, and a quarter lost through leakage.[5] Each individual water user in London uses on average 167 litres of water per day.[6]

Rainfall in 2012

Summer river flow is normally maintained by water welling up from underground. This groundwater comes from previous rainfall, normally mainly winter rain. By March 2012, two successive dry winters had left much of England, especially the south east, with very low river flows (the Thames was 'exceptionally low' at barely a third of average levels) and groundwater (with all of the chalk aquifers in the

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[1] *Securing London's water future* The Mayor's Water Strategy, 2011 (hereafter referred to as Water Strategy), page 31 http://www.london.gov.uk/who-runs-london/mayor/publications/environment/london-water-strategy

[2] 590mm/year of rain across Greater London's area of 1572 km^2 gives a rain volume of about 927 million m^3/year. The volume of treated water supplied to London is about 870 million m^3/year (calculated from the leakage figures on page 62 of the water strategy).

[3] Water Strategy, pages 30-31

[4] All of South East England is rated as 'seriously water stressed', meaning that water demand is already having a negative impact on the environment – Mayor's Water Strategy pages 31-32, drawing on work by the Environment Agency.

[5] Water Strategy, pages 30-31

[6] Water Strategy, page 39

London region also 'exceptionally low').[7] Restrictions on water use came into force across the region.

However, in spring and early summer 2012, exceptionally heavy rain ended the drought. In April, the south-east received two and a half times the average rainfall for that month, restoring flow in the Thames to normal levels. Much of the rainfall was retained in the dry upper layers of soil, though, and returned to the air by growing plants, so groundwater levels remained exceptionally low around London. In June, rainfall was again 250% of the average.[8] On 12 June, this Committee met with Thames Water and questioned the continuation of the hosepipe ban.[9] The following day, Thames Water announced that its restrictions would be lifted.[10] Veolia Water Central, and Sutton and East Surrey Water, kept their bans in place until 9 July as their water supplies are more reliant on groundwater.[11] July (and August in the upper Thames catchment) also saw heavy rain, making the Thames 'exceptionally' or 'notably' and groundwater levels around London much nearer normal for the time of year.[12] By the end of August, it was apparent that the summer had been the wettest for 100 years.[13]

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[7] Environment Agency maps, available at http://www.environment-agency.gov.uk/static/documents/Leisure/3monthmaps.pdf - accessed 3 September 2012

[8] Environment Agency water report for June - http://www.environment-agency.gov.uk/static/documents/Research/WSR_June_2012.pdf - and previous months

[9] Health and Environment Committee meeting of 12 June 2012 (hereafter referred to as 12 June meeting) – see transcript pages 2-3 http://www.london.gov.uk/moderngov/documents/b6654/Minutes%20-%20Transcript%20-%20Appendix%201%20Tuesd.pdf?T=9

[10] *Hosepipe ban lifted after record rain* Thames Water press release, 13 June 2012 http://www.thameswater.co.uk/media/press-releases/15794.htm

[11] Defra drought news and resources page, see news items of 9 July and 13 June 2012 http://www.defra.gov.uk/environment/quality/water/resources/drought/ accessed 24 August 2012. See also Veolia Water Central at the 12 June meeting, transcript pages 3-4

[12] Environment Agency water reports for July - http://www.environment-agency.gov.uk/static/documents/Research/WSR_July_2012.pdf - and August - http://www.environment-agency.gov.uk/static/documents/Research/WSR_August_2012.pdf

[13] *Summer 'wettest in 100 years', Met Office figures show* BBC News online, 30 August 2012 http://www.bbc.co.uk/news/uk-19427139 Summer in this case is defined as June to August. The April to June period had been the wettest on record (records began in 1910).

Future prospects

However, if there is another dry winter, leaving groundwater reserves low in spring of 2013 or a future year, London could be in a position of water risk again. The Environment Agency said 'we still have concerns about the low ground-water levels entering into potentially a third dry winter. The probability is relatively low but the consequences could be relatively high.' The water companies are planning to minimise the risk.[14]

However, there are two longer-term factors likely to increase the pressure on water resources in London: population growth and climate change. London's population is expected to grow, from about 8 million now to 9 million or more by 2031.[15] More people will need more water.

Also in the longer term, London's climate is expected to change; heavier spring rainfall is consistent with this. It is expected that autumn, winter and spring will be wetter but summer drier. This could mean more water available overall, but there could be challenges in collecting the water in the cooler months and making it last through the dry summers. Temperatures are also expected to rise, which could increase evaporation and/or water demand.[16]

There is therefore a need for effective water management methods which reduce the amount of water per person that needs to be extracted and treated.

Existing plans and actions to improve water management

The Mayor has developed a water strategy which proposes actions in partnership with water companies and others to improve water management, under six main headings: [17]

- Improve the water efficiency of existing buildings
- Ensure all new development is super-water-efficient
- Raise Londoners' awareness of the financial benefits of increased water efficiency
- Increase the number of homes with a water meter

[14] Environment Agency at the 12 June meeting, transcript pages 1-2 and 5, and Veolia Water Central, page 4
[15] GLA Intelligence Unit http://data.london.gov.uk/documents/intelligence-presents-2011-census.pdf
[16] Water Strategy page 41
[17] Water Strategy pages 51-65. See also 12 June meeting, transcript page 19

- Change the way Londoners pay for their water
- Continue to tackle leakage

In December 2011, the Department for Environment, Food and Rural Affairs (Defra) published its water White Paper,[18] addressing issues of water management and security of supply in the light of concerns for the natural environment and the customer.

The Committee welcomes proposals in the White Paper to improve strategic guidance, tackle unsustainable water abstraction from the environment and to reform the abstraction regime, and also proposals to increase the interconnectedness of the nation's water infrastructure so that areas with water scarcity can be supplied from neighbouring areas with better supply.

Defra is to strengthen the strategic framework for water management nationwide, setting priorities for the next rounds of water companies' water resource management plans including taking a long-term perspective on meeting supply challenges, reflecting the costs to the environment of water abstraction, acting in stewardship of catchment areas and reducing water consumption.[19]

Working with the Environment Agency and Ofwat, Defra proposes to use existing powers to tackle over-abstraction of water that is harming ecosystems, and to incentivise sustainable abstraction, while consulting on longer-term solutions.[20]

Defra will also seek to increase connections and trading between water supply areas. The costs and impacts of pumping water make widespread long-distance transfers unlikely, but the incremental development of links between neighbouring areas, building into a more connected infrastructure across regions, is envisaged. Defra sees the potential for trading to substitute for hundreds of millions of

[18] *Water for Life* Defra White Paper, 2011 (hereafter referred to as *Water for Life*) http://www.defra.gov.uk/environment/quality/water/legislation/whitepaper/
[19] *Water for Life* pages 45-56
[20] *Water for Life* pages 21-24 and 40-44 - note that the Environment, Food and Rural Affairs Committee has criticised these measures for being too slow. http://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/news/water-white-paper-publication/

pounds worth of costs in water-scarce areas by bringing water from where it is more plentiful.[21]

These proposals are broadly welcome. The Committee's investigation did not identify specific recommendations in these areas and so they are not a further focus of this report. However, the provisions on water trading between neighbouring areas could support a sustainable, efficient and equitable management of future water scarcity across London, to avoid a situation where hosepipe bans affect some parts of London but not adjacent areas. The Committee would welcome this, providing it does not lead to funding being diverted from priority water saving measures such as mains replacement programmes.[22]

The Draft Water Bill published in July[23] addresses mainly the structure and management of water markets and measures for non-household customers, so it is also not a focus for this report.

Structure of the report

The Committee's discussion with stakeholders has instead focussed on what practical steps can be taken in London, and in certain aspects of national policy, to ease the pressure on water supplies by reducing leakage and reducing consumption in the home. It has also brought out the broader issue of the valuation placed on water as a precious resource in limited supply. A truer valuation would drive stronger action on water efficiency measures.

The report makes a series of recommendations to Ofwat, the Government and the Mayor to support more effective water management in and around London.

[21] *Water for Life* pages 25-26
[22] See 12 June meeting, transcript pages 20-23
[23] http://www.defra.gov.uk/environment/quality/water/legislation/water/

Leakage

Water for the mains system is extracted from environmental sources (such as rivers and groundwater), stored in reservoirs, and then when required treated to a high standard of purity and safety, suitable for drinking by humans. Since extraction, storage and treatment all have financial, environmental and human costs, this treated water is a valuable commodity.

After treatment, water is transported to its users in underground pipes. The network of pipes has joints, which inevitably develop leaks. Ground movement helps to cause leaks, and the buried situation of the pipes makes it difficult to detect, pinpoint and fix the leaks. Leakage is therefore an issue in all public water distribution networks.

Leakage in London

In London, leakage rates are higher than the rest of the UK - Thames Water ascribes this to the age of the water supply pipes, soil conditions and other local factors.[24] Improvements have been made in recent years, but about a quarter of London's treated drinking water is still lost to leakage – see Table 1.

Table 1: Water supplied and lost to leakage in London, by company (2009/10)

	Thames Water	**Veolia Water Central**	**Essex & Suffolk Water**	**Sutton & East Surrey Water**	**London Total**
Estimated population served	6.166m	1.019m	0.537m	0.293m	8.015m
Overall water supplied	1,875 million litres/day	277 million litres/day	136 million litres/day	68 million litres/day	2,356 million litres/day
Total leakage	504 million litres/day	52 million litres/day	21 million litres/day	11 million litres/day	589 million litres/day
Leakage as % of water supplied	26.9%	18.9%	15.7%	16.0%	25.0%

Source: Mayor's Water Strategy (table p39)

[24] 12 June meeting, transcript pages 8 and 14

Are leakage rates expected to reduce?

These leakage figures are not likely to improve significantly in the next few years. Water companies' leakage targets are set by Ofwat, and Table 2 shows that the targets are set at or above current leakage levels for all four of these companies until 2015.

Table 2: Leakage targets, by company (2010-15), in million litres per day across each company's whole region

	Performance	Targets			
	2010/11	**2011/12**	**2012/13**	**2013/14**	**2014/15**
Thames Water	665	673	673	673	673
Veolia Water Central	181	185	185	185	185
Essex & Suffolk Water	65	66	66	66	66
Sutton & East Surrey Water	25	25	25	25	25

Source: Ofwat data published October 2011: http://www.ofwat.gov.uk/content?id=92cfa37a-fe43-11e0-b825-e9d4301f7d7b

However, the Mayor's Water Strategy expects that leakage reductions of over 20 million litres per day are expected by 2018 in London. This is relied on as part of a range of efficiencies to offset the water demands of London's growing population.[25] Table 2 shows that Ofwat's leakage targets for the water companies will not contribute to further leakage reduction until at least 2015/16. Instead they could allow an increase of up to 13 million litres per day by 2014/15 (across the whole region served by the four companies).

How are leakage targets set?

The leakage targets are set by Ofwat, in consultation with the water companies and others. The targets are based on a 'sustainable economic level of leakage' (or 'socially efficient leakage level' – in either case SELL) in each water company's water resources

[25] Water Strategy, page 59

management plan (also proposed by the company, for approval or challenge by Ofwat).

The SELLs determined by the water companies and Ofwat may seem surprisingly high, but there are reasons. Ofwat has explained to the Committee that a balance needs to be struck between all the costs (financial, social and environmental) of supplying water, all the similar costs of fixing leaks, and customers' demands for water and willingness to pay. Ofwat agrees a SELL at a level where it considers that further leakage reductions would incur greater costs than making the same improvement to water supply or demand by other means.[26]

Customers tell Ofwat that they want to see leakage reduced further. But Ofwat estimates that to reduce leakage by half across England and Wales would cost about £100 billion, or over £4,000 per customer if paid in one bill. Ofwat does not consider that this would be affordable or acceptable for most customers.[27] As another example, Thames Water told the Committee that its desalination plant at Beckton cost £270 million to build and can supply 150 million litres of water per day, but that to save that amount of water by replacing more leaky pipes would cost £1.2 billion and take ten years.[28]

Less radical improvements in leakage may be hoped for, if the calculations of the SELL indicate that they would be less costly than balancing water supply and demand in other ways. Therefore the details of how the SELL is calculated are of the essence.

Ofwat publishes a guidance paper on how to take into account social and environmental costs and benefits in calculating the SELL.[29] This paper indicates that the factors to take into account include:

- Social costs of works to reduce leakage (such as disruption from streets dug up to work on pipes, or risks to customer supply if pressure is reduced)

[26] Letter from Ofwat to Murad Qureshi AM, 3 August 2012
[27] Letter from Ofwat to Murad Qureshi AM, 3 August 2012
[28] 12 June meeting, transcript pages 5-6
[29] *Providing best practice guidance on the inclusion of externalities in the ELL calculation* September 2008, hereafter referred to as Ofwat ELL externalities guidance http://www.ofwat.gov.uk/pricereview/pap_pos_pr09supdempolapp2-1.pdf See pages 13-14 for a summary of external costs and benefits and pages 16-20 for more detail

- Environmental costs of work to reduce leakage (such as carbon emissions from the work)
- Environmental benefits of reduced leakage (such as the carbon emissions avoided if less water needs to be treated, and the reduced impact on ecosystems if less water needs to be taken from rivers)
- Social benefits of reduced leakage (such as reduced impact on human use of waterways if less water is taken from them)

The social and environmental costs of leakage reduction are relatively easy to quantify, using economic models for impacts such as traffic disruption and carbon emission. However, the models for valuing the environmental benefits of extracting and treating less water are less well-established, relying on more subjective methods such as surveys.[30] Therefore there is a strong risk that the SELL calculations do not reflect well the environmental or social benefits of reduced leakage.[31]

Furthermore, at least in the 2000s when surveyed for the Ofwat guidance report, many water companies were not including all of these factors in their calculations of the SELL. Carbon impacts and impacts on reservoirs and wetlands were particularly poorly-covered.[32]

Four years after the publication of the guidance, Ofwat acknowledges that there is still scope to improve the way that water companies calculate social and environmental costs and benefits. It is currently reviewing, with Defra and the Environment Agency, how the companies apply guidance on these matters, and will update the guidance in the light of the review.[33]

Thames Water proposed to invest more in leakage reduction in 2010-15, and pass the cost to customers through bills. Ofwat did not allow this because the case relied on data on climate change impacts that was out of date. Ofwat allowed an option to review this with 2009

[30] Ofwat ELL externalities guidance, pages 21-27
[31] These concerns also reflect views expressed to the Committee by the GLA environment team (including flood damage from major leaks and the effect on public attitudes and behaviour of visible leakage) and by the Environment Agency - see 12 June meeting, transcript pages 9 and 13. The recent Government White Paper *Water for Life* (page 50) also says that existing guidance does not fully reflect the long-term sustainability of the water environment; the Government plans to get involved in reviewing SELL methodology.
[32] Ofwat ELL externalities guidance, pages 28-34
[33] Letter from Ofwat to Murad Qureshi AM, 3 August 2012

data, but no companies have done this.[34] Thames Water has acknowledged to the Committee that there is room to improve its valuation of the environmental cost of water, and said that it will inform its next water resources management plan with the results of a detailed review of the costs and benefits of leakage reduction.[35]

The Institution of Civil Engineers, which has devoted its 2012 State of the Nation report to water management[36], also hopes that the forthcoming review of SELL methodology will more truly reflect the environmental cost of water, and thus increase the value placed on water and lead to greater investment in efficiency measures.[37]

Conclusion

Ofwat has been improving its method for assessing long-term environmental costs, but it is not clear that Ofwat's guidance covers all of the relevant factors, including:

- Full costs of extracting water from the environment
- The social and economic costs of water use restrictions in periods of water shortage
- The economic, social and environmental costs of flooding caused by major leaks
- The consumer behavioural effects of the visibility of water leaks and publicity about leakage levels, especially in times of water shortage when consumers are being asked to use less water

Recommendation 1

In its forthcoming review of its methodology for calculating leakage targets, Ofwat should include in its calculations all the significant long-term economic, social and environmental costs and benefits of water management options, including:

- **Full costs of extracting water from the environment**
- **The social and economic costs of water use restrictions in periods of water shortage**
- **The economic, social and environmental costs of**

[34] Letter from Ofwat to Murad Qureshi AM, 3 August 2012
[35] 12 June meeting, transcript pages 6-7 and 15
[36] *The state of the nation: Water 2012* Institution of Civil Engineers, 2012 http://www.ice.org.uk/Information-resources/Document-Library/State-of-the-Nation-Water
[37] 12 June meeting, transcript page 10

flooding caused by major leaks

- **The consumer behavioural effects of the visibility of water leaks and publicity about leakage levels, especially in times of water shortage when consumers are being asked to use less water**

In a response to this report to the Committee by the end of 2012, Ofwat should indicate an in-principle response to this recommendation and give an indication of how it will be done.

Valuing water in other decision-making

In their decision-making, water companies and Ofwat use a 'shadow price' or monetary valuation of water.[38] If the methodology for assessing the environmental costs of supplying water is improved as recommended above, this shadow price will better reflect the full environmental, social and economic cost of water.

Currently, the Greater London Authority (GLA) considers that 'there is no agreed, transparent mechanism for comparing supply and demand measures that fully captures the social and environmental consequences.' The Mayor, in his water strategy planned to lobby Defra, the Environment Agency and Ofwat to develop such a mechanism.[39] Defra has since published proposals to value water and consider demand measures more effectively in national strategy and in guidance to the industry.[40]

With a fuller recognition of water costs and values, the business case can be made for higher, more sustainable levels of investment in water efficiency, metering, and infrastructure, and for more trading of water between companies to minimise hosepipe bans.

Conclusion

A better valuation of water would inform decision-making on other policies affecting water, including Ofwat's regulation of water companies' actions on:

[38] Letter from Ofwat to Murad Qureshi AM, 3 August 2012
[39] Water Strategy, page 50
[40] *Water for Life* pages 49-51

- Promoting water efficiency
- Installing meters
- Investing in water storage infrastructure such as reservoirs
- Pricing water supplies
- Trading water between suppliers

Recommendation 2

Water companies and Ofwat, for the next round of Water Management Plans, should incorporate fully into their modelling and decision-making the long term economic, social and environmental costs and benefits of water.

In responses to this report to the Committee by the end of 2012, Ofwat and the water companies should indicate an in-principle response to this recommendation and give an indication of how it will be done.

Water efficiency in existing homes

There is significant scope for water efficiency gains in existing homes – the Mayor's water strategy estimates that the majority of expected water usage savings between 2010 and 2017/18 are expected to come from this area. This will be achieved mostly by retrofitting efficient appliances, and metering and tariffs that encourage efficient user behaviour.[41]

London water customers have some of the highest average consumption rates in the country.[42] Although water companies work on efficiency with their customers,[43] Thames Water's Ofwat-set target for water efficiency is only about 0.2 per cent of the volume supplied per year.[44]

Water efficiency also reduces the overall cost of water supply, helping to offset any potential increase in bills resulting from a fuller reflection within the water industry of the social and environmental costs of water. Therefore water efficiency is an important element of an environmentally and socially sustainable approach to balancing water supply and demand.

The two main drivers of efficiency in the home are user behaviour and appliance efficiency. Metering water usage can encourage both of these shifts. Metered water billing, alongside potential price pressure that reflects the full cost of water, could exacerbate issues of water poverty – especially for relatively large households in properties of relatively low rateable value. 'Social tariffs' are therefore needed to protect vulnerable households from water poverty.

Changing user behaviour

User behaviour is difficult to tackle directly. It is important in the long term to address water awareness, even when there is no drought situation, so that future droughts pose less of a threat to the ability of London to meet its water needs.[45] The approach in the Mayoral strategy is to use household finance as a lever, raising awareness of

[41] Water Strategy, page 59
[42] *Water for Life*, page 80 - London's four water companies are all in the top 6 (out of 21 companies in England and Wales) by average water consumption per person
[43] 12 June meeting, transcript pages 25-28
[44] Meeting of 12 June 2012, transcript page 25, gives efficiency target as 4 million litres per day; Table 1 above gives Thames Water's overall supply as 1,875 million litres per day. Water companies in water-scarce regions like London are likely to have to increase their achievement on water efficiency by 2020 under policies outlined in the Defra White Paper *Water for Life* (see pages 50-51)
[45] See meeting of 12 June 2012, transcript page 19

the financial benefits of water efficiency and seeking to increase the number of homes with a water meter. Specific actions include: [46]

- Lobbying for bill information and other customer engagement by water companies
- Promoting awareness of water payment options through consumer information channels with many less-well-off users
- Pushing for the completion of London's water meter roll-out by 2020 or 2025 depending on housing type
- Lobbying government to promote enhanced water meters
- Lobbying for tariffs that encourage water efficiency while protecting vulnerable customers

Efficient appliances

Appliance efficiency, however, is more amenable to direct intervention. Simple measures such as tap and hosepipe fittings and cistern inserts or dual flush mechanisms for toilets can cost-effectively be retrofitted to existing homes. The Mayor's water strategy estimates that such measures can save 18 per cent of household water use (and bills, if metered) – and also save nearly a quarter of the cost (and carbon emissions) from heating water for the household.[47]

An effective means of promoting these simple measures is via home visits, especially in tandem with other money-saving steps including energy saving measures. Such work has been taking place under the GLA's RE:NEW scheme. The Mayor is reporting that the target for retrofitting 200,000 London homes by the end of 2012 is to be comfortably exceeded, as long as homes retrofitted outside the RE:NEW scheme by independent promoters are included.[48] However, RE:NEW is only funded to the end of 2012/13.

Going forward from 2012, the context for home retrofit is now the nationwide Green Deal scheme. However, this is focussed on carbon savings, and does not include measures to save cold water, which account for about half the water savings achieved under RE:NEW. Home visits are expensive and so the GLA sees the omission of water efficiency from the Green Deal as a missed opportunity and effectively

[46] Water Strategy, pages 48-62
[47] Water Strategy, page 53
[48] Mayoral Question 2194/2012, put by Murad Qureshi AM on 4 July 2012 http://mqt.london.gov.uk/mqt/public/question.do?id=41950

a significant cost.[49] When they met with this Committee, Thames Water and Veolia Water Central had not given full consideration to the Green Deal as an avenue for their water efficiency work.[50]

The GLA is developing proposals to continue work on home retrofit within the Green Deal framework. The primary focus of the programme remains carbon savings, and there is limited scope for adding additional elements to the home visit without making it too complicated for householders, but cold water efficiency might potentially be included.[51]

Conclusion

Both energy and water efficiency should be promoted through home visits. To maximise economic, social and environmental benefits, any major programme of home visits tackling retrofit for resource efficiency should cover both energy and water.

As energy is in the remit of DECC and water in the remit of Defra, these two departments need to work together on resource efficiency. The GLA may also be able to continue its own retrofit promotion under the Green Deal framework and should take into account London's water needs as well as carbon reduction targets when considering the business case for future resources for RE:NEW or other retrofit programmes.

Recommendation 3

DECC should immediately review the exclusion of cold water efficiency measures from the Green Deal, and report its conclusions to this Committee by the end of 2012.

Recommendation 4

The Mayor should, in a response to this report within three months, say how the GLA will be promoting the retrofitting of cold as well as hot water efficiency measures to existing homes in 2013/14 and beyond.

[49] Meeting of 12 June 2012, transcript page 28
[50] Meeting of 12 June 2012, transcript page 27
[51] GLA environment team, informal meeting with London Assembly staff 30 July 2012

Water metering

Metering consumption helps to promote water efficiency. It does so both by enabling users to know how much they are using and, when the meter reading determines the bill, it provides a financial incentive to use less. It is estimated that a typical household uses about ten per cent less water when metered. Meters can also help water companies to understand customers' usage, and can help to detect leaks.[52]

However, only about a quarter of London's households have water meters[53] and the percentage is rising slowly. Under current Government policy, water metering is encouraged but there are no specific targets[54] - this has been criticised as not going far enough by the Environment, Food and Rural Affairs Committee.[55]

Water companies can install meters in new homes, when an existing property changes occupancy, or on request of the customer. They also have statutory powers to fit meters to existing occupied properties, but investment is subject to approval by Ofwat. Thames Water and Veolia told us that they planned to roll out compulsory metering, but their plans were rejected or delayed by Ofwat on grounds of value for money.[56] This delay led to the Mayor's water strategy putting back its targets for universal metering by five years – from 2015/2020 to 2020/2025.[57] Thames Water expects to start installing compulsory meters and fit 85,000 by 2015, but to have achieved only 80 per cent metering at the household level by 2025 even assuming the cost-benefit case satisfies Ofwat,[58] so the Mayor's strategy represents a lobbying position directed at the water companies.[59] This Committee supports that position.

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[52] Water strategy, page 61
[53] Water strategy, page 60
[54] *Water for Life*, page 51
[55] http://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/news/water-white-paper-publication/
[56] Thames Water and Veolia Water Central at the meeting of 12 June 2012, transcript pages 29-30
[57] See Water Strategy Consultation Report pages 6-7 http://www.london.gov.uk/sites/default/files/water-strategy-consultation-report_0.pdf and Veolia Water Central at the meeting of 12 June 2012, transcript page 29. The dual dates in the strategy are for houses and flats – many blocks of flats are not plumbed in such a way as to facilitate household metering, and so universal metering of flats is likely to take longer.
[58] Meeting of 12 June 2012, transcript pages 30
[59] Meeting of 12 June 2012, transcript page 29

Conclusion

Water metering is an important part of raising awareness of the true value of water and enabling and encouraging households to reduce their usage. A faster roll-out of meters would therefore be beneficial but, as with other efficiency investments, the progress of water metering is regulated by value-for-money calculations.

Recommendation 5

London's water companies should seek to meet the Mayor's water strategy timescales for metering in their next Water Resources Management Plans. If the plans submitted to Ofwat do not reflect these timescales, the company concerned should set out the reasons for the delay in its response to this report.

Bills for vulnerable households

Water metering may cause problems for those with special needs for water or those on low incomes, who may feel a need to use less water than reasonably necessary for their well-being. The Institution of Civil Engineers argued this point in its recent State of the Nation report. The report distinguished between essential water use, which tariffs should protect, and non-essential use, which tariffs should incentivise down by appropriate unit pricing. As tariffs and billing evolve, peak tariffs may become able to signal times of water scarcity, and smart bills should inform customers about their water use and how they can save money.[60]

The Mayor's water strategy also considers issues of water affordability. It finds that near-universal metering would be likely to increase bills for some vulnerable households where a relatively large family occupies a property with a relatively low rateable value. It concludes that the most effective protection for these households would be either a tariff based on ability to pay (such as the WaterSure capped bills for vulnerable elderly people, or the discounted bills for low-income households recommended by the Walker Review), or direct

[60] Meeting of 12 June 2012, transcript page 28, and *The state of the nation: Water 2012* Institution of Civil Engineers, 2012, page 15 http://www.ice.org.uk/Information-resources/Document-Library/State-of-the-Nation-Water

financial support to the most vulnerable households. Targeted help with water efficiency measures may also play a part.[61]

In June this year, the Government published guidance on social tariffs.[62] The guidance is that 'enabling' and social tariffs are at water companies' discretion, but are strongly indicated where a high level of metering is achieved.

The guidance leaves it up to water companies how the rates and structure of a social tariff should relate to usage incentives. There could therefore be significant differences between the incentives provided between tariffs - for example a tariff that protects customers by capping the water bill could encourage high use, whereas a tariff that provides a modest allowance for free and then charges extra usage at a normal rate discourages high use while protecting essential use. It is clearly important for social tariffs to support essential water use without encouraging excessive use.

Recommendation 6

Ofwat and the water companies should, in their responses to this report by the end of 2012, tell the Committee how they will work together to implement social tariffs no later than the companies' commencement of compulsory metering rollout.

[61] Water strategy, chapter 4

[62] *Company Social Tariffs: Guidance to water and sewerage undertakers and the Water Services Regulation Authority under Section 44 of the Flood and Water Management Act 2010* Defra, June 2012

Conclusion

To secure London's future balance between water supply and demand, at minimal social cost and maximal benefit, water needs to be recognised and properly valued as a scarce and essential resource.

Decision-making in the water business must be informed by a full evaluation of the social, environmental and economic costs and benefits of water management measures such as (including leakage reduction, water trading, metering, efficiency and pricing). In recent years Ofwat and the water companies have made considerable progress in this regard but there is more to do, and the forthcoming reviews of methodologies and business plans offer an opportunity to get things right.

Water customers need to be 'water wise', to use water efficiently and make adjustments to wasteful behaviours. This will happen more rapidly and effectively with support and the right incentives, especially from government and the GLA on domestic water efficiency alongside energy efficiency, and from water companies in the form of metered billing. However, as billing encourages less wastage by heavy users, it must also support essential use by all, especially vulnerable customers, through social tariffs.

The Committee hopes that the recommendations in this report will help London's water stakeholders continue to improve the way they manage this vital resource.

Appendix 1 Key findings

Ofwat has been improving its method for assessing long-term environmental costs, but it is not clear that Ofwat's guidance covers all of the relevant factors, including:

- Full costs of extracting water from the environment
- The social and economic costs of water use restrictions in periods of water shortage
- The economic, social and environmental costs of flooding caused by major leaks
- The consumer behavioural effects of the visibility of water leaks and publicity about leakage levels, especially in times of water shortage when consumers are being asked to use less water

A better valuation of water would inform decision-making on other policies affecting water, including Ofwat's regulation of water companies' actions on:

- Promoting water efficiency
- Installing meters
- Investing in water storage infrastructure such as reservoirs
- Pricing water supplies
- Trading water between suppliers

Both energy and water efficiency should be promoted through home visits. To maximise economic, social and environmental benefits, any major programme of home visits tackling retrofit for resource efficiency should cover both energy and water.

As energy is in the remit of DECC and water in the remit of Defra, these two departments need to work together on resource efficiency. The GLA may also be able to continue its own retrofit promotion under the Green Deal framework and should take into account London's water needs as well as carbon reduction targets when considering the business case for future resources for RE:NEW or other retrofit programmes.

Water metering is an important part of raising awareness of the true value of water and enabling and encouraging households to reduce their usage. A faster roll-out of meters would therefore be beneficial but, as with other efficiency investments, the progress of water metering is regulated by value-for-money calculations.

It is clearly important for social tariffs to support essential water use without encouraging excessive use.

Appendix 2 Recommendations

Recommendation 1

In its forthcoming review of its methodology for calculating leakage targets, Ofwat should include in its calculations all the significant long-term economic, social and environmental costs and benefits of water management options, including:

- Full costs of extracting water from the environment
- The social and economic costs of water use restrictions in periods of water shortage
- The economic, social and environmental costs of flooding caused by major leaks
- The consumer behavioural effects of the visibility of water leaks and publicity about leakage levels, especially in times of water shortage when consumers are being asked to use less water

In a response to this report to the Committee by the end of 2012, Ofwat should indicate an in-principle response to this recommendation and give an indication of how it will be done.

Recommendation 2

Water companies and Ofwat, for the next round of Water Management Plans, should incorporate fully into their modelling and decision-making the long term economic, social and environmental costs and benefits of water.

In responses to this report to the Committee by the end of 2012, Ofwat and the water companies should indicate an in-principle response to this recommendation and give an indication of how it will be done.

Recommendation 3

DECC should immediately review the exclusion of cold water efficiency measures from the Green Deal, and report its conclusions to this Committee by the end of 2012.

Recommendation 4

The Mayor should, in a response to this report within three months, say how the GLA will be promoting the retrofitting of cold as well as hot water efficiency measures to existing homes in 2013/14 and beyond.

Recommendation 5

London's water companies should seek to meet the Mayor's water strategy timescales for metering in their next Water Resources

Management Plans. If the plans submitted to Ofwat do not reflect these timescales, the company concerned should set out the reasons for the delay in its response to this report.

Recommendation 6

Ofwat and the water companies should, in their responses to this report by the end of 2012, tell the Committee how they will work together to implement social tariffs no later than the companies' commencement of compulsory metering rollout.

Appendix 3 Orders and translations

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Hindi

यदि आपको इस दस्तावेज का सारांश अपनी भाषा में चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये गये डाक पते या ई मेल पते पर हम से संपर्क करें।

Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান, তাহলে দয়া করে ফো করবেন অথবা উল্লেখিত ডাক ঠিকানায় বা ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

Greek

Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.

Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں درکار ہو تو، براہ کرم نمبر پر فون کریں یا مذکورہ بالا ڈاک کے پتے یا ای میل پتے پر ہم سے رابطہ کریں۔

Turkish

Bu belgenin kendi dilinize çevrilmiş bir özetini okumak isterseniz, lütfen yukarıdaki telefon numarasını arayın, veya posta ya da e-posta adresi aracılığıyla bizimle temasa geçin.

Arabic

إذا كنت بحاجة إلى الحصول على ملخص لهذا المستند بلغتك، فرجاء الاتصال برقم الهاتف أو الاتصال على العنوان البريدي العادي أو عنوان البريد الإلكتروني أعلاه.

Punjabi

ਜੇ ਤੁਸੀਂ ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਸੰਖੇਪ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਲੈਣਾ ਚਾਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਉਪਰ ਦਿੱਤੇ ਡਾਕ ਜਾਂ ਈਮੇਲ ਪਤੇ 'ਤੇ ਸਾਨੂੰ ਸੰਪਰਕ ਕਰੋ।

Gujarati

જો તમારે આ દસ્તાવેજનો સાર તમારી ભાષામાં જોઈતો હોય તો ઉપર આપેલ નંબર પર ફોન કરો અથવા ઉપર આપેલ ટપાલ અથવા ઈ-મેઈલ સરનામા પર અમારો સંપર્ક કરો.

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