WPD Response to Ofgem's Consultation on Mid-Period Review

1 February 2018

Contents

1 Introduction and summary

1.1 This document sets out Western Power Distribution's (WPD) response to Ofgem's consultation of 1 December 2017 on the scope of a potential RIIO-ED1 Mid-Period Review (MPR) (the Consultation). The Consultation identified three options:

(a) Option 1: To implement an MPR as currently defined (Issues 1-7);

(b) Option 2: To implement an MPR with a "small" extension of scope (Issue 8 - WPD specific issue of rail electrification); or

(c) Option 3: To implement an MPR with a significant extension of scope.

1.2 In WPD's view, only Option 1 warrants consideration, and we agree with Ofgem that there is no good basis for any changes at this time under Option 1.

1.3 This is based on two core regulatory principles. Our response considers how these principles apply to the three options identified.

Principle 1: Regulatory predictability is essential

1.4 The quintessential, core regulatory principle of good regulation is predictability and thus certainty. For example, this point is emphasised by the Better Regulation Task Force in their Principles of Good Regulation, which state that the predictability of regulation is paramount to ensure stability and certainty for utilities and investors.[1]

1.5 In our view, this point alone strongly indicates that the appropriate course is to adopt Option 1, namely to implement an MPR as indicated to WPD when we agreed to ED1 as a fast-track operator (and as indicated to all other DNOs and the market more generally). As already set out in WPD's letter of 29 August 2017 and considered further in section 3, we have not identified any issues that should be considered as part of any MPR within the scope of Option 1.

1.6 It is worth re-iterating the two key reasons why Ofgem moved to an eight-year price control period from five yearly reviews, since this puts into context why any MPR should be of limited and pre-defined scope. First, this longer period "*…was expressly intended to provide greater certainty in a market where investment and*

[1] "Principles of Good Regulation", Better Regulation Task Force, Page 5. Available at: http://webarchive.nationalarchives.gov.uk/20100407173247/http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principlesleaflet.pdf

innovation are important."[2] A longer price control commits the regulator to a revenue allowance and a specific set of "rules" for longer.

1.7 Second, with five-year price controls, licensees will inevitably spend a considerable amount of management time and effort on submissions to Ofgem for these reviews, rather than focussing on delivering outcomes and engaging with stakeholders to deliver the networks that they want. The frequency of these distractions is reduced with an eight-year price control.

1.8 However, for the benefits of the eight-year price control to be realised, it needs to be credible, and not subject to re-opening outside the scope of that clearly stated at the time the price controls were accepted by the DNOs. While the MPR, used appropriately, should act to reduce uncertainty over the longer price control, re-opening the price control outside of the agreed framework creates significant regulatory risk.

1.9 In its final decision on the RIIO framework, Ofgem notes that there is concern "*…that the mid-period review may turn into a full blown review and therefore effectively reduce the price control from five to four years*".[3] Ofgem indicated that this concern was intended to be mitigated through the "*careful design of automatic adjustment mechanisms (e.g. inflation indexation), uncertainty mechanisms and a clear articulation of how the mid-period review of outputs will work and what will and will not be reviewed…[to] be set out as early as possible at each price control review*".[4]

1.10 The RIIO Handbook published by Ofgem states that:

"*Details of how the review will work as well as details of what will be included within scope will be signalled early in the price control review process. These aspects of the mid-period review will subsequently be specified in final proposals, and in licences. We will provide commitment that any mid-period review will not extend to other aspects of the control. …. The tightly defined scope of the review will be necessary to manage any risk of undermining the incentive benefits of the longer price control period*."[5]

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[2] CMA (2015), "Northern Powergrid (Northeast) Limited and Northern Powergrid (Yorkshire) plc v the Gas and Electricity Markets Authority: Final determination", 29th September 2015, paragraph 4.153, page 74.

[3] Ofgem (2010), "RIIO: A new way to regulate energy networks: Final decision", October 2010, paragraph 5.10, page 28. Available at: https://www.ofgem.gov.uk/ofgem-publications/51870/decision-docpdf

[4] Ofgem (2010), "RIIO: A new way to regulate energy networks: Final decision", October 2010, paragraph 5.11, page 28.

[5] Ofgem (2010), "Handbook for implementing the RIIO model", 4th October 2010, paragraph 11.14, page 93. Available at:

1.11 Similarly, Ofgem was clear that DNOs' engagement on the scope of business plans was intended to occur at the time of ED1, not at the time of any MPR. For example, as stated by Ofgem in its strategy decision for the RIIO-ED1 on outputs, incentives and innovation:[6]

"[The MPR] *is not intended to be an opportunity for either Ofgem or the DNOs to conduct a mini price review. As such we are keeping the scope of the mid-period review tight. The submission of business plans is the key opportunity for DNOs to propose the outputs they believe are required for RIIO-ED1*."

1.12 Such a position was adopted to avoid precisely the types of adverse regulatory outcome which Ofgem has identified in its Draft Impact Assessment, namely:

- negative impact on regulatory confidence, including future financing costs;
- adverse impact on investments; and
- reduced incentive to deliver efficiencies that are in consumers' interests.

1.13 Accordingly, both as a matter of general principle, and given Ofgem's statements at the start of the RIIO project and ED1, an MPR review of limited and pre-defined scope (Option 1) should be adopted.

Principle 2: It is essential to avoid regulatory risk

1.14 For reasons elaborated on in section 4, it is important to avoid any perception to investors of regulatory risk, namely that price controls are most likely to be re-opened or revised in the context of an MPR if operators' returns are higher than expected, rather than if they are lower. As discussed in section 5, for this reason Option 3 should be rejected.

1.15 Moreover, there is no systematic pattern of underspend across DNOs (for example, WPD has incurred greater costs on various core matters), and it is recognised by Ofgem that this is only a transitory phenomenon as expenditure across DNOs is expected to ramp up over the course of ED1. In addition, any embedded cost savings sustained over ED1 will be considered as part of the Ofgem benchmarking that will be used to set lower baseline price controls in ED2. This is precisely what the price control mechanism is intended to achieve.

https://www.ofgem.gov.uk/ofgem-publications/51871/riiohandbookpdf

6 Ofgem, "Strategy decision for the RIIO-ED1 electricity distribution price control Outputs, incentives and innovation", March 2013, https://www.ofgem.gov.uk/sites/default/files/docs/2013/02/riioed1decuncertaintymechanisms_0.pdf, para 5.19

1.16 This leads to a consideration of whether Option 2 raises analogous issues. It is correct that after WPD secured fast-track status the Government decided to reduce the scope of rail electrification, and the suggestion is that under Option 2 there would be an extension to the MPR to consider this issue in isolation.

1.17 Ofgem characterises this extension to the MPR under Option 2 as being "small", and its regulatory impact assessment asserts that this extension to consider rail electrification in isolation may not raise any material issues relating to regulatory risk as it is attributable to a change in government policy.

1.18 We disagree. This is because Option 2 would increase regulatory risk generally by re-opening the agreed price control and would do so in an asymmetrical manner if it considers the issue of rail electrification in isolation. The benefit to consumers of a reduced allowance for WPD's rail electrification works can be expected to be a mere 14 basis points on WPD's RORE during ED1, while the cost to consumers from increased regulatory uncertainty will have ramifications for the cost of capital in future price controls and across all energy networks. These adverse effects would arise for a number of reasons.

1.19 First, Ofgem introduced uncertainty mechanisms to limit the potential for greater uncertainty associated with eight-year price controls. These uncertainty mechanisms were designed to allow revenue allowances to adjust in response to defined changes in the DNOs' outputs. There was no such uncertainty mechanism agreed for WPD in relation to rail electrification.[7] (In these circumstances, as Ofgem recognises, it is clear that Option 2 is an extension to the pre-defined MPR.) Accordingly, WPD bore both the downside risk and possible upside of any change in policy. It should also be noted that the scope of rail electrification is not yet determined over ED1. For example, the Welsh Affairs Committee is currently conducting an inquiry into the appropriate scope of rail electrification in South Wales.[8] Thus rail electrification costs may increase again due to further changes in government policy. We have received advice from Transport for Wales that future rail projects are planned throughout Wales including the South Wales Metro scheme to upgrade the Core Valley Lines by 2023/24 which means that we can expect further diversionary works to take place during the ED1 period.

1.20 Second, we have incurred, and will incur, additional costs over RIIO due to government policy changes without being given any increase in allowances. Seven such issues are identified in the Consultation, and (in short) Ofgem's general view in the Consultation is that there is either uncertainty as to the likely implications or

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7 Charge Restriction Condition 3K allows a refund of allowed costs to consumers if a third party rather than WPD meets rail electrification costs, but crucially, not in any other circumstances.

8 For further detail see the Welsh Affairs Committee website: https://www.parliament.uk/business/committees/committees-a-z/commons-select/welsh-affairs-committee/inquiries/parliament-2017/future-welsh-rail-17-19/

that the costs/output changes are not “material”. In this regard, it should be noted in particular that WPD is planning to spend an additional £125 million compared to forecasts at ED1 to transition to become a distribution service operator (DSO).[9] This is a significantly larger sum than the currently envisaged gross saving of £77 million on rail electrification costs when comparing our latest forecast on rail electrification costs with the costs we originally included in our RIIO-ED1 business plan to support our requested totex. Ofgem takes the view that increased DSO costs do not involve material changes to outputs and is therefore out of scope for MPR purposes. Ofgem does not however go on to state that there ought to be a "small" extension to MPR scope to take account of this increased expenditure, which also flows from changes in government/regulatory policy. Moreover, Ofgem does not consider the combined impact on DNOs of the seven issues it outlines.

1.21 We are not seeking an MPR to address any such issue, but it seems unreasonable to consider rail electrification in isolation from these points under Option 2.

1.22 Third, there is already a cost sharing mechanism in place if we achieve lower total expenditures than those envisaged, such that the net effect will be smaller. If Option 2 were to even very slightly increase the perceived regulatory risk associated with price control reviews and thus the cost of equity across UK energy networks, this would entirely negate the money returned to consumers in ED1. This is because energy networks are capital intensive businesses so that small increases in the weighted average cost of capital materially increase the overall cost base of UK energy networks.

1.23 Fourth, it would seem particularly inappropriate to re-open one element of WPD’s price control review in isolation without regard to its position as a fast-track operator. In particular, at the time of ED1, Ofgem’s view was that the debt “tromboning” granted only to the slow-track DNOs was not a source of material disadvantage to WPD.[10] However, this has proved to be incorrect as interest rates have not increased as expected. As a result, WPD expects to face an additional unrecovered cost of circa £137m over RIIO-ED1 due to the lack of a trombone mechanism (see Annex 2, Table A2.1), and its RORE is currently expected to be on average 70 basis points lower over the duration of RIIO-ED1 (compared to an estimated 14 basis point benefit WPD would retain from the savings made on rail

[9] “DSO Transition Strategy December 2017 Update”, p. 15. Available at: https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx

[10] “RIIO-ED1: Draft determinations for the slow track electricity distribution companies Overview”, see para 5.16. Available at: https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf

electrification).[11] It would seem perverse to ignore this reality in the context of considering Option 2.

1.24 One of the key innovations of RIIO was the introduction of incentives to encourage operators to secure fast-track status by submitting high quality business plans, which deliver high quality outcomes for stakeholders. This also enhanced Ofgem's ability to challenge the business plans of slow-track operators. WPD secured such status in ED1, and WPD would expect (all other things being equal, including with regard to the specific outcomes of the Consultation) other network operators to seek to secure fast-track status in future price control reviews.

1.25 Accordingly, we consider that the implementation of Option 2 and considering rail electrification in isolation would:

(a) increase the cost of equity across all energy networks to the detriment of consumers; and

(b) reduce the incentives for operators to secure fast-track status if differences between slow and fast-track operators' settlements are disregarded in assessing "extension" MPRs.

Conclusions

1.26 In WPD's view, only Option 1 warrants consideration, and we agree with Ofgem that there is no good basis for any changes at this time under Option 1.

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[11] Annex 2, Table A2.1, page 41, "Difference in return: 10 year trailing average vs. Trombone, £ millions, 2012/13 prices", based on Lloyds Bank interest rate forecasts, calculates a difference between WPD's trailing 10 year average and its regulatory allowance of £137 million in 2012/13 prices over RIIO-ED1, with an impact on RORE of 0.7% (based on an arithmetic average, increasing to 0.8% when weighted average used). Other interest forecasts (for example, Moody's) give a different range of estimates of at least £100 million, with a 0.6% RORE impact, irrespective of whether an arithmetic or weighted average of returns in individual years is calculated.

2 Factual background

2.1 Before addressing the specific options identified by Ofgem, it is appropriate to make some comments on the underlying factual background to the MPR.

Regulatory context

2.2 In view of the longer price control period under RIIO, Ofgem introduced several uncertainty mechanisms to limit the potential for greater uncertainty that the extended time horizon of eight-year price controls might create. These uncertainty mechanisms were designed to allow revenue allowances to adjust in response to a change in DNOs' outputs. As a further measure, Ofgem included the potential for an MPR to allow a re-examination of the required outputs to be conducted at the mid-point of the price control period. Specifically, the MPR was designed to address "…*material changes to existing outputs that can be justified by clear changes to government policy, and new outputs that may be needed to meet the needs of consumers and other network users*".[12]

2.3 An MPR was always envisaged as being part of both fast and slow-track deals, but its scope was stated as being tightly delineated. In designing the RIIO-ED1 electricity distribution price control framework, Ofgem was clear that the MPR was not a mini-price review, or a reopening of previously made decisions.[13] It would not penalise companies for non-delivery against the agreed output regime; nor would it adjust prices if a company had delivered outputs at lower (or higher) cost than expected in the price control decision.[14]

2.4 As stated by Ofgem in its strategy decision for the RIIO-ED1 period on outputs, incentives and innovation:[15]

"[The MPR] *is not intended to be an opportunity for either Ofgem or the DNOs to conduct a mini price review. As such we are keeping the scope of the mid-period review tight. The submission of business plans is the key opportunity for DNOs to propose the outputs they believe are required for RIIO-ED1*."

[12] Ofgem (2017), "Consultation on a potential RIIO-ED1 Mid-Period Review", 1st December 2017, page 4, https://www.ofgem.gov.uk/system/files/docs/2017/11/ed_mpr_consultation.pdf.

[13] Ofgem, "Strategy decision for the RIIO-ED1 electricity distribution price control, Overview", March 2013, https://www.ofgem.gov.uk/sites/default/files/docs/2013/03/riioed1decoverview.pdf, paras 8.16 and 8.19.

[14] Ofgem, "Strategy decision for the RIIO-ED1 electricity distribution price control Outputs, incentives and innovation", March 2013, https://www.ofgem.gov.uk/sites/default/files/docs/2013/02/riioed1decuncertaintymechanisms_0.pdf , para 5.11.

[15] Ofgem, "Strategy decision for the RIIO-ED1 electricity distribution price control Outputs, incentives and innovation", March 2013, https://www.ofgem.gov.uk/sites/default/files/docs/2013/02/riioed1decuncertaintymechanisms_0.pdf , para 5.19

Performance of Western Power Distribution under RIIO-ED1

2.5 As stated in Ofgem's RIIO-ED1 Annual report 2016-17, all the DNOs are performing well against their RIIO-ED1 outputs and associated incentives:

"*After the second year, DNOs continue to perform strongly against five of the six output categories: reliability and availability, environment, customer service, social obligations and safety. There is scope for improvement for the connections outputs. Various financial incentives, as well as reputational incentives, such as public reporting on delivery, encourage strong output performance*."[16]

2.6 As a result, Ofgem estimates that "*the average customer will pay £83 per annum in 2018-19 to cover electricity distribution network costs, down 3.5% from £86 in 2017-18, whilst at the same time receiving an improved service*".[17]

2.7 Evidence from Ofgem indicates that WPD, is performing very well against all its outputs, both against its own targets, as well as compared with other DNOs. In particular, we are outperforming with regards to reliability, connections and customer satisfaction.

2.8 In a recent speech, Jonathan Brearley of Ofgem highlighted the innovative and balanced approach WPD takes to running its business and delivering a high quality, reliable service for customers:

"After we set the 2015-2023 electricity distribution price control, Western Power Distribution found that demand for grid connections was higher than expected, especially from solar generators. WPD could have requested further funding but instead they found an innovative solution, by offering flexible connection offers where generators agree not to use the system at times of highest demand."[18]

WPD and rail electrification

2.9 On 20th July 2017, in a written statement to Parliament, Transport Secretary Chris Grayling announced a scaling back on rail electrification.[19] This has resulted in a reduction of the forecast WPD spend in the ED1 period on diversionary works associated with rail diversion projects from £96.5 million to £19.5 million.[20] However, since then we have received advice from Transport for Wales that future rail projects are planned throughout Wales. The South Wales Metro scheme will upgrade the Core Valley Lines, to become the foundation of a future multi-modal,

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16 Ofgem RIIO-ED1 Annual Report, 19 December 2017, page i.

17 Ofgem RIIO-ED1 Annual Report, 19 December 2017, page ii.

18 Jonathan Brearley, senior partner for networks, Ofgem, keynote speech to the Low Carbon Networks and Innovation Conference, 6 December 2017.

19 See https://www.gov.uk/government/speeches/rail-update-bi-mode-train-technology

20 See Annex 1, page 40.

integrated transport system. This will include dual tracking, substations, depot, alterations to stations and structures, and construction of overhead line electrification (OLE) masts and foundations. We have been advised that the planned alteration of the Core Valley Lines includes infrastructure improvements including additional track works to increase capacity, new stations, station improvements, new signalling and electrification works. Transport for Wales expects to work closely with WPD in relation to electricity assets that may be affected.

2.10 We do not currently have an estimate on the potential costs of these new works given the limited information we have received to date on these schemes. However, the estimated completion date is 2023/24 which means that we can expect diversionary works will be required to take place during the ED1 period.

2.11 In addition to these new schemes work is still underway to electrify the Midland Mainline section from Bedford to Corby.

2.12 On Friday 1st December 2017, Ofgem published its Consultation on a potential RIIO-ED1 MPR. In the Consultation, Ofgem identifies a number of external factors that potentially affect outputs (Issues 1-7), as well as a number of issues that would fall outside the scope of an MPR as defined in the Ofgem strategy decision. Included in the issues that fall outside of the scope of an MPR is the reduction in scope of rail electrification schemes (Issue 8), the impact of which is discussed in section 4.

3 Option 1 (Issues 1-7)

Summary

The option to conduct an MPR on pre-agreed issues is a core part of the RIIO framework, which provides a degree of flexibility in a way that does not increase regulatory risk. In this way, Ofgem seeks to promote stability and predictability in the regulatory framework, which is important for investors and crucial to ensure that consumers receive a high-quality service at reasonable prices.

Any MPR must, therefore, be restricted to the scope as defined under the RIIO-ED1 price control. WPD does not consider that there is a good basis for any MPR changes under Option 1.

3.1 The eight-year price control was envisaged in order to allow companies to take longer-term perspectives and reduce the regulatory burden in order to improve outcomes for consumers. However, the longer time horizon naturally creates the potential for increased uncertainty. The price control is based on forecasts of output requirements, demand, the cost of delivery and financing costs. As a result, Ofgem observed that "*The ex-ante nature of the regime will mean there will always be uncertainty about the reasonableness of the forecasts*", particularly whether the outputs agreed during the price control turn out to be "*insufficient or inappropriate*".[21]

3.2 To address the uncertainty associated with the longer time horizon, Ofgem specified a series of uncertainty mechanisms and "*included provision for a mid-period review of output requirements to enable any fundamental change in what is expected of network companies*".[22]

3.3 Since Option 1 <u>only</u> covers issues within the scope of the MPR as currently defined in the ED1 price control, consideration of these issues reinforces stability in the regulatory process. The Consultation identifies two questions related to Option 1:

- Question 1: "*Do you agree with the initial view we set out in this section against each individual issue?*"
- Question 2: "*Have you identified any other issues not covered in this section that should be considered within the scope of the ED-MPR process?*"

3.4 We respond to each of these in turn.

[21] Ofgem (2010), "Handbook for implementing the RIIO model", 4th October 2010, paragraph 11.1, page 89. Available at: https://www.ofgem.gov.uk/ofgem-publications/51871/riiohandbookpdf

[22] Ofgem (2010), "RIIO: A new way to regulate energy networks: Final decision", October 2010, paragraph 5.9, page 27. Available at: https://www.ofgem.gov.uk/ofgem-publications/51870/decision-docpdf

Issues covered by the Consultation

3.5 We agree that only external factors that have impacted the required outputs should be considered to fall within the scope of an MPR. Restricting an MPR to the pre-agreed scope defined under the price control is fundamental to ensure the predictability and stability of the RIIO-ED1 framework.

3.6 There are a number of areas where forecast expenditure differs from that which was predicted at the time of submitting the fast track business plan. Some of these areas are underspends and some are currently overspends. For example, in WPD's case, higher than forecast volumes of large size connections requiring network reinforcement (especially in East Midlands where there is significant growth along the M1 corridor) has resulted in an overspend. The redeployment of resources to deal with large connections has resulted in lower than forecast expenditure on general reinforcement. WPD has also faced higher than expected costs due to addressing the increased number of "wayleave" payment claims paid to householders for having electricity distribution poles in gardens.[23] Further examples of areas of underspend and overspend are illustrated in Table 1 below.

Table 1: Examples of current under and overspends

Overspend	Underspend
Connections – higher than forecast volumes of large size connections requiring network reinforcement (especially in East Midlands where there is significant growth along the M1 corridor).	General Reinforcement – lower than forecast expenditure caused by a redeployment of resources to deal with the higher volumes of connections related reinforcement.
Faults – higher than forecast costs associated with an operational focus on restoring customers quickly	Operational IT and telecommunications costs - lower than forecast costs due to rephasing of network control system server replacements .
Quality of Supply - higher than forecast expenditure on additional remotely controlled devices that will improve network performance.	Flood mitigation expenditure - is lower than forecast due to lower cost solutions being adopted.
Overhead line clearance - higher than forecast expenditure to deal with low clearance issues across roads.	

23 The higher than expected volume of wayleave payment claims has been driven by an increased involvement of land agents.

Tree clearance programme - higher contractor prices have led to increased costs.	
Diversions (excluding rail electrification) – higher than forecast costs caused by higher volumes of diversions.	

3.7 In addition to the changes to the plan outlined above, which WPD is already experiencing, we are also aware of a number of new and emerging risks which we consider could have an impact on our workload and hence costs. Ofcom's ongoing work on the radio spectrum review could result in additional works for WPD to change communication devices on substations and remotely controlled equipment. Brexit discussions have already resulted in a rise in input costs for the UK, and new compensation activity from predatory land agents are real risks we are likely to face up to the end of RIIO-ED1.

3.8 WPD's Business Plan recognised that changes during the price control would have to be accommodated and investment decisions would be reprioritised where necessary throughout the price control. WPD is committed to managing its overall work programme so as to respond to new challenges. Underspend on one area can thus be reallocated to other areas. In this way, WPD manages new and existing risks in line with its Business Plan commitments.

3.9 In the Consultation, Ofgem identifies seven external factors potentially affecting the operation of the RIIO-ED1 price control:

(a) Electric vehicles (EV): Ofgem's view is that there is currently insufficient clarity around the change in outputs associated with an uptake in EV to justify an MPR. WPD considers that there has been, and will continue to be, a growing switch to EV reflecting improvements in EV technologies, vehicle manufacturers switching away from diesel engines (reflecting the cost of supporting multiple engine technologies and the PR issues associated with diesel vehicle emissions), and a desire by consumers and Government to switch away from fossil fuels (particularly diesel). WPD agrees that, in isolation, this does not warrant an MPR, notwithstanding that this will increase costs.

(b) The EU Clean Energy Package: Ofgem indicates that there is currently insufficient clarity around any changes in outputs to accommodate the EU Clean Energy Package to justify an MPR. WPD agrees with this, but (Brexit notwithstanding) notes that it is likely that additional costs will be incurred during ED1 to address the issues associated with clean energy.

(c) Flood protection: Ofgem recognises that the change to the relevant engineering standard may require DNOs to revise their current flood protection programmes. Changes to the standard are likely to result in additional costs. Ofgem's view, however, is that there has not been a material change in outputs. WPD agrees with this view.

(d) The EU Network and Information Systems Directive: Ofgem considers that the EU Network and Information Systems Directive is unlikely to require material changes to outputs to address security threats. WPD agrees, but notes that the nature and severity of cyber security issues related to energy infrastructure is increasing.

(e) Black Start: Ofgem acknowledges that there is significant on-going work across the industry in reviewing arrangements around Black Start so that electricity systems can quickly recover following shut down. However, whilst Ofgem accepts that this could require increased resilience in some areas, it would not result in a change in outputs. WPD agrees that this does not justify an MPR on materiality grounds.

(f) Transitioning costs: Ofgem indicates that there are changes in the role of DNOs as they transition to becoming Distribution System Operators (DSO). However, its view is that this does not require material changes to outputs for ED1. However, it should be noted that this is a key area where WPD forecasts that it will incur significant additional costs that were not predicted at the time of ED1. WPD has recently published its DSO transition strategy in response to industry developments. This is a costed £125 million plan that has just been reissued following extensive consultation.[24] This expenditure is additional to that forecast by WPD in ED1 and has been endorsed by stakeholders. However, given the previously agreed defined scope of the MPR, WPD is not seeking an MPR for these costs.

(g) Smart meters: Ofgem indicates that DNOs' efficient use of funding relating to the roll-out of smart meters is a matter that falls for consideration as part of the on-going price control and is outside the scope of any MPR. WPD agrees, but notes that the treatment of smart meter costs will need to be reviewed if the roll-out is delayed.

3.10 As a broader observation, Ofgem does not consider the combined materiality of all of the items identified above – i.e. whether, in aggregate, a "small" extension to MPR would be appropriate to address the increased total expenditures that DNOs will incur due to those changes in government policy/regulation. We are not seeking such an extension, including specifically addressing the significant additional costs associated with transitioning from being a DNO to becoming a DSO. This is partly due to the overall materiality of these costs relative to WPD's total

[24] "DSO Transition Strategy December 2017 Update", p. 15. Available at: https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx

planned expenditures over ED1 when netted off against cost saving opportunities (such as rail electrification), and our view that our business plan should be, and is, resilient to some unexpected increases in costs that can be balanced across other costs being lower than expected. More importantly, it is driven by the fundamental principle that the scope of any MPR was agreed to be tightly defined at the outset of ED1 and the need for regulatory certainty dictates that this should not be re-opened mid-way through the price control period.

3.11 However, as discussed in section 4, in our view it would be wholly inappropriate to disregard these additional costs if Ofgem were to commence an MPR to consider whether regulatory allowances should be reduced to take account of a change in the scope of rail electrification (which is referred to by Ofgem as Option 2).

3.12 If Ofgem intends to pursue an MPR in order to clawback underspends in individual areas following changes in government policy (as envisaged under Option 2 and with which we strongly disagree), it must also allow for increases in the allowance where overspends have occurred due to regulatory changes. In particular, it would seem perverse to disregard the larger cost to WPD of £125 million associated with the transition to becoming a DSO in assessing whether a maximum gross saving of £77 million on rail electrification should be returned to consumers, in whole or in part.[25] In addition, if Ofgem wishes to re-open allowances in the absence of output changes in the context of an MPR, it must also consider the differences in treatment between slow and fast-track operators, including specifically the treatment of debt costs. These points are discussed further in section 4.

Further issues not covered by the Consultation

3.13 We have identified no further issues to be covered by an MPR.

[25] "DSO Transition Strategy December 2017 Update", p. 15. Available at: https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx

4 Option 2 (Issue 8)

Summary

It is important to avoid any perception to investors of regulatory risk, namely that price controls are most likely to be re-opened or revised in the context of an MPR if operators' returns are higher than expected, rather than if they are lower. Such perceptions can be expected to increase the cost of equity, and thus prices to consumers across UK energy networks. This is a real issue with Option 2 since (as accepted by Ofgem) this is beyond the scope of the MPR envisaged under RIIO and when WPD agreed its price control arrangements under ED1.

Expanding the scope of the MPR solely to include rail electrification amounts to "cherry picking". WPD's fast track settlement had implications for its regulatory deal, which was different from that of slow-track companies in several respects (including on the specific issue of rail electrification costs). In particular, since the cost of the debt indexation scheme had not been fully worked out, WPD did not benefit from trombone debt indexation. The additional unrecovered cost to WPD of the lack of a trombone mechanism is expected to equate to circa £137 million, more than double the net amount of £53.9 million that would be recouped by Ofgem under Option 2.

4.1 Option 2 raises the question of extending the MPR beyond the scope agreed under ED1 to reduce the revenue allowance and recoup (all or part of) the underspend by WPD resulting from the reduction in the scale of the rail electrification programme. This is not the result of any uncertainty mechanism agreed with WPD in ED1, but to highlight in isolation one specific area of underspend.

4.2 In 2016, Ofgem decided to launch an MPR for the RIIO-T1 price control but not for the RIIO-GD1 price control. During the consultation process, some stakeholders raised the issue of widening the scope of an MPR to consider value for money for consumers and review the RIIO outputs and funding requirements in light of the strong financial performance of the regulated entities.

4.3 One element of the proposed broadening advocated by certain stakeholders in both of these MPRs involved reducing the revenue allowance for projects that were no longer required. The decision document on the MPR for T1 and GD1 described this possible change as follows:

"*.. additional projects/schemes could be reclassified as outputs to allow a greater scope to take action (e.g. clawing back associated funding) if these schemes/projects were no longer needed or not delivered*."[26]

[26] Ofgem, "Decision on a mid-period review for RIIO-T1 and GD1", 12 May 2016, paragraph 1.6, page 54. Available at: https://www.ofgem.gov.uk/system/files/docs/2016/05/mpr_decision_document_final.pdf

4.4 Ofgem rejected this possibility. Ofgem determined that any broadening of the scope of an MPR for RIIO-T1 and GD1 beyond that specified in the price control would create more significant costs than any potential benefits for consumers:

"*We are therefore conscious of the need to balance the reduction of costs to consumers in the short term with the introduction of regulatory risk and uncertainty, which could ultimately lead to higher costs for consumers. Based on this, we consider that the benefits of maintaining regulatory confidence and ensuring companies focus on the long term outweigh the potential short term benefits of widening the scope of MPR. For these reasons we think it is appropriate that the MPR remains focused on changes to output requirements as we have proposed.*"[27]

4.5 We believe the same rationale applies in this instance and therefore see no grounds for Ofgem to extend the scope of the MPR as set out in Option 2. Specifically, we submit that Option 2 both increases regulatory risk generally by re-opening the agreed price control and does so asymmetrically by considering the issue of rail electrification in isolation. This is because:

a) Extending the scope of the MPR to allow a reduction in the revenue allowance for rail electrification would create regulatory risk and harm consumers. While consumers would benefit in the short term from a reduced revenue allowance, the creation of such regulatory risk would increase the risk premium required by investors and thus the cost of equity, and consequently raise the cost to consumers in future price control periods across all UK energy networks.

b) If Ofgem does decide to expand the scope of the MPR (notwithstanding the above), rail electrification cannot be considered in isolation from WPD's overall regulatory deal. WPD's fast-track settlement had implications for its regulatory deal, which was different from that of slow-track companies in several understandable respects. In particular, since the cost of the debt indexation scheme had not been fully worked out, WPD did not benefit from trombone debt indexation.[28]

4.6 We expand on these concerns below.

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[27] Ofgem, "Decision on a mid-period review for RIIO-T1 and GD1", 12 May 2016, paragraph 1.21, page 58. Available at: https://www.ofgem.gov.uk/system/files/docs/2016/05/mpr_decision_document_final.pdf

[28] Ofgem proposed Tromboning of the cost of debt for the draft slow track settlements on 30 July 2014, after WPD's fast track settlement had been made. Ofgem made it clear that tromboning would not apply to WPD – see para 5.16. Available at: https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf

Regulatory risk and the cost to consumers

4.7 The shift to an eight-year price control period "*…was expressly intended to provide greater certainty in a market where investment and innovation are important*."[29] It also ensures that energy networks spend more time delivering to their business plans and engaging with stakeholders, rather than focussing on price control submissions to Ofgem. As established in the Principles of Good Regulation, the predictability of regulation is paramount to ensure stability and certainty for regulated entities and investors.[30]

4.8 While the MPR, used appropriately (as envisaged under Option 1), should act to reduce uncertainty over the longer price control (as set out above), re-opening the price control outside of the agreed framework creates significant regulatory risk. In its final decision on the RIIO framework, Ofgem noted that there is concern "*…that the mid-period review may turn into a full blown review and therefore effectively reduce the price control from five to four years*".[31] Accordingly, Ofgem indicated that this concern would be addressed by the "*careful design of automatic adjustment mechanisms (e.g. inflation indexation), uncertainty mechanisms and a clear articulation of how the mid-period review of outputs will work and what will and will not be reviewed…[to] be set out as early as possible at each price control review*".[32]

4.9 The RIIO Handbook published by Ofgem states that:

> "*Details of how the review will work as well as details of what will be included within scope will be signalled early in the price control review process. These aspects of the mid-period review will subsequently be specified in final proposals, and in licences. We will provide commitment that any mid-period review will not extend to other aspects of the control. …. The tightly defined scope of the review will be necessary to manage any risk of undermining the incentive benefits of the longer price control period*."[33]

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[29] CMA (2015), "Northern Powergrid (Northeast) Limited and Northern Powergrid (Yorkshire) plc v the Gas and Electricity Markets Authority: Final determination", 29 September 2015, paragraph 4.153, page 74.

[30] "Principles of Good Regulation", Better Regulation Task Force, Page 5. Available at: http://webarchive.nationalarchives.gov.uk/20100407173247/http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principlesleaflet.pdf

[31] Ofgem (2010), "RIIO: A new way to regulate energy networks: Final decision", October 2010, paragraph 5.10, page 28. Available at: https://www.ofgem.gov.uk/ofgem-publications/51870/decision-docpdf

[32] Ofgem (2010), "RIIO: A new way to regulate energy networks: Final decision", October 2010, paragraph 5.11, page 28. Available at: https://www.ofgem.gov.uk/ofgem-publications/51870/decision-docpdf

[33] Ofgem (2010), "Handbook for implementing the RIIO model", 4 October 2010, paragraph 11.14, page 93.

4.10 Ofgem states in the Consultation that a reduction in WPD's revenue allowance to reflect the scaling back in rail electrification would require a "*small extension of scope*" in the MPR (as currently defined).[34] Ofgem acknowledges in its draft impact assessment that expanding the scope of an MPR to allow an adjustment to WPD's price control to reflect the reduction in the scale of the rail electrification programme, while benefitting customers in the short term, could have a negative impact on "*regulatory confidence, longer term financial costs, and on how companies react to incentives*". Nevertheless, Ofgem's Draft Impact Assessment (Appendix 1 of the Consultation) speculates that the reduction in regulatory confidence may not be material since the disallowance is "*discrete*" and linked to clear changes in government policy.

4.11 We disagree with the view that the extension envisaged under Option 2 is somehow "*small*" or that the impact on regulatory risk is immaterial for several reasons, which are considered in turn below.

WPD has borne all the risks associated with rail electrification

4.12 WPD's fast track agreement with Ofgem was spelt out in Ofgem's letter "Decision to fast-track Western Power Distribution", 28 February 2014.[35] As indicated in the Consultation, while provision was made for the costs to be refunded to consumers if rail electrification was funded by a third party, no provision at all was made for a change in the scope of the programme.[36]

4.13 It is clear, therefore, that WPD has borne all risks. Decisions regarding rail electrification come from the Department of Transport and are beyond the control of WPD. There was no mention of the rail electrification diversion works being an output, with the implication that any changes to the scope of those works is a risk that WPD was required to take. We would have had no claim on consumers were the scope to increase, and likewise should have no need to refund if the scope were decreased. Consumers would benefit from the additional price stability over the period, with the risk under-written by us.

4.14 Whilst it is true that we may have gained a benefit from changes to rail electrification (taken in isolation from other components of the fast-track settlement and disregarding that other costs have increased materially as set out in section 3), we would also have suffered a loss had the requirements turned out to be more complex or extensive than was envisioned at the time of the fast track

https://www.ofgem.gov.uk/ofgem-publications/51871/riiohandbookpdf

[34] Ofgem (2017), "Consultation on a potential RIIO-ED1 Mid-Period Review", 1 December 2017, page 12.

[35] https://www.ofgem.gov.uk/sites/default/files/docs/2014/02/fast-track_decision_letter.pdf

[36] Ofgem (2017), "Consultation on a potential RIIO-ED1 Mid-Period Review", 1 December 2017, Page 17.

settlement.[37] For example we have recently received advice from Transport for Wales that future rail projects are planned throughout Wales including the South Wales Metro scheme which will upgrade the Core Valley Lines. The estimated completion date is 2023/24 which means that we can expect the diversionary works to take place during the ED1 period.

WPD has borne the costs and risks associated with other Government decisions

4.15 In our view, it would be entirely inappropriate to consider rail electrification in isolation from other Government led/regulatory cost changes. We have incurred, and will incur, additional costs over ED1 due to Government/regulatory policy changes without being given any increase in allowances. Seven such issues are identified in the Consultation, but as discussed in Section 3, Ofgem's view in the Consultation is that there is either uncertainty as to the likely implications or that the costs/output changes are not "material". In particular, as set out in section 3, WPD is currently planning to spend an additional £125 million to transition to become a distribution service operator (DSO) than was not expected at the start of ED1.[38] This is self-evidently a larger sum than the maximum gross saving of rail electrification costs of £77 million. Moreover, Ofgem does not consider the combined impact on DNOs of the seven issues it outlines.

Extending the scope of the MPR would increase regulatory risk

4.16 Extending the scope of the MPR with a view to reducing the revenue allowance for WPD with respect to rail electrification would increase regulatory risk generally since there would then be at least a perception on the part of investors that the regulatory settlement may be re-opened whenever returns turn out to be higher than expected or particular expenditure is not incurred as envisaged. By extending the scope of the MPR in response to the scaling back of the rail electrification scope, Ofgem would effectively be sending the signal that Ofgem may seek to re-open a regulatory settlement if it transpires that it has not provided for something in the settlement that, in hindsight, it wishes it had. In addition, Ofgem would be reducing the potential for WPD to enjoy upside risk in the investment plan, as well as

[37] This raises the question of whether WPD may not have borne some element of this downside risk due to the possibility of a favourable MPR in the hypothetical event that the costs or scope of rail electrification had increased, rather than fallen. The hypothetical possibility of an increase in rail electrification obviously cannot be observed, but no investor can assume certain and full recovery of any such additional costs, and they had no right to given the clearly stated narrow scope of an MPR. Moreover, Ofgem's position in the Consultation as regards a series of other government/regulatory related cost increases is that these can be accommodated within the scope of ED1 without any MPR, and notwithstanding the additional aggregate costs and risks associated with these matters.

[38] "DSO Transition Strategy December 2017 Update", p. 15. Available at: https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx

exposing it to asymmetric risk. This risk factor would thus apply by analogy to all other UK energy networks.

4.17 Investors will have weighed up the possibility of changes to rail electrification spending (and other matters) on the understanding from WPD's fast-track settlement that such a change would represent both a potential downside and upside risk. To remove the upside in the MPR can only damage investor confidence.

4.18 If Ofgem were ex-post to remove this upside through modification to the fast-track settlement, it would impact the returns required by investors in future price reviews. This is because it is widely recognised that as investors value downside risk higher than upside, they require an additional premium to the cost of equity when risk is skewed to the downside. The effect of skewness on investor behaviour can be seen in academic studies. The research, outlined in Box 1 below, shows that the cost of equity will be higher because of investor aversion to negatively skewed risk.

Box 1: Academic research on the impact of asymmetric risk on investor returns

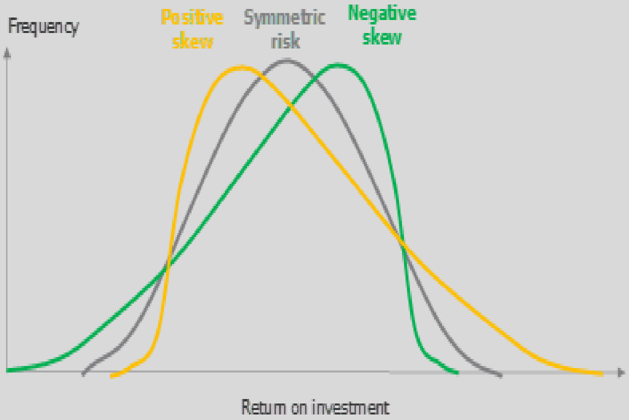
What is asymmetric risk?

It makes intuitive sense that investors attach more value to downside risk than they do upside risk. Only someone who gained satisfaction from risk (i.e. a gambler) would voluntarily accept a "double or lose all" bet on the toss of a coin. Conversely, most people are prepared to pay a premium to insure themselves against unlikely events, even though the expected return (payout x probability of event) is less than the price of the insurance premium.

This point can be considered further from an investor perspective by assessing investors' preferences across three portfolios. These all have the same overall expected return, but differ in the distribution of risk. A common measure of asymmetric risk is the "skewness"[39] which measures the relative upside potential and downside risk of an investment.

[39] Skewness means that the upside potential of a company's share is different to their downside risk.

The figure shows three distributions of investment returns, all with the same expected level of return. A symmetric risk distribution will have risk equally matched between upside and downside. A negatively skewed distribution will have a higher frequency of downside risk and limited upside risk, but a higher modal point to give the same level of overall return. A positively skewed distribution will be the reverse.



Note: in the chart "frequency" effectively refers to the likelihood of a particular return on investment being achieved.

What evidence is there that a negative skewed distribution has a significant effect on the cost of equity?

Various studies have assessed the implications of risk distributions by comparing returns on portfolios characterised by the same overall expected risk, but with expected returns skewed more to the upside or downside. These studies indicate that, faced with downside risk, investors require a risk premium.

For example, Bali, Demirtas, and Levy (2009) use data on monthly returns on the NYSE, AMEX and Nasdaq portfolios between 1962 and 2005 to examine the relationship between downside risk[40] and the expected return and whether a risk-return trade-off exists.[41] They find evidence of a statistically significant risk premium for downside risk over "different stock market indices, different measures of downside risk, loss probability levels, and after controlling for macroeconomic variables and volatility over different holding periods".

Similarly, Mitton and Vorkink (2007) conclude that investors attach value to positive skewness.[42] By examining data on the portfolio holdings of 60,000 investors at a large discount brokerage house between 1991 and 1996 they find that investors "are consciously trading mean-variance efficiency for skewness" (i.e. they are willing to accept lower average returns and variance in these returns to reduce downside risk).

[40] As measured by Value at Risk (VaR), expected shortfall, and tail risk.

[41] Bali, Demirtas, and Levy (2009), "Is there an intertemporal relation between downside risk and expected returns?", Journal of Financial and Quantitative Analysis 44.4, 883-909.

[42] Todd Mitton and Keith Vorkink (2007), "Underdiversification and the preference for skewness", Review of Financial Studies 20.4, 1255-1288.

Kraus and Litzenberger (1976) and Harvey and Siddique (2000) also found that upside and downside risks are key factors in explaining variation in returns across assets.[43] Both papers examine the explanatory value of the Capital Asset Pricing Model (CAPM), a widely used model in explaining the relationship between the risk and returns of financial investments.[44] Both found that when the CAPM is augmented to include systematic skewness, it performs better in explaining share price expected returns than the standard CAPM model. Their results hold even when other factors such as size and book to market value are accounted for.

How robust is the empirical evidence?

While estimates of the risk premium are sensitive to the data used, the modelling approach adopted, and the measure of risk applied, the academic literature is consistent in identifying a significant effect on the cost of equity from the existence of downside risk. Moreover, these results are consistent across the range of estimation approaches and measures of downside risk that have been adopted.

The evidence outlined above relates to publicly traded securities in general. Accordingly, the effect may be different for a regulated monopoly, such as energy networks, where asymmetric risk is potentially created by investor concerns for the predictability and certainty of the regulatory regime rather than competitive market risks. However, the literature does suggest that asymmetric extensions to an MPR (as in Option 2) would result in a material increase in the cost of equity. Given the capital-intensive nature of energy network utilities, a small increase in the cost of equity would more than offset any reduction in the revenue allowance associated with rail electrification.

Quantifying the cost to consumers of increased regulatory risk

4.19 As described in the 2012 Competition Commission decision on the Phoenix Natural Gas Limited price determination, any behaviour by the regulator that impacts "*…on the perception of regulatory stability can damage investor confidence in the regulatory framework. … Any increase in the cost of capital would feed through into relatively higher prices to customers.*"[45]

4.20 While we acknowledge that for the remainder of this price control customers would benefit from a reduction in the revenue allowance in light of lower than expected rail electrification costs, setting a precedent of reopening price controls at the MPR

[43] Campbell R Harvey and Akhtar Siddique (2000), "Conditional skewness in asset pricing tests", Journal of Finance 40.3, 1263-1295, and Alan Kraus and Robert H Litzenberger (1976), "Skewness preference and the valuation of risk assets", Journal of Finance 31.4, 1085-1100.

[44] The CAPM model assumes that the expected return of a stock is equal to the risk-free rate plus a beta factor, times the market risk premium.

[45] Competition Commission 2012, "Phoenix Natural Gas Limited price determination", A reference under Article 15 of the Gas (Northern Ireland) Order 1996.

to reduce the allowed revenue if uncertain events go in favour of the provider will effectively mean that firms will bear the downside risk with no potential upside risk. This will increase the cost for customers in the medium to long term as investors will require a higher price for their equity investment. The fact that this is being applied to Government decisions where no uncertainty mechanisms have been agreed, rather than in relation to all matters, does not remove these issues, particularly since unexpected Government decisions are a material driver of unexpected cost changes.

4.21 As stated by the Gas and Electricity Markets Authority (GEMA) and reported by the CMA in its final determination on the British Gas Trading Limited appeal:[46]

"*Consumers' interests had to be considered broadly and included the interests of existing and future consumers in maintaining investor confidence in a stable and predictable regime and the Authority's adherence to principles and commitment*."

4.22 The first point to make in quantifying the impact on consumers is that the gross £77 million of avoided expenditure on rail electrification does not translate into any automatic increase in returns since other costs have increased, as set out in section 3 and as described above. Moreover, any actual savings in total expenditure are shared with consumers, with WPD's sharing factor being 70%. Accordingly, even if our total expenditure were to fall by £77 million (which is not the case), then this will translate into a net benefit to WPD of £53.9 million.

4.23 In Annex 1 we estimate the impact on return on regulatory equity (RORE) of clawing back WPD's £53.9 million net saving from the reduction in the scale of the rail electrification programme. The calculation divides the saving into the "fast-pot" saving that is directly passed through to WPD, and the "slow-pot" saving that reduces depreciation through the RAV. Adding together the fast-pot saving, the depreciation saving on the slow-pot, and the saved return on the lower regulatory asset value (RAV), we calculate a RORE gain to WPD that averages 14 basis points (bps) (i.e. 0.14%) over the RIIO-ED1 period. (See Annex 1 for full details.)

4.24 If Ofgem were to disallow the reduced expenditure on rail electrification and disregard the other cost increases, investors would clearly see this as an additional risk for future settlements. Investors will have weighed up the possibility of cost changes for which they bear the risk on the understanding from WPD's fast-track settlement that such a change would represent both a potential downside and upside risk. To remove the upside in the MPR can only damage investor confidence

[46] CMA (2015), "British Gas Trading Limited v The Gas and Electricity Markets Authority Final determination", paragraph 8.11 (c), page 139. Available at: https://assets.publishing.service.gov.uk/media/5609588440f0b6036a00001f/BGT_final_determination.pdf Original document: GEMA, "Response to the Notice of Appeal Energy Licence Modification", 22 April 2015, paragraph 261, page 125.

in RIIO-ED2. Furthermore, that investor confidence needs to be damaged only sufficiently to raise the cost of equity by a very small amount across the UK energy networks to make the MPR extension against overall consumer interests.

4.25 As such, while WPD's customers would benefit (marginally) for the remainder of the current price control period (and completely disregarding that we have in fact more than reallocated this saving to address other cost increases, most notably associated with the transition to becoming a DSO), this benefit would be more than offset by increases in the cost of capital in future price controls, which would be borne by customers.[47]

4.26 Furthermore, it is very likely that regulatory action of this nature with respect to WPD would spill over into a higher perceived regulatory risk across all DNOs in RIIO-ED2, and other energy network companies, increasing costs for all customers (not just WPD customers who would have benefitted from the marginal saving in ED1).

Overall Regulatory Settlement and incentives for fast-track companies

4.27 In the ED1 price control, Ofgem accepted WPD's Business Plan in full for fast-tracking. The purpose of the fast-track scheme was to:

(a) incentivise the specification of a high-quality business plan, including incentives for companies to reveal the full potential for cost efficiency and consumer output improvements (this information also benefits consumers of those DNOs subject to slow-track settlements by providing a basis to challenge other operators' business plans);

(b) reduce regulatory costs for both company and regulator;

(c) allow management to focus on operation of the business at an earlier stage in the process; and

(d) close-down regulatory risk at an earlier stage in the process – a particular advantage for investors.

4.28 Ultimately, the aim was to improve outcomes for consumers by lowering costs and improving the quality of service they receive. Ofgem has acknowledged these consumer benefits.

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47 This raises the issue of the fairness of benefiting current customers at the expense of a higher cost of capital paid by future customers. This intertemporal consideration is important, particularly in light of GEMA's principal objective under section 3A of the Electricity Act 1989 to "*protect the interests of existing <u>and future</u> consumers in relation to electricity conveyed by distribution systems or transmission systems*" (emphasis added).

4.29 However, WPD's fast-track settlement had implications for our regulatory settlement, which was different from that of slow-track companies in several respects:

(a) Rail electrification was not identified as an output during the fast-track process and no uncertainty mechanism was included to protect WPD from changes in the scale of the rail electrification programme.[48] Therefore, WPD's fast-track required the company to take the risk of changes in scope to rail electrification. This provided consumers with more certainty on future prices, but involved risk for the company. For the slow-track DNOs an uncertainty mechanism was included to allow a re-opener for the costs of rail electrification.[49]

(b) Since the cost of debt indexation scheme had not been fully worked out, WPD had no benefit from trombone debt indexation.[50]

(c) There was no Information quality incentive (IQI) scheme, since these complexities did not fit with either (a) the fast-track objective of a lean process, or (b) fast-track timescale (and the scheme had not been fully worked out).

4.30 These differences have resulted in both gains and losses for WPD. If Ofgem decides (despite the potential to create significant regulatory risks discussed above) to pursue an extension in the scope of the MPR to cover changes in rail electrification costs, it would be wholly unfair to investors to take this action without considering WPD's overall regulatory deal.

4.31 The most important difference between WPD's settlement and that of the slow track companies is the application of the "tromboning" cost of debt indexation approach. WPD remains with a 10-year trailing average index to set its regulatory cost of debt, whereas the slow track distribution companies were given a "trombone" mechanism. The trombone mechanism implies that the averaging period is progressively lengthened as RIIO-ED1 proceeds, and consequently short-term

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48 Though WPD's licence includes an uncertainty mechanism for third party funding of rail electrification, at Charge Restriction Condition 3K.

49 Ofgem (2014), "RIIO-ED1: Final determinations for the slow-track electricity distribution companies: Final Decision", 28th November 2014. Available at: https://www.ofgem.gov.uk/ofgem-publications/91564/riio-ed1finaldeterminationoverview.pdf. See also Charge Restriction Condition 3F of the slow-track licensees.

50 Ofgem proposed tromboning of the cost of debt for the draft slow track settlements on 30 July 2014, after WPD's fast track settlement had been made. Ofgem made it clear that tromboning would not apply to WPD – see para 5.16 at https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf

fluctuations in the interest rate have a less pronounced effect on the regulatory cost of debt applied.

4.32 The reason for moving to a trombone arrangement for cost of debt indexation was explained by Ofgem as follows:

> *"Several DNOs presented evidence in their slow-track business plans, and subsequently, that the 10-year trailing average index is forecast to under-recover their forecast interest costs. Our analysis confirms this evidence and concludes that, taking all DNOs together, the 10-year trailing average index does not meet the criteria we used for RIIO-T1 and GD1. In particular, we tried to ensure that introducing an index made the forecast interest costs of a typical network operator and its cost of debt allowances broadly equivalent."*[51]

4.33 Ofgem reached this conclusion after extensive modelling of the differences between DNOs' actual cost of debt, and different specifications of the regulatory index. Ofgem looked at the overall level of difference, and also the sensitivity of the difference to market interest rate fluctuations. The results of their analysis are reproduced in the chart below. Essentially, Ofgem "*found that trailing average periods that extend trombone like from a fixed starting point until they reach about 20 years provided the lowest sensitivity to interest rates.*"[52] The results were summarised by Ofgem in the Draft Slow Track Determinations, in the charts reproduced as Figure 1 below. The lower sensitivity to interest rate changes under a trombone mechanism can be seen clearly by comparing the left and right hand panels of Figure 1.

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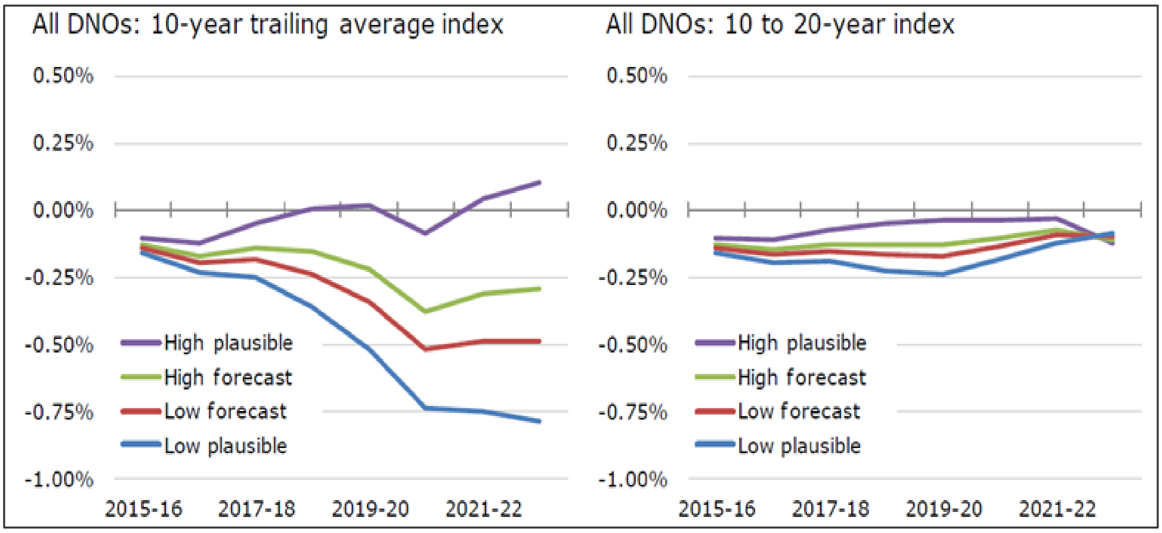
51 "RIIO-ED1: Draft determinations for the slowtrack electricity distribution companies: Overview", 30 July 2014. https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf. See para 5.10

52 "RIIO-ED1: Draft determinations for the slowtrack electricity distribution companies: Overview", 30 July 2014. https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf. See para 5.10

Figure 1: Forecast cost of debt allowances less forecast debt costs



Source: Ofgem, "RIIO-ED1: Draft determinations for the slowtrack electricity distribution companies Financial Issues", 30 July 2014.

4.34 This result is not surprising since DNOs are long asset life companies, and one would expect their debt to be of a relatively long tenor. This means that interest rate changes will have more impact on the trailing 10 year average, upon which the revenue allocation for the cost of debt is based, than they will on the actual cost of debt faced by the DNOs that determines actual debt interest costs. The argument applies equally to WPD as well as the slow-track DNOs.

4.35 Ofgem proposed tromboning of the cost of debt for the draft slow-track settlements made on 30 July 2014[53], since (as described above) Ofgem considered that it better captured the actual efficient cost of debt faced by the companies. This was after WPD's fast-track settlement had been concluded, meaning that WPD was not able to take advantage of this mechanism, and has faced a lower regulatory cost of debt allowance as a result.

[53] "RIIO-ED1: Draft determinations for the slow track electricity distribution companies Overview", see para 5.9-5.11. Available at: https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf. Ofgem's decision was upheld by the Competition and Markets Authority in the British Gas Trading Limited v The Gas and Electricity Markets Authority Final determination published in 29 September 2015 (refer to Section 8, pages 136-153).

4.36 At the time of the slow-track settlements, Ofgem made it clear that tromboning would not apply to WPD:

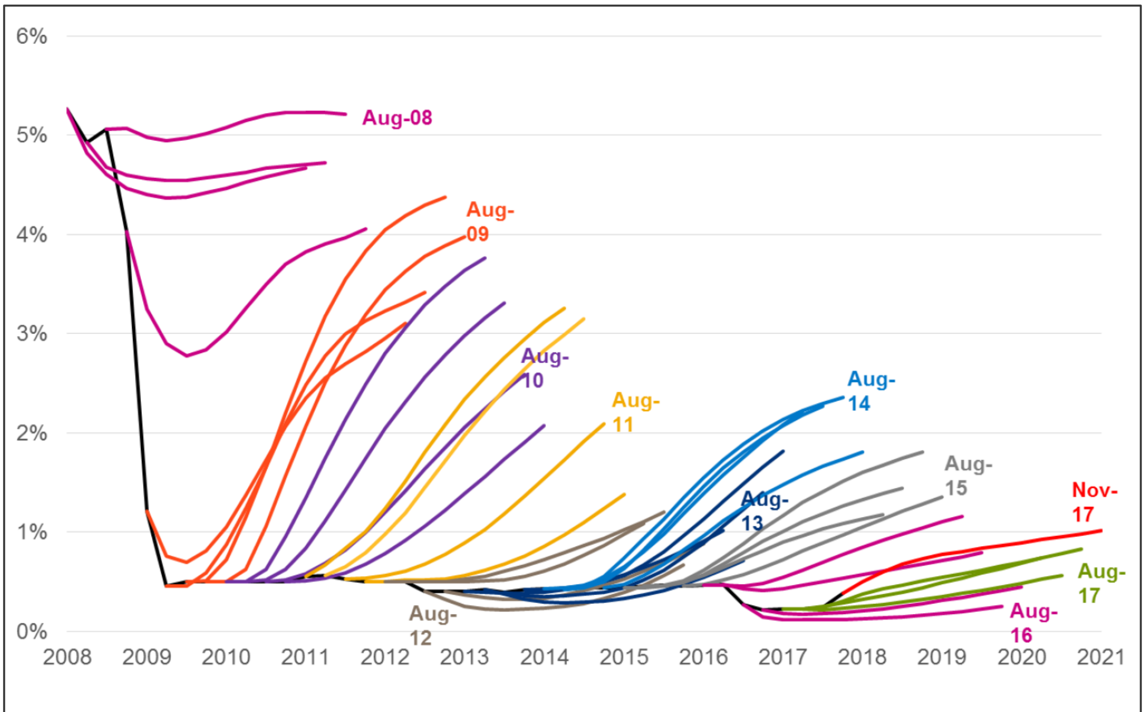
"*We do not propose to offer the new index to WPD. While we have committed to adjust its settlement if it is materially worse off (in the round) by being fast tracked, we do not think this is the case here*".[54]

4.37 It is understandable that, at the time of WPD's fast-track settlement, Ofgem did not expect WPD to be worse off, since interest rates were expected to rise. In the event, interest rates have fallen. This is illustrated in Figure 2 below, reproduced from Ofwat's recently published Final Methodology for PR19.[55] At the time of WPD's fast-track settlement at the beginning of 2014, interest rates were still expected to rise sharply. In the event they fell lower (until the 0.25% Bank of England rate rise in November 2017). More importantly, the implied forward rates are now considerably lower (and flatter) than they were in 2014. In short, interest rate expectations have been considerably downgraded since WPD's fast-track settlement at the start of 2014. This is shown by Figure 2 below, which is taken from an Ofwat document of December 2017, and shows that interest rate expectations have fallen sharply over time.

[54] "RIIO-ED1: Draft determinations for the slow track electricity distribution companies Overview", see para 5.16. Available at: https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio_ed1_draft_determination_overview_30072014.pdf

[55] Ofwat, "Delivering Water 2020: Our methodology for the 2019 price review; Appendix 12: Aligning risk and return", 13 December 2017, see Figure 5. Available at: https://064f1d25f5a6fb0868ac-0df48efcb31bcf2ed0366d316cab9ab8.ssl.cf3.rackcdn.com/wp-content/uploads/2017/12/Appendix-12-Risk-and-return-CLEAN-12.12.2017-002.pdf

Figure 2: Market-implied expectations of the Bank of England Official Rate (reproduced from Ofwat, Final Methodology for PR19)

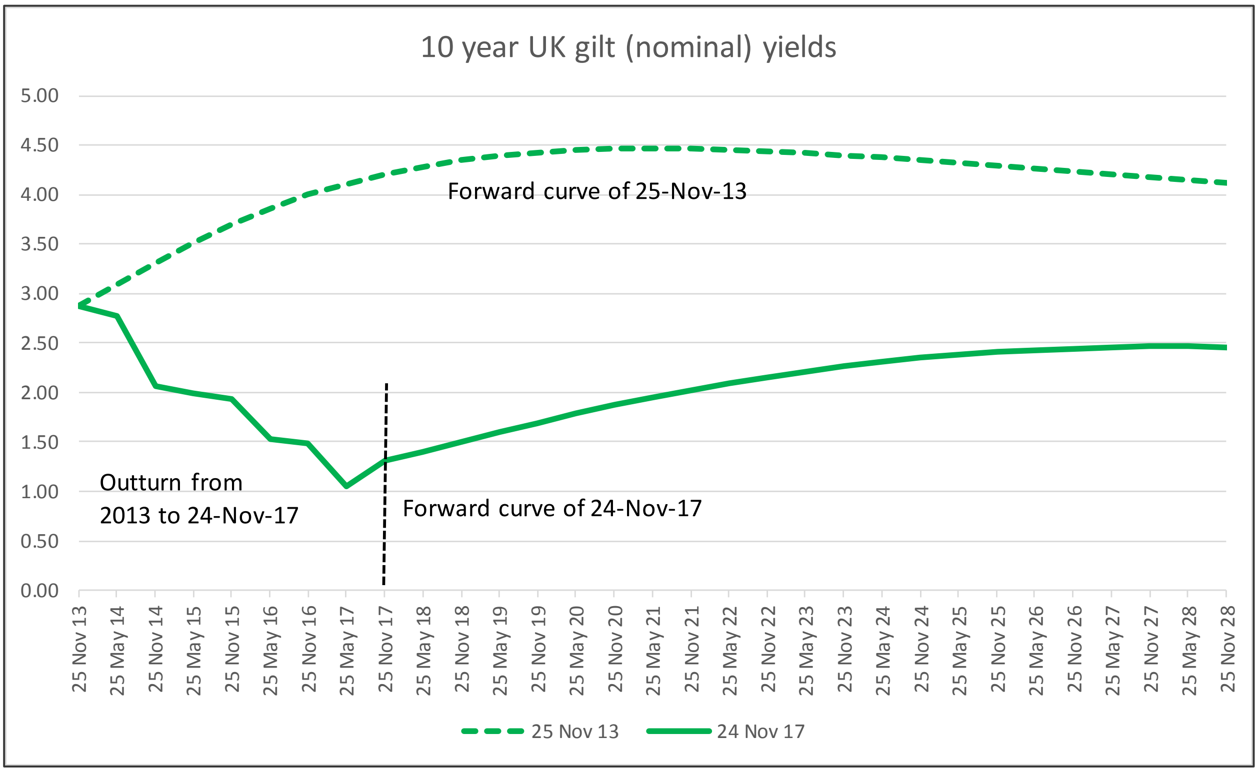


Source: Bank of England, Conditioning Path for Market Interest Rates

4.38 Of more relevance to WPD's cost of debt allowance are expectations on longer term bonds. However, the picture is the same. In Figure 3, the dotted line plots the forward curve for the yield on a 10-year UK gilt[56] at 25 November 2013 - a few months before WPD's fast-track settlement was made. This shows the expected trajectory of the 10-year interest rates just before WPD's fast-track settlement. In comparison, the solid line plots the actual trajectory of the yield on the 10-year UK gilt, followed by the latest forward curve. Not only have interest rates fallen rather than risen but also, looking at the current forward curve, the expected rise in interest rates is still not as steep as that anticipated by the markets four years ago.

56 Ofgem actually uses the iBoxx non-financial corporate 10+ year bond yields. However, for purpose of illustration of interest rate trends we use 10 year gilt yields for which data is more readily available. The overall trends in interest rates will be the same.

Figure 3: Change in 10 year UK gilt (nominal) yield expectations between 2013 and the present

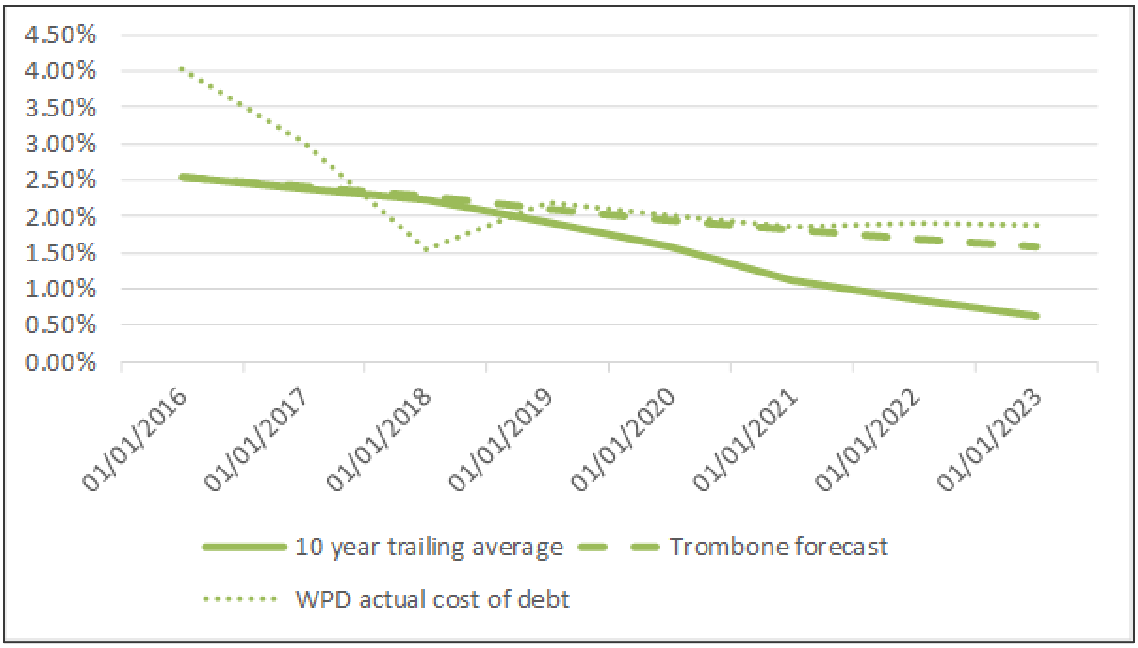


Source: Bank of England Yield Curves, and WPD calculations

4.39 The unexpected fall in both outturn and market expectations for future interest rates has meant that WPD's 10 year moving average indexation has underperformed the trombone mechanism of the slow-track companies that have benefited from a progressively longer period of averaging.

4.40 The impact of this decision on WPD's regulatory cost of debt can be seen in Figure 4. As interest rates have remained low, the 10-year trailing moving average (in which new low rates of interest replace higher rates from 10 years ago) has fallen faster than the trombone index (in which the older higher rates remain in the averaging process). By the end of RIIO-ED1, this difference is projected to be almost one percentage point.

Figure 4: Regulatory allowance for cost of debt under alternative schemes



Source: WPD based on Lloyds Bank forecasts.

4.41 The impact of not tromboning WPD's cost of debt has been to reduce the company's allowed returns after interest by circa £137 million over RIIO-ED1, and its RORE by 70 bps over the duration of RIIO-ED1 (see Annex 2 for illustrative detailed calculations[57]), compared to the counterfactual of a trombone mechanism.[58]

4.42 Ofgem will be aware that Ofwat, in its Final Methodology for PR19[59], has confirmed that only new debt will be subject to an indexed allowance, whilst embedded debt will retain a fixed allowance throughout the PR19 period. We believe this makes WPD's 10 year trailing moving average allowance for <u>all debt</u> significantly out of line

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57 Annex 2, Table A2.1, page 41, "Difference in return: 10 year trailing average vs. Trombone, £ millions, 2012/13 prices", based on Lloyds Bank interest rate forecasts, calculates a difference between WPD's trailing 10 year average and its regulatory allowance of £137 million in 2012/13 prices over RIIO-ED1, with an impact on RORE of 0.7% (based on an arithmetic average, increasing to 0.8% when weighted average used). Other interest forecasts (for example, Moody's) give a different range of estimates of at least £100 million, with a 0.6% RORE impact (as quoted in the text, paragraph 4.41), irrespective of whether an arithmetic or weighted average of returns in individual years is calculated.

58 It should be noted that if a comparison were to be made between WPD's regulatory allowance for debt costs (using its 10-year trailing moving average approach) and the company's <u>actual debt</u> costs, the shortfall becomes much larger (as described later in paragraph 5.9). As a result, this £137m difference represents an unrecovered cost to WPD not borne by the slow-track DNOs.

59 Ofwat, "Delivering Water 2020: Our methodology for the 2019 price review; Appendix 12: Aligning risk and return", 13 December 2017, see Section 6.3. Available at: https://064f1d25f5a6fb0868ac-0df48efcb31bcf2ed0366d316cab9ab8.ssl.cf3.rackcdn.com/wp-content/uploads/2017/12/Appendix-12-Risk-and-return-CLEAN-12.12.2017-002.pdf

with regulatory practice, since both Ofwat (via a fixed embedded debt allowance) and Ofgem slow track (via tromboning), are giving more stability to the embedded debt allowance.

4.43 The outturn of interest rates and expectations for future interest rates since WPD's fast-track settlement means that WPD is "worse off (in the round)". Any MPR, if it were to occur, would need to be genuinely "in the round". Otherwise, WPD would be exposed to asymmetric regulatory risk – the consequence of which for future investment is discussed above.

Conclusions

4.44 For the reasons set out above, we do not consider that there is any basis for considering Option 2.

5 Option 3

Summary

As set out in Option 2, any broadening of the scope of the MPR beyond its current definition under RIIO-ED1 would go against Ofgem's stated position at the time of ED1 and would undermine the regulatory framework and increase costs to consumers.

In addition, Ofgem has made clear that it believes the current underspend by DNOs to be temporary, and anticipates DNOs' costs being more closely aligned to revenue allowances over ED1 as a whole. Even if this is not the case, any cost savings sustained over ED1 will then be used to set lower baseline price controls in ED2. This is precisely what the price control mechanism is intended to achieve.

Option 3 is clearly an extreme alternative. WPD strongly submits that the pursuit of Option 3 would have significant adverse effects on the stability of the RIIO framework and the costs for consumers in future price controls, both for electricity distribution as well as more widely across transmission and gas distribution.

5.2 The third option set out in the consultation refers to a much wider extension in the MPR beyond the currently defined scope. This would reopen the financial and incentive performance and design of the settlement.

5.3 The Consultation identifies two questions related to this option:

- Question 1: "*What are your views on a potential significant extension of scope to capture financial and incentive performance and design?*"
- Question 2: "Do *you have any views on the other issues raised in this section?*"

Views on extension of scope

5.4 Option 3 would re-open the price control not because of any external factor, but presumably based on a belief that RIIO-ED1 is performing poorly.

5.5 However, as set out in section 3, we do not consider there is any evidence that ED1 is performing poorly. Ofgem's RIIO-ED1 Annual Report on DNO Performance in 2016-17 showed WPD to have achieved a full set of green "traffic lights" across all the outputs measured by Ofgem. Refinements to the price control system can be addressed in RIIO-ED2, not least since they will involve material work and analysis that cannot be done quickly in the context of an MPR.

5.6 As set out in our analysis of Option 2, any MPR that extends beyond the scope set out and agreed in the original price control decision will create regulatory uncertainty and undermine stability. This is at odds with the overarching objective of stability that underpins the inclusion of the potential for an MPR in the regulatory framework. Option 3 is an extreme alternative.

5.7 Ofgem highlighted the costs of a widened scope to the MPR in its decision document on an MPR for RIIO-T1 and GD1:

> "*…in the long run we would expect a number of detrimental impacts to consumers to arise from taking such action. These impacts would primarily stem from the fact that the action to extend scope would go against the stated intention of the MPR to be focused on changes in output requirements alone. Moreover, we have been explicit in previous documents that we would not use the MPR to reopen more widely and that we did not want the MPR to result in two four-year price controls. Widening the scope in this way would weaken confidence in our regulatory regime and the commitments that we make in future.*"[60]

5.8 The uncertainty such a decision would create would not be limited to the affected DNOs either. The effects would be felt by all companies regulated by Ofgem (including also transmission and gas companies), and potentially more broadly cross the regulated industries in the UK. Ofgem acknowledged the wider impact any broadening of scope could have across the portfolio of industries it is responsible for regulating:

> "*These impacts would not be limited to just the transmission and gas distribution price controls but also other price controls we set for instance RIIO-ED which operates on a different regulatory timetable.*"[61]

5.9 In the event that, notwithstanding these significant risks, Ofgem decides to extend the scope of the MPR in this way, it would be wholly unfair to restrict the extended scope purely to a review of activities and systems that have resulted in perceived benefits to the regulated entity. As highlighted in the discussions of Options 1 and 2, WPD has been adversely affected by a number of factors, both in terms of differences in its settlement compared to other DNOs (in particular, the lack of trombone mechanism for cost of debt) and in terms of unexpected expenditure that it has been required to make (e.g. for the transition to DSO which has been costed by WPD at an additional £125 million).[62] We currently estimate that WPD's cost of debt alone is forecast to be in excess of £200 million greater than allowed for in its 10-year trailing moving average indexation formula, due to the mis-match with the nature of WPD's embedded debt. In Annex 2, Table A2.2, we present our calculation on the cost of debt based on interest rate forecasts from Lloyds Bank.

[60] Ofgem, "Decision on a mid-period review for RIIO-T1 and GD1", 12 May 2016, paragraph 1.14, page 56. Available at: https://www.ofgem.gov.uk/system/files/docs/2016/05/mpr_decision_document_final.pdf

[61] Ofgem, "Decision on a mid-period review for RIIO-T1 and GD1", 12 May 2016, paragraph 1.14, page 56. Available at: https://www.ofgem.gov.uk/system/files/docs/2016/05/mpr_decision_document_final.pdf

[62] "DSO Transition Strategy December 2017 Update", p. 15. Available at: https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx

This analysis demonstrates WPD has already incurred additional unrecovered costs of over £83m during the first two years of RIIO-ED1 and provides a point estimate of the cost of debt impact to WPD over the whole of RIIO-ED1 of approximately £240 million.[63]

5.10 As we have already noted above, that Ofwat's Final Methodology for PR19 uses a fixed allowance for embedded debt for the following reasons:

"We said that there are significant differences between companies on their cost of embedded debt, related to actual financing structures, and the timing and tenor of debt issuance. We also stated that this would drive a range of financial outperformance and underperformance in 2020-2025." [64]

5.11 Any re-opening on the MPR must address not only the difference in treatment of WPD's indexation allowance compared to other electricity distribution companies, but more generally the under-recovery of WPD's cost of debt due to its embedded debt, especially in the light of Ofwat's PR19 Final methodology.

Views on the issues covered by Option 3

Financial performance

5.12 As set out in the Consultation, on average, over the first two years of the ED1 price control DNOs have achieved a 7% underspend. Ofgem identifies lower than expected expenditure on reinforcing the network due to lower than expected load on the network, and lower than anticipated asset replacement and business support costs. However, Ofgem also states that these costs have been predominantly deferred and are expected to materialise later in the price control period. Consequently, they anticipate that this underspend will reduce to align DNOs' costs more closely to revenue allowances.[65]

5.13 There are important differences across DNOs in the scale of the current underspend. The average 7% figure is based on a broad range, as illustrated in Table 2 below.[66]

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63 Annex 2, Table A2.2, pages 42-43, shortfall based on Lloyds Bank interest rate forecasts, calculates a difference between WPD's actual cost of debt and its regulatory allowance of £240 million over RIIO-ED1. Other interest forecasts (for example, Moody's) give a different range of estimates of at least £200 million. The £83 million figure is calculated by summing the shortfalls for 15/16 and 16/17, 58.6 and 24.9 respectively.

64 Ofwat, "Delivering Water 2020: Our methodology for the 2019 price review; Appendix 12: Aligning risk and return", 13 December 2017, see Section 6.1. Available at: https://064f1d25f5a6fb0868ac-0df48efcb31bcf2ed0366d316cab9ab8.ssl.cf3.rackcdn.com/wp-content/uploads/2017/12/Appendix-12-Risk-and-return-CLEAN-12.12.2017-002.pdf

65 Ofgem (2017), "Consultation on a potential RIIO-ED1 Mid-Period Review", 1 December2017.

66 Ofgem RIIO-ED1 Annual Report 2016/17, 19 December 2017, page 11.

Table 2: Current and forecast over and underspend against allowed expenditure

	Two year cumulative (2015-16 + 2016-17)		Forecast RIIO-ED1 (2015-16 to 2022-23)	
	£ m		£ m	
ENWL	-40	-8%	-57	-3%
NPgN	-12	-3%	9	1%
NPgY	-32	-6%	-4	0%
WMID	73	13%	44	2%
EMID	20	3%	-36	-2%
SWALES	-24	-8%	-57	-5%
SWEST	23	5%	-35	-2%
LPN	-131	-25%	-275	-14%
SPN	-124	-25%	-264	-14%
EPN	-135	-18%	-372	-14%
SPD	-35	-8%	-1	0%
SPMW	-19	-4%	14	1%
SSEH	-21	-6%	-88	-7%
SSES	-74	-11%	-117	-5%
Total	**-531**	**-7%**	**-1239**	**-5%**

	Current 2 year cumulative difference	Difference forecast for RIIO-ED1
WPD	5%	-1%

Source: Ofgem RIIO-ED1 Annual Report 2016-17

5.14 As indicated above, the four WPD licensees are currently overspending by an average of 5%. This is forecast to reduce to an underspend of 1% for the price control period as a whole.

5.15 The RIIO framework is designed specifically to create incentives for firms to improve their operational efficiency and to capture such improvements in subsequent price control periods. Underspends in ED1 will be captured through the RIIO-ED2 price control.

Incentive performance and design

5.16 The objective of the incentive schemes under RIIO-ED1 is to drive efficiency and outputs. Rewards gained under the incentives schemes are earned as a result of increased efficiencies and outputs that the DNOs have achieved. Re-opening the price review in order to clawback these rewards undermines the fundamental objectives of the schemes. If DNOs are led to believe that such rewards would in future be clawed back at an MPR, they would have significantly less incentive to achieve such efficiencies and outputs. This will harm customers by reducing the scope for future cost reductions and improvements in the quality of service provision.

Approach to setting key financial metrics

5.17 Deriving the most appropriate methods for setting key financial metrics, such as the cost of equity, is a significant task. These are highly complex subjects that require careful consideration as part of a full price control review. These are not issues that should be addressed as part of an MPR, a process that is not even supposed to be a quasi-price review. The cost of equity was set at the appropriate investor expectation for the RIIO-ED1 period at the time. It will be right to review the cost of equity for RIIO-ED2, but not before as this would directly undermine investor confidence for future reviews.

Load Indices

5.18 We agree with Ofgem's assessment that these should not form part of an MPR.

Resetting connections targets

5.19 We note that the resetting of the time to connect targets will form a separate piece of work and look forward to engaging in this process when it commences.

6 Conclusion

6.1 Ofgem has always been clear that the MPR is not intended to be a mini-price review and would be limited in scope. A fundamental tenet of incentive regulation is regulatory commitment, and so any changes introduced to RIIO-ED1 at this time must be fully consistent with the commitments made by Ofgem at the time of the original settlements.

6.2 Whilst there is potential for adjustments to be made in an MPR, this should not be done in circumstances which are inconsistent with Ofgem's previous repeated statements on the intended scope of an MPR and which would therefore serve to increase regulatory uncertainty. Otherwise ultimately consumers will need to pay for the higher returns required by investors to compensate for the increased regulatory risk.

6.3 We believe that, following this principle, Ofgem should maintain the existing scope of the ED-MPR (Option 1 of the Consultation).

6.4 Even though there has been a policy change in the scale of rail electrification, this was a risk that WPD bore. Moreover, the expected costs of rail electrification may increase again during ED1 as we have received advice from Transport for Wales that future rail projects are planned throughout Wales, including the South Wales Metro scheme to upgrade the Core Valley Lines by 2023/24.

6.5 If Ofgem were to pursue an extension to the MPR to take into scope changes to WPD's cost allowance for rail electrification (Option 2), this would create at least a perception of asymmetric regulatory risk in future price controls. Investors will have weighed up the possibility of over or underspend under the existing settlement, only to experience a regulator taking advantage of underspend if upside is realised.

6.6 We disagree with Ofgem's Draft Impact Assessment (Appendix 1 of the Consultation) where it speculates that the reduction in regulatory confidence resulting from Option 2 may not be material since the disallowance is discrete and linked to an external change in government policy. To seek to remove upside through the MPR in circumstances where this was not previously provided for can only damage investor confidence more broadly.

6.7 In addition, the benefit to consumers of a reduced allowance for WPD's rail electrification works can be expected to be a mere 14 bps on RORE. The longer-term damage to the required cost of equity from investors to mitigate the perceived additional asymmetric regulatory would, in our view, substantially exceed this. The effect would be felt across all DNOs and energy networks.

6.8 If, notwithstanding these points, Ofgem were to make such an extension to the MPR, it would be wholly unfair if Ofgem did not consider "in the round" other components of the settlement. This would include cost increases that WPD has faced (notably for the transition to becoming a DSO, which WPD has costed at £125 million of additional cost, far outweighing a possible gross saving of £77 million on rail electrification).[67]

6.9 In addition, it would also be important to have regard to a significant difference between WPD's settlement and that of the slow-track companies, namely the application of the tromboning cost of debt indexation approach to only slow-track DNOs. The impact of not tromboning WPD's cost of debt is expected be an additional unrecovered cost of circa £137 million over RIIO-ED1 (compared to a net saving of £53.9 million for rail electrification), and reduce its RORE by an average of 70 bps over the duration of RIIO-ED1 (compared to the 14 basis point benefit WPD would retain from the savings made on rail electrification).[68]

6.10 As demonstrated, these points each outweigh the net cost of the rail electrification underspend.

6.11 Option 3 would, as Ofgem identifies in its own Draft Impact Assessment, have far greater consequences for regulatory confidence.

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67 "DSO Transition Strategy December 2017 Update", p. 15. Available at: https://www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/DSO-Strategy/DSO-Transition-Strategy.aspx

68 Annex 2, Table A2.1, page 41.

Annex 1: Estimation of the impact on RORE of Rail Electrification Saving

2012/13 Prices		**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**21/22**	**22/23**	**ED1 average**
ED1 asset lives (years)	A	23.125	26.250	29.375	32.500	35.625	38.750	41.875	45.000	
Forecast cost of debt	B	2.55%	2.38%	2.22%	1.93%	1.58%	1.12%	0.87%	0.63%	
Cost of equity	C	6.40%	6.40%	6.40%	6.40%	6.40%	6.40%	6.40%	6.40%	
Forecast WACC	D = 35% x C + 65% x B	3.90%	3.79%	3.68%	3.49%	3.27%	2.97%	2.80%	2.65%	
Allowance	E	25.25	24.90	10.32	10.35	1.26	5.78	6.58	12.07	96.50
Forecast spend	F	3.83	0.38	1.07	6.43	7.78	0.00	0.00	0.00	19.49
Totex over/(under)spend	G = F – E	-21.42	-24.52	-9.26	-3.92	6.53	-5.78	-6.58	-12.07	-77.01
Totex Incentive Strength	H	70%	70%	70%	70%	70%	70%	70%	70%	
Post TIM over/(under)spend	I = G x H	-14.99	-17.17	-6.48	-2.74	4.57	-4.04	-4.60	-8.45	-53.91
Fast pot revenue benefit	J = - 20% x I	3.00	3.43	1.30	0.55	-0.91	0.81	0.92	1.69	10.78
Opening difference in RAV	K = N_{t-1}	0.00	12.00	25.21	29.35	30.33	25.39	27.44	29.85	
Slow pot benefit	L = 80% x I	12.00	13.73	5.18	2.19	-3.66	3.23	3.68	6.76	43.13
Depreciation on slow pot benefit	M = $L_{t-1}/A_{t-1} + L_{t-2}/A_{t-2} + \ldots$		-0.52	-1.04	-1.22	-1.29	-1.18	-1.27	-1.35	-7.87
Closing difference in RAV	N = K + L + M	12.00	25.21	29.35	30.33	25.39	27.44	29.85	35.26	
Discounted closing difference in RAV	O = N / (1 + D)	11.55	24.29	28.31	29.30	24.58	26.65	29.04	34.35	
NPV-neutral difference in RAV	P = (K + O) / 2	5.77	18.14	26.76	29.33	27.45	26.02	28.24	32.10	
Return on slow pot benefit	Q = D x P	0.22	0.69	0.99	1.02	0.90	0.77	0.79	0.85	6.23
Total revenue benefit	R = J - M + Q	3.22	4.64	3.32	2.79	1.27	2.76	2.98	3.90	24.88
WPD Forecast NPV neutral RAV	S	5,922.9	6,113.7	6,274.9	6,415.9	6,555.2	6,694.8	6,859.1	7,051.3	
Regulated equity	T = 35% x S	2,073.0	2,139.8	2,196.2	2,245.6	2,294.3	2,343.2	2,400.7	2,467.9	
RORE impact	**U = R / T**	**0.16%**	**0.22%**	**0.15%**	**0.12%**	**0.06%**	**0.12%**	**0.12%**	**0.16%**	**0.14%**

Source: WPD calculations

Annex 2: Illustrative calculations of the impact of the regulatory allowance for debt costs

Table A2.1: Illustrative estimate of costs of not tromboning the cost of debt indexation on WPD RORE

	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	ED1 Impact
Regulatory cost of debt forecast									
10 year trailing average	2.55%	2.38%	2.22%	1.93%	1.58%	1.12%	0.87%	0.63%	
Trombone forecast	2.55%	2.42%	2.29%	2.10%	1.94%	1.81%	1.69%	1.58%	
Difference to regulatory cost of debt	0.00%	-0.04%	-0.07%	-0.17%	-0.36%	-0.68%	-0.82%	-0.95%	
Difference to regulatory WACC	0.00%	-0.03%	-0.05%	-0.11%	-0.23%	-0.44%	-0.53%	-0.62%	
WPD forecast NPV neutral RAV, £ millions, 2012/13 prices									
WMID	1,948.2	1,991.3	2,026.0	2,054.5	2,085.2	2,119.6	2,159.9	2,208.3	
EMID	1,922.9	1,980.9	2,020.9	2,046.3	2,069.1	2,094.6	2,136.5	2,189.0	
SWALES	839.3	868.7	899.0	935.1	971.3	1,003.1	1,033.0	1,062.6	
SWEST	1,212.5	1,272.8	1,329.0	1,380.0	1,429.6	1,477.4	1,529.7	1,591.4	
WPD	**5,922.9**	**6,113.7**	**6,274.9**	**6,415.9**	**6,555.2**	**6,694.8**	**6,859.1**	**7,051.3**	
Difference in return: 10 year trailing average vs. Trombone, £ millions, 2012/13 prices									
WMID	0.0	-0.5	-0.9	-2.3	-4.9	-9.4	-11.5	-13.7	
EMID	0.0	-0.5	-0.9	-2.3	-4.8	-9.3	-11.4	-13.5	
SWALES	0.0	-0.2	-0.4	-1.1	-2.3	-4.5	-5.5	-6.6	
SWEST	0.0	-0.3	-0.6	-1.6	-3.3	-6.6	-8.2	-9.8	
WPD	**0.0**	**-1.6**	**-2.9**	**-7.2**	**-15.3**	**-29.8**	**-36.6**	**-43.6**	**-137.0**
Difference in return: 10 year trailing average vs. Trombone, £ millions, nominal prices									
WMID	0.0	-0.6	-1.0	-2.7	-5.8	-11.6	-14.6	-17.8	
EMID	0.0	-0.6	-1.0	-2.7	-5.8	-11.5	-14.4	-17.7	
SWALES	0.0	-0.2	-0.5	-1.2	-2.7	-5.5	-7.0	-8.6	
SWEST	0.0	-0.4	-0.7	-1.8	-4.0	-8.1	-10.3	-12.8	
WPD	**0.0**	**-1.7**	**-3.2**	**-8.4**	**-18.3**	**-36.6**	**-46.3**	**-56.9**	**-171.5**
Regulatory equity, £ millions, 2012/13 prices									
WMID	681.9	696.9	709.1	719.1	729.8	741.9	756.0	772.9	
EMID	673.0	693.3	707.3	716.2	724.2	733.1	747.8	766.1	
SWALES	293.8	304.0	314.6	327.3	339.9	351.1	361.6	371.9	
SWEST	424.4	445.5	465.1	483.0	500.4	517.1	535.4	557.0	
WPD	**2073.0**	**2139.8**	**2196.2**	**2245.6**	**2294.3**	**2343.2**	**2400.7**	**2467.9**	
RORE impact of using 10 year trailing average instead of trombone									
WMID	0.0%	-0.1%	-0.1%	-0.3%	-0.7%	-1.3%	-1.5%	-1.8%	
EMID	0.0%	-0.1%	-0.1%	-0.3%	-0.7%	-1.3%	-1.5%	-1.8%	
SWALES	0.0%	-0.1%	-0.1%	-0.3%	-0.7%	-1.3%	-1.5%	-1.8%	
SWEST	0.0%	-0.1%	-0.1%	-0.3%	-0.7%	-1.3%	-1.5%	-1.8%	
WPD	**0.0%**	**-0.1%**	**-0.1%**	**-0.3%**	**-0.7%**	**-1.3%**	**-1.5%**	**-1.8%**	**-0.7%**

Source: WPD calculations, based on forecasts from Lloyds Bank

Table A2.2: Illustrative calculation of WPD's overall shortfall on cost of debt allowance

	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	ED1 Impact
10 year trailing average forecast	2.55%	2.38%	2.22%	1.93%	1.58%	1.12%	0.87%	0.63%	
Actual/Forecast RPI (average Apr-Mar)	1.08%	2.14%	3.80%	3.07%	3.02%	3.03%	3.02%	3.03%	
WPD forecast NPV neutral RAV, £ millions, 2012/13 prices									
WMID	1,948.2	1,991.3	2,026.0	2,054.5	2,085.2	2,119.6	2,159.9	2,208.3	
EMID	1,922.9	1,980.9	2,020.9	2,046.3	2,069.1	2,094.6	2,136.5	2,189.0	
SWALES	839.3	868.7	899.0	935.1	971.3	1,003.1	1,033.0	1,062.6	
SWEST	1,212.5	1,272.8	1,329.0	1,380.0	1,429.6	1,477.4	1,529.7	1,591.4	
WPD	**5,922.9**	**6,113.7**	**6,274.9**	**6,415.9**	**6,555.2**	**6,694.8**	**6,859.1**	**7,051.3**	
Real cost of debt allowance - 2012/13 Prices									
WMID	32.3	30.8	29.2	25.7	21.4	15.4	12.2	9.1	
EMID	31.9	30.6	29.2	25.6	21.2	15.3	12.1	9.0	
SWALES	13.9	13.4	13.0	11.7	10.0	7.3	5.8	4.4	
SWEST	20.1	19.7	19.2	17.3	14.7	10.8	8.6	6.5	
WPD	**98.2**	**94.6**	**90.5**	**80.3**	**67.3**	**48.8**	**38.7**	**29.0**	**547.4**
Real cost of debt allowance – Nominal									
WMID	34.2	33.4	32.9	29.8	25.6	19.0	15.4	11.8	
EMID	33.8	33.2	32.8	29.7	25.4	18.8	15.3	11.7	
SWALES	14.8	14.6	14.6	13.6	11.9	9.0	7.4	5.7	
SWEST	21.3	21.3	21.6	20.0	17.5	13.2	10.9	8.5	
WPD	**104.1**	**102.4**	**101.8**	**93.1**	**80.4**	**60.0**	**49.0**	**37.8**	**628.6**
Interest Expense - Nominal Prices (Actual from RRP)									
WMID	76.5	76.4	77.5	78.4	80.8	84.5	88.0	90.2	
EMID	60.9	66.7	72.9	73.2	77.2	80.7	83.1	84.0	
SWALES	36.1	36.1	37.8	39.2	38.6	36.6	35.3	36.1	
SWEST	32.2	36.9	45.6	49.1	50.0	52.1	55.3	58.9	
WPD	**205.7**	**216.2**	**233.8**	**239.9**	**246.6**	**254.0**	**261.6**	**269.3**	**1,927.1**

Table A2.2 (continued): Illustrative calculation of WPD's overall shortfall on cost of debt allowance

	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	ED1 Impact
Average Debt Balance									
WMID	1,450.0	1,450.0	1,450.0	1,450.0	1,590.0	1,730.0	1,730.0	1,730.0	
EMID	1,295.0	1,295.0	1,295.0	1,435.0	1,575.0	1,575.0	1,575.0	1,705.0	
SWALES	575.0	600.0	650.0	675.0	745.0	815.0	815.0	875.0	
SWEST	675.0	800.0	925.0	925.0	925.0	1,025.0	1,125.0	1,125.0	
WPD	**3,995.0**	**4,145.0**	**4,320.0**	**4,485.0**	**4,835.0**	**5,145.0**	**5,245.0**	**5,435.0**	
Inflation element of interest (Average debt x RPI)									
WMID	15.6	31.1	55.1	44.6	48.1	52.3	52.3	52.3	
EMID	14.0	27.7	49.2	44.1	47.6	47.6	47.6	51.6	
SWALES	6.2	12.9	24.7	20.8	22.5	24.7	24.7	26.5	
SWEST	7.3	17.1	35.2	28.4	28.0	31.0	34.0	34.0	
WPD	**43.1**	**88.8**	**164.2**	**137.9**	**146.3**	**155.6**	**158.7**	**164.4**	**1,058.9**
Real interest expense at nominal price									
WMID	60.9	45.4	22.4	33.8	32.7	32.2	35.6	37.9	
EMID	47.0	39.0	23.6	29.0	29.6	33.1	35.4	32.4	
SWALES	29.9	23.3	13.1	18.4	16.1	12.0	10.6	9.6	
SWEST	24.9	19.7	10.5	20.6	22.0	21.1	21.3	24.9	
WPD	**162.7**	**127.4**	**69.6**	**101.9**	**100.3**	**98.4**	**103.0**	**104.9**	**868.2**
Shortfall (Real interest expense at nominal level - real cost of debt allowance in nominal)									
WMID	-26.6	-12.0	10.5	-4.0	-7.1	-13.2	-20.2	-26.1	
EMID	-13.2	-5.8	9.1	0.6	-4.2	-14.3	-20.2	-20.7	
SWALES	-15.2	-8.7	1.5	-4.9	-4.2	-3.0	-3.3	-3.9	
SWEST	-3.6	1.6	11.1	-0.6	-4.4	-7.9	-10.3	-16.4	
WPD	**-58.6**	**-24.9**	**32.2**	**-8.9**	**-20.0**	**-38.4**	**-53.9**	**-67.1**	**-239.6**

Source: WPD calculations, based on forecasts from Lloyds Bank