August 2015

Trust in water

Ofwat guidance on approach to the economic regulation of the Infrastructure Provider for the Thames Tideway Tunnel

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Contents

1 The purpose of this guidance

This guidance is not intended to provide guidance on all regulatory issues but rather sets out the approach we expect to take in making the determinations set out in paragraphs 1.1 and 1.2 below.

In all circumstances, we will regulate the infrastructure provider (the “IP”) in accordance with statute and the Project Licence. Where we are required to determine the issues referred to in paragraphs 1.1 and 1.2, we will have regard to this guidance.

Capitalised terms in this guidance are terms that are defined in the Project Licence.[1]

1.1 The construction phase

In relation to the **construction phase** (i.e. up until 31 March following the First Periodic Review), we will have regard to this guidance in making the following determinations:

- the weighted average cost of capital of the IP undertaking the Thames Tideway Tunnel Project (the “Project”);
- the level of any Additional Allowable Project Spend (i.e. the allowable spend above the Threshold Outturn); and
- the incentive mechanisms that will apply to either expenditure incurred in excess of the Threshold Outturn or as a result of delays beyond the planned system acceptance date;

1.2 The operational phase

In relation to the **operational phase** (i.e. from 1 April following the First Periodic Review), we will have regard to this guidance in determining the ongoing weighted average cost of capital for the IP.

[1] Terms that are used throughout the Project Licence are defined in Appendix 4 of the Project Licence. Terms that are only used in Appendix 1 and/or 2 of the Project Licence are defined in paragraph 1 of Appendix 1 or paragraph 1 of Appendix 2.

2 The legislative framework

The Flood and Water Management Act 2010 amended the Water Industry Act 1991 ("the Act") by inserting a new Part 2A, which, among other things, conferred powers on the Secretary of State to make regulations about the provision of infrastructure for the use of water undertakers or wastewater undertakers.

Pursuant to the above powers, the Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013 (the "SIP Regulations") were made on 27 June 2013, coming into force on 28 June 2013.

The SIP Regulations provide that for the purpose of regulating specified infrastructure projects particular provisions of the Act apply with or without modification, and some new provisions are introduced (referred to below as 'the modified Act').

In respect of the Project and following consultation, the Thames Tideway Tunnel Project Specification Notice (the "Specification Notice") and the Thames Tideway Tunnel Preparatory Work Notice (the "Preparatory Works Notice") were issued by the Secretary of State on 4 June 2014 pursuant to regulation 4(1) and regulation 5(3) of the SIP Regulations. The Specification Notice and the Preparatory Work Notice, may be found on the Ofwat website.

The specification of the Project required Thames Water Utilities Limited ("Thames Water"), as the incumbent sewerage undertaker, to put the Project out to tender. It did this by way of the publication of an Official Journal of the European Union Contract Notice in June 2014. On 13 July 2015 Thames Water selected Bazalgette Tunnel Limited as the preferred bidder, and on 13 August 2015 Ofwat designated Bazalgette Tunnel Limited as an infrastructure provider by way of a notice of designation pursuant to regulation 8(1) of the SIP Regulations (the "Designation Notice") subject only to the condition that Bazalgette Tunnel Limited is granted a Project Licence pursuant to section 17F of the modified Act on or before a date falling 12 months after the date of the designation. The Designation Notice may be found on the Ofwat website.

The Preparatory Work Notice requires Thames Water to carry out certain works and enables Thames Water to carry out certain other works. Some of these works are necessary to enable the IP to carry out its works and some of these works are interface works that are necessary at certain sites to connect Thames Water's wastewater network to the Project.

3 Ofwat's duties

In regulating the IP and the incumbent undertaker we will have regard to our statutory duties under section 2 of the modified Act. These include –

- protecting the interests of consumers wherever appropriate by promoting effective competition;
- securing that the functions of a licensed infrastructure provider and the functions of undertakers are properly carried out;
- securing that an efficient licensed infrastructure provider and an efficient undertaker, are able (in particular by securing reasonable returns on their capital) to finance the proper carrying out of those functions;
- performing our regulatory duties in the manner which we consider best calculated to promote economy and efficiency on the part of a licensed infrastructure provider and an undertaker in the carrying out of its functions;
- contributing to the achievement of sustainable development; and,
- in the case of undertakers, securing the long-term resilience of water supply and wastewater systems and securing that undertakers take steps to enable them, in the long term, to meet the need for water supplies and wastewater services.

4 Overview of the IP allowed revenue

4.1 IP allowed revenue during the construction phase

The basis on which the IP's allowed revenue will be determined during the construction phase (i.e. up until and including 31 March following the First Periodic Review, which follows the completion of construction and acceptance testing of the Project), is set out in the Project Licence. The Project Licence provides the IP with certainty around the application of the regulatory mechanics in the construction phase.

One of the most important elements that make up the IP's regulated charges in the construction phase will be the weighted average cost of capital.

The appointment of a competitively procured third party infrastructure provider, with its own shareholders, board and management, and the exposure of, inter alia, the weighted average cost of capital to a competitive bidding process, enables value for money to customers to be tested. Bidders in the IP procurement were required to bid the weighted average cost of capital for the Project (the "Bid WACC").

The Bid WACC will apply, subject to any adjustments in accordance with the Project Licence, up to and including 31 March 2030. The expectation is that on and from 1 April 2030 the Project will be in the operational phase and in such case the IP allowed revenue in relation to the period from that date will be determined as described in paragraph 6 of this guidance. However, if the Project is delayed such that Acceptance does not occur by 1 January 2029, then it will not be possible to carry out a First Periodic Review for implementation on 1 April 2030. Consequently, the First Periodic Review will be postponed and the Project will continue to be in the construction phase until and including 31 March following the First Periodic Review. In this case, the weighted average cost of capital on and from 1 April 2030 until and including 31 March following the First Periodic Review will be determined by Ofwat as described in paragraph 5.1(c) of this guidance.

4.2 IP allowed revenue during the operational phase

Again, one of the most important elements that will make up the IP allowed revenue during the operational phase (i.e. in the period on and from 1 April following the First Periodic Review) will be the weighted average cost of capital. From this period the weighted average cost of capital applicable to the IP will be determined by Ofwat at periodic reviews that coincide with the periodic reviews undertaken for the wholesale activities of the incumbent wastewater undertaker. Further information on our approach to periodic reviews is set out in paragraph 6.7 of this guidance.

4.3 Recovery of the IP allowed revenue

Under the terms of the Project Licence and a Revenue Agreement entered into between Thames Water and the IP, the IP charges Thames Water for its services and Thames Water, in turn, recovers such charges from customers that are served by Thames Water's wholesale wastewater activities. Section 142 of the modified Act gives the IP the right to charge the regulated incumbent wastewater undertaker.

4.4 Remuneration of the IP's costs in advance of the Post Construction Review

In the period until 1 April in the year following the Post Construction Review, our base assumption is that all Allowable Project Spend (which includes operating expenditure incurred up to the Threshold Outturn prior to 1 April following the Post Construction Review but excludes Excluded Project Spend) will be capitalised for regulatory purposes and remunerated in the RCV, irrespective of the accounting treatment.

5 The determination of the IP's cost of capital, Additional Allowable Project Spend and incentive mechanisms above the Threshold Outturn during construction

As the Project will spend a number of years in construction before becoming fully operational, we have agreed a number of regulatory adaptations that are designed to support the IP in financing the construction of the Project at an efficient cost to customers.

These adaptations are described more fully in the explanatory memorandum to the Project Licence, which can be accessed on Ofwat's website. The Project Licence can also be accessed on Ofwat's website. The explanatory memorandum should not be taken as being authoritative of the content of the Project Licence and, if there is a contradiction between the explanatory memorandum and the Project Licence, the Project Licence will take precedence.

- Many of the adaptations are formulaic and because the weighted average cost of capital in the period up to and including 31 March 2030 is based on the Bid WACC we are generally not required to determine the weighted average cost of capital for the IP during this phase. However, the limited circumstances in which there is scope for determinations to be made by us in relation to the construction phase that will impact the IP's revenue include where:
- there is a delay in achieving Acceptance beyond the Minor Delay Period, i.e. 18 months following the Planned System Acceptance Date of 28 February 2027; and/or
- the IP forecasts a Predicted Overrun will occur and so submits an application for Increased Allowed Revenue (IAR) to Ofwat under the terms of the Project Licence.
- In making our determination in these circumstances, we will have regard to, amongst other things:
- our statutory duties as set out in paragraph 3 of this guidance;
- market evidence on the appropriate weighted average cost of capital, including the prevailing equity market risk premium, yields on corporate debt and other financing costs;
- our policies in place at the time on setting the weighted average cost of capital in the industry more generally;
- the appropriate remuneration for the exposure of the IP to risk; and
- the Bid WACC.

5.1 Cost of capital in the event of a delay

In relation to delays up until 31 March 2030, the delay incentive mechanism works on the basis of a retrospective adjustment to the weighted average cost of capital (and consequently revenues) the IP is entitled to during the period of delay. There are different adjustment mechanics in relation to the Minor Delay Period (being the first 18 months of delay to achieving Acceptance beyond the Planned System Acceptance Date of 28 February 2027) and the Major Delay Period (which is the period following the Minor Delay Period until Acceptance or, if earlier, 31 March 2030). These adjustments (if any) are carried out at the Post Construction Review and explained in (a) and (b) below.

If Acceptance is delayed beyond 1 January 2029, then the IP allowed revenue for the period on and from 1 April 2030 would be calculated by reference to a weighted average cost of capital determined by Ofwat, as explained in (c) below, and would be applied on and from 1 April 2030 until 31 March following the First Periodic Review.

(a) Cost of capital adjustments for the Minor Delay Period

The mechanics for the weighted average cost of capital adjustment in respect of the Minor Delay Period are set down in paragraph 6.2 of Part B of Appendix 1 to the Project Licence. The adjustment for this period is calculated by reference to the difference between (i) the Bid WACC and (ii) the industry WACC (which is, in summary, the real post-tax cost of equity and pre-tax cost of debt weighted average cost of capital for the relevant service, as determined and published by Ofwat on an industry-wide basis), subject to a minimum adjustment of 1% below the Bid WACC.

(b) Cost of capital adjustments for the Major Delay Period

The mechanics for the weighted average cost of capital adjustment in respect of the Major Delay Period are set out in paragraph 6.3 of Part B of Appendix 1 to the Project Licence. The adjustment for this period is calculated by reference to the difference between (i) the Bid WACC and (ii) (unlike the Minor Delay Period where it is the industry WACC) a weighted average cost of capital that is determined by Ofwat and which is revisited within 12 months if Acceptance has not occurred by then.

Consistent with the terms of the Project Licence, we will set this weighted average cost of capital on a forward looking basis, and, in doing so, will not seek to claw-back returns earned by investors on costs incurred before the Major Delay Period (to the extent they form part of the RCV) as the regulatory incentive mechanisms that apply until the point that the Major Delay Period commences were set down ex-ante in the Project Licence.

In setting the weighted average cost of capital applicable in the Major Delay Period we will have regard to our statutory duties (as described in paragraph 3 of this guidance). Considerations that are relevant to balancing our duties in such circumstances include:

- what weighted average cost of capital is appropriate and sufficient to reward a prudently managed and efficient IP such that Acceptance can be achieved in an efficient and timely manner;
- the requirement to incentivise the IP to achieve Acceptance with minimum further delay; and
- the rate that should reasonably be expected by customers, investors and creditors of an efficient IP taking account of the circumstances that have led to the major delay and the behaviours of the IP in managing that delay.

In balancing our duties we will take into account the reasons for delay, including whether they are beyond the control or material influence of the IP and whether the IP has effectively managed and mitigated the impact of that delay.

All other things being equal, the Ofwat determined weighted average cost of capital applicable during the Major Delay Period is likely to be lower in circumstances where the major delay is within the control or influence of the IP or where the IP has not effectively managed or mitigated the impact of that delay than it would be in circumstances in which the delay is not within the control or influence of the IP and/or the IP has effectively managed and/or mitigated the impact of the delay.

Additional flexibility in the event of significant delay is afforded by the provisions in the Project Licence that provide that we may conduct an interim Post Construction Review if Acceptance has not occurred within three years of Handover (being the completion of construction of all of the IP’s regulated assets and the related sewerage assets to be constructed by Thames Water pursuant to the Preparatory Works Notice). This process would allow us, for example, to treat the Project effectively as if Acceptance had occurred notwithstanding that it has not. If an interim Post Construction Review is conducted, we anticipate adopting the same methodology that we would adopt at the actual Post Construction Review, which will follow once Acceptance has been achieved.

(c) Cost of capital during delays beyond the Major Delay Period

In the event that Acceptance is delayed beyond 1 January 2029, then the First Periodic Review cannot be completed in time for implementation from 1 April 2030 and will be postponed until 2034 for implementation from 1 April 2035. In this case, the following will apply in relation to the interim period depending on when Acceptance occurs:

- If Acceptance occurs between 1 January 2029 and 1 May 2029, a Post Construction Review will be conducted for implementation from 1 April 2030. At the Post Construction Review we will, among other things, determine the weighted average cost of capital that will apply on and from 1 April 2030 until and including 31 March following the First Periodic Review. In doing so, we will have regard to paragraph 6 of this guidance as if we were determining the weighted average cost of capital at a periodic review;
- If Acceptance occurs after 1 May 2029, a Post Construction Review cannot be conducted for implementation from 1 April 2030. In this case, we will before the start of each charging year falling within the period from 1 April 2030 until 31 March following the Post Construction Review determine the weighted average cost of capital that will apply for the next charging year. In determining this weighted average cost of capital (as explained in (b) above), we will, in balancing our duties, take into account the principles set out in this guidance and the reasons for delay, along with the expected period of the delay beyond 1 April 2030, including whether the reasons are beyond the control or material influence of the IP and whether the IP has effectively managed and mitigated the impact and length of the delay. At the Post Construction Review we will then determine the weighted average cost of capital that will apply on and from 1 April following the Post Construction Review until 31 March following the First Periodic Review and, in doing so, we will have regard to paragraph 6 of this guidance as if we were determining the weighted average cost of capital at a periodic review.

5.2 Cost of capital above the level of the Threshold Outturn

Where the IP forecasts that a Predicted Overrun may occur (that is, project expenditure is likely to exceed the level of the Threshold Outturn), the IP is obliged under the terms of the Liaison Agreement to put in place a Mitigation Plan. The IP will discuss this plan with stakeholders, identify the potential scope of any Predicted Overrun and describe the measures that will be taken to mitigate that Predicted Overrun. Where it is apparent that, notwithstanding the implementation of the

Mitigation Plan, a Predicted Overrun is expected to occur, the IP may request an increase in Allowed Revenue (an IAR) under the terms of the Project Licence.

In considering the IP's IAR application, Ofwat is required, subject to its statutory duties (as described in paragraph 3 of this guidance) and the terms of the Project Licence, to determine various aspects that affect the revenue that the IP will receive in relation to the additional expenditure above the Threshold Outturn i.e. the Additional Allowable Project Spend. This includes determining the appropriate revised Additional Allowable Project Spend (including a cap (if any) applicable thereto), the incentive mechanism that will apply to expenditure incurred in excess of the Threshold Outturn and the applicable weighted average cost of capital.

It is expected that an IAR application will be made in advance of the occurrence of the expenditure overrun and so the determination will be undertaken on a forward looking basis.

In determining the IAR application we will consider:

- on a forward looking basis, the predicted efficient costs that are necessary to complete the Project and thereby determine the efficient net Additional Allowable Project Spend that is necessary to complete the Project. In carrying out our assessment, we will take account of all relevant information that is available to us at the time, which may include, but will not necessarily be limited to, the Mitigation Plan, evidence provided in the IAR application, evidence we receive from the Independent Technical Assessor, representations we receive from third parties on the efficient costs, and the activities that the IP must undertake to achieve Acceptance;
- the appropriate incentive mechanism for costs above the level of the Threshold Outturn to incentivise the IP to complete the Project efficiently and economically. In determining the appropriate incentive mechanism, we will take into account the behaviours of the IP in managing cost escalation as evidenced to stakeholders through the Liaison Committee, the IP's regulatory reports and the behaviour that might be expected of an effectively managed and efficiently operated IP;
- the weighted average cost of capital that investors and creditors would reasonably expect of a prudently managed and efficient IP. In setting the weighted average cost of capital we will not have regard to the source of future equity and debt (i.e. whether it is from existing or new investors in the IP or provided through the Government Support Package ("GSP")). We will not seek to claw-back returns earned by investors on costs incurred below the Threshold Outturn (to the extent they form part of the RCV) as the regulatory

incentive mechanisms that apply until the level of the Threshold Outturn were set down ex-ante in the Project Licence.

6 Weighted Average Cost of Capital from the First Periodic Review

Unless the Project is delayed (as to which see paragraph 5.1 above), the First Periodic Review, at which we will be required to determine a weighted average cost of capital that will take the place of the Bid WACC in the calculation of the IP's revenue, will take place in 2029 to allow the IP's revised charges to feed into Thames Water's wholesale wastewater charges from 1 April 2030.

The precise approach to setting the IP's allowed revenue at the First Periodic Review (or future periodic reviews) will be influenced by any changes in policy or methodology by which the industry is economically regulated at the time the First Periodic Review or subsequent periodic reviews are carried out. As at previous price reviews, and in line with good regulatory practice, we expect to consult the industry on our proposed methodology for each future periodic review and to consult on a draft determination before finalising our determination. In respect of the IP, we expect to publish and consult on our proposed methodology for the First Periodic Review and subsequent periodic reviews following the approach we apply for price controls generally. However, this guidance is intended to provide an indication of our approach using our existing regulatory policies and having regard to our statutory duties.

6.1 Calculating the revenue requirement

In setting price limits we have to date followed a building block approach to determine a revenue forecast for each year for which price controls are set. At the 2014 periodic review we set separate price controls for retail and wholesale services and separate controls for wholesale water services and for wholesale wastewater services. The wholesale control covers the technical services that companies provide – such as collecting sewage through a network of pipes from a customer's property prior to its treatment and discharge into the environment. In the absence of a more general change in the way in which the industry is economically regulated, we would expect to retain this model for the IP both at the First Periodic Review and in future periodic reviews.

The IP's charges are comparable to a "wholesale wastewater charge" albeit for a specific service. The revenue requirement determines the amount an efficient infrastructure provider should receive to:

- finance day-to-day operating costs;

- finance capital investment (including depreciation);
- provide a return on regulatory capital value (“RCV”) and allow for amortisation; and
- meet tax liabilities as and when they arise.

At each periodic review, the IP will be required to provide in its business plan submitted to us, its view of the revenue requirement in accordance with the then methodology adopted for setting the price control and by reference to its obligations. We expect to form a view of the appropriate revenue allowances including appropriate financing costs so that an efficient infrastructure provider is able to finance the proper carrying out of its functions, including by securing reasonable returns on its capital.

6.2 Capital structure

In the absence of a fundamental change in policy or methodology by which the industry is economically regulated, our approach to remunerating both debt and equity investors is expected to be to set a real weighted average cost of capital which ensures that an efficient infrastructure provider is able to finance the proper carrying out of its functions. We cannot confirm the exact methodology we will adopt in future periodic reviews. However, we expect that the IP will propose in its future business plans a real weighted average cost of capital that balances both the requirement for the IP to be financeable and for bills to be affordable to customers.

The real weighted average cost of capital depends on assumptions on a capital structure. We do not, as a long held policy, prescribe or endorse specific capital structures. The IP’s capital structure during the construction and operational phases is decided and controlled by the IP and its investors, subject to the Project Licence requirements, including an obligation to maintain an investment grade credit rating and subject to mandated elements of the GSP.

In price controls undertaken since privatisation, we have set a single weighted average cost of capital for a notional financial structure that reflects our view of an efficient capital structure. The weighted average cost of capital has been expressed in real terms using the weighted average of the pre-tax cost of debt and post-tax cost of equity.

For the IP, we expect to follow a similar methodology to that which we adopt for determining the weighted average cost of capital for wholesale wastewater activities at the time. We may conclude, as demonstrated in our approach to remunerating risk in water only companies (“WOCs”) at earlier periodic reviews, that when the IP’s comparable risk profile is considered, a different notional capital structure is efficient for the IP. In this case, we would then apply this notional capital structure rather than that established for wholesale wastewater undertakers. In concluding an efficient notional capital structure for the IP we would, for example, have regard to:

- the capital structure as proposed by the IP in the procurement process;
- the IP's actual capital structure (and features thereof which result from mandated elements of the IP procurement process);
- the proposed capital structure in the IP's business plan;
- the IP's liquidity requirements;
- the notional capital structure adopted for normal wholesale activities; and
- the IP's exposure to risk compared to wholesale wastewater undertakers.

6.3 Cost of debt

We acknowledge that the IP must secure significant funding over a short period of time in order to finance delivery of the Project from a position of an opening RCV of zero.

The IP will be incentivised to raise debt efficiently and will need the flexibility to raise both long and short term debt through the construction phase. The IP may need to refinance existing debt during the operational phase and, whilst the Project Licence sets the minimum requirement for a credit rating that the IP must maintain, the IP may require a credit rating that is sufficiently within the investment grade category to enable it to access, and refinance, debt at an efficient cost. This is consistent with our expectation (and long held policy) in respect of existing water and sewerage companies ("WASCs") and WOCs. In this context we note that while our methodology and approach to price controls may change in the future, at PR14 we expected companies to provide evidence around the credit rating they targeted in delivering their business plan and to provide assurance that the business plan was financeable under both a notional and an actual financial structure.

We cannot confirm precisely our approach to setting the cost of debt at future periodic reviews. However, as evidenced by our track record in previous price determinations, we have always had regard to our primary duties, which include our duty to secure that efficient companies can finance their functions. For instance, at previous price determinations we have included for some smaller companies a cost of debt premium reflecting that they face different challenges from larger companies in accessing debt.

While we made no explicit allowance for embedded debt costs in recent price controls, our approach in assessing a fixed cost of debt assumption for the duration of the price control included consideration of the actual cost of debt (on average across the sector) in companies' balance sheets and a view of the appropriate cost of new debt (including debt raised to refinance existing debt). This took into account expected market developments, including the expected direction of future interest rate movements.

6.4 Cost of equity

At each periodic review we have used a range of evidence in assessing the appropriate cost of equity. For PR14 we used the Capital Asset Pricing Model ("CAPM") as our primary methodology in calculating the cost of equity and estimated a forward-looking weighted average cost of capital taking account of expected market developments (for each of the three components of the cost of equity: the risk-free rate, the equity market risk premium and the equity beta).

Whilst we cannot state precisely the mechanics we expect to use to set the cost of equity at the First Periodic Review and at subsequent periodic reviews, it is expected that the cost of equity determined for the IP will reflect the atypical level of risk inherent in the IP's operational role in relation to the Project compared to the more customary level of risk associated with wholesale wastewater undertakers. Our approach would take into account our primary duties and a balanced view of risk.

6.5 Risks in the operational phase

The weighted average cost of capital at the First Periodic Review and subsequent periodic reviews will be set at a level that reflects the risks inherent in delivering the day to day activities of the IP.

The risks associated with the IP after the First Periodic Review when considered together may result in lower cashflow volatility and thus lower variability of expected returns, influencing the associated asset beta in assessing the appropriate weighted average cost of capital for the IP.

To demonstrate how our approach to risk, utilising the factors set out in our publication "Setting price controls for 2015-20 – risk and reward guidance" issued in January 2014 ("Risk and Reward guidance"), may have resulted in a weighted average cost of capital at PR14 for the IP, we have set out a worked example in Appendix 1. In addition, to highlight how we may approach decisions on the weighted average cost of capital in the operational phase, we have considered some examples of the factors that could be anticipated to influence the risk profile and thus the weighted average cost of capital when it is set for the IP.

Factors where the IP may, on balance, face a higher level of risk relative to a wholesale wastewater company could include:

- dependence on the incumbent undertaker: All the IP's revenues will be received from the incumbent regulated wastewater wholesale undertaker, Thames Water, and Thames Water ultimately receives its revenues from the customers that are served by Thames Water's wholesale wastewater activities. As such, except in specific circumstances where the IP has the ability to commence direct charging of customers, the IP will bear a degree of credit risk associated with a single customer, Thames Water (or its relevant successor), that other wholesale wastewater undertakers do not face;
- re-financing risks: The long-term unchanging nature of the asset incentivises the IP to have in place stable long-term financing during the operational phase. The IP may, however, need to refinance debt arranged during construction and in operations as such debt matures. Given that a higher proportion of the IP's allowed revenue will likely be accounted for by financing costs when compared to other wholesale wastewater undertakers, equity investors could be exposed to greater risks on a change in the cost of its existing debt portfolio. This risk could provide both upside and downside to the IP. The IP, however, will need to manage effectively the maturity profile of its debt while meeting the requirement to maintain an investment grade credit rating; and
- expenditure intensity: The Project is the IP's only asset and it is likely there will be less on-going capital expenditure and operating expenditure associated with the Project once constructed than might otherwise be the case for a wastewater undertaker. The concentration of regulatory risk associated with the weighted average cost of capital, which is the primary component of the IP's revenue requirement, may make the allowed revenue process more focussed for the Project than would be the price control process for wholesale wastewater undertakers where there may be greater scope for trade-offs and outperformance on individual elements of the overall package.

Factors where the IP may, on balance, face a lower level of risk than a wholesale wastewater undertaker could include:

- operations: Operating costs are expected to be less volatile and more predictable than for a wholesale wastewater undertaker. Furthermore, as the IP will have an underlying cost structure very different from wholesale wastewater undertakers, it may be expected that the occurrence of variations in costs experienced by the IP would have a distinct impact on the IP compared to a wholesale wastewater undertaker. For instance, whilst the IP may have less scope to drive operating efficiencies (as operating expenditure is a relatively small component of allowed revenue) increases in operating expenditure are likely to have a lower consequential impact on equity returns;

- maintenance: Maintenance risks are expected to be lower than for a conventional wholesale wastewater undertaker whose infrastructure assets would be of varying age and condition. There are reduced risks associated with maintaining new assets, like those of the Project, rather than a mixture of old and new assets, and the IP will not have risks relating to the interface with the wider wastewater collection system – these remain with Thames Water. Furthermore, we consider significant major maintenance events will be predictable and capable of being planned in advance; and
- raising financing for new capital expenditure: With the design and operational characteristics of the Project, the IP is unlikely to need significant incremental finance to fund any major new capital expenditure in the short term.

6.6 Run Off following the First Periodic Review

The Project Licence includes a provision that allows the IP to include within its business plan a proposal for the amortisation ("run off") of the RCV at any time from 1 April following the First Periodic Review. The licence requires that the proposal includes the rate and the period over which such run off should occur and, to the extent we accept such a proposal, an allowance will be included in the IP's Allowed Revenue.

We expect that any proposal to run off the RCV should be made in a manner that is consistent with the methodology adopted for setting price controls at the time. In the context of PR14, this required companies to explain and justify whether, and how, RCV run off was used to address financeability and to demonstrate customer support for such charges.

The RCV run off rate assumed by the IP will have distributional effects in terms of which generation of customers contribute more or less to the costs of the asset. In this context it is expected that the IP's future business plans will take into account the views of customers in its proposals around the appropriate run off rate and the period over which such run off applies and in balancing this against any financeability constraints.

Our baseline assumption in relation to run off is that the assets will be depreciated on a straight line basis, informed by the asset's technical asset life. The information currently available to us in respect of the Project suggests an asset life of 120 years.

The IP may from time to time propose a longer or shorter notional asset life and an alternative to straight line run off but, in doing so, our expectation is that it must justify its approach and provide evidence to support any deviation from that baseline or from any previous IP run off proposal, including in terms of customer support, financeability and affordability.

6.7 Periodic reviews

The IP should take comfort from our track record in our approach to determining revenue allowances at previous price determinations for WASCs and WOCs. It should also take comfort from the fact that one of our statutory duties is to secure that efficient companies can finance their functions, and from the protections incorporated in the regulatory regime, including allowed revenue reopening mechanisms (which include, interim determinations of K ("IDoKs"), and substantial adverse effect ("SAE") and substantial favourable effect ("SFE") applications) which will become available to the IP and Ofwat following the Post Construction Review. In addition, the IP has the right to appeal our allowed revenue determinations to the Competition and Markets Authority.

At the First Periodic Review (and, if applicable, the Post Construction Review), the weighted average cost of capital will be set on a forward looking basis, analysing the risks and associated reasonable returns for the operation of the Project. The returns earned by investors prior to the First Periodic Review (or, if applicable, the Post Construction Review) at which the weighted average cost of capital is determined by us, will not be a factor in determining the weighted average cost of capital at the First Periodic Review (or, if applicable, the Post Construction Review) and/or subsequent periodic reviews.

The view expressed by external commentators, including investors and credit rating agencies, is that the regulatory system operated by us, which relies on clearly defined risk allocation principles, has been consistently applied and transparently disclosed over a number of years and has facilitated investment in the water and wastewater sector. As such investors should take comfort that our regulatory approach to the IP's allowed revenue will similarly be clearly defined, consistently applied and transparent in the operational phase.

6.8 Transfer of the IP Assets on revocation of the Project Licence

- The circumstances in which the Project Licence may be revoked are set out in condition O and in Appendix 2 paragraph 8 of the Project Licence. These provisions of the Project Licence are intended to ensure that there is a mechanism in place for transferring the Tunnel and related assets on revocation of the Project Licence and to supplement the statutory regime. In drafting these provisions we sought to provide the IP with similar protections to the statutory protections that apply to undertakers.
- Under condition O, Ofwat has the power to issue directions as to the transfer of assets when the Project Licence is revoked. Ofwat will only issue a direction as to transfer arrangements if no transfer scheme under Schedule 2 to the modified Act is agreed and the other requirements of paragraph 1.7 of condition O have been satisfied. In the case of other revocations, Ofwat may issue a direction under condition O. In doing so, we will ensure, so far as may be consistent with our duties under Part 1 of the modified Act, that the interests of the members and creditors of the IP are not unfairly prejudiced as respects the terms on which any new company or companies could accept a transfer of property, rights and liabilities from the IP. (This is to replicate the protection afforded undertakers by section 9(4) of the Act[2]).
- If Ofwat issues a direction, that direction may be subject to conditions including in respect of the valuation of the IP Regulated Assets. In issuing a direction subject to conditions on the valuation of the IP Regulated Assets, we may determine a value for the IP assets, which value may be nil or may be a market value; or alternatively we may determine a process or methodology for determining a value for the assets.

[2] Section 9(4) provides that in making a new appointment or in replacing a company as a relevant undertaker, the Secretary of State or Ofwat must ensure that the members and creditors of the existing appointee are not unfairly prejudiced as respects the terms on which the new appointee could accept transfers of property, rights and liabilities from the existing appointee.

7 Conclusion

The regulatory regime operated by us supports the construction of the Project and the IP delivery mechanism. We have reflected this in the Project Licence conditions that support and incentivise the IP to deliver the Project in an efficient and timely manner, while ensuring that customer's interests are protected and cost impacts minimised.

It is too early to give any indication of our detailed approach to allowed revenue setting at the First Periodic Review and thereafter. We recognise, however, the need to provide investors during this period with returns commensurate with the specific risks associated with the Project at that time, in fulfilment of our duty to secure that an efficient IP can finance the proper carrying out of its functions by securing a reasonable rate of return on capital whilst also protecting the interests of customers.

Ofwat
24 August 2015

Appendix1: Post construction cost of capital worked example and narrative

The weighted average cost of capital at the First Periodic Review (and, if applicable, the Post Construction Review) and subsequent IP periodic reviews will be set at a level that reflects the risks inherent in delivering the day to day activities of the IP during the relevant price control period.

The IP will take ownership of any business plan that it provides to us and this includes any evidence it provides as to the appropriate weighted average cost of capital that should apply at each price review. To provide an indication of how we may approach setting the IP's weighted average cost of capital at the First Periodic Review (and, if applicable, the Post Construction Review) and subsequent IP periodic reviews we have considered how the IP's weighted average cost of capital may have been assessed during the PR14 price control. We have done this using the parameters set out in our statement "Setting price controls for 2015-20 – risk and reward guidance" (Risk and Reward Guidance) published in January 2014, and set out in Figure 1 below.

For the avoidance of doubt, this is not the weighted average cost of capital that will be applied at any IP periodic review post Acceptance. This would only be established in light of circumstances that prevail at the time, taking account of the policies we adopt at each price review and taking account of our statutory duties. This includes the duty to secure that an efficient IP is able to finance its functions, as would be the case for a WASC, a WOC or another infrastructure provider (if any).

In PR14 the key components for setting the weighted average cost of capital were:

- gearing
- cost of equity
- cost of debt

Each component is discussed below in the context of how a hypothetical weighted average cost of capital for the IP for the price control period 2015-2020 would be set, and should be read alongside our Risk and Reward Guidance. Specific factors affecting the weighted average cost of capital for the IP are set out in paragraph 6.5 above.

Gearing

In July 2013, we published a report by PwC on the methodology for assessing the weighted average cost of capital for PR14. PwC advised retaining a notional capital structure for setting returns. It also reviewed appropriate notional capital structure assumptions. PwC concluded that a range of 60% to 70% would be an appropriate assumption for a conventionally financed water and wastewater undertaker or water only company.

For the purposes of our PR14 weighted average cost of capital assessment we considered that a point estimate of 62.5% was efficient for both WASCs and WOCs and balanced the benefits of lower-cost debt financing with considerations of financeability.

We have used 62.5% in the example that follows but this is purely indicative. For the IP a higher gearing level may ultimately be considered more efficient than the PR14 point estimate. However, this would be subject to evidence in respect of, for example, the rating agency metrics that would be applicable for the IP to maintain an investment grade credit rating post Acceptance pursuant to the Project Licence. As such in the absence of any fundamental change by the credit rating agencies of published credit metrics the same point estimate for gearing as applicable to WASCs and WOCs is considered in this hypothetical case to be efficient for the IP.

Cost of equity

Using the CAPM approach, the cost of equity comprises three components:

- the risk-free rate (RFR);
- the equity market risk premium (EMRP); and
- the equity beta.

The RFR and EMRP are considered to be the same for the IP as for the wider water sector at PR14 and as such no change is necessary to the assumptions published in our aforementioned January 2014 guidance note.

Beta

The equity beta is the only input in the CAPM approach to the cost of equity that is sector or company specific. Since the turn of the millennium, we have discerned asset beta values predominantly in the 0.2 to 0.3 range.

However, in determining the weighted average cost of capital for PR14, we consider that relying solely on historical data for a limited number of (publically quoted) water companies is not a perfect indicator of expected beta over the PR14 period. The data illustrates some variation over time. Because of this, we have also considered the betas of other UK regulated utilities (National Grid and SSE), which lie in the range of 0.27 to 0.46 on a two-year measure of beta.

We consider that the past five years have exposed the strength of water company performance during a period of financial crisis and economic recession, and illustrated the low systemic risk of the water sector.

Analysis supports the PR14 asset beta range of 0.20 to 0.30 for the water sector and for WASCs and WOCs we have used a point estimate of 0.30. We consider that the IP during operations would have, in comparison to a WASC or WOC, substantially lower cashflow volatility and thus lower variability of expected returns, influencing the associated asset beta in assessing the appropriate weighted average cost of capital for the IP. A number of the factors set out in paragraph 6.5 would be relevant in estimating the asset beta for the IP. It is expected that the IP will provide its evidence on these issues in its business plan and a full analysis of these factors would need to be undertaken closer to the First Periodic Review (or, if applicable, the Post Construction Review) and subsequent periodic reviews to assess whether the current asset beta range would encompass the asset beta for the IP. For the purposes of the worked example we assume that the asset beta for the IP would sit at the lower end of the industry range and we use as a point estimate an asset beta of 0.20.

Cost of debt

In PR14, our approach in assessing a fixed cost of debt assumption for the duration of the price control includes consideration of the actual cost of debt in companies' balance sheets and a view of the appropriate cost of new debt (including debt raised to refinance existing debt). Most water company financing is long term in nature and current company debt finance costs are impacted by the cost of debt at the point of issue, which in the IP's case will be predominantly over the duration of the Project's construction.

We considered that, based on PR14 business plan submissions, a ratio of 75%:25% embedded debt to new debt issued for the water sector during the PR14 period was appropriate. For the IP we recognise that, due to the nature of the asset, financing of future investment requirements may be significantly lower than that associated with a normal WASC or WOC. As such the level of embedded debt compared to new debt will be generally higher for the IP and will only change as embedded debt matures and is refinanced. In order to manage refinancing risk efficiently we consider that the IP will seek to spread its debt maturity over a significant period. As such we consider for the purpose of the worked example that an initial embedded debt: new debt ratio of 90%:10% is appropriate.

New debt issuance

For our Risk and Reward Guidance we analysed the yields on benchmark corporate debt, using iBoxx indices of A and BBB credit rated corporate debt maturities of ten or more years alongside evidence on the current yields on traded water company bonds. We calculated a current real cost of new debt ranging from 1.8% to 2.2%, with a mid-point of 2.0%, based on a long-term RPI inflation assumption of 2.8%. Forward expectations indicate interest rates will increase during the PR14 period; therefore, our range for the real new cost of debt over PR14 is 2.6% to 2.8% and we consider that this range would equally apply to the IP for the purposes of the hypothetical indication of how the IP's weighted average cost of capital may have been assessed during the PR14 price control. In our analysis, we have continued to consider iBoxx indices of A and BBB corporate debt maturities of 10+ years, but we note our cost of debt range is consistent with a credit rating in the BBB range.

While companies have some opportunity to take advantage of current low yields, we have allowed for future increases in corporate borrowing costs and have assumed for PR14 that new borrowing is issued throughout the 2015-20 period.

Embedded debt

For PR14, as noted above, we analysed the historical yields on benchmark corporate debt using iBoxx indices of A and BBB corporate debt maturities of 10+ years alongside evidence on the current yields on traded water company bonds. Water companies have historically outperformed credit benchmarks through a mixture of timing their debt issuances when debt markets were cheaper and by being able to issue debt at a discount to the blended A/BBB benchmark rate. We calculated in our Risk and Reward Guidance a range for the real cost of embedded debt of 2.6% to 2.8%, with water company issuance towards the lower end of this range.

As water companies bear the risk relating to the timing and cost of debt issuance, we do not consider it appropriate to focus solely on these water sector benchmarks. Therefore, we placed more emphasis in our Risk and Reward Guidance on the figures at the top end of the range which are drawn from broader corporate credit benchmarks consistent with water companies bearing performance risk. As a result we used a point estimate of 2.75%.

We recognise that the IP's embedded cost of debt may be higher (or lower) than the sector as a whole because of some of the factors set out in paragraph 6.5. We would expect that analysis would need to be undertaken at a time closer to the relevant IP periodic review but it is likely that such factors would be taken into account in arriving at the overall cost of debt as we have for the PR14 methodology.

Figure 1: Worked Example
Post construction cost of capital: worked indicative example

	PR14 RISK & REWARD	TIDEWAY INDICATIVE POINT ESTIMATE
TOTAL EQUITY MARKET RETURN	6.75%	6.75%
RISK FREE RATE	1.25%	1.25%
EQUITY MARKET RISK PREMIUM	5.50%	5.50%
ASSET BETA	0.300	0.200
EQUITY BETA	0.80	0.53
COST OF EQUITY (POST TAX)	5.65%	4.18%
COST OF NEW DEBT (REAL)	2.65%	2.65%
COST OF EMBEDDED DEBT (REAL)	2.65%	2.65%
RATIO: EMBEDDED DEBT/NEW DEBT	75.00%	90.00%
ALLOWANCE FOR DEBT ISSUANCE FEES	0.10%	0.10%
OVERALL COST OF DEBT (PRE-TAX)	2.75%	2.75%
GEARING (NET DEBT:RCV)	62.50%	62.50%
APPOINTEE (VANILLA) WACC	3.85%	3.29%

Notes:

The indicative examples are for guidance only and may not represent the actual cost of capital which would be set for the Infrastructure Provider following Acceptance.

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales. Our vision is to be a leading economic regulator, trusted and respected, challenging ourselves and others to build trust and confidence in water.

Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA

Phone: 0121 644 7500
Fax: 0121 644 7533
Website: www.ofwat.gov.uk
Email: mailbox@ofwat.gsi.gov.uk

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Any enquiries regarding this publication should be sent to us at mailbox@ofwat.gsi.gov.uk.