

Regulating energy networks for the future: RPI-X@20

Working Paper

Delivering desired outcomes: Ensuring the future regulatory framework is adaptable

Summary

A future regulatory framework needs to be adaptable if it is to encourage networks to facilitate delivery of a sustainable energy market and provide value for money for existing and future consumers on an ongoing basis. This is particularly relevant in light of the uncertainty that we and networks face about what will be needed in the future and about the best technologies to deliver them.

In this working paper, we consider adaptability and the treatment of uncertainty in the context of the RPI-X regimes applied to energy networks. The discussion is likely to be relevant to any modified versions of those regimes that may be developed further as our RPI-X@20 review progresses.

Reviewing price controls periodically (e.g. every five years) allows us to adapt and develop regulatory arrangements over time. In addition, the current regulatory regimes make provision for a price control to be “re-opened” before its scheduled review. However, re-opening has drawbacks.

Regulatory regimes in other sectors include explicit mechanisms to facilitate a general re-opening of a price control before its scheduled review (e.g. “shipwreck clauses”). Our initial view is that we do not find a compelling case for introducing similar arrangements for energy networks, but will keep this under review as our work develops.

Current regulatory regimes in the energy sector are also characterised by a variety of specific tools (e.g. revenue drivers and indexation of allowed revenues by RPI) that reduce networks’ exposure to particular uncertainties. We consider whether these are needed in addition to the possibility of re-opening a price control. We identify and discuss potential reasons for using these tools as well as potential drawbacks.

We welcome views on the issues raised in this paper. We are presenting this work at an early stage, consistent with the review’s guiding principles of transparency and “no surprises”. The ideas may change as the visionary phase of the project develops. We will provide updated analysis this winter in our “Emerging Thinking” consultation paper.

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1. Introduction

1.1. RPI-X@20 is a “root and branch” review of the RPI-X framework that has been used successfully to regulate Britain’s transmission and distribution gas and electricity networks for the past 20 years. We published our first “Principles, Process and Issues” consultation document in February 2009¹. We remain in the “visionary” phase of the project, which will culminate in our “Emerging Thinking” consultation paper in the winter. We will provide our recommendations to Ofgem’s governing Board, the Gas and Electricity Markets Authority (GEMA), in summer 2010.

1.2. We have engaged with a range of stakeholders in the early stages of the review; this is an approach that we will continue to take when developing and progressing our ideas. As part of this engagement we are publishing working papers on our web forum, which outline our current thinking on key issues. We hope that the industry working groups and other interested parties will also submit papers to the web forum.

1.3. A consistent theme has emerged from our work to date. This is that a future regulatory framework should be adaptable if it is to encourage networks to facilitate delivery of a sustainable energy sector and provide value for money for existing and future consumers. This is particularly relevant in light of the uncertainty that Ofgem and networks face about what will be needed in the future (e.g. changing energy policy and technological change).

1.4. As discussed in our working papers titled ‘What do we mean by ‘efficiency’ and ‘A modified ex ante incentive framework’ we anticipate that Ofgem and networks will learn more over time about what the best options are for delivering the desired outcomes. This learning will need to be reflected in our decision-making on an ongoing basis, reinforcing the need for the regulatory framework to be adaptable.

1.5. This paper focuses on issues of adaptability under the existing RPI-X regimes, as well as under possible modified versions of the current regulatory arrangements. We recognise that the issues surrounding the adaptability of the regime would differ were we to recommend a more fundamental change to the regulatory approach, such as the introduction of ex post regulation.

1.6. Across all four of the energy sectors, RPI-X has, in the past, been able to adapt to meet challenges effectively. This was recognised by the majority of respondents to our February consultation document. These respondents also believed that the RPI-X regime is capable of adapting further to meet future challenges.

1.7. In this paper we step back and examine adaptability in the context of an ex ante incentive regime, considering both adaptability during a price control period (e.g. a five-year period between regulatory reviews) and adaptability from one price control period to another.

1.8. The main focus of the working paper is adaptability during a price control period. Our starting point is a recognition that Ofgem’s statutory duties mean that, in some circumstances, it may be necessary to “re-open” or amend the price control settlement before the next price control review is scheduled. In particular, if unexpected events mean that an efficient company cannot finance its activities for the remainder of the price control

¹ Available at:

http://www.ofgem.gov.uk/Networks/rpix20/publications/CD/Documents1/Principles%20Processes%20and%20Issues%20con%20doc_final%20-%20270209.pdf

period, it may be appropriate to make changes to the company's allowed revenue. From this starting point, we consider three main questions:

- Why might we go further and include, within a price control settlement, specific tools or mechanisms that reduce networks' exposure to uncertainty? What are the pros and cons of doing so?
- Should there be a more explicit mechanism to govern the way that Ofgem would consider re-opening a price control to address concerns that a network cannot finance its activities?
- Why else might we need to re-open or adjust a price control before the next price control review?

1.9. Our thinking will develop during the course of the review, along with our ideas on other aspects of the regulatory framework. The purpose of this paper is to highlight the key issues that we think should be considered and to present our current ideas in a number of related areas. Updated thinking will be provided in our winter 'Emerging Thinking' paper. We will continue to develop our ideas as we work up recommendations for our Board in summer 2010.

1.10. This working paper does not consider ways in which to determine the overall amount of money that a company is allowed as part of a price control review, however, this is not to suggest that there are no interactions. For instance, as the paper highlights, the appropriate cost of capital will depend on how the regulatory regime protects networks against uncertainty.

1.11. This paper is structured as follows:

- Section 2 highlights ways in which our approach to dealing with uncertainty matters to our desired outcomes of the regulatory framework.
- Section 3 discusses uncertainties faced by networks and the regime.
- Section 4 summarises the ways in which adaptability is built into our current regimes. It covers adaptability to events within a price control period and adaptability over time, from one price control to the next.
- Section 5 examines the issues surrounding the use of specific regulatory tools or mechanisms to reduce network's exposure to uncertainty during a price control period.
- Section 6 discusses the possibility of introducing a more explicit general re-opener (e.g. a "shipwreck clause") in light of our duty under the Electricity Act 1989 and the Gas Act 1986 to have regard to the need to secure that licence holders are able to finance their activities². This statutory duty is referred to as our 'financing duty' in this paper.
- Section 7 looks at when, for reasons other than financeability, it may be appropriate to re-open or amend a price control. In particular, it identifies the possibility that certain outputs or investments are required which were not anticipated when the price control was set and cannot be delivered under the current arrangements.

² Ofgem's principal statutory objective is to protect the interests of gas and electricity consumers, existing and future, wherever appropriate by promoting effective competition. Ofgem also has a range of secondary duties including its duty to have regard to the need to secure that licence holders are able to finance the activities which are subject of obligations imposed on them (See section 3A(2)(b) of the Electricity Act 1989 & section 4AA(2)(b) of the Gas Act 1986).

- Section 8 considers the way in which the regulatory regime may be adapted from one price control period to the next.
- Section 9 summarises our current thinking on these issues.

2. How does uncertainty matter to our desired outcomes?

2.1. Uncertainty creates risk for all types of business including energy networks. However there is an additional challenge for companies that are subject to price control regulation in that the prices they can charge are determined by pre-specified limits and rules.

2.2. In a competitive market an unexpected increase in the costs of an input used by suppliers may be reflected by an increase in the market price. In contrast, a company subject to a price control can only adjust its prices as far as is permitted by the regulatory framework. The design of the regulatory framework determines how networks are exposed to uncertainty.

2.3. In our first working paper we described the desired outcomes that the regulatory framework should deliver³. We emphasised that the regulatory framework should encourage energy networks to facilitate delivery of a sustainable energy sector and provide value for money for existing and future consumers.

2.4. Table 1 sets out the main issues surrounding the management of uncertainty and links them to the desired outcomes described in our first working paper. These issues are explored in greater detail later in this working paper.

Table 1: Issues surrounding the treatment of uncertainty

Issue	Why does it matter?	Risks to desired outcomes
Financeability	The regulatory regime should enable efficiently operated network companies to finance their activities, including in the face of events that cannot be anticipated at the price control review. There are related concerns that companies facing financeability problems may provide lower quality of service or incur excessive costs.	Financeability Value for money (efficiency) Quality of service, choice, security of supply, Environmental & social objectives
Cost of capital	The uncertainty faced by networks will need to be taken into account when setting the appropriate cost of capital. The cost of capital feeds into consumer prices.	Value for money (efficiency)
Incentives for efficiency	Networks' exposure to uncertainty may affect their efforts to control, reduce costs, and deliver outputs efficiently, which will feed into consumer prices.	Value for money (efficiency)
Price volatility	Consumers and suppliers may prefer predictable and stable prices. How uncertainty is managed in the price control will affect the extent to which network charges are volatile and predictable within and between price control periods.	Better regulation Value for money (efficiency)

³Available at: <http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/RPI-X20%20Working%20Paper%20-%20What%20should%20a%20future%20energy%20regulatory%20framework%20deliver%20-%20Final.pdf>

Windfall profits	Uncertainty raises the possibility that a price control that is fair to both a network and consumers when it is set may, in outturn, appear to provide windfall profits to the networks. This may undermine confidence in the regulatory regime.	Better regulation Value for money (efficiency)
Desired outputs	Uncertainty makes it impossible to specify, at the time of the price control review, precisely what networks should deliver. Furthermore, what Ofgem and customers want networks to deliver will change over time.	Quality of service, choice, security of supply Environmental & social objectives
Complexity and regulatory burden	Tools within the price control to deal with uncertainty can add to the complexity of the regime. This may increase the likelihood of unintended consequences.	Better regulation

2.5. Despite these issues, the regulatory framework is not required to protect regulated companies against all forms of uncertainty. Indeed, this would be undesirable. The overarching principle is that risks should be borne by the party best placed to manage them, in light of the various considerations highlighted in the table above. We expect that this is the approach that will deliver value for money for existing and future consumers, whilst protecting the ability of networks to finance efficient delivery of desired outcomes in the long term. The challenge then is how to develop a regulatory framework that is most consistent with this principle.

3. What are the uncertainties faced by networks and the regulatory regime?

3.1. Table 2 gives examples of the types of uncertainties faced by network companies. These have existed in the past, though the extent of uncertainty varies over time.

Table 2: Examples of uncertainties that networks could face

Uncertainty type	Examples
Demand	Location and volume of new connections to networks Need for reinforcement to increase network capacity Nature of service that network customers demand
Input prices	Wages, contractors' costs, copper cables, equipment
Financing	Risk that financial market conditions will lead to an efficient company finding it more difficult to finance its activities
Regulatory	Risk that Ofgem could reinterpret existing regulations or create new ones that will increase costs or reduce revenues
Political	Risk that new legislation (e.g. environmental) could be introduced by Government, placing unexpected costs on the networks
Operating environment	Costs to company may be affected by unpredictable events such as storms and floods

3.2. It is important to note that the impact of uncertainty may not always be detrimental for networks. For example, were input prices substantially lower than forecast, this could benefit the company.

3.3. Arguably, the degree of uncertainty in the energy sector is greater now than at any time since privatisation, for both electricity and gas. Drivers of this include:

- uncertainty surrounding the future role of networks, given the sustainability challenges of moving towards a low carbon energy sector. For example, will future infrastructure consist of large transmission and distribution networks, or microgrids?
- the potential scale of outturn variations in costs, particularly if more unfamiliar investments are needed; and
- the cost and availability of finance in the wake of the global credit crunch.

3.4. The sustainability challenges, in particular, have led to a change in the degree of uncertainty about the future role and direction of networks. However, some aspects of the sustainability challenges are becoming clearer. For instance, a recent Electricity Networks Strategy Group (ENSG) study⁴ looks at the investment scenarios that would be capable of supporting the Government's 2020 targets - although this is not an agreed way forward. Nonetheless, the Long Term Electricity Networks Scenarios (LENS)⁵ project suggests that there is significant uncertainty as to how electricity networks will develop, particularly beyond 2020. There is also considerable uncertainty for gas networks, including the scale of development of biogas, the amount of gas storage and the way in which domestic demand for gas might decrease as the energy sector is decarbonised. The regulatory framework will need to be sufficiently flexible to adapt to the technological, social and political changes connected to the sustainability challenges.

3.5. It is appropriate to review our current approach to managing uncertainty in order to assess whether it is conducive to the delivery of a sustainable energy sector and whether it is likely to encourage the outcomes and behaviours that we would like to see from network companies in the future.

4. How is adaptability built into the current regulatory regimes?

4.1. Adaptability is built into the current regulatory regimes in two ways:

- **Adaptability during the price control period** - Including the management of uncertainties that are present at the time when the price control is set. This adaptability relates to our financing duty and to the inclusion, within the price control, of specific tools that reduce network's exposure to uncertainty.
- **Adapting the regulatory framework over time** - This ranges from adding or removing a specific tool or scheme, to changing all or part of the regulatory process.

Adaptability during the price control period

4.2. At its most basic level, the RPI-X regulatory regime fixes a control on the revenues that regulated companies are able to earn for a specified number of years. Once the control period begins, revenue controls in isolation would place all remaining uncertainty associated with costs and demand with the regulated company.

4.3. The regulatory regimes applied to energy networks depart substantially from this simplified approach. The price control setting process involves, implicitly and explicitly, a view on how to share risks and known uncertainties between network customers and the

⁴ Available at: <http://www.ensg.gov.uk/index.php?article=126>

⁵ Available at: <http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/lens/Documents1/20081107Final%20Report.pdf>

regulated company. Adaptability is built into the regulatory regimes so that changes to revenue allowances can occur, under certain circumstances, during the price control period. In particular:

- There is a possibility that the revenue a network is entitled to earn at a price control is “re-opened” or amended before the next price control review is scheduled.
 - The current regimes include a variety of tools or mechanisms which reduce networks’ exposure to specific risks during the price control period (we call these “specific tools”).
- a) Re-opening the entire price control mid-period

4.4. In setting a control Ofgem seeks to provide a licensee with a revenue stream that is expected to be sufficient to meet its obligations if it is operating in an efficient manner. However, an appropriate regulatory response would need to be considered by Ofgem by reference to its statutory duties (including its financing duty⁶) in circumstances where the revenue allowance set at the price control review was insufficient to enable an efficiently managed company to finance its activities. For example, Ofgem would have regard to its financing duty⁷ in considering whether to re-open a price control if there were a change to the law that had significant financial consequences or involved a marked financial spend/commitment by network licensees. This current arrangement can be seen as a type of general re-opener. In these circumstances, Ofgem would consider requests from companies for amendments to their price controls. If Ofgem accepted there was sufficient justification to do so, then the price controls could be re-opened.

4.5. In addition, a price control may be re-opened or amended, for reasons other than financeability, for instance, if certain outputs or investments are needed which were not anticipated when the price control was set and cannot be delivered under the current arrangements (this is discussed in Section 7).

- b) Specific tools that allow mid-period changes to be part of the price control

4.6. In addition to the general financing duty, Ofgem employs specific tools to enable changes to occur during the control period. For example, revenue allowances are not fully fixed up front, but depend partly on how things develop over the five-year period. A set of specific tools have been employed across the energy sectors to help facilitate this adaptability as outlined in Annex 1. Examples include:

- **Price indexation** – allowed revenues in each of the energy sectors are indexed by RPI to offer protection against general inflation.
- **Sharing factor** - the price control only exposes the companies to a share of any under- or over-spends.
- **Revenue drivers** – these have been employed in each of the energy sectors to allow revenue allowances to vary as a specific variable (predominantly demand related) changes. For example, as part of TPCR4 electricity transmission owners’ capital expenditure allowances are linked to the amount of generation that is connected over the price control period.

⁶ See footnote 2 above.

⁷ Ofgem would also have regard to its principal objective and wider statutory duties, including European obligations.

- **Specific re-openers** - around specific areas of expenditure where there is some uncertainty at the time of the determination. For example, the capital expenditure safety net in electricity transmission would trigger a re-opening of capital expenditure allowances in the event of a major shortfall of investment relative to allowance.
- **Pass through items** – allows networks to pass through the cost of a specific item to their customers, for example, Ofgem’s licence fees.

4.7. While helping to manage uncertainty, these specific tools have different properties, for example:

- Some are entirely mechanistic, such as automatic pass through of Ofgem’s licence fees, whereas others require more judgement and onus on companies to justify the need for a change in revenues.
- The timings of a change to allowed revenue can vary based on the choice and design of the specific tool. For example, logging up can lead to a change in the regulatory asset value (RAV) at the next periodic review, while a revenue driver can make an adjustment within the price control period.

4.8. Ofgem’s financing duty means that networks are able to request changes to be made to the price control in the event that financeability is put at risk, due to the impact of unexpected events. Therefore, it is important to ask why specific tools are employed that reduce network’s exposure to uncertainty. Section 5 assesses the case for employing specific tools compared to relying on the possibility of re-opening a price control by reference to the financing duty.

Adapting the regulatory framework over time

4.9. The five-year price control review cycle allows significant adaptability by ensuring a regular fresh look at what networks need to deliver and how much this will cost.

4.10. The price control review is also an opportunity for new or refined regulatory arrangements to be introduced which are, at times, substantial. It enables us to address and learn from issues highlighted in previous control periods, to adapt to changing Government policy (national and EU), and to implement lessons from other sectors or countries where relevant.

4.11. Some examples of innovation and learning in Ofgem’s price control approach over time include:

- More extensive use of output measures.
- The information quality incentive (IQI).
- Schemes to fund and promote innovation.
- The introduction of auctions in gas transmission.
- Changes to equalise incentives between operating and capital expenditure.
- Addition/removal of revenue drivers.
- Introduction of the annual regulatory reporting pack in TPCR4.

5. Why employ specific tools?

5.1. In section 4 it was highlighted that based on our financing duty, the regulatory regime can adapt to new circumstances arising during the control period. Despite this, under the current regulatory regimes we see that specific tools are also employed (details are provided in annex 1).

5.2. This section aims to establish a set of broad criteria to assess when to employ specific tools in addition to Ofgem's financing duty. This will be performed firstly, by identifying the main reasons for their use and secondly, by highlighting that using them has drawbacks. These drawbacks need to be recognised as part of the decision making process and, where possible, taken into account by designing the specific tool to minimise them.

Assessing the case for employing of specific tools

5.3. We have identified three **reasons for including specific tools** within a price control to reduce networks' exposure to uncertainty:

- To lower the cost of capital or address financeability concerns.
- To reduce the probability of windfall gains.
- To help meet desired outputs.

5.4. In addition, we have identified several **drawbacks of specific tools**:

- May undermine incentives for efficiency.
- May increase price volatility.
- May increase complexity and regulatory burden.

5.5. These issues are not independent. For example, introducing a specific tool with the primary aim of meeting desired outputs, may also lower the cost of capital, but at the same time damage incentives and create more volatile prices for network customers. We look at each of these issues, in turn, below.

Reasons for including specific tools

To lower the cost of capital or address financeability concerns

5.6. The inclusion, within a price control, of a specific tool that reduces a network's financial exposure to uncertainty may bring the following benefits:

- It may reduce the financing costs faced by the network and, in turn, the cost of capital Ofgem should allow in setting the price control. Since a lower allowed cost of capital will feed in to lower consumer prices, this might provide a reason to introduce specific tools.
- It may reduce the risk of the network facing financeability problems and, in turn, the risk that circumstances arising during a price control period mean that Ofgem needs to re-open a price control to provide additional revenue to the network. Reducing this risk of re-opening might provide a reason to introduce specific tools. This is because the possibility of re-opening a price control has a number of drawbacks, including risks of undermining a company's incentives to control and reduce its costs. In addition, the costs of undertaking the re-opener would be significant – both for the company and Ofgem.

5.7. These two issues are related through network decisions about financial structure. For instance, the introduction of arrangements that reduce a network's exposure to uncertainty may enable it to finance itself with a greater proportion of debt relative to equity (higher gearing) whilst facing similar financeability risks; this could reduce the weighted average cost of capital (WACC) set by Ofgem. Alternatively, if the network does not react to the introduction of those arrangements by choosing a financial structure with a higher level of gearing, it would tend to face lower risks of financeability problems.

5.8. How networks respond to the use of specific tools within a price control will depend on a range of factors, including Ofgem's approach towards financeability issues and the level of gearing adopted by networks. These issues are beyond the scope of this paper.

5.9. Furthermore, it is not certain that every specific tool introduced to lessen companies' financial exposure to uncertainty would lead to the benefits set out above. In particular, the magnitude of the impact of a specific tool on the financial risks borne by the company may be immaterial, in terms of both the allowed cost of capital set by Ofgem and the actual costs of raising finance from investors.

Windfall gains

5.10. Linked to the sub-section above is the issue of windfall gains for shareholders. Broadly, the more exposure to uncertainty that a network faces, the greater the possibility of very high or very low profits. Very high profits might be seen as unjustified profits if they are perceived to reflect good luck more than good management, or are not linked to defined customer benefits such as lower prices or improved service. If profits are not strongly linked to performance this could undermine the public's confidence in the regulatory regime.

5.11. Specific tools might be used to reduce the chances of this happening.

Help deliver desired outputs

5.12. Where it is not possible to specify precisely what outputs are required at the time of the price control review, there are risks that networks' profit incentives work against delivery of the desired outputs. Specific tools that reduce networks' exposure to uncertainty may mitigate these risks. For instance, at the time of the price control review, in the face of uncertainty about how many new connections to a network will be needed, a revenue driver may be used to mitigate the risk that networks do not provide timely new connections. Here the revenue driver could permit the allowed revenue to vary on the basis of the actual number of connections. This can reduce the networks' financial exposure to uncertainty.

5.13. Specific tools might also be used to enable changes in desired outputs within the price control period. For example, for funding of incremental investment in gas transmission a revenue driver is used. If a customer (shipper) required a change in output from what NGG was required to do at the start of the price control, then the auction process and revenue driver allows incremental investment to be funded and occur over the control period.

Drawbacks of specific tools

Can undermine incentives for efficiency

5.14. Options to mitigate or remove uncertainties facing regulated companies need to be considered against the incentives they may create. For example, specific tools that enable companies to pass more of their costs through to customers will provide protection to the company, but also reduce or eliminate their incentive to manage costs and uncertainties efficiently.

5.15. Not all measures that reduce network companies' exposure to uncertainty present a risk of undermining incentives to control costs. In some cases a specific tool can be designed in a way that removes or mitigates a risk without damaging incentives to control costs. For example:

- The RPI indexation of allowed revenues provides networks with some protection against increases in costs (e.g. wages) without an obvious risk of damaging networks' incentives to control and reduce those costs.
- The ESQCR re-opener was introduced in DPCR4 to provide funding to DNOs to cut down trees close to power lines. This was because there was uncertainty as to the levels of costs at the price control review. The re-opener established that each DNO would submit the costs of the work during DPCR4, and that these costs would be benchmarked against all other DNOs in order to establish an 'efficient' level of costs. Here the specific tool was able to mitigate the cost uncertainty when setting the price control while maintaining incentives on each company to control its costs through benchmarking.

Creates price volatility

5.16. Network companies use network charges to recover the allowed revenues set at the price control review. Therefore, changes to the allowed revenue during the price control may contribute to creating volatility in charges. This has been identified as an issue by several stakeholders since it adds to uncertainty for shippers and suppliers when trying to formulate their business plans.

5.17. Logging up is seen as a way of limiting price volatility during a control period. Broadly, this means that the company bears the costs of any change that is necessary in allowed revenue until the next periodic review⁸.

5.18. However, there is a trade-off when deciding whether to employ logging up. It is possible to envisage circumstances where additional short-term funding in advance of the next price control would be required, due to the level of cost which could put financeability at risk.

Increase complexity and regulatory burden

5.19. Specific tools can add to the complexity and may reduce transparency of the regulatory regimes. Therefore, on the grounds of better regulation it may be desirable to limit the use of these tools.

5.20. There are concerns that the regulatory regime could hamper our desire to encourage consumer engagement in the regulatory process. Furthermore, as with other

⁸ Note: this does not always have to be at the next periodic review. The process could be designed such that logging up is used up to some pre-defined 'trigger' amount - though this would be less beneficial for mitigating price volatility.

regulatory mechanisms, the use of specific tools may have unintended consequences: they may provide the regulated companies with opportunities to exploit the specific tool and obtain money for things they were not intended to allow.

5.21. For example, in DPCR4, Ofgem introduced two revenue drivers based on units distributed and customer numbers to manage uncertainty in demand and new connections. However as part of DPCR5, Ofgem has proposed their removal as they do not capture the relationship between the investment needs of the DNOs and the volume of outputs. In the case of the units distributed driver, it also discouraged DNOs from using demand side management schemes to defer reinforcement where it was efficient to do so.

5.22. The risks identified above may also be exacerbated where there are multiple specific tools in operation which may interact with each other and with the wider regulatory regime.

Summary

5.23. Since privatisation, the uncertainty frameworks employed in electricity and gas have become increasingly complex through the use of specific tools, such as revenue drivers and specific re-openers. This has been driven, in part, by increasing demands for what networks need/are required to deliver during a price control period.

5.24. Specific tools may be used to reduce the cost of capital, help deliver outputs and reduce the risks of windfall gains. Some of these tools may be beneficial in helping to fulfil our desired outcomes. However, whether these are persuasive reasons to introduce a specific tool is debateable. For instance, the impact of some specific tools on the cost of capital may not be material. We also recognise the potential drawbacks of using these tools including a risk of undermining incentives and creating a more complex, less transparent regime. Before a specific tool is implemented, it is important that both Ofgem and networks consider the issues raised both carefully and holistically. Furthermore, as our work progresses, we plan to examine whether the regime would benefit from a more structured approach to the implementation and review of specific tools.

5.25. This paper does not attempt to recommend which specific tools could or should be employed for different uncertainties. This will depend, in part, on other aspects of the regulatory framework and it is therefore difficult to form a view at this stage in RPI-X@20. However, as we progress our policy development, as part of our 'Emerging Thinking' consultation paper and beyond, it may become clear that some of the reasons for employing specific tools (and their drawbacks) are more important based on the design of the regulatory regime as a whole. This may make certain types of specific tools more desirable.

6. A full re-opener of the price control: do we need something more explicit?

6.1. As discussed in Section 4, under Ofgem's financing duty, a company could request that the price control be entirely re-opened if it was unable to finance its activities. A company's request does not guarantee that the price control will be re-opened, with discretion left to Ofgem.

6.2. In the wake of the credit crunch, recent work by Ofgem has looked at the arrangements that are in place to respond to a network licensee in financial distress. As

part of this work Ofgem has recently published a draft guidance document⁹ (final version to be published shortly) on responding in the event that an energy network company experiences financial distress. This document includes a section on re-opening a price control.

6.3. This draft guidance document reiterates that Ofgem will not re-open price controls in all cases and that re-opener requests will only be considered where:

- the cause of financial distress was beyond the company's control; and
- re-opening the settlement could reasonably be expected to relieve the financial distress in a timely manner.

6.4. The document also sets out the process for undertaking an interim review following a re-opener request by a company. This would include a consideration of the impact of re-opening a price control on consumers, network users and other interested parties.

6.5. It is important to ask if Ofgem's financing duty (with the addition of the guidance document) is sufficient to manage effectively the risks posed by uncertainty and whether there is a case for change. For example, in light of Ofgem's financing duty, should a more explicit re-opener mechanism be developed?

6.6. Several regulated industries have a "shipwreck clause" (sometimes referred to as a "substantial effects clause") including Ofwat, Postcomm and ORR, with some differences in its application. At its most basic level, it allows a company to apply for a re-opener under specific rules. These rules can be both qualitative or quantitative. For example, Ofwat's substantial effects clause specifies that a company can make a request for the price control to be re-opened if unforeseen events occur, involving extra costs or losses that equate to more than 20% of turnover. The regulator then interprets the company's application using its statutory duties and will assess whether it is appropriate to make additional funding available.

6.7. Table 4 below looks at how the introduction of a substantial effects clause could work alongside our existing financing duty.

⁹ Arrangements for responding in the event that an energy network company experiences deteriorating financial health: Guidance document, see <http://www.ofgem.gov.uk/Networks/Policy/Documents1/Arrangements%20for%20responding%20to%20financial%20distress%20-%20Guidance%20Doc%20FINAL.pdf>

Table 4: How a substantial effects clause might work alongside our existing financing duty

	No explicit mechanism: rely on financing duty	Addition of explicit general re-opener¹⁰: Shipwreck clause
Assessment criteria	The criteria against which any application for the price control to be entirely re-opened are not specified, with each case being considered on its merits. Ofgem’s statutory, European and public law duties will act as a constraint. However, the addition of the guidance document ¹¹ does set out high level criteria – including where financial distress is beyond companies' control.	This clause could spell out in greater detail the criteria that Ofgem would assess in any event – e.g. which specific reasons would enable a company to request a re-opener of the entire price control and the time period over which Ofgem would have to make decision.
Materiality	There is no specific materiality threshold.	May include a materiality threshold to trigger a re-opener.

6.8. In addition to the features identified in the table above, the introduction of a more explicit general re-opener may bring additional benefits:

- It is possible that it could reduce the cost of capital, for instance if it provides investors with greater confidence that financeability problems will be addressed.
- Clarity on circumstances for re-opener application may reduce risks that companies’ incentives to control costs are dampened by the prospects of the price control being re-opened if costs are higher than expected.
- In terms of better regulation, an explicit general re-opener could provide greater clarity and transparency for companies. However, clarity and transparency should be improved through Ofgem’s recently issued guidance document, when taken alongside our financing duty.

6.9. An explicit general re-opener may also lead to unintended negative consequences. For instance, if there is a threshold for a review, there are risks that a company near the threshold may incur further costs unnecessarily simply to trigger a review. It might also fetter Ofgem’s flexibility and discretion in how to deal with a re-opener request and constrain the networks in what they can and cannot include in such a request.

6.10. The issues raised above provide a high-level indication of relevant considerations. The performance of any explicit general re-opener mechanism, such as a substantial effects clause, is likely to depend on the details of its design.

Conclusions

6.11. Ofgem’s recently issued guidance document, when taken alongside our financing duty, makes this duty more explicit by providing greater transparency and clarity on the types of circumstances under which a general re-opener can be applied and the likely process it will involve.

¹⁰ It is important to note that the financing duty would still be relevant and we would be bound to consider it notwithstanding the terms of a substantial effects clause.

¹¹ See footnote 9

6.12. Based on the development of this guidance document (including investigations and consultations as part of this work) and in other areas, for example DPCR5¹², our initial view is that it seems difficult to make a compelling case to introduce a more explicit general re-opener under the current regulatory regimes.

6.13. It is also important to note that the guidance document is intended to be flexible so that it can be adapted to reflect changes in either the regulatory or legal frameworks and accommodate changes in regulatory best practice. This adaptability should be viewed as a benefit as it will enable the document to evolve should changes to the regulatory frameworks be made as part of the RPI-X@20 review.

6.14. However, as the RPI-X@20 project develops we will need to reconsider whether introducing a more explicit general re-opener mechanism might be appropriate in the light of any changes proposed for other aspects of the regime.

7. Adapting during the price control to deal with 'new' outputs or investments

7.1. The possibility of re-opening the price control for financeability reasons, due to events outside of the companies' control, may be justified under Ofgem's financing duty. Aside from financeability, risks to the delivery of desired outcomes may also be addressed by re-opening the price control. For example, where new desired outputs have not been provided with upfront funding and/or are not adequately encouraged under the current requirements and incentives, there is a risk that what Ofgem and customers want during the price control period will not be delivered.

7.2. However, re-opening the price control can carry significant costs. Therefore, re-opening for reasons other than financeability needs to be considered very carefully. The potential costs or downsides include:

- An expectation that a price control would be re-opened can change the behaviour of the regulated company and may undermine incentives for cost efficiency.
- Can introduce instability in the regulatory process and undermine regulatory commitment.
- If changes need to be made quickly, this may undermine the quality and credibility of the decision-making.
- Making adjustments mid-period may have unintended consequences. For instance, if additional funding is provided to encourage a network to provide specific outputs, there is a risk of consumers "paying twice" for those outputs in cases where it is unclear whether or not the original revenue allowance was intended to cover them.
- The costs of undertaking the re-opener may be significant – both for the company and for Ofgem.

7.3. It may be appropriate in many circumstances to wait until the next review to deal with changes that arise during a regulatory period.

7.4. The way in which the regulatory regimes should deal with 'new' outputs or investments that might be needed during a price control period has been an area of

¹² Following investigation for the recent DPCR5 initial proposals document, introducing a substantial effects clause in electricity distribution was not recommended. It was decided that such a clause was not required, as Ofgem must consider its response to events that pose a risk to company financeability as part of its statutory duties.

considerable debate, particularly in electricity transmission (in order to facilitate the delivery of the Government's 2020 targets).

7.5. Ofgem has recently published an update of its ongoing work in developing Enhanced Transmission Investment Incentives (TO incentives)¹³. The work includes the development of new financial incentives on transmission Operators (TOs) to anticipate future demand from generators and invest efficiently to meet this demand ahead of user commitment. TO incentives are intended to start operating before the next transmission price control is put in place. Rather than a re-opening of the entire price control, the new arrangements are intended to operate as an enhancement to the current price control package (TPCR4).

7.6. The TO incentives example demonstrates that it may be appropriate to adjust or re-open during the price control period. Nevertheless, the potential costs and downsides identified above will need to be taken into account.

7.7. The ongoing TO incentives project clearly has a number of overlaps with the RPI-X@20 project and we will continue to work closely with the TO incentives project team to ensure that our work is joined up and that lessons learned are taken forward as part of our project. For example, we are looking at how the regulatory regime can accommodate investment ahead of user commitment.

8. Adapting the regulatory framework over time

8.1. A valuable property of the current RPI-X regimes has been their ability to adapt over time to address changing circumstances and policy and it is clear they have changed markedly from their original conception at privatisation. This view was also supported by the majority of respondents to our February consultation document. Furthermore, respondents to this document were generally of the opinion that the current ex ante regimes are capable of further adaptation to meet future challenges.

8.2. We see adaptability as a desirable characteristic of the current, and indeed, any future modified ex ante regimes given the considerable uncertainty faced by networks. This uncertainty means that an inflexible regulatory regime – one which is not capable of learning and developing – could act as a barrier to meeting our desired outcomes and encouraging desirable network behaviours (highlighted in our first working paper)¹⁴.

8.3. However, having an adaptable regulatory regime does carry some cost, not least that it could become a source of regulatory uncertainty. For example, a regime that is opaque and constantly changing is likely to lack regulatory commitment, which could detrimentally influence investors' decisions and the cost of capital. Therefore, where adaptation of the regime is required, it should be consistent with the principles of better regulation – including transparency.

8.4. In our first working paper on delivering outcomes, we highlighted several principles - based on regulatory best practice¹⁵ - which we would need to take into account in order to achieve a desirable regulatory process. These better regulation principles should be considered when any adaptation to the regime is considered:

- decision-making is open and transparent.

¹³ Available at: http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/tar/Documents1/September%20Consultation_090908.pdf

¹⁴ Available at: <http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/RPI-X20%20Working%20Paper%20-%20What%20should%20a%20future%20energy%20regulatory%20framework%20deliver%20-%20Final.pdf>

¹⁵ GEMA also has better regulation duties under section 3A(5A) of the Electricity Act and section 4AA(5A) of the Gas Act.

- decision-making is based on robust and auditable evidence.
- accountability to different stakeholders, including consumers.
- the value of commitment to the regulatory framework and provide clear and reasoned explanations when changes are made.
- the importance of regulatory credibility with a range of stakeholders.
- the need for any changes to be proportionate.

8.5. Table 5 below highlights several examples of adaptability across control periods that have been discussed in our working papers. A consistent theme emerging across our working papers is that an adaptable regulatory framework appears beneficial to meeting the challenges that the networks face, given the considerable uncertainty surrounding how best to meet such challenges.

Table 5: Examples of adaptability discussed in our working papers

Working paper	Possible adaptation over time
Innovation ¹⁶	This paper concluded that a specific innovation solution may be needed in the short-term while an enhanced regulatory framework (one which will stimulate innovation through output measures, cost incentives and enhanced competitive pressures) is bedded down.
Who decides? ¹⁷	Were an adapted regulatory framework model to be adopted (where networks are given clear outcomes for what they must deliver, but there is no specific centralised plan for delivering them) then it may be beneficial to allow elements of it to be 'shut down' over time. E.g. if Central Government chose to become more directly involved in the decision making process ¹⁸ .
What is efficiency ¹⁹	This paper highlighted that, in light of the uncertainty that we and networks face about the best way to deliver outcomes in the long term, learning over time will be needed. The regulatory framework, and associated controls, will need to be adaptable both within and between regulatory periods for this learning to be reflected in our own and network's decision-making.
Consumer engagement in the regulatory process ²⁰	There may, in the future, be a role for consumer representatives, network users and potentially other parties in agreeing decisions on the regulatory regime with network companies. The transition to a model which facilitates this, may be appropriate in the event that the networks begin to have greater interactions with consumers due to changes in their role.

¹⁶ Available at: http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/RPI-X20%20Innovation%20Working%20Paper_FINAL%20DRAFT.pdf

¹⁷ Available at: <http://www.ofgem.gov.uk/Networks/rpix20/forum/Documents1/rpix20%20who%20decides%20what%20energy%20networks%20of%20the%20future%20look%20like%20FINAL.pdf>

¹⁸ This would need to be consistent with the Third Package requirement for there to be independent regulatory authorities.

¹⁹ Available at: http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/what%20do%20we%20mean%20by%20efficiency_publish.pdf

²⁰ http://www.ofgem.gov.uk/NETWORKS/RPIX20/FORUM/Documents1/Role%20of%20consumers%20working%20paper_FINAL.pdf

8.6. While it is beyond the scope of this paper to examine how the regulatory regime will be best adapted to any specific changes that may be required over time - this will be developed in the option development phase of our project - in the context of better regulation, several process-based ideas that may be relevant include:

- Commitment to reviews after each price control decision, from which Ofgem can learn. For example, ORR has decided to commission an independent evaluation of its latest periodic review²¹, drawing on the views of stakeholders, in order to learn lessons and inform the design and conduct of the next periodic review. Were such an idea deemed beneficial for introduction at Ofgem, we would need to consider issues such as, what will be evaluated, who should undertake it and when it should take place.
- Enhancement of regulatory credibility and commitment by ensuring there is mutual understanding amongst parties involved of what is expected from networks, what rewards are available and in what circumstances, and what the downsides of non-delivery or inefficient delivery of outputs would be. This might include setting out how long Ofgem would stick to a specific scheme and under what conditions it would be removed. Any steps in this direction would need to retain the flexibility to change over time in response to learning and changes in the circumstances in which networks operate and we regulate.

8.7. A further point to consider as we develop our 'Emerging Thinking' consultation paper is how adaptability fits in with some of our options for modifying the current ex ante regimes. For example, ideas such as using competitive tendering based on long-term contracts, may have efficiency benefits, but may also mean the ability to adapt is more limited.

9. Conclusions

9.1. This paper presents our initial thoughts regarding adaptability and the management of uncertainty.

9.2. The current regulatory regime has successfully adapted over time to address changing circumstances and policy. The ability to revisit the price control every five years allows the regime to learn and develop over time – something we expect to be very important going forward. However, having such adaptability carries some cost, particularly the risk of undermining regulatory commitment. Therefore, where adaptation of the regime is required, it should be consistent with the principles of better regulation, particularly being clearly explained with transparent consultation.

9.3. In terms of adapting during the price control, we have highlighted the issues surrounding the use of specific tools to reduce network's exposure to uncertainty. This is necessary as there is a fundamental question as to whether specific tools are needed at all, given Ofgem's statutory financing duty. It appears that under an ex ante incentive regime, specific tools may be useful, but should be justified in light of the issues raised in this paper. As our work progresses, we plan to examine whether the regime would benefit from a more structured approach to the implementation and review of specific tools, that reduce networks' exposure to uncertainty.

9.4. Under the current regulatory regimes our initial view is that there does not appear to be a compelling case to introduce a more explicit general re-opener, such as a shipwreck clause to sit in addition to Ofgem's statutory financing duty. However, as the RPI-X@20

²¹Available at: http://www.rail-reg.gov.uk/upload/pdf/independent_evaluation_cblet140509.pdf

project develops, we will need to consider whether introducing a more explicit re-opener might be more appropriate under a different or modified ex ante regulatory framework - should either be recommended.

9.5. Ofgem's current work in electricity transmission on TO incentives demonstrates that it may be appropriate to adjust or re-open a price control in certain circumstances, for reasons other than financeability. However, given the potential costs or downsides, this course of action should only be taken where it is clear that it is in the interests of existing and future consumers. Where there are changes in the desired outcomes of the regulatory regime during the price control period, it may be preferable to accommodate these as part of the next price control review.

9.6. We will continue to develop our thinking on the merits of specific tools, general re-openers and adaptability over time. Where appropriate, we will present our updated thinking in these areas in our winter 'Emerging Thinking' consultation paper, but recognise further work will be needed beyond this as we clarify our proposals for the regulatory regimes during 2010.

9.7. We welcome views on the ideas presented in this paper, and on other issues related to our assessment of the adaptability of the regulatory framework.

Current thinking

Annex 1: Examples of specific tools employed to manage uncertainty in current price controls

Tool	Brief description	Electricity transmission	Gas transmission	Electricity distribution	Gas distribution
The length of the Control period	The shorter the period the greater the protection, but this can weaken efficiency incentives.	Five years	Five years	Five years	Five years
Sharing factor	The price control only exposes the companies to a share of any under- or over-spends.	25% of any capex over/under spend, subject to efficiency test, capex safety net mechanism	25% of any capex over/under spend, subject to efficiency test	Fixed percentage (29-40%) of any capex over/under spend	Fixed percentage (33-36%) of any capex over/under spend, subject to efficiency
Price protection (Indexation)	RPI Indexation - Allowances are typically indexed by RPI offering protection against general inflation. Input price indexation - allowed revenues are a function of a defined input price index.	RPI term in RPI-X	RPI term in RPI-X	RPI term in RPI-X	RPI term in RPI-X, shrinkage mechanism where revenue varies with a shrinkage gas price index
Revenue driver	Allowed revenues are a function of a pre-defined variable. This may be a global adjustment or a unit cost driver applied to a specific area of expenditure.	Linked to amount of generation connected and boundary flows	Revenue allowed to increase in response to the delivery of user commitment via auctions	Customer numbers , Units distributed	Unit cost driver applied to the mains replacement programme (Repex)
Use it or lose it	Allowed revenue ex ante for a set purpose, which is clawed back if the expenditure is not required.	IFI, Equity raising costs	IFI, Equity raising costs	IFI	IFI/SD
Specific re-openers	These allow price limits to be changed before the next price control review.	Capital expenditure safety net	No specific re-openers	ESQCR (tree cutting), Traffic Management Act (TMA) costs	TMA costs, interruptions, loss of meter work
Ex post adjustment (inc. Logging up)	Companies receive additional income after the price control period.	Logging up of specified items - Underground cable tunnels and BT21CN	Logging up of specified costs for Xoserve developments	Discretionary Reward Scheme	Discretionary Reward Scheme
Pass through	The price control allows full recovery of any costs in this category	Ofgem licence fee, business rates, pensions (This list is not exhaustive – see special conditions D4 for NG and J4 for Scotland)	Ofgem licence fee, business rates, pensions	Ofgem licence fee, business rates, pensions, partial pass through arrangements for distributed generation (DG)	Ofgem licence fee, business rates, pensions