Veolia Water East

JR11 Table 10b(i) Commentary and Water Resources Management Plan Annual Review

June 2011

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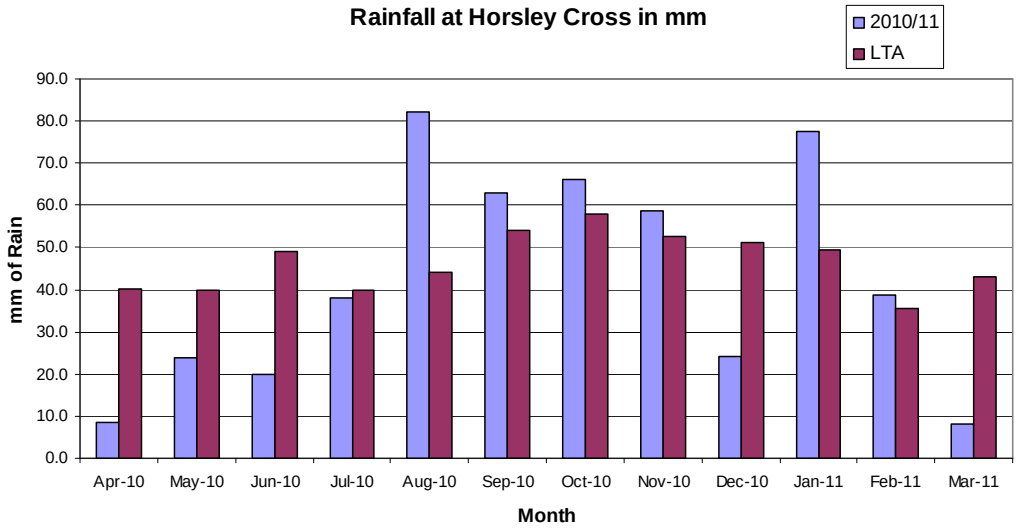


1 Introduction

The Company is a single water resource zone and considers its critical period for water resource planning to be the average annual demand in a dry year. The Company has therefore only completed Table 10B (i). This is consistent with the Company's Water Resources Management Plan and previous annual returns to Ofwat and the Environment Agency (EA).

The Final Water Resources Management Plan (FWRMP) for Veolia Water East was published on 12th November 2009. This Annual Review is a statutory requirement of the Water Industry Act 1991 Section 37A(5) which requires water undertakers to review their Plans on an annual basis. The information provided in this review is taken from the Company's June Return submitted to Ofwat which covers the period 1 April 2010 to 31 March 2011. Any departure from this period where more recent data is given is noted in the text.

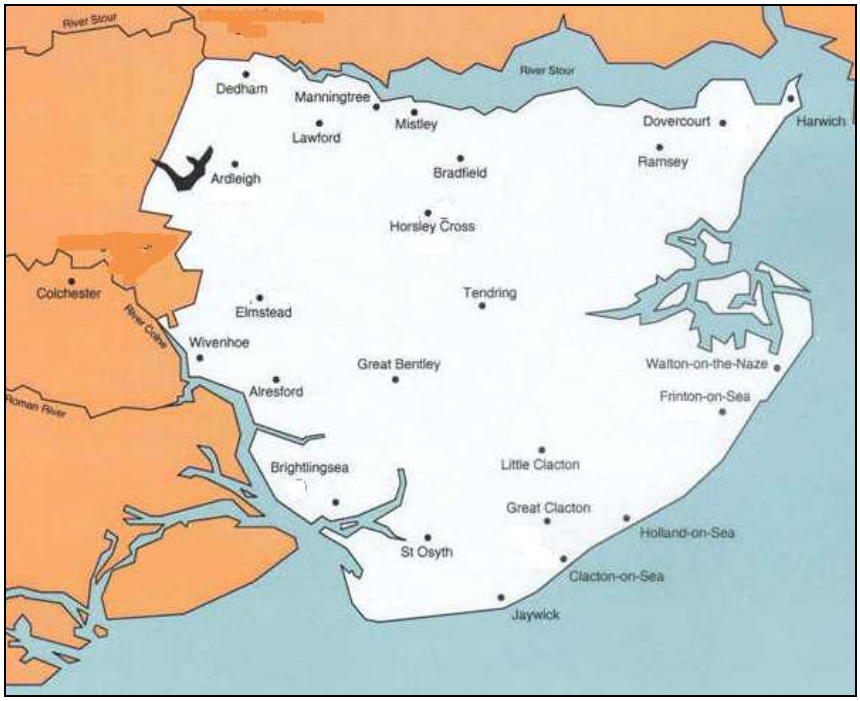
The review provides an overview of the water resources situation in the year 2010/11 and it compares actual data with that forecast in the FWRMP. At this early stage in the life of the FWMRP no changes are recommended.

The water resource position for the company is currently good.

Total rainfall of 509mm in 2010-11 was below the LTA of 548mm. The year started drier than normal however August was particularly wet. This was followed by a normal autumn leading into a prolonged cold period at the end of December. Rainfall in January was high but was very low in March.

2 General

VWE supplies drinking water to approximately 157,000 people and some 4,000 businesses within an area of 352km^2 on the North East Essex coastline. During the holiday season the population supplied is increased substantially by the influx of visitors to the coastal resorts. The boundary of the supply area, which is known as the Tendring Peninsula, is 104 km long with 81km being coast or estuary and only 23 km being a land border with AWS supply area shown in Figure 1.2. The Company is one of the smallest water only companies in the UK. More than eighty percent of the supply comes from groundwater, drawn from robust confined aquifer chalk boreholes. The balance of the supply is sourced from the River Colne and stored in a reservoir shared with Anglian Water Services (AWS). Currently, these water sources provide sufficient water to meet all the needs of our customers.



The Tendring Peninsula

The Company seeks to reduce waste where possible. We continue to monitor leakage and ensure it is maintained at a sustainable and cost efficient level so that VWE can maintain the position of having one of the lowest levels of leakage in the industry.

Customers of VWE are the most efficient users of water in the industry and the Company is seeking to maintain this position by finding new ways of supporting the customers in using water even more efficiently. The best way of promoting water efficiency is to increase the penetration of household metering. VWE already has one of the highest household meter penetration rates in the industry. In our Water Resources Management Plan and Business Plan we hoped to increase the percentage of households with a meter to over 90% by 2016 by pro-active actively metering properties and generating comparative bills. Ofwat did not agree that this was cost justified and so our plan is now to continue to meter customers on request.

2.1 Water Resources Zones

A resource zone is the largest possible zone in which all resources, including external transfers can be shared and hence the zone in which all customers experience the same risk of supply failure from a resource shortfall. The Company's supply network is highly integrated and risk of supply failure is shared throughout the VWE area. As such Company planning is based on a single water resource zone.

2.2 Levels of Service

Despite operating in the driest part of the driest region in the UK, through managing demand, a positive balance of supply over demand has been maintained. As a result the Company has never had to resort to formal restrictions in over 40 years and through several drought periods. Our future plans are based on never having to implement formal restrictions on use.

3 Supply

The Company's raw water is derived from both its groundwater borehole sources and a pumped storage reservoir owned and operated in equal partnership with AWS. There are eight chalk groundwater sources within VWE Water Resource Zone. One of the chalk sources is currently not in use. VWE has sold the site with a gravel source detailed in the FWRMP, this was unused so has not affected the available resource. VWE's only surface water source is maintained and managed by a committee on behalf of VWE and AWS with members from both companies.

Ardleigh Reservoir was 89.3% full at 31 March 2011. No drought action trigger levels in the drought plan were crossed during the year. There were no changes in the resource zone in operation in the year.

3.1 Deployable Output (DO)

The average DO values for each individual groundwater source remain constrained by licence. Peak DO values are constrained by treatment capacity. Potential Yields are constrained by the Half Saturated Aquifer Thickness, which represents the Deepest Advisable Pumping Water Level (DAPWL).

Our surface water source is a shared reservoir with AWS where the share of the DO is normally a 50:50 share for each company. From 2005-6, VWE agreed with AWS to change the sharing of the DO from 50:50 to 40:60 (VWE:AWS) until March 2010. From 2010 -11 for at least 10 years VWE and AWS have agreed to change the sharing to 30:70 in favour of AWS.

There have been no changes to assessed DO since the FWRMP which accounted for the then current and proposed sharing arrangement at the surface water source.

3.2 Outage

The outage in periods of average water demand is 0.66 Ml/d, whilst at critical periods of water demand (assumed to be a one month period from mid-July to mid-August) the outage is 1.59 Ml/d. This is considered to be a representative value of current conditions and although the value has marginally increased since 2004, Outage is not considered a major problem for VWE as there is a significant amount of spare capacity in the groundwater sources, combined with storage in the reservoir. Outage assessments have not been updated since the FWRMP.

3.3 Losses

No water balance reconciliation adjustments were made during the year and all figures are based on long standing methodologies consistently applied. Previously, estimating treatment works losses at Horsley Cross has been difficult as losses are a small proportion of the total and do not exceed the acceptable error of the sum of the source meters and the works inflow meter. Following the EA's comments on this for 2004-05 additional meters were fitted to the sludge pumping main and the drainage pump. The information from these meters shows that treatment works losses are very low at only 0.03 Ml/d for routine operations which increases to 0.05 Ml/d when raw water main flushing activities are allowed for. There is also evidence of negligible raw water mains losses such that the raw water abstracted has been back calculated as distribution input + treatment works losses. There remains a small reconciliation discrepancy between the sum of the source flow meters and the treatment works output.

3.4 Bulk Supply

The company has no bulk supply agreements

3.5 Sustainability Reductions

The Environment Agency has confirmed that there will be no Sustainability Reductions for VWE, in the period 2010-2015.

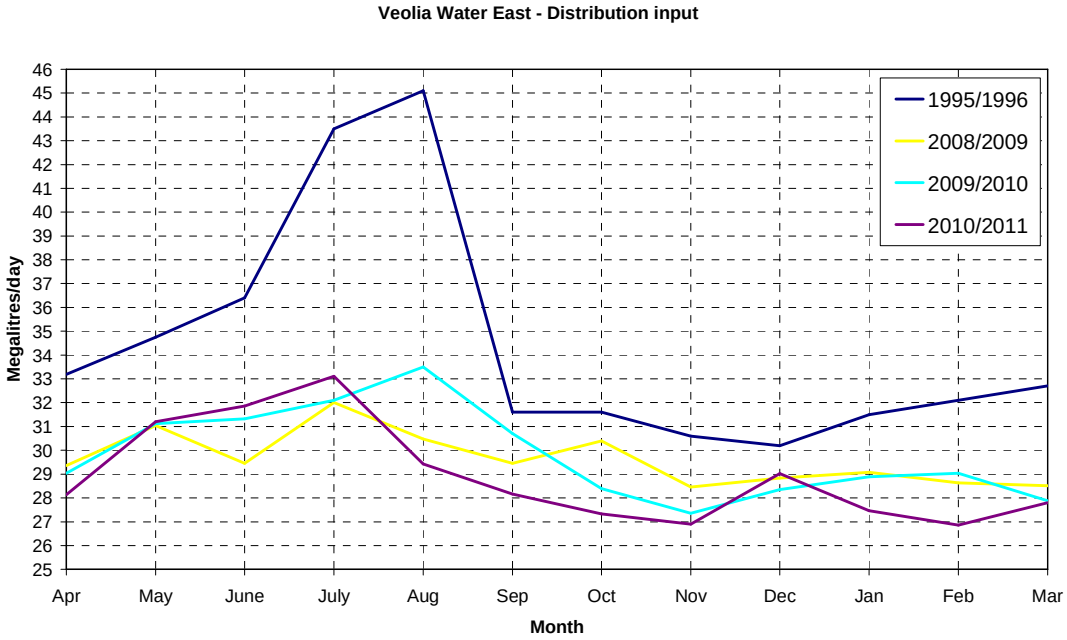
VWE does not have any Environment Programme schemes on going under the AMP5 National Environment Programme (NEP). However, the Company is aware of the concerns about the impact on the environment of public water supply (PWS) abstraction on the River Brett during a drought. The link between PWS abstraction and the levels in the River Brett was studied as part of the 2000-2005 NEP.

Although the study did not demonstrate a short-term link between PWS abstraction and the reduction of flow in the River Brett, the Company's groundwater sources are sufficiently robust to augment river flows and are licensed to do so when requested by the Environment Agency. As part of the NEP work in 2004 the Company installed a pipeline from a nearby borehole to the River Brett for use during a future drought.

The new River Basin management plans are in the process of being formulated by the Environment Agency as part of the Water Framework Directive (WFD) requirements, and depending on the assessment of these, may change the need for future sustainability reductions. VWE has been advised that no such reductions will be required during the first river planning cycle (2009 to 2015), but there may be a requirement to make such reductions in future planning cycles. No account of any future sustainability reduction has been taken in the FWRMP.

4 Demand

During the record peak demand which occurred during the sustained hot summer of 1995, VWE supply/distribution system coped with a record demand of 50.9 Ml/d in 24 hours and a peak week demand of 49.1 Ml/d. Although there were no significant failures, the Company invested in some resource improvements and demand management measures to give greater margin of supply Peak demand did not exceed 42Ml/d on any day during the prolonged hot dry weather in July/August 2003. The critical period for VWE is, therefore, the average demand in a dry year and no separate critical period was assessed for the FWRMP.



4.1 Demand Forecast

The average distribution input for the 2010/11 year was 28.99 Ml/d which compares to 29.66 Ml/d for 2009/10, a reduction of 2.3%. The distribution input forecast for the dry year annual average 2010/11 year was 30.08 Ml/d.

There have been no significant updates to demand forecasting assumptions since the November 2010 review.

4.2 Per Capita Consumption

The company currently has the lowest per capita consumption of water in the country and scope for further water efficiency savings is considered to be limited and linked to metering plans. There have been no material changes to PCC assumptions since the FWRMP.

Year	Forecast Metered PCC *	Forecast Unmetered PCC *	Actual Metered PCC	Actual Unmetered PCC	% Change Metered	% Change Unmetered
2006-07	123.29	135.55	113.72	131.54	-8%	-3%
2007-08	123.58	138.68	110.84	128.13	-10%	-8%
2008-09	123.59	137.46	112.63	132.37	-9%	-4%
2009-10	123.52	136.98	113.09	126.77	-8%	-7%
2010-11	123.43	136.62	110.58	124.57	-10%	-9%

* Forecast restated using correct values, Nov 2010 review values stated in error.

The table above shows that both unmetered and metered per capita consumptions have been below forecast levels. We attribute this to a combination of drought publicity from surrounding companies (despite the fact there were no restrictions at VWE) and recessional effects.

4.1 Metering

In 2010/11, 0.2 Ml/d was saved as a result of water efficiency measures. However the largest single effect on demand has resulted from increased meter penetration, which VWE has pursued with support from the Environment Agency, Ofwat and the Eastern CCW. During the year the company installed 826 household optional meters (09/10: 902 and 08/09: 1199). Household meter penetration at 31 March 2011 was 73.4% (2009-10: 72.2%), the end of year total being 49,068 metered properties. For commercial connections, this figure is 99.1% (2009-10: 99.0%), the end of year total being 4,068 metered properties.

Meter penetration compared with baseline forecast is shown below. The reduced baseline metering still provides adequate headroom of supply over demand to beyond 2034-35.

Year	Forecast Meter Penetration	Actual Meter Penetration
2006-07	66%	66%
2007-08	67%	68%
2008-09	69%	69%
2009-10	71%	71%
2010-11	73%	73%

4.2 Resource zone leakage

Loss of water put into supply as a result of leakage contributes to demand. Therefore, monitoring and controlling leakage is integral to demand management. The Company's network of circa 900 km of mains is operated with close control of pressure and VWE reports one of the lowest levels of leakage in the industry at 67.8litre/property/day, which is approximately half of the industry average.

Even though a relatively low average zone pressure (AZP) exists naturally due to the flat low lying topography the percentage of properties subject to close control pressure reduction is currently at 93%. We base current leakage policies, which are included within the baseline demand forecast, around close control of pressures and district metering telemetry where practicable

Leakage is continuously monitored recording the minimum night flow (MNF) for each day. There have been no significant changes in leakage detection policies, activity or other relevant issues. There was a decrease in the number of bursts in the year but this is not considered to be indicative of a trend. Overall the condition of the network is considered stable. Distribution mains and communication pipe replacements during AMP5, assisted by supply pipe loss reductions due to metering is expected to hold total leakage stable and normally within the 5.1 Ml/d target. Total leakage in 2010-11 for the single company resource zone at 5.01 Ml/d is within the 5.10 Ml/d target and is 12% below the latest assessment of the sustainable economic level of leakage (SELL) from the WRc SELL study completed in March 2009. We continue to meet and exceed our regulatory targets for leakage performance and report the lowest leakage levels in the industry.

4.3 Water efficiency initiatives

Our long term vision is:

Providing a high quality, water efficient service

Our Water Efficiency Strategy (WES) set out how we will deliver a water efficient service.

The main objectives are:

- Limiting the average per capita consumption of domestic customers to not more than the government target of 130 l/h/d. This has already been achieved by supporting measured customers to save water, and increasing the number of measured customers,
- Universal metering; 90% of homes to have a meter by 2030.
- To advise / educate customers and consumers on a number of specific water efficiency initiatives
- Maintain leakage at or below the sustainable economic level.
- Reduction in our own use of water and promotion of water efficiency within the Company

4.3.1 Keeping our side of the partnership

- The Company will continue to monitor leakage and ensure it is maintained at a sustainable and cost efficient level.
- We will continue to maintain pressure management as a tool for minimising leakage.
- We will carry out water audits at our operational sites and set targets for water use.
- We will develop water awareness programmes for our employees and expect them to become water efficiency ambassadors for VWE.
- We will procure in a sustainable manner and take advantage of the Enhanced Capital Allowance (ECA) scheme which supports businesses investing in water saving equipment or water saving technologies.

4.3.2 Progress Report

Public Education - Household Customers

Our Water Efficiency Customer Services Technician (CST) has been in his role since October 2007. The role is specifically aimed at carrying out free water audits at both domestic and commercial premises and giving advice on ways to save water by using latest technology and industry best practice. Customers can request these audits or are selected based on their high consumption. During the audits we also carry out a full internal and external leak test.

Our charges leaflets for measured and unmeasured customers, which are sent out with bills, contain water efficiency advice. In addition to this we have a leaflet titled "Tips for reducing your water bill" which is freely available on request.

In July 2009 we launched our new website (www.veoliawater.co.uk/east) which contains improved extensive advice for customers on water efficiency in the home and garden. There is also advice for commercial customers. The sections includes links to websites which give further water efficiency advice and also offers savings on the purchase of water saving devices.

All of the leaflets mentioned above can be downloaded from our website, and a self-audit calculator can also be used enabling customers to estimate where savings can be made.

We have worked together with EAGA, an energy saving company, to offer all customers a free water and energy saving pack. The pack can potentially save each customer 21000 litres of water per year and more than 1 tonne of CO_2 over the products lifetime. This offer was advertised to customers in a leaflet with their water bill.

The company provides water efficiency advice to customers when answering telephone queries including information on potential water savings and unmeasured customers have the option of a free meter with the ability to revert to unmeasured charges during the first year.

Public Education - Business Customers

In addition to the advice now given by the Water Efficiency CST, advice on water efficiency is also provided during Water Supply (Water Fittings) Regulations 1999 inspections.

Extensive advice on water efficiency for businesses is also offered on the company's website.

Households - Cistern Devices

Customers are made aware of cistern devices such as "Hippos" and "Save-a-Flush" through:

- Information leaflets for measured and unmeasured customers which are sent out annually with customers' bills and a water efficiency leaflet.
- The company's website (www.veoliawater.co.uk/east). Hippo bags can be ordered from the company online.
- In the welcome pack issued to all customers transferring to measured tariff. Each pack includes a Hippo bag.
- During household and non-household water efficiency visits carried out by the Water Efficiency CST.

The Hippo bags and Save-a-Flush carry instructions on them to inform customers as to how they should be installed.

Further to this Hippo bags are sent to customers following either a written or telephone request. These requests are recorded on the company's Hi-Affinity billing system.

In addition, Hippo bags and save-a-flush devices were also issued and installed by the Water Efficiency CST. The total number of cistern devices (Hippo bags and save-a-flush) distributed was 1199.

The estimated number of cistern devices installed is consistent with the guidance in the reporting requirements.

The table below gives details of the distribution of cistern devices in the report year. The numbers in brackets are those presumed installed.

		Distribution Method (nr)				
Household or non household	Type (e.g. Hippo)	Bespoke Packs	Requested by customer	Welcome pack with meters	Distributed at events	Totals
Not specified	Hippo	0 (0)	308 (216)	846 (423)	0 (0)	1154 (639)
Not specified	Save-a-Flush	2767 (1937)	45 (32)	0	0 (0)	2812 (1969)
Totals		2767 (1937)	353 (248)	846 (423)	0 (0)	**3966 (2608)**

The assumed savings are based on the guidance given in the reporting requirements and have been calculated totally on the household figure, with non-household not being used. This is an assumption because we have not specified between household or non-household in our numbers.

The occupancy rate used is consistent with the properties and population figures in table 7 of the June Return.

The actual purchase cost of a "Hippo" was £0.74 and administration and distribution is estimated at £0.40 per unit. The total cost of each "Hippo" device is therefore estimated to be £1.14. The save-a-flush devices cost £0.73 each, with £0.40 administration making these £1.13 each.

Other initiatives

The water efficient appliances which are now a requirement under the Water Supply (Water Fittings) Regulations 1999 will have an effect on the water consumption of new properties but this will take many years to have any significant impact on overall demand.

The company has a close relationship with its large user customers. Should irregular consumption patterns be observed then the customer is contacted and offered advice, which is free of charge. If appropriate, leakage detection work will be carried out.

Households – Water butts

The company carries out a promotion in partnership with a third party which offers customers special deals on water butts. This is advertised via a leaflet in customer's bills and also on the company website. The leaflet also contains other water efficient products that can be purchased. A total of 235 water butts were purchased by our customers during the report period. Assumed savings from installation of water butts by customers are 0.001Ml/d. This is based on the guidance in the reporting requirements which suggest a 100% installation rate and 6.9 fills per water butt per year. The capacities of the water butts are 100l, 190l, 200l and 700l and these have been split accordingly. The cost entered for water butts is zero as the company incurred no costs for this activity.

Water Efficiency Visits to customers
On request the company provides customers with advice on water efficiency in the form of a visit. As part of the visit water saving devices may be fitted and issues such as leaking toilet cisterns rectified. As a result of these additional activities water savings totalling 0.15Ml/d have been achieved.

Water efficiency monitoring/research/trials 2009-10
The Water Efficiency CST monitors the impacts of the measures he has taken at the properties he visits and a proportion of the data he has collected has been used to calculate some of the savings in the table entries. An ongoing key objective for the water efficiency CST is to report on the effectiveness of different interventions and recommend which activities and initiatives to pursue in future.

Amendments/additions to the company's water efficiency strategy
The company anticipates that approximately 78% of customers will be metered by 2015. We also intend to continue our programme of replacing inferior copper communication pipes which are susceptible to leaking. This has played a part in holding total leakage down.

4.4 Measured and unmeasured population, pcc and occupancy rates

Population estimates are based on the latest known information from OPCS, ONS data and local council plans, which were updated in JR04 with the 2001 Census data. This resulted in a step increase in population first noted in June 2004 which has followed through into subsequent years.

When processing meter option requests, the Company records information on household occupancy levels for each property. This information is used in the demand forecasting model to estimate the charging mix between measured and unmeasured.

As part of the WRMP preparation the companies demand forecast has been updated by Experian. Also as part of the WRMP preparation 20,000 questionnaires were issued to customers with more than 3,000 returned. While it had been hoped that the questionnaire responses would improve the population estimates for measured and unmeasured customers the responses received produced contradictory results and therefore have not been used. The apportionment of population between unmeasured and measured properties has therefore been taken from the forecasts used in the WRMP.

When preparing the WRMP demand forecast Experian carried out further detailed analysis of the 2001 census data including responses for people living in "institutions" rather than households. This has been used as the basis for estimating the population in measured non households and explains the increase from the previous estimate.

4.5 Distribution and production developments

There were no distribution developments during the year.

4.6 Resource developments

Ardleigh Reservoir Extension
The Company's WRMP includes a scheme to increase the storage capacity and yield of Ardleigh Reservoir by constructing a second reservoir on an adjacent site following removal of circa 4 MT of sand/gravel. Mineral extraction has begun during 2010 with the augmented yield becoming available by 2025.

4.7 Changes in policy/planning forecasting assumptions

The assumed number of, new properties, changes in population and per capita and non household consumption have been reviewed and were found to be broadly in line with the forecast used in the WRMP.

4.8 Links between June Return and WRMP annual review

A single document has been produced to satisfy the requirements of both June return and WRMP annual review.

5 Climate Change

Climate change affects both the resources available for use and customer demand. Climate change impacts were assessed by applying global climate models (GCM's) to derive future rainfall patterns and thus to forecast changes in regional water levels and river flows. From these forecasts estimates of potential reductions in operational output are made.

The impact of climate change on supply was included directly as a deduction from DO. This is an additional safety margin relating to the loss of resources arising from an increased frequency of extreme events. The climate change assessments indicated a reduction of 1.02 M//d at average and 1.11 Ml/d at peak in available resource between 2007 and 2035 pro-rata with uncertainty over these estimates included in the Headroom assessment of this Plan.

Demand behaviour is also affected by climate change as longer drier summers for example are expected to increase personal hygiene use of water. We forecast an increase of between 1.83% in household consumption in 2020 in the Anglian Region and a 2.6% increase in industrial/commercial consumption associated with climate change in 2030. The impact of climate change on demand was included in the Headroom assessment. We have made no changes to these assumptions since the FWRMP.

6 Headroom and Options

6.1 Headroom

Headroom is the buffer that is maintained between supply (minus outage and allowing for imports and exports) and demand to cater for uncertainties in the overall supply-demand balance.

Target Headroom		2007	2012	2017	2022	2027	2032	2037
Company Average (Baseline)	%	3.0	3.3	3.7	4.0	4.3	4.6	5.0
	Ml/d	1.3	1.3	1.4	1.5	1.6	1.7	1.9
Company Average (Final Plan)	%	3.0	3.3	3.7	4.0	4.3	4.6	5.0
	Ml/d	1.3	1.3	1.4	1.5	1.7	1.8	1.9

We have made no changes to our headroom assessment since the Final Plan. Available headroom is the actual difference between Water Available For Use (WAFU) and demand at any given point in time. Where available headroom falls below target headroom a supply-demand balance deficit is introduced and as a result the level of service for water resources cannot be met. Our JR11 reported security of supply index was 100 in all scenarios indicating that actual headroom is greater than assessed target headroom.

6.2 Options

Our supply and demand forecasts showed that there is no supply-demand deficit driving substantial expenditure on resource development before 2034/35. However, despite the apparent satisfactory margin between supply and demand, the following policies were considered necessary and included in the FWRMP.

- Further acceleration of metering from 2010 onwards through encouraging further optants or compulsory metering to achieve metering of greater than 90% domestic properties by 2015 having regard to impact of vulnerable groups to ensure water remains affordable.
- Maintain leakage below the economic level of leakage (ELL).
- Continued customer water efficiency from awareness of environmental/sustainability issues and gradual increases in water re-use, other conservation measures and improved appliance efficiency through our new Water Efficiency Strategy.
- Retention of the abstraction license for VGBE so that at the appropriate time seek to increase supply by re-use of the sands/gravel source based on reverse osmosis treatment for drought contingency or demand step change response.
- For longer term consideration continue to progress with the promotion of increased yield of the Ely-Ouse-Essex transfer in conjunction with Abberton raising by Essex and Suffolk Water.
- In conjunction with Anglian Water, benefit from an increase in deployable output within existing licence limits by 2025 following the construction of additional surface storage at VARD.

Ofwat did not agree that accelerated metering was cost beneficial in our area and so this policy will not be progressed during the current AMP5 period. We will continue to maintain leakage levels below the ELL. Our water efficiency programme is in full swing and we are outperforming our water efficiency targets.

During 2010-11 VWE sold off the site at VGBE and therefore VWE no longer provides for the possible re-introduction of this source in future.

7 Conclusions

The Company's FWRMP forecast showed that there would be adequate headroom of supply over demand until beyond 2034-35. Although disappointed that the faster pace of metering households proposed by the Company was not allowed for within the Ofwat Final Determination, the slightly reduced headroom remains adequate to beyond 2034 - 35.

During the year strategic targets were met with the Security of Supply Index remained at 100, the published Levels of Service were achieved and leakage remained below the Ofwat target and below the Sustainable Economic Level.

The Company continued its promotion of water saving initiatives and its demand management policy.