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Secretary of State for Environment, Food & Rural Affairs
Water resources management plan consultation
Area 3D
Nobel House
17 Smith Square
London
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14 May 2018

Dear Secretary of State,

Severn Trent Water – draft water resources management plan 2019

Severn Trent Water published its draft water resources management plan 2019 on 19 February 2018 for consultation. This letter provides a summary of our assessment of the draft plan. It is our statutory consultation response, produced in accordance with our statutory duties and the Government's strategic policies and objectives for Ofwat. These views are without prejudice to any subsequent decisions that we may make at the next price review (PR19) in connection with the business plan that the company is scheduled to provide to us in September. Our assessment has considered:

- how adequately the draft plan follows the requirements of the Water resources planning guideline and Defra's guiding principles for water resources planning; and
- how the draft plan helps achieve our vision of ensuring trust and confidence in the sector through the delivery of our key themes for PR19 of great customer service, affordable bills, resilience in the round and innovation.

Long term water resources planning is a key part of company business activities. We expect companies to integrate the development of their water resources management plans into their business plans which they submit to Ofwat. We also expect them to adopt the 'twin track' approach to improve water supply resilience through both increased supply and reduced demand. We will continue to work closely with Government and the other regulators in both England and Wales to ensure that a long term secure and sustainable supply of water is achieved.

Severn Trent Water supplies water to a population of approximately eight million across central England and parts of Wales. Whilst the draft plan is produced based on the current company operating area we recognise that this will change for the final plan with the integration of part of Dee Valley Water's area. Its water resources are planned on the basis of 15 water resources zones, which include major cities including Birmingham, Coventry, Nottingham, Derby and Leicester. Its central geographic location means it has the potential to act as a trading hub between regions of surplus and deficit.

Severn Trent Water predicts that several of its water resource zones will be in deficit in the future, without additional action to reduce demand or provide additional supplies. This means there would be insufficient water to maintain supply to customers in some severe drought conditions. The scale of the challenge and complexity of the issues means that effective action is needed to meet the needs of customers and the environment.

The Severn Trent Water draft plan sets out a range of demand-side and supply-side options to meet future demands for water and ensure that customers receive a sustainable and resilient service. While many aspects of Severn Trent Water's plan are in line with our expectations and best practice, there are a number of important areas where the plan fails to provide convincing evidence that it delivers in the best interest of customers. In particular:

- There are significant differences in the data, methods and assumptions between the current and previous plan. These changes in approach means there are large differences between the plans which are difficult to reconcile and are not fully explained or justified. This is a concern where the changes result in larger deficits. We would expect the final plan to explain the reasons for the step change in approach and to assure us of its robustness.
- We have concerns around the process adopted for plan development. It is unclear how the final programme was selected, how scenarios influenced the decision, and whether the deliverability of the programme has been assessed. In the final plan we would expect to see a clear summary that concisely explains how and by whom the preferred portfolio was decided.
- Linked to the point above, the draft plan does not provide sufficient evidence that the proposed options are appropriate:
 - It is unclear if the metering programme (97% meter penetration by 2045) is deliverable and has taken into account the experiences of other companies.

- While we welcome the company ambition in leakage reduction in the short term (a reduction of over 15% by 2025) after 2025 the ambition reduces greatly (4% reduction planned over the remaining 20 years).
- The preferred programme up to 2030 appears to be reliant on relatively small in-house supply options. We would look for assurance that third party options were given equal consideration in the selection of the programme.
- Considering the potential trading role that Severn Trent Water can provide, we are disappointed the draft plan does not appear to fully take into account national or regional considerations. While we appreciate that these issues are not entirely an issue for Severn Trent Water alone, we encourage Severn Trent Water to actively participate and work to identify and develop intra and inter regional solutions.

Further details on these points are outlined in the annex to this letter alongside more detailed comments on different areas of the draft plan.

I look forward to seeing these points addressed in Severn Trent Water's statement of response and final plan.

Yours sincerely



David Black

Senior Director, PR19

Annex

In this annex we outline further details on the points raised in our main letter alongside more detailed comments on different areas of the draft plan. Our points reflect our assessment approach and cover:

- 1. Plan building blocks:** The overall approach to the development of the draft plan in line with the technical guidance and broader resilience issues.
- 2. Customer participation:** The type and quality of interaction with customers and the impact this has had on the draft plan formulation and proposals.
- 3. Demand forecast:** How the company has considered the impacts of population growth, leakage and water efficiency in its demand forecast.
- 4. Supply forecast:** How the company has considered climate change, abstraction licences changes and transfers in its supply forecast.
- 5. Forecast uncertainty:** The robustness of the draft plan in accommodating uncertainties in the demand and supply forecasts.
- 6. Supply-demand balance:** The robustness of the overall need for water, if any, and the scenario testing applied to this assessment.
- 7. Options:** The approach taken to identifying and screening options for both supply and demand, including identification of trades and third party options.
- 8. Decision making:** The decision making tools, preferred programme development process and accompanying assurance processes.
- 9. National and regional considerations:** The interaction and consistency with national studies and regional groups (where relevant).

1. Plan building blocks

Broadly, Severn Trent Water has used methods appropriate to the scale and complexity of the problem it needs to address and has applied a proportionate approach across its water resources zones. However, we have concerns around changes in approach from the previous plan in 2014, the integration of part of the Dee Valley Water area into the final plan and some wider aspects of the plan building blocks. In particular:

- There are significant differences in the data, methods and assumptions used for the draft plan when compared to the previous plan in 2014. As this is not fully articulated in the narrative it is hard to track the delivery of the previous plan and understand the extent of the changes. For example, baseline deployable output has reduced from the previous plan by 72 Ml/d (3%) which represents more than half of the forecast deficit by 2025.

- The draft plan suggests that the supply system will be resilient to a 1-in-200 year drought event. However, for the final plan there will be changes to the water resources zones to align with national boundaries. It will need to be demonstrated that this level can be met for the part of Dee Valley Water's area that will be transferred to Severn Trent Water.
- There is a lack of clarity in the draft plan on the consideration of non-drought resilience, such as freeze-thaw events, though it is noted that this is being developed for the company business plan. The final plan should set out the interaction between the draft plan and the company's wider proposals to manage system resilience and supply system efficiency.
- The planning period used is 25 years which is the minimum required in the guidance. Other water companies with large and complex challenges have selected a longer planning horizon or undertaken sensitivity analysis to better understand the long term impact on resilience. We would expect Severn Trent Water to clearly set out the reason for its chosen planning period and assure us that the final plan will be sufficiently robust beyond 2045.

2. Customer participation

Severn Trent Water has carried out a wide ranging approach to customer participation. However, there is insufficient evidence that customers have been engaged on the scale and timing of the proposed options, the potential impacts of the preferred programme on their bills, and risks to supply resilience. We would expect Severn Trent Water to ensure that customers are fully engaged and that the plan is accessible. In particular:

- The draft plan does not appear to be written with customers in mind. It is difficult to navigate and while the plan generally avoids technical terminology there is little use of diagrams or summary tables to aid the reader. It also does not include a short non-technical summary to help customer understanding of the plan.
- Customers have been consulted through the PR19 customer research programme using various different approaches. While the company indicates that it has conducted willingness to pay research, there is no evidence that the bill impact of the various options has been discussed with customers in a meaningful way.
- Severn Trent Water has sought to understand customer views on the impact of drought, however, greater clarity is needed in the final plan on the discussions with customers that took place. For example the willingness to pay research indicated that reducing the risk of standpipes was the least valued service improvement, which is then attributed to the complexity of

drought return periods for customers to understand. It is also unclear whether relative drought resilience levels with other companies was also discussed.

- Beyond the discussions on drought resilience it is not clear in the draft plan that wider resilience discussions have been held with customers. These should be included in the final plan.
- We welcome the fact that feedback from customer research has influenced the selection of options, in particular the leakage and metering programmes. It is unclear how the options were presented including if each element, such as leakage reduction were discussed independently, rather than as a package. Clarity is required on how customers were engaged on the cost impacts of the different options and their relative weightings.
- The draft plan only provides a relatively brief description of the role that Severn Trent Water's English and Welsh Water Forums (Customer Challenge Groups) have had in assuring the customer engagement undertaken in the development of the plan. Greater clarity should be provided in the final plan.

3. Demand forecast

Severn Trent Water has prepared a component based demand forecast according to the relevant guidance. We have concerns around the approach to population, non-household demand forecasts and per capita consumption (PCC) trends. Further specific comments:

- Severn Trent Water should provide clarity on how it has incorporated local planning authorities updates on housing growth projections into its plan. The draft plan suggests these projections were based on Office for National Statistics population forecasts from 2014 and it is not explained how local authority projections, which could be higher, were incorporated into this.
- Greater clarity needs to be provided on trends for baseline PCC (without interventions) and how these interact with baseline water efficiency measures. For example the draft plan suggests that in the baseline the company average PCC is forecast to decline by 7% across the planning period, however, insufficient evidence is provided on baseline water efficiency activities to support this.
- Severn Trent Water forecasts non-household demand to remain stable through the planning period. However, it appears the company has not engaged with large users or retailers to enhance and validate this forecast. This is a gap and engagement here will help support the forecasting of non-household demand.

- The 48 MI/d used for ‘water taken unbilled’ is significantly larger than the estimate used in the previous plan (30 MI/d). The draft plan does not provide sufficient explanation for this change and this should be clarified in the final plan.

4. Supply forecast

Severn Trent Water has calculated available supply in line with the planning guidance. It has used statistical approaches to help determine low frequency drought yields with higher levels of confidence, which is an example of good practice. Climate change and abstraction licence changes are significant drivers of the supply forecast. However, we have identified some areas for improvement:

- Abstraction licence changes reduce the supply forecast by 103 MI/d (6%) by 2030. The draft plan was constructed incorporating the available information contained in Water Industry National Environment Programme 2 and the final plan will incorporate the next data release (WINEP3). We expect the final plan to explain any changes between these two releases and how the programme has changed as a consequence.
- Treatment works process losses have nearly doubled since the previous plan (from 33 MI/d to 61 MI/d). The draft plan does not explain the reasons for this change and this should be clearly set out in the final plan.
- While the outage allowance (7% of demand) has reduced from the previous plan (by 2%), it is still higher than the industry average (6%). Given its impact on available supply we would expect the company to consider measures to reduce outage further given its forecast supply-demand deficits. It is unclear whether such outage improvement options have been considered.

5. Forecast uncertainty

Severn Trent Water has updated its methods to test its plan making use of a structured scenario and uncertainty testing model, which is a positive approach. However, there is a risk of double counting. We expect the final plan to ensure that there is no double counting and that the levels of target headroom are fully justified. In particular:

- It is not clear how target headroom and the uncertainty elements included in the decision making upgrade model (DMU) are related. The draft plan does not explain how the risk of double counting uncertainty has been mitigated and we expect to see clarity on this in the final plan.

- The target headroom allowance (13%) is larger than the industry average (8%). The components have also significantly changed from the previous plan, with climate change uncertainty increased and other components reduced. There is also an unusual trend for headroom, whereby it increases and then decreases across the planning period. All these points need to be explained and justified in the final plan.

6. Supply-demand balance

The supply-demand balance profile presented is in line with the assumptions of the individual supply and demand components and it appears to be consistent with the guidance. However, changes to individual components of supply and demand have been noted above, which need further clarification. The main planning factors driving the deficit are presented which include population growth, licence reductions and climate change.

7. Options

Reflecting the scale of the challenge, Severn Trent Water has considered a range of supply and demand options. However, further work is required around a number of options, including the potential for water trades. In addition, greater clarity needs to be provided in the final plan on the leakage and metering programmes and the process used to develop supply options. Further specific comments:

- The screening criteria used to develop the feasible list of options appear to be appropriate. However, it is not clear how consistently the criteria have been applied as only simple yes/no responses to each criterion are provided in the rejection log.
- Severn Trent Water has engaged in discussions with third parties to investigate supply options. However, we would want to see more evidence on the ways in which the third parties were engaged and to see third parties' options fairly appraised in the final plan. Further considerations:
 - A range of options from third parties were included on the unconstrained list, though these focus on supply-side options. The company should consider what it could do in order to promote further demand options.
 - Only two third party options made it to the feasible list (separate canal transfers to Draycote and Milford water treatment works) and neither were selected for the final plan. For options that did not make the feasible list Severn Trent Water should continue to actively engage

with the third parties and provide support to ensure viable options are not unnecessarily screened out.

- We expect Severn Trent Water to demonstrate equal vigour in gathering data on third party options as with in-house options and to ensure equal treatment and consideration of the former. It should be careful to ensure that its in-house options are not unfairly or unduly favoured and that the [principles for company bid assessment frameworks](#) are followed.
 - Water trading with other water companies does feature in Severn Trent Water's draft plan with the potential for significant future imports and exports. We welcome the fact that the company has held discussions and provided information on potential trades with seven water companies and that it expects to include water trading options in its final plan. Further considerations:
 - There is the potential for a large trade, to support companies in the south east, via the River Severn. This has been included in the United Utilities draft plan and would involve Severn Trent Water. We expect all the companies involved in this transfer option to continue to actively engage on progressing its assessment prior to publishing the final plans.
 - Linked to this greater clarity is required on the Severn Trent Water's approach to water trading and how it will be incorporated into the final plan. There are 14 exports and 9 imports identified in the unconstrained list. However, no trading options are currently included in its list of feasible options or in its preferred plan even though the planning tables include over 50 MI/d of additional exports and over 100 MI/d of additional imports.
 - We welcome the company's ambition for leakage reduction in the short term (a reduction of over 15% by 2025). However, after 2025 the ambition is greatly limited with only a further 4% reduction planned over the remaining 20 years. Further considerations:
 - Greater clarity is required on the significant variance in the leakage reduction from zone to zone and how the incorporation of some Dee Valley Water zones will impact on the total leakage reduction target.
 - Only a single preferred leakage strategy is proposed and there is no discussion of what alternative options and scale of reduction were considered.
 - The draft plan contains only limited details of how the company will achieve its leakage targets and greater clarity is required on this in the final plan.
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- Severn Trent Water proposes an ambitious enhanced metering programme, to increase meter penetration to 97% over 20 years to 2040. However, in the final plan greater clarity on the deliverability of this programme is required, alongside thorough testing of the impact of not being able to meet this target. Further considerations:
 - Compulsory metering can only be introduced if the company is classified as an area of serious water stress by the Environment Agency. This classification is being sought by Severn Trent Water.
 - The proposed 97% meter penetration target is out of step with the experiences of other companies who have found it difficult and expensive to achieve more than 90-95% meter penetration. This is due to problems at individual customers' premises and the high costs of some meter installations.
 - Given the uncertainties in delivery, the consequences of not meeting the ambitious metering target on the supply-demand balance should be tested and the impacts on other options presented.
- The long term target for average PCC at 121 l/h/d by 2045 is in line with the average for other companies nationally (122 l/h/d). This is based on the current programme of home and social housing water efficiency audits. Given the proposed metering levels and Severn Trent Water's needs, it may be appropriate for the company to consider an even more ambitious target for reducing PCC.
- We welcome the fact that Severn Trent Water propose to continue its current 27 catchment management schemes and to add a further eight schemes to address identified issues.
- A large number of supply options are presented and 23 are selected in the preferred plan. However, the draft plan does not provide sufficient evidence that the proposed supply-side options are appropriate. Further considerations:
 - Across the options we would welcome clarity on the assumptions made in the development of the draft plan. This should include greater detail on the potential risks in deliverability and uncertainty in timing of the options.
 - Only limited information is provided in the draft plan on the feasible and preferred schemes so it is not possible to assess the options in detail. Further clarity should be provided in the final plan on these schemes.
 - All of the supply options presented have build times of exactly 5 or 10 years with some having identical yields for different sized schemes, for example all 3 reservoir expansion schemes (Lower Shustoke, Stanford and Whitacre) in the Strategic grid zone have a yield of 2.5MI/d and a

delivery time of 5 years. The final plan should provide greater clarity on the process taken to develop these options and assess their delivery.

- Severn Trent Water has not provided evidence of how option costing was completed for the draft plan. The company should provide an explanation of its option costing process, including cost assumptions and their application to different scheme types and how methods will be consistently applied to PR19 business planning.

8. Decision making

Severn Trent Water has adopted a complex method of decision making which is consistent with its problem characterisation approach. However, we have concerns about the approach to decision making, the lack of transparency on how the preferred programme was selected and the assessment of deliverability of the programme. In particular:

- Severn Trent Water has adopted a complex method of decision making which has considered and compared 60 scenarios using its new DMU model. While complex methods may be appropriate for developing more robust programmes when required, there is a risk of reduced transparency, which needs to be considered. Further specific comments:
 - There is limited detail on how the results of the scenario testing was used to inform the draft plan and greater clarity is required on why the preferred plan was selected and what alternative plans were considered.
 - The steps taken to generate the scenarios and programmes are also unclear, as are the outputs of option selection.
 - No evidence was found that non-monetised metrics, for example resilience or customer preference, have been used in the decision making process of option selection and scenario analysis.
 - Severn Trent state in Appendix E that the draft plan is a least cost plan, however, in a number of cases the feasible options have lower costs than the preferred options. For example, in the North Staffordshire zone the feasible Tittesworth reservoir expansion and in the Strategic grid zone the River Severn raw water import both have lower costs than the preferred options chosen.
 - There is no summary in the draft plan that provides a concise and transparent overview of the decision making process. In the final plan, for clarity, we would expect to see a clear summary that concisely explains how and by whom the preferred portfolio was decided on.

- The preferred programme up to 2030 appears to be reliant on relatively small in-house options. For example this includes five reservoir options, three new water treatment works and six treatment works enhancements. Greater clarity is required on why these options are selected and evidence given that third party options have been treated and considered equally.
- Deliverability does not appear to have been considered in the decision making process. There is no clear evidence in the draft plan that either the final programme or its constituent options are deliverable. For example some supply options may be difficult to deliver to programme whilst also mitigating risks to customers, such as the multiple treatment works upgrades proposed for the same 5 year period or the untested East Leicestershire quarry scheme.
- There is evidence of independent assurance of the draft plan and of engagement with the Severn Trent Water executive team and the Board during the plan development and its approval.

9. National and regional considerations

The draft plan does not appear to fully take into account national or regional considerations and the potential for the company to act as a trading hub between regions of surplus and deficit. We expect the regional level discussions to be ongoing and for greater clarity on these considerations to be provided in the final plan. In particular:

- The work of the Water UK national project is referenced, but there is limited comparison of inputs and assumptions.
- There is also no reference made to the Water Resources East regional group that the company has participated in.
- There is no reference to discussions with Water Resources South East.