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Dear Jonathan,

Open letter on the RIIO-2 Framework

Thank you for the opportunity to respond to the above consultation. This is a non-confidential response on behalf of the Centrica Group, excluding Centrica Storage.

We continue to be supportive of the use of the RIIO framework for the economic regulation of energy networks. We welcome this review of the framework as the evidence to date shows that allowances and incentive targets have been set at levels which have been too easy to outperform, leading to high returns and poor value for money for consumers. Some of the key points to be considered in this review are:

- The RIIO framework should be looking to mimic competition wherever possible, including the design of incentive schemes and the expected range of returns.
- In order to achieve this, more active stakeholder engagement by Ofgem is required with a dedicated stakeholder working group to review and challenge detailed proposals.
- Arrangements should reflect the changing energy system, allowing whole system solutions across both gas and electricity, and require both innovation and the use of flexibility services.

The objective for RIIO-2 should take account of the overall aim of network regulation. Regulation is required because networks are natural monopolies, and the aim of regulation should be to mimic competition. The allowed cost of equity reflects the return to be expected from an average network and network company returns should be symmetric around this baseline i.e. not all networks can outperform. We calculate the value of the reported outperformance under the RIIO-1 price controls, compared to if returns were symmetric around the baseline, to be around £5.8bn¹.

In practice, we believe the following principles should be applied to ensure that RIIO-2 is effective:

- Performance is assessed relative to other networks.
- Incentive schemes should be designed with the intention of costing nothing to customers overall i.e. rewards for good performing networks are effectively paid for by penalties for poor performing networks.

¹ 2016/17 prices, based on RORE forecasts included in Ofgem's 2015/16 RIIO Annual Reports

There are a number of possible changes to the framework to help ensure that this happens in practice. At the most limited end, this could mean analysis reflecting likely performance scenarios, based on historical data and trends, being used to develop a plausible symmetric spread of returns (RORE²). We believe this is a necessary development in any case but will need to be augmented by other developments.

At the more advanced end it could mean adjustments that, whilst maintaining the relative position of networks to each other (and so the ex-ante incentive properties), shift returns to be dispersed around the baseline cost of equity. Whilst this should be explored as an option, our preference is for a solution sitting in between these options, where individual incentive schemes could be calibrated to be zero-sum overall, or redesigned in other ways. For example, incentive scheme targets could update on a rolling basis, or could be reset at certain points during the price control period, to capture revealed performance and ensure that overall rewards do not deviate from a broadly symmetric distribution for too long. This would avoid the current situation in the RIIO-ED1 Interruptions Incentive Scheme where targets fixed at the beginning of the price control will result in the networks receiving £647m³ in rewards for no improvement in performance.

Designing the price control to reward relative performance, either at an overall or individual incentive level, will also manage the issue of information imbalance. Networks can no longer benefit as a group for any information imbalance and so should focus analytical resource into getting the 'right' solution. Network companies may have differing ideas of what the right solution is, which would create a tension that improves the rigour of the final arrangements.

The involvement of stakeholders is also important to addressing the information imbalance and ensuring that the arrangements mimic competition. We recommend the creation of a Stakeholder Working Group to shadow the more technically detailed Ofgem-network company working groups. Ofgem would use this forum to explain the detail of key aspects of the price control currently under debate. Stakeholders could then provide feedback and challenge, to be referred to the detailed working groups.

Arrangements to facilitate 'whole-system solutions' are important and should reflect the best solution for customers overall. There is robust evidence for the long-term future of gas networks and so whole-system solutions need to include both gas and electricity. Networks will need to be innovative and make use of flexibility services in the future. The use of flexibility is valued by network users and so we suggest an incentive scheme should be introduced that assesses the approaches taken to flexibility and rewards (and penalises) the relative level of performance.

Significant innovation funding has already been provided. Ofgem's assessment of efficiency should include an assumption that ideas successfully trialled using this funding are fully recognised in the expenditure allowances. More generally, we believe that the need to outperform other networks in order to receive high returns is likely to drive increased innovation.

² Return on regulatory equity

³ 2012/13 prices, assuming performance in maintained at 2014/5 levels

The answers to the detailed questions are below. Please contact me if you have any queries.

Yours sincerely,

Andy Manning
Director - Network Regulation, Forecasting and Settlements

Overarching Objective

1. Do you agree with our overarching objective for RIIO-2 and how we propose to achieve it?

The objective for RIIO-2 should take account of the purpose of network regulation. Regulation is required because networks are natural monopolies, and the aim of regulation should be to mimic competition. This means that network company returns should be symmetric around the baseline returns i.e. not all networks can outperform.

Therefore the success criteria for RIIO-2 also need to be defined are part of the overarching objective. RIIO-ED1, for example, is very clear that a well calibrated settlement is one where the best performing companies could achieve low double digit returns and the worst performing networks the cost of debt.

By contrast, Ofgem state in this RIIO-2 consultation:

“An effective price control should also create a natural dispersion of returns corresponding to the dispersion of company performance on measures that matter to consumers, with the best performers making the highest returns, and the worst performers the lowest”.

It is not sufficient for there to be a natural dispersion of returns. The dispersion also needs to be around a legitimate baseline if RIIO-2 is to be successful in delivering the overarching objective. There needs to be transparency about how the success of RIIO-2 will be defined and measured, including value for money. It would be a backwards step to move away from measurable outcomes.

The RIIO-1 price controls, whilst delivering some benefits to customers, have failed to provide value for money because allowances and performance targets have been too easy to outperform.

In practice, we believe the following principles should be applied to ensure that RIIO-2 is effective:

- Performance is assessed relative to other networks
- Incentives should be designed to cost nothing to customers overall i.e. rewards for good performing networks are effectively paid for by penalties for poor performing networks.

There are a number of possible changes to the framework to help ensure this happens in practice. This ranges from, at the most limited end, analysis reflecting likely performance scenarios, based on historical data and trends, being used to develop a plausible symmetric spread of returns (RORE); to, adjustments that maintain the relative position of networks to each other but shift returns to be dispersed around the baseline cost of equity. In between these options, individual incentive schemes could be calibrated to be zero-sum overall, or could be redesigned in other ways. For example, incentive scheme targets could update on a rolling basis, or could be reset at certain points during the price control period, to capture

revealed performance and ensure that overall rewards do not deviate from a broadly symmetric distribution for too long.

Producing RORE ranges based on likely performance scenarios should enable improved calibration of price control settlements. If this generates a roughly symmetric distribution of returns, around the baseline cost of equity, then this would give increased confidence. This would be a welcome and necessary development. Stakeholders should be involved in detailing the scenarios. The information imbalance between the networks and other parties means it is unlikely to be sufficient to ensure returns are legitimate and so will need to be augmented by other developments.

Shifting returns to be dispersed around the baseline cost of equity has a number of benefits. It guarantees that overall returns in a sector will be close to the level that Ofgem has identified as appropriate. It also, by keeping the relative position of networks, maintains the ex-ante incentive properties i.e. the *incremental* rewards are unchanged. We accept the *absolute* level of rewards is less certain than under current arrangements and any detrimental impact of this would need to be balanced against the benefits.

Whilst we believe there is merit in exploring this option, our preference at this stage is to redesign individual incentive schemes (alongside using likely performance scenarios). The exact approach could vary by incentive scheme. Some should be designed to be at no overall cost. For example, the Broad Measure of Customer Satisfaction (BMCS) should be zero-sum as, in a competitive market, it is improvements in customer service *relative* to competitors that will bring rewards. Under RIIO-1, BMCS is currently expected to give rewards to all network companies, totalling £471m⁴ over the RIIO-1 price controls. In other areas, potentially including efficiency, incentive scheme targets could update on a rolling basis, or could be reset at certain points during the price control period. This allows the price control to react to changes in a similar way to a competitive market.

2. How can we strengthen the consumer voice (primarily end-consumers), in the development of business plans and price control decisions?

Our views on engagement are provided under question 37.

We would also note that whilst enhanced stakeholder engagement is beneficial to the price control review process, stakeholders (including end-consumers and their representatives) should not be expected to fully assess the efficiency of each individual business plan. Stakeholder satisfaction with business plans should not be taken as stakeholder 'sign-off' of the costs within those business plans but as broad agreement with the 'direction of travel'. The primary responsibility for assessing efficiency will always rest with Ofgem. It is also important that how end-consumer feedback (especially views on willingness-to-pay) is used be reviewed and standardised across all networks. We recommend an agreed approach is developed for RIIO-2.

⁴ 2016/17 prices, assuming performance is held at 2015/16 levels

3. How should we support network companies in maintaining engagement with consumers throughout the price control period?

Stakeholder engagement incentives were introduced in the first round of RIIO controls across all four network sectors to encourage networks to conduct proactive engagement activities that delivered positive outcomes for consumers. We have observed increased levels of engagement by the networks compared to during the pre-RIIO price controls. Stakeholder engagement should now be considered to be a BAU activity and, therefore, we do not believe retaining a financial incentive in this area will provide value for consumers. We believe a reputational incentive would be an effective means of encouraging networks to maintain high levels of engagement, especially if Ofgem took account of stakeholders' and the assessment panel's views of performance in making price control decisions.

If a financial incentive is retained, it should be designed to be symmetrical so that the rewards earned by the best-performing networks are paid for by penalties on the worst-performing networks, thereby mimicking competition. The underlying efficient costs of engagement activity should be included in baseline expenditure allowances. Further, the assessment process, which currently does not provide stakeholders with a formal role, can be improved. Stakeholders should be permitted to comment on networks' submissions and the assessment panel (and Ofgem) should be required to take account of stakeholders' views. Stakeholders' views should also be sought on the proposed rewards and penalties. The ways in which stakeholders' views are incorporated into the assessment of DNOs' performance against the Incentive on Connections Engagement is a good example. We recommend a similar process is implemented for all discretionary incentives.

4. Does this structured approach to defining outputs provide the right level of clarity around delivery?

We are concerned about the changes being made to Network Outputs Measures (NOM) methodologies during the price control. Whilst we understand the NOM methodologies are a work in progress, it is important to assess delivery on the same basis as allowances were granted. If improvements are made to the methodologies during a price control then there should be dual reporting so that delivery in the current price control is measured against outputs using the methodology agreed at the outset of the price control, whilst information can be gathered under the new methodology in preparation for the next price control. This removes the risk of affecting the outputs that the networks have been funded to deliver through developing the methodology. This means there is no incentive to develop the methodology for commercial reasons and ensures developments are viewed as legitimate.

5. How can the outputs framework be improved, including the introduction of additional output categories for example around efficient system operation for distribution network companies?

Currently, the outputs framework encourages, captures and measures delivery of outputs in each network company's licence area. However, it has been recognised that a licensee can deliver investment not needed in its licence area but which has an overall system benefit, thereby delivering long-term efficiency outcomes for consumers. This 'whole system' approach underpins the SO-TO mechanism being trialled in the 2017-18 SO Incentives Scheme⁵.

We agree regulatory regimes should interact effectively to ensure all licensees work together to deliver efficient whole system outcomes⁶. In principle, the SO-TO mechanism being trialled appears to be a reasonable starting point to developing arrangements that encourage 'whole system' coordination. The operation of that mechanism should be reviewed and further trials should be conducted ahead of the next round of price controls so that areas of improvement can be identified. Also, consideration should be given as to how elements of the regulatory framework such as incentive mechanisms and the apportionment of risk can be aligned so that each network company is not discouraged from delivering 'whole system' solutions.

'Whole system' solutions are to provide long-term, efficient outcomes for consumers. It should be recognised that any such mechanisms designed into the RIIO framework, whilst having the potential to result in higher spending for individual networks, should result in lower overall network expenditure requirements.

6. Did the outputs target the right behaviours?

The implementation of the outputs framework represents an improvement in encouraging behaviours that deliver benefits to customers. There are, however, examples of poorly calibrated outputs and incentives that can encourage the wrong behaviours or encourage companies to not improve or even worsen performance.

The Exit Capacity incentive in the RIIO-GD1 price control is meant to encourage GDNs to book efficient levels and distributions of capacity at NTS exit points. However, in the first three years of the RIIO-GD1 price control, the mechanism scheme has cost consumers £15m more than if it had not been implemented because of the reference prices used. Ofgem has recognised "*...the scheme might encourage GDNs to target their reductions at the wrong exit points...*"⁷ and has committed to reviewing it ahead of the next price control.

⁵ Final proposals for electricity System Operator incentives from April 2017, para 1.79-1.88: https://www.ofgem.gov.uk/system/files/docs/2017/03/final_proposals_for_electricity_system_operator_incentives_from_april_2017.pdf.

⁶

Future Arrangements for the Electricity System Operator: Working Paper on the Future Regulatory Framework, para 1.40: https://www.ofgem.gov.uk/system/files/docs/2017/07/future_so_reg_framework_july_2017_working_paper.pdf.

⁷ Consultation on mid-period review parallel work, para 3.97: https://www.ofgem.gov.uk/system/files/docs/2017/02/mpr_parallel_work_consultation.pdf

The Broad Measure of Customer Satisfaction (BMCS) and the Interruptions Incentive Scheme (IIS) are examples of mechanisms that could encourage network companies not to continue to pursue improvements or even worsen performance because targets were set at insufficiently challenging levels. We previously highlighted the calibration of the BMCS in the RIIO-GD1 price control meant that seven of eight licensees were performing above the cap in the Unplanned Interruptions category from the first year of the price control. Further, by maintaining 2013/14 BMCS performance⁸, GDNs will receive £148m in rewards over the price control. Similarly, in the RIIO-ED1 price control, several networks are performing beyond the level where rewards are capped in the Interruptions Incentive Scheme and so there is no incentive for networks to improve performance. Further, by maintaining 2014/15 performance levels across RIIO-ED1, DNOs will earn c. £647m in rewards.

7. How can we address areas of expenditure for which a clear output is difficult to define?

When outputs are being defined, it is important any ambiguity is avoided. Outputs should also be designed to focus on consumer outcomes in a way that allows and encourages network operators to deliver at best value to consumers.

We understand that in some cases, where it is challenging to define meaningful and measurable outputs, alternatives may be required including specific details of projects and allowances.

The greater use of revenue drivers to ensure that allowances adjust when background conditions change relative to those assumed in the original settlement can also help to prevent the undesirable circumstance where significant allowances have been awarded and are subsequently not needed.

For example, in RIIO-ET1, material amounts of ex-ante non-variant load-related allowances were provided which were subsequently not required because the need for additional capacity has not materialised resulting in National Grid voluntarily deferring £130m of load related network investment⁹. It would have been better for allowances to automatically adjust to changes in circumstances, for example as occurs with the RIIO-ET1 generation volume driver.

8. Were the output targets and associated financial incentives set for RIIO-1 appropriate, reflecting what consumers value and are willing to pay for?

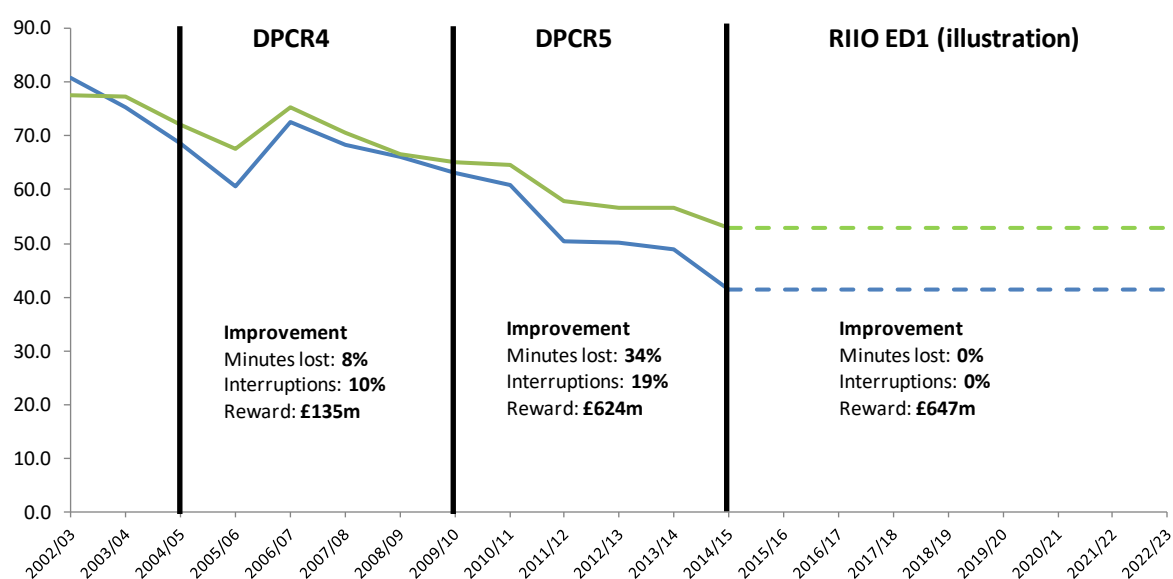
The consistent outperformance through companies delivering outputs at lower costs than allowances suggests that the output targets were not sufficiently stretching. It also suggests

⁸ For 2013/4 performance beyond the capped level, performance could worsen to the level of the cap without affecting the £148m reward

⁹ Open letter: National Grid Electricity Transmission's deferral of £480m of RIIO-T1 allowances: https://www.ofgem.gov.uk/system/files/docs/2017/06/nget480_open_letter_final_0.pdf

that the Information Quality Incentive (IQI) – the ‘truth telling’ incentive - is not fully effective in encouraging networks to reveal their true costs. A full review of IQI is required (including sharing factors). A possible explanation is that the difference in treatment, and potential returns, between more and less challenging business plans is not sufficient.

Also, a review of incentive performance for RIIO-1 would suggest that incentive targets were not appropriate, in some instance allowing significant rewards for networks maintaining current levels of performance. For example, we expect DNOs will receive c. £647m¹⁰ through the Interruptions Incentive Scheme incentive even if they make no improvements to performance during RIIO ED1.



Incentives should not be used to fund activities, but to provide rewards or penalties for good or poor performance. The underlying efficient costs of an activity subject to an incentive scheme should be included in baseline efficient expenditure allowances.

We would also note that the RORE ranges presented with the RIIO-1 settlements did not represent a realistic range of outcomes. The ranges did not allow for the probability of outcomes, generally choosing incentive schemes caps (collars) or symmetric outperformance. For example, for RIIO-GD1 the RORE range assumed a range of actual expenditure of +/- 10% compared to allowed expenditure, despite there being no historical evidence of networks overspending allowances. This created, by design, ranges that looked symmetric but were unrepresentative of reasonable expectation. This has a negative impact on transparency and potentially restricts debate on the appropriate calibration of price controls. It is inadequate to simply design incentive schemes with an apparently symmetric potential upside and downside. They need to be designed with a probabilistic symmetric upside and downside.

¹⁰ 2012/13 prices, assuming performance in maintained at 2014/5 levels

In September 2014, we provided an assessment of the realistic RORE range for RIIO-ED1, as part of our consultation response to the RIIO-ED1 Draft Determinations. The table below compares the first year performance of DNOs in the areas included in our analysis and suggests that the outperformance was foreseeable.

	BG Central View RIIO ED1	Outturn Estimate 2015/16	Diff
AVERAGE	11.2%	11.5%	0.3%
BEST PERFORMING	16.3%	16.6%	0.3%
WORST PERFORMING	8.0%	7.9%	-0.1%
By Performance Area			
Baseline RoRE	6.1%	6.1%	0.0%
RPI formula effect	0.4%	0.4%	0.0%
Outperformance in CoD (converted to equivalent CoE)	0.2%	-0.1%	-0.3%
Ex ante reward/penalty	0.3%	0.2%	-0.2%
Totex efficiency Incentive	2.9%	2.2%	-0.7%
Interruptions incentive scheme	0.8%	1.9%	1.2%
Health Index	0.0%	0.0%	0.0%
Broad Measure of Customer Satisfaction	0.6%	0.5%	-0.1%
Guaranteed Standards for reliability	-0.1%	0.0%	0.1%
Guaranteed Standards for severe weather	-0.1%	0.0%	0.1%
Guaranteed Standards for connections	-0.1%	0.0%	0.1%
Losses discretionary reward	0.0%	0.0%	0.0%
Time to connect Incentive	0.2%	0.2%	0.0%
Incentive on connection engagement	-0.1%	0.0%	0.1%
Tax trigger deadbands	0.0%	0.0%	0.0%
Forecast RoRE - Central Case	11.2%	11.5%	0.3%

	BG Central View RIIO ED1	Outturn Estimate 2015/16	Diff
AVERAGE	11.2%	11.5%	0.3%
BEST PERFORMING	16.3%	16.6%	0.3%
WORST PERFORMING	8.0%	7.9%	-0.1%
By DNO			
Baseline RoRE	6.1%	6.1%	0.0%
ENWL	10.9%	10.0%	-0.9%
NPGN	9.1%	9.0%	-0.1%
NPGY	9.0%	9.5%	0.5%
WMID	16.1%	7.9%	-8.2%
EMID	15.1%	10.9%	-4.2%
SWales	14.8%	13.6%	-1.2%
SWest	16.3%	11.0%	-5.3%
LPN	10.2%	16.6%	6.4%
SPN	10.0%	15.3%	5.3%
EPN	10.2%	13.7%	3.5%
SPD	8.7%	10.4%	1.7%
SPMW	9.0%	8.8%	-0.2%
SSEH	9.4%	11.0%	1.6%
SSES	8.0%	12.7%	4.7%
Forecast RoRE - Central Case	11.2%	11.5%	0.3%

9. What changes in the RIIO framework would facilitate returns that are demonstrably good value for consumers?

The aim of network regulation should be to mimic competition. The allowed cost of equity reflects the return to be expected from an average network and network company returns should be symmetric around this baseline i.e. not all networks can outperform. In practice, we believe the following principles should be applied to ensure that RIIO-2 is effective:

- Performance is assessed relative to other networks
- Incentive schemes should be designed with the intention of costing nothing to customers overall i.e. rewards for good performing networks are effectively paid for by penalties for poor performing networks. Consistent with mimicking competition, we do not believe it is possible for all networks to outperform (even when all are improving performance) or for all networks to underperform (even when performance is worsening generally). Rewards should be based on relative performance where possible.

There are a number of possible changes to the framework to help ensure this happens in practice. At the most limited end, this could mean analysis reflecting likely performance scenarios, based on historical data and trends, being used to develop a plausible symmetric spread of returns (RORE). At the more advanced end it could mean adjustments that, whilst maintaining the relative position of networks to each other (and so the ex-ante incentive properties), shift returns to be dispersed around the baseline cost of equity. In between these options, individual incentive schemes can be redesigned. For example, incentive scheme targets could update on a rolling basis, or could be reset at certain points during the

price control period, to capture revealed performance and ensure that overall rewards do not deviate from a broadly symmetric distribution for too long.

The best way to change the framework will clearly require development and may well need to vary by sector, particularly where there are a limited number of companies to compare. However, it would be useful for Ofgem to confirm, or otherwise, the *intention* that companies returns should be dispersed around the cost of equity.

Designing the price control to reward relative performance will also effectively manage the issue of information imbalance. If networks can no longer benefit as a group for any information imbalance, companies should focus analytical resource into getting the 'right' solution. If relative performance becomes more important each network will have an incentive to ensure the performance of all network companies is accurately reflected. This means the information and expertise of the network companies would then be an asset. Network companies may have differing ideas of what the right solution is, which would create a tension that improves the rigour of the final arrangements.

Whilst the RIIO-1 price controls may have delivered some benefits to customers, there is significant doubt about the legitimacy of the levels of returns achieved by networks. We believe it is necessary to perform a forensic review of current price control performance in order to:

- Identify drivers of outperformance
- Assess underlying reasons
- Assess whether these are justified
- Develop proposals for addressing

Such a review should also seek to assess the implications of the recent network sales.

10. How can we minimise the scope for forecasting errors?

Greater scrutiny of networks' business plans should mitigate forecasting errors. The expectation that their submissions will be more rigorously scrutinised might encourage networks to submit higher quality information. Greater scrutiny may require additional resources. However, the cost of greater scrutiny should be assessed against the potentially significant benefits that can be delivered to consumers, by reducing forecasting errors and narrowing the information asymmetry gap between Ofgem and networks.

Another improvement that would also help manage the inherent information asymmetry that exists between the regulator and networks would be to include more revenue drivers into the price control such that allowances would automatically reduce or increase for changes in circumstances (e.g. higher/lower demand or EV or DG¹¹ deployment) compared to those assumed in setting original allowances.

¹¹ Electric Vehicle (EV) or Distributed Generation (DG)

Similarly, to prevent forecasting errors and information asymmetry leading to inappropriate incentive targets, incentive schemes should be designed with the intention to cost nothing to customers overall (rewards for good performing networks are effectively paid for by penalties for poor performing networks). This can be achieved by calculating rewards/penalties based on relative performance, or by updating ex-ante targets on a rolling basis or resetting them at certain points during the price control period (or upon a certain trigger like uncertainty mechanisms) to capture revealed performance and ensure that overall rewards do not deviate too far from a symmetric distribution for too long.

Incentives should not be used to fund activities, but to provide rewards or penalties for good or poor performance. The underlying efficient costs of an activity subject to an incentive scheme should be included in baseline efficient expenditure allowances.

11. What constitutes a fair return for a regulated monopoly network company, and how can we ensure that returns remain legitimate in the eyes of stakeholders?

At this stage in the RIIO-2 process (i.e. several years before final determinations), it is too early to offer a view on the precise rate of return that should apply to monopoly network companies over the RIIO-2 period. However, we do agree with Ofgem's assessment that "evidence seems to point towards a significantly lower cost of capital for regulated network companies than that set for the RIIO-1 price controls".

We believe Ofgem should set out some further thoughts at an early stage in the RIIO-2 process on the principles which should guide the approach to, and the tools and techniques which might be used for, determining a fair rate of return for a regulated monopoly network company and ensuring it remains legitimate in the eyes of stakeholders. This is in the interests of transparency and enabling third party review of Ofgem's decisions. Below we set out some of our preliminary thinking in these areas for Ofgem to consider as it evaluates principles and tools and techniques.

A fair return for a regulated monopoly network company should enable an efficiently operated and financed company to be financeable i.e. to raise debt and equity on capital markets on reasonable terms. Companies which are pushing the efficiency frontier forward should be able to earn higher rates of return, but an inefficient company should not be entitled to earn a return equal to its cost of capital.¹² Customers should not pay more than is necessary to enable an efficiently operated and financed company to be financeable.

A fair rate of return should compensate companies and investors for the risks that an investor in an efficiently operated and financed company would face. As part of ensuring a fair and legitimate rate of return is identified, Ofgem should ensure that risks are allocated to the party best placed to manage them. In most cases, this will be to network companies and their investors, who have the tools and wherewithal to mitigate many of these risks.

Ensuring that investors earn a fair and legitimate rate of return also requires that investors should not unduly benefit from windfall gains (i.e. higher rates of return due to factors outside

¹² We note that this position is consistent with Ofwat's recent consultation on its proposed approach to PR19.

of their control, such as lower than expected interest rates). Consequently, to ensure the rate of return earned by investors in monopoly network companies is fair and legitimate, Ofgem should consider introducing mechanisms to pass on windfall gains to customers i.e. to ensure that the rate of return adjusts over time for changes in circumstances. Indexing the cost of debt helps to share windfall losses arising from falling interest rates with customers, but Ofgem should also consider other tools (such as caps and collars, triggers and refinancing gain-share arrangements) and whether similar mechanisms could be applied to the cost of equity. Introducing mechanisms to address uncertainties will mitigate risks for investors and reduce any “headroom” Ofgem may have otherwise considered allowing on the costs of debt and equity e.g. if Ofgem intended to adopt a much lower assumption about the total market return at RIIO-2, but was concerned about a possibility that the cost of equity might rise over the period.

Applying these principles in practice requires tools and techniques for identifying a fair rate of return, for monitoring actual returns and for implementing any adjustments to the rate of return over the price control period.

Ofgem has traditionally used a Capital Asset Pricing Model (CAPM) framework for estimating the cost of equity, but other tools are available including Dividend Growth Models (DGMs)¹³, Market to Asset Ratios (MARs)¹⁴ from M&A transactions and listed energy networks, and Residual Income Models (RIMs)¹⁵. Other UK economic regulators, including the CMA, have previously considered the DGM and MARs,¹⁶ while a range of academic studies have supported the RIM.¹⁷ There are also variants of the CAPM framework that may better address some of the shortcomings of that model, e.g. variants of CAPM which incorporate skewness of returns.¹⁸ Given the importance of setting a fair and legitimate rate of return, Ofgem should consider all the alternatives to CAPM carefully before settling on a particular approach for RIIO-2. It may be that a range of techniques should be employed and their results combined to reach a conclusion on the appropriate rate of return for RIIO-2.

12. What factors do you think are relevant for assessing and setting the cost of capital so it properly reflects the risks faced by companies?

The cost of capital for regulated monopoly network companies cannot be estimated in isolation; it must be calibrated taking into account the risks that investors actually bear. These in turn are a function of the risks facing the sector and how those risks are allocated between the network companies and stakeholders. We set out below a number of principles

¹³ The DGM calculates the cost of equity as the discount rate which equates the current market value to the net present value of forecast dividends.

¹⁴ The market value of a regulated energy network equals the value of expected future profits (including any outperformance of price controls) discounted at investors’ cost of equity. The ratio of the market value of a regulated energy network to its Regulatory Asset Value (RAV) therefore provides information about whether investors’ cost of capital is higher or lower than the allowed cost of capital.

¹⁵ The RIM calculates the value of equity in a company as the book value plus the discounted value of forecast future super-normal profits.

¹⁶ For example, Ofwat have used DGMs as a cross-check for their CAPM analysis – Ofwat (2009), Future water and sewerage charges 2010-15: Final determinations; the CMA considered estimates from DGMs in their NIE determination – Competition Commission (2014), Northern Ireland Electricity Limited price determination.

¹⁷ See, for example, Sudarsanam and Park (2011) Cost of Equity for Regulated Companies: An International Comparison of Regulatory Practices.

¹⁸ For example, a four-moment CAPM takes into account the third (skewness) and fourth (kurtosis – fat tails) moments of the distribution of returns – Jurczenko and Maillet (2002), The Four Moment CAPM: Some Basic Results

to help ensure the cost of capital at RIIO-2 only compensates investors for efficiently incurred and borne risks:

- Risks should be allocated to the party best able to manage them. This should lead to the best value for money price control package for customers.
- Risks which an efficient company would mitigate (e.g. through insurance, hedging or the way they operate and manage their business) should not be compensated through the cost of capital. Only risks which cannot be mitigated or diversified, and which are efficiently borne by companies, should be compensated through the allowed cost of capital.
- Ofgem should consider carefully how best to deliver value for money for customers: uncertainty mechanisms or appropriate incentives on companies to mitigate risks, may deliver a better overall outcome for customers than an increase in the cost of capital.
- Double counting of risks must be avoided i.e. Ofgem must ensure that both debt and equity investors are not compensated for the same risks and that investors are not compensated for risks which some other aspect of the regulatory framework protects them against.
- Equally, the costs of debt and equity should be based on a consistent view of risk. It would be helpful if Ofgem developed a full “risk register” of the risks faced by the sector and identified which parties currently bear those risks and which would be best placed to manage those risks (i.e. allocating the risk to which party would lead to the best value for money outcome for customers overall).

We have also noted Ofgem’s suggestion that there is significant uncertainty around the outlook for the electricity and gas sectors.¹⁹ However, uncertainty and risk are not the same thing, and the uncertainty Ofgem describes is in many cases a long-term issue rather than relevant to RIIO-2, so we would caution Ofgem against assuming that network companies will face more risk at RIIO-2 (all else equal) and that there should be any increase in the allowed rate of return to compensate for higher risk.

In the context of the CAPM framework typically adopted by Ofgem in the past for estimating the cost of equity, the standard approach to reflecting the risks borne by investors in the cost of capital has been to estimate equity betas, a measure of an investment’s systematic risk. This standard approach should be refined and complemented with additional and alternative sources of evidence because in the absence of any “pure play” listed energy networks in Great Britain that Ofgem can use to estimate betas for the companies covered by RIIO, CAPM-style beta analysis cannot provide a complete picture of the risks borne by the networks’ investors.

Some options for refining the beta analysis could include:

- Identifying listed “pure play” gas/electricity transmission/distribution companies in other jurisdictions and using these as comparators.
- Estimation of accounting betas from financial statements.

¹⁹ See, https://www.ofgem.gov.uk/system/files/docs/2017/07/open_letter_on_the_riio2_framework_12_july_final_version.pdf, p2.

- Decomposing the betas of National Grid and SSE by estimating betas for the other activities undertaken by these groups (e.g. US energy networks, UK generation and supply activities etc) in order to isolate the betas of the “pure play” GB regulated energy networks.
- Using listed English water companies, some of which are quite close to being “pure play”, as comparators and adjusting the resulting beta estimates for differences in the relative risk of water and energy networks (based on a detailed comparison of the different sectors).

Ofgem should also explore, in detail, the risks actually borne by energy networks, how those risks are allocated between stakeholders and the risks that investors actually require compensation for. This might be thought of as “bottom up” analysis to complement the “top down” beta analysis discussed above. It is important to fully understand the risks that betas are capturing as regulated energy networks in GB are a low risk investment proposition and yet the betas derived from market data have appeared to be relatively high in the past. It is possible that the betas calculated from market data do not solely reflect the underlying systematic risk of the energy networks.

13. Can we improve our methods for the indexation of the costs of debt and equity?

Ofgem will need to consider whether to continue with its current approach to debt indexation for RIIO-2 carefully, or whether to revert to setting a fixed cost of debt allowance, or to otherwise refine its debt indexation methodology. Ofgem should also consider whether it would be appropriate to index the cost of equity for RIIO-2. These decisions will in part depend on other features of the regulatory framework (e.g. the duration of the price control) and the effectiveness of available tools and techniques for implementing indexation. We therefore set out below some initial thoughts about the appropriate principles which should guide Ofgem’s choices in relation to indexing the costs of debt, equity and/or capital, and some potential tools and techniques which could be explored.

Any decision about whether and how to index the costs of debt, equity or capital should be guided by consideration of a number of factors. These factors include:

- Value for money for customers. Indexation changes the allocation of risks between customers and investors, so has implications for the allowed cost of equity. Indexation can also change the incentives on energy networks to achieve the lowest overall cost of debt, which would be undesirable if it increases the cost of capital paid for by customers.
- The potential for a formal sharing mechanism to ensure that customers benefit from any reductions in the cost of capital over the period. Under Ofgem’s current approach to debt indexation, network companies retain 100% of outperformance of the cost of debt index. This is in direct contrast to Ofgem’s approach to other elements of the price control where companies share outperformance with customers.
- Implementation in practice. Any index would need to be able to accurately and robustly track the efficient cost of debt, equity or capital faced by the network

companies. Indexation also needs to be transparent and predictable, so investors and other stakeholders can observe it.

Ofgem should also learn the lessons from its approach to debt indexation at RIIO-1. In particular, it would be a useful exercise to understand whether debt indexation has encouraged companies to adopt least cost financing arrangement, or adopt more risk averse strategies to mimic the index from experience to date. Ofgem should also consider whether it was beneficial to adopt different approaches to debt indexation for different network companies (or groups of companies)²⁰ and whether it would be better to adopt a single approach to indexation applicable to all network companies.

Some of the tools and techniques for indexation of the costs of debt, equity and/or capital which Ofgem should consider include:

- Other regulatory precedents:
 - Ofwat's proposal to only index the cost of new debt, setting a fixed allowance for the cost of existing debt;²¹
 - the approach adopted for Thames Tideway Tunnel, where movements in the benchmark cost of debt outside of a pre-defined range are shared with customers, but movements within the pre-defined range are absorbed by the company;²²
 - UREGNI's decision to make an ex-post true-up to the allowed cost of debt based on passing through the efficient cost of debt on an 80/20 customer/investor basis for gas and electricity networks in Northern Ireland;²³
 - in Ireland the Commission for Energy Regulation (CER) included a trigger mechanism in its decision on revenue for Bord Gáis Networks for the WACC; the allowed cost of capital is reviewed each year, and adjusted if there are significant changes (defined in accordance to a pre-set band) in market conditions;²⁴
 - in Finland and in Norway currently the risk free rate is updated annually.^{25,26}
- Available tools and techniques, including:
 - whether an unfettered indexation approach remains appropriate, or whether complementing it with caps and collars, or some other sharing arrangements, would be appropriate e.g. similar to those used by UREGNI for energy networks or the approach adopted for Thames Tideway Tunnel;

²⁰ For example, Ofgem adopted a different approach to indexing the cost of debt for the "slow track" DNOs than other energy networks, but there were also slightly different approaches to the cost of debt index for the two Scottish electricity transmission network companies.

²¹ See <https://0980a19b0bb02fe4a86d-0df48efcb31bcf2ed0366d316cab9ab8.ssl.cf3.rackcdn.com/wp-content/uploads/2017/07/Delivering-Water-2020-Consulting-on-our-PR19-draft-methodology-2.pdf>

²² See https://0980a19b0bb02fe4a86d-0df48efcb31bcf2ed0366d316cab9ab8.ssl.cf3.rackcdn.com/wp-content/uploads/2015/10/pap_pos20150824baztttlc.pdf, pp12-13.

²³ See <https://www.uregni.gov.uk/sites/uregni/files/media-files/2017-07-04%20RP6%20FD%20Main%20Report%20%28002%29.pdf>, para 12.12 – 12.14 and https://www.uregni.gov.uk/sites/uregni/files/media-files/Annex_14_-_Rate_of_Return_Adjustment_Mechanism.pdf

²⁴ CER (2012), Decision on October 2012 to September 2017 distribution revenue for Bord Gáis Networks <http://www.cer.ie/docs/000404/cer12194.pdf>

²⁵ Energiavirasto (2015), Regulation methods in the fourth regulatory period of 1 January 2016 – 31 December 2019 and the fifth regulatory period of 1 January 2020 – 31 December 2023 https://www.energiavirasto.fi/documents/101091/0/Appendix_2_Regulation+methods+draft_DSO_2016-2023.pdf/3fb120b9-97ba-4226-a7a8-6f0b3cb39f15

²⁶ NordREG (2011), Economic regulation of electricity grids in Nordic countries http://www.nordicenergyregulators.org/wp-content/uploads/2013/02/Economic_regulation_of_electricity_grids_in_Nordic_countries.pdf

- the cost of equity or the risk-free rate might potentially be indexed to gilt yields, a similar approach to that adopted in some Nordic countries;
- whether any index of the cost of debt may need to take into account the different kinds of debt (e.g. private placements) raised by energy networks, not just bonds;
- whether the components of Ofgem's existing approach to indexing the cost of debt remain the best available. For example:
 - the use of A and BBB rated non-financial bonds
 - 10+ years to maturity tenor
 - the use of breakeven inflation data from the Bank of England as a measure of market inflation expectations
 - has the "halo" effect – the ability of energy networks to issue debt more cheaply than benchmark bond indices – been fully taken into account?
 - does a 10 year (or longer) trailing average of the index ensure that reductions in the cost of debt are passed through to customers as quickly as they should be?

Other approaches and issues will likely also need to be considered. At this early stage in the RIIO-2 process we do not have a firm view as to whether the costs of debt, equity and/or capital should or should not be indexed, and if they should be indexed, how. To facilitate stakeholder engagement Ofgem should consider each of the issues outlined above and set out its views on the strengths and weaknesses of each approach, including an evaluation of whether the approach would meet the guiding principles set out above.

14. Are there specific amendments to any core aspects of financeability that we should be considering in light of performance during RIIO-1 and the change in the financial environment?

A key part of the approach to financeability testing will be the extent to which energy networks are required to resolve any financeability problems themselves and the hierarchy of solutions which are available i.e. the order in which those solutions should be expected to be adopted.

Ofgem has previously given companies a certain amount of freedom over capitalisation rates to resolve financeability problems.²⁷ Ofgem has also made a number of changes to asset lives²⁸ and depreciation profiles,²⁹ generally to bring forward revenues in an NPV-neutral fashion, to solve financeability problems for the network companies. It is not clear that these approaches to financeability are in the best interests of customers and particularly the

²⁷ For example see Ofgem (2011), RIIO-T1 and GD1 Financial Issues <https://www.ofgem.gov.uk/ofgem-publications/48262/gd1decisionfinancepdf> para 7.12

²⁸ For example, see Ofgem (2011), Decision letter on the regulatory asset lives for electricity distribution assets <https://www.ofgem.gov.uk/ofgem-publications/50629/assetlivedecision.pdf>. This issue, and particularly the use of transition periods to move from one asset life to another, was the subject of considerable debate during the RIIO-ED1 appeals process.

²⁹ For example, Ofgem adopted an accelerated depreciation profile – sum of the digits – instead of straight line depreciation for RIIO-GD1 – Ofgem (2011) RIIO-T1 and GD1 Financial Issues <https://www.ofgem.gov.uk/ofgem-publications/48262/gd1decisionfinancepdf> p3.

interests of current customers who end up paying higher bills as a result of these changes. The inter-generational equity issues that this might create need to be considered carefully.

Equally importantly, however, is for Ofgem to explore whether it is appropriate for customers to pay higher bills today in order to solve financeability challenges which companies' investors could solve for themselves through reductions in dividends and equity injections. Many investors in energy networks have invested in these companies because they are growing and the increase in RAV can lead to higher returns over time (particularly if it is assumed that the network companies can be sold in future at a significant premium to RAV). Those investors should not therefore be allowed to be released from the responsibility for resolving any financeability problems caused by the combination of high leverage and high rates of investment in the network. Ofgem should explore whether it has appropriately factored dividend cuts and equity injections into its approach to financeability in the past. Both of these options would lead to lower customer bills in the short-term and should not have any increase on bills in net present value terms as equity investors should be able to raise finance against the higher expected revenues in future (which they otherwise propose to bring forward to solve financeability problems).

A number of principles should guide the approach to financeability testing at RIIO-2, including:

- A price control is financeable if an efficiently operated and financed company could meet its obligations at an efficient cost of capital. Financeability adjustments should not be allowed for inefficiently managed and financed companies.
- Investors and companies should be required to reduce dividends and make equity injections to resolve financeability problems before Ofgem – and customers – are expected to make a contribution towards resolving financeability problems.
- Investors and companies are responsible for capital structures, so the extent that financeability problems arise from actual real-world financing decisions, customers should be protected from those choices.
- An equitable balance must be found between the interests of current and future customers. Reducing bills for future customers at the cost of increasing current customers' bills must be robustly and clearly evidenced, including through customer engagement.

Financeability tests have often been conducted by reference to a suite of financial ratios used by credit ratings agencies to evaluate energy networks. The financial ratios considered have typically included interest coverage ratios and gearing, among others. These types of tests will continue to have a role to play. However, Ofgem should consider the range of following issues as part of developing its approach to financeability testing at RIIO-2:

- The definition of any notionally efficient company that it intends to use in its financeability tests. This definition should go beyond simply describing the capital structure in terms of a gearing assumption and set out the assumptions that have been made about totex efficiency and output delivery. This will enable stakeholders to better understand the link between Ofgem's views on the definition of efficiently financed and operated companies.

- The credit rating (e.g. BBB+) Ofgem expects an efficiently operated and financed company to be able to achieve, taking into account which credit rating would be consistent with an optimal capital structure and best overall value for money for customers.
- The appropriate choice of financial ratios and thresholds consistent with a particular credit rating. Ofgem should not adhere rigidly to these financial ratio tests. Economic regulators can and should consider if the financial ratios and tests used by credit rating agencies, many of which have been developed to be applied globally, appropriately take into account the specifics of Ofgem's regulatory framework and the relatively favourable financial and operating environment of British energy networks relative to most of their international peers. Ofgem has previously used an alternative version of the post maintenance interest cover (PMICR) ratio,³⁰ while Ofwat has used tailored versions of some of the financial ratios that the credit ratings agencies adopt.³¹
- The period over which companies should forecast their financial ratios e.g. whether that should extend beyond the current price control period.
- What constitutes passing a financeability test, noting that it is not essential to meet the thresholds for all financial ratios in all years of the period.
- The amount of weight to apply to the financial ratio tests (as opposed to other qualitative factors also considered by credit ratings agencies) and how to interpret the results of these tests.

Some of the energy networks are owned by infrastructure funds (and other similar investors) and may be highly leveraged. These investors would presumably not have adopted these financing structures if they did not anticipate that the structures would enable them to earn higher rates of return. It might be, therefore, that Ofgem's traditional approach to evaluating financeability on the basis of a notionally efficient company may be unduly generous to investors. With that possibility in mind, Ofgem should also consider conducting financeability tests on both an actual and a notional capital structure basis. Comparing and contrasting the results of these tests may help to identify any increases in risk that higher gearing (whole business securitization) structures have created and how those risks are allocated between investors and customers. It may also help to identify where an actual capital structure has reduced the overall cost of capital and a lower allowed cost of capital could be adopted without compromising the financeability of the actual business.

15. Should we consider moving to CPIH (or another inflation index) and how should we put into effect any change to ensure it is present value neutral for investors?

It will be important to consider the interplay between financeability and any potential transition to indexing price controls to CPIH or CPI inflation, instead of RPI inflation, at RIIO-2. Such a transition would, all else equal, accelerate cash into the RIIO-2 period, easing financeability challenges, so it is essential that Ofgem's approach ensures that customers do

³⁰ See Ofgem (2014) RIIO-ED1: Draft determinations for the slow-track electricity distribution companies <https://www.ofgem.gov.uk/ofgem-publications/89072/riio-ed1draftdeterminationfinancialissues.pdf> Appendix 1

³¹ See https://assets.publishing.service.gov.uk/media/56279924ed915d194b000001/Bristol_Water_plc_final_determination.pdf, para 11.43.

not pay more simply as a result of a decision to change the chosen reference inflation index. This may mean the use of capitalisation rates and asset lives to bring forward revenues to address financeability issues at RIIO-2 is reduced. Ofgem should also consider if there may be an opportunity to share more benefits of the reduction in market rates of return (discussed in our response to Question 11) with customers at RIIO-2 because of the financeability uplift that a transition, in part or in full, to CPIH/CPI may give rise to.

17. Are there any other realignment options we should consider?

The case would need to be made for any realignment of price controls, and Ofgem would need to demonstrate that consumers are not made worse off by any such realignment. Given the levels of outperformance being achieved by the electricity transmission companies, it is important that revealed performance in RIIO-T1 is captured through tougher allowances, output and incentive targets without any unjustified delay i.e. RIIO-T1 should not be simply 'rolled-over'.

18. What amendments to the RIIO framework, if any, should we consider in supporting companies to make full use of smart alternatives to traditional network investment?

Arrangements to facilitate 'whole-system solutions' are important and should reflect the best solution for customers overall. There is robust evidence for the long-term future of gas networks and so whole-system solutions need to include both gas and electricity. Networks will need to be innovative and make use of flexibility services in the future. The use of flexibility is valued by network users and so we suggest an incentive scheme should be introduced that assesses the approaches taken to flexibility and rewards (or penalises) the relative level of performance. This incentive could take a similar form to the current Stakeholder Engagement Incentive, but with a number of essential improvements (e.g. involvement of stakeholders in the assessment of network performance, zero sum rewards/penalties).

The treatment of expenditure in the price control, or across price controls, for particular flexibility arrangements needs to be fully considered. For instance, it is not appropriate, in the case of DSR, for networks to fund this expenditure through reduced network charges to a subset of customers. The lower income recovery for this subset would lead to increased charges for everyone else. This means networks would not have contributed to the smart alternative solution, but would receive a large share of the efficiency saving.

19. Given the uncertainty around demand for network services, how much of an issue might asset stranding be and how should this risk be dealt with?

We are supportive of networks seeking smart alternatives to traditional network investment. Making better use of existing assets in a smarter, more effective way is preferable to building new assets and risking them being stranded.

There is a future for the gas network, and decisions which would curtail its future should be avoided. In terms of the decarbonisation of heat, we believe efficient gas technologies offer the best customer experience in terms of flexibility, disruption and cost (but they will need to be supplemented with other technologies - electric heat pumps, heat networks - and some biogas if we are to meet the 2050 decarbonisation goal).

In a forthcoming Centrica report on the future of heat, the total system costs of delivering the 2050 decarbonisation goal under various scenarios is evaluated. The Efficient Gas scenario in our report has the lowest total annual system costs, at £29.7bn by 2050; 16% higher than today's cost of £25.6bn. The report's High Heat Pumps scenario, by comparison, which is closest to the UK government's 2013 low carbon heat strategy, has annual total system costs of £32.4bn. The Efficient Gas scenario, in addition to more efficient boilers, includes gas driven heat pumps and hybrid boilers (with a heat pump combined with a boiler).

20. How do we need to adapt the RIIO framework, and the uncertainty mechanisms in particular, to deal with this uncertainty?

The existing mechanisms in the RIIO framework appear to provide the adequate tools to cater for the delivery of outputs in circumstances in which the level of need or investment required cannot be robustly forecast at the start of the price controls. How these tools have been, and should be, employed needs review. We believe that greater use can be made of these tools.

There are examples in which the provision of fixed ex-ante allowances was inappropriate. Given the general uncertainty about the materialisation of demand and potential changes in relevant Government policy ahead of the ET1 price control, some volume drivers relating to load-related expenditure were developed. However material amounts of ex-ante non-variant load-related allowances were also provided. Subsequently, National Grid voluntarily deferred £130m of load related network investment because the need for additional capacity has not materialised³².

The use of uncertainty mechanisms is appropriate when potential changes in circumstances are genuinely beyond networks' control. We agree uncertainty mechanisms should not be used to insulate networks from risk which they are expected to manage given the freedom they are allowed on delivery decisions within the RIIO framework:

*We expect network companies to manage the uncertainty they face. The regulatory regime should not protect network companies against all forms of uncertainty.*³³

Uncertainty mechanisms should be designed so as not to unintentionally undermine incentives that are meant to encourage networks to deliver service improvements and seek

³² Open letter: National Grid Electricity Transmission's deferral of £480m of RIIO-T1 allowances: https://www.ofgem.gov.uk/system/files/docs/2017/06/nget480_open_letter_final_0.pdf

³³ Handbook for implementing the RIIO model, para 11.28: https://www.ofgem.gov.uk/sites/default/files/docs/2010/10/riio_handbook_0.pdf

efficiencies. The greater use of revenue drivers, which automatically adjust allowances in response to changes in circumstances, is one way in which uncertainty during the RIIO-2 periods can be managed. It is also important that incentive schemes are designed to capture revealed performance during the price controls, thereby reducing the reliance on close-out mechanisms after the end of price control periods to make adjustments for performance.

21. Is an eight-year price control period with built-in uncertainty mechanisms still appropriate given the greater range of plausible future scenarios?

We are unable to conclude what is the appropriate length at this stage. Other developments to the RIIO framework will affect the risks inherent with a longer control period and so the decision on price control length will need to come later in the process. Networks should provide evidence of the additional benefits to customers from a longer price control period.

The greater use of uncertainty mechanisms than currently utilised in the current round of RIIO price controls, such as volume drivers and re-openers, is an appropriate way of managing uncertainty during the RIIO-2 price controls even if the length of the controls remains unchanged. For example, revenue drivers could be used to automatically reduce or increase allowances for changes in the level of demand, or EV or DG deployment, compared to the assumptions used in setting original allowances. This, combined with incentive schemes designed to capture revealed performance, should reduce the issues related with a longer price control.

22. What improvements should be made to the assessment of business plans?

Interpolation between networks' expenditure forecasts and Ofgem's view of efficient expenditure to arrive at final expenditure allowances introduces an inherent bias in favour of the networks and may create an incentive to networks to over-forecast. We recommend this is addressed ahead of the RIIO2 price controls. Through our RIIO-ED1 appeal it became clear that there are number of methods of calculating the upper quartile point (for assessing efficiency). The method used in RIIO-ED1 should be reviewed as it does not appear to be the most suitable. Ofgem's current method, generally known as the n-1 method³⁴, moves the upper quartile point towards the median (and away from the highest point) compared to other methods. This may be appropriate when using a sample, as the sample could have generated an anomalous value as the highest point, but not for a full set of data. The n+1 method³⁵, more commonly used in statistical packages, is more appropriate.

We believe greater scrutiny of the underlying assumptions of networks' business plans is necessary, as another means of addressing the consumer detriment above. Particularly, networks should be robustly challenged about the use of solutions developed via the consumer -funded innovation stimuli to ensure the realisation of consumer benefits. A finding

³⁴ QUARTILE.INC in Microsoft Excel

³⁵ QUARTILE.EXC in Microsoft Excel

of the review of the Low Carbon Network Fund is that up to £8.1b³⁶ of net benefits can be realised if the solutions developed are rolled out across the sectors. Greater scrutiny may require additional resources. However, the cost of greater scrutiny should be assessed against the potentially significant benefits that can be delivered to consumers, by reducing forecasting errors and narrowing the information asymmetry gap between Ofgem and network companies.

24. Should we determine the revenues an “efficient” network company requires before seeking information from the companies themselves?

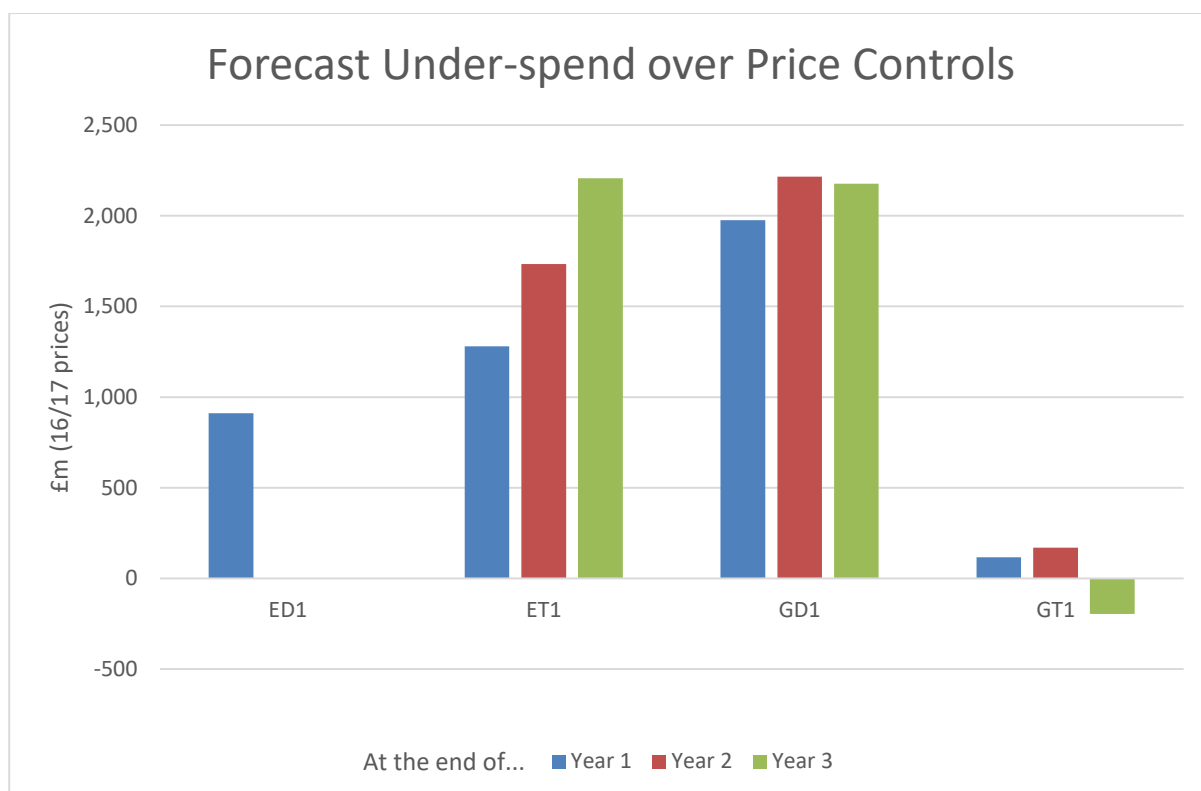
In theory the process would be improved with an accurate independent view of efficient costs at the start of the process. Achieving this in practice would be difficult due to the natural limitation on information available to Ofgem relative to the networks. This information asymmetry is likely to lead to a relatively conservative view by Ofgem on forward looking efficiency improvements and therefore could simply provide a conservative base to begin from. Experience from previous price controls shows that once Ofgem has declared a view of efficient costs at draft determinations, the movement in allowances at final determinations has generally been an upwards adjustment (e.g. the £1.48bn increase for RIIO-GD1 or the £0.71bn increase for RIIO-T1) – noting that networks have usually then been able to go on to significantly under spend against these increased allowances from the outset of the price control. For these reasons we think that care would need to be taken in how any such policy was implemented and Ofgem would need to be clear upfront that they are not bound by the initial view should better information become available through the business plan process.

26. How well has the IQI and efficiency incentive worked in revealing efficient costs through the business plan process and encouraging efficiency throughout the price control period?

The sharing factors provide a strong incentive to network companies to deliver outputs at lower cost compared to expenditure allowances. Network companies have consistently outperformed by delivering outputs by spending less than expenditure allowances funded by consumers. At the end of the first year of each RIIO price control, Ofgem forecasted the networks collectively will spend 6.5% less than allowances granted. As of the end of 2015-16, Ofgem forecasted the networks collectively will spend 7.7% less than allowances during the first round of RIIO controls, amounting to £5bn. This means consumers will fund £2.8bn of expenditure allowances above the expected level of expenditure³⁷.

³⁶ The network innovation review: our consultation proposals, para 2.10:
https://www.ofgem.gov.uk/system/files/docs/2016/12/innovation_review_consultation_final.pdf

³⁷ Data taken from RIIO Annual Reports.



If networks were providing a ‘best view’ of expected expenditure in their business plans, it would be reasonable to expect a distribution of actual expenditure around these best views (with some overspending and some underspending). The general outperformance, including from the beginning of the price control periods i.e. shortly after final determinations, suggests that the IQI ‘truth telling’ incentive has failed to encourage networks to reveal their true levels of expenditure during price control reviews. Possible reasons for this should be explored with the networks and other stakeholders.

An unintended consequence of the sharing factors is network companies may be encouraged to submit conservative expenditure forecasts. We believe the rewards available to network companies for delivering network improvements more efficiently should always be greater than the rewards achieved due simply to circumstances meaning investment was not required (i.e. due to ‘good luck’ or over forecasting). However, mechanisms within the current framework allow significantly greater returns for keeping a share (e.g. 50%) of the *total* allowance for ‘efficiently’ deferred expenditure compared to the returns achieved by retaining the same share of the *savings* from delivering network improvements more efficiently. This could create an incentive for networks to collectively over forecast network expenditure requirements.

In some instances, the deferral of expenditure may not be efficient overall for consumers under the current approach. For example, it may be deemed efficient (from an investment perspective) to defer investment from the last year of one price control to the first year of the next price control. This, however, results in customers paying for a share (e.g. 50%) of the project cost in one price control (the networks’ share of the ‘efficiency’) and for all of the deferred project in the next price control. This is not efficient overall for consumers. It may be

necessary to significantly reduce the share of savings that can be retained by networks from expenditure deferral to correct this.

27. What alternative approaches could we consider to encourage companies to give us high quality information that minimises the damage from their information advantage?

A licence condition that places an obligation on networks to provide high quality, reliable information in their business plans could be developed. The licence condition could reflect the principle that networks should ensure their submissions seek to deliver a fair outcome for consumers. This would provide Ofgem with a route to challenge networks if information included in business plans quickly transpires to be unreliable after a price control review has been concluded. This is consistent with the idea of a 'regulatory contract' i.e. any price control settlement is on the basis that the best information available at the time has been provided by the networks.

Another improvement that would also help to manage the inherent information asymmetry that exists between the regulator and networks would be to include more revenue drivers into the price control such that allowances would automatically reduce or increase for changes in circumstances (e.g. higher/lower demand or EV/DG deployment) compared to those assumed in setting original allowances.

Greater scrutiny of networks' business plans is another approach. The expectation that their submissions will be more rigorously scrutinised might encourage networks to submit higher quality information. Greater scrutiny may require additional resources. However, the cost of greater scrutiny should be assessed against the potentially significant benefits that can be delivered to consumers, by reducing forecasting errors and narrowing the information asymmetry gap between Ofgem and the network companies.

29. Have the incentives inherent in the RIIO model encouraged network companies to be more innovative and what should we consider further?

The innovation stimulus appears to have fostered the development of a culture of innovation within the electricity distribution sector, as noted in the independent evaluation of the Low Carbon Network Fund. However, it is recognised that "...many DNOs do not believe that innovation is critical to the continued success of the business..."³⁸. The regulatory framework has not yet been able to deliver the full benefits of a competitive market for consumers, in which a network company can 'win' by innovating in order to lower costs and increase profits. It is possible that the high returns network companies continue to earn generally mean that DNOs have not had to treat innovation as a business-critical activity in order to earn acceptable returns.

³⁸ An Independent Evaluation of the LCNF, page 106:
https://www.ofgem.gov.uk/system/files/docs/2016/11/evaluation_of_the_lcnf_0.pdf.

The independent review highlights the significant number and types of solutions have been trialled and the areas in which the greatest benefits would accrue if the solutions were implemented. We are concerned about the delays in the wide-scale implementation of the proven solutions. It may be necessary to re-focus efforts from trialling to implementing solutions and ensuring that innovation becomes business-critical for the networks. Efficiency assessments should assume that savings arising from innovation projects are realised.

Any innovation stimulus in the RIIO-2 framework should be better targeted at those areas that have the potential to be in the long-term interests of consumers but could not be progressed without innovation funding, such as the wide-scale use of hydrogen in gas networks. Further, funding provided via some of the existing innovation mechanisms could be re-directed and made available for the delivery of 'whole system' solutions.

30. Do you agree that the scope of competition should be expanded in RIIO-2? What further role can competition play?

It is important to recognise that competition is already inherent in the economic regulation of energy networks. The mimicking of a competitive market has been fundamental to the regulation of network companies since privatisation and was an important consideration in the design of the RIIO framework. Its predecessor, the RPI-X model was also meant to deliver the benefits of competition.

As when the RIIO framework was first designed, its role in delivering consumer benefits and the ways in which it can mimic competition should remain important considerations in the review. The calibration of some elements of the current RIIO framework does not deliver outcomes that would be expected in a competitive market. For example, in a competitive market, it is expected there will be 'winners' and 'losers' depending on performance. However, within the current RIIO framework, some incentives mechanisms have been designed to be reward-only mechanisms, thereby suggesting all market participants can 'win'.

In order to mimic competition, the framework should be revised to recognise that, in any given sector, not all networks can outperform baseline returns on equity. Returns should be symmetric around the baseline. In practice, this means:

- The performance of each network company should be assessed relative to other networks in the sector.
- Incentives should be designed with the intention to cost consumers nothing overall (rewards for good performing networks are effectively paid for by penalties on poor performing networks).

In principle, the scope of competition in the RIIO2 price controls could be expanded. However, the benefits to be derived from further competition have to be compared to the costs of its introduction and ongoing operation (such as the costs of maintaining interfaces between infrastructure providers). Also, concerns about inter-generational equity, if

allowances for large separable projects are recovered over different time periods, should be considered.

31. Which elements add the most complexity and how do you think that these and the broader RIIO framework could be simplified?

RIIO-2 should design and limit incentive schemes to ensure that each one delivers clear value for money for consumers. As an example, whilst improved stakeholder engagement is welcome, the scores awarded by the stakeholder engagement panel in 2015/16 translated to consumers paying an additional £31.7m across the RIIO networks (equivalent to over £0.25bn across an 8-year price control period). It is not sufficiently robust for this level of reward to be decided by reference to scores provided by a panel with no opportunity for input or challenge from stakeholders.

Incentives should generally be designed with the intention to cost nothing to customers overall i.e. rewards for good performing networks are effectively paid for by penalties for poor performing networks. This will better replicate a competitive market and should ensure that overall value for money for customers is maintained. In practice this could be done in a number of ways. For instance, schemes could be structurally designed such that it is relative performance that translates to rewards and penalties with a zero sum outcome, or incentive scheme targets could update on a rolling basis, or could be reset at certain points during the price control period, to capture revealed performance and ensure that overall rewards do not deviate from a broadly symmetric distribution for too long.

If networks can no longer benefit as a group for any information imbalance companies should focus analytical resource into getting the 'right' solution. If relative performance becomes more important each network will have an incentive to ensure the performance of all network companies is accurately reflected. This means the information and expertise of the network companies would then be an asset. Network companies may have differing ideas of what the right solution is, which would create a tension that improves the rigour of the final arrangements.

32. What improvements could be made to the format and presentation of the business plans?

A common format would be useful. Whilst summary information is also useful, we are also supportive of as much transparency as possible in relation to the publication of the detailed business plan submissions and models.

34. Should we retain fast tracking and if so, for which sectors?

At this stage, we do not see a case to retain fast-tracking. Fast-tracking was intended to encourage companies to submit well-justified business plans that, among other things,

demonstrated evidence of stakeholder engagement, efficient expenditure plans, output delivery and consumer interest. Companies that were awarded fast-track status would receive an up-front financial reward. However, the IQI serves a similar purpose, by providing greater rewards to those companies that submitted expenditure plans that most closely aligned with Ofgem's view of efficiency.

Notwithstanding the review of the operation of the IQI, it would seem fast-tracking provides little consumer benefit which cannot be provided via the IQI. Also, we note that, after having been awarded fast-track status, Western Power Distribution's business plans were deemed less efficient when assessed along with the slow-track licensees' plans. We believe this justifies greater levels of resources being allocated to assessing business plans, as mentioned above.

35. Do we collect the right information in the right format and are there better ways to monitor the performance of companies?

In the current price controls, the RIIO Annual Reports have been a welcome addition that provides stakeholders with an overview of various elements of network performance and aids transparency. We suggest those reports are published much earlier than almost a year after the end of the relevant reporting year in order to provide stakeholders with timely information.

We note there are other initiatives to expand the suite of reports such as the development of the RIIO Accounts³⁹ and Electricity Distribution performance reports⁴⁰. We have made recommendations about how those can be developed. It is important that both cater for the information needs of various types of stakeholders. Detailed, supporting data should be provided along with those reports.

36. What are your views on how the changing role of the electricity SO should be factored into the RIIO framework, including whether or not the electricity SO should have a separate price control?

We note it has already been decided the Electricity System Operator (ESO) will be subject to a separate price control. We agree a separate price control is needed to support the creation of the legally separate ESO. It has been recognised that current arrangements allow NGET to make expenditure trade-offs between the TO and SO functions. The trade-offs may represent the optimum outcome for NGET but may not always represent the optimum solution from a consumer perspective. Also, NGET's TO function was excluded from the trial of the SO-TO mechanism in the 2017-18 System Operator incentives scheme:

³⁹ Open letter consultation on our proposals to develop and introduce RIIO accounts:

https://www.ofgem.gov.uk/sites/default/files/docs/2015/06/riio_accounts_open_consultation_letter_0.pdf.

⁴⁰ Open letter consultation: how we report on electricity distribution company performance:

https://www.ofgem.gov.uk/sites/default/files/docs/2015/08/performance_reporting_open_letter_270715.pdf

We also believe it is appropriate for the pilot to exclude payments to NGET itself given the current integration between the SO and the TO in England and Wales⁴¹

The retention of an integrated price control is unlikely to reduce concerns about the conflicts of interest within the National Grid group or promote 'whole system' thinking.

A separate price control for the ESO provides an opportunity to ensure incentive mechanisms that apply to the ESO encourage the behaviours it is expected to exhibit. Currently, some incentive mechanisms within the T1 price control, such as the Stakeholder Satisfaction Incentive, jointly apply to NGET's SO and TO functions. There is a risk that maintaining joint incentives may promote behaviours that do not deliver long-term efficient decisions from a consumer perspective. Additionally, there may be merit in consolidating all the incentive schemes that apply to the SO under a single framework.

37. Do you agree with our broad stakeholder engagement approach set out above?

We agree stakeholders should be given a stronger role in the price control review process because their contributions can deliver tangible benefits for consumers. In our appeal of the RIIO-ED1 licence modifications for the slow-track DNOs, we identified an improperly calibrated element of that price control. That intervention delivered £105m of benefits for consumers than otherwise would have been the case. As a further example, we identified flaws in the implementation of the Stakeholder Satisfaction Incentive in the RIIO-T1 price controls. Following the revocation of the initial decision, the revised decision delivered c. £20m of benefits for consumers than otherwise would have been the case.

The complexity of price control reviews and of the ongoing operation of price controls appears to be a barrier to greater stakeholder participation. The level of stakeholder engagement with important RIIO decisions to date supports this. For example, we were the only non-network stakeholder to respond to the joint-DNO consultation on revisions to the Common Network Asset Indices Methodology and the Ofgem consultation on the rebasing of network outputs targets for the RIIO-ED1 price control. We were the only non-network stakeholder to participate in the working group that developed the methodologies for 'closing-out' the DPCR5 price control. These methodologies are crucial for holding the DNOs to account for the outputs they agreed to deliver in exchange for allowed expenditure allowances.

We welcome that non-network stakeholders are encouraged to attend working groups dealing with technical detail. However, additional stakeholder engagement is required, with Ofgem seeking to present information and provide data proactively. We recommend the creation of a Stakeholder Working Group to shadow the more technically detailed Ofgem-network company working groups for each price control review. Ofgem would use this forum to explain the detail of key aspects of the price control currently under debate. Stakeholders

⁴¹ Final proposals for electricity System Operator incentives from April 2017, para 1.88:
https://www.ofgem.gov.uk/system/files/docs/2017/03/final_proposals_for_electricity_system_operator_incentives_from_april_2017.pdf

could then provide feedback and challenge, to be referred to the detailed working groups. It is important that the Stakeholder Working Group works in parallel to the Ofgem-network company working groups to allow sufficient time for stakeholder feedback and challenge to be taken account of. This group could include network users, end consumers or their representatives.

This would also enable Ofgem to respond to the issues with stakeholder engagement identified by the CMA in our RIIO-ED1 appeal. For example, with regards to the Interruptions Incentive Scheme, the CMA noted:

“...While we recognise that price controls are complex decisions requiring consultation on multiple issues with many parties, we consider that the level of discussion in these documents and the absence of detailed published data created difficulties for any non-DNO seeking to engage fully with the IIS target-setting process.”⁴²

The CMA also explicitly supported Citizens Advice’s comments on the process:

“...This is part of a broader problem we encountered during the development of ED1, where crucial information about the performance of the networks and their earnings during DPCR-5 was not made available to stakeholders until GEMA issued its Final Determination, by which time it was too late to consider it as part of our assessment of the appropriateness of performance targets...”⁴³

⁴² British Gas Trading Limited v The Gas and Electricity Markets Authority Final determination para 5.61: https://assets.publishing.service.gov.uk/media/5609588440f0b6036a00001f/BGT_final_determination.pdf.

⁴³ Energy Price Control Appeals: British Gas Trading and Northern Powergrid para 2.5: https://assets.publishing.service.gov.uk/media/55c482bbcd915d534300000d/Citizens_Advice_Bureau_resp_to_NoA.pdf