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RIIO

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

Implementing Sustainable Network Regulation

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Target audience: Consumers and their representatives, gas and electricity transmission and distribution companies, generators and offshore gas producers/importers, suppliers, shippers, debt and equity investors, those with sustainable development interests, academics and other interested parties.

Overview:
RPI-X@20 is Ofgem's detailed review of energy network regulation. Our 'Recommendations' paper sets out for consultation our 'minded to' recommendations on Sustainable Network Regulation for electricity and gas transmission and distribution network companies. This supporting paper explains in more detail how each aspect of Sustainable Network Regulation would work. It is primarily aimed at those needing to understand our recommendations in detail and is therefore more technical in some areas.

This supporting paper sets out the principles underpinning the framework. It is written to enable network companies and stakeholders to understand better how Sustainable Network Regulation will work in practice. It is our intention that these principles are long lived, as far as possible, and will be applied at future price control reviews. However, the context in which they are implemented may change and the framework has been designed to be able to adapt over time.

The detail of our recommendations has been informed by our discussions with a range of stakeholders and our review of written responses to our consultations. We are grateful for input received to-date and welcome further comments on this supporting paper alongside our main 'Recommendations' consultation.

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Context

The gas and electricity industries are at a cross roads. They face major challenges and opportunities, primarily driven by the need to decarbonise Britain's energy sector, while maintaining a safe, secure and affordable system for existing and future consumers. We have been tackling many of these challenges with the network companies in recent years, evolving the RPI-X regulatory framework at price control reviews. This is most apparent in our recent electricity distribution price control review and in the enhanced investment incentives for transmission companies to connect more renewable generation ahead of need.

RPI-X@20 is Ofgem's comprehensive review of how we regulate energy network companies to determine whether the existing "RPI-X" framework will remain fit for purpose in light of these challenges. We developed a vision of the future regulatory framework for our "Emerging Thinking" consultation in January 2010 and are now consulting on our recommendations for a new regulatory framework. The Gas and Electricity Markets Authority (GEMA) is minded to implement these recommendations and will take account of responses to this consultation when reaching a final decision in autumn 2010.

We have worked closely with a number of stakeholders and interested parties to understand the issues and challenges facing the energy network companies. We have assessed a range of alternative regulatory frameworks and consulted widely on our developing ideas on specific aspects of the regulatory framework.

We have asked whether the current frameworks can help deliver a sustainable energy sector sufficiently quickly, given, in particular, the significant network investment and innovation required. The existing RPI-X framework has delivered lower prices, increased investment and improved quality of service, and ensured network companies have been able to finance themselves. However, that framework was not designed for the challenges that network companies now face. The nature and pace of change possible under the existing framework will not be enough. The regulatory framework must be reformed to encourage network companies to make the scale of changes required.

Our recommendations set out a new framework – *Sustainable Network Regulation.* The framework is based on the RIIO model, setting **R**evenue using **I**ncentives to deliver **I**nnovation and **O**utputs. We have taken the elements of the existing framework that work well, adapted other elements to ensure they are focused on delivery of a sustainable energy sector and long-term value for money, and added elements to encourage the radical measures needed in innovation and timely delivery. We are confident that we have a comprehensive and coherent package that will encourage network companies to play a full role.

This document provides a detailed explanation of "how" Sustainable Network Regulation would be implemented. It is aimed primarily at the network companies, investors and other stakeholders who require a more in depth understanding of our thinking. A more accessible overview of Sustainable Network Regulation is provided in our Recommendations document[1].

[1] See http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/RPI-X@Recommendations.pdf

Associated documents

- Regulating energy networks for the future: RPI-X@20 Recommendations http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/RPI-X@Recommendations.pdf
- A Guide to Price Control Modification References to the Competition Commission - Licensee and Third Party Triggered References (Draft) http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Mod%20guidance.pdf
- Regulating energy networks for the future: RPI-X@20 Recommendations - Impact Assessment http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Impact.pdf
- Glossary http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/rec%20glossary.pdf
- Emerging Thinking consultation (January 2010) http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=42&refer=NETWORKS/RPIX20/CONSULTDOCS
- Principles, Process and Issues consultation (February 2009) http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=76&refer=NETWORKS/RPIX20/CONSULTDOCS
- Alistair Buchanan speech**:** Is RPI-X still fit for purpose after 20 years? October 2008 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=24&refer=NETWORKS/RPIX20/FACTSHEETS
- Alistair Buchanan speech: Ofgem's "RPI at 20" project, March 2008 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=23&refer=NETWORKS/RPIX20/FACTSHEETS
- Other working papers, consultant reports and submissions by network companies and other parties can be found on **the RPI-X@20 website:** http://www.ofgem.gov.uk/Networks/rpix20/Pages/RPIX20.aspx
- A full list of all the documents produced for the RPI-X@20 review can be found at: http://www.ofgem.gov.uk/Networks/rpix20/Stakeholder/Documents1/RPI-X@20%20full%20list%20of%20paper.pdf

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1. Introduction to Sustainable Network Regulation

Chapter summary: This chapter explains the objectives of Sustainable Network Regulation and provides an overview of the key elements of the regulatory framework. We also set out the purpose of this supporting paper.

1.1. RPI-X@20 is Ofgem's comprehensive review of how we regulate Britain's energy networks. We are looking to the future on behalf of energy consumers to design a regulatory framework that meets their needs, particularly those relating to delivery of a sustainable energy sector.

1.2. In our "Recommendations" consultation paper we set out our proposal to move to a new regulatory framework, Sustainable Network Regulation. We set out what the new regulatory framework would include and why we think this is the best way forward. The Gas and Electricity Markets Authority (GEMA) is minded to implement these recommendations and will take account of responses to this consultation when reaching a final decision in autumn 2010.

1.3. This supporting paper provides further details on how we envisage the regulatory framework would work at future price control reviews. We set out principles and guidelines that we would consider when developing price controls. We also describe how the price control review process would work in practice.

1.4. Sustainable Network Regulation has been designed to be implemented in all four energy network sectors (gas transmission, electricity transmission, gas distribution and electricity distribution). Variation would arise across sectors in the application of the principles at price control reviews rather than in the principles themselves. RPI-X@20, and the resulting recommended framework, has focused on regulation of the electricity distribution network operators (DNOs), gas distribution networks (GDNs), electricity transmission operators and gas transmission operator (TOs). Implications of our recommendations for the regulation of independent network operators (Independent distribution network operators (IDNOs) and independent gas transporters (IGTs)) will be considered when we review their regulatory arrangements.

1.5. This supporting paper is aimed primarily at the network companies, investors and other stakeholders who require a more in depth understanding of our thinking and the rationale underpinning it. It is written to allow the reader to dip into the chapters of most interest to them. Those who are looking for a less detailed discussion of the Sustainable Network Regulation may wish to review our Recommendations consultation paper in the first instance.

1.6. GEMA will make a final decision on Sustainable Network Regulation in the autumn, taking account of responses to our consultation. We would expect to update and republish this paper following that decision, with the paper then becoming a guide to the "Implementation of Sustainable Network Regulation". The use of the guide would be first tested when GEMA's decision on Sustainable Network

Regulation is used for the next transmission and gas distribution price controls (TPCR5 and GDPCR2), to be implemented from 1 April 2013.

Objective and core concepts

1.7. Sustainable Network Regulation is designed and would be implemented to encourage energy network companies to:

- play a full role in delivery of a sustainable energy sector; and
- deliver value for money network services for existing and future consumers.

1.8. The two parts of this objective are complementary. Indeed, provision of long-term value for money is a core part of delivery of a sustainable energy sector. The objective is also consistent with our prevailing duties under the Gas Act 1986 and Electricity Act 1989.

1.9. Sustainable Network Regulation would be applied to the electricity transmission owners (TOs), the gas TO, the electricity distribution network operators (DNOs) and the gas distribution networks (GDNs)[2]. Under Sustainable Network Regulation, those companies that rise to these challenges would see material upside and opportunity. While those that do not would be penalised.

1.10. When designing the new regulatory framework we have focused on a number of core concepts that are relevant across the different elements of the framework. We define these concepts here, to aid the reader in understanding the meaning and underlying rationale of Sustainable Network Regulation.

- **sustainable energy sector:** an energy sector that meets the broad needs of existing and future consumers. This includes delivery of low carbon energy and other environmental objectives, delivery of secure safe supplies, and delivery of value for money including meeting the needs of vulnerable consumers;
- **sustainable network services:** by sustainable network services we mean: providing network services that are safe, reliable and available; minimising the impact of network services on the environment; providing connections and network services consistent with the delivery of a low carbon energy sector (low carbon generation and active demand management); and delivering social obligations mandated by government;
- **play a full role**: the regulatory framework is designed to encourage network companies to take a leading role in the delivery of a sustainable energy sector. We want network companies to be proactive in seeking the best way of providing sustainable network services for the long-term, be open minded about how best to deliver and innovate to achieve desired outcomes. They should engage effectively with their existing consumers and respond to the needs of future

[2] To be clear, the framework would not apply to the regulation of independent distribution network operators (IDNOs) in electricity or independent gas transporters (IGTs). IDNOs and IGTs own and operate distribution networks. These networks are predominately extensions connected to the existing distribution network, e.g. to serve new housing developments. The framework would not apply to the System Operators (SOs).

consumers (and as part of this future government targets). They should take responsibility for managing the uncertainty that their businesses face, and learn and adapt in response to new information;

- **long-term value for money:** value for money is about delivering sustainable network services at as low a long-term cost as possible. Focusing on value for money rather than cost efficiency should ensure network companies do not make cost savings at the expense of delivering outputs but that they do focus on minimising the long-term cost of delivering those outputs, rather than necessarily minimising costs over the next price control period;
- **long-term cost:** in our definition of long-term value for money we emphasise that we want energy network companies to minimise long-term cost. We are focusing on total costs of delivering outputs, wanting network companies to make choices between infrastructure (capital) solutions and non-capital solutions on the basis of which is least cost over the long term. The relevant time horizon will vary by the activity being considered; for some costs "long-term" may be within the eight-year price control period whilst for others it will span a number of price control periods. We would expect network companies to be focusing on the life-cycles of assets and have asset management plans consistent with the long-term nature of network assets. When considering costs we would expect network companies to consider the impact on the environment ("environmental costs"), for example taking account of the price of carbon, when comparing the "cost" of different options for delivering outputs;
- **consumers**: network companies provide the physical link between suppliers of gas and electricity and domestic and business consumers. They provide network services to generators, shippers, interconnectors, independent network operators (IDNOs and IGTs), suppliers and energy service companies (ESCos) who also provide services to end consumers. We think it appropriate to include users of network services as well as domestic and business end consumers, and their representatives, when considering "consumers" in the regulatory framework. We recognise that the interests of the users of network services and end consumers will not always be aligned. Indeed, within each type of consumer category (e.g. generators, end consumers) there is unlikely to be complete alignment of interests. Furthermore, in each group there may be more of a focus on what needs to be delivered today rather than a consideration of future requirements. It is therefore important that GEMA, with a principal objective to protect the interests of existing and future consumers, remains responsible for making decisions that balance the different viewpoints; and
- **stakeholders**: in our discussions on enhanced engagement we widen the group of parties that we and network companies may need to engage with beyond consumers (as described above). Government could have a key role in providing updates on the direction of government policy while local authorities could provide insight on the needs of consumers of network services. In addition, stakeholders could include parties that are affected by, or represent those affected by, decisions made by network companies and Ofgem that are not (in that role) direct consumers of network services. A key example is organisations representing environmental interests that are interested in ensuring the impact of network services on the environment are consistent with broader environmental goals such as reduction in greenhouse gases, protection of landscape.

1.11. When implementing Sustainable Network Regulation at future price control reviews we would expect the objectives and these concepts to remain core to

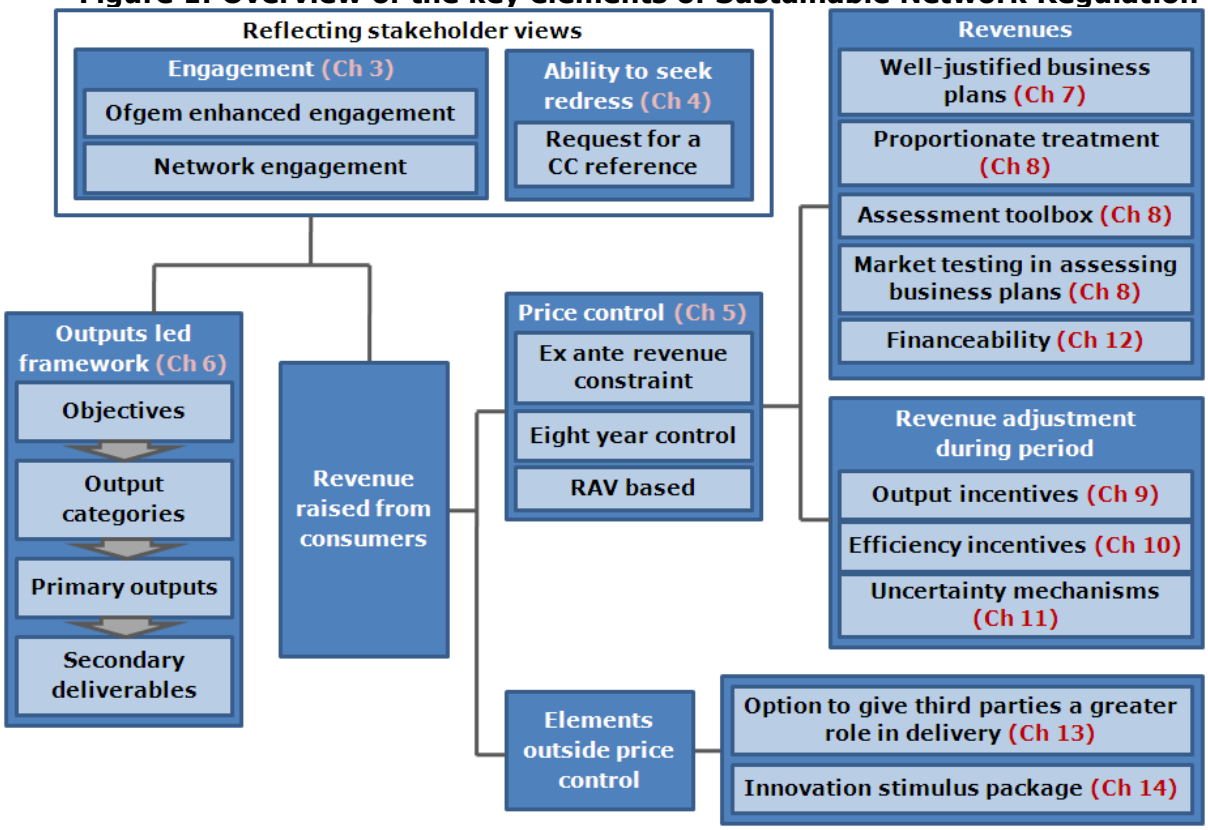
discussions. It is therefore important that there is common understanding of what they mean in the context of the regulation of energy network companies.

Overview of Sustainable Network Regulation

1.12. The regulatory framework incorporates three elements which are designed to meet the objectives of Sustainable Network Regulation:

- an upfront (ex ante) price control that sets out the outputs that network companies are required to deliver and the revenue that they are able to earn for delivering these outputs efficiently;
- the option to give third parties a greater role in the delivery of material and separable projects; and
- a time-limited innovation stimulus for electricity networks and one for gas networks which would be open to network companies and non-network parties.

Figure 1: Overview of the key elements of Sustainable Network Regulation



1.1. Figure 1 provides an overview of the key elements of Sustainable Network Regulation and shows where each aspect is discussed in this supporting paper. We describe the price review process associated with implementing the framework with these elements in Chapter 2.

1.2. We set out in Box 1 what would be included in final proposals and hence licence conditions. This provides an alternative way of thinking about the framework.

Box 1: Key elements of the final proposals for a price control

Our price control decision for a network company would be set out in final proposals and formally implemented in the relevant licence condition(s). The final proposals would set out:

- the primary outputs that the network company is expected to deliver, including details of the level at which they are expected to operate;
- the £m level of base revenue that the network company is allowed to earn from consumers during the eight-year price control period;
- the proportion of total expenditure to be recovered during the year in which it was spent and the proportion to be capitalised and recovered through the RAV, the assumed asset lives for depreciation, and the allowed return;
- the amount of money to be raised from consumers, and included in the revenue allowance, for the innovation stimulus package;
- the secondary deliverables that the network company is expected to deliver, linked to the revenue allowed to enable the network company to undertake activity in the current price control period to deliver primary outputs and value for money in future periods;
- the upfront efficiency incentive rate, including details of how this would be implemented during the price control period;
- the incentive arrangements for each of the primary outputs;
- action to be taken if secondary deliverables are not delivered;
- arrangements for adjusting revenue for Ofgem-required market testing that is not completed in time for final proposals;
- details of the uncertainty mechanisms included in the price control;
- details of scope and timing of any mid-period review of output requirements; and
- specification of any projects that we are intending to take forward by giving delivery third party responsibility for delivery and asset ownership.

Details on how we would consider and respond to a request from another party for us to make a price control licence modification reference to the Competition Commission would be provided in 'Guidance' on our website. Details on how the innovation stimulus package would be governed and operated would be provided in separate published documents. Arrangements for a competitive process to identify a third party to given delivery responsibility to would also be published separately.

Structure of this supporting paper

1.3. This supporting paper is divided into three parts as follows. Links are provided to enable the reader to dip into those areas that of most interest.

1.4. **Part 1** discusses the price control review process and explains the role of stakeholders in the process:

- Chapter 2 describes the proposed price control review process;
- Chapter 3 explains how we and network companies would be expected to engage with stakeholders; and
- Chapter 4 sets out how we would consider a request from another party for us to make a price control modification reference to the Competition Commission.

1.5. **Part 2** sets out the detail of how the ex ante price control would be set:

- Chapter 5 provides an overview of how we would set the eight-year price control;
- Chapter 6 explains how primary outputs and secondary deliverables would be set and what principles we would consider when setting them;
- Chapter 7 sets out what we expect network companies to include in well-justified business plans;
- Chapter 8 provides details on how we would adopt a proportionate approach to assessing business plans and expected efficient expenditure requirements;
- Chapter 9 explains how we would consider the design and implementation of incentives for primary output delivery;
- Chapter 10 sets out the issues that we would consider when setting efficiency incentives;
- Chapter 11 explains the principles to be considered when deciding whether and how to implement uncertainty mechanisms in the price control; and
- Chapter 12 sets out our principles for embedding financeability into the price control.

1.6. **Part 3** describes the two elements of Sustainable Network Regulation that are outside but interlinked with the price control framework:

- Chapter 13 explains when and how we would consider using the option of giving third parties a greater role in delivery; and
- Chapter 14 provides details on the innovation stimulus package.

Part 1 – The price review process

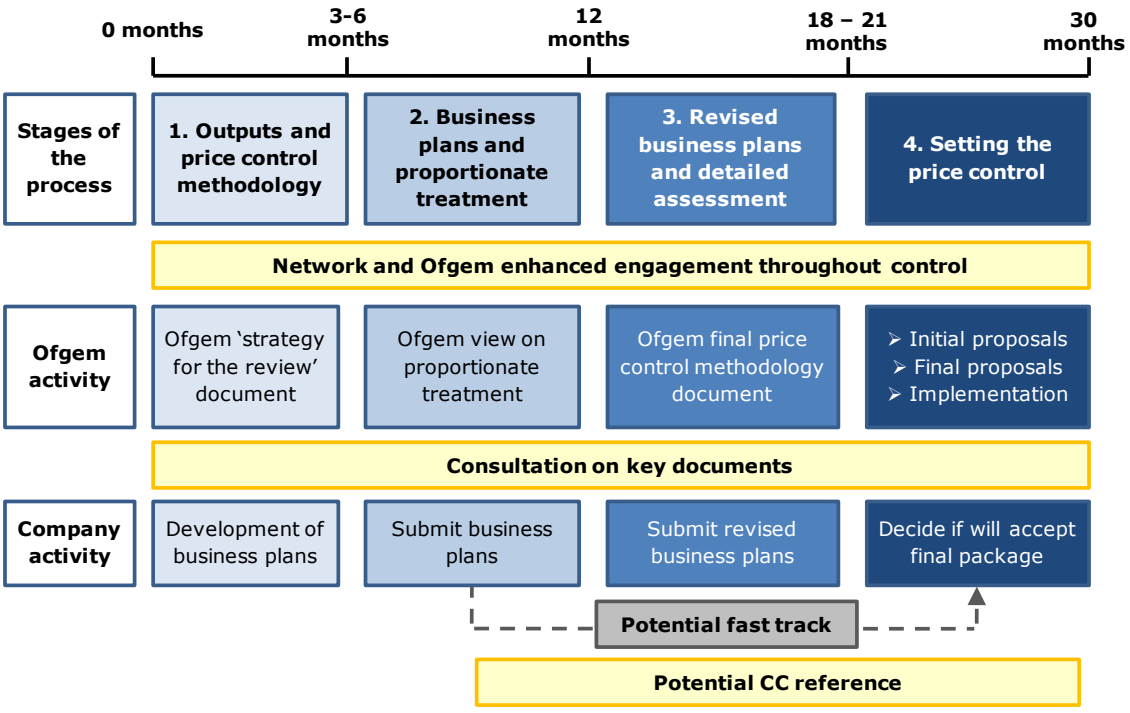
2. Stages of the price control review process

Chapter summary
This chapter provides an overview of the stages of the price control review process under Sustainable Network Regulation, highlighting the respective roles that each party would take and the decisions that would need to be taken at each stage.

2.1. The price control review under Sustainable Network Regulation would be conducted over a similar timeframe to recent price control reviews (2 to 2.5 years). However, changes in how the price control would be set and the role of stakeholders in the price review process mean that the timing of key stages of the review and Ofgem publications would be different to the past.

2.2. Figure 2 provides an overview of the process that would be followed in setting future price controls. The timings are indicative only and price control review teams would publish their own timetables at the start of each review.

Figure 2: Overview of the process and indicative timings of a price review



2.3. As Figure 2 illustrates, the price control process would have four main stages:

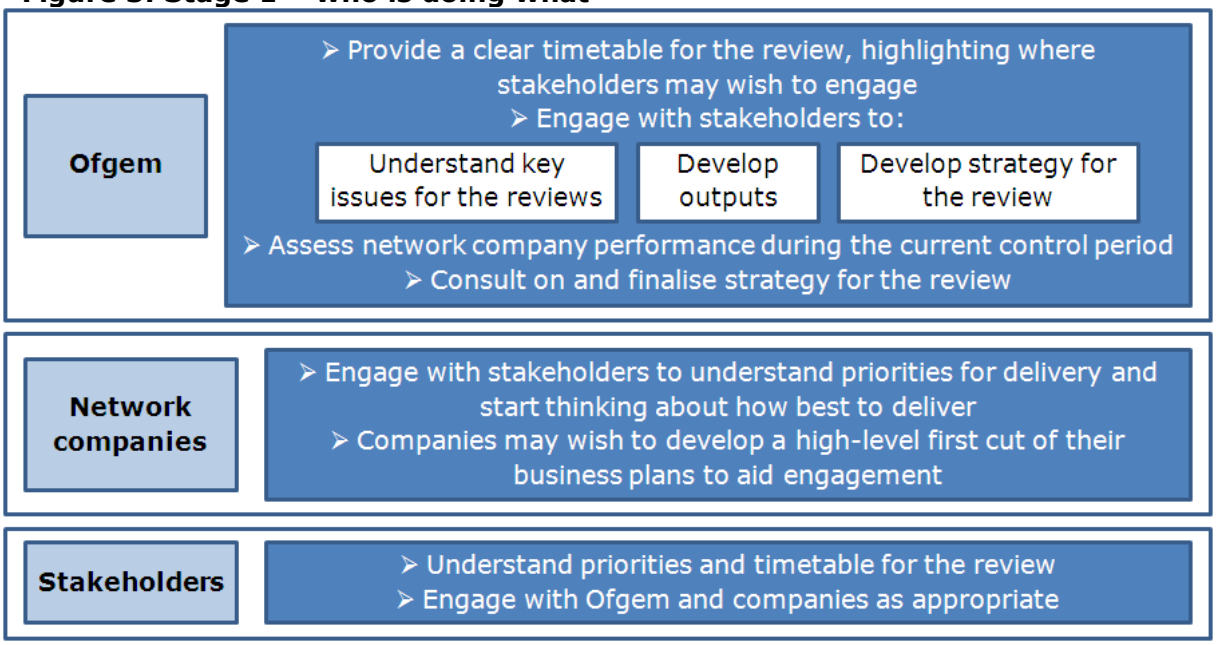
- **Stage 1** - Outputs and price control methodology;
- **Stage 2** - Business plans and proportionate treatment;
- **Stage 3** - Revised business plans and detailed assessment; and
- **Stage 4** - Setting the price control.

2.4. The key steps in each stage of the review are set out in the sections below. We will shortly publish an open letter for both GDPCR2 and TPCR5 which will provide further detail on the proposed timetables for these reviews.

Stage 1: Determining outputs and price control methodology

2.5. The aim of this stage would be to set the timetable for the review, understand key issues, establish outputs to be delivered and parameters for the price control, engaging with stakeholders throughout. It would culminate in the publication of our "Strategy for the review" consultation, which would provide network companies with information to develop their well-justified business plans, including the outputs that they need to deliver. We would consult on this document before finalising it.

Figure 3: Stage 1 – who is doing what



2.6. The "Strategy for the review" document would:

- set out priorities for the sector over the longer term, identifying the role network companies may play in delivering these, informed by our enhanced engagement;
- provide our initial assessment of network company performance during the price control period. This may be informed by historic evidence from regulatory reporting packs (RRPs) and the return on regulatory equity (RORE) measure. It would also be informed by network company performance in delivering primary outputs and secondary deliverables;
- set out our view, informed by enhanced engagement, on key elements of the price control, including but not limited to: primary outputs and desired levels of performance for the sector; efficiency and output incentives; inflation indexation, business plan requirements; the estimated cost of capital range for the sector; the length of control and the use of uncertainty mechanisms; and

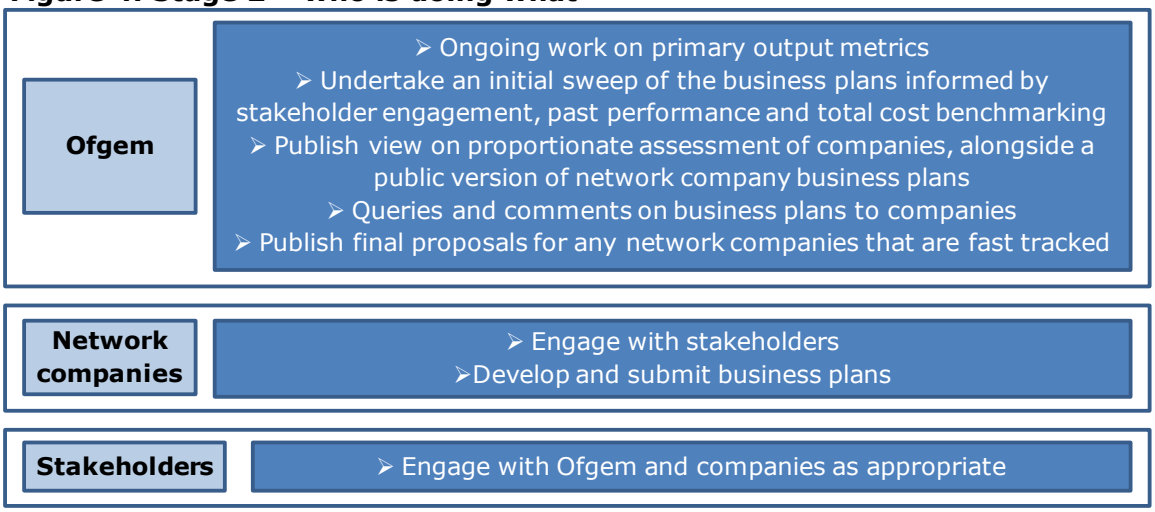
- set out the criteria for a company to be fast tracked.

2.7. Alongside the "Strategy for the review" document, we would issue the business plan guidance and the data request to support network company business plans.

Stage 2: Business plans and proportionate treatment

2.8. Companies would have time to develop their well-justified business plan, based on the high-level approach set out in the "Strategy for the review" document, the data request issued alongside it and their engagement with stakeholders. On receipt of the business plans, we would assess them with a view to which companies would face more or less intensive scrutiny (see Chapter 8). Less intensive scrutiny may include fast tracking a company (i.e. reaching an early decision on the price control). If we decide to fast track a company we would intend to consult on our approach before reaching a decision. If we decide to fast track, we would finalise a companies' price control settlement at this stage including drafting licence changes. These companies would therefore move straight to the end of Stage 4. All other companies would move into Stage 3.

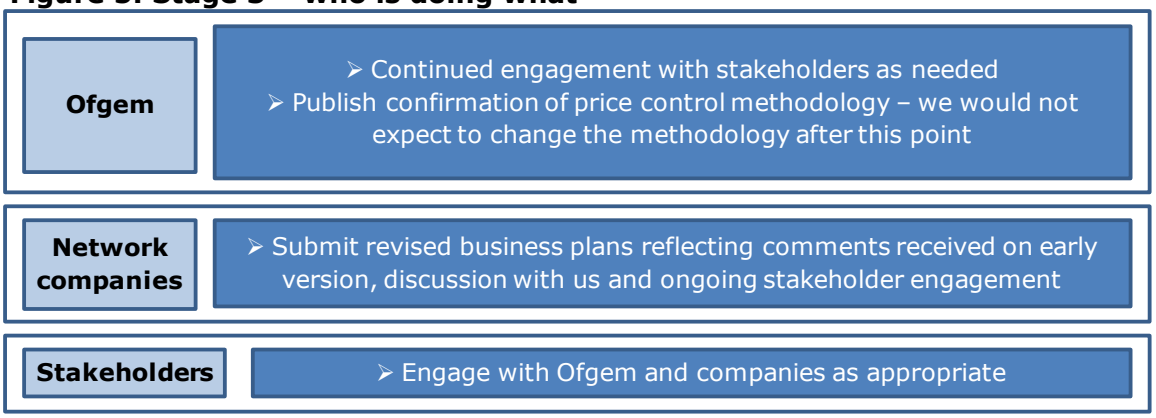
Figure 4: Stage 2 – who is doing what



Stage 3: Revised business plans and detailed assessment

2.9. Network companies that were not fast-tracked would submit revised business plans, seeking to address the comments from us on the Stage 2 business plans. We would further scrutinise these business plans, according to the categories in which network companies were placed in line with our approach to proportionate assessment and areas of particular concern. The objective of this stage would be to finalise business plans for the network companies and confirm the methodology to be used to set the price control.

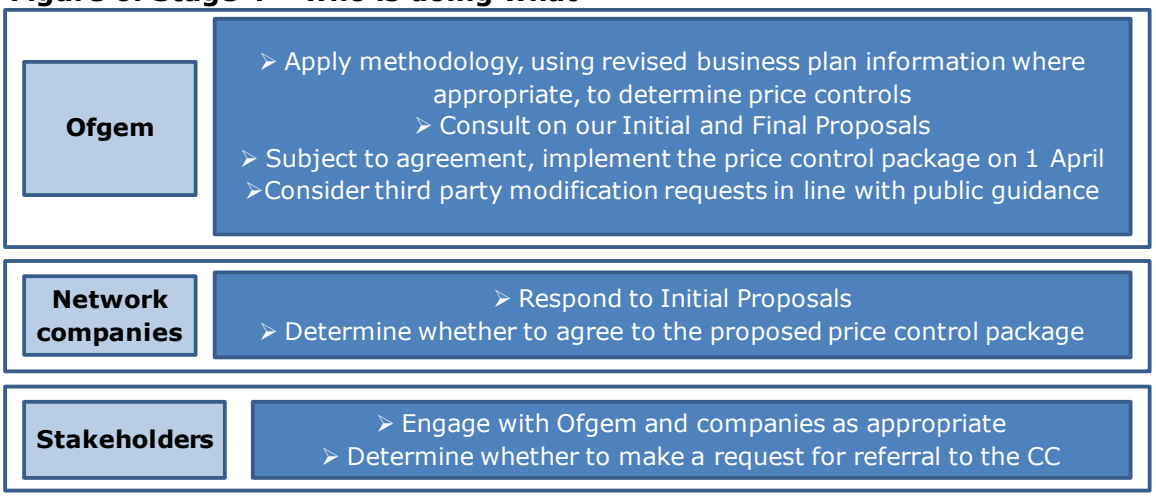
Figure 5: Stage 3 – who is doing what



Stage 4: Setting the price control

2.10. The aim of this stage would be to develop initial and final proposals for the network companies and associated licence drafting, in accordance with the final price control methodology, to provide transparency on how the proposals would be implemented. We would not receive any new data, save for identified errors, from network companies and would not expect to change our methodology. We would seek to implement the final proposals through licence modifications subject to agreement from the network companies. Should a third party make a request to GEMA to modify the final proposals and/or make a reference to the Competition Commission the request would be considered in accordance with our published guidance (see Chapter 4).

Figure 6: Stage 4 – who is doing what



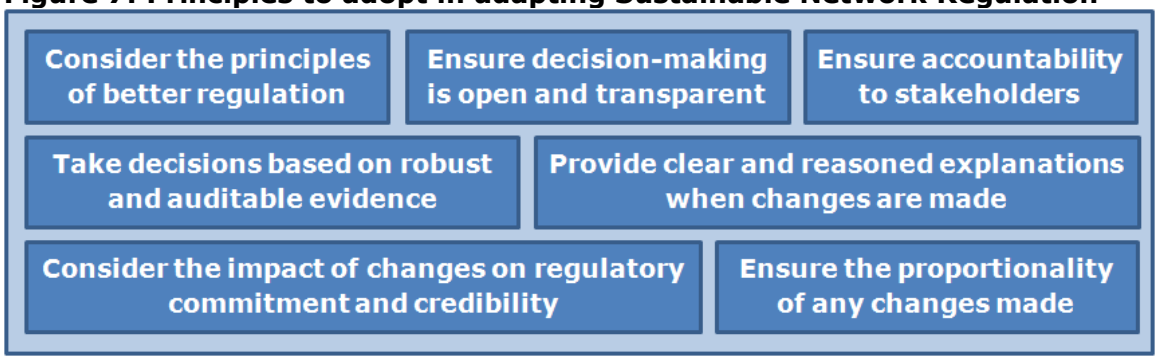
Adapting the framework over time

2.11. We expect that the objectives and principles of Sustainable Network Regulation will be long lived and should be adaptable to changing circumstances. The way in

which the principles are implemented will need to reflect the context at the time. We would learn from issues identified in previous control periods, adapt to changing government policy and learn lessons from other sectors.

2.12. Although there are significant benefits from having an adaptable regulatory regime in place, there are potential downsides in terms of the impact on regulatory commitment and certainty. We would therefore be transparent about how this adaptation could take place. We would seek to ensure consistency with the principles of better regulation when making any modifications to Sustainable Network Regulation[3]. Figure 7 below provides an illustration of the issues to be considered when assessing the need for changes to Sustainable Network Regulation.

Figure 7: Principles to adopt in adapting Sustainable Network Regulation



2.13. To facilitate a transparent approach to adapting the framework we would put clear practices in place following the price review and during the price control period. These would include, but may not be limited to:

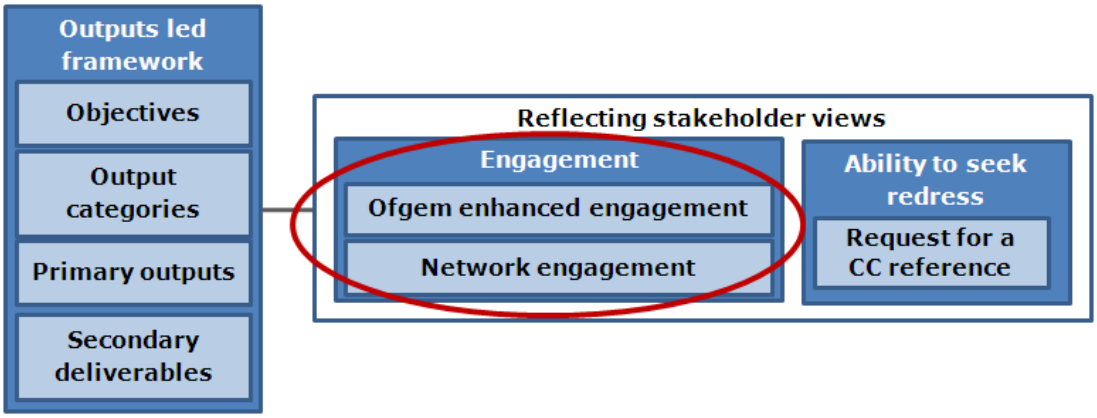
- publication of reports following price control reviews summarising lessons learned, including the effectiveness and transparency of the process and recommendations for future reviews;
- ongoing monitoring and publication of company performance in delivering against primary outputs and of the rewards they have earned from doing so, using the Regulatory Reporting Packs as the basis for collection of information; and
- adopting best practice knowledge retention procedures, including keeping and sharing records of data, discussions, and decisions from one review to the next.

2.14. We would aim to collect new information and learn from lessons in a systematic and open way.

[3] The principles of better regulation are: transparent, accountable, proportionate, consistent, and targeted. Adhering to these principles is consistent with our duties under Section 3A (5A) of the Electricity Act 1989 and Section 4AA (5A) of the Gas Act 1986.

3. Stakeholder engagement during the price control review

Chapter summary
This chapter provides details of the role of stakeholder engagement by network companies and Ofgem in the price control review.



3.1. We set out in this chapter how we would use a range of techniques to obtain up-to-date and relevant stakeholder views. We also set out what network companies would be expected to do to engage with stakeholders to inform their business plans. The engagement undertaken by network companies at the time of the price control review would be part of the stakeholder engagement that we expect network companies to undertake on an ongoing basis (i.e. not just at the time of the price control review). We set out in Box 2 our principles for effective enhanced engagement.

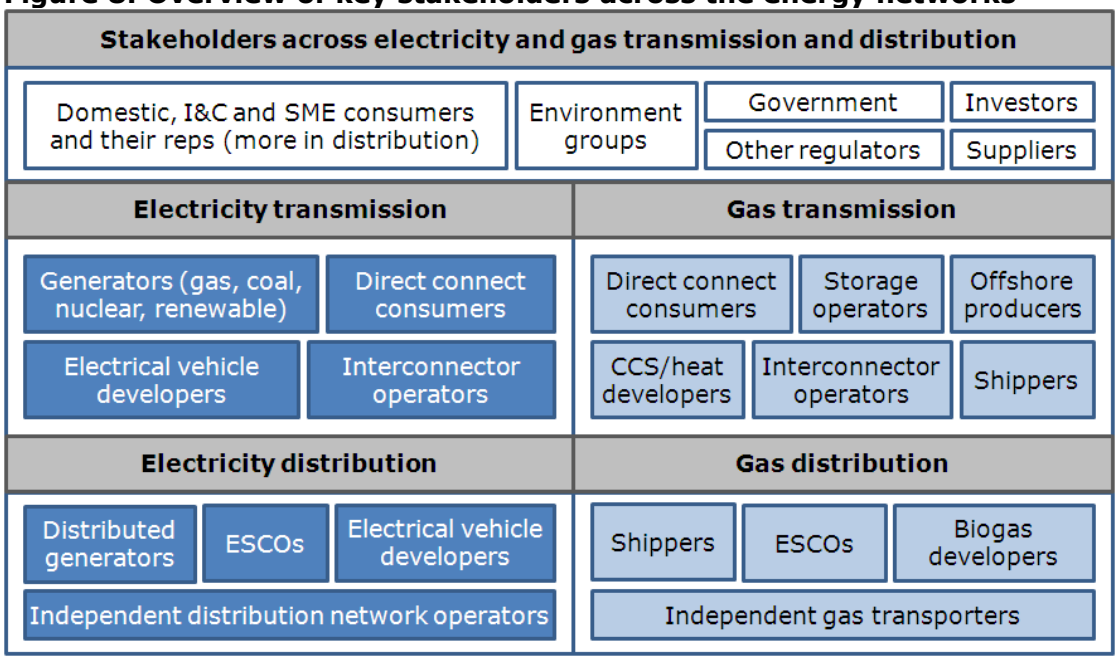
Box 2: Our principles for effective enhanced engagement

- **inclusiveness:** we would seek to ensure that the views of all interested parties are sought during the process, using a wide range of methods;
- **transparency:** we would provide transparency on the process we were intending to adopt to raise awareness of the opportunities to engage;
- **accessibility:** we would make available accessible and targeted information to facilitate discussions at meetings/workshops and during primary research; **control:** stakeholders would be able to indicate to us the specific issues that they were particularly keen to discuss;
- **responsiveness:** we would seek to adopt a flexible process to our engagement, responding to the information revealed as the review progresses;
- **accountability:** we would be transparent about the way that we would use the information collated over the course of the price control process to highlight to stakeholders the impact that their engagement could have;
- **taking views seriously:** we would seek to effectively govern the process to ensure that all the views expressed were appropriately considered;
- **demonstrating impact:** we would demonstrate the impact of engagement on the outcome of the price control throughout the price control review; and
- **evaluation:** we would evaluate the success of our approach to engagement to enable us to adapt future approaches.

Engagement with whom

3.2. It is important that we and network companies engage with consumers and stakeholders to ensure that we have a clear understanding of the views of parties affected by the price control. Figure 8 illustrates the wide-ranging parties with whom we would expect to engage. The range of stakeholders and consumers would likely require a range of techniques to be used to obtain their views, recognising the differences in levels of interest in particular issues, numbers of individuals in each stakeholder group, available resources and levels of desired engagement.

Figure 8: Overview of key stakeholders across the energy networks



3.3. The final decision on the price control would remain with GEMA. The interests of consumers and other stakeholders may differ but we would remain responsible for balancing these interests in line with our duties, having particular regard to the needs of existing and future consumers. Given uncertainty about the role of network companies in the delivery of a sustainable energy sector, the backdrop against which we are making these decisions is increasingly difficult. However, several elements of Sustainable Network Regulation should help us to balance the decisions we take between the needs of existing and future consumers. These include:

- the focus on the longer-term and sustainable development;
- the application of financeability principles, which are aimed at balancing costs fairly between existing and future consumers; and
- the option to give third parties a greater role in delivery, underpinned by an assessment of the long-term benefits and costs where the option is being considered.

3.4. These elements of the framework should complement our principal objective and help to ensure that we retain sufficient focus on the needs of future consumers.

Role of Government

3.5. Government could play a key role in enhanced engagement, providing clarity on relevant policy. For example, the Department of Energy and Climate Change (DECC) could provide information on developments in energy policy. Other government bodies, such as the Department for Environment, Food and Rural Affairs (Defra) and the Department of Communities and Local Government (CLG), could also provide clarity on key policies relevant to the energy networks. There may also be benefits, particularly in gas, from participation of the Health and Safety Executive (HSE) in enhanced engagement.

3.6. We would consider how best to involve government and public body representatives in stakeholder meetings or workgroups to provide clarity on policy as required and, as appropriate, we would continue to make use of bilateral discussion sessions with government. We would also expect network companies to engage with government where they are unclear about implications of relevant energy policy.

3.7. The EU Third Legislative Energy Package ("the third package") requires the national regulatory authority to be legally distinct and functionally independent from any other public or private entity and not to "seek or take direct instructions from any other private or public entity when carrying out the regulatory tasks". We therefore would need to ensure that any role of government in enhanced engagement is consistent with the EU third package.

Network company engagement with their consumers

3.8. Network companies should proactively engage with consumers of their network services and wider stakeholders, as highlighted in Figure 8 above. We would expect this engagement to take place on an ongoing basis, not just as part of the price control review. While we do not want to be prescriptive about how network companies engage with their stakeholders, Table 1 provides an illustration of the type of issues that network companies would be expected to engage on in the context of the price control review and what engagement might involve. It also explains how the framework is designed to provide network companies with a strong incentive to engage effectively on an ongoing basis.

Table 1: Overview of the key elements of network company engagement

Issue	Engagement during price control review
What issues might network companies need to engage on?	▪ the early development of their business plans at Stage 1; ▪ business plans at Stage 2; ▪ revised business plans at Stage 3; ▪ engagement should cover all aspects of the business plan; and ▪ potential areas of engagement include, but are not limited to: ○ **electricity transmission:** the volume of generation likely to connect to a network now and in the future; ○ **electricity distribution:** the level of reliability consumers expect and their willingness to pay; ○ **gas transmission:** expected changes in required capacity now and in the future; and ○ **gas distribution:** potential rate of biogas deployment.
How might network companies engage with stakeholders?	▪ we would not prescribe how companies should engage; ▪ network companies should take decisions about how best to understand and respond to the needs of their consumers; and ▪ network companies may wish to explore a range of techniques, providing accessible information to facilitate this, including public versions of their proposed business plans.
How would we assess network company engagement?	▪ credibility of engagement: we would consider the range of stakeholders whose views had been sought, the information provided to stakeholders and the form engagement took; and ▪ impact of engagement: network companies should clearly set out how they had used the views expressed through engagement. Where they had not made use of stakeholder views, they would need to provide robust reasons for this.
What incentives are there for network companies to engage effectively?	▪ if they engage effectively they may face less scrutiny under proportionate treatment; ▪ the primary output related to customer satisfaction relates to the experiences of a range of users of network services providing incentives to deliver a service and level and quality of engagement aligned with their expectations; ▪ we could enhance reputational incentives, publishing best performance examples of network company engagement; and ▪ if there was evidence of insufficient engagement, we could seek to place a licence obligation on the companies requiring that they demonstrate thorough and ongoing engagement – enforcement action could then be taken for breaching the condition.

3.9. The onus would be on the network companies to determine their strategy for engagement, and to demonstrate how this engagement had influenced their thinking in what needs to be delivered and how it should be delivered. It would be important that there was scope for this engagement to impact on the business plans developed by the network companies. Where effective engagement took place this would provide opportunities for (a) stakeholders to drive changes to the regulatory regime, (b) network companies to explore and get stakeholder buy in to proposed

approaches for the delivery of primary outputs, and (c) network companies and stakeholders to identify delivery solutions that involve them working together. Where any of these effects is evident this would provide persuasive evidence to GEMA of the need for change.

3.10. A number of parties have commented that it may prove difficult to accommodate the needs of stakeholders given that many network activities are mandated through licence conditions. Where network companies encounter any such obstacles to the delivery of network services in line with stakeholder expectations, they should seek to make a case to us setting out why what they are proposing is consistent with statutory obligations and emphasising where stakeholder views differ. An example of where this could happen is set out in Box 3 below.

Box 3: Example of where stakeholder views may not be consistent with licence requirements

The increased emphasis on facilitating the transition to a sustainable energy sector is evident through a number of government targets including the commitment to the decarbonisation of electricity generation by 2030. There is significant uncertainty about the best way to meet this target but we anticipate that where network companies engage with their stakeholders, this should provide more information about the potential routes available and the associated costs. In this regard, network engagement with their stakeholders could expose information about the availability of generation and the potential to meet the targets. In the event that the GB market was significantly lagging behind the levels of decarbonisation needed to meet the 2030 target, some smaller generating facilities, e.g. domestic microgen, may be willing to delay connection to the system to allow larger generators to connect and this could increase the ability to decarbonise the sector.

However, standard condition 4a of the electricity distribution licence requires that in carrying out work for the purpose of connection to the licensee's distribution system, network companies should not discriminate between any persons or classes of persons. This could therefore prohibit the network company from delaying the connection of certain types of generator, even where they had obtained agreement. In such a situation, we would expect the network company to present the case to us to allow us to determine the most appropriate way forward. We would need to have regard to a number of issues including compatibility with the third package.

Enhanced engagement by Ofgem

3.11. Our enhanced engagement processes would complement the engagement that network companies take forward with their stakeholders. Table 2 below provides an overview of the type of issues we would expect to engage on with stakeholders, our approach to engagement and examples of the methods we would consider using to obtain stakeholder views. We are proposing to introduce a price control review forum as a new element of our proposed approach to engagement at price control reviews. The intent of the price control review forum is to get consumers, network companies and other interested stakeholders "in the room" during a price control review to provide opportunities to come together and discuss "big picture" issues. Government representatives would also be invited to attend to provide guidance on

the direction of energy and other related policies (for further details on the role of government in engagement, see paragraphs 3.5 to 3.7).

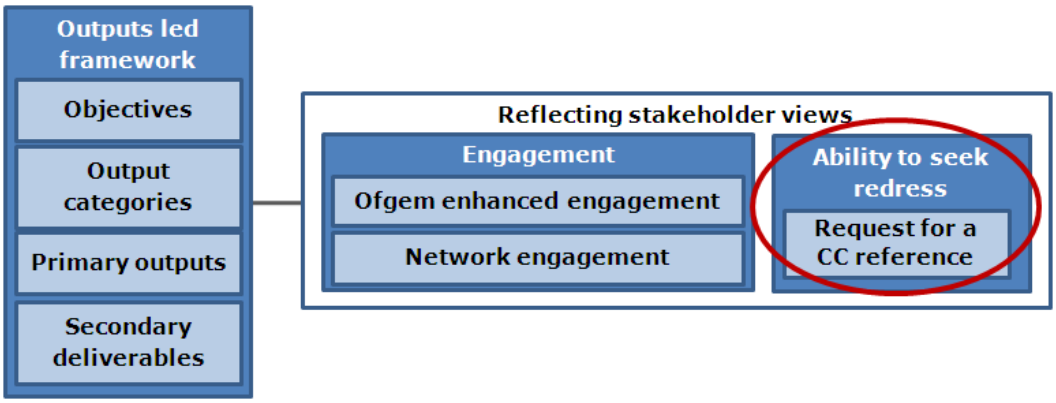
Table 2: Overview of the key elements of Ofgem's enhanced engagement

Issue	Approach under Sustainable Network Regulation
What issues would we expect to engage with stakeholders on?	▪ key sector-wide issues; and ▪ majority of engagement would be on outputs and the form of the price control package.
Approach to enhanced engagement	▪ developed on a case-by-case basis depending on key issues for the review and the key stakeholders to engage with; ▪ a multi-layered approach incorporating a range of techniques; ▪ make use of, and build on, tools developed during previous price controls, e.g. the consumer challenge group; ▪ a flexible approach, evolving mechanisms over time and learning from our experience through regular reviews; ▪ ensure the provision of targeted information to facilitate input; ▪ be transparent about our approach at the start of the review, in terms of timings and forms of engagement; and ▪ a key input to our consultation documents.
What methods would we consider using to obtain stakeholder views?	▪ market research – qualitative and quantitative; ▪ the consumer first panel; ▪ the consumer challenge group; ▪ Ofgem-led workshops and working groups; ▪ Ofgem-led industry fora, e.g. the large users group (LUG); ▪ Ofgem-led advisory groups, e.g. the environmental advisory group; ▪ consultation documents and factsheets; ▪ meetings – the price control review forum and bilateral; and ▪ investor relations.
What is the price control review forum?	▪ a series of Ofgem-led meetings open to a cross-section of industry stakeholders and network companies to allow views to be shared/issues debated; ▪ held prior to document publication to inform developing policy; ▪ discussion would allow stakeholders to tangibly influence policy; ▪ we would provide targeted information to facilitate effective contributions from a range of stakeholders; and ▪ complemented by other elements of enhanced engagement approach, for example targeted working groups on key issues.

3.12. The purpose of the price control review forum would be to inform our policy making and we would not therefore expect attendees to reach agreement on pre-specified areas. However, to facilitate effective outcomes from the sessions, we would hope consumers and stakeholders would look to make use of existing meeting opportunities (e.g. the LUG and association meetings such as the Energy Retail Association) to discuss the issues at hand prior to the meeting of the forum.

4. Third party modification requests

Chapter summary
This chapter explains how we would provide clarity, through published guidance, on how we would respond to a request from a third party for GEMA to make a price control modification reference to the Competition Commission.



4.1. Sustainable Network Regulation would provide stakeholders with clear opportunities to engage with network companies and Ofgem during the price control review. As discussed in Emerging Thinking, giving stakeholders (those affected by price control decisions and network company performance) more of a "standing" in the price review process would improve the effectiveness of engagement between network companies and stakeholders on the price control determination. Network companies would be more likely to engage effectively with third parties if there was a higher risk of a Competition Commission (CC) reference if they did not engage. Stakeholders would also be more likely to engage if they recognised that their concerns were more likely to be given due consideration if they had effectively engaged during the price control review.

4.2. Under existing legislation, third parties can make a request to GEMA to modify a price control licence condition, raising pubic interest concerns with our final price control proposals and potentially asking GEMA to make a reference to the CC. Given the increased focus on stakeholder engagement by us and network companies under Sustainable Network Regulation, we think it would be appropriate to publish guidance on how GEMA would respond to a third party concern that our price control determinations may operate against the public interest.

4.3. Publishing guidance would give third parties, and network companies, greater clarity on the options open to them and thereby may make engagement more effective. However, this approach would not equate to a formal right of appeal for third parties which could only be introduced by government through legislative change. GEMA would retain discretion and final say as to how to respond to third party requests, subject to careful consideration of a request and consideration of the criteria in the guidance.

4.4. This chapter provides a summary of how we would respond to a request from a third party to make a price control modification reference to the CC. It relates to what is possible with GEMA's powers under existing legislation. A draft of the public guidance has been published as part of the Authority's "minded to" recommendations and is available on our website[4].

4.5. The possibility exists for government to introduce a formal third party right of appeal via primary legislation. We will keep the guidance under review and, as part of this, continue to assess the merits of seeking a formal third party right of appeal from government through legislation. DECC will be consulting on implementation of the EU third package over the summer and, as part of this, seeking views on their proposals for implementing the requirement for member states to "ensure that suitable mechanisms exist at national level under which a party affected by a decision of a regulatory authority has a right of appeal to a body independent of the parties involved and of any government"[5]. We would consider and adapt to any developments in this area, and any other future discussions on legislative options, as needed.

4.6. We recognise that this has proved a controversial issue in the RPI-X@20 debate and that there are potential downsides to giving stakeholders more of a standing in the process. We think the risks would be effectively managed through the "guidance" but we would welcome the views of interested parties on this.

Guidance on third party modification requests[6]

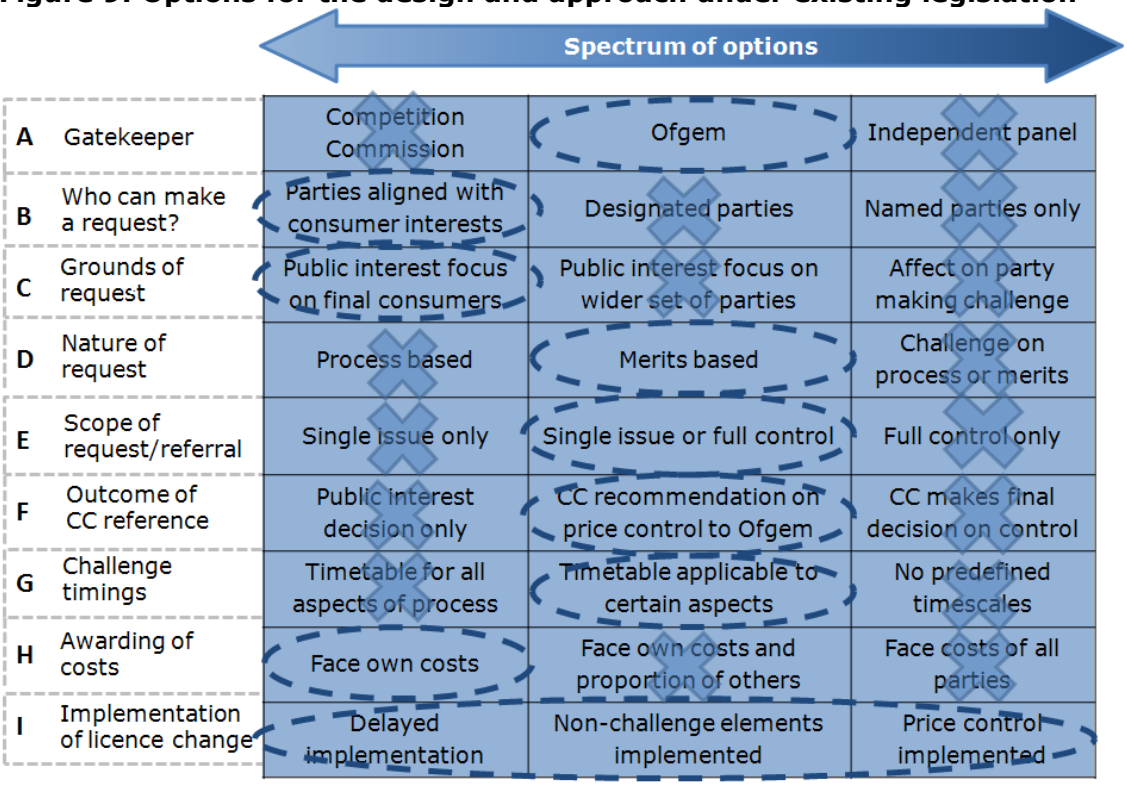
4.7. Under existing legislation any party can initiate a judicial review of the process followed in determining a price control. Judicial reviews are a challenge to the way a decision has been made, rather than the rights and wrongs of the conclusion. The establishment of guidance on third party modification requests would complement this by providing transparency on the process that we would follow where a request, related to the merits of a price control decision, was submitted to GEMA.

4.8. Under existing legislation, if a third party writes to us setting out a material and legitimate concern that our price control determination may act against the public interest, GEMA would need to respond. In response, we could consider a number of options including: maintaining the original final price control proposals and rejecting the request; changing the final price control proposals (including undertaking whatever additional consultation may be required to facilitate this); or making a price control modification reference to the CC.

[4] See, A Guide to Price Control Modification References to the Competition Commission Licensee and Third Party Triggered References (Draft)
http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Mod%20guidance.pdf
[5] Article 41.17 of the Gas Directive and Article 37.17 of the Electricity Directive
[6] The situation that we are considering is where a third party raises a concern with our final proposals (i.e. they suggest that the price control proposals need to be modified) and we consider whether it is appropriate to make a price control modification reference to the Competition Commission under our existing powers.

4.9. Under Sustainable Network Regulation, we would publish guidance on how we would respond to any such public interest concerns from third parties or indeed licensed network companies. Figure 9 sets out the full spectrum of options we presented in Emerging Thinking for the design of a third party right of challenge. It also shows how we would take account of the design options in our guidance on third party requests for price control modifications (which is not a formal right of challenge or right of appeal). Other design options might be considered by government if it was to design a formal right of appeal through primary legislation.

Figure 9: Options for the design and approach under existing legislation



4.10. Broadly, the guidance document sets out that a third party could raise "legitimate and material" concerns with our final price control proposals and GEMA would need to respond to the concerns raised. One option would be to respond by making a price control modification reference to the CC. The power to make a modification reference would sit with GEMA under existing legislation. GEMA would decide, based on an open and transparent process and criteria in the guidance document, whether to make a modification reference. Although each case would be considered on its merits, we would be unlikely to refer an issue raised if a third party had not complied with the criteria laid out in the guidance.

4.11. If we decided to make a reference, the CC would then investigate the reference as it would now if GEMA made a reference when a licensed network company rejected final proposals. The CC would consider whether our proposals operate or may be expected to operate against the public interest - with a likely focus on the merits of GEMA's decision.

Features of the design

Gatekeeper

4.12. Under existing powers, GEMA is responsible for determining whether a modification request from a third party is compliant with the criteria laid out in the guidance document - an overview of the key criteria is outlined in the subsections below. It is then at GEMA's discretion whether to make a modification reference to the CC or to pursue an alternative course of action (which may include making no change).

4.13. GEMA's decision on how to respond to a modification request would be based on a clear and transparent process against the following matters:

- the criteria for making a price control modification request set out in the guidance document; and
- GEMA's principal objective and wider statutory and public law duties, including European legal obligations.

4.14. Some parties engaged in the RPI-X@20 review have expressed concerns that we may not be sufficiently independent from the process to take the role of gatekeeper. Therefore, we believe that providing clear and well formed justifications for our decision on how to respond to a modification request is vital for our credibility in this role. Furthermore, if this is not demonstrated, then the process we follow and the reasons provided for the decision would still be amenable to Judicial Review.

4.15. If we decide that it is appropriate to make a modification reference to the CC, we would likely make the reference on the grounds that, while we considered our final proposals to be consistent with our primary objective and other duties, a third party had raised concerns that we consider are sufficiently "legitimate and material" to warrant further investigation and consideration by the CC.

Who can make a modification request?

4.16. Under our existing powers, we cannot place restrictions on who can make a modification request to us. For example, under existing legislation we cannot limit the ability to seek a modification reference to a consumer group such as Consumer Focus or specify that particular organisations are or are not able to make a request.

4.17. Save in exceptional circumstances, a third party would need to meet the criteria set out in our guidance for us to make a reference to the CC. The direct costs of making a modification request, along with reputational costs if unsuccessful, would be borne by the third party making the request.

Grounds for a modification request

4.18. The price control modification request would, save in exceptional circumstances, need to demonstrate "legitimate and material" concerns, supported by detailed reasons and evidence, why our price control final proposals:

- operate against the public interest; or
- may be expected to operate against the public interest

4.19. To do this, third parties would be expected to demonstrate how their request for a price control modification reference is consistent with GEMA's statutory objectives. It should be consistent with GEMA's principal objective, explaining why such a reference would be in the interests of existing and future consumers. It should also take account of GEMA's wider statutory duties, including the need to secure that licence holders are able to finance their activities.

4.20. As part of the grounds for making a modification request, third parties would also be expected to provide evidence that they had engaged effectively throughout the price control review process. This includes showing that they had brought any evidence relied upon in the price control modification request to our attention during the price control review process. Stakeholders, who chose not to participate in price control review process may limit the likelihood that we refer their modification request to the CC. While under our existing powers we are unable to rule out consideration of "exceptional" modification requests, i.e. from a party not engaged in the process and/or raising a new issue, it is expected that this would be rare.

Nature of request

4.21. Third parties can only make a modification request to us on the merits of our final price control proposals – broadly consistent with what licensed network companies are able to do in rejecting a price control package. Were a third party to raise a modification request around a process issue, this would likely be seen as out of scope and the request likely refused by GEMA on the grounds that other routes, such as Judicial Review, are available.

Scope of request/Scope of referral

4.22. The issue(s) raised in the modification request to us should relate to the price control final proposals. GEMA may refuse a price control modification request where the issue(s) raised are deemed out of scope because they could be appropriately addressed elsewhere. Examples of areas that would be deemed out of scope include:

- process issues seen as amenable to Judicial Review;
- matters relating to industry codes, which can be altered by reference to the governance rules in the relevant code. For example, issues relating to the modification of charging methodologies; and

- planning matters, which should be left to the planning process and the relevant planning agencies.

4.23. It is open to third parties whether they choose to make a modification request with respect to the price control package as a whole or with respect to a particular element(s) of it. However, GEMA would have discretion in setting the reference and would decide whether it refers:

- the whole price control package specified in final proposals; or
- a single issue or specific parts of the package specified in final proposals

4.24. Ordinarily, we would expect to refer the package as a whole but could decide, if appropriate, to make a reference on a single issue that was considered separable. If we were to make a single issue modification reference, we would expect the CC to adhere to the scope of the referral and for their investigations not to widen beyond this issue. Single issue references would only be considered where the element of the price control in the request is sufficiently separable from the rest of the package.

Outcome of CC reference

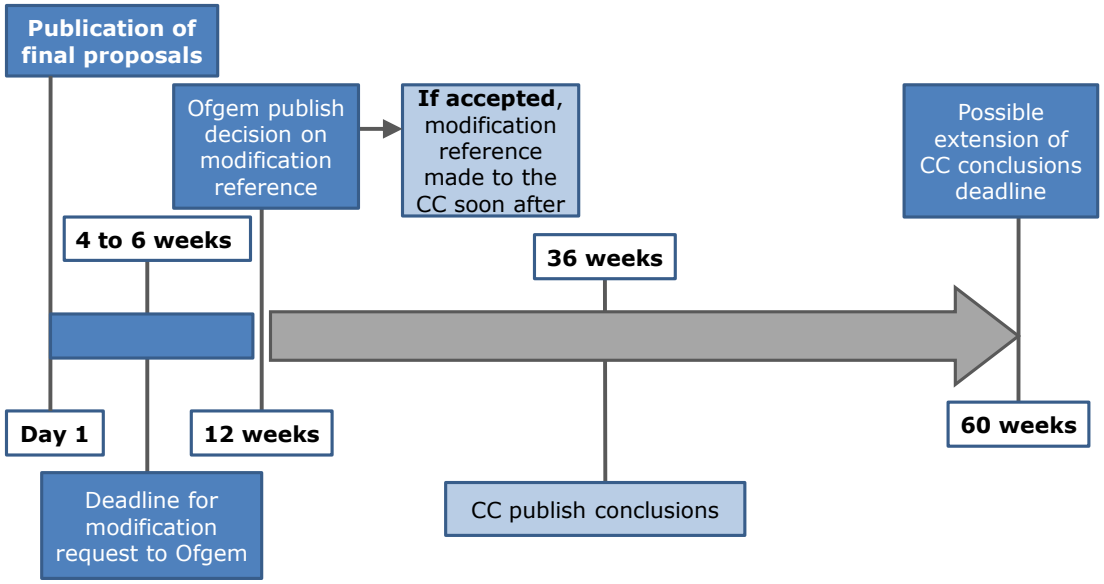
4.25. Consistent with existing powers in the Gas Act and Electricity Act, the CC would investigate the matter referred and report to GEMA whether there was a public interest concern. Where the CC concludes that any adverse effects identified could be remedied or prevented by licence modifications, it would specify these in the report.

Timings

4.26. Figure 10 sets out an illustrative timeline for consideration of a modification request raised at final proposals and the reference to the CC – if one is made. A third party who wishes to make a request for a price control modification reference would be expected, save in exceptional circumstances, to do so following the publication of final proposals. The timescales that would be attached to a price control modification request, and any modification reference itself, are subject to existing legislative requirements and constraints. As such, save for statutory periods, the timetabling may be extended or reduced at GEMA's discretion[7]. However, where possible, the time periods and deadlines would be specified in final proposals in order to minimise uncertainty. The timescales for a third party modification request would be consistent with those applied to licensed network companies at final proposals.

[7] Further information on timetabling can be found in the Guidance document.

Figure 10: Indicative timeline for price control reference decisions



Awarding of costs

4.27. Parties will incur their own costs under the third party price control modification request model. We do not expect these costs to be trivial given the criteria that need to be met for a request to be referred to the CC. For example, a party will need to demonstrate effective engagement throughout the price control review process, which will involve significant resource costs. The reputational costs of making an unwarranted and/or unsuccessful modification request may also be seen as significant. Again, both Consumer Focus and Centrica have indicated that this would be a significant consideration for them before making a modification request.

4.28. Under our existing powers it is not possible for us to make a third party liable for others' costs in the event that a modification referral is made to the CC. Where GEMA makes a modification reference to the CC, licensees and third parties will bear their own costs associated with the reference. In terms of the costs incurred by the Competition Commission, they will only be recovered via licensee charges. How the costs are apportioned between licensees will be determined by the Competition Commission at its discretion under the power contained in section 177(3) of the Energy Act 2004 once their work on the modification reference is complete.

Implementation of licence change

4.29. Each case will need to be considered on its own merits and in light of the particular circumstances that pertain at the relevant time that GEMA makes a price control modification reference.

4.30. Where licensees agree final proposals, GEMA may consider it appropriate to apply the new price control terms and would normally take this course of action, making adjustments retrospectively after the CC recommendations. However, in the event of a reference relating to a "single issue" only, GEMA may consider modifying the licence condition to reflect all aspects of the final price control proposals save, where possible, the single issue referred.

4.31. This flexibility open to GEMA may help to minimise disruption and potential uncertainty caused by a modification referral to the CC.

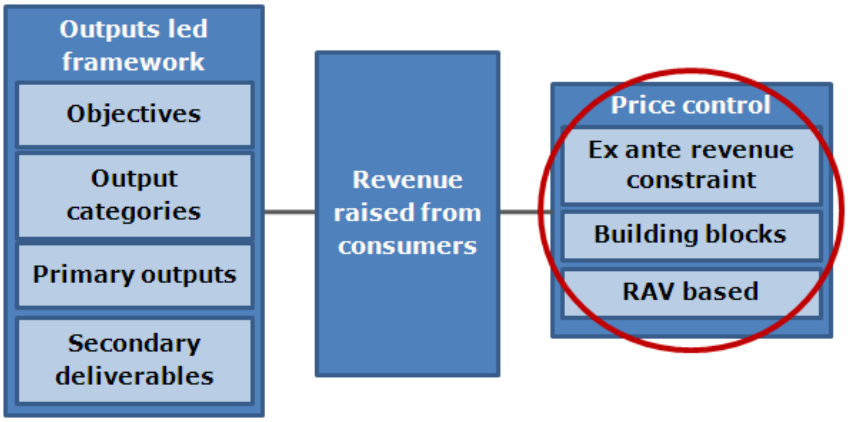
Next steps

4.32. Following the consultation on our recommendations, and subject to the Authority's final decision on Sustainable Network Regulation, we would expect the guidance document, "A Guide to Price Control Modification References to the Competition Commission – Licensee and Third Party Triggered References", to be updated to reflect responses to this consultation and to then become active as part of regulatory regimes for TPCR5 and GDPCR2. The prospect of GEMA making a reference following a request by any stakeholder would be flagged as a possibility during the review process.

Part 2 – Setting the price control

5. Setting the eight-year ex ante price control

Chapter summary: This chapter provides an overview of the parameters of the price control under Sustainable Network Regulation and discusses the length of the control period.



5.1. Under Sustainable Network Regulation the price control would, as now, be set upfront for a fixed period into the future. During RPI-X@20 we have considered a range of alternative approaches, including ex post regulation[8]. However, as emphasised in "Emerging Thinking" we do not think that these alternatives would offer sufficient protection for existing and future consumers of GB energy network services.

5.2. We discuss here the length of the upfront, or ex ante, price control and the components of the price control.

Longer-term thinking and a longer price control period

5.3. We have emphasised throughout RPI-X@20 that we, and network companies, need to focus on the long-term when considering what to deliver and how best to deliver. The longer-term focus is needed given the challenge of delivering a sustainable energy sector, the long-lived nature of network assets, and the uncertainty about how best to meet the needs of existing and future consumers. We set out here how Sustainable Network Regulation would encourage longer-term thinking and explain the role that a longer price control period can play.

Encouraging longer-term thinking

5.4. Decisions that network companies make about how best to play a role in delivering a sustainable energy sector and how best to deliver value for money over

[8] The case for ex post regulation of energy networks – report by LECG for Ofgem, available at: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=11&refer=NETWORKS/RPIX20/CONSULTREPORTS

the long-term involve a mix of different time horizons. In some cases taking action in the next year or two to deliver outputs in the short-term would be what is relevant. For other investments or operational decisions, taking action over a ten or twenty-year period to deliver outputs for a long period (e.g. commensurate with the life of network assets) would be what is relevant.

5.5. During RPI-X@20 we have heard a number of concerns that network companies have been overly focused on the five-year price control cycle, at the expense of considering long-term value for money. We provide examples of some of the concerns that we have heard in Box 4[9].

Box 4: Examples of the short-term focus of network companies

During RPI-X@20 stakeholders have highlighted that RPI-X has tended to encourage network companies to focus on the short-term rather than considering the longer-term efficiencies that could accrue beyond the current price control period.

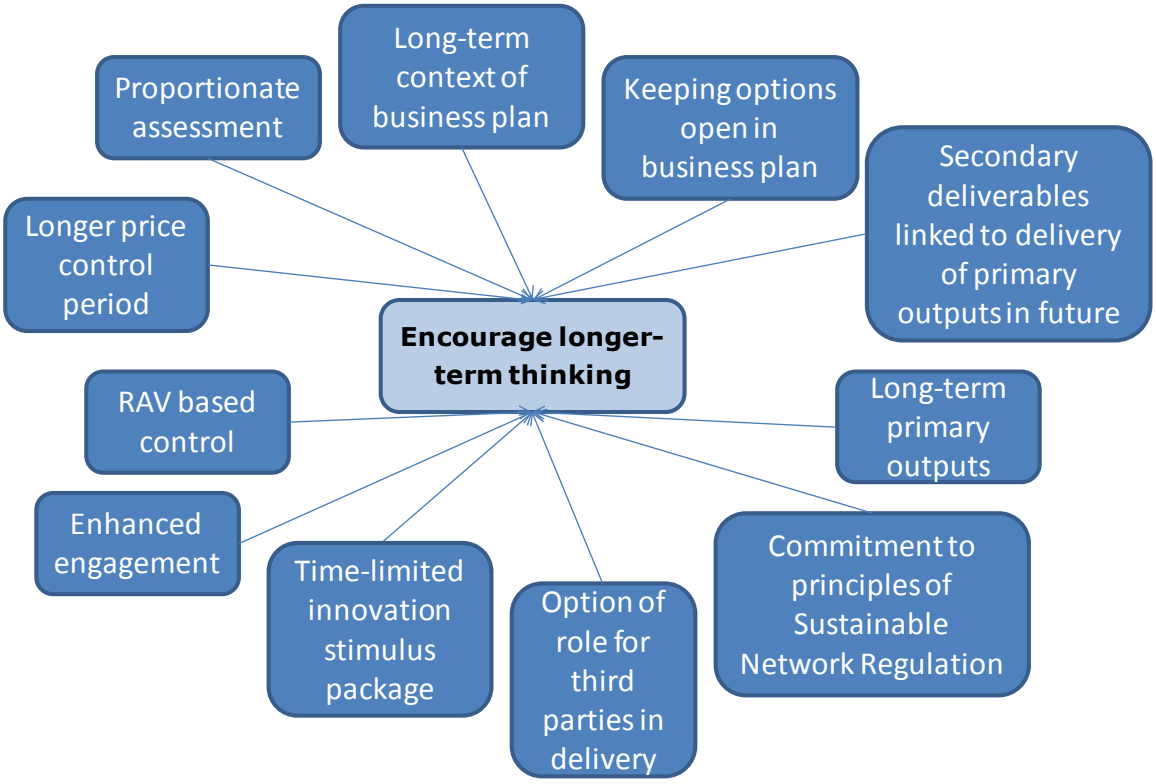
At both the London and Cambridge workshops that we held at the end of 2008, stakeholders recognised that the five-year periods may create artificially short time horizons for investment planning and may not appropriately incentivise financing of long-term investment projects. This was also emphasised by EA technology, EDF energy, Prospect and SP networks in their responses to our February 2009 'Principles, Process and Issues' consultation. These respondents suggested that the short-term focus of the RPI-X framework had led network companies to minimise short-term costs and reduce expenditure on technical innovation, training and their staff costs.

Throughout RPI-X@20, stakeholders have recognised that, to address this, the regime should incentivise network companies to minimise long-term costs and that longer-term planning would facilitate this. This message was emphasised again at our workshop on the length of the price control, held in May 2010.

5.6. To encourage network companies to focus on the longer-term (i.e. on their existing and future consumers) we are making a number of changes to how the price control is set. The main elements of the package that are focused on encouraging longer-term thinking are illustrated in Figure 11.

[9] Further information on the concerns can be found in the Reckon LLP paper on "Longer-term price controls" available from: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=1&refer=NETWORKS/RPIX20/CONSULTREPORTS, and our May 2010 working paper on Regulating energy networks for the future: RPI-X@20, The length of the price control period, available from http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=20&refer=NETWORKS/RPIX20/WORKINGPAPERS

Figure 11: Encouraging longer-term thinking



5.7. These aspects of Sustainable Network Regulation are designed to encourage network companies to focus on the time horizon that is most relevant for each type of decision, and are complemented by the extended length of the control period:

- we would expect well-justified **business plans** to be set in a **longer-term context** (e.g. an asset management strategy consistent with asset life cycles) and include evidence that network companies had considered alternative options for delivering outputs at long-term value for money as set out in Chapter 7;
- this would be facilitated by **proportionate treatment** which would, as set out in Chapter 8, provide incentives to the network companies to present their business plans in a longer-term context in order to be classified as category A and receive relatively lower levels of scrutiny.
- the emphasis on **keeping options open where appropriate** would also encourage network companies to consider value for money over the longer-term;
- network companies and Ofgem would discuss these longer-term strategies with stakeholders as part of **enhanced engagement** as set out in Chapter 3;
- we would expect ideas on **innovative ways of delivering** (technical and commercial) to be included in the business plans, with extra encouragement provided through the innovation stimulus package as set out in Chapter 14;
- we would expect to allow network companies funding in a price control period linked to the delivery of primary outputs and long-term efficiency savings in future periods. Where such funding is allowed, there would be a clear link between the revenue allowed and specific approaches that the network company

is proposing to adopt in the next price control period (for further details see discussion on **secondary deliverables** in Chapter 6);
- we would, when considering whether to use the option of **giving third parties a greater role in delivery**, focus on the potential longer-term benefits and costs. Further details can be found in Chapter 8 and Chapter 13;
- as far as possible, we would aim to provide assurances about how long-term investment projects would be treated in the future. We would **continue to use the RAV** as the vehicle for providing a reasonable return to investors and would commit to **not making retrospective adjustments** to the RAV so long as outputs are delivered; and
- we are, through our decision on RPI-X@20, providing **commitment to the principles of Sustainable Network Regulation** for future price control reviews, including our principles on financeability. We are aiming to provide network companies and investors with more certainty about how plans and delivery decisions would be treated over time.

The case for extending the length of the price control period

5.8. This package of measures would promote longer-term thinking and encourage network companies to identify ways of delivering better value for money over the longer-term. They could be applied, and be effective, with a five-year price control period. However, we have also considered, as discussed in Emerging Thinking and our May 2010 working paper[10], whether an extension of the price control period would enhance and support these measures.

5.9. By extending the price control period we are providing a strong signal that we, and network companies, would focus on long-term value for money**.** The price control period represents the period of time over which a network company has a well-defined financial stake in the level of costs it incurs to deliver the agreed outputs. The shorter the period of the price control the greater the risks to value for money over the long-term. As long as there is an end date for a price control we cannot eliminate these risks; but we can reduce their scale (even if only at the margin) by having the length of the price control no shorter than necessary. Where we provide a financial commitment for a longer price control period we would also expect network companies to take more responsibility for considering how best to deliver primary outputs and value for money network services over the longer-term.

5.10. The key question is how much we can credibly extend the price control period. The period needs to be lengthened sufficiently to drive behaviour changes, but not to the extent that there is real concern that we would need to intervene on an unanticipated basis. We do not think extending the period to match the asset management horizons of the network companies, as suggested by a number of network companies, would be credible. The risk of needing to undertake a full comprehensive review earlier than scheduled would be too great and would open up concerns relating to cost forecasting. At the other extreme, extending by a year would have limited impact.

[10] Regulating energy networks for the future: RPI-X@20, The length of the price control period http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=20&refer=NETWORKS/RPIX20/WORKINGPAPERS

5.11. It is in this context that we are recommending an extension to eight years. This should provide a strong signal to network companies and others that we are putting greater emphasis on longer-term thinking. This change would open up a greater range of options that network companies might consider for efficiently delivering outputs during the period, even if only at the margins. It is expected to encourage network companies to make decisions to deliver efficiencies over a time horizon longer than the five-year period used in recent price control reviews.

5.12. We would expect the extension of the price control period to incentivise network companies to innovate by increasing the period over which they are guaranteed to benefit financially from any such innovation that enables them to deliver outputs at lower costs. In addition, the move to a longer-term control would also be consistent with the principles of better regulation by reducing the administrative burden for the network companies. Network companies would be focused on running their business, and meeting the needs of consumers, rather than investing time and effort in price control reviews with Ofgem every five years.

5.13. In Emerging Thinking we considered an option of partially lengthening the price control, with some elements having revenue commitment for longer than others. Adopting this approach would be complicated and, as emphasised in responses to Emerging Thinking, it would be difficult to work out and understand where and how to draw the boundaries between different activities or cost types. However, we recognise that it may be appropriate to treat high value projects that relate to delivery of outputs in future periods differently. Our proposals on linking expenditure in the current period to delivery in future periods, through the use of secondary deliverables (see paragraphs 6.28 to 6.44), would be relevant for such projects. We would also consider at price control reviews, when designing incentive mechanisms and uncertainty mechanisms, whether and how to allow some incentive mechanisms to span price control periods to encourage such high value long-term projects to be delivered at long-term value for money.

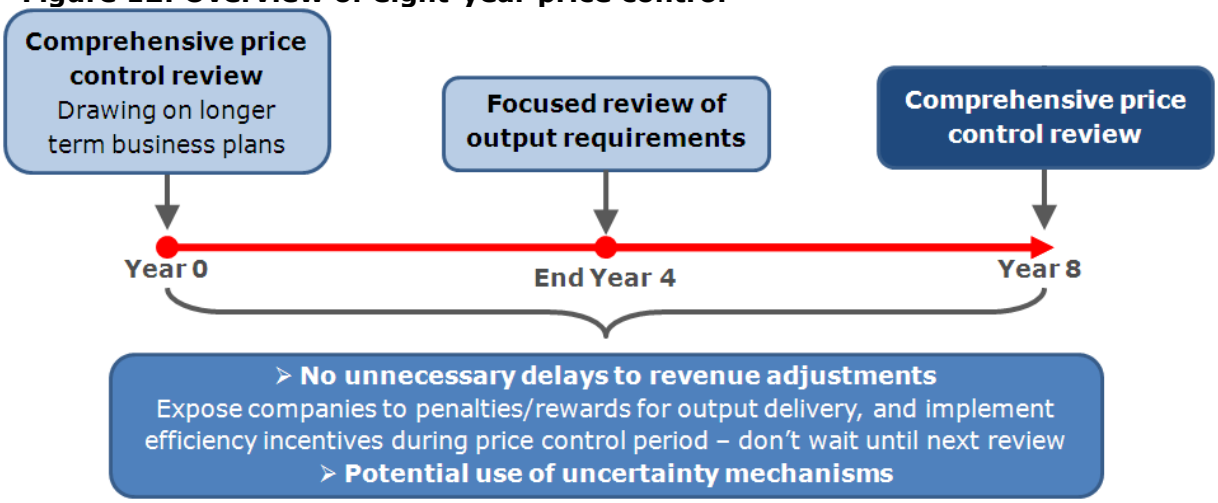
5.14. We think the eight-year price control period is appropriate for all four energy network sectors, with other aspects of the framework being implemented in a way that takes account of the specific needs and challenges of each sector. When implementing Sustainable Network Regulation in TPCR5 and GPDCR2 we are mindful of the need to consider whether it would be appropriate to delink the timing of these reviews in the future and therefore, in this case, have different price control lengths for the next period.

5.15. As far as possible we want to provide certainty for network companies and investors on the length of the price control period. However, we recognise that there is, inevitably, some element of judgement in the choice of the length of the price control period. We therefore recommend reviewing the eight-year price control period at future price control reviews. We would consider lessons from the experience of different sectors under the eight-year control period to determine whether it would be appropriate to increase the length further or potentially to revert to the five-year price control length.

How would the eight-year price control work?

5.16. Figure 12 illustrates how the eight-year price control framework would work. There would be a comprehensive price control review every eight years, covering all aspects of the price control. The principles and incentive arrangements underpinning the control would be fixed for the eight year period, as would the assumptions on financial elements (e.g. WACC, depreciation profiles, and capitalisation policy).

Figure 12: Overview of eight-year price control



5.1. We recognise the uncertainty about what network companies need to deliver over the eight year period and have included the potential for a tightly-scoped mid-period review of output requirements to take place to manage significant incremental changes in one go during the period. At a comprehensive price control review we would set out in licence conditions what would be covered in any mid-period review. We would not expect to review past expenditure, financial parameters (e.g. WACC) or incentive arrangements for cost efficiency or existing output incentives.

5.2. The intention is that any review should be focused on step-changes in the primary outputs that companies are expected to deliver (for example a change in the scale or urgency of requirements to connect electric vehicles to the distribution network). These changes already arise in the context of a five-year price control. With the mid-period review of output requirements we would prioritise and aggregate key changes in the sector to enable holistic changes to be made at a designated point, rather than considering piecemeal changes throughout the price control period. The mid-period review is discussed in further detail in Chapter 11.

5.3. As under the existing five-year price controls, there would be scope for revenue to adjust during the period to reflect performance in delivering outputs efficiently (as discussed in Chapter 6) and uncertainty mechanisms (discussed in Chapter 11). There would be more transparency on how we would adjust the revenue during the price control period (for uncertainty mechanisms and performance in efficient delivery) enabling investors and consumers of network services to better understand and make assumptions about how revenue might evolve during the period.

Responses to our May 2010 working paper

5.4. In written comments on our May 2010 working paper, and in discussions on that working paper, stakeholders have raised a number of potential concerns with the extension of the price control. The main points raised include that:

- there would be higher risk associated with the longer period, particularly given uncertainties that exist and this would increase the cost of capital;
- scope creep at the mid-period review of outputs was possible, indeed likely;
- there was uncertainty about whether our decisions at mid-period reviews could be referred to the Competition Commission; and
- an eight year period was not sufficient to encourage network companies to focus on longer-term horizons to deliver outputs and long-term value for money.

5.5. Our proposals on the overall package are designed to manage these concerns. It is debatable whether the extension to eight years would increase the risks. Our proposals on how revenue would be determined under the price control, and how any changes to it would be managed during the price control period (see Chapter 9, Chapter 10 and Chapter 11), are designed to manage risks and uncertainties. As set out in Chapter 12, if there are implications for the cashflow risk of businesses these would be reflected in the determination of the allowed return (through notional gearing) at each price control review.

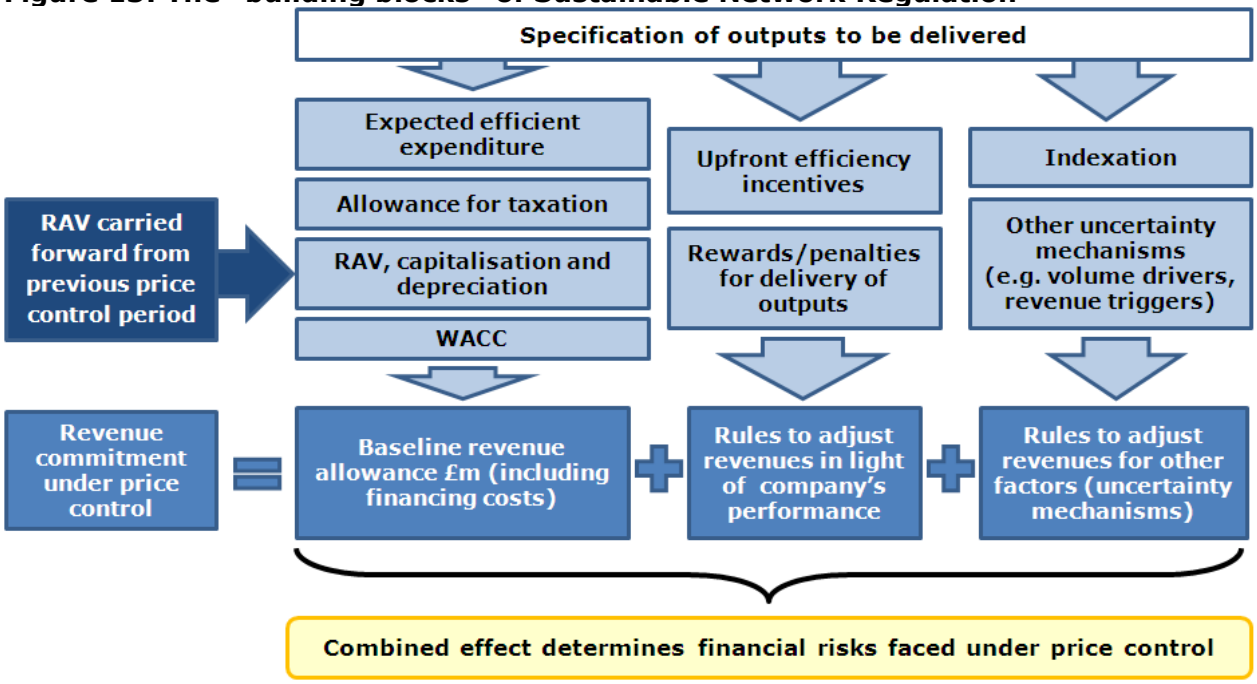
5.6. We would provide firm commitments on what was, and was not, included in the scope of any mid-period review of outputs. Standard options for raising concerns (e.g. requests for modification references to the Competition Commission and Judicial Review) would apply at the time of a mid-period review of output requirements. As discussed elsewhere we recognise that many decisions made by network companies would involve decision-making horizons longer than eight years. We think that extension of the price control period will complement the other elements of the framework designed to encourage longer-term thinking.

Price control building blocks

5.7. As now, the price control would be set using a "building block" approach, incorporating incentives to encourage network companies to deliver outputs and value for money over the long-term. Figure 13 illustrates the core building blocks. A number of features of the current approach would be retained, with the control set to reflect a reasonable balance between investor and consumer needs.

5.8. What would be different is how the building blocks would be set. In particular the fact that Sustainable Network Regulation would be outputs-led in the sense that outputs feed in and influence other elements of the framework. The main differences with RPI-X regulation (applied to energy network companies in recent price control reviews) are set out in Appendix 3 of our Recommendations consultation paper.

Figure 13: The "building blocks" of Sustainable Network Regulation



5.9. Under Sustainable Network Regulation the price control would set out the primary outputs network companies are expected to deliver (see Chapter 6) and would set revenue for efficient delivery of these outputs. This revenue commitment would comprise three elements:

- **base revenue** to cover expected efficient costs (including financing costs) of delivering outputs and long-term value for money, including allowances for maintenance of, and investment in, capital assets and taxation (see Chapters 7 and 8);
- **adjustments to reflect company performance** at delivering outputs efficiently and innovating to expose efficiencies during the control period (see Chapters 9 and 10); and
- **adjustments made during the control period for specified uncertainties** that are considered to be outside the company's control but would have a significant impact on costs of delivery (e.g. compensation for changes in general price inflation in the economy) and changes to financial parameters that are updated during the period (e.g. annual adjustment to the cost of debt, pension adjustments) (see Chapter 11).

5.10. Network company decisions would be influenced by their perceptions of the credibility of the regulatory framework. Through our RPI-X@20 recommendations

we are endeavouring to provide more certainty and transparency about how the framework would work in the future. As part of this we would seek to avoid any retrospective/ex post adjustments to the package agreed in final proposals and licence modifications as this could undermine regulatory commitment.

5.11. The outcome of the price control determination would be that network companies would earn higher returns for good performance in line with consumer expectations and lower returns for poor performance. Incentives would be calibrated to ensure they provide long-term value for money and to ensure the package is consistent with our financeability principles.

Profile of revenue collection

5.12. As part of the price control review, we would reach a view on each network company's expenditure requirements, in each year of the price control period, to deliver the agreed outputs. Our default approach would be to set base revenues for each year of the price control that are consistent with the expected path of expenditure requirements.

Profiling at the price control review

5.13. In some cases, there may be concerns with the impact that the profile of base revenue would have on the profile of prices that consumers' are expected to pay over the price control period. For example, the default approach might lead to prices that increase substantially from current levels at the start of the control period, fall back down and then increase again towards the end of the period. In such circumstances, we may consider setting base revenues that would give rise to a less volatile profile of prices. We would consider the impact of price volatility and potential smoothing measures on existing and future consumers.

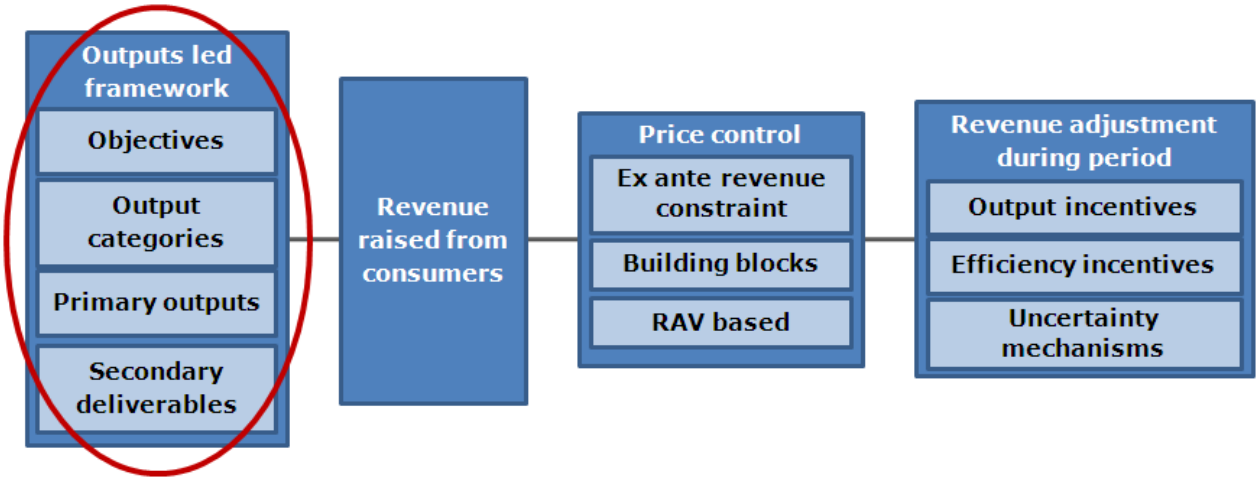
Re-profiling during the price control period

5.14. The arrangements in place to allow revenue to adjust during the period (for uncertainty mechanisms and output and efficiency incentives) could result in network companies wanting to adjust the profile of prices during the period. Ordinarily we would expect companies to manage the variation and adhere to the price profile assumed at the price control review. However, if a company needed to make a large but transitory change in its prices, compared to what was expected at the price control review, it would need to provide a clear and robust justification, comparing forecast revenue for the remainder of the period with and without re-profiling.

5.15. If we were to change the profile of revenue collection — either at or during the price control period — we would need to use an appropriate discount rate. This should be set so as to neither penalise nor reward network companies for any re-profiling of revenues. We would expect an appropriate discount rate to be consistent with the interest rates from low-risk investments. It would not necessarily be the weighted average cost of capital assumed for the price control.

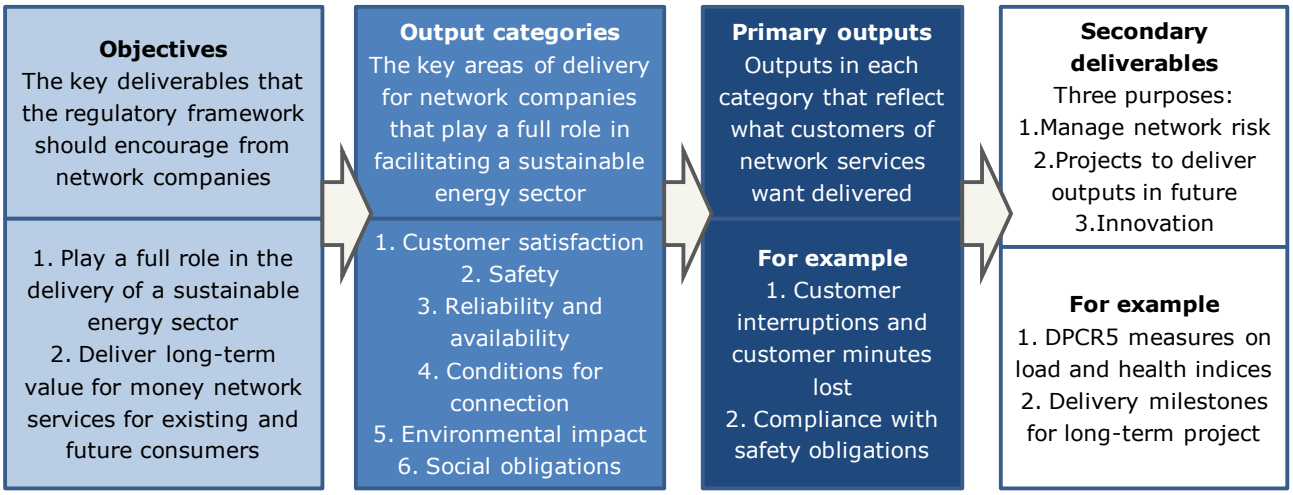
6. Setting outputs

Chapter summary
In this chapter we set out how the two objectives of Sustainable Network Regulation would be translated into outputs that network companies would be "held to account" to deliver in return for earning revenue from consumers under the price control. We describe the six output categories that would be used and explain the role of primary outputs and secondary deliverables in the framework.



6.1. Outputs would be at the heart of Sustainable Network Regulation. They would be derived from the two high-level objectives of the regulatory framework, with base revenues and incentives in the framework derived from, and linked to, delivery of the outputs. This would be set against a focus on long-term value for money. Figure 14 illustrates how, under Sustainable Network Regulation, the objectives and outputs would fit together. This chapter provides further details on each of the elements.

Figure 14: The framework for setting outputs



6.2. Outputs would be set for the duration of the eight-year price control period, with an expectation that they would remain in place over the long-term unless a different time frame is specified at the price control review. Network companies would have a clear role in determining the best way to deliver outputs at long-term value for money. As set out in Chapter 5, a review of the output requirements would take place mid-way through the price control period, to reflect any changes in what network companies are required to deliver. Companies would be accountable for delivering outputs and would be incentivised through rewards for delivery and penalties for non-delivery. This is discussed in further detail in Chapter 9.

Objectives

6.3. The objectives of Sustainable Network Regulation would be the cornerstone of the new regulatory regime. As set out in our Recommendations consultation paper the objectives would be to encourage energy network companies to:

- play a full role in the delivery of a sustainable energy sector; and
- deliver long-term value for money network services for existing and future consumers.

6.4. In RPI-X@20 we have thoroughly consulted on the objectives of the regulatory framework and there has been widespread support for these. We therefore do not expect these to change significantly in the foreseeable future. However, what is required of Ofgem and/or network companies could change over time and it is important that provisions are in place to allow a review of the objectives, where required. For example, a review could take place if:

- a fundamental change to our primary or secondary duties was implemented;
- there was a strong signal from enhanced engagement with stakeholders that the objectives were no longer fit for purpose; and/or
- there was a fundamental change in the direction of energy policy e.g. government decided to move away from the existing 2020 and 2050 targets.

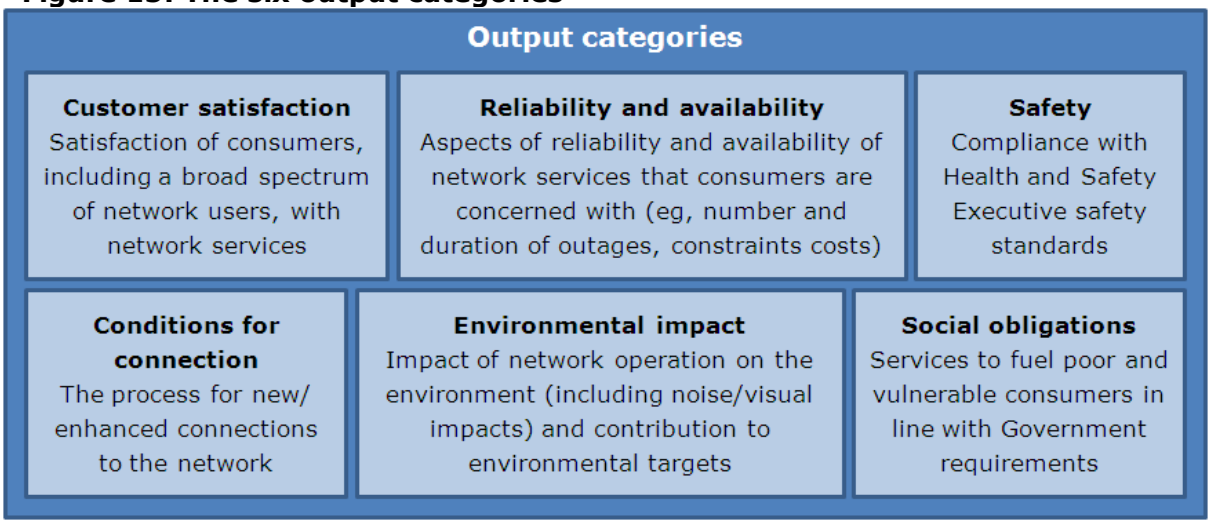
6.5. A change in the overriding objectives would not necessarily change Sustainable Network Regulation. We would need to take account of any changes to the objectives when setting outputs and the price control more generally. In general, and certainly for the foreseeable future, we expect that it would be appropriate to develop outputs and output incentives that are consistent with these objectives.

Output categories

6.6. The outputs that network companies are expected to deliver would sit in one of the six output categories shown in Figure 15. These categories reflect the broad role that energy network companies would play in delivering the objectives of Sustainable Network Regulation.

6.7. In some ways the output categories are familiar to those involved with delivery of energy network services as they (certainly reliability and availability, conditions for connection and safety) are fundamental features of an economic and efficient network service. What is different is that the type of deliverables that are considered is broader than in the past, incorporating environmental impacts and social obligations and more specific customer satisfaction measures. This builds on what has been done in recent price control reviews, most notably DPCR5. The more fundamental difference is that these output categories would be at the centre of the price control review and drive the setting of the price control itself.

Figure 15: The six output categories



6.8. A number of parties have commented that safety should not be included in the set of output categories as it is not an aspect of delivery that a network company should compromise on. We accept that this category should not undermine what network companies are required to deliver by statute. Network companies would be expected to include in their business plans the costs that link to the delivery of safety obligations set by the Health and Safety Executive, as well as considering safety when assessing how best to manage overall network risk. Therefore, it is important that when undertaking price control reviews we understand what is being delivered in terms of safety and how it links to costs and hence required revenue. This is the key reason for including safety alongside the other aspects of network service delivery in the outputs framework. As such, we would not anticipate setting any automatic financial incentive mechanisms that have the potential to detrimentally affect safety.

6.9. However the Gas Act 1986 requires that the Authority shall carry out its functions best calculated to protect the public from dangers arising from the conveyance or use of gas. We therefore consider that there may be value in providing incentives on network companies to undertake safety related initiatives over and above those required of them under statute, where it can be reasonably demonstrated that public safety will benefit. We would therefore expect network companies to consider including such safety initiatives in their business plans.

6.10. As part of Emerging Thinking we consulted upon output categories that were broadly the same as those set out in Figure 15. Respondents to the consultation did not put forward any outputs that could not be reflected in these categories[11]. We also commissioned Frontier Economics to assess these categories for us, using a bottom-up approach of considering what network companies in each sector might be expected to deliver[12]. In their work, Frontier Economics concluded that the categories were representative and comprehensive. Further assessment of our work on outputs, including peer review of the Frontier Economics report by organisations with consumer and environment interests, also confirmed that the categories were appropriate for the regulation of energy network companies in the context of Sustainable Network Regulation.

6.11. The relative importance of the six output categories would vary between the four energy network sectors. For example, in transmission there are currently no specific social obligations on the companies but the presence of the output category would allow relevant outputs to be developed in the event that Government implemented obligations in this area. We would also need to take decisions on the appropriateness of social obligations, not mandated by government but implemented in previous price control reviews, e.g. network extensions introduced in the gas distribution price control review.

6.12. The first time the output categories would be used would be as part of TPCR5 and GDPCR2. The appropriateness of the categories should be reviewed periodically, to reflect developments in network company activities, changing priorities amongst stakeholders including Government, and any lessons learnt from implementing Sustainable Network Regulation. Any changes to the categories would be consulted on in the relevant price control reviews.

Primary outputs

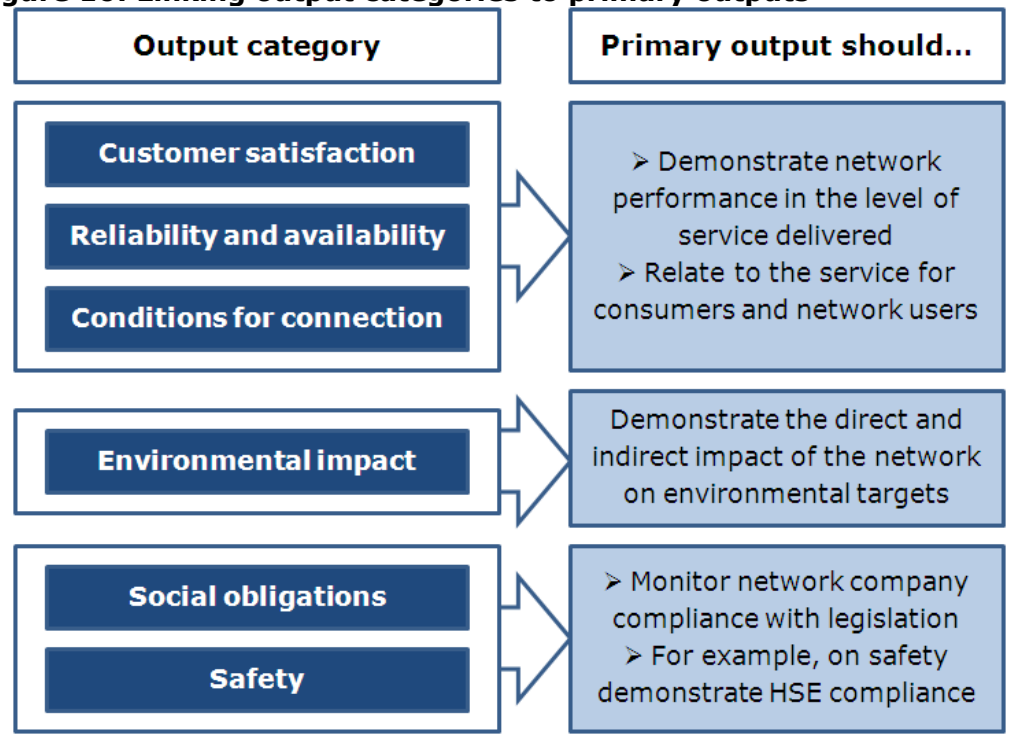
6.13. For each output category, a set of primary outputs would be developed at the price control review to enable us, network companies and stakeholders to have a clear understanding of what is being delivered in each area. Where possible, we would seek to commit to primary outputs over a number of control periods to support the focus on the longer-term. We would also aim to limit the number of primary outputs in each category, but not at the expense of ensuring that the set is comprehensive. These primary outputs should reflect the expectations that consumers have with respect to the delivery of network services and network companies would be responsible for determining how best to deliver against these. We would encourage delivery by developing incentives for each primary output with a clear link between delivery of the outputs and revenue allowed in the price control. Further details on these incentives are provided in Chapter 9.

[11] Regulating Energy networks for the future: RPI-X@20 Emerging Thinking, available from: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=42&refer=Networks/rpix20/ConsultDocs
[12] "RPI-X@20: Output measures in the future regulatory framework", available from: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=17&refer=Networks/rpix20/ConsultReports

Linking output categories to primary outputs

6.14. Figure 16 illustrates how the primary outputs would be derived from relevant output categories. Three of the categories would include primary outputs directly related to the "experience" of consumers of network services. The environmental impact category would include outputs related to the impact of network companies and the provision of network services on the wider environment. Primary outputs in the social obligations category would include those mandated by government and those in the safety category would be mandated by the Health and Safety Executive.

Figure 16: Linking output categories to primary outputs



Principles for setting primary outputs

6.15. During RPI-X@20 we have developed a set of principles which would guide the development of primary outputs at price control reviews. The principles provide that, as far as possible, the primary outputs should be:

- **material:** the primary outputs should make a significant contribution toward the objectives of Sustainable Network Regulation;
- **controllable:** the network company should have full or a sufficient degree of control over performance against the primary outputs, with the strength of any incentive taking account of the degree of controllability;
- **measurable:** it should be possible to meaningfully measure the primary outputs using quantitative or qualitative methods;

- **comparable:** it should be possible to measure the primary outputs meaningfully over time and across network companies in a sector by normalising the levels of performance that they are incentivised to achieve;
- **applicable:** it should be possible to use the primary outputs to set penalties and rewards as part of the process of determining revenue allowances;
- **compatible with the promotion of competition:** the primary outputs should facilitate competition in upstream and downstream markets, e.g. for independent gas transporters and independent distribution network operators as well as developing retail models such as energy service companies (ESCOs); and
- **legally compliant:** the primary outputs should be compatible with existing legal obligations that are within our remit and the remit of other government bodies.

6.16. The development of primary outputs at each price control review should, as far as possible, include reference to new government policies and initiatives in areas such as sustainable development, social issues and safety. We may have primary outputs that do not meet all of the above criteria and, in these cases, we would expect to limit the strength of any financial incentives accordingly.

Example primary outputs and link to outputs in existing frameworks

6.17. To illustrate how the primary outputs might look, Table 3 provides some examples of the types of primary outputs that might be relevant in each category by sector. These examples build on the recommendations made by Frontier Economics in their report and are intended to be illustrative. Specific primary outputs would be developed as part of a price control review.

6.18. As the examples show, some of the primary outputs could build on existing schemes in place. For example the broad measure of customer satisfaction (to be implemented as part of DPCR5), could be developed to apply across each of the sectors and extended to recognise the range of stakeholder views that should be captured, including both consumers and network users. However, under Sustainable Network Regulation we would expect some changes to existing outputs to be made and some new primary outputs to be developed. The rationale for these changes can be largely attributed to two main factors.

1. Streamlined approach

6.19. We would seek to limit the number of primary outputs to ensure they were focused on the key areas of importance to consumers of network services. This streamlined approach could simplify the regulatory framework as it would allow us to focus attention on the key primary outputs and more easily link revenue to these primary outputs. This approach could also facilitate stakeholder understanding and allow them to engage effectively on key issues. We would only expect to discuss detailed metrics with stakeholders where delivery performance was a concern.

2. Focus of the framework

6.20. As illustrated by the objectives, the framework and hence the price control reviews would be focused on delivery of a sustainable energy sector. This means, in particular, that alongside our focus on ensuring the delivery of a safe, secure and reliable network service, environmental impacts would have a higher profile than in the past. This is consistent with our principal objectives[13] as amended by the Energy Act 2010[14].

6.21. Frontier Economics noted that primary outputs underpinning environmental impacts could be narrow, focusing on the carbon footprint of the network companies (as per DPCR5), or wide focusing on reducing the carbon footprint across the energy system. In the context of a wider role, network companies could seek to facilitate an increase in the flow of low carbon generation and encourage active network management through demand side response and consumer energy efficiency.

6.22. Although energy efficiency is an area in which network companies do not presently have a role, they may have a part to play in working with other industry parties (e.g. suppliers) to support this. Areas where network companies have a role in working with, and providing information to, other players in the industry (e.g. meter point administration services) could be captured in the customer satisfaction output category, recognising the broader range of stakeholders that this would cover. In addition, in the future, network companies may also have a more distinct role in facilitating energy efficiency, for example, through the roll out of smart meters.

6.23. We would hope to develop a set of primary outputs for this category focused on the "wide environmental impact", subject to prevailing legal provisions. This would be a significant change for network companies and for the regulatory framework. We would also need to be mindful of the need to consider any cross-over with relevant outputs in the reliability and availability and conditions for connection categories.

6.24. As far as possible, we would want metrics to be developed that would robustly reflect the performance of the network companies on each of the primary outputs. However, we recognise that it may take time for reliable metrics to be developed which would accurately measure delivery against the primary outputs. To encourage network companies to actively seek out potential sources of information that could be utilised to more effectively measure performance, we may place an incentive on them which would reward them for developing new data sources.

[13] Under Section 3A of the Electricity Act 1989 and 4AA of the Gas Act 1986.
[14] Included in sections 16 and 17 of the Energy Act 2010.

Table 3: Example primary outputs by category and sector

Output category	Electricity Distribution	Gas Distribution	Electricity transmission	Gas Transmission
Customer satisfaction	1. Broad measures of customer satisfaction reflecting experience of consumers and network users 2. Qualitative survey evidence			
Safety	1. Comply with minimum legal requirements as specified by the Health and Safety Executive 2. Additional safety initiatives considered to be in public interest			
Reliability and availability (Network risk dealt with in secondary deliverables, see paragraphs 6.28 to 6.44)	1. Customer interruptions (CI) 2. Customer minutes lost (CML) or energy not supplied (ENS)	1. Supply restoration after an interruption 2. Customer minutes lost (CML) or energy not supplied (ENS)	1. Energy not supplied (ENS) 2. Constraint measure	1. Baseline entry capacity 2. Buy back at entry 3. Baseline flat/flex offtake capacity 4. Buy back at exit
Conditions for connections	1. Time to connect a generation node 2. Time to connect a demand node	1. Time to connect an entry/exit or demand node	1. Time to connect a generation node 2. Time to connect a demand node	1. Time to connect an entry/exit or demand node
Environmental impact	1. Carbon footprint of network including losses 2. Proportion of new low carbon generation 3. Other emissions 4. Visual impacts 5. Role in consumer energy efficiency	1. Carbon footprint of network including shrinkage 2. Proportion of new low carbon energy 3. Other emissions 4. Role in consumer energy efficiency	1. Carbon footprint of network including losses 2. Proportion of new low carbon generation 3. Other emissions 4. Visual impacts	1. Carbon footprint of network including shrinkage 2. Proportion of new low carbon energy 3. Other emissions
Social obligations	1. Targets for vulnerable customers, e.g. PSOs			

* A composite customer satisfaction measure used in electricity distribution consisting of a customer satisfaction survey, a complaints metric and stakeholder engagement.

The level of primary outputs to be delivered

6.25. At each price control review we would set the level of performance at which network companies in a sector would be expected to operate for each primary output. For example, we would agree a level of reliability and availability that network companies should achieve. Where relevant we would take account of requirements set by government or the Health and Safety Executive when considering the performance level. We would also take account of interactions across primary outputs, considering issues such as those set out in Box 5 below.

Box 5: Level of primary outputs and interactions

There are many links between the output categories and we would need to take account of these when setting the level of performance that network companies would be incentivised to achieve. For example, when setting the baseline level of performance on reliability and availability, we would need to have regard to Health and Safety requirements and the impacts these requirements would have on the level of reliability and availability that network companies would automatically achieve through compliance with safety standards. This would ensure we had a full understanding of the context in which we were setting performance levels for reliability and availability.

Similar links would also need to be considered between, for example: (a) environmental impacts and conditions for connection; (b) reliability and availability and customer satisfaction; (c) conditions for connection and customer satisfaction; and (d) reliability and availability and environmental impacts.

6.26. We would set a minimum level of performance at which we would expect all network companies in the sector to operate, taking account of stakeholder views and the views of network companies. Where companies presented a persuasive case that the level of performance they deliver should be incrementally higher or lower than this base level, we could approve this. The network company would need to demonstrate, with evidence, that the alternative level of a primary output was consistent with providing long-term value for money and more generally was consistent with the objectives of Sustainable Network Regulation. Lower performance levels would not be possible for primary outputs where the minimum level is set by government or the Health and Safety Executive. This is discussed further in Chapter 9.

6.27. The required levels of performance for the sector would be specified early in the price control review to ensure all stakeholders had a clear understanding of the expectations on the network companies. The network companies would set out in their well-justified business plans (see Chapter 7) what primary outputs they would be delivering and what the associated cost of delivering would be. We would set base revenue in the price control to reflect our assessment of what is needed to fund delivery of the primary outputs over time and to deliver long-term value for money.

Secondary deliverables

6.28. Network companies would be responsible for network planning, stewardship of their assets and operational decisions over time, to ensure that any risk to long-term delivery of primary outputs is managed and that they deliver long-term value for money for existing and future consumers. Network companies would need to work out how best to deliver primary outputs over time and long-term value for money, potentially revising their approach during price control periods to reflect technological and political developments, evolving patterns of energy demand and/or new information.

6.29. If price controls were focused only on the delivery of primary outputs, network companies may be encouraged to deliver primary outputs at the lowest cost during the eight-year price control period, potentially at the expense of measures that could help reduce the costs of delivering primary outputs over the longer-term. To protect against this, we would expect the network companies to focus on the longer-term and consider whether it is appropriate to include costs in their business plans that are related to delivery of primary outputs in future price control periods and to long-term value for money.

6.30. Assuming the network company presents a well-justified case for including such costs in the price control for the forthcoming period, providing coherent and comprehensive evidence to support the case, we would expect to include costs of this type in the price control. The benefits of this expenditure would be observed in future price control periods. In these situations we would require the company to set out the rationale for the expenditure in the context of a long-term strategy for delivery. We would also expect the network company to provide a clear link between costs in the current period and deliverables or indicators that they can be held to account to during the period. We would not expect to specify what these secondary deliverables should be or what the appropriate level of delivery should be although ideally they would be intermediary outputs rather than inputs. Where appropriate we would work with the industry to develop common metrics for secondary deliverables (e.g. asset health indicators) but we recognise that in some areas company-specific metrics would be most relevant. It is for the company to propose and justify the choice and level of secondary deliverables using evidence, including where relevant the results of engaging with stakeholders.

6.31. Secondary deliverables are not the "ends" that relate to the experience that consumers have of network services but they are the "means to the end". They are needed to ensure delivery of primary outputs over time and long-term value for money are not put at risk. We would expect the network company to continue to seek out better ways of delivering during the price control, changing the proposed approach relative to the plan where this is expected to be better for long-term value for money. In this context it would be preferable for secondary deliverables to be as far as possible related to intermediate outputs rather than to a specific way of delivering (e.g. building a particular size transmission line). We recognise that it may not always be possible to use secondary deliverables of this type and it may be most appropriate to focus on the details of a specific project (way of delivering).

6.32. There are three main drivers of the need for secondary deliverables:

- **managing network risk** to ensure that delivery of primary outputs in future periods is not put at risk by decisions made in the price control period;
- **projects for delivering primary outputs in future periods** with action taken during the price control period; and
- **technical and commercial innovation projects**, or other projects which require upfront costs but have the potential, with some uncertainty, to deliver benefits in terms of long-term value for money in future periods.

6.33. The following sections provide an overview of these drivers and the way that secondary deliverables would be used to encourage network companies to take decisions in the price control period, where appropriate, relating to delivery of primary outputs in future price controls and long-term value for money whilst limiting the risk of consumers overpaying to contribute to such activity.

Managing network risk

6.34. The primary outputs are intended to allow us to monitor the performance of the network companies in the delivery of end services to consumers. In some cases, network companies may continue to demonstrate delivery of the primary outputs in the current period but may not be effectively managing network risk. The-long-term nature of network investment could mean that it would take time for insufficient levels of investment to manifest in the form of non-delivery of outputs. However, this would create risks in terms of the ability of the network company to deliver the primary outputs in future periods.

6.35. For example, a network company may undertake the minimum work required to maintain an asset to allow it to deliver a reliable network service in line with its primary outputs in the current price control period. However, in the event that the asset is nearing the end of its useful life, it may need to be replaced. A delay to the replacement of this asset could result in increased network interruptions in future periods, which would compromise the ability of the network company to meet its primary output. It may also require emergency work to be taken forward to replace the asset, which would likely incur higher costs and would not represent long-term value for money for consumers. In this example, it would have been more efficient for the network company to replace the asset in the current period before it began to fail. Although this would require the network company to incur higher costs in the current period it would likely mean that costs in future periods would be reduced.

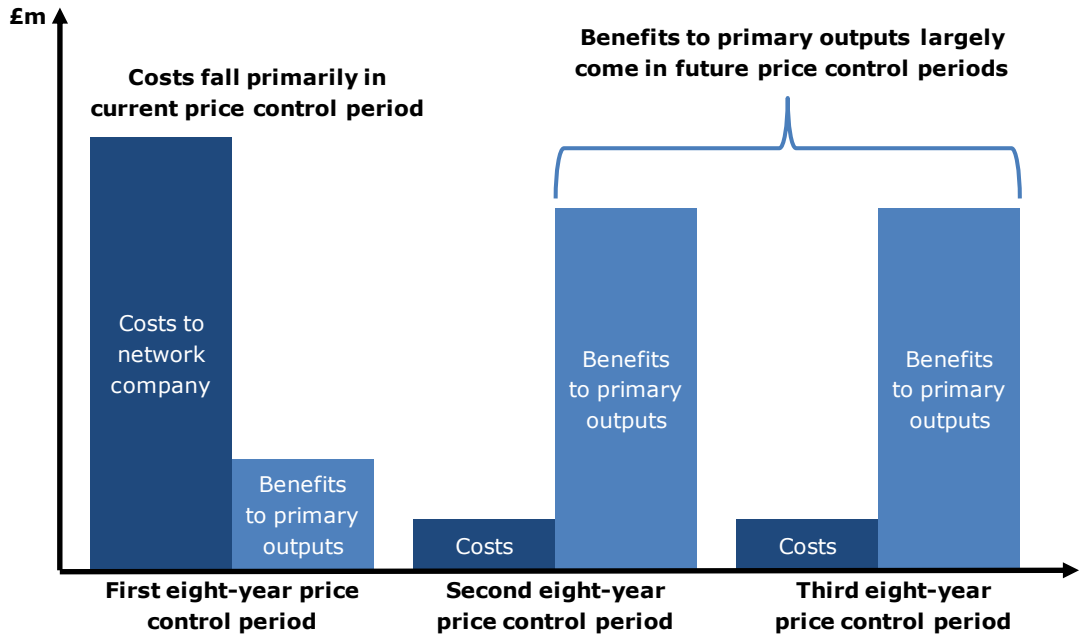
6.36. Under Sustainable Network Regulation, the network companies would need to identify areas on the network where work may be required to maintain their assets to reduce risks to network operation and delivery of the primary outputs, both during the price control period and into the future. This would help to ensure that the network company could continue to provide primary outputs in the future in situations where the lag in replacing assets would need to be considered. Network companies would need to set out the expenditure required for this purpose and link it

to agreed measures of network risk, which are the secondary deliverables that we would hold them to account on.

Projects to delivery primary outputs in future periods

6.37. If a network company is only focused on delivery of primary outputs in the forthcoming price control period, there is a risk that it will miss opportunities to take action that could improve its delivery of primary outputs in future periods. For example, an electricity transmission network operator may identify an investment project which would reduce the level of constraints in an area of the network over the long-term (e.g. at least the next twenty years). However, the lead time needed to complete the project may be so long that any investment would make little contribution to the delivery of primary outputs (e.g. an output related to constraints) during the current price control period. There is a potential risk that a company may decide it is not in its financial interests to carry out the project because the benefits to primary outputs in the current price control period are less than the costs that it would incur in the period — even if the likely benefits over the longer-term would render the project in consumers' interests. This scenario is illustrated in Figure 17.

Figure 17: Use of secondary deliverables to improve long-term delivery



6.38. We would expect the network company to set out the expenditure that it would need to incur to ensure that the required capacity was available where and when it was needed. We would expect them to link the expenditure to a long-term strategy or plan focused on delivery of primary outputs over time and long-term value for money. We would also expect them to link the expenditure in the price control period to secondary deliverables. Where the projects were significant in size, and there was uncertainty about the need for the investment to be taken forward, the

secondary deliverable could be the achievement of milestones related to delivery of the project. We would work with the network companies at a price control review to establish clear secondary deliverables related to elements of the plan focused on meeting primary outputs in future periods.

6.39. Where milestones for a project are used as the secondary deliverable we would consider whether it is appropriate to make decisions on how much revenue to allow the company to raise revenue from consumers only when each milestone is reached rather than including all funding in the price control upfront. This approach would balance the need to provide certainty to network companies that investment would be funded with the need to ensure that consumers' money is used only where there is reasonable certainty that it will deliver benefit in terms of primary output delivery over time and/or long-term value for money. This approach could increase required scrutiny of delivery during the period, imposing burdens on Ofgem and the network company. We would therefore expect to use this approach only for projects that are high cost and where there is significant uncertainty about what needs to be delivered and how best to deliver.

Technical and commercial innovation projects

6.40. Sustainable Network Regulation is designed to encourage network companies to seek out innovative ways of delivering outputs where this is expected to deliver long-term value for money for existing and future consumers (see Chapter 14). As well as using opportunities to bid for funding through the innovation stimulus package, network companies would be encouraged to include expenditure related to innovation projects in their well-justified business plans. By its nature innovation involves investing upfront, with uncertainty about whether benefits will be delivered. Where we allow costs for innovation in the price control we would not make adjustments, after the fact, should the innovation turn out to be ineffective at delivering benefits. This is a reflection of our recognition that even "failed" investments deliver benefits in terms of lessons learned. We would, however, wish to ensure that consumers were not paying too high a price for innovative activity and we would want to ensure that companies were undertaking the innovative projects effectively.

6.41. In some cases, where a company spends on innovative activity in the forthcoming period the benefits, if they arise, would not be expected to accrue until future periods. In these cases, as for other expenditure that spans price control periods, we would consider whether it was appropriate to link innovative activity to secondary deliverables. For example, we may expect the network company to link the expenditure to milestones for trials relating to a new technology.

Guidance on the use of secondary deliverables

6.42. The case for including secondary deliverables could be initiated by Ofgem, by network companies or by other stakeholders. We would work with network companies to identify the most appropriate measures to use. The balance of primary outputs and secondary deliverables could vary between the four network sectors and

over time. The use of secondary deliverables brings potential risks of micro-management and may encourage companies to adopt an approach that turns out not to be in consumers' interests. To reduce these risks, we would follow the process in Table 4.

Table 4: Guidance on the inclusion of secondary deliverables

(1)	**Potential refinement of primary outputs and associated incentives** Before considering potential secondary deliverables, we would examine whether the perceived risk to long-term value for money stems from deficiencies in the specification of primary outputs. For example, a primary output could be missing, or there may be opportunities to address the risk by refining the way existing primary outputs are specified. It may not be necessary to use a secondary deliverable at all. It might also be possible to address the perceived risk by amending the incentive arrangements for primary outputs. For example, greater financial rewards could be set for improvements in delivery during the current price control period.
(2)	**Specification of secondary deliverable** Secondary deliverables should be specified in the least restrictive way possible. For instance, rather than holding a company to the completion of a specific network investment project, it may be more appropriate to require an increase in capacity in a specific area of the network. This could still deliver long-term value for money but would allow the company to retain flexibility as to the best way to increase capacity.
(3)	**Check for potential double-counting** A secondary deliverable may naturally be encouraged under the core incentives of the price control regime. To avoid double-counting it would be important to assess whether the primary outputs and efficiency incentives in the price control would be sufficient to encourage the network company to deliver the secondary deliverable.
(4)	**Funding and incentive arrangements** Funding and incentive arrangements would be considered to encourage delivery of the secondary deliverable. Where there is uncertainty about the need for a secondary deliverable, it may be more appropriate to include an uncertainty mechanism to reduce the risks that consumers pay for a secondary deliverable that does not represent value for money in the long-term. This is discussed further in Chapter 11.

6.43. The number of stages in the table highlights that there is a potential administrative burden. For this reason, there would need to be a clear and credible case for a secondary deliverable before we started the process.

Monitoring and incentivising secondary deliverables

6.44. We would collect information on and monitor the secondary deliverables on an ongoing basis. For example, for network risk, network companies could put together an annual reliability report presenting broad evidence on performance and areas of concern on leading indicators of reliability, e.g. asset health. Where a network company does not deliver what was assumed in the price control, we would want to understand why and would consider what, if any, action to take.

6.45. We want to encourage network companies to focus on delivery of primary outputs over time and long-term value for money, which may mean deviating from the course of action (and related secondary deliverables) proposed at the price control review. At the same time we want to ensure that consumers do not overpay for expenditure linked to long-term delivery and in particular that companies do take action to deliver the primary outputs over the long term (even if the action is different to what was originally planned). The action that we consider appropriate in the event that a secondary deliverable is not delivered will depend on how these two aims balance out.

6.46. We may consider in some cases using alternative "non-standard" arrangements for providing funding for expenditure linked to future delivery of primary outputs through specified secondary deliverables.

- For some projects we may allow for the related expenditure in the price control period in full at the price control review but specify penalties that would be incurred if the secondary deliverable was not provided. We would not expect penalties to be automatically imposed but would expect to review the circumstances relating to non-delivery of a secondary deliverable. For example, where network risk is allowed to deteriorate below the level assumed at the price control review we could set allowances for the next control period assuming network risk remained at the level indicated in the original business plan. We would not fund a network company to bring the network risk back up to the previously assumed level.
- As discussed in paragraph 6.39, we may also consider an option of making decisions on how much additional revenue would be provided by consumers in stages, linked to completion of identified key milestones of a project.
- Another option that we may consider would be to provide upfront funding on a "use it or lose it" basis, whereby we would specify when and how we would "give" the funding linked to a secondary deliverable back to consumers if the network company did not use it for its intended purposes.
- In some cases, it may not be appropriate to take a decision at the price control review on a specific secondary deliverable and it may be preferable to include, subject to the principles in Chapter 11, an uncertainty mechanism in the price control that allows funding for the secondary deliverable if a specific trigger event occurs (e.g. planning permission for specific new generation project obtained) or that allows Ofgem to revisit the question at a specified date when better information is expected.

6.47. In all cases, decisions on whether and how to use alternative funding arrangements for expenditure linked to secondary deliverables would be taken at the time of a price control review. The decision would be based on an assessment of how best to balance the need to incentivise network companies to make decisions for the longer-term with the need to ensure that consumers do not overpay for these decisions. Whatever approach is adopted we would provide transparent details at the time of the comprehensive price control review of how specific expenditure and secondary deliverables would be treated.

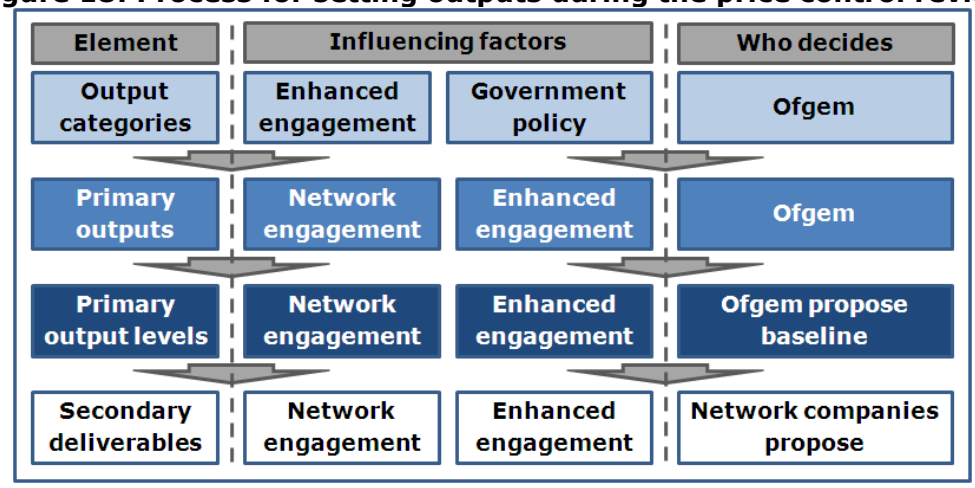
6.48. It is not our intention to commit the network company to a particular way of delivering but only to ensuring that consumer funding is proportionate and effective. It is also important that we continue to recognise that where expenditure is allowed for innovation projects, there are lessons to be learned from failures as well as success and we should not penalise network companies that trial new ways of delivering and decide not to proceed with the idea.

6.49. In cases where a financial penalty is attached to a secondary deliverable, we would not expect it to be imposed automatically for non-delivery. Before any financial penalty is applied, we would establish the reason for the non-delivery. We would expect the network company to set out actions it was taking to ensure the delivery of primary outputs and long-term value for money were not at risk. We would base any assessment on the reasonableness of decisions at the time they were made. We would also ensure that action was not taken because the network company chose a different way of delivering, so long as similar benefits to long-term value for money and delivery of primary outputs over time were achieved.

6.50. Whatever the arrangements agreed for secondary deliverables, network companies would remain responsible for delivering primary outputs. They would face penalty regimes, including potential licence revocation and potential risk of third parties being given a greater role in delivery in cases of persistent non-delivery.

How outputs would be set at price control reviews

Figure 18: Process for setting outputs during the price control review



6.51. We set out here how output categories, primary outputs, level of performance, and secondary deliverables would be determined at a price control review.

Setting the primary outputs

6.52. We would put forward our view on primary outputs early in the price control review. Our view would be informed by discussions during enhanced engagement as well as discussions with network companies.

6.53. In the price control review we would work with network companies and stakeholders to develop transparent metrics for primary outputs. As far as possible we would seek to ensure common metrics across each of the network sectors to allow comparisons to be made between the performance of network companies. For example, we may signal that customer minutes lost is the appropriate measure for reliability and during the price control review we would refine the appropriate metric for this.

6.54. As far as possible we would not change the view on primary outputs from what was said in our "Strategy for the Review" paper (Stage 1 of the review process) but we recognise that some adaptation may be needed as policy develops in the first three stages of the price control review process. Indeed as Sustainable Network Regulation beds down we would generally expect that the primary outputs used in the past would be retained, save where the requirements on the network companies have changed significantly.

Setting the levels of performance for the primary outputs

6.55. We would set a baseline level of performance for each of the primary outputs, at an early stage in the price control, taking account of views expressed during enhanced engagement and performance during the most recent price control period. For example, we would specify that we are looking for reliability to be kept at least at current levels. The precise nature of the performance level will depend on the metric used; it may be a percentage change on existing levels or an absolute measure.

6.56. The network company could propose to deliver a different performance level for a primary output, either higher or lower than the baseline level. This would need to be underpinned by evidence of stakeholder support for the proposed level through consumer research or engagement. The costs of efficiently delivering the alternative performance level would need to be clearly set out in the business plan.

6.57. We would decide the primary output level that network companies would be expected to deliver based on the case put forward in their business plans, the views of stakeholders, and our assessment of what is value for money for existing and future consumers.

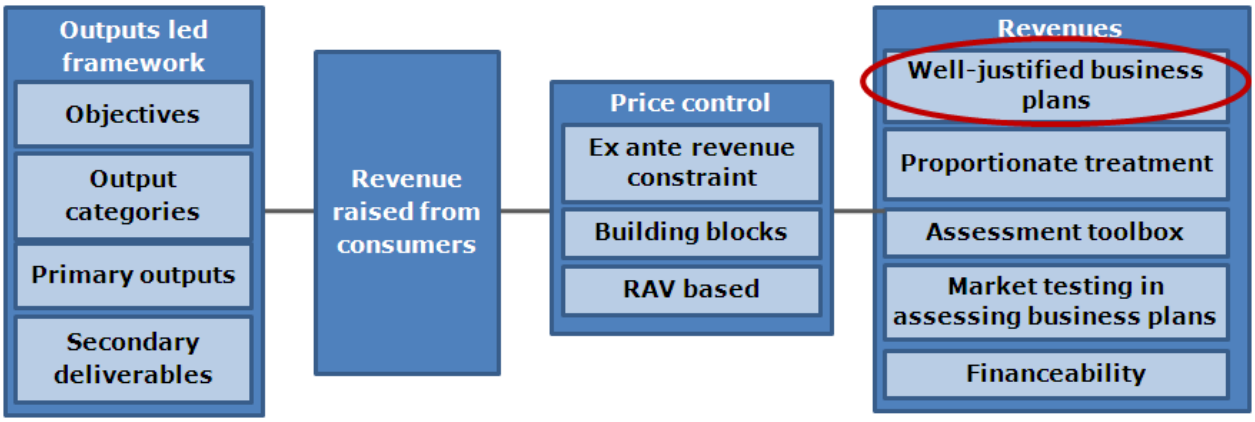
Setting secondary deliverables

6.58. Network companies would, in the first instance, put forward the secondary deliverables linked to costs (and hence revenue) that they would be required to deliver during the control period. We would assess the company proposals in their

well-justified business plans and potentially propose alternative secondary deliverables where we consider this appropriate. We would take account of views from stakeholders where relevant. In this sense our final proposals on a company's price control would incorporate our final view on secondary deliverables and associated base revenue, but this would be based to a large extent on what was proposed by network companies themselves. We expect that stakeholders would have less involvement in discussions on these secondary deliverables, although we would seek views where we considered it appropriate.

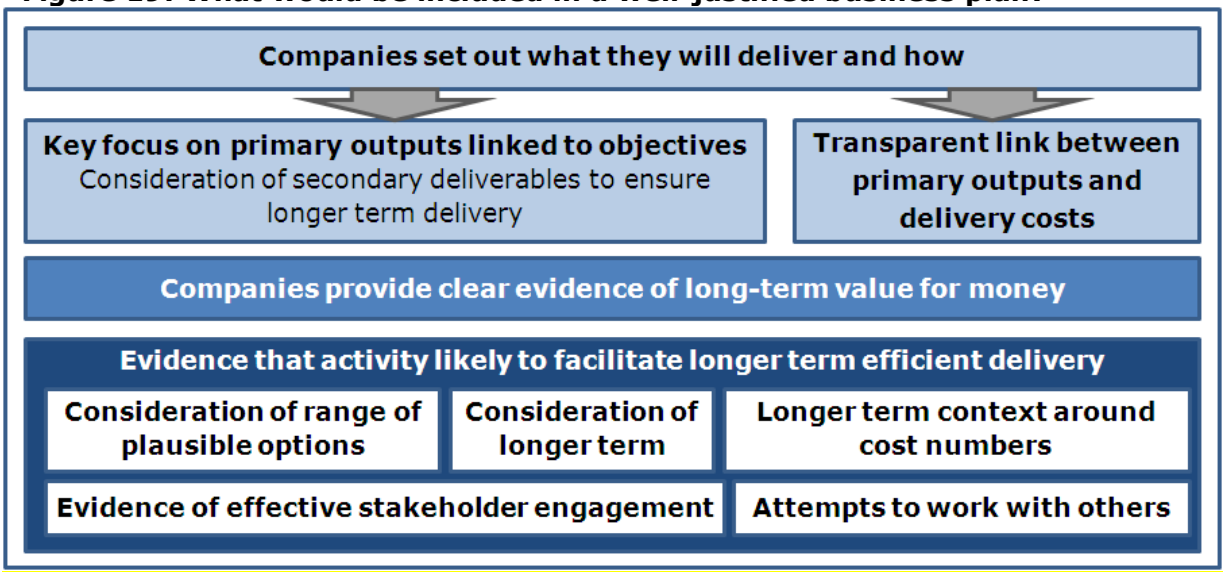
7. Well-justified strategic business plans

Chapter summary
We describe what we would expect network companies to include in their price control review business plans. We explain how network companies would be incentivised to provide well-justified business plans.



7.1. Under Sustainable Network Regulation our assessment of the outputs that network companies are required to deliver and the associated revenue to be earned from consumers would be informed, to a large degree, by the plans put forward by network companies. In the business plans a network company would set out what it intends to deliver for consumers of network services over time and what revenue it needs to earn from existing and future consumers to ensure delivery is financed. The onus is on network companies to justify their view of required expenditure.

Figure 19: What would be included in a well-justified business plan?



7.2. An overview of the information that network companies would be expected to provide in their business plans is provided in Figure 19 above. We discuss in Chapter 8 how we propose to assess these plans.

What do we mean by "well-justified"?

7.3. The business plan is the opportunity for network companies to demonstrate how they propose to deliver the objectives of Sustainable Network Regulation. The outputs and base revenue included in a network company's price control are more likely to be consistent with the company's plans if they provide us with well-justified business plans during the price control process.

7.4. A business plan would be considered well-justified where network companies demonstrate, amongst other things:

- **focus on output delivery**: the company would demonstrate that their proposals were relevant and focused on the delivery of primary outputs over time whilst also providing long-term value for money;
- **consideration of secondary deliverables:** the company should provide details of the activities they would be taking forward during the price control to ensure delivery of the primary outputs and value for money over the longer-term;
- **a clear and well-evidenced case for their proposals**: the onus would be on network companies to robustly demonstrate to Ofgem that their proposed outputs and proposed approach to delivering outputs provide the best option in terms of meeting the objectives of Sustainable Network Regulation. For example, they may need to identify the net present value of costs over the long-term, the impact on delivery of primary outputs and degree of risk associated with these, and any margin of error in relation to assumed demand for network services;
- **an open minded consideration of available options:** the company would need to show that they had considered alternative ways to deliver outputs, where relevant, and provide credible evidence suggesting that their preferred approach gives long-term value for money. For example, they would be expected to consider whether to pursue a capital investment solution or an operating cost solution. They would also be expected to identify synergies across projects where these can provide long-term value for money without jeopardising delivery of primary outputs;
- **link between costs and primary outputs:** the company should demonstrate how the revenues that it would raise from consumers would allow it to deliver the primary outputs developed through enhanced engagement and defined by us;
- **a consideration of the longer-term**: the company would be expected to set out how their proposals for the eight-year control period sit within a longer-term strategy for delivery of sustainable network services. They would be expected to show that they had considered not only the expenditure that they would need for the duration of the eight-year control but also the implications that this would have on required investment and associated efficiency beyond the control period. They would also be expected to justify expenditure in the eight-year period in the context of a longer-term strategy, particularly asset management;
- **value for money**: the company should demonstrate how its proposed approach would ensure value for money for consumers over the long-term, having

considered all of the other options available. This may involve seeking to keep options open for future development of the network where robust option analysis suggests this could deliver value for money for existing and future consumers;
- **effective engagement with a range of stakeholders:** the company would be expected to demonstrate how they have taken account of the views of stakeholders in developing their plan, setting out what engagement was undertaken and how the engagement informed the company plan; and
- **working with others:** network companies would be expected to show that they considered whether and how to work with others in the industry or in other sectors (e.g. communications companies) to identify potential joint solutions that may provide long-term value for money.

7.5. We provide further details below of the type of information that would be included in the plan to meet these criteria.

7.6. We would expect network companies to take responsibility for providing the relevant information and evidence to justify their proposals on what is being delivered, how best to deliver and hence on the revenue they wish to raise from consumers. We would expect the network companies to take a proportionate approach to developing their business plans, placing emphasis where it adds most value. The type and level of information required will vary by type of expenditure. For example, more specific justification and evidence might be expected for high value projects, projects where there is uncertainty about what needs to be delivered (or when), activities relating to meeting the needs of future consumers and/or new types of activities. At the other end of the spectrum, we would not expect network companies to justify every pound spend on maintenance separately. It is the overall approach or strategy to maintenance that we would expect to be justified, closely linked to network risk.

Outputs at the heart of the business plan

7.7. Consistent with the objectives and structure of Sustainable Network Regulation network companies would be expected to present business plans that are centred around delivery of primary outputs and, where relevant, secondary deliverables. We would expect the network company to set out what performance level they are proposing for the primary outputs. As discussed in paragraphs 6.55 to 6.57, where the network company is proposing a performance level different to Ofgem's baseline level for the sector a clear justification of this variation would be needed, linked to delivery of the objectives of Sustainable Network Regulation.

7.8. The network company would be expected to set out how it will deliver primary outputs and secondary deliverables over the price control period as well as proposals on the efficient costs they would need to raise from consumers to ensure delivery. This would be about making a solid business case for proposed costs. We discuss below (paragraphs 7.17 to 7.21) how we would expect them to assess different ways of delivering. As far as possible in its business plan the network company would be expected to link costs to delivery of these primary outputs and secondary deliverables. We recognise that this may not always be feasible, particularly where a

capital investment or operating decision is intended to deliver a number of outputs simultaneously.

7.9. Network companies would be held to account to deliver primary outputs and secondary deliverables. Where network companies provided evidence in their business plans of the way they would deliver the primary outputs, this would inform our judgment of whether the plan was well-justified and whether it suggested that a company would be able to deliver the required outputs at long-term value for money. This in turn would provide the basis for our confidence in the base revenue sought by the company and inform our decision as to what proportion of this to include in final price control proposals. However, we recognise that circumstances change and we would not hold the companies to the specifics of their business plans. Indeed, we would expect network companies to update their decisions on how to deliver during the price control period as new information becomes available.

Setting the plan in a longer-term context

7.10. Network companies would need to consider the longer-term context when setting out their plan for an eight-year price control period. They would be expected to consider what outputs they would need to deliver over time, taking account of long-term government targets for example, and what the potential demand for network services might be over a long-term horizon (e.g. 25 years). The longer-term strategy would be based on a view of future demand, underpinned by a range of potential scenarios. A company's strategy for delivering outputs and meeting demand over the long-term should set the scene for proposals on the eight-year price control period.

7.11. This would not be about providing detailed cost and activity data for a long time period. It would be about focusing on the long-term implications of today's decisions and thinking about delivery choices that are focused on long-term value for money. For example, a network company would consider the costs of reinforcing the network in the context of a twenty five year asset management plan rather than in the context of what is needed for the price control period itself. The network company would also use the longer-term context to identify aspects of the business plan where it expects that it will be appropriate to keep options open, based on robust option analysis, given uncertainties about the future. The longer-term context may also be used by the company to assess and explain the potential risks associated with their plan, informing their view on the required cost of capital.

7.12. We would expect the network company to keep its long-term strategy under review over time, certainly from one price review to another but potentially at other intervals as new information becomes available on what it is expected to deliver and on demand for network services over time. There are areas where we would expect consistency over time, for example in the strategy for asset stewardship, but other areas where changes might be expected. Where the long-term strategy varies significantly from previous plans a clear justification should be provided.

7.13. Box 6 sets out the expected effect of this longer-term thinking on the justification provided by network companies for planned expenditure linked to long-term value for money and delivery of primary outputs over time.

Box 6: Well-justified business plans and delivery of longer-term projects

There are a number of challenges currently facing the electricity industry. In particular, the government's target to reduce total UK carbon emissions by 80% by 2050 is likely to require investment in transmission and distribution to accommodate new generating facilities and new ways of operating, both of which will need to be taken forward in innovative ways. It is also likely that the system will need reinforcement, in terms of available capacity, to meet the demands of its users.

To ensure that the capacity to support new facilities is available when it is required, network companies may need to anticipate where and when they need to invest and consider the appropriate timeframes associated with delivering key projects. When forming a view on future demand for network services, and hence on the need for investment, network companies would be likely to take account of information on upcoming projects, the proposed future plans of their current (and future) network users and wider government policy (e.g. on nuclear generation, CCS, feed-in tariffs and renewable heat incentives). In addition, where they demonstrated ongoing effective engagement with stakeholders, and government where relevant, this should help to provide the required justification for the project. Their case would also likely be strengthened where other potential delivery solutions had been considered, including operational solutions such as demand side management and alternative asset-based solutions. The network operator would be expected to set out their strategy for meeting the anticipated need in a long-term context (longer than the length of the price control) and provide details of what was being delivered along the way (e.g. provide details of milestones and/or secondary deliverables). They would be expected to explain how the proposed expenditure links to delivery of these secondary deliverables.

In gas transmission the decision on whether to invest is largely driven by the market mechanisms that are in place. However, the network company has a reasonable endeavours licence obligation to substitute capacity in a manner consistent with its duty to maintain an efficient and economical pipeline system. Given uncertainties about future system demand, it will be increasingly important that the company explores the potential for substitution of capacity in the most effective way.

Engagement with stakeholders

7.14. Network companies would have to demonstrate effective engagement with their stakeholders on the development of their business plans. As set out in Chapter 3, engagement should take place on an ongoing basis, including at all stages in the development of their price control review business plans. It would be important for network companies to show how engagement had impacted on their business plans and, where they had not addressed stakeholder concerns, they would need to have robust reasons for this. Where there was evidence of effective engagement, we would need to assess whether a clear link between primary outputs and costs of delivery had been identified.

7.15. As illustrated in Table 1 in Chapter 3, we would assess the quality of stakeholder engagement demonstrated in network companies' business plans. We would have particular regard to the credibility of the views network companies had obtained through stakeholder engagement given our enhanced engagement and, where relevant, findings of engagement taken forward by other network companies. We would consider the range of stakeholder views that had been sought, the issues on which their views had been sought and the way the engagement was carried out. Business plans could also be peer reviewed by stakeholder representatives to stress test their quality. For example, the Consumer Challenge Group could undertake a review of the business plans, in their role of "critical friend", to determine whether the methods used were appropriate given the consumer audience involved.

7.16. Effective engagement with stakeholders should include engagement on the implications for charges. A well-justified business plan would detail this engagement and the information provided to stakeholders to allow them to calculate the effect on their charges of various different scenarios and associated revenues, given the charging structure in place at the time of the price control review. This would provide the means by which a range of different types of consumers could attain an indication of the way that their charges may be affected. It may also result in stakeholders encouraging network companies to consider whether and how alternative charging arrangements may contribute to delivery of primary outputs and long-term value for money.

Demonstrating long-term value for money

7.17. The objectives of Sustainable Network Regulation clearly set out that we want network companies to focus on delivering long-term value for money for existing and future consumers. This is about delivering primary outputs over time and finding solutions that are lowest cost over the long-term (not just during the price control period). We recognise we are asking companies to do this at a time of change where there is uncertainty about how best to deliver and the long-term costs of delivery. Indeed, this uncertainty is driving the need for new ways of thinking about how best to deliver and the need to assess business plans in different ways from the past.

7.18. Sustainable Network Regulation is designed to encourage and reward open minded, longer-term, innovative thinking by network companies when deciding how best to deliver. With the wider range of choices facing network companies, the best value for consumers now and in the future might be obtained where:

- costs are minimised over a period longer than the control period;
- options are kept open, with changes made to delivery solutions as more information becomes available;
- network companies are incentivised to try different or new approaches to delivery as a means of finding the lowest cost way of delivering particular outputs;
- synergies across projects are identified and capitalised on; and/or
- choices between delivery solutions reflect views from a range of stakeholders.

7.19. We expect network companies to justify their proposals for delivering primary outputs and secondary deliverables by providing a "needs case" for its proposals. The network company's longer-term strategy, including forecasts of expected demand, and enhanced engagement would be expected to provide part of the evidence base. The network company may also identify other evidence to support its case.

7.20. The network company would need to demonstrate that its proposals were lowest cost over the long-term. We would expect the network company to consider a range of options for delivering primary outputs and explain why its proposal was the best way forward. When making the case for its preferred proposal we would expect the network company to demonstrate that it had considered the long-term costs and benefits of the most viable options. As part of this the company should not only consider financial costs but also the cost to the environment and any social impacts that could result. Primary outputs related to environmental impact of network services and meeting social obligations should encourage the network company to do this. If the network company includes proposals in its plan to undertake activity in the eight-year price control period to assist with value for money delivery of primary outputs in the future they would be expected to demonstrate how this approach results in lower long-term costs than the alternative of waiting until the next period to take steps to deliver primary outputs in that period.

7.21. Network companies would determine the evidence required to demonstrate that its proposal delivers long-term value for money. In our business plan guidance we would provide indications of the type of information we might expect. This could include, for example, comparisons with past performance, bottom up benchmarking of activities with appropriate comparators (not necessarily in the sector), market testing evidence and assessment of input price trends. We would expect the network companies to make reasonable endeavours to obtain the information needed to make their case but to be proportionate and focus effort on where it is expected to add most value. We would also expect the network company to provide evidence that is helpful to its case and to present it succinctly and in an accessible format. This would affect our assessment of the quality of the well-justified business plans.

Thinking about keeping options open

7.22. When considering how best to deliver outputs over time, a network company may have to chose between taking a course of action that closes down alternative options for the future or taking a different course of action that keeps options open. For example, a network company could have an option to expand the network with additional capacity that would be in place for 40 or 50 years or it could have an option to use operational solutions to manage capacity in the short-term and keep expansion options open until better information is available about how much capacity is needed over the long-term and/or better information becomes available about what technologies might be able to support active demand management and reduce the need for large scale expansion investment. The network company would need to undertake robust option analysis, taking account of the long-term benefits, costs and risks of the different options, to determine whether the "keeping options open" route was expected to provide long-term value for money for consumers.

7.23. We would expect this analysis to be presented in the well-justified business plans for large long-term projects and/or where there was significant uncertainty about what needed to be delivered and when (because of uncertainty about the nature and location of demand for network services for example).

Box 7: Options available to network companies to deliver against outputs

A network company is considering extending and reinforcing its network in part of its area. Three options are being considered.

Options

1. Commit to small upgrade;
2. Commit to large upgrade; and
3. Commit to small upgrade now but combined with preparatory work that retains the possibility of expansion works later in the control period.

The costs over time and the impact on outputs are likely to vary between the options. In addition the 'needs' case for different options will depend on the degree of uncertainty around demand forecasts and the risk to delivery of primary outputs. The well-justified business plan might propose option 3 above, as opposed to closing down options at this time, by comparing the net present value cost and choices in terms of impact on, and risk to, delivery of primary outputs. It would separately need to show how its choice is affected by the degree of uncertainty in its volume forecasts.

7.24. Keeping options open for a time may deliver longer-term value for money, particularly where it allows information to be obtained that reduces uncertainty or enables synergies to be identified. As with other aspects of the business plan the onus would be on a network company to justify its preferred approach. The business case would need to include, but would not necessarily be limited to:

- evidence on the net present value of costs of delivery of the alternative options including evidence on option value;
- evidence on the impact on delivery of primary outputs including an assessment of the potential risk to delivery; and
- information on the assumed demand for network services (volume) and the confidence interval around this assumption.

Data requirements

7.25. As far as possible we would not set a template for the network companies' business plans. We recognise that different companies would wish to take different approaches to making their case and we would hope that the absence of a template would encourage them to think for themselves taking account of the views of stakeholders on the best way to deliver and how best to make their case. We would however, set out in business plan guidance what the network company should include in the plan for it to be considered well-justified.

7.26. We discuss in Chapter 8 how we intend to assess base revenue requirements and in Chapter 6 how we intend to form a view on the company performance level

for primary outputs. Both would be informed by comparisons of plans from network companies in a given sector. It is therefore important that we collect relevant data in a consistent format and, to facilitate this, we would issue a data template to all companies, for submission at the same time as business plans. The data would need to be consistent with what is included in the business plan. We would aim to limit the scale of the data requirement. We would make use of data that we have already obtained through annual reporting packs and we would aim to streamline the data requirements to those that we consider are necessary for our output and cost assessments. This may mean that we would need to ask for more data at a later stage in the price control review period if we find that data needed was not included in the original request. Once Sustainable Network Regulation is bedded down we will be more confident of what is needed, but there will be some learning and adaptation at the price control reviews as we implement the principles set out in this paper.

Encouraging network companies to submit well-justified plans

7.27. There are a number of reasons why a network company would have an incentive to submit a well-justified business plan:

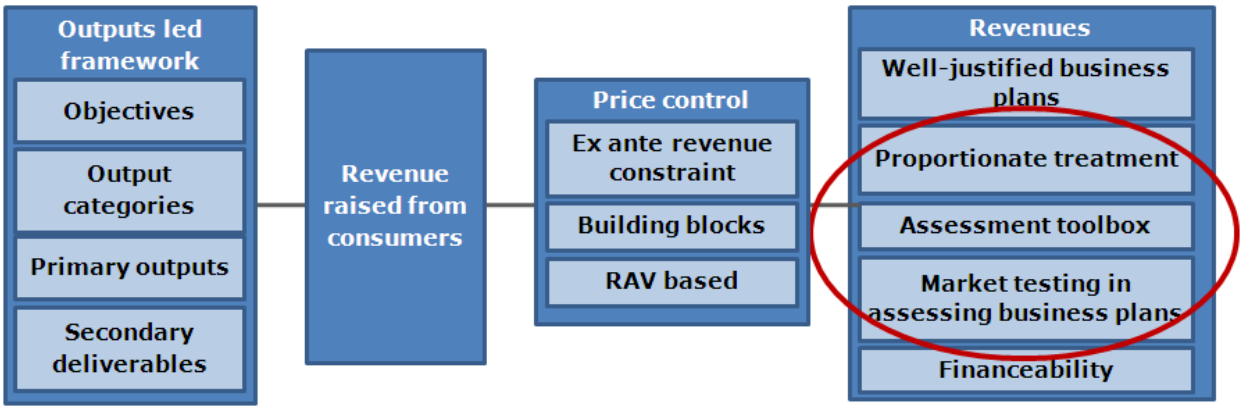
- it is more likely that the final price control would reflect what is in the plan;
- the use of the Information Quality Incentive (IQI) provides a financial incentive for companies to spend the time and resources necessary to produce high quality and well-justified business plans;
- the company is likely to be subject to less intensive scrutiny;
- the company's price control may be set earlier than others, freeing them up to focus on delivery of network services; and
- the company's reputation would be higher with stakeholders and Ofgem.

7.28. The onus is on a company to provide a well-justified case to support its proposed plan for the eight-year price control period (in a longer-term context where relevant). We discuss how we would assess plans in Chapter 8. Our starting point would be to focus on the quality of the justification and the process used to make the case. Where we are comfortable with this, our assessment of base revenue is likely to be based on a cost forecast linked to that in the business plan. The nature of the link between Ofgem's view and the company's plan will depend on how the network company responds to our concerns on different elements of the plan.

7.29. If a network company fails to provide robust evidence to support its plan the price control proposal is likely to be informed by a wider range of evidence than the company's own plan, including benchmarking evidence, and hence the base revenue is likely to be different to what the company proposed. The approach we adopt may vary for different aspects of the plan – for example we may undertake a detailed bottom-up assessment for large projects and for other aspects of the plan apply an assumption on the percentage reduction that we think can be applied to the network company's proposed costs to bring them in line with what we consider is efficient over the longer-term. With this approach our view of expected efficient costs may be very different from the companies' view. These companies are also more likely than those with a well-justified business plan to be asked to provide more evidence, including (potentially) market testing evidence, to support their proposals.

8. Proportionate assessment of value for money expenditure

Chapter summary
We set out how we will consider what the "value for money" or "efficient" level of total costs is for the longer-term to feed into our decision on the base revenue required for the price control period.



8.1. Base revenue in a network company's price control would be set to reflect our assessment of expected efficient costs required, during the eight-year control period, to deliver the primary outputs over time and to deliver long-term value for money. The assessment of expected efficient costs required by a network company would be largely based on our assessment of the company's business plan. Other information, for example information in other companies' business plans, international benchmarking evidence and information on historical performance, would also be used to inform this assessment.

8.2. We set out here how we propose to assess expected efficient costs required by a network company in a proportionate way. We describe the range of tools that could be used in the assessment, including market testing to inform our assessment of efficient costs. We also explain how the assessment of expected efficient costs would feed into final price control proposals.

Basis of assessment

8.3. We set out in Chapter 7 what we would be looking for in a network company's well-justified business plan. This illustrates the type of information that we would be assessing to determine base revenue.

8.4. Ultimately what we are doing is making an assessment of what level of costs is expected to be consistent with delivering primary outputs over time at long-term value for money. This should mean that cost savings are delivered in a price control period, so long as they do not jeopardise delivery of primary outputs over time or result in higher total costs over the long-term (i.e. because cost savings today lead to a need for higher expenditure in the future). Long-term value for money should

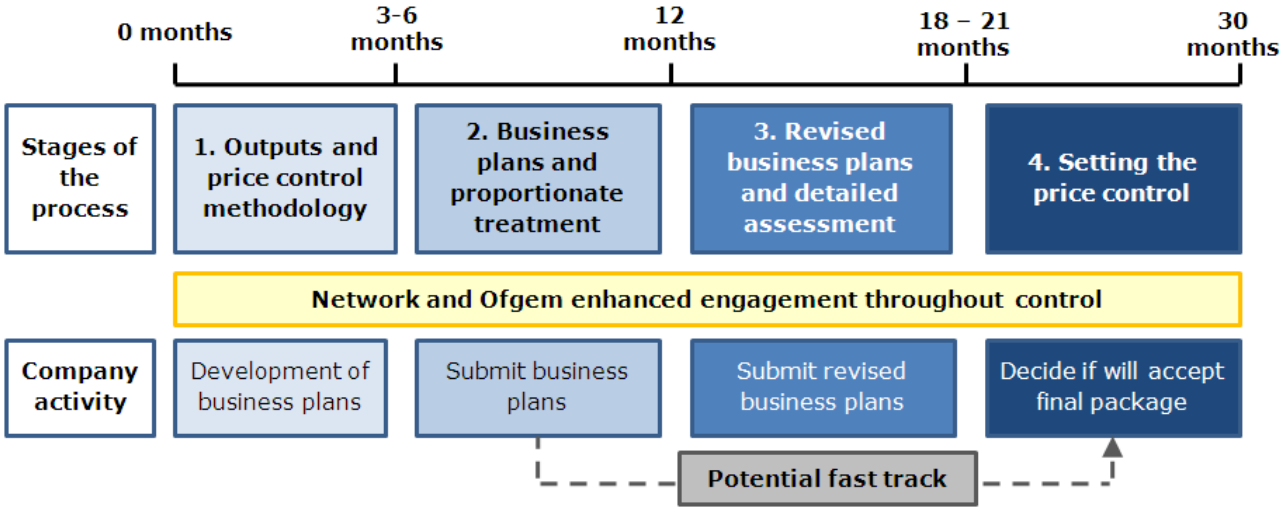
also mean that in some cases companies spend more in one period with an expectation of reducing costs in the future. For example, they may invest in a new technology in one period which they expect to reduce future maintenance costs.

8.5. The focus on long-term value for money may have implications for how we assess base revenue requirements. The focus on total costs of delivery, rather than specific cost categories (notably operating costs and capital costs), also has implications for the decisions that network companies make and for our assessment of the efficient cost of delivering outputs. As part of this we would need to take account of any potential synergies across different projects. Furthermore, when network companies are making decisions to keep options open, in light of robust option analysis, the implication of this decision for value for money over the long-term needs to be included in our assessment of base revenue.

Our approach to proportionate assessment

8.6. We would take a proportionate approach to assessing base revenue for the network companies. In particular, our approach to assessing network company plans would vary according to (a) the quality of the business plan submitted and (b) the network company's performance at delivering outputs and value for money in previous periods. We set out below our two-step approach to the assessment. Within this section, a number of references are made to the timings associated with the price control review and therefore the stages of the price control are reproduced here for reference. A more detailed overview of the process is provided in Chapter 2.

Figure 20: Overview of the stages of the price control review process

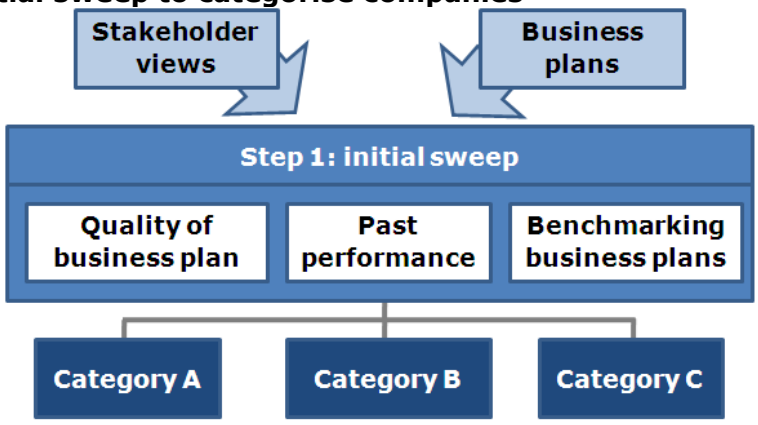


8.7. Proportionate treatment is intended to incentivise network companies to submit well-justified business plans and perform well in the delivery of outputs. It would also allow us to focus effort where it is most needed and it would allow those network companies that provide well-justified business plans to spend less time focused on Ofgem's price control review and more time on running their business.

Step 1: Initial sweep and categorisation of companies

8.8. When network companies submit their business plans to us, we would undertake an initial sweep of the information to determine how we propose to take forward our assessment of the expected efficient costs of delivery for each company. The process that would be followed is illustrated in Figure 21. We would aim to do the initial sweep within a short period of time although we would ensure that we take the time necessary to undertake the required analysis.

Figure 21: Initial sweep to categorise companies



Step 2: Implications for assessment			
	Category A	**Category B**	**Category C**
Intensity of scrutiny	Low	Moderate	High
Typical assessment method	➢ Review/follow up questions ➢ Short assessment of business plan	➢ Focus on deficiencies in plan/past performance ➢ Analysis of condition of formerly unreliable assets ➢ Random inspections	➢ Full engineering and policy based analysis ➢ Follow up analysis ➢ May require significant new data from company
Timing of final proposals	Potentially early settlement	Final proposals (stage 4)	Final proposals (stage 4)

8.9. The purpose of the initial sweep is to identify those companies that we might subject to less scrutiny during the price control review (category A) and those that might need to be subject to more intensive scrutiny. The sweep would be based on combined evidence from three sources:

- our review of the quality of the business plans;
- performance during the previous regulatory control; and
- benchmarking of business plans.

8.10. For a network company to achieve initial sweep results that place it in category A, it should demonstrate good performance on the basis of our assessment of these

areas. This would help to avoid the risk that we might erroneously identify good performance based on a single data source. In the first round of reviews where Sustainable Network Regulation is being implemented (TPCR5/GDPCR2/DPCR6) we would need to consider how best to take account of historic output delivery performance and would aim to make use of measures that are already used in the sectors. For example in DPCR6 we would be able to make use of the asset health/loading data from the DCPR5 period among other indicators. In GDPCR2 we can draw on the capacity targets that were put in place at the last gas distribution price control review. While outputs are less developed in transmission, there are some measures which could be drawn upon including the output measures developed in electricity transmission following TPCR4 and the reliability incentive targets established at TPCR4. From a gas transmission perspective, capacity release measures might be used as part of assessment of past performance.

8.11. At the time of the price control review we would consider how best to get views from network companies and stakeholders on our initial sweep, potentially including a short formal consultation.

Review of quality of the business plan

8.12. We would assess the business plans to determine if they are well-justified (our interpretation of "well-justified" is set out in Chapter 7). We would aim to reach a view on the quality of the business plans, and on whether they are on track in terms of meeting our view of what is "well-justified", in a relatively short period of time.

8.13. We would focus on identifying whether the business plans demonstrated evidence of delivering primary outputs consistent with the views of stakeholders and, more generally, delivering long-term value for money sustainable network services. We would not anticipate undertaking a detailed assessment of the plans at this stage but we would expect to ask clarification questions on the plans during this assessment.

8.14. A balance would need to be reached between adopting a proportionate approach, which would allow us to form a view relatively quickly, and ensuring that sufficient scrutiny had been given to plans to enable us to categorise companies. This is particularly important in the context of putting companies into category A and thereby subjecting them to less scrutiny for the remainder of the price control review. If we had any doubts about the quality of a company's plan at this stage in the process we would be unlikely to place them in category A and we would proceed on the assumption that further assessment was needed, with the extent of assessment depending on the nature and scale of concerns with the plan (and the updated plan submitted in Phase 3 of the price control review process).

Assessment of past performance

8.15. The assessment of past performance would include a review of performance in delivering outputs and a review of historic cost efficiency. This assessment will look at performance over the current control period. In an eight-year price control we will

have about five years of data. We may need to consider data from the immediately preceding price control review in the first reviews to follow this approach. We would aim to undertake the assessment in Stage 1 of the price control review, presenting our findings in the "Strategy for the Review" consultation, and we may update it at the time of the initial sweep if an additional year's worth of data is available.

8.16. The review of output performance would relate to both primary outputs and secondary deliverables. The balanced scorecard approach to assessing company's performance in the round in output delivery (outlined in paragraphs 9.29 to 9.33) would provide the main tool for informing this assessment.

8.17. We expect, as information on output delivery performance will be collected on an annual basis during the price control period, that this assessment would be done early on in the review and should not contain surprises for network companies or stakeholders.

8.18. We would take account of reasons why outputs might have been different to the performance level assumed at the time the price control was set before taking a view on the overall record of delivery. For example, if we had determined during the price control period it was appropriate for a secondary deliverable to not be met, because this was in the interest of long-term value for money, we would not expect to penalise the company in the sweep for not meeting this deliverable.

8.19. A potential range of options are available to us for undertaking a high level assessment of historic cost efficiency during the recent price control period. These include, but are not necessarily limited to:

- benchmarking of total costs;
- benchmarking of specific categories of costs (e.g. IT costs, network operating costs);
- assessment of trends in productivity improvements over time; and
- international benchmarking.

8.20. We discuss the role of benchmarking in the assessment tool-kit in more detail below. As far as possible we would focus attention on total cost assessments, taking account of the recommendations in a report commissioned from Frontier Economics[15]. However, we recognise that the appropriate tool, or set of tools to use, will vary by sector and depend on data availability. In any case, what we would be doing is forming a high level view on the relative efficiency of a company to inform our decision on what category a company would be placed in. The assessment would not be linked in a direct or mechanistic way to our assessment of the expected efficient costs, and hence base revenue. It would, however, clearly be an important starting point of that assessment.

[15] The future role of benchmarking in regulatory reviews, Frontier economics (2010) http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=18&refer=NETWORKS/RPIX20/CONSULTREPORTS

8.21. Like the assessment of output delivery the assessment of historic cost efficiency would be undertaken in the first instance in Stage 1 of the review, and published in our "Strategy for the review" consultation paper. It would be updated for the initial sweep with data for another year if available. In some cases the assessment may relate to work undertaken during the price control period. For example, we may undertake spot checks on IT cost efficiency during the price control period. We would also make use of any annual assessment of cost efficiency that we have undertaken during the price control period.

Benchmarking of business plans

8.22. As part of our assessment of the quality of a network company's plan we would intend to benchmark the forecast costs to others in the sector where feasible. We would also compare the costs in the plan to historic cost performance although we recognise that, given the changes that network companies are undergoing, these comparisons may need to be treated with caution.

8.23. The benchmarking of plans would be based on the total costs of delivering the baseline performance level for primary outputs set by us in Stage 1 of the review. This would be the case even where a company was proposing an output level different from that set by us at Stage 1. The purpose of this exercise is to identify outliers and to provide a starting point for further assessment of plans. There would not be a mechanistic link between relative performance in this benchmarking exercise and base revenue. The assessment would be one piece of evidence used to inform our decisions on how to categorise companies in the initial sweep. The benchmarking of forecast costs is clearly not an exact science and we would treat the results with appropriate caution when making these decisions.

8.24. Further details on how benchmarking of business plans would work is provided below and in the Frontier Economics report. We would intend to set out how we would take forward the benchmarking of plans at each sectoral price review in our "Strategy for the review" consultation paper at Stage 1.

Step 2: Determine how to take forward assessment for each category

8.25. Once the categories had been finalised our proportionate assessment of the companies would depend on the category that they are placed in:

- companies in category A would be subject to relatively lower levels of scrutiny of their business plans, with an expectation that our assessment of primary outputs, secondary deliverables and expected efficient costs would be close to the proposals in their business plan. Although less likely, putting a company in category A would not preclude us from considering the option of giving third parties responsibility for delivery of large projects in a network company's plan (see Chapter 13);
- companies in category B would receive relatively higher levels of scrutiny of their business plans, with the level potentially similar to what companies experienced in price reviews in the past; and

- companies in category C would be subject to the most intensive assessment. For example, we might send in engineering experts to consider in detail the justifications that network companies had provided for the asset strategies proposed. Our questions would be likely to focus particularly on areas of failed past delivery and areas of their business plan highlighted as potentially inefficient as compared with those of other network companies. This focus would help to highlight material inefficiencies and allow us to implement more significant reductions to the base revenues in such cases.

8.26. Where we are confident that the business plan of a company in category A is well-justified and provides value for money for consumers over the long-term we may reach an early decision on the company's final proposal. A company could be "fast tracked" in this way after the initial sweep and, as illustrated in Figure 20 above, would be fast-tracked from Stage 2 when the initial sweep took place to Stage 4 and its final proposals. If we decided to fast-track a company there would be a consultation on the final proposals for that company during Stage 2.

8.27. We discuss below the range of tools that could be used to assess base revenue for companies in categories B and C. The tools used would vary depending on whether a company was in category B or C. The detailed assessment would be carried out on the revised business plans submitted in Stage 3 of the price control review process. It is this assessment that would inform our initial and final price control proposals. We would expect these updated plans to be closely aligned with the business plans submitted in Stage 2 but with updates for new data, changes to take account of updated views from stakeholders where relevant, changes to take account of concerns and clarifications raised by us on the business plans, and corrections for any errors in the original plans.

The assessment tool-kit

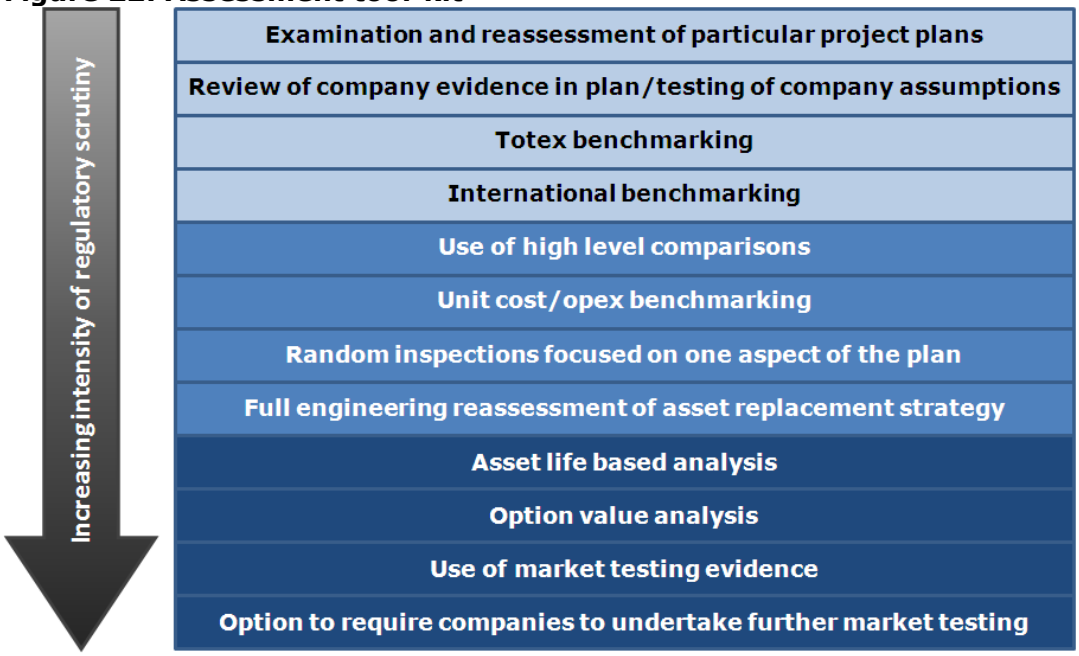
8.28. Our assessment would be proportionate throughout not just in terms of categorising company plans at the initial sweep but also in assessing the plans. We would focus on the aspects where most value can be added through regulatory scrutiny. We do not envisage, except where justified by cost or uncertainty reasons, focusing intensive scrutiny on each project or individual programme of activities. However, as explained below we might apply a more detailed level of scrutiny to a random area of the plan. This should act as a discipline to encourage network companies to consider carefully all aspects of their plan.

8.29. We will use a range of different tools to assess the base revenue requirement. All tools would be used to elicit information about the expected efficient costs for a company to deliver primary outputs over time and long-term value for money. Our decisions on the tools to use would depend on the quality of the business plans and the specific aspects of the plans that concern us as well as the cost at stake. For example, if we are concerned about telecoms costs we may use benchmarking to get a better view of what efficient telecoms costs might be. In contrast, if we are concerned about the needs case for a particular capital investment, or indeed the design of an investment project, then using experts to assess the proposal from a detailed bottom-up perspective may be appropriate.

8.30. As such, a range of information would be used to inform our assessment of a company's base revenue in the price control. When submitting their business plans companies would know that if proposals were not well-justified and not credible they would be scrutinised at a greater level of detail. However, they would not know the precise form that scrutiny might take. This would mean companies would not have an incentive to adjust their plans to perform well in one assessment (e.g. an operating cost benchmarking study). Instead the proposed approach would encourage companies to focus on ensuring the plan as a whole, and all components of it, are well-justified.

8.31. Figure 22 provides some examples of the tools that could be used as part of our assessment tool-kit. We may develop others during the course of price control reviews and some may be used rarely but remain in the tool-kit as an option. There is a mix of familiar methods (e.g. cost comparisons, assessing project plans) and new methods (e.g. option value analysis and random inspections) in the tool-kit. We set out below further details on the option of requiring network companies to undertake further market testing to inform our assessment of base revenue as well as our revised approach to benchmarking.

Figure 22: Assessment tool-kit



8.32. As discussed in Chapter 7, a company may wish to propose delivery solutions that involve keeping options open for the future in their well-justified business plan. As with other aspects of the plan, we would assess the robustness of the evidence provided by the company to demonstrate that the strategy of keeping options open delivers long-term value for money for consumers. For high value projects we would expect to see evidence that this strategy had been considered alongside others which involved not keeping options open. We may need to develop new tools which enable us to effectively evaluate option value analysis undertaken by the company to support their case.

8.33. Where we are convinced that a strategy that involves keeping options open is long-term value for money for consumers we would expect to reflect the associated expected efficient costs in the assessment of base revenue. If a network company chooses to take a different course of action during the price control period, choosing a new strategy and potentially closing down future options, any associated variation in costs relative to what was assumed at the price control review would be shared with consumers through the upfront efficiency incentive rate in the normal way (Chapter 10). In some cases the course of action may have been linked to an uncertainty mechanism in which case revenue would be adjusted during the price control period in line with the design of that mechanism. Similarly expenditure allowed may be linked to a secondary deliverable and the arrangements for dealing with non-delivery would be in accordance with our general approach to secondary deliverables discussed in Chapter 6.

Random inspections

8.34. As part of our proportionate assessment we would include the option to carry out random detailed inspections, involving regulatory scrutiny in one area, of certain aspects of a business plan. The inspections might relate to type of cost (e.g. IT) or to a specific project. Rather than assess all aspects of a plan in detail we would do spot checks in certain areas to form a view on the credibility of the company's proposals. The results of this assessment might have implications for the plan more widely. This approach is likely to be particularly valuable for category B companies.

8.35. The company would not know what area of its plan might be subject to a random inspection in advance and would therefore have to ensure that all aspects of the plan could stand up to scrutiny.

Role of benchmarking in the tool-kit

8.36. As discussed in the context of our approach to proportionate assessment we would benchmark historic costs and future plans to inform our decisions on what category a company would sit in.

8.37. The benchmarking would be focused on total costs to limit risks of the assessment methodology biasing company choices between operating or capital cost solutions. Our approach would build on the recommendations put forward by Frontier Economics[16]. In the conclusions of their report, Frontier recommended that benchmarking should continue to be used to support assessment of the business plan. However, they warned against the use of benchmarking mechanistically, for example to determine a specific base revenue requirement. Instead they emphasised that benchmarking should form part of the assessment and give context to questions and challenges.

[16] The future role of benchmarking in regulatory reviews, Frontier economics (2010) http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=18&refer=NETWORKS/RPIX20/CONSULTREPORTS

8.38. It is in this context that Frontier Economics recommended benchmarking future total expenditure where possible although they recognised that we may need to take into account an element of historic total cost, particularly in transmission, based on current availability of data. Box 8 below contains a summary of their recommendations by sector.

Box 8: Recommendations from Frontier Economics on benchmarking

Electricity and gas distribution

***Costs*:** Total cost, making use of two measures.

- Planned operating expenditure plus a measure of capital consumption; and
- Planned operating expenditure plus planned capital expenditure.

Cost drivers: Ideally, the full set of explanatory factors outlined below, guided by empirical analysis at each review.

The number of connections	Peak load	Volumes distributed/ transmitted	Quality variables	Losses
A proxy for network density at the distribution level			Other output variables	

Include outputs directly, where possible, if supported by empirical analysis.

Sample Scenarios presented in the 14 DNO business plans and eight GDN business plans. Make use of historic costs to increase the scope for tasting of plans.

Electricity and gas transmission

Costs: Total cost, making use of a standardised measure of capital consumption.

Given the international sample, there will be a need to adjust costs to reflect a wide range of factors, including exchange rates, tax etc.

Cost drivers: Drawn from the set of explanatory factors presented above, but guided in practice by the data that is publically available. Include outputs directly, where possible, but recognising that limited data is likely to be available.

Sample: The GB operator(s) supplemented by a number of operators from other countries (e.g. 4-6 others).

Use historic data for the most recent year available to develop a cross section.

8.39. When undertaking benchmarking analysis we would consider the following principles:

- total costs is the right basis for assessment given the ambition to avoid biasing the network company into particular solutions (e.g. capex solutions over opex;
- we would not expect to use total cost benchmarking in a mechanistic analysis of the base revenue requirement given potential concerns about the robustness of the analysis; and
- no single measure of total cost is ideal, particularly given the lumpy nature of capital expenditure and variation in the historic capital investment programmes (and hence RAVs) of network companies in a sector, and it may be appropriate to use a number of alternative measures as cross-checks on the analysis.

8.40. When considering benchmarking at price control reviews we would take account of available information and the timescales in which we needed to conduct the analysis. In this context, what is feasible may vary by sector and over time. We would provide clarity on our proposed approach for each price control review in our "Strategy for the Review" consultation paper.

8.41. A number of detailed issues would need to be considered and developed as part of the price control reviews. This includes the specific design of any benchmarking model, e.g. the functional form and cost drivers to be used, as well as any new elements to be included in benchmarking to reflect implementation of Sustainable Network Regulation. For example, it would be important to reflect primary outputs within the benchmarking analysis as far as possible. If, in practice, it was not possible to effectively incorporate performance on primary outputs into benchmarking analysis, we would need to think about other ways in which this could be reflected in the conclusions that were drawn from this analysis.

8.42. We recognise that work has been done to seek to make use of international comparator information in transmission, but that a number of issues still need to be addressed, e.g. in normalising the data so as to inform comparison. It would be important to develop robust information in this area but the approach adopted would need to be considered in the context of each price control review.

8.43. There would not be a mechanistic link between the benchmarking assessment and our view on base revenue for a company. However, the benchmarking assessment at the initial sweep would be one piece of evidence used to inform our view. In particular we expect that for those companies in category B and C we would use the high level benchmarking analysis as the basis for raising questions with companies about their relative efficiency and as a means of engaging with them on whether they can provide further evidence to demonstrate that their proposals are relatively better value for consumers than those presented by their peers (including international peers if relevant) in the sector.

8.44. As Figure 22 shows we would retain other benchmarking models in the assessment tool-kit and may make use of these as additional evidence to support our assessment, e.g. comparison of specific categories of cost such as business support costs. In general we would be looking for network companies to take more responsibility for undertaking detailed activity-based benchmarking and/or benchmarking of particular cost types and present the evidence to us. However, where we have concerns about the evidence presented we may wish to undertake our own analysis using tools that we are familiar with (e.g. opex benchmarking models used in previous price control reviews). As with the other tools in the tool-kit we would not expect to engage in lengthy and detailed debates on the precise detail of the models used but instead would want discussions to focus on the extent to which they should inform our assessment of base revenue.

8.45. This approach to benchmarking is different from the one we have taken in the past, not only in terms of the techniques but, more importantly, in terms of the use made of the benchmarking evidence. We would work with network companies and other stakeholders during the price control reviews to ensure that we were adopting

a proportionate approach to benchmarking. We would aim to balance the need to make the benchmarking analysis as robust as possible with the value to consumers of all parties spending time and effort to refine the analysis over a number of iterations.

8.46. We recognise that benchmarking cannot perfectly reflect all of the principles of Sustainable Network Regulation, e.g. effective stakeholder engagement with stakeholders and innovation. This is why, where used, it is neither being used mechanistically nor exclusively of other evidence that allows these principles to be reflected.

Purpose of the IQI in the tool-kit

8.47. Ofgem introduced the Information Quality Incentive (IQI) in DPCR4, then known as the sliding scale incentive, with the aim of encouraging distribution companies to submit more accurate forecasts whilst preserving efficiency incentives. The IQI was used in GDPCR and more recently in DPCR5, albeit with a slightly different calibration. Ofgem considered whether to use the IQI for transmission networks as part of TPCR4, but decided against it for the purposes of that review.

8.48. The tool is used to set the strength of the upfront efficiency incentives each company faces according to differences between its forecast and Ofgem's assessment of its (efficient) expenditure requirements. The aim of the tool is to encourage companies to submit more accurate expenditure forecasts to Ofgem.

8.49. Under the new framework, we would use the IQI in all four energy network sectors to provide financial incentives to encourage companies to submit more accurate expenditure forecasts than they would in the absence of the IQI. In particular, the IQI would provide:

- an additional financial motivation for companies to spend the time and resources necessary to produce high-quality and well-justified business plans; and
- a financial deterrent against the submission of inflated expenditure forecasts.

8.50. The use of the IQI would be subject to review in future price control periods. The incremental benefit of the IQI depends on the contribution that the other tools can make. For instance, as companies become experienced in developing well-justified long-term business plans, and as we become experienced in assessing those plans, the incremental benefits of the IQI may reduce. At some point in the future, we may decide that the potential benefits of the IQI are not sufficient to justify the additional complexity and administrative burden that it brings.

Box 9: The IQI in theory and practice

It is possible to construct a theoretical model in which the IQI would ensure that profit-seeking network companies would each submit an expenditure forecast to Ofgem which represents its expectation value (i.e. unbiased forecast) of its expenditure over the price control period.

There are a number of conditions necessary for the IQI to achieve this result. These include: (i) the requirement that companies are risk neutral in the sense that they are indifferent between a higher or lower efficiency incentive rate; (ii) the requirement that the efficiency incentive rate is implemented in a way that exposes each company to the desired strength of incentives; and (iii) the requirement that Ofgem sets the price control using an assessment of a company's expenditure requirements that is completely independent of the company's own expenditure forecasts.

There is some uncertainty as to how well (i) and (ii) would be met in practice, though this will depend on the way in which the IQI is calibrated and on other aspects of the regulatory framework (e.g. how the allowed cost of capital reflects the financial risks that companies face). Condition (iii) is more fundamental. Even if it were possible to set price controls completely independently from companies' forecasts, to do so would deny Ofgem one of the main — arguably only — benefits of the IQI: improvements to the information that Ofgem can use to set price controls. We do not propose to take this approach.

Under the new framework, there would be an opportunity for each company's forecasts to influence Ofgem's assessment of its expenditure requirements. The extent of influence would depend on how well the company supports these forecasts in its plan. If a company supports its expenditure forecasts with a sufficiently well-justified plan, our assessment of the company's expenditure requirements may match those submitted by a company. At the other extreme, where a company's plan is not well-justified, we would have the ability to put aside the company's forecasts and make our own assessment of the company's expenditure requirements drawing on other sources of data.

Under our proposed approach, the IQI would not guarantee the theoretical results that are sometimes claimed. This is not the intention. Instead, the role of the IQI would be to bring incremental benefits to the quality of information that companies submit in their business plans — compared to what would be submitted in the absence of the IQI.

8.51. We do not propose any wholesale changes to the mechanics of the IQI compared to the approach taken in DPCR5. But we are proposing changes to the way that the IQI is calibrated during the price control process. This is intended to ensure (i) that we retain sufficient control over the strength of the upfront efficiency incentives and (ii) that the way that the IQI is integrated into the price control review process allows the option of fast-tracking a company that provides a sufficiently well-justified business plan. These two aspects are discussed below.

Control over upfront efficiency incentives

8.52. Under the new framework, there would be more emphasis on upfront efficiency incentives as set out in Chapter 10. A necessary feature of IQI is that different companies would face different efficiency incentive rates. The efficiency incentive rate for a specific network company would depend on the ratio between its expenditure forecast and Ofgem's assessment of its expenditure requirements and on the parameters used to calibrate the IQI. The extent to which the efficiency incentive rates vary across companies depends on how the IQI is calibrated.

8.53. Whilst using the IQI means that we cannot apply the same efficiency incentive rate across all companies (e.g. 50 per cent), we can operate the IQI in a way that allows us to control the broad level and spread of the efficiency incentive rate. For instance, we might choose to limit the rate to a range of 40 per cent to 50 per cent. We could achieve this if we calibrate the IQI in light of information on (i) each company's expenditure forecasts and (ii) our assessment of each company's expenditure requirements.

8.54. Under this approach, we would set out early in the price control review our intentions on the maximum and minimum efficiency incentive rate that we want companies to face. We would then calibrate the IQI in a way that achieves this. We would use the principles and guidance set out in Chapter 10 to choose the maximum and minimum levels. In doing so, we would recognise that if too narrow a range were chosen, this could dampen the financial incentives from the IQI for companies to submit more reliable expenditure forecasts.

8.55. It may be helpful to provide an indicative calibration of the IQI early in the price control review process, based on assumptions on company forecasts and Ofgem's assessments, and to highlight how we would vary the calibration if either of these differed from the assumptions.

8.56. Under this approach, companies would not have clarity over the impact that changes in their forecasts would have on their allowed revenue under the price control. But this is always the case with the IQI if companies submit their forecasts before Ofgem makes it own assessment of expenditure requirements. Our proposed approach would provide companies with more certainty than at present as to the range of efficiency incentive rates that they could face.

Integration of IQI within price control review process

8.57. The use of the IQI is consistent with the option to fast-track a network company during the price control review process if it provides a sufficiently well-justified business plan. The process would work as follows:

- we would set out the maximum and minimum incentive rate that companies would face under the IQI, before companies submit their forecasts;
- any fast-tracked companies would face the maximum efficiency incentive rate;

- when the IQI is subsequently calibrated, the fasted-tracked company would not lose out on any financial rewards that it would otherwise have received through the IQI (taking its expenditure forecast and Ofgem's acceptance of this forecast as given)[17]; and
- for each company that is not fast-tracked, we would produce our own view of its expenditure requirements (drawing on the company's plans, and revisions to the plans, where these are well-justified). We would calibrate the IQI so as to achieve the range of efficiency incentive rates committed upfront.

8.58. Early in the review process, we would need to set out clear rules on how any changes that non-fast-tracked companies make to their expenditure forecasts, following submission of their first substantive business plans, would feed through to the IQI. It may be appropriate to distinguish revisions that reflect changes in the scope of work (e.g. changes to output measures) from other changes. For the latter category, we may decide that revisions received from the company would not affect the company forecast which is used as an input to the IQI, but may, if well-justified and received before a specified cut-off date, affect our own assessment of a company's expenditure requirements, which is also an input to the IQI. This would help to address the concern that opportunities for companies to revise their forecasts during the price control review process would render the IQI ineffective in improving the quality of the original expenditure forecasts submitted by a company.

Option to require market testing evidence

8.59. Under Sustainable Network Regulation, the onus would be on network companies to demonstrate that their proposals deliver value for money for existing and future consumers. This would include, amongst other things, making efficient decisions on which aspects of delivery (if any) should be outsourced. We have not taken a view on the optimal level of market testing or outsourcing and we would not want to suggest that some business models (e.g. with all activities outsourced) are, in principle, better than others.

8.60. However, we recognise the potential benefits that can arise from using competitive processes to identify parties best placed to deliver some or all aspects of a project. The benefits may come, for example, from new ideas on how to deliver, lower unit costs of delivery and/or more timely delivery of outputs. We would expect network companies to explore and exploit potential opportunities by market testing proposed delivery solutions where this is expected to provide value for money for existing and future consumers. The efficiency incentives in the framework should encourage them to do this.

8.61. We would have the option of requiring network companies to provide market testing evidence to support their business plan proposals where we had concerns about the level of costs or the design of a proposed delivery solution. Stakeholders and third parties who could potentially be involved with delivery would have

[17] This may require that we commit to providing an additional IQI reward to a fast-tracked company (e.g. reflecting the "additional income" term from the IQI), the level of which would be finalised at a later stage of the review.

opportunities through enhanced engagement to put forward ideas on where alternative market-tested solutions may offer better value for consumers.

8.62. As discussed in Chapter 13 we would also have an option of giving third parties, through a competitive process, a greater role in delivery with responsibility for aspects of delivery and subsequent ownership of associated assets. We would identify the projects where this option might be considered as part of the assessment of business plans. The associated costs of delivery would not be included in the existing network company's price control if we make a decision to give the responsibility for the specific aspect of delivery to a third party.

8.63. We would consider requiring network companies to provide further market testing evidence to support their proposals during a comprehensive price control review. We may also consider this option during a mid-period review of outputs in the event that requirements change significantly and hence new or significantly adapted delivery solutions are needed.

8.64. There could also be instances in which a network company has failed to deliver primary outputs and where there is concern that it would continue to fail to do so. In this case we would consider the possibility of requiring the network company to carry out further market testing to identify a better way of ensuring outputs are delivered. We may also consider, in responses to the failure of the existing network company to deliver, to give third parties a greater role in delivery where this was expected to better meet the objectives of Sustainable Network Regulation.

Company decisions on market testing

8.65. When a network company is providing justification for the costs in its plan one piece of evidence provided might be market testing evidence. For example, a network company may include costs associated with running a joint venture to deliver a project or costs derived from running a competitive process to procure services to maintain assets from a third party. Where such information is provided we would evaluate it alongside all other evidence in the business plan to inform our view of required base revenue.

8.66. For significant costs, we would expect the network company to demonstrate that an outsourced solution is the best value solution relative to other options. We may decide to evaluate the market testing carried out in more detail but would not expect to undertake such assessments on a regular basis. For example, we could ask the company to provide clarification that the process followed was consistent with ensuring that the solution provides value for money over the long-term. Similarly, where the network company has chosen to use in-house resources to deliver a project we would expect, for significant cost areas, the company to demonstrate in its plan that this was the approach that represented value for money over the long-term. In both cases, our assessment could include comparisons against the past delivery performance of the network company and against the plans of other network companies.

8.67. When seeking out ways of involving third parties, and competitive processes, in efficiently delivering outputs network companies may, depending on the nature or scope of the project, be required to comply with the relevant EU procurement rules as implemented in the UK by the Utilities Contracts Regulations 2006.

Ofgem-required market testing

8.68. We would consider requiring companies to undertake further market testing with respect to certain aspects of their business plan where the following apply:

- we have concerns that the costs in the business plan do not provide value for money over the long-term and/or that the proposals may result in problems with timely delivery of outputs;
- justification provided by the company in response to our concerns is not sufficiently robust, including evidence supporting any claims from the network company that further market testing would not provide value for money;
- other tools (e.g. benchmarking) are not sufficient to provide us with information about the expected efficient costs of delivery in the relevant context;
- the scale of costs involved are sufficiently large to ensure that the potential cost savings from market testing would outweigh the administrative costs and additional complexity that may be involved;
- we are confident that requiring the company to undertake further market testing would not threaten timely delivery of primary outputs; and
- we are confident that requiring further market testing would not pose significant risks to the safety, security, integrity or quality of energy services.

8.69. We would expect the presence of the option in the tool-kit to encourage network companies to identify opportunities for working with third parties and outsourcing aspects of delivery where this is expected to provide value for money over the long-term. The option should also encourage them to provide a robust case to support decisions where they choose not to involve third parties in delivery.

8.70. If we ask a company to provide market testing evidence to support their business plan, the network company would be responsible for designing and running any process[18]. The network company would be responsible for determining what information to provide to third parties to ensure that the process is open and competitive. We expect that third parties would be looking for information relating to non-confidential aspects of the company's well-justified business plans, our concerns on the company business plan, and our proposed approach to using the information from market testing in our assessment of base revenue.

8.71. Licensees, including the NETS SO and gas National Transmission System (NTS) SO, would retain responsibility for all existing obligations relating to the

[18] In the case of transmission market testing, we might consider whether it is appropriate for the National Electricity Transmission System Operator (NETS SO) or the gas National Transmission System (NTS)SO to take on the role of running the process as required by Ofgem, recognising there may be benefits in having the national co-ordinator perform this role. We would, however, need to take account of the current industry structure in considering whether this would be appropriate.

transmission/distribution system including pertaining, for instance, to quality of service and security of supply as well as continued asset stewardship.

8.72. We note that in undertaking market testing, whether of their own initiative or as required by Ofgem, network companies may, depending on the nature or scope of the relevant project, be subject to EU procurement rules (implemented in the UK by the Utilities Contract Regulations 2006). We would expect network companies to cover any additional administrative costs incurred in running further market testing required by Ofgem.

8.73. We would expect that when considering how best to obtain market testing evidence, the network company would take account of the concerns that we have raised with the proposals in its business plan. For example, if our concerns were about how best to deliver a project, rather than the unit costs of the project, the network company might be expected to seek ideas from third parties in any competitive processes on the design and build of a project rather than just the build. We would not expect market testing undertaken by the network company to extend to asset ownership unless the network company decided this was appropriate and consistent with its continuing obligations under statute and licence.

Reflecting the results of Ofgem-required market testing in base revenue

8.74. Our assessment of business plans would start during Stage 2 of the price control review process. Where possible, we would signal at this stage any projects or activities where we may require the company to provide market testing evidence but we expect that final decisions on this would only be made in relation to the revised business plan submitted in Stage 3. This is to ensure network companies have adequate opportunity to present revised plans and associated justifications. We would also use enhanced engagement processes to elicit views from stakeholders and third parties that might be involved with aspects of delivery on areas where they think market testing evidence might be expected to add value for existing and future consumers.

8.75. Where we decide to require a network company to provide further market testing evidence, we would set out, at the price control review, how the outcome of this market testing would affect base revenue. We recognise that clarity would be needed, not only for the network company itself but also for third parties that may submit bids to any competitive process run by the network company.

8.76. It would be possible to arrange for the price control to adjust automatically to reflect the prices revealed through the market testing, when they are known, and to pass this through to consumers in full. We also recognise that a network company's actions could have a significant impact on the success of the market testing in achieving value for money. These actions relate, for example, to the design of the process (e.g. lead times given to potential suppliers and risk-sharing arrangements between the network company and the supplier) and to the assessment process. If the company is "fully insured" against the level of costs resulting from the process, it may not do enough to run the process in a way that achieves value for money.

8.77. We would therefore provide the network company with a clear stake in the success of the market testing. We could do this in two ways, each of which can be seen as involving a type of uncertainty mechanism[19] to adjust the price control for information revealed during the price control period according to pre-specified rules:

- we could include an adjustment mechanism in the licence such that the price control would be updated to pass through the resultant market testing price to consumers, subject to a review that the network company has used an effective process. If we found that market testing had not been run effectively, we could consider the appropriate level of costs to be passed through to consumers; and

- we could directly expose the network company to a proportion of the resultant market testing price. For example, at the price control review, we could make an upfront forecast of the costs of delivering the activities (e.g. drawing, where appropriate, from the company's business plan). We would include an adjustment mechanism in the licence so that the base revenue that the company is allowed to collect is adjusted upwards or downwards to reflect a proportion (e.g. 50 per cent) of any difference between the forecast and resultant market testing price. This adjustment would apply in addition to the general risk-sharing around actual expenditure under the upfront efficiency incentives (discussed in Chapter 10).

8.78. We would ensure that any adjustment to revenue only related to costs associated with the aspect of delivery that we asked the network company to provide market testing evidence on. For example, if a network company chooses to run a broader procurement process, combining delivery of a specific project where we sought market testing evidence and other projects, we would only make adjustments to revenue for the costs associated with the former.

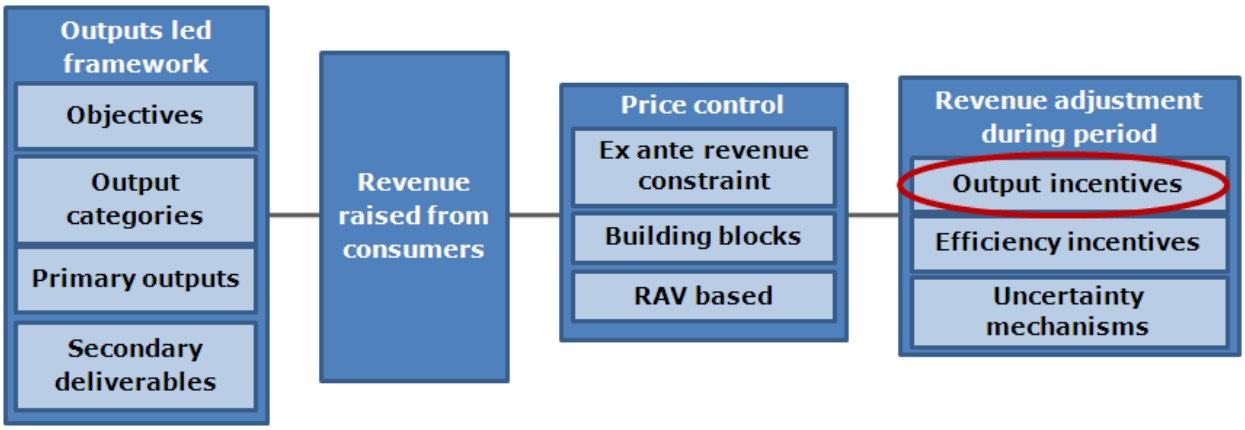
Determining base revenue

8.79. Our assessment of expected efficient costs, using the proportionate approach and range of tools described here, would be one of the building blocks used, to set the amount of base revenue for each year of the eight-year price control. Our approach to assessing the other building blocks (depreciation and return on the RAV) is discussed in Chapter 12. The price control would specify what primary outputs the network company was expected to deliver in return for this revenue. It would also, where necessary, make clear what proportion of base revenue is linked to specific secondary deliverables.

[19] Further information on uncertainty mechanisms is set out in Chapter 11.

9. Incentivising delivery of outputs

Chapter summary
We set out the principles that we would consider when designing and implementing incentives to encourage network companies to deliver primary outputs and secondary deliverables over the long-term.



9.1. Under Sustainable Network Regulation network companies would be provided with incentives to deliver the primary outputs discussed in Chapter 6. Revenue and hence the return earned during the price control period would vary according to delivery performance. We would also publish information on delivery performance on an annual basis, introducing reputational incentives.

9.2. In the event of persistent failure to deliver outputs we would have at our disposal the backstop threat of using our existing powers to revoke a company licence where the licensee had failed to comply with an enforcement order and/or financial penalty procedure. However, we anticipate that this would only be used in exceptional circumstances.

9.3. We describe here the principles that we would use when determining how best to encourage companies to deliver outputs. We discuss the principles for setting efficiency incentives in Chapter 10. Decisions on the incentive schemes, underpinned by these principles, would be made at price control reviews.

9.4. The principles discussed here take account of the fact that the type of incentive scheme that is appropriate would depend on the nature of the primary output and associated performance level, on whether the output is a mandatory requirement (e.g. safety or social), on the quality of the data underpinning the output measure and on the relative importance of outputs from the perspective of consumers of network services.

9.5. A range of issues need to be considered when designing output incentives including, but not limited to, the following:

- **Symmetric incentives or not:** for some primary outputs there would be penalties for delivering less but no reward for delivering more. For other outputs it would be appropriate to have symmetric rewards/penalties for variation above or below the performance level in the price control;
- **Marginal incentives or not:** for some primary outputs it would be appropriate to have marginal incentives, with rewards/penalties varying according to the size of any incremental variation from the performance level in the price control. For others it would be appropriate to have a fixed penalty amount for any variation below the performance level;
- **Financial and/or reputational incentives:** for some primary outputs it would be appropriate to have financial incentives, while for others it may be more appropriate to make use of reputational incentives; and
- **Automatic revenue adjustment or not:** for some primary outputs it may be appropriate to have incentives working automatically, so that there is no review of whether the reward or penalty should be passed through into revenue. For others we may need to assess whether decisions relating to delivery of outputs at a performance level different to that assumed in the price control (or not) are consistent with long-term value for money before making any potential changes to revenue.

9.6. At a price control review we would consider the appropriate tools to use to encourage efficient delivery from the network companies and to penalise companies that fail to deliver. The circumstances in which different tools may be used are discussed in turn below.

What tools are available to incentivise delivery?

9.7. We set out below high-level principles that would be used to determine the appropriate mix of incentives for encouraging network companies to deliver primary outputs. The principles set out the types of incentive mechanisms available and the circumstances in which they may be most suited. We discuss incentive arrangements relating to secondary deliverables in Chapter 6.

9.8. In most cases it would be appropriate to determine the incentive mechanisms that are most likely to facilitate the effective delivery of individual primary outputs. However, we would also need to consider how the package of outputs worked holistically, taking account of how primary outputs interact with each other and the relative importance of outputs discussed above.

9.9. While some of the primary outputs may be complementary, the delivery of other primary outputs may require network companies to make trade-offs. When setting incentives, we would take account of these relationships. We would also sense check the incentive mechanisms to identify any potential unintended consequences for the individual outputs but also across the outputs (both primary and secondary deliverables).

9.10. More generally, it would be necessary to ensure that the package of incentives exposed network companies and their investors to an appropriate package of risks

and returns. The calibration of the incentive package with the assessment of the allowed return is discussed further in Chapter 12.

Financial incentives

9.11. Financial incentives allow revenue adjustments to be made in line with network company performance in delivering primary outputs. When determining the form that financial incentives should take a number of decisions would need to be reached. These include decisions on the way adjustments to revenue would be made, the timing of any adjustments and the magnitude of potential changes to revenue. This section looks at each of these areas in turn.

When would we use financial incentives?

9.12. We would use financial incentives when:

- there is clarity on the primary outputs to be delivered;
- there is confidence in the data used to measure performance;
- we consider delivery of the primary output to be important; and
- there are not already incentives in place on the network company through other schemes or obligations[20].

Types of financial incentives

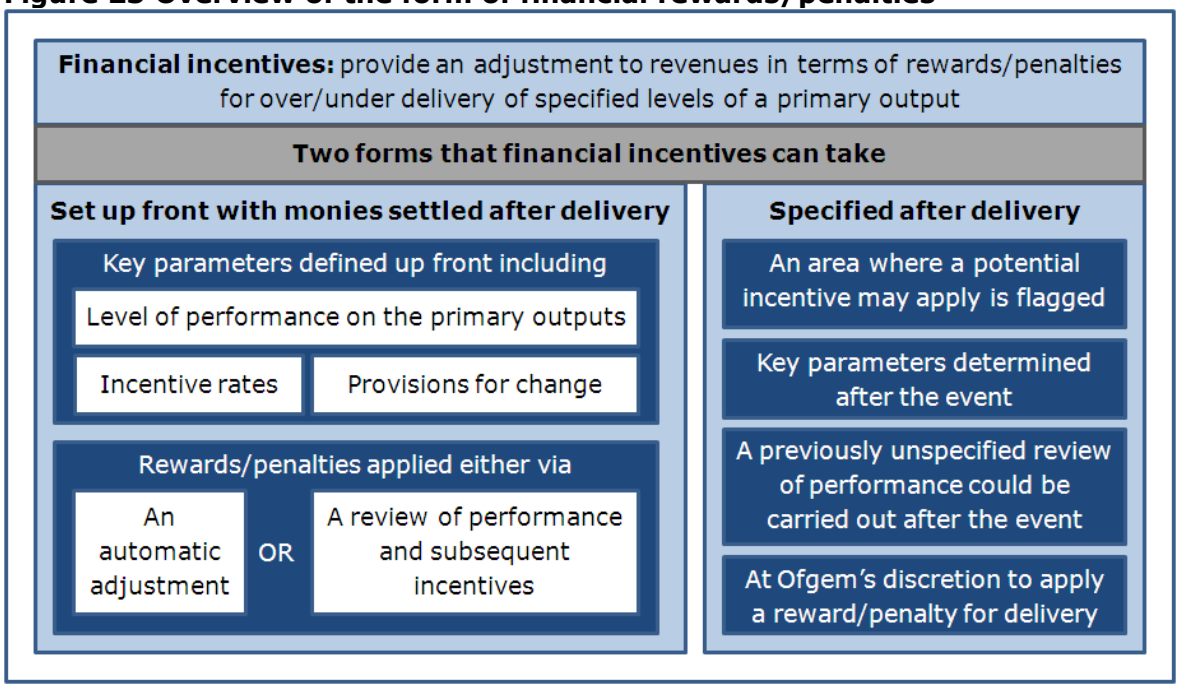
9.13. Figure 23 below provides an overview of financial incentives and the various forms that they could take.

9.14. In the price control review we would specify target levels for performance, the incentive rates that would apply and the provisions for changing allowed revenue. In this way we would provide transparency on the treatment that would be applied in the event of successful delivery/non-delivery. We would aim to limit the use of incentives set wholly after the event (with no indication of the parameters for assessment prior to commencement of the period) as this could lead to regulatory uncertainty and reduce transparency for the network companies.

9.15. We may also consider making use of upper and/or lower limits on the revenue adjustment depending on the extent to which we think it is appropriate for consumers to pay for more or less of an output relative to what was assumed when the price control was set. If we were to use such "caps and collars" we would aim to design them to limit any risk of creating perverse incentives at the margins and we would aim to make them as simple as possible. We would also aim, as far as possible, to base the decision on the design of the incentive mechanism on information on consumer willingness to pay for varying levels of "service" (or similar information).

[20] For example, Sustainable Network Regulation would include an output category related to safe network services but the incentives for this have already been established through the HSE regime.

Figure 23 Overview of the form of financial rewards/penalties



9.16. For some primary outputs the incentive mechanism may be asymmetric, with no reward for doing more and a penalty for doing less. They could take the form of a specified amount of penalty/reward that the company would be fined/receive depending on performance or a percentage change in revenues (either up or down) that would be made to reflect performance on the primary output. The decision on how to design the incentive would depend on the relevant circumstances at the time of the price control review.

Timing of financial incentives

9.17. In some cases the financial incentive would comprise an automatic adjustment that would take effect where certain predefined conditions were fulfilled. In other cases, we would undertake a review of performance and consider, as part of this, how best to apply a financial incentive.

9.18. It would be important to provide clarity to network companies on the timing of any financial adjustment resulting from incentives put in place. The timing of any financial adjustments would depend on the time at which relevant information became available (and the reliability of that information) as well as the inclusion of provisions to allow these adjustments to be made during the price control period.

Strength of financial incentives

9.19. Incentives would be calibrated to ensure they provide long-term value for money and to ensure the package is consistent with our financeability principles. We would consider the strength of financial incentives holistically as well as considering

the individual priorities assigned to each primary output. In particular, we would be keen to ensure that those companies that deliver for consumers earn good rates of return, whilst those that demonstrably do not deliver, earn low returns. This should be considered in the round in terms of the output incentives, efficiency incentives and cost of capital as well as the implications that this would have in terms of energy network companies' ability to earn returns. This is discussed further in Chapter 12.

9.20. The strength of any financial incentives would depend on:

- confidence in the clarity of the primary output;
- confidence in the accuracy and reliability of the information used to measure performance against the primary output; and
- the importance that we and stakeholders place on achievement of the primary output.

9.21. We would consider a range of issues when considering the strength of incentives including but not limited to the following:

- **estimates of the value of delivering the primary output:** in some cases, there may be evidence associated with the potential "value" that could be provided through delivery of different levels of performance against the primary output. For example, the social cost of carbon associated with a business carbon footprint or willingness to pay evidence for a particular aspect of service quality;
- **preferences expressed during enhanced engagement:** a key area that stakeholders could discuss during enhanced engagement would be the primary outputs. Through this process stakeholders would be able to provide an indication of the importance they placed on the primary outputs and this would help ensure that incentives were aligned with value for money as far as possible;
- **historical performance of the energy network companies:** if poor performance by a network company was identified, we may want to consider stronger incentives to encourage changes in behaviour in this area. This means that the incentives could vary by company;
- **external policy drivers:** even where performance on a primary output had been relatively good, it may be identified as an area in which incentive strength should be increased if there had been a step change in requirements or the ongoing importance of the issue had been emphasised; and
- **high level guidance from government:** any such guidance would, for the most part, take the form of energy policy or related initiatives determined by government. It could also include additional guidance given through existing tools such as the social and environmental guidance. In both cases, we would need to ensure that the provision of guidance was consistent with legislation under the Third package.

9.22. In determining the priorities attached to the primary outputs, a balance should be struck between these factors.

Reputational incentives

9.23. Reputational incentives are non-financial incentives that leverage off the value companies place on establishing or maintaining a good track record for delivery with their stakeholders. They would usually involve the measurement of network company performance on delivery of primary outputs which would be publicised to groups of interested stakeholders. In this instance, stakeholders might include:

- the consumers and users of network services with whom their reputation would be important from a corporate social responsibility point of view. This may increase over time if consumer awareness were to improve as a result of enhanced engagement by us and network companies;
- Ofgem with whom their reputation would be important given the role that we play in determining the levels of their revenue allowances during the price control. This would likely be reinforced by the application of proportionate treatment;
- Government with whom reputation is important to ensure their credibility in discussions regarding energy policy; and
- investors with whom reputation is important to continue to attract finance.

9.24. If primary outputs were developed and it was not appropriate to use financial incentives we would encourage network companies to deliver using reputational incentives. This type of incentive is unlikely to influence network company decisions as strongly as financial rewards/penalties but we think they could motivate the companies to behave in certain ways where they are designed and used effectively. This is particularly the case where we signal that we would take performance on these primary outputs into account when considering our proportionate approach to assessing companies at the next price control review (See Chapter 8).

9.25. In some cases we may use reputational incentives for an interim period, as a primary output was "bedded down" and we obtained confidence in the metrics used. In these cases, we would provide a strong signal that the intention would be to move to financial incentives in time. In other cases we may not be using a financial incentive because network companies were incentivised by other organisations (e.g. the HSE for safety) or other mechanisms (e.g. enforcement powers, legal obligations). However, in these cases it may be appropriate to add an extra effect of reputation through the price control to influence their decisions.

9.26. Reputational incentives are likely to be of most use where:

- there are comparator companies as this could facilitate competitive pressures between counterparts; or
- it is possible to monitor and compare the performance of individual network companies over time to determine improvements/deteriorations in performance.

9.27. Their use can be combined with financial incentives to provide extra incentives on network companies or they can be considered in isolation.

Monitoring performance

9.28. To facilitate the application of the incentives developed for primary outputs, it would be important that we had a clear understanding of the performance of the network companies in delivering against the primary outputs and secondary deliverables throughout the course of the price control period. Arrangements would need to be implemented to facilitate this monitoring. As far as possible, we would seek to build on the existing information provisions in place for the regulatory reporting packs (RRPs) and regulatory instructions and guidance (RIGs). To ensure we had a clear understanding of the additional information requirements that would arise, we would review the information already collected during the period at each price control review.

A scorecard for outputs

9.29. To facilitate a meaningful comparison of network company performance, we would develop a balanced score card for output delivery in each of the network sectors. This would enable comparisons to be made across companies, so long as performance in delivering primary outputs is measured relative to a normalised baseline. The use of a balanced scorecard would be expected to facilitate reputational incentives and the information could be used to inform our approach to proportionate assessment (detailed in Chapter 8).

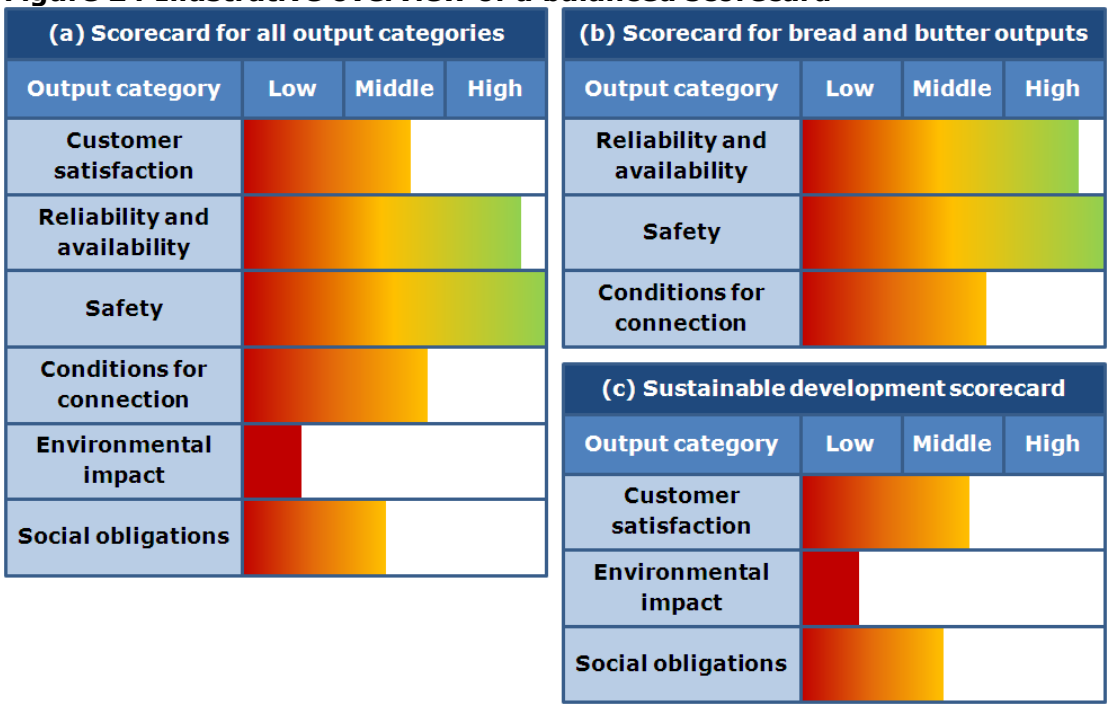
9.30. As the scorecard would provide a summary of information it would be necessary for performance relative to individual primary outputs to be aggregated. The primary outputs should be weighted, with for example greater weight given to areas identified by stakeholders as priorities during enhanced engagement. Indeed, the scorecard could be used as a tool to facilitate discussion during enhanced engagement. The scorecard could also be used to inform our approach to proportionate assessment. Although we anticipate that the financial incentives would be focused on individual primary outputs, there would also be some scope to attach incentives to overall performance with respect to the scorecard.

9.31. Recognising that a network company may demonstrate differential levels of performance in certain areas, the score card could be presented in each of the three following formats:

- performance of the network companies in each of the output categories;
- performance of the networks companies in areas that are "bread and butter" to them, e.g. conditions for connection, reliability and availability, and safety; and
- performance of the network companies in areas particularly relevant to sustainable development, e.g. environmental impacts, customer satisfaction and social obligations.

9.32. Figure 24 provides an illustrative overview of the way that these scorecards could look in practice. It highlights that the scorecard could be used as a clear and simple way to convey information about network company performance.

Figure 24 Illustrative overview of a balanced scorecard



9.33. In the event that certain secondary deliverables were deemed particularly useful in illustrating network company performance, there may also be scope to include these within the balanced scorecard.

9.34. The details of how scorecards would be designed and implemented would be worked up at each price control review. We expect that the scorecards may develop from one review to the next as we learn lessons from their use.

Last resort responses for failure to deliver

9.35. The primary outputs would be agreed as part of the price control process and inserted as a condition in network company licences. We would seek to extend network company licence conditions to include an explicit requirement to deliver primary outputs, which would be subject to existing enforcement arrangements. The associated detail on the primary outputs would either be specified as part of the relevant licence condition or in a direction issued by GEMA. Combined with the incentive framework set out above, this would provide strong incentives on network companies to deliver on all of their primary outputs.

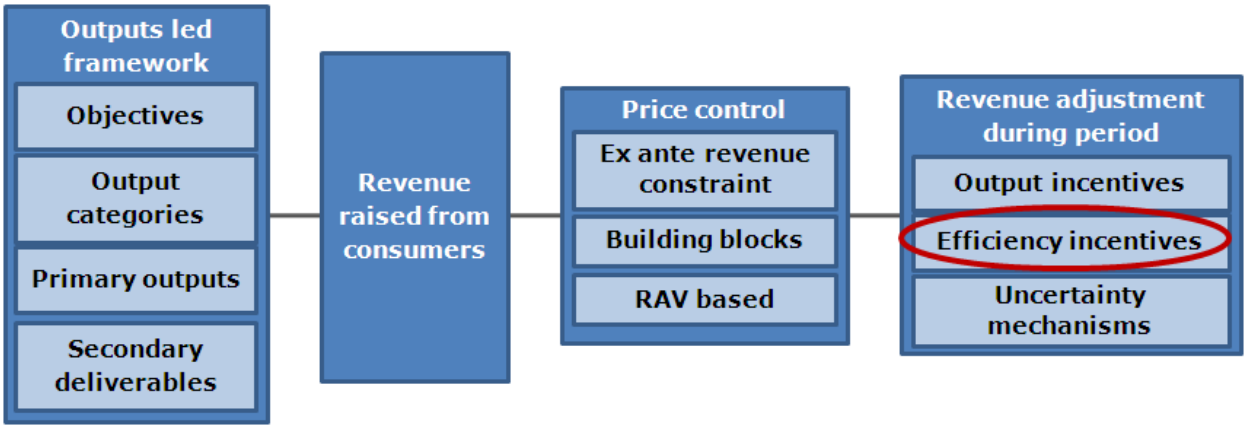
9.36. Where a network company failed to deliver against its primary outputs, the company would be penalised according to the incentive arrangements in place. In addition, there are three main tools that we could use if a network company demonstrated a persistent failure to deliver against one or more of their primary outputs:

- where a network company had failed to deliver a project (on time) that was significant and sufficiently separable, we may consider using the option to give third parties a greater role in delivery. The principles that we would follow in these situations are discussed in Chapter 13;
- we could take enforcement action on the basis that the network company was non-compliant, or likely to contravene, the provisions of its licence relating to its delivery of primary outputs. The first step in this process would be to issue a warning notice, where a network company appeared to be contravening, or was likely to contravene, the relevant licence condition. In appropriate cases, this may be by way of a provisional order. If, following this warning notice or provisional order, the network company took steps to facilitate compliance with the licence condition; we would inform the company that we were satisfied with the action that it was taking. In the event that the network company remained non-complaint with the licence condition, we would have the ability to issue a final order requiring the network company to take steps to ensure compliance in the future; and
- upon failure to comply with an order (and/or upon failure to pay a penalty) we could use our existing powers to revoke a network company licence for failure to deliver against the primary outputs in line with the obligations set out in their licence. If we were to revoke a network company licence, we would need to consider how best to take forward the ongoing management and operation of the network. The arrangements put in place would need to be tailored to the specific situation.

9.37. These tools should act as a useful backstop deterrent against failure to deliver the primary outputs and thereby provide additional incentives on network companies to seek to meet their obligations. Although these tools would be valuable as a backstop threat for persistent failure to deliver we would only envisage using them where necessary and we anticipate that this would be in exceptional circumstances. They are in place to complement and reinforce any financial and reputational output incentives in the price control framework.

10. Efficiency incentives

Chapter summary
We set out how we would encourage network companies to seek out delivery solutions that are value for money for existing and future consumers on an ongoing basis. We describe principles that we would consider when setting an efficiency incentive rate at a price control review. We also explain why and how we would avoid making adjustments to revenue for variation in costs from the expected level (often called ex post efficiency adjustments), save through the symmetric efficiency incentive rate, if outputs are delivered.



10.1. The business planning process and our assessment of base revenue in the price control are key parts of the framework designed to encourage network companies to seek out delivery solutions that are lowest cost over the longer-term. The plan provides a helpful and reasonable basis on which to make assessments of forecast efficient costs. However we would not expect a network company to deliver against the detail of its plan for the eight-year price control period.

10.2. Network companies should evaluate the best way of delivering on an ongoing basis, taking account of new information, learning and potential changes in circumstances. It is in this context that we provide them with specific incentives to seek out on an ongoing basis delivery solutions that provide better value for existing and future consumers. This aspect of Sustainable Network Regulation builds on and clarifies the original incentive-based principles of RPI-X regulation[21].

10.3. There are two elements to our approach to encouraging network companies to seek out value for money delivery solutions:

- we would commit at a price control review to a fixed and symmetric efficiency incentive rate for that company. We describe below the issues to consider when

[21] Littlechild S (1983), "Regulation of British Telecommunications Profitability: A Report to the Secretary of State", Department of Trade and Industry: London

setting that rate. The spread of efficiency incentive rates within a sector would be determined according to the principles set out here; and

- we would commit to not making retrospective adjustments to revenue in the event that costs turned out to be different to what was assumed in the price control itself, save through the application of the efficiency incentive rate. We would only consider using such "ex post adjustments" if outputs were not delivered or if we had a concern that a company had manifestly wasted money.

10.4. We discuss both these aspects of our efficiency incentive package below.

Upfront efficiency incentives

10.5. The efficiency incentive rate would represent a commitment to the way that revenue that the company is allowed to collect adjusts upwards or downwards in light of what it actually spends during the price control period. If the efficiency incentive rate is set at 40 per cent, the company's investors would earn £40 more profit (before tax) for each £100 that the company saves during the price control period and bear £40 of each additional £100 the company spends. The remainder would be passed on to consumers through lower or higher network charges.

10.6. The efficiency incentives are about risk-sharing. Investors and consumers would share the benefits when the company delivered outputs for less money than Ofgem envisaged when setting the price control. Similarly, investors and consumers would share the additional costs if the company spent more money than envisaged. These arrangements would be specified at the price control review, through the "efficiency incentive rate". This has sometimes been called the "sharing factor".

10.7. The principle of an upfront efficiency incentive rate is reflected in all of Ofgem's current network price controls. We would retain this principle, but there would be some changes in how it is applied, calibrated and implemented. For instance, the efficiency incentive rate would affect the revenues that a network company can collect during the price control period. Under current regimes it is implemented through a revenue adjustment determined at the subsequent price control review.

10.8. The network company would face the same efficiency incentive rate for the duration of the price control period regardless of whether the company has spent more or less than envisaged. Building on developments in DPCR5, the same efficiency incentive rate would apply to operating expenditure and capital expenditure. This is needed to reduce the risks that network companies' expenditure decisions are distorted in favour of capital expenditure solutions. In the past, capital expenditure has effectively been subject to a lower efficiency incentive rate than operating expenditure; a lower rate means that a company's profits are affected less by variations in the company's actual expenditure during the price control period.

The level of the efficiency incentive rate

10.9. The efficiency incentive rates would be set at each price control review. As set out in Chapter 8, the incentive rate would vary across companies according to the IQI. We would decide the range of efficiency incentive rates for companies. There is no exact science to determining "optimal" rates, as evidenced by all regulators adopting similar approaches, and there are a number of issues to consider when determining the appropriate rates. We discuss the factors that would need to be considered below. For simplicity, we talk about factors affecting the appropriate level of the efficiency incentive rate, although in practice we would be deciding on a range (e.g. 40 to 50 per cent), with the exact rate for each company determined through the IQI mechanism.

10.10. We would undertake preliminary analysis to determine a lower bound for the incentive rate. The range of efficiency incentive rate would not be below this lower bound, but it could be above it (e.g. we might decide that the lower bound is 30 per cent, but set a range of efficiency incentive rates of 40 to 50 per cent). The lower bound would be needed to address the risk that, if the incentive rate was too low, a company could spend money unnecessarily (i.e. incur expenditure that is not needed to deliver current or future outputs) just to increase its regulatory asset value (RAV). This would not be in consumers' interests. This risk is explained in more detail in Box 10 below.

10.11. We would carry out analysis at each price control review to understand where the lower bound for the incentive rate should lie. The position of the lower bound would depend on other aspects of the price control framework that affect the income stream that a company can expect from additions to the RAV, such as the depreciation period and the way in which the allowed return is set. Further details on these elements are set out in Chapter 12). This analysis could be carried out using a spreadsheet model of the impact of additional expenditure on future cash-flows over the full depreciation period applied to expenditure funded through the RAV.

10.12. Subject to the lower bound, we would take account of a range of issues when forming a view on the efficiency incentive rate for the sector. We would consider the relative merits of setting a higher or lower incentive rate and we would also consider the benefits of having consistency in the incentive rate between price control reviews and also across companies and energy network sectors.

Box 10: Potential perverse incentives from a low efficiency incentive rate

If a regulated network company incurs additional expenditure today, it would be entitled to a greater stream of income in future years, through an upward adjustment to its regulatory asset value (RAV). This entitlement is intended to reflect the percentage of additional spend to be shared with consumers and provide some compensation and protection to the company in cases where it needs to spend more money than was envisaged when the price control was set. As described above, the upfront efficiency incentives are intended to have "risk-sharing" characteristics.

It is possible that a network company may value the future cash-flows that it expects through the RAV, as a result of additional expenditure, at more than the costs of that expenditure. If so, there is a risk that a company may incur additional expenditure not because it contributes to the efficient delivery of outputs, but because it is attracted to the future income streams from an enlarged RAV.

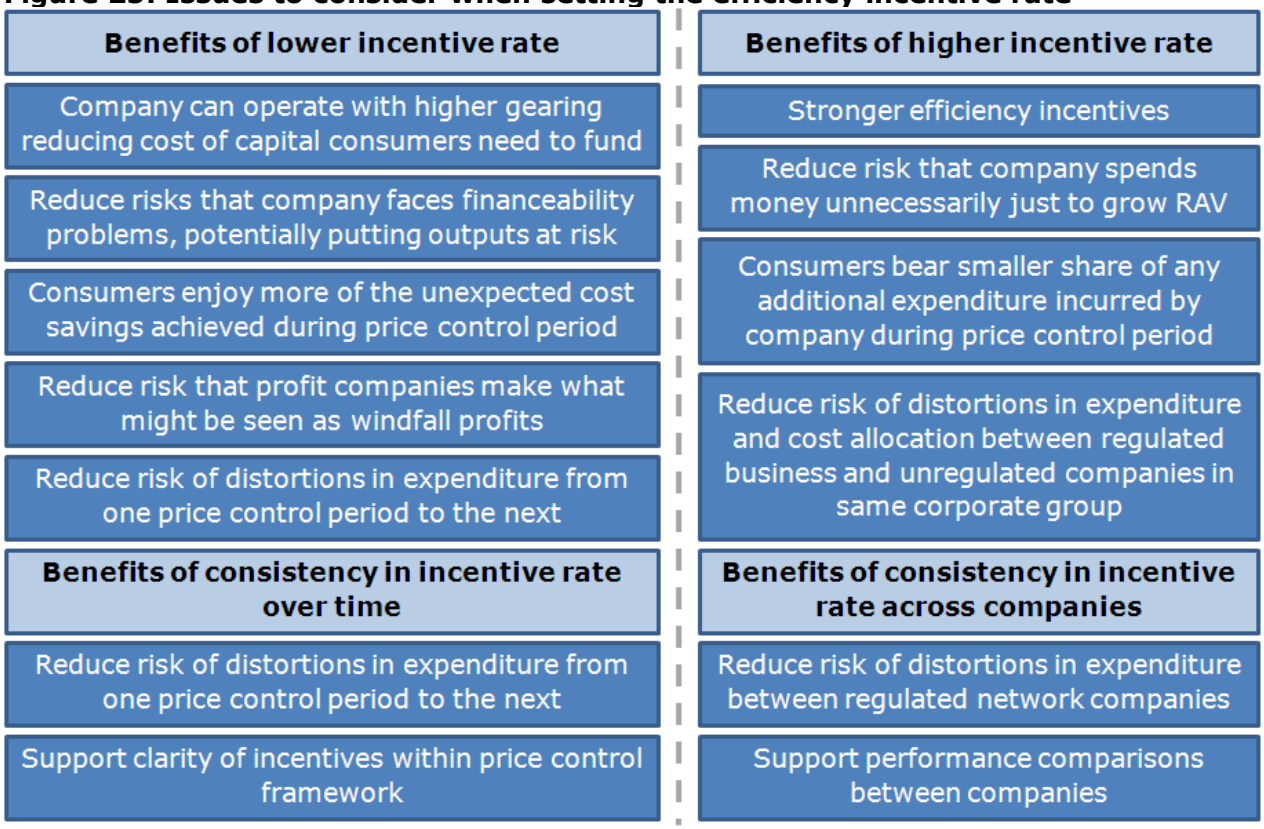
This risk arises because a company may be able to finance additional expenditure at a lower rate than the return it expects to earn on (additions to) the RAV: i.e. its expectation of the allowed return set in future price control reviews. This is for two main reasons. First, Ofgem faces uncertainty in setting an appropriate allowed return and it is possible that a particular company expects to be able to finance its activities at a lower rate. Second, the allowed return is intended to reflect the cash-flow risks from the overall price control but some cashflows may be very low risk, e.g. the future income streams from the opening RAV, and have correspondingly low financing costs which could reduce the level of the overall cost of capital.

We would assess this impact when considering the level of the efficiency incentive rate. It is expected that the higher the rate, the lower the risk of companies seeking to increase spend in this way.

10.13. We would set out our view on the range of the efficiency incentive rate for the sector towards the start of the price control review and retain the option to adjust the incentive rate as part of the risk-reward calibration exercise which would be updated as new information came to light during the price control process. We would take particular account of the interactions between the incentive rate and the appropriate allowed return. Further details on calibrating the incentives are set out in Chapter 12.

10.14. Figure 25 below sets out a range of considerations that we would take account of. The range of issues illustrated may not be exhaustive and other factors may be considered during a price control review. The importance of each of these considerations would reflect other aspects of the price control. For instance, the need to provide stronger efficiency incentives through the efficiency incentive rate depends, in part, on the length of the price control period. Similarly, the required allowed return depends, in part, on the uncertainty mechanisms to be included in the price control.

Figure 25: Issues to consider when setting the efficiency incentive rate



10.15. We recognise that it may be appropriate to exclude a specific category of expenditure from the main efficiency incentive rate arrangements and instead apply a 100 per cent efficiency incentive rate to them. For instance, where a regulated network company is part of a wider corporate group, there are risks that an efficiency incentive rate below 100 per cent could encourage it to distort its allocation of certain overhead costs, to the detriment of network customers. If the main efficiency incentive rate is, say, 50 per cent, there might be case for applying an incentive rate of 100 per cent to a well-defined set of overheads costs. An approach along these lines was taken for "business support costs" in DPCR5[22]. There would need to be a clear justification for such a differential treatment, and we would expect it to apply to only to small proportion of a network company's expenditure.

Implementation of the incentive rate

10.16. We would develop transparent rules for application of the efficiency incentive rate at the price control review, specifying how differences between expenditure assumed in the price control and actual expenditure would feed through to changes in revenues that companies were allowed to collect from customers. These rules would be based on a spreadsheet model that would provide a way to adjust the revenues the company was allowed to collect in future years to expose the company

[22] See our website for DPCR5 documents: http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Pages/DPCR5.aspx

as accurately as possible to the intended incentive rate. The adjustments made to implement the incentive rate would be applied annually during the price control period. Adjustments would be made with a time lag to ensure they were based on audited expenditure data and to avoid the need to make two adjustments (one based on forecast spend and another based on actual audited data).

10.17. The rules would give equal treatment to different types of expenditure. For example, the breakdown of over-spend (or under-spend) between operating and capital expenditure would not affect the amount, or timing, of money the company was allowed to collect from customers. A fixed proportion of any over-spend (or under-spend) would feed through to the revenue the company could collect in the subsequent year. The remainder would feed through to the RAV and, in turn, affect the revenue the company could collect in future years. Within the price control period we would make revenue adjustments reflecting this change to the RAV.

10.18. The level of the incentive rate would determine the extent to which the RAV was adjusted in light of a given over-spend or under-spend. For instance, in the case of an over-spend in a given year, there would be an upward adjustment to the RAV. But, as the incentive rate would be above zero, this would be less than the scale of the overspend. The higher the incentive rate, the smaller the adjustment. As such, the RAV would not track actual expenditure but reflect a combination of expenditure forecast by Ofgem at the price control review and the actual expenditure incurred.

10.19. These arrangements would represent a change in how the efficiency incentive rate is currently implemented to address concerns that upfront efficiency incentives do not work effectively under current arrangements. This is due to a number of reasons:

- under the existing approach, the RAV is adjusted at each price control review to reflect differences between forecast and actual expenditure in the previous price control period (e.g. to reflect the full value of any over-spend). The incentive rate is then implemented through a separate short-term adjustment to price control revenues to partially offset the RAV adjustment. The level of the efficiency incentive rate (which is intended to determine the extent to which consumers and investors are exposed to over- or under-spends) has no impact on the RAV. As the RAV is more visible, the arrangements risk creating (or maintaining) perceptions that, over the long-term, a company will be fully compensated where it spends more than the expenditure expected when the price control was set;
- the risks identified in Box 10 are greater where the RAV is adjusted to fully reflect any differences between forecast and actual expenditure; and
- the efficiency incentives are intended to compensate companies where they need to spend more than expected at the price control review, and compensate consumers where companies do not need to spend as much. However, current arrangements mean that any compensation due for a particular year of the price control is unnecessarily delayed until the subsequent price control period.

No discretionary adjustments for over- or under-spends

10.20. For the upfront efficiency incentives to work as intended, we would need to make a firm commitment that the incentive rate set at the price control review would be honoured. We recognise that this would require a commitment not to make discretionary adjustments to the revenues that companies were allowed to collect, based on comparisons between what a company actually spent and the expenditure forecast at the price control review. We would provide this commitment save in the exceptional circumstances outlined in paragraphs 10.23 to 10.27.

10.21. Provided that a company delivered the outputs agreed at the price control review, it would enjoy the benefit of any under-spend relative to the expenditure assumed in the price control, to the extent specified by the incentive rate. For instance, if the incentive rate was set at 40 per cent, investors should enjoy 40 per cent of the value of the under-spend (before tax). We would not make discretionary adjustments to "claw back" differences between the base revenue allowances set at the price control review and what a company actually spent. Indeed, we would not undertake any detailed assessment of the expenditure level as long as outputs were being delivered. If there is a concern with output delivery then the application of financial output incentives and our approach to secondary deliverables may mean that we review actual expenditure and adjust revenue to reflect it.

10.22. If a company spends more than envisaged at the price control review it would receive additional revenue, in line with the commitment given by the incentive rate (e.g. 40 per cent of the value of the over-spend). We would not provide additional funding on a discretionary basis to compensate for unexpectedly high expenditure.

Clarity on limited role for ex post efficiency assessments

10.23. Consumers would share the risks, through the efficiency incentive rate, of the expenditure decisions that companies take during the price control period. The proposed approach towards upfront efficiency incentives is intended to provide clear and strong financial incentives to avoid wasteful expenditure.

10.24. As discussed above, application of the incentive rate would not be conditional on judgements by Ofgem about the efficiency of network company decisions. During the price control period, companies would decide on the best value delivery approaches, driven by the efficiency and output incentives in the framework. As discussed in Chapter 8, when assessing expected efficiency costs for the next price control review we would consider information on historical costs alongside other data to form our view. As such, decisions taken during one period would affect future price controls. In general, we would not make changes to revenue during the current period, save through the application of the efficiency incentive rate.

10.25. We would reserve the option, in exceptional circumstances, to make an adjustment that would over-ride the mechanistic sharing of actual expenditure between investors and consumers through the efficiency incentive rate. If we could

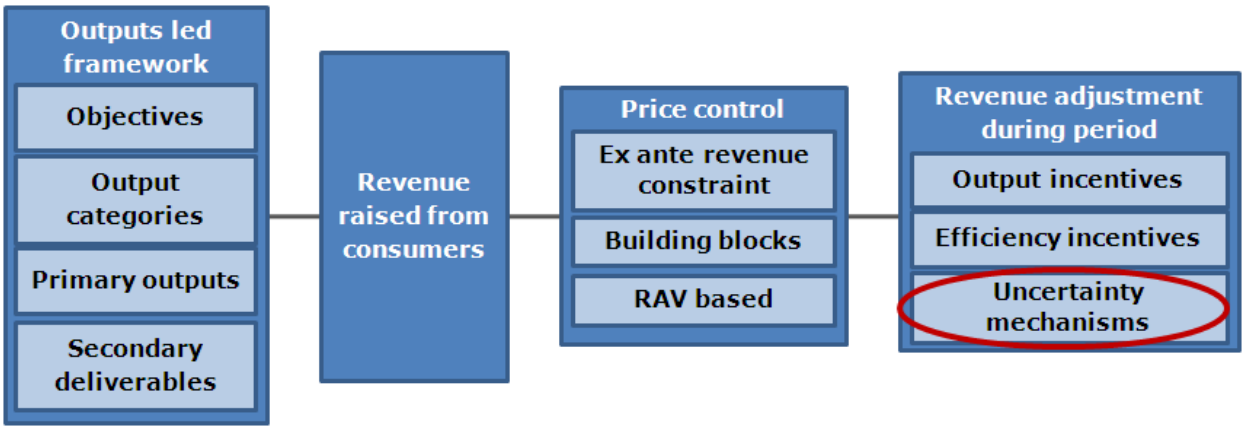
demonstrate that a network company had wasted money we may need to make an adjustment so as to prevent consumers from bearing a proportion of that waste.

10.26. We envisage there would be a reasonably high hurdle for such an adjustment although we would be mindful at all times of our duty to promote efficiency and economy on the part of the network companies, and the duty of the network companies to develop and maintain efficient, co-ordinated and economical networks. We would need to show that expenditure decisions taken by the company were unreasonable at the time they were made, in light of the information available at that time. We would not use this option to penalise companies that took reasonable decisions to anticipate future customer needs or to experiment with new delivery approaches, even if these turned out to be unsuccessful with the benefit of hindsight.

10.27. In considering potential adjustments of this nature, we would need to take account of the context in which a company has taken expenditure decisions. There are conceivable circumstances in which it would be unwise to rely on the upfront efficiency incentives. For instance, if a company was owned by an organisation that did not pursue profit objectives, we may need to take a more active role in assessing whether it had wasted money during a price control period.

11. Managing uncertainty within the price control period

Chapter summary
We set out how uncertainty would be managed during the eight-year price control period. We provide a set of principles that would underpin decisions on the role of specific uncertainty mechanisms at future price control reviews.



11.1. Under Sustainable Network Regulation the price control would be based on forecasts of: output requirements; demand for network services over time; cost of delivery (including input prices) and financing costs. The ex ante nature of the regime would mean there would always be uncertainty about the reasonableness of the forecasts. As a result, several risks could arise, including the possibility that:

- revenues raised from consumers could be higher/lower than necessary to cover the costs of providing network services, with consumers paying more/less for network services than was required. Under both scenarios consumers would have to pay more otherwise investors would make below average returns; and
- the primary outputs (and potentially secondary deliverables) that we agree with network companies may turn out to be insufficient or inappropriate.

11.2. Under Sustainable Network Regulation, the price control would be extended from five to eight years and therefore the level of uncertainty over the price control period would inevitably be greater. We would also be asking network companies to make decisions about the longer-term, including taking action in the current price control period to deliver primary outputs and value for money in future periods.

11.3. Recognising these issues, as set out in Chapter 5, provisions would need to be in place to allow revenue to adjust during the price control period in response to changes in operating conditions. We intend to limit the number and complexity of uncertainty mechanisms whilst ensuring efficient delivery is financeable and long-term value for money is delivered. We would expect network companies to bear their own business risk and therefore uncertainty mechanisms should only be used where action is required due to changes outside of network company control which could significantly impact cost.

11.4. In this chapter we explain the options available to manage uncertainty during the price control period in an ex ante price control framework. The options are broadly the same as under RPI-X regulation, although some new options have been introduced.

11.5. The options would also be the same whatever the length of the price control period. It is the extent to which the options are used, and the choice of option, that is potentially influenced by the length of the period. We focus on the principles that would be used to make choices between different uncertainty mechanisms at a price control review. We elaborate on two important areas: price uncertainty and general indexation, and volume uncertainty.

Options for managing uncertainty

11.6. The main sources of uncertainty during a price control period relate to what networks need to deliver (outputs), input prices, volumes of activity required and combinations of these. Under Sustainable Network Regulation, we would have a number of different options to deal with uncertainties over outputs, price and volume risk as part of the price control package. These include, but are not limited to:

- risk sharing through the efficiency incentive rate;
- uncertainty mechanisms;
- a mid-period review of output requirements; and
- our general financing duty.

11.7. We explain each of these below.

11.8. Whatever arrangements are in place to manage uncertainty, we need to set the allowed return to reflect cash-flow risks faced by the network company as set out in Chapter 12. We would take account of potential implications for the cost of capital in deciding how best to manage uncertainty. For example, we may be concerned about the downsides of using a wide set of uncertainty mechanisms (e.g. complexity and administrative burden during the price control review) and assess whether any benefits from a lower cost of capital would be sufficient to justify these downsides.

Risk-sharing through the efficiency incentive rate

11.9. The lower the efficiency incentive rate, the less financial exposure a network company has to the risks of its actual expenditure being higher or lower than Ofgem envisaged. As discussed in Chapter 10, the upfront symmetric efficiency incentive rate would share the risks of actual costs being different to what was assumed in the price control between consumers and investors. As such, this would provide network companies with some protection against the risks associated with uncertainties related to the price control.

Uncertainty mechanisms

11.10. Uncertainty mechanisms allow changes to the revenue allowance to be made (upward or downward) during the price control period. They may be used to protect the network companies from cost changes outside of their control and the form they take may depend on the outputs companies need to deliver. Uncertainty mechanisms might be triggered by, for example, changes in prices, volumes, primary outputs or secondary deliverables. There may also be mechanisms in place to adjust revenue for key financial parameters such a pension funding deficit.

11.11. Figure 26 provides an overview of the types of uncertainty mechanisms, split into three categories based on their design. These three categories are:

- **uncertainty mechanisms fully-calibrated at the price control review**: the magnitude of revenue adjustments are set at the price control review and the precise number (e.g. in £m per unit) are written in the licence. Such mechanisms are "mechanistic" in that we would not carry out a review to adjust revenue but it changes in line with an agreed formula/rule specified at the price control review;
- **forward-looking revenue adjustment determined by Ofgem during the price control:** the magnitude of the revenue adjustment is set during the price control period in light of an updated assessment of the company's expected expenditure requirements; and
- **revenue allowance determined after the company incurs the relevant expenditure:** the magnitude of the revenue adjustment is set in light of data on the actual expenditure incurred by the company or comparable companies.

11.12. Examples of the types of uncertainty mechanisms available in each of these categories are explained further in Figure 27 and Table 5.

Figure 26: Different types of uncertainty mechanism

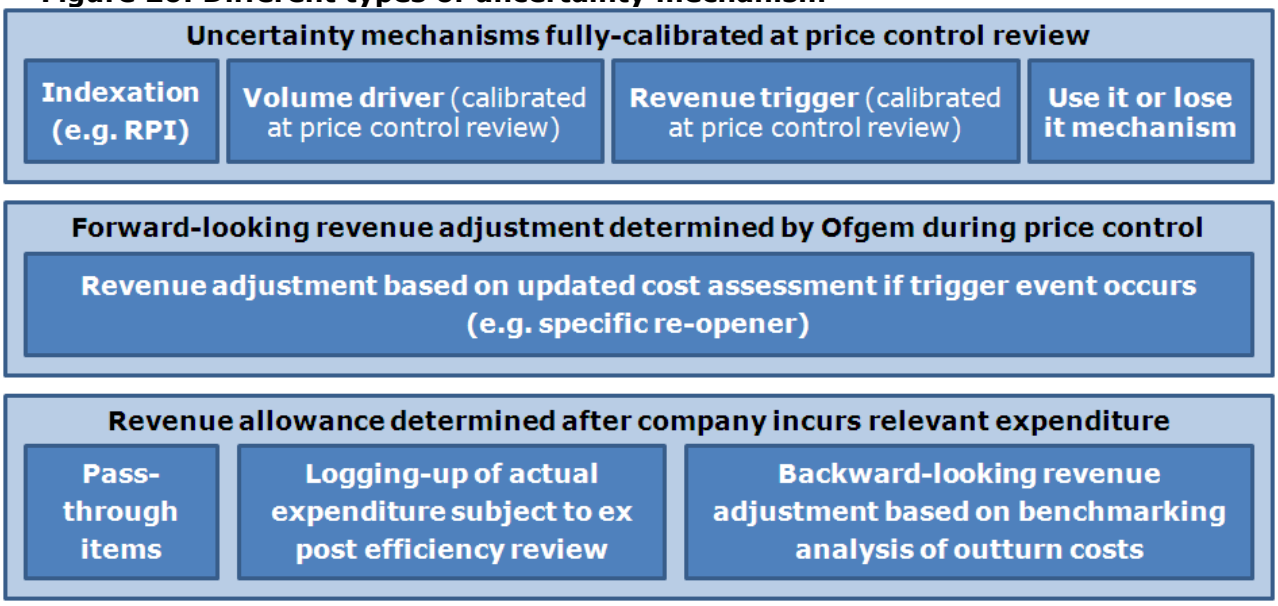


Table 5: Description of types of uncertainty mechanism

Tool	Summary of provision in price control licence
Indexation	Provision that adjusts the revenue that the company is allowed to collect from customers according to changes in a specified price index (e.g. the RPI or a published input price index).
Volume driver calibrated at price control review	Provision such that the revenue that the company is allowed to collect from customers is set to vary as a function of a volume measure (e.g. number of new connections).
Revenue trigger calibrated at price control review	Provision that the revenue that the company is allowed to collect from customers is set to increase/decrease by a specified amount (or in a specified way) if and when certain trigger events occur during the price control period.
Use it or lose it mechanism	The revenue a company can collect under the price control includes an allowance for expenditure on a specified activity or purpose, with a provision that future revenue allowance will be adjusted to remove this allowance if it is not used as intended.
Revenue adjustment based on updated cost assessment if trigger event occurs (e.g. specific re-opener)	Provision that allows for a specific part of the company's revenue allowance to be reviewed and potentially adjusted by Ofgem during the price control period, on a forward-looking basis, if and when specified conditions are met (e.g. if a measure of customer demand exceeds a specified thresholds).
Pass-through items	Provides that the company would be fully or partially compensated for costs it incurs in specified areas of expenditure or on specified items (e.g. Ofgem licence fees).
Logging up of actual expenditure subject to ex post efficiency review	Provides that a company will be fully compensated for its actual expenditure on a certain activity, through the revenue allowance set at the next price control review, at least insofar as Ofgem determines the relevant expenditure was efficiently incurred.
Backward-looking revenue adjustment based on benchmarking analysis of outturn costs	Provision that a company will receive an amount of revenue, in respect of a particular activity or output, which Ofgem will determine based on benchmarking analysis of other companies' actual expenditure on that activity or output. This mechanism may be considered where the activity or output is new and there is no historical expenditure data to use for benchmarking at the time the price control is set.

11.13. Details of how and when we would expect to use uncertainty mechanisms and the design options are set out in paragraphs 11.25 to 11.34. Under Sustainable Network Regulation, a set of uncertainty mechanisms would be developed during the price control review. These would allow revenue to flex during the price control period to deliver value for money for existing and future consumers while protecting the ability of networks to finance efficient delivery. We would expect uncertainty mechanisms to be justified to limit, as far as possible, the number that are developed.

Mid-period review of output requirements

11.14. As discussed in Chapter 6 we would include provisions for a review of the primary outputs that network companies are required to deliver mid-way through the

eight-year period. The review may be particularly important when the outputs-led framework is first implemented and in periods of significant change (for example, the transition to a low carbon economy in electricity). This review would be conducted in the fourth year of the eight-year price control and would have effect from the start of the fifth year. We expect that the six output categories would remain valid but, within an eight year period, there may be a need to change the primary outputs, for example, to introduce measures to reflect new government targets on connections for electric vehicles or tighter renewable targets.

11.15. We would specify in final proposals, and in licences, how the mid-period review would work and what would be included in scope. We would provide commitment that any mid-period review would not extend to other aspects of the control. There are other elements of the framework to manage these issues where appropriate (e.g. uncertainty mechanisms, updates to cost of debt based on a ten-year trailing average, adjustment for the efficiency incentive rate within period, and rewards/penalties for output delivery). The tightly define scope of the review would be necessary to manage any risk of undermining the incentive benefits of the longer price control period.

11.16. When considering a mid-period review, we would first assess whether output requirements needed to change. If we decided that a material change was needed we would review whether and to what extent the revenue in the price control would need to change. The review may be limited to a short consultation process if we decide that we do not need to change the outputs set at the price control review.

11.17. We would need to have a clear case that the existing set of outputs did not deliver what customers need before making any changes at the mid-period review. We do not envisage that this provision would be used to address minor issues, for example, whether a particular output target is set at 98 per cent or 99 per cent. We would set out at the comprehensive price control review the grounds on which we would consider undertaking a mid-period review. In taking any decisions on a mid-period review we would need to consider the risks from introducing instability in to the outputs and distracting network companies as well as the administrative costs.

11.18. If we decided that we needed to change the primary outputs, we may need to adjust the revenues allowed under the price control to compensate companies (if the requirements are increased) or to compensate consumers (if the requirements are reduced). Any changes to allowed revenues would focus on the incremental impact on expenditure requirements from the specific change to outputs, without re-opening the whole price control. The adjustments would represent the minimum necessary to compensate network companies/consumers for changes in requirements. The review of outputs would not provide an opportunity to adjust revenues for any other reason (e.g. unexpectedly high input prices). We would make this clear to stakeholders and provide a firm commitment to this at the price control review.

11.19. This process would work through arrangements specified in the licence conditions agreed with the company at the end of the price control review. It would depend on a determination, by Ofgem, of an appropriate revenue adjustment to compensate for any changes to outputs. Before making such a determination, we

would engage with stakeholders and publish a draft adjustment alongside supporting analysis, for consultation.

11.20. The review would provide an opportunity to change the primary outputs in the remaining years of the price control period. It would not apply retrospectively. Even if primary outputs were changed, companies would still be held to account for their performance to that point in delivering the original set of outputs.

Our general financing duty

11.21. When setting a price control, Ofgem seeks to provide a licensee with a revenue stream that is expected to be sufficient to enable it to finance efficient delivery of its obligations. We set out in Chapter 12 our principles for assessing financeability under Sustainable Network Regulation.

11.22. Our statutory duties (including the financing duty[23]) do not only apply at the time that a price control is set. If circumstances arise during the control period where the revenue allowance set at the price control review is insufficient to enable an efficiently managed company to finance its regulated activities we would consider requests from companies for amendments to their price control. If there was sufficient justification to do so, the price control would be re-opened.

11.23. Ofgem has recently issued a guidance document[24] which, when taken alongside our general financing duty, makes this duty more explicit by providing greater transparency and clarity on the types of circumstances under which a price control would re-opened and the likely process it would involve, including:

- it can be demonstrated that adequate provision is not provided by the existing price control settlement;
- 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.

11.24. Our general financing duty means that network companies are able to request changes to be made to the price control in the event that financeability is put at risk and can be seen as a way of managing the impact of highly significant uncertain events which could occur during the price control period. As such, invoking our general financing duty would be expected to be rare.

[23] The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them. 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).

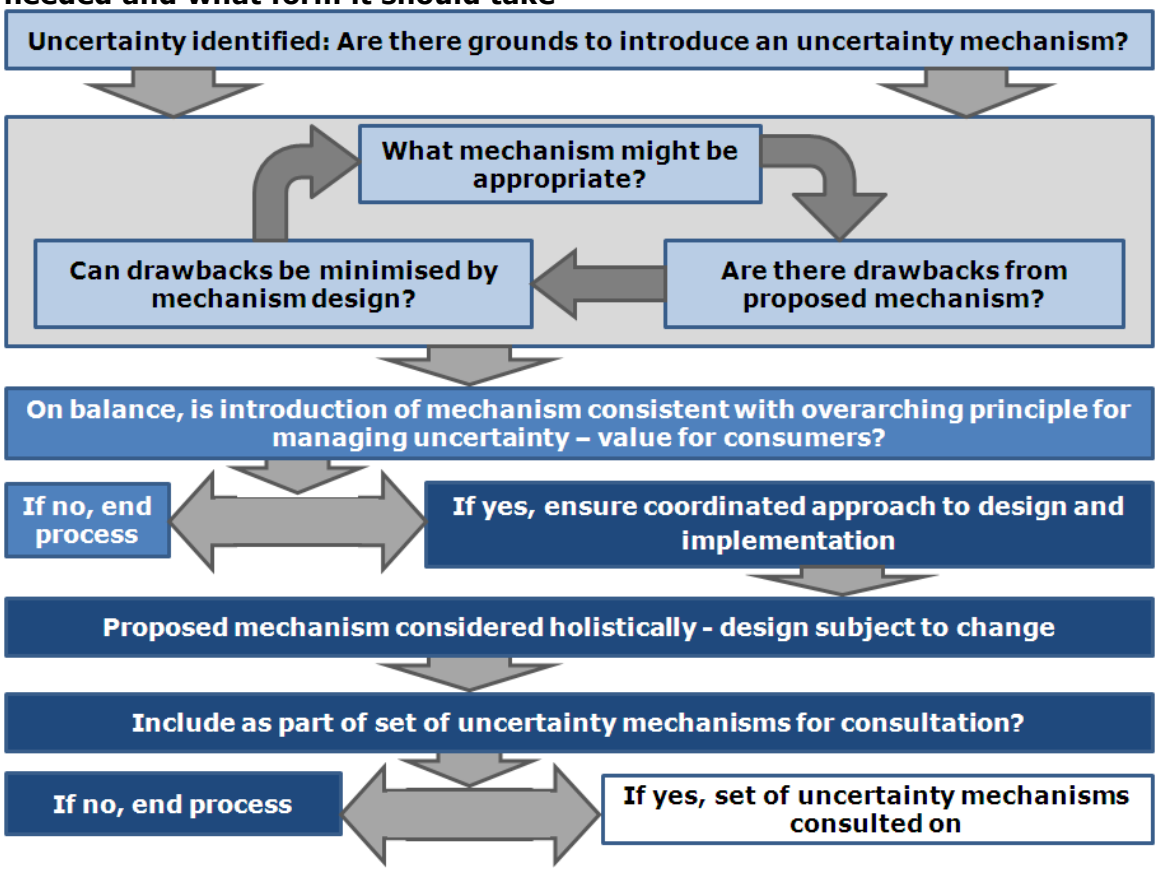
[24] Arrangements for responding in the event that a network company experiences deteriorating financial health – Guidance document. See chapter 4 - http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=259&refer=Networks/Policy

Using uncertainty mechanisms

11.25. Decisions on whether and how to implement an uncertainty mechanism would be made at a price control review, taking account of the specific circumstances facing the sector at the time and other elements of the price control package.

11.26. We set out here the range of issues we would consider when deciding whether to implement or remove an uncertainty mechanism as well as outlining the options that we would consider in their design. The nature of the process involved is illustrated in Figure 27.

Figure 27: Process to determine whether an uncertainty mechanism is needed and what form it should take



11.27. Under Sustainable Network Regulation, uncertainty mechanisms would be agreed during the price control review with the rules governing their operation specified in the licence. To ensure that the decision to implement an uncertainty mechanism is consistent with the principles set out here, there would be clear responsibility within the price control team for monitoring the design and implementation of the potential range of proposed uncertainty mechanisms. There are a number of potential advantages to having a coordinated approach. In particular, it would help to:

- ensure there was a clear rationale for inclusion of every uncertainty mechanism introduced at the price control. The decision to include an uncertainty mechanism would need to be based on clear grounds and take account of the potential drawbacks of the mechanism;
- avoid undue complexity and provide greater transparency on the rationale for proposed changes to the regime, consistent with principles of better regulation;
- prioritise resources during the price control review process to focus on areas that would offer the greatest benefits to consumers. Areas where uncertainty mechanisms may be required or removed should be identified at an early stage in the price control, alongside potential design options. We would seek to avoid, save in exceptional circumstance, adding new uncertainty mechanisms at a late stage in the review process;
- ensure every uncertainty mechanism was considered holistically in light of other mechanisms and the wider price control package. This would be expected to promote greater consistency and simplicity in the design of any uncertainty mechanisms. For example, holistic consideration of proposed mechanisms could present opportunities to "bundle" those with similar aims. This might be seen as a way of reducing complexity. In DPCR5, a bundled reopener for low-volume high-cost connections and general reinforcement costs was introduced; and
- limit opportunities for network companies to "game" mechanisms off each other by ensuring more formal consideration of how the mechanisms work together in the package.

11.28. The process for determining whether to implement uncertainty mechanisms and how any such mechanisms should be designed would vary according to the type of mechanism being considered, other elements of the price control package, and the precise circumstances of the sector at the time of the price control review. The process of determining the case for a mechanism and associated decisions on the design of that mechanism would be intrinsically linked. Design changes would be likely to enhance/reduce the grounds for the use of any mechanism and vice versa. For simplicity, we look at the aspects of the discussion discretely below, recognising that they would need to be considered together when the principles are being implemented in a price control review. Figure 27 above highlights this.

Deciding whether or not to introduce an uncertainty mechanism

11.29. Our overarching principle for using uncertainty mechanisms, rather than other options, is set out in Box 11 below.

Box 11: Overarching principle for uncertainty mechanisms

We would expect network companies to manage the uncertainty they face. The regulatory regime should not protect network companies against all forms of uncertainty. The use of uncertainty mechanisms should be limited to instances in which they would deliver value for money for existing and future consumers while also protecting the ability of networks to finance efficient delivery.

11.30. Under Sustainable Network Regulation there would be provisions, as part of the mid-period review, to allow changes in primary outputs to be made. Table 6 provides an overview of the other uncertainty mechanisms available under the framework and the potential benefits associated with each. We would need to have regard to these potential benefits, as well as the overarching principle for uncertainty mechanisms set out in Box 11, when making a decision about whether or not to introduce an uncertainty mechanism at a price control review. The list may not be exhaustive and other issues may be considered at the time. It may be that more than one of the potential benefits applies. Where this is the case, this would be expected to increase the rationale for the introduction of a specific mechanism to manage uncertainty.

Table 6: Potential grounds for introducing an uncertainty mechanism

Reason	Explanation
To lower the cost of capital	May reduce the financing costs faced by network companies and, in turn, the allowed return Ofgem should allow in setting the price control. This lower allowed return would feed in to lower consumer prices. Chapter 12 discusses further the risk-return calibration.
Reduce financeability concerns	May reduce the risk of the network company facing financeability problems and, in turn, reduce the risk that Ofgem needs to re-open a price control (which would be costly[25]) to provide additional revenue to the network company.
Reduce consumers' exposure to forecasting uncertainty at price control review	There may be reasons to employ an uncertainty mechanism where forecasting cost/demand is challenging due to the uncertainty involved. In some cases it may be beneficial to, for example, introduce an uncertainty mechanism and re-investigate the costs/demand with the benefit of more relevant information, e.g. once prices from market testing are known. One reason for this might be to minimise the potential of windfall gains for network companies, reflecting good luck more than good management.

11.31. The potential benefits need to be considered alongside the potential drawbacks, outlined in Table 7 below. This ensures that we would be taking an "on balance" decision, recognising the implications (both upsides and downsides) of introducing a mechanism or not. When evaluating the benefits and downsides of implementing an uncertainty mechanism it would be important to consider these relative to the potential benefits of using a different approach to managing uncertainty. It would also be important to consider the balance for alternative designs of uncertainty mechanisms.

11.32. The importance of taking this balanced approach can be demonstrated by a stylised example. A key factor in making a decision on introducing an uncertainty mechanism might be that it would reduce network companies' cost of capital -

[25] Potential costs include: Possible introduction of instability and undermine regulatory commitment to the regime; expectation that the control would be re-opened can change the behaviour of network companies and may undermine incentives for cost efficiency; and if additional funding is provided to encourage a network to provide specific outputs, there is a risk of consumers "paying twice" for those outputs where it is unclear whether or not the original revenue allowance was intended to cover them.

lowering prices for consumers. However, its introduction may also dampen efficiency incentives, making costs higher, countering the reduction in the cost of capital. This is discussed further in table 7 below. The key question might be, does introducing the mechanism lead to benefits from a reduction in the cost of capital that are greater than the consumer benefits associated with incentives that encourage network companies to drive down costs which will be shared with consumers?

Table 7: Potential drawbacks of introducing an uncertainty mechanism

Reason	Explanation
Can undermine incentives for efficiency	Options to mitigate or remove uncertainties facing network companies need to be considered against the incentives they may create. For example, uncertainty mechanisms that enable companies to pass more of their costs through to customers would provide protection to the company, but may also reduce or eliminate their incentive to manage costs and uncertainties efficiently. The potential to undermine efficiency incentives was recognised by the Competition Commission in their recent provisional findings report on Bristol Water's price control.[26]
Price volatility	Network companies use network charges to recover the allowed revenues set at the price control review. Depending on how an uncertainty mechanism is specified, changes to the allowed revenue during the price control may contribute to volatility in charges for end users. As discussed in Chapter 5, we would allow companies to make applications during the price control period to re-profile revenue collection to address price volatility where this is in consumers' interests, but this process would bring its own administrative burden.
Risk of unintended consequences	The use of uncertainty mechanisms may have unintended consequences: they may provide the regulated companies with opportunities to exploit the uncertainty mechanism and obtain money for things they were not intended to allow. The risk may be exacerbated where there are multiple uncertainty mechanisms in operation which may interact with each other and with the wider regulatory regime. This could provide opportunities for network companies to "game" mechanisms off each other.
Increase complexity of regime	Uncertainty mechanisms can add to the complexity and may reduce transparency of the regulatory regime. On the grounds of better regulation it may be desirable to limit the use of these tools.
Resource costs	Designing, implementing and managing uncertainty mechanisms carries a cost for Ofgem and network companies. This should be recognised and steps taken to ensure resources are appropriately targeted such that mechanisms are designed consistently and holistically, based on the uncertainty they are addressing.

Options on the design of an uncertainty mechanism

11.33. The uncertainty mechanisms outlined in Figure 26 and Table 5 above have been given discrete descriptions, but in reality there are numerous forms that the

[26] Competition Commission (June 2010), "Bristol Water plc: A reference under Section 12(3) of the Water Industry Act 1991 – Provisional Findings." http://www.competition-commission.org.uk/inquiries/ref2010/bristol/pdf/pfs_for_publication.PDF

design of an uncertainty mechanism could take. For example, there could be design differences in the timings associated with when a network company receives a revenue adjustment and the way the mechanism is triggered. The design of the mechanism would likely play a crucial role in delivering benefits and mitigating against any drawbacks of an uncertainty mechanism (set out in tables 7 above). Table 8 below sets out some of the design options which could be considered when developing an uncertainty mechanism. The options should not necessarily be seen as independent of each other. We would take account of the potential grounds and drawbacks (outlined above) of these design options, on a case-by-case basis, when reaching a balanced decision on the appropriate design. We would also ensure that we learn from experiences of using similar designs and mechanisms in the past.

11.34. Where possible, we would seek to design uncertainty mechanisms such that there is transparency over when and how we would adjust revenue during the control period. This would benefit investors and consumers of network services as they would be better able to understand and make assumptions about how revenue might evolve during the period. As such, learning from developments such as the introduction of application windows in DPCR5 may be important. Under DPCR5 we introduced two one-month reopener windows for each of the proposed specific reopeners in the package. This was done to try and reduce the volatility in charging from such mechanisms which ultimately impact on consumers and users of the network and to allow us to make comparisons between DNOs at the same time.

Table 8: Aspects of design that we need to consider

Aspect of design	Explanation
Mechanistic trigger to adjust revenue	Some mechanisms can be entirely mechanistic, whereas others require companies/Ofgem to justify the need for a change in revenues. Where a trigger is based on judgement clear guidance is required. The trigger event itself might be linked to: a particular time (e.g. within clearly defined "windows", a project milestone, cost threshold or some measure of volume).
Timings of payment to a network company	The timings of a change to allowed revenue can vary based on the choice and design of the specific tool. Timing of payment may be, when the price control is set, after the price control period or when triggered during the price control period and ,as such, will impact areas such as the volatility of network charges. For highly material costs, the timing of the payments should, in general, be quick and may make the use of certain mechanisms (e.g. logging up) less appropriate.
Calculation of additional/reduction in payment level	This may be determined when the price control is set, after the price control period or once triggered during the price control period. Later calculation can benefit from more up-to-date information, but can require more resource to manage; be less simple; and may be a source of uncertainty itself.
Symmetric vs. Asymmetric	It may be desirable to design mechanisms that flex revenue both up and down in response to uncertainty. Symmetric mechanisms may be regarded as being consistent with the interests of both consumers and investors.

Inflation

11.35. The purpose of indexing the price control is to provide investors in network companies with protection against general price inflation which is outside their control. Protecting them in this way benefits customers through a lower cost of capital. The indexation of price controls therefore represents a form of uncertainty mechanism.

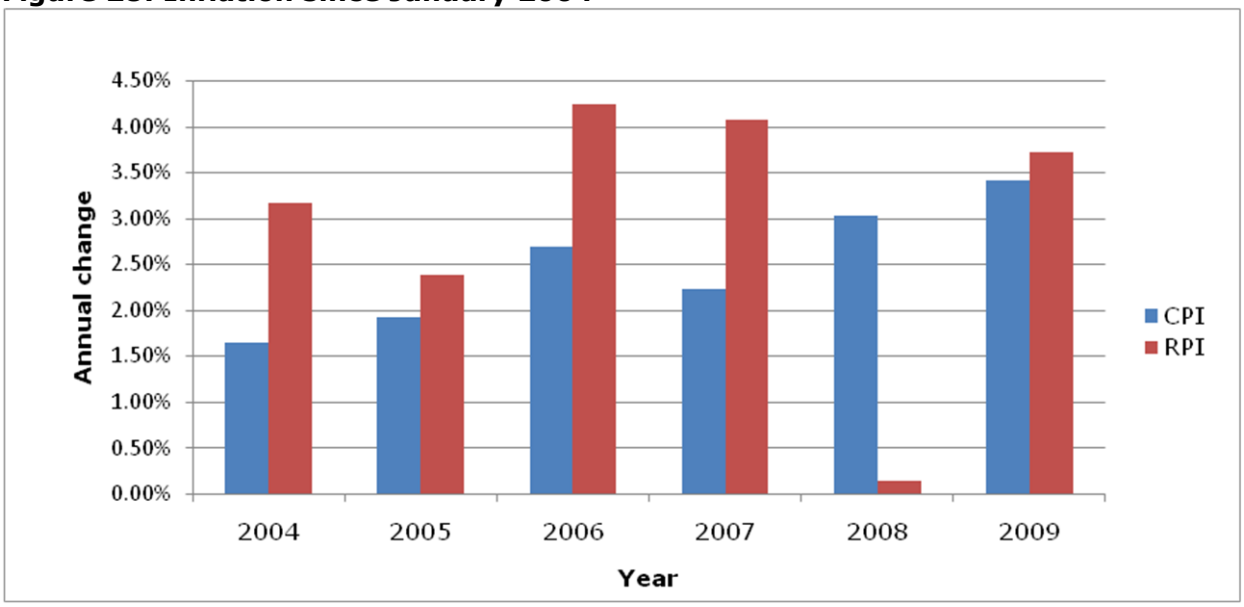
11.36. Indexation does not take away companies' responsibility for efficient delivery of outputs and for efficiently financing their activities. Companies remain exposed to the impacts of their decisions in these areas.

11.37. In this section we provide an assessment of options for indexing the price control. We would welcome the views of interested parties on which approach represents the best option under Sustainable Network Regulation.

Why are we considering changing our approach?

11.38. At privatisation, the retail prices index (RPI) was the prominent inflation index in the UK. Since 2003, however, the Bank of England has used the consumer prices index (CPI) as the target measure of inflation for monetary policy, and CPI has become an increasingly established measure of general inflation. Though no index is perfect, CPI is therefore a credible alternative index for setting price controls.

Figure 28: Inflation since January 2004



Source: ONS

11.39. Headline CPI growth is now 180 basis points below headline RPI (3.2 per cent versus 5.0 per cent in June 2010) and the CPI has grown at a slower rate than RPI

since 2003. The CPI has also been less volatile to date as illustrated in Figure 28. Box 12 provides an overview of the drivers of the difference between growth in CPI and growth in RPI.

11.40. Whether a switch to CPI indexation would be in consumers' interests depends on how the choice of index affects other aspects of the price control framework, including the setting of the allowed return.

Box 12: Drivers of differences between CPI growth and RPI growth

Differences between CPI and RPI arise from the following methodological differences:

- **the formula effect:** the CPI is calculated using a geometric mean formula whereas the RPI is calculated using an arithmetic approach to averaging. The difference in calculation results in the "formula effect", which the Office of National Statistics suggests has made the RPI growth approximately 0.5 percentage points higher on average than the CPI growth (measured in 12-month rates of change);
- **housing effect**: the CPI does not currently take account of a number of housing elements which are included in the RPI, including mortgage interest payments. The inclusion of mortgage interest payments and other housing costs in the RPI has, on average, increased the growth in RPI approximately 0.4 percentage points[27] as compared to the growth in CPI, over the period January 1997-April 2010; and
- **other differences**: other differences in aspects, such as coverage and the weights given to particular items, increased the CPI inflation by approximately 0.06 percentage points[28] above RPI inflation.

The impact of the housing effect may change, however. The government announced, shortly after taking office, it "*will work with the Bank of England to investigate how the process of including housing costs in the CPI measure of inflation can be accelerated*"[29]. This is being considered in the context of the appropriateness of the index for setting monetary policy.

How do we currently index the price control?

11.41. Under the existing energy network price controls, the total revenue that network companies are allowed to collect (which includes allowances for depreciation and an allowed return on the RAV) is adjusted in each year of the price control to reflect growth in an inflation index (currently the RPI)[30].

[27] Ofgem calculation using ONS data
[28] Ofgem calculation using ONS data
[29] "The Coalition: Our programme for government", available from: http://programmeforgovernment.hmg.gov.uk/files/2010/05/coalition-programme.pdf
[30] For ease of exposition we focus on the main building blocks in the revenue calculation, recognising that other elements (e.g. tax, adjustments for incentive mechanisms) also have an impact. They are less relevant for discussions on the choice of inflation index and do not affect our analysis.

Forecasting real price effects at the price control review

11.42. In recent price control reviews, we have explicitly recognised that network company input prices are likely to change at a different rate to RPI. We make adjustments for "real price effects" (RPEs), which represent our forecasts of expected increases (or decreases) in input prices relative to RPI. For example, if we thought that the input prices that network companies face would grow (on average) at 1 per cent more than the RPI, we would build in an adjustment of 1 per cent per year to the expenditure forecasts made assuming constant input prices. These forecasts are difficult and somewhat subjective and discussions on the appropriate level of the RPE may be influenced by the index of general inflation used (i.e. currently the RPI).

11.43. Under Sustainable Network Regulation, we would continue to adjust expenditure in the price control for RPEs. As outlined in Chapter 7, as part of their well-justified business plans, we would ask network companies to provide their estimates of the expected costs of delivering outputs. We would also ask them to include an assumed adjustment for input price inflation (RPEs) and we would tell them which inflation index to use to base the calculation on. This approach would provide us with useful information on which to make our own assessment of the RPEs to be used for the sector as whole.

Indexing the allowed return for inflation

11.44. The allowed return on the RAV should be set at levels that we expect to provide a fair return to investors, in light of potential growth in RPI over the price control period. The current approach to indexing the allowed return is equivalent to providing a fixed percentage rate of return on a RAV that is inflated each year in line with the RPI. If the RAV is set to grow each year according to RPI, then the return on the RAV that investors receive comes from two sources: (i) the allowed return on capital and (ii) the RPI indexation of the RAV.

11.45. We currently use information on the yields from RPI-indexed bonds when we assess a fair level for the allowed return on the RAV. We have used this information as an input to estimates of the cost of debt and the cost of equity. In effect, we have taken information on the observed returns (excluding growth in the principal) on RPI-linked bonds as a starting point for the allowed return, and then made upward adjustments to reflect the additional risks that investors in network companies face compared to investors in UK bonds.

Indexation options

11.46. We have assessed three main options for indexing the price control:

- retention of RPI to index all aspects of the control;
- wholesale move to CPI to index all aspects of the control; and
- a hybrid approach where RPI is used to index the allowed return element of the revenue allowance and CPI is used to index all other aspects of the control

11.47. We explain below the two options that would represent a change from our current approach.

Wholesale move to CPI

11.48. With a wholesale move to CPI we would:

- set total allowed expenditure using RPEs relative to CPI;
- index the allowed return and other elements of the control by CPI; and
- as part of this change the way that we set the allowed return, to take account of the CPI rather than RPI indexation.

11.49. A wholesale move to CPI indexation may be appealing in principle but indexing the RAV by CPI would mean that we would need to change how we assess the allowed return. Ideally, although we recognise there are other potential options for doing this, we would move to calculating the allowed return against sterling CPI-linked bonds. These do not currently exist; as sterling corporate and government index-linked bonds continue to use RPI as the relevant index. This may change in the future[31].

11.50. In the absence of sterling CPI-linked bonds, we would need to adjust the way that we set the allowed return to reflect that we were indexing by CPI. One option would be to make a forecast of CPI growth over the price control period or, if we were to continue to use data from RPI-linked bonds, make a forecast of the difference between RPI and CPI growth over the period. This would be difficult and involve a high degree of judgement. If we get these forecasts wrong then the allowed return we set could be too high, harming consumers directly, or too low, harming consumers indirectly. It would also be less transparent than our current approach.

Hybrid approach

11.51. With the hybrid option we would:

- set total allowed expenditure using RPEs relative to CPI; and
- use RPI to index the allowed return element of the revenue allowance, and CPI to index all other aspects; and
- index the RAV by RPI.

11.52. By using CPI on the expenditure side, the hybrid approach may provide a potentially better base for the RPE calculations. As now, the allowed return would be set using RPI-linked bonds so concerns about having to adapt our approach to determining the allowed return for the use of CPI indexation do not arise.

[31] There are reasons to think it might – the government has recently announced it will index public (and some private pensions) to CPI rather than RPI. This may create demand for CPI indexed government and corporate debt if more defined benefit pension schemes start to move to CPI indexation.

11.53. Nevertheless, having a hybrid approach may introduce new complexities.

Our proposed approach

11.54. We think that there is a case for moving to CPI. However, there are significant practical problems with a wholesale move to CPI as corporate and government index-linked bonds continue to use RPI as the relevant index. We currently use information on the yields from RPI-indexed bonds when we assess a fair level for the allowed return on the RAV; no corresponding information would be available if we switched to CPI indexation as no CPI-indexed sterling debt is currently issued. Any alternative methods of determining the allowed return with a CPI indexed RAV would introduce new complexities to the framework and would be less transparent than our current approach.

11.55. We therefore propose to retain RPI at this time but if a market in sterling CPI indexed bonds developed we would want to revisit this issue at future price control reviews.

11.56. Retaining the faster growing RPI index does not mean that consumers are paying more than necessary or, on the flip side, that there is systematic over-rewarding of shareholders. We can calibrate other elements of the price control package to reflect the use of RPI indexation.

11.57. The relative merits of retaining RPI and the hybrid approach are technically complex. But our initial analysis suggests a preference for retaining RPI based on its greater transparency and lower complexity.

11.58. We would welcome views on the choice of inflation index. We propose to test our analysis and assumptions prior to making our decision in the autumn with a range of experts (as well as stakeholders) including the Bank of England, the Government Debt Management Office, City experts on the bond market and leading academics.

Volume uncertainty

11.59. The way in which the regulatory regime allocates volume risk between customers and network companies is an important decision in all four of the regulated energy network sectors. The price control could shield a network company entirely from the effects of rising and falling volume. However, as we have made clear in our overarching principle for uncertainty mechanisms (see Box 11) protecting network companies against all forms of uncertainty is unlikely to be desirable.

11.60. In each of the energy sectors there is a material proportion of costs which varies with volume. There is also no simple relationship between measures of volume and costs. For example, the relationship between costs and volumes is not necessarily linear and this is important to consider when looking at whether, and

how, to manage volume uncertainty. Table 9 sets out the main uncertainty mechanisms which are likely to be relevant for addressing volume uncertainty.

Table 9: Design options for mechanisms for managing volume uncertainty

No.	Mechanism for volume uncertainty	Description
1	Volume driver calibrated at price control review	The price control includes a mechanism such that the revenue that the company is allowed to collect from customers is set to vary as a function of a volume measure. For example, a volume driver may be set at the price control review so that an electricity distribution company is allowed an additional £X for each new connection to the network that is made during the price control period above some baseline number of connections (and conversely, is allowed £X less per connection if the number connections is below the baseline level).
2	Revenue trigger calibrated at the price control review	The price control includes a mechanism, such that the revenue that the company is allowed to collect from customers is set to increase by a specified amount if and when certain trigger events occur during the price control period. For example, the price control for an electricity transmission company may include a provision to allow the company an additional £100m of revenue if a specific wind generation project is given planning permission, to help fund network reinforcement expenditure needed to accommodate the increase in network demand associated with this generation project.
3	Revenue adjustment based on updated cost assessment if trigger event occurs	If a trigger event occurs during the price control period, Ofgem makes an up-to-date forward-looking assessment of the company's upcoming expenditure requirements for a specified output or activity, and adjusts the revenue that the company is allowed to collect for the remainder of the price control period to reflect this. For example, the price control for a gas transmission company may include a provision that there would be a revenue adjustment if there is a need (demonstrated via auction) for new entry capacity at a network location that was not anticipated at the price control review. We would review a submission from the company, to decide how much additional revenue the company should be allowed to fund the additional capacity. The revenue adjustment is made before the company starts this work.
4	Logging-up of actual expenditure subject to ex post efficiency assessment	The price control for a company could include a provision that if the company faces greater demand or volumes of activity than expected at the price control review (e.g. if volumes are greater than a threshold) the company would be compensated for that additional expenditure at the end of the price control period, at least insofar as we determine that the additional expenditure was efficiently incurred.

11.61. We recognised in paragraph 11.33 that uncertainty mechanisms need to be developed on a case-by-case basis. However, given the potential significance of volume uncertainty in each of the sectors and the complexity of the relationships between volume changes and cost changes, we expand here on some of the mechanisms available and their design. This is not intended to usurp the previous sections on when and how to design uncertainty mechanism, rather to add more detail to certain areas. Decisions on how best to manage volume uncertainty in each sector would be made at the price control reviews. We recognise that in some cases it may not be in consumers' interests to include uncertainty mechanisms to protect companies against volume uncertainty. For example, it may be better to address concerns about companies' exposure to the financial risks associated with volume uncertainty by reducing the efficiency incentive rate than by including a specific uncertainty mechanism.

11.62. The two key issues to be considered when choosing a design for a volume uncertainty mechanism are:

- when is the magnitude of the revenue adjustment determined?; and
- how is the revenue adjustment triggered?

11.63. We discuss both below.

When is the magnitude of the revenue adjustment determined?

11.64. There are three main options for when the magnitude of the revenue adjustment is determined:

- **at the price control review:** the magnitude of revenue adjustments can be set upfront (or calibrated) at the price control review, in which case the precise number (e.g. in £m per unit) can be written into the licence. Mechanisms one and two in Table 9 fall in this category;
- **during price control period:** the magnitude of the revenue adjustment can be set on a forward-looking basis by Ofgem during the price control period in light of an updated assessment of the company's expenditure requirements. For the adjustment to be on a forward-looking basis, it needs to be set before the company starts to incur expenditure on that output/activity (e.g. set using a forecast of expenditure). The third mechanism in Table 9 falls into this category; and
- **after expenditure has occurred:** the magnitude of the revenue adjustment can be set in light of data on the actual expenditure incurred by the company. This is the final option in Table 9.

11.65. When making choices between these options we would consider the following:

- **impact on efficiency incentives:** the first of the three options is least likely to damage efficiency incentives during the price control period, because there is the least influence between the expenditure that the company incurs and revenue that the company is allowed. The third of these raises substantial risks of

damaging efficiency incentives: companies may have little incentive to control their expenditure if they expect that the revenue they will be allowed will adjust to reflect the money that they actually spend. As such, additional design considerations, such as benchmarking, would be needed. The second approach may fall between the two, depending on the precise design of the mechanism;

- **information availability**: at the time of the price control review there might be limited information on the potential costs of certain load-related expenditure and this could make it difficult to set the magnitude of adjustments upfront. Setting the magnitude later allows for more up-to-date information to be used. The information deficiencies may be more acute if volume and costs do not to follow a reasonably simple relationship (e.g. there might be substantial variations in unit cost by location due to geographical differences such as terrain); and
- **administrative burden**: setting revenue adjustments on a case-by-case basis during a price control period, or at the end of a price control period, may increase the administrative burden and lead to a stream of regulatory interventions during the price control period, potentially increasing complexity.

How is the revenue adjustment triggered?

11.66. Where a network company may have some influence on the volume measure, it would be appropriate to consider whether the changes in revenue that may result from a trigger being hit should be mechanically implemented.

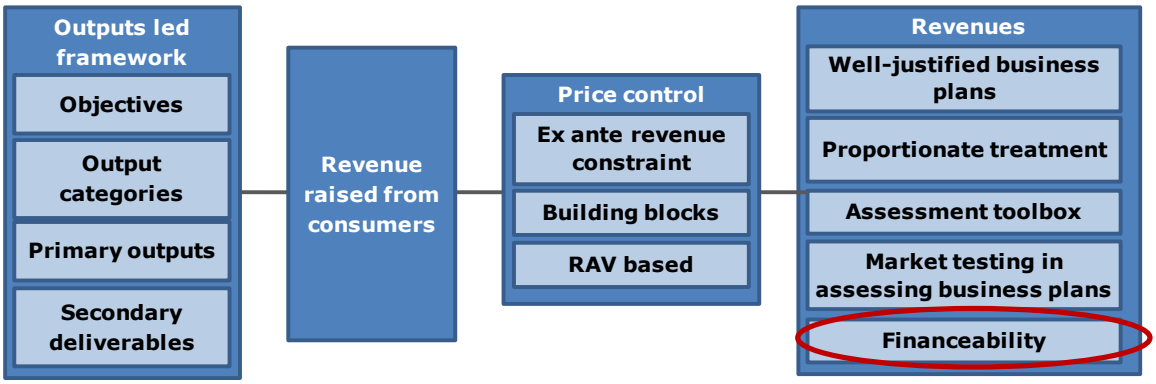
11.67. Depending on their design, uncertainty mechanisms may dampen the efficiency incentives that the price control is intended to create and may work against some of the output incentives. They may also create perverse incentives, particularly where the mechanism is contingent on an explicit trigger that the network company can influence. For example, the removal of the units distributed volume driver in DPCR4 was, in part, because network companies have some influence on the volume of units distributed. This volume driver may have discouraged companies from using demand side management schemes to defer reinforcement because increasing units distributed they could increase their revenue.

11.68. Similarly, a mechanistic revenue trigger could be set that would allow the company more revenue when it reaches a particular milestone in a proposed infrastructure project. But this could encourage the company to focus on reaching that milestone even if it becomes apparent that the most efficient way to deliver primary outputs would be to take a different delivery approach altogether.

11.69. The alternative option is that the trigger should inform us that a sufficient change in volume has occurred, but that we would then assess whether and on how to change the price control based on a balanced assessment at the time. However, having a non-mechanistic approach to determine changes in revenue needs to be balanced against drawbacks including adding complexity, it being a potential additional source of uncertainty and greater control period intervention by us.

12. Financing efficient delivery

Chapter summary
We set out how we intend to fulfil our financeability duty under Sustainable Network Regulation.



Introduction

12.1. Our principal objective is to protect the interests of existing and future consumers. We also have a duty "to have regard to the need to secure that licence holders are able to finance the activities which are the subject of obligations on them." This means that efficient network companies should be able to secure financing in a timely way and at a reasonable cost in order to facilitate the delivery of their regulatory obligations. This is also in the interests of consumers. However, it is important that the regulatory framework does not provide excessive returns, reward inefficiency or "bail-out" a company that has encountered financial distress as a result of its own behaviour.

12.2. Historically, when assessing financeability we have considered evidence from many different sources, one of which involves comparing certain credit metrics - calculated in the financial model – to those published by the credit ratings agencies. If and when financeability "failures" have been identified during such modelling, we have tended to address them by accelerating depreciation in order to boost near-term cash flows, which improves these ratios in a way that is neutral in net present value (NPV) terms. However, these measures arguably mean that existing consumers bear too much of the cost of assets that will likely have useful lives well beyond those assumed. As part of RPI-X@20, we aim to re-dress this balance between existing and future consumers to ensure a fairer distribution of costs.

12.3. In Emerging Thinking, we said we were considering whether there is merit in establishing a set of principles to guide our judgment on ensuring financeability in future price controls. This received widespread support amongst stakeholders, though there was also a desire to understand the principles in more detail.

12.4. In May 2010, we published a working paper on financeability, which presented our proposed principles in more detail in the form of a "straw man."[32]

12.5. We believe that establishing clear, ex ante rules and principles, would provide as much certainty as possible to investors, companies, ratings agencies and consumers while ensuring that our ability to react to future events is not unduly constrained. These principles would be designed to simplify and improve our existing approach to financeability and would increase transparency. We also believe that such policies would provide a clear basis for balancing the interests of existing and future consumers. The platform for our recommendations is the idea of regulatory commitment. We believe that by providing a strong set of principles on the various components of financeability, we would be improving regulatory commitment to companies and their investors – to facilitate longer-term thinking. In addition, we believe that a greater degree of regulatory commitment would result in lower financing costs for companies and thus lower bills for consumers. It is our intention that our proposals improve and enhance our current approach to financeability and should not be considered a step-change.

12.6. We have considered alternative approaches to setting the allowed return. One such alternative is the "split cost of capital". Under this model, different elements of a regulated business would be remunerated in different ways: there would be a "low risk" sunk investment (the RAV), which would be remunerated at the cost of debt; and a "higher risk" operating expenditure and capital expenditure operation, which would be remunerated at the cost of equity. This model is advocated as a means to incentivise efficient investment decision making by network companies. It is also argued to provide for a sufficient rate of return given the delivery risks that companies face under a price control package, whilst ensuring that investors are not overcompensated given the low risk nature of the RAV. Further, it is seen to provide a way for the cost of debt element of allowed returns to be indexed to market rates, which could lower overall financing costs[33].

12.7. We appreciate a number of the concerns that this model is aimed at addressing. However, we think that Sustainable Network Regulation addresses the issues raised without the disadvantages associated with creating new boundaries between RAV and new investment, or between RAV and price control expenditure. In particular, we recommend that we promote efficient decision making by setting clear outputs that the networks companies must deliver and strong incentives for delivery. Our principles for establishing the notional gearing and for the cost of debt within the allowed return then deliver the benefits associated with recognising the low risk nature of the RAV, taking account of the risks that companies face under the price control package and updating the cost of debt element of allowed returns annually.

[32] The paper "Regulating energy networks for the future: Financeability" and responses is available from: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=11&refer=Networks/rpix20/WorkingPapers

[33] See Helm (2006) "Split cost of capital, indexed cost of debt and longer periods – a reply to critics", available: http://www.dieterhelm.co.uk/sites/default/files/March06.pdf. and Helm (2009) "Infrastructure investment, the cost of capital, and regulation: an assessment", Oxford Review of Economic Policy, 25:3, pp307-326, available http://www.dieterhelm.co.uk/sites/default/files/Oxrep%20Infrastructure%20Dec09.pdf.

Box 13: Summary of financeability principles

The principles are summarised below:

- a longer-term view of financeability - reinforced by regulatory commitment;
- risks to be appropriately allocated between companies and consumers - depending on who is the best placed to manage them;
- a principles-based approach to the calculation of notional gearing, with the size of the notional equity wedge reflecting the company's risk exposure and potentially varying within and between sectors;
- a real, weighted average cost of capital (WACC) based approach to setting allowed return;
- the cost of debt assumed in the WACC to be based on a long-term trailing average and updated annually within a price control;
- CAPM, supported by other approaches, to be used to determine the cost of equity;
- a capitalisation policy that equalises incentives but is also based on companies' business plans and so is closely aligned with actual opex/capex split;
- assumed asset lives underpinning the depreciation policy to reflect expected economic life, with potential to weight the depreciation profile to reflect uncertainty in the future consumption of assets;
- financeability assessment to be informed by a number of sources including ratings agency credit metrics considered over the long-term;
- an onus on companies to manage short-term requirements and to provide equity where necessary, and
- Return on regulated equity (RORE) analysis used to check the package fits together appropriately.

12.8. In our Emerging Thinking consultation document, we said that we were keen to ensure that the regulatory framework is calibrated in a such a way that those companies that deliver for consumers earn good rates of return, whilst those that demonstrably do not deliver, earn low returns - potentially below the cost of debt.

12.9. Under Sustainable Network Regulation, we would determine an appropriate degree of risk exposure for regulated companies based on the overall impact on consumers. In making this assessment, we would consider the potential benefit of a company being exposed to risk and the financial implications of that decision. In some cases, it may be that a company is able to manage a particular risk but that the negative implications for their cost of capital would make it an unattractive proposition. The following elements of the price control have a particularly close relationship with a network company's cost of capital and therefore required allowed return:

- the efficiency incentive rate;
- the use of uncertainty mechanisms; and
- the potential scale of penalties and rewards for output delivery.

12.10. The efficiency incentive rate is discussed in Chapter 10. The higher the efficiency incentive rate, the more investors are exposed to the risk that a company needs to spend more than envisaged at the price control review to deliver outputs. In setting the efficiency incentive rate, we would take account of the impact of variation in the incentive rate on the cost of capital.

12.11. The use of uncertainty mechanisms is discussed in Chapter 11. Uncertainty mechanisms can be used to reduce investors' exposure to the risk that a network company needs to spend more than envisaged at the price control review to deliver outputs. The justification for including a specific uncertainty mechanism within the price control may be to reduce the cost of capital that consumers would need to fund.

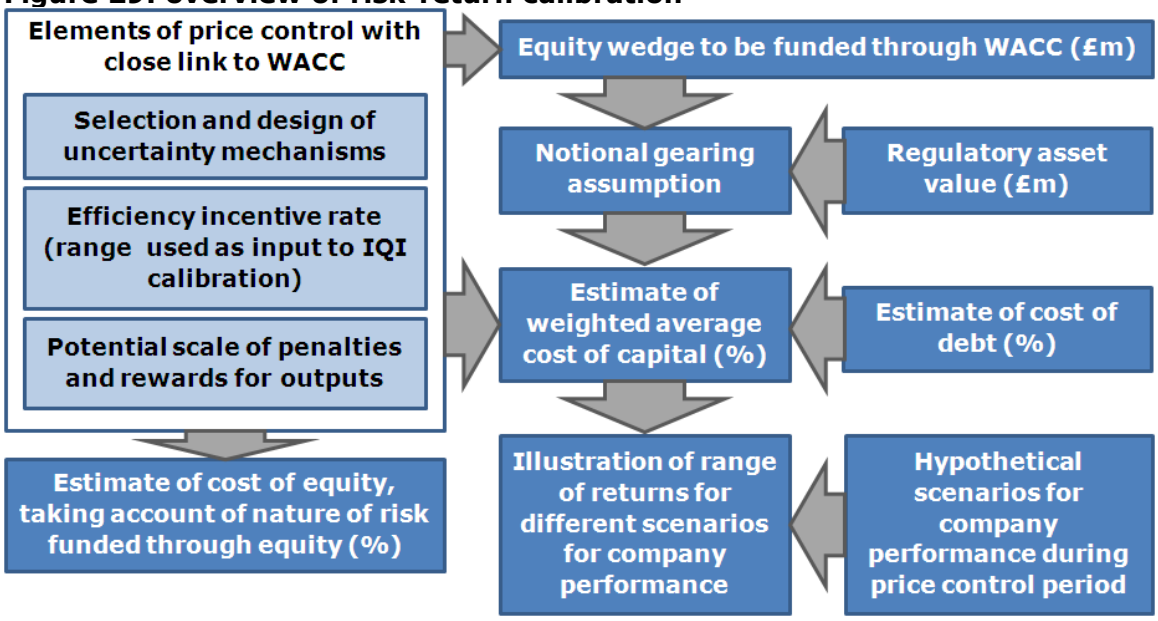
12.12. The role of penalties and rewards for output delivery is discussed in Chapter 9. The greater the penalties and rewards, the greater is investors' exposure to a company's performance in delivering outputs. Where possible, we would set the levels of penalties and rewards upfront at the price control review. In other cases, we would provide guidance at the price control review on how penalties would be determined in the event of under-delivery. In setting the levels and guidance on penalties and rewards, we would take account of the potential scale of penalties and rewards on the cost of capital that consumers would need to fund.

12.13. It would be important to recognise that, for some output incentive arrangements, the appropriate levels of penalties and rewards are based on estimates of the value of these outputs. For instance, an output incentive scheme might be calibrated based on data regarding the willingness of consumers to pay for marginal improvements in a particular output measure. In these cases, the link with the cost of capital is one-way: we would need to set the allowed return at a level that fairly compensates investors for the risks from that incentive scheme. It is unlikely to be appropriate to scale up or scale down an incentive scheme based on willingness to pay data in order to address concerns that the implied cost of capital would be too high or too low.

12.14. Once these elements have been set, we would estimate a notional gearing that reflects the cash-flow risks from the overall package. Figure 29 provides an illustration of the process and interactions, which we discuss in more detail below.

12.15. Once we have determined the level of risk, we would use this information to derive how much equity would be required in the notional capital structure of an efficient company. In this way, a company's risk exposure would directly relate to their notional gearing and thus the calculation of their allowed return. The greater the potential variance in financial returns, the greater the cash flow risk that companies bear, and hence the greater the requirement for equity finance within their capital structure. Equity would thus be acting as a buffer to absorb any variance in the baseline allowed return.

Figure 29: overview of risk-return calibration



12.16. To the extent that the risk allocation and regulatory framework are common across a sector, the derived notional gearing would likely be the same for all companies within that sector. However, under this approach, there is scope for companies within the same sector to have different levels of notional gearing where there is a significant difference in the risks facing them, for example, as a result of the size of their investment programme relative to their existing RAV. This may well be the case for the electricity transmission operators in particular.

12.17. Once we have determined the appropriate level of notional gearing, the methodology for calculating it in future price controls would be retained as far as possible to reinforce the concept of regulatory commitment. We would also seek to avoid significantly changing the risk profile of a particular sector from one price control to the next without good reason.

12.18. As now, it is for the network companies themselves to choose their actual financial structure and they and their investors bear the risks associated with the choice made. The regulatory framework is about identifying an allowed return, reflecting an assumed notional gearing. Consistent with the recent report on Bristol Water from the Competition Commission[34] we would expect a network company to take a range of factors into account when choosing their financial structure including the scale of future capital expenditure requirements and the expected risk that the business faces.

[34] Competition Commission (June 2010), "Bristol Water plc: A reference under Section 12(3) of the Water Industry Act 1991 – Provisional Findings." http://www.competition-commission.org.uk/inquiries/ref2010/bristol/pdf/pfs_for_publication.PDF

A WACC-based allowed return

12.19. The allowed return has two main roles in the regulatory framework. First, it provides a fair return to existing investors in network companies and second it is the value which facilitates investment in new infrastructure. Under Sustainable Network Regulation, we would continue to set an allowed return on the basis of a single weighted average cost of capital (WACC).

The cost of debt

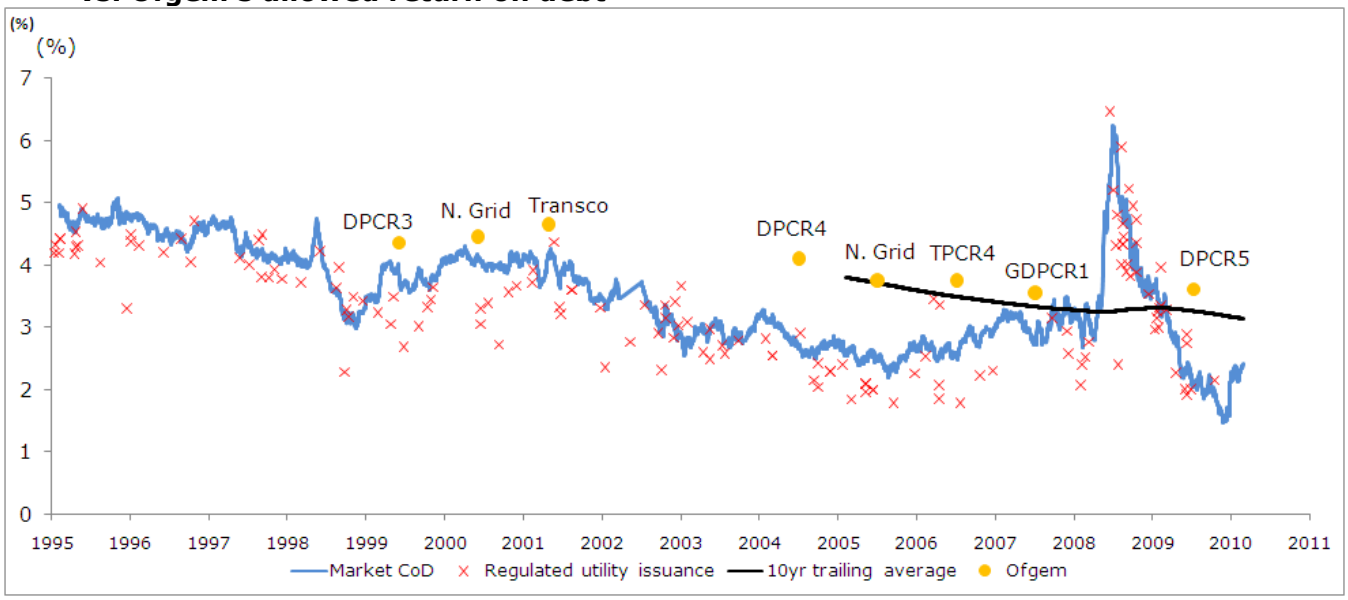
12.20. Our proposed approach is to extend the concept of regulatory commitment to the estimation of the cost of debt. We believe that if there is a commitment to remunerating efficiently incurred debt costs, it will facilitate a greater role for equity in the capital structure of regulated companies going forward. We also believe that such an approach would mean a higher likelihood of getting the WACC "right" thus leading to better investment decisions by companies.

12.21. To date we have not laid out in detail our approach to estimating the cost of debt. This has arguably led some stakeholders to speculate that we include arbitrary "headroom" in our determinations of the cost of debt to reflect uncertainty. The divergence in recent years between the rates obtained by some companies on their issued bonds and long-term averages has arguably contributed to this belief.

12.22. Figure 30 shows a 10-year forward cost of debt index (real) and the coupons achieved by regulated utility issuers at issuance compared with the return on debt allowed by Ofgem in price control determinations since 1995. This analysis, when taken at face value may suggest "headroom" but we believe it does not tell the whole story.

12.23. Regardless of any view about "headroom", the allowed return on debt in the last five Ofgem price controls has very closely tracked the long-term average rather than current rates, as this chart shows. We believe that a strong emphasis on long-term averages remains an appropriate basis for calculating the cost of debt going forward - irrespective of current (or indeed forecast) market rates. We would extend this concept such that there is an annual adjustment in the allowed return on debt, based on movements in the trailing average rather than making a step movement at every price control. This could be particularly important in the context of longer-term price controls where interest rates could vary considerably within a period.

Figure 30: The forward cost of debt (real) vs. regulated utility bond issuance vs. Ofgem's allowed return on debt



Source: Bloomberg

12.24. We are therefore proposing that, in future price controls, the cost of debt embedded in the allowed return is based on a long-term trailing average of forward interest rates, and that the revenues allowed under the price control are adjusted each year for changes in this trailing average. This annual adjustment for changes in the cost of debt would be entirely mechanistic, with the rules determined at the price control review. This would represent a type of uncertainty mechanism. Estimating the cost of debt on this basis should provide comfort that new debt, financed at efficient rates – even at levels higher than the allowed return - will be fully funded in the future. Furthermore, customers would benefit from this approach as there would clearly be no need for "headroom" to be included in any future determinations.

The cost of equity

12.25. In estimating the cost of equity parameter within the WACC, many regulators – including Ofgem - have relied primarily on the capital asset pricing model (CAPM) but sense checked the result with other methods, e.g. dividend growth model (DGM) and market to asset ratios (MAR).

12.26. We believe that our previous approach to calculating an appropriate cost of equity remains valid. While there are many differing approaches, none of the alternatives are without criticism or limitation. Consequently, we cannot see any reason for changing the existing approach of employing a range of techniques to estimate the cost of equity.

Capitalisation and depreciation

12.27. Network companies' expenditure in each price control period is funded, in part, from revenues raised from consumers during that price control period and, in part, from revenues to be raised from future consumers during subsequent price control periods. The RAV provides a commitment on the revenues to be raised from future consumers during subsequent price control periods.

12.28. In price controls before DPCR5, costs which yielded a benefit over a period of more than one year ("capex like") were capitalised into the RAV and returned (through depreciation) over a longer period of time. In contrast, some costs ("opex like") were funded in the year incurred.

12.29. In DPCR5, we modified our approach to capitalisation, with all companies having a fixed percentage of their total network costs capitalised into the RAV and the rest being expensed in year. The overall percentage of capitalised costs was similar to the actual capitalisation rate in DPCR4.

12.30. The rationale for this modified approach to capitalisation was to equalise the incentives on capex and opex, which previously had different incentive rates applied to them, potentially distorting decision making. In DPCR5, all costs were treated equally with a single incentive rate applying.

12.31. However, this new approach is not without its consequences. Although on average the rate of capitalisation was similar across electricity distribution companies, some ended up with a lower proportion of costs expensed than under the DPCR4 approach. Furthermore, some opex like costs were indirectly capitalised into the RAV. Hence, in DPCR5, capitalisation policy was considered alongside the general discussion of financeability as our decisions made significant differences to a company's cash flow over the price control.

12.32. In contrast, the rate of RAV depreciation has long been considered a financeability issue. In both electricity distribution and electricity transmission, we have previously adopted policies that "accelerate depreciation" – to improve a company's near-term cash flow ratios and improve their perceived financeability. For these sectors, the assumed regulatory life was reduced to 20 years for assets that are likely to have a physical life of more than 40 years. While in NPV terms the impact on consumers is negligible, our chosen policy has raised questions about inter-generational fairness, with existing consumers paying more for the assets than future consumers.

12.33. In gas distribution and gas transmission, the problem is arguably reversed with the regulatory depreciation period being 45 years for new investment. In contrast to electricity, there is much more uncertainty about the outlook for gas. It is therefore possible that an economic depreciation period could result in a shorter depreciation profile than currently.

12.34. In our "Emerging Thinking" consultation, we said that for capitalisation we would consider if the DPCR5 approach remains appropriate. We would aim to establish a clear set of principles for determining an appropriate rate of capitalisation going forward. For depreciation, we said that the rate should reflect the average expected economic life of the asset base. This means that assumed asset lives could be shorter than their physical lives where there is uncertainty about long-term utilisation.

12.35. We believe that the issues around capitalisation and depreciation are better considered within the context of inter-generational fairness and only affect financeability in so far as they affect our ability to give regulatory commitment.

12.36. However, if the regulatory approach to certain expenditure items deviates significantly from the treatment of those same costs by companies, it is likely that perceived regulatory risk would increase – which would impact financeability. This could occur if the capitalisation percentage of total expenditure was considerably different from a company's methodology. In devising a suitable approach going forward, we believe that there are number of issues to consider:

- how to strike an appropriate balance between existing and future consumers;
- the uncertainty in assessing the useful economic life of assets; and
- the equalisation of incentives between opex and capex.

12.37. Going forward we believe that to help equalise incentives we should set a fixed percentage of total expenditure to be capitalised during the price control period. We would set the percentage at the price control review, seeking to strike a fair balance between existing and future consumers in light of the nature of the expenditure expected over the price control period (e.g. drawing on the amount of capex like costs submitted in a company's business plans).

12.38. Our approach to the depreciation rate would reflect the average expected economic life of the asset base. In this way, the interests of existing and future consumers would be fairly balanced. We recognise that assessing the appropriate rate of economic depreciation for assets is not straightforward. However, we intend to commence a full review of economic life later this year as part of the price control reviews for transmission and gas distribution.

12.39. When considering the form of depreciation schedule to adopt there are a number of different approaches possible, including:

- straight-line;
- sum of year digits;
- reducing balance; and
- per unit.

12.40. While our default approach to depreciation would be a straight-line methodology - as has historically been used by Ofgem, we are considering whether there is merit in profiling the return of capital to reflect the likely future demand of

these assets or to reflect uncertainty about its assessment. For example, for electricity distribution there is a real possibility of growth as the transition to a low carbon world changes the pattern of demand. Therefore, a depreciation profile that back-end loads the charge could be appropriate. In contrast, in gas distribution, there is a possibility of reducing demand by households. This could warrant a front-end loaded depreciation profile, such as one based on a sum of digits methodology. This issue will also be considered in the aforementioned reviews.

12.41. For some sectors, we are aware that changing the methodology may mean a slowing down in the return of capital. While this may not imply a financeability issue, we recognise that RAV depreciation represents a significant component of allowed revenue for companies and any sudden reduction could increase perceived regulatory risk, which would be undesirable. Under these circumstances, we would consider whether it is appropriate to have some period of transition, as discussed in the following section.

Impact on the cost of capital

12.42. We recognise that there is an argument that increasing the duration of cash flows (i.e. pushing them out) may increase the cost of capital, as set out in Oxera's report for the Energy Networks Association (ENA)[35]. However, as CEPA have set out in their report for us, our proposals on the allowed return already factor in any such effect[36]. This is because the estimated WACC would be based on yields at the longer end of the yield curve where the additional premium is observed to be negligible. We therefore do not think that our proposal to link regulatory depreciation to useful economic life will materially affect the cost of capital.

Assessing financeability

12.43. As set out in our "Emerging Thinking" consultation document, as long as the allowed return, depreciation profile and capitalisation policy are set appropriately and that there is consistency in their respective future determinations, the notional company should be financeable. In its recent report on Bristol Water the Competition Commission took a similar approach, emphasising that as long as the price control included an "appropriate" allowed return it would not be in the consumer interest to raise prices to enable a company to meet a financeability test.

12.44. We recognise that the credit ratings agencies - while not infallible - are an important source of information and hence play an important role in the raising of low cost debt finance, which is a benefit to consumers. Going forward, we would continue to assess financeability in the round, considering evidence from a number of sources. This would include but would not be limited to - consideration of the metrics that the ratings agencies look at in determining a company's credit rating.

[35] Oxera, June 2010, "What is the impact of financeability on the cost of capital and gearing?" is available at http://www.ofgem.gov.uk/Networks/rpix20/WorkingPapers/Documents1/ENA_Oxera_financeability.pdf
36 Cashflow profiles and the allowed WACC, CEPA (2010) http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Lengthening%20cashflows%20and%20the%20WACC%20July%202010.pdf

The Competition Commission, in their recent report on Bristol Water noted that credit rating agencies consider a range of factors, in addition to credit ratios, when making their valuations. It is the broad range of evidence that we would consider.

12.45. However, we would not advance cash flow in light of apparent short-term dips in cash flow metrics. We would seek to understand the reason behind such failures (e.g. high capital expenditure relative to RAV) but the onus would be on the company to resolve the situation, including by injecting equity and/or reducing dividend payments as they see fit. In contrast, when relative expenditure levels decrease, the company may choose to remove equity if it considers this appropriate, e.g. through the payment of special dividends.

12.46. By placing a greater onus on companies to take action to maintain their investment grade credit ratings, it reduces the requirement for Ofgem to make adjustments to other areas of the price control.

Financeability ratios

12.47. We believe that of the many ratios calculated by the ratings agencies, some are more relevant for the assessment of regulated networks than others.

12.48. Historically, we have focused mainly on the results of the following ratios:

- funds from operations (FFO)/ interest cover;
- retained cash flow/net debt; and
- net debt/RAV.

12.49. Going forward, we think that net debt/RAV and the adjusted interest coverage ratio or post maintenance interest cover ratio (PMICR) are the most appropriate ratios to consider. PMICR is a variation on the FFO/interest cover but eliminates the effect of regulatory depreciation's contribution to the calculation of FFO.

12.50. This view is shared by Moody's in their Special Comment on RPI-X@20, "*Moody's welcomes Ofgem's move away from an FFO-based ratio approach*. We *agree that regulated entities such as the network companies need to be treated differently to unregulated entities as a result of the concept of their RAV.*"[37]

Transitional arrangements

12.51. Given the large amount of investment required in the sector going forward, we do not want to make it difficult for companies to raise the necessary finance. Indeed, our recommendations on financeability are designed to do the opposite. Providing greater transparency and predictability about the way we approach the

[37] RPI-X@20: A Welcome Review of the UK Regulatory Framework but a Step Change Could Raise Credit Risk, 8 June 2010.

elements of financeability should provide comfort to investors and make the sector more attractive.

12.52. Our proposals are value neutral in cash flow terms. However, application of the above principles may have implications for the timing of a company's cash flows. The precise impact will not be clear until companies have submitted their well-justified business plans as part of the price control review process. In some sectors it may mean that a network company's cash flows are brought forward, in others they may be pushed out.

12.53. Consistent with our principles, where application of our principles in a single step could cause excessive disruption to capital markets and/or raise concerns about financeability, we would adopt appropriate transition arrangements at price control reviews. The focus would be on ensuring that the principles are applied but over a period of time, which we expect to be no longer than a single control period (eight years). In seeking to identify whether transition arrangements are necessary, the types of factors that we would have regard to include:

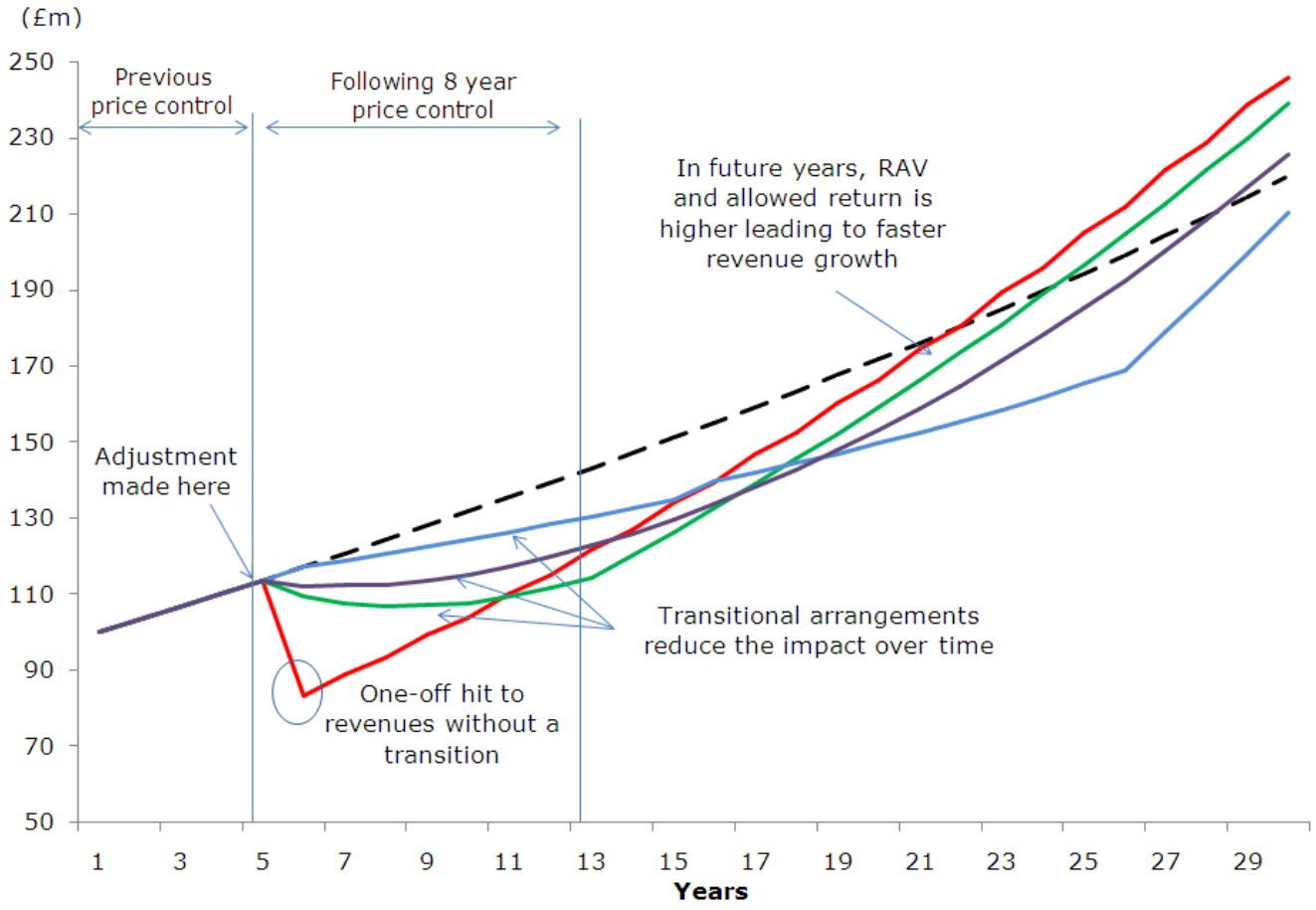
- the length of the price control and options for phasing within the control period;
- the effects of the proposals on allowed revenue;
- the impact on the notional company's ability to raise necessary finance, both debt and equity; and
- the impact on key cash flow ratios, as calculated by credit ratings agencies.

12.54. There are many factors (including depreciation) that influence the timing of a company's cash flow. Where transition arrangements are necessary, the precise nature of these would be consulted on at price control reviews, reflecting the specific circumstances of a given sector at the time. There is a range of approaches that we could adopt to ensure appropriate transition. These include:

- gradually moving to the new depreciation rate over the period of a price control;
- applying the current depreciation rate to the existing RAV and the new depreciation rate to future RAV additions only (i.e. existing RAV is unaffected); and
- using an "accelerated depreciation" schedule for existing RAV, e.g. sum-of-years-digits but a straight-line methodology for future additions.

12.55. The relative impact on allowed revenue of each of these options is illustrated in Figure 31 below. We assume that the RAV is initially being depreciated over a twenty-year period (similar to current policies for electricity distribution and electricity transmission) while RAV additions remain flat in real terms.

Figure 31: Effects of transitioning depreciation rates on allowed revenue



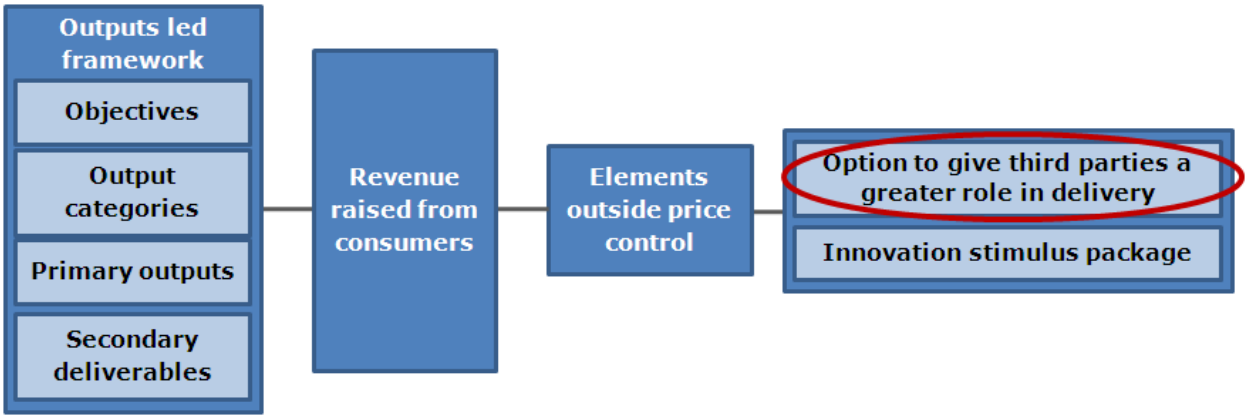
Source: Bloomberg

12.56. We welcome views on whether and how to transition financeability changes at a price control review.

Part 3 – Other elements of Sustainable Network Regulation

13. Greater role for third parties in delivery

Chapter summary
Under Sustainable Network Regulation we would have the option of providing third parties with a greater role in delivery by giving them responsibility for delivering key projects following a competitive process. The third party would be responsible for operating and owning the associated assets. We set out here the principles that we would consider when deciding whether to use this option at a price control review. We also set out the range of issues that would need to be worked out if we chose to use the option of Ofgem giving third parties a greater role in delivery.



13.1. As discussed in Chapters 7 and 8, under Sustainable Network Regulation network companies would be expected to consider, alongside other delivery options, the case for outsourcing aspects of their business plan where this was expected to provide long-term value for money for existing and future consumers. In addition, where we had concerns about the network company's proposals on how to deliver outputs (e.g. there was insufficient evidence of innovative thinking) or the long-term costs of delivery we would have an option to require them to provide market testing evidence with respect to certain aspects of the plan. With these tools, the processes and decisions around market testing rest with the network company. Existing and future consumers would reap any benefits by us encouraging or indeed requiring the network company to itself make choices about how best to involve third parties in value for money and timely delivery solutions.

13.2. With Sustainable Network Regulation we would also have the option of giving a third party responsibility for delivering key projects, following a competitive process. The third party would be an existing or new licensed network operator. We would expect the third party to be involved with the design, build, operation and ownership of the related assets. Where we did give third parties a greater role in delivery the obligations and rights associated with the project would be taken from the existing network company and therefore taken outside the core price control. Subject to third package implementation, the National Electricity Transmission System Operator (NETS SO) and the System Operator for the gas National Transmission System (NTS) would remain responsible for ensuring system integrity, in accordance with existing

Codes and licence conditions. These parties would have a clear role in any decisions on the specification of the project to ensure that it would not put the system at risk.

13.3. We would consider the option where we expect it to provide greater value for consumers than the option of Ofgem-required market testing. The option of giving a new operator a greater role in delivery would be expected to bring additional benefits due to the fact that the third party would have more direct responsibilities and obligations, as a licence holder, and through the fact that the third party would own the assets and derive an income stream from them. There are also potential additional costs related to running a competitive process and there being additional fringe operators in the system. As set out below, we would pursue the option where we expected the potential benefits to outweigh any potential costs.

13.4. We set out in this chapter the principles under which we would consider using the option of giving third parties a greater role in delivery. With these principles we would only expect to use the option for large-scale projects that are separable from other network assets and where the nature of the project is such that the existing network operator may not necessarily be best placed to deliver it at best value for consumers. This may be, for example, because the project is to some extent new or untested from the perspective of the existing network service provider. We recognise that focusing on large projects could create incentives for the network companies to restrict the size of their projects to guard against the potential that we may open up delivery to competition. It will be important that we implement a framework which safeguards against this.

The case for having the option in the tool-kit

13.5. Encouraging network companies to focus on delivery of primary outputs and long-term value for money is the objective of Sustainable Network Regulation. Having the option of giving third parties more responsibility for aspects of delivery is expected to increase the prospect of meeting the objectives, supplementing and complementing other aspects of the price control framework.

13.6. Over the next 10 years we are expecting the network companies to invest at an unprecedented level, often in untested technologies. For some companies this will mean that their existing asset base more than doubles. This will be challenging and will stretch both their management capabilities and their balance sheets.

13.7. It is in this context that we have considered whether and how best to allow for the possibility of third parties to be involved in aspects of delivery. We think having this option will be valuable where it drives consumer benefits and does not jeopardise the strategic development of the networks, reliability or timely delivery. Were existing network companies to struggle to deliver at a reasonable cost to consumers, having the option in the tool-kit could help ensure timely delivery of a low carbon energy sector.

13.8. We would pursue the option where we were confident that the long-term benefits of having a third party responsible for delivery and asset ownership

outweighed any long-term costs. These benefits may come in the form of new ideas about how best to deliver in terms of innovative design, better management of delivery and lower delivery costs (for instance, through the attraction of new types of investment at more reasonable rates of return). They may also come in the form of opportunities that third parties may present to mitigate against the risks that delivery may be not delivered within required timescales or delivered with cost overruns. We would not give third parties a greater role in delivery if there was a risk to the objectives of Sustainable Network Regulation, particularly timely delivery of projects needed to facilitate government environmental targets.

13.9. Having the option in the tool-kit would impose disciplines on existing network companies that would encourage them to strive for timely delivery, be more innovative and seek out lower long-term cost delivery solutions. This could include new financing opportunities arising from third parties being responsible for delivery and ownership of related assets. Having the option would also encourage companies to think about how they take forward market testing of aspects of delivery themselves, including potential opportunities to look for input from third parties on the "design" of delivery solutions rather than just the unit costs of building. Similarly, it may provide incentives for them to consider more carefully the contractual sharing of risks associated with costs and volume when outsourcing projects or activities.

13.10. It is possible for us to give third parties a greater role in delivery through competitive processes under our existing powers and duties although there are a number of changes that would need to be made to existing licences and Codes to facilitate this. For example, changes would need to be made to the System Operator - Transmission Code (STC) that currently governs interactions between the three electricity transmission owners (TOs) and the NETS SO. We would propose to initiate such changes following a final decision being made on Sustainable Network Regulation.

When in the regulatory process would we consider giving third parties a greater role in delivery?

13.11. There are three main circumstances in which the question of whether we should give third parties a greater role in delivery could arise:

- **during the comprehensive price control review** potential projects may be identified as part of the assessment of a company's business plan. Where we are familiar with the major projects envisioned in a sector or company region, we may be able to give an early signal – in our "Strategy for the Review" consultation paper (Stage 1 of the price control review process) - of the projects that might be considered relevant. The decisions on whether to consider, in detail, the case for giving third parties a greater role in delivery would happen after the business plan had been submitted at Stage 2 of the price control review process (details of which are provided in Chapter 2). We would make decisions to take projects out of the price control at this point, so that a network company's revised business plan (Stage 3 of the price control review process) would be finalised knowing that the project was to be treated differently;

- **at the mid-period review of output requirements** the outputs that a network company is required to deliver may change resulting in the need for adapted or new delivery solutions. In these circumstances, the network company may identify a new project that it needs to deliver. Subject to arrangements for changing the price control at the mid-period review our assessment of the amount of revenue that might be needed, would then be expected to follow a similar process to that set out in Chapter 7 and 8. We would also, as part of the general assessment consider the option of giving third parties greater responsibility for aspects of delivery where the new project meets the principles set out in paragraphs 13.12 to 13.16; and
- **if a network company is persistently failing to deliver primary outputs** we would consider the option of awarding a third party the right to take over responsibility for some aspects of delivery during the price control period. As discussed in Chapter 9, this would be a last resort option, used only after other output incentives had been used and had failed to change network company behaviour. Again, when considering the option in this context we would apply the principles discussed below.

When would we expect to use the option of giving third parties a greater role in delivery?

13.12. We would consider giving third parties a greater role in delivery where the following conditions apply:

- the project is significant in scale and/or cost;
- the project involves assets required for expansion of the network that are not meshed with existing assets, or can be defined in such a way that they are not meshed with existing assets;
- giving third parties a greater role in delivery would not pose significant risks to timely delivery, including constraints on the delivery of emission reduction or renewable targets;
- giving third parties a greater role in delivery would not pose significant risks to the safety, security, integrity and quality of energy services;
- we can demonstrate that the expected potential long-term net benefits (in terms of delivery of the objectives of Sustainable Network Regulation are significant. We discuss below the factors that we would need to consider when undertaking our assessment of the expected long-term net benefit;
- we are confident that giving third parties ownership of relevant assets would not compromise the legitimate expectations of existing licensees when making investments without knowledge of the possibility of assets potentially being transferred to a third party at a later date; and
- giving third parties a greater role in delivery would be compliant with domestic and relevant EU legislation, including the third package.

13.13. Where we are considering the possibility of giving third parties a greater role in delivery as a potential response to failure by a network company to deliver primary outputs, we would take account of the potential benefits this could deliver as well as potential risks to the system and quality and timeliness of delivery that may result (in line with the principles above).

13.14. When undertaking our assessment of the expected long-term net benefit of giving third parties a greater role in delivery, we would need to consider a number of factors, including, but not limited to, the following:

- the administrative and resource costs associated with running a competitive process to identify the most appropriate third party to be involved (for Ofgem, the NETS SO or gas NTS SO, the existing network company and potentially third parties);
- the potential costs of delivering the project over the life of the project or assets and the potential profiling of such costs;
- the timing and potential scale of the impact on delivery of outputs;
- the likelihood of third parties being interested in participating, recognising that this would be influenced by the process adopted, the design of the process and the conditions (including regulatory arrangements) that the winner would face;
- the likelihood of other companies or consortia being able to offer lower financing costs in owning the asset;
- the likelihood of third parties having better access to relevant specialist technical knowledge, experience and skills;
- the risk of non-delivery of the project, delay to delivery of the project and/or cost overruns and the likelihood of these being better managed by a third party;
- potential barriers to effective competition among bidders, for instance because of distortions in the competition in other related markets that would be expected to provide a pool of participants (e.g. if there is a limited number of suppliers of a particular technology needed to deliver the project);
- potential implications for, and interactions and synergies with, existing network company activities and the NETS SO or gas NTS SO, taking account of our engagement with these parties and decisions on how to ensure these interactions are carefully and effectively managed; and
- impacts on sustainable development, such as potential impacts on emissions and generation sources, in line with our statutory duties and obligations[38].

13.15. When considering the principles set out above we would expect that benefits could be higher in cases where the project involves new processes, technologies or delivery of new outputs, and hence where the existing network operator does not necessarily have experience in delivery.

13.16. To inform our assessment of potential costs and benefits we would consider seeking views from relevant third parties on how they might contribute to more timely delivery and to delivery of value for money through new approaches or lower long-term cost solutions. For example we may seek views through an expression of interest. Ideas on how third parties may do things differently may also be forthcoming from stakeholders through enhanced engagement.

[38] Refer Ofgem Guidance on Impact Assessments, available: http://www.ofgem.gov.uk/About%20us/BetterReg/IA/Documents1/REVISED%20GUIDANCE%20ON%20IMPACT%20ASSESSMENTS%2015%20DECEMBER%202009.pdf

How would we deal with transfers of existing asset?

13.17. When specifying what aspects of delivery are being given to a third party we would need to consider carefully how best to specify and separate the relevant assets. We recognise that, given the nature of network services and the integrated GB system, even with new and separable expansion projects there may be some overlap of assets around the edges. This could mean that assets owned by the existing operator would need to be transferred to the new operator in the event that the third party was given responsibility for delivery and ownership of associated assets. We also recognise that in some cases a network company may have already started work on the project (e.g. pre-construction work) prior to us making the decision to give third parties a greater role in delivery.

13.18. In these cases the transfer of existing assets held by the existing network company may avoid duplication of effort and thereby lead to lower costs in total. These assets may range from physical assets, such as pre-construction works or land, to intellectual property and other assets such as project designs, planning consents, and drawings.

13.19. We recognise that there are limits on the extent to which we can require network companies to transfer assets that they have invested in and where there was a legitimate expectation, when they invested, that they would retain ownership of these assets for the foreseeable future. In these cases our decisions on giving third parties a greater role in delivery would need to be consistent with protecting the legitimate expectations of companies with regards to investments and regulatory returns related to these investments. As such, our approach may be to look to engage with the existing network company and third parties to see if mutual agreement can be reached on options for facilitating the transfer of assets. In other cases we may consider it appropriate for the third party to "start from scratch" and duplicate the effort. Were this to be the likely outcome this would need to be factored into our assessment of the long-term net benefit of opening up delivery to competition.

13.20. Going forward, when considering allowances for costs related to pre-construction or construction of assets in a price control (either at the price control review or during the price control period where relevant), we would signal the possibility that new assets being developed may need to be transferred to another licensee at a later stage as a result of opening up aspects of delivery to competition. In addition, we would retain the option to consider giving a third party responsibility for any future expansion works. In this way we would manage expectations about the future treatment of these assets. We would expect to manage expectations in this way in any price control decisions (e.g. transmission roll-over decisions) or decisions relating to major infrastructure investments from when a final decision is made on Sustainable Network Regulation.

13.21. Were we to decide at a later stage to require a transfer of assets we would ensure that the transfer was at fair value, using clear criteria for asset valuation (related to our financeability principles where appropriate – see Chapter 12). We would need to specify at the start of any process what the assets are, what the

process for transferring assets would be, and what the expected cost of the transferred assets would be as all these factors would affect valuations and third party interest in being given a greater role in delivery.

What would happen if we gave third parties a greater role in delivery?

13.22. If we decide that there is net benefit for consumers from giving a third party responsibility for delivering key projects we would be responsible for designing and running any competitive process to identify the most appropriate third party to take on the role. The third party would be an existing or new licensed network operator, with interested parties expected to obtain a relevant licence ahead of participating in any process. We would also be responsible for evaluating bids from third parties, choosing the winner and regulating delivery of the project.

13.23. Decisions on how to run the process, evaluate bids and regulate the winner would be made if, and when, we decided to use this option. The decisions would be made at the time to reflect the specific project being considered and the circumstances of the sector at the time. We set out here ideas on the issues that would need to be considered but do not provide firm views in RPI-X@20 as the decisions need to be considered on a case-by-case basis.

Getting the process underway

13.24. All parties would need to be certified by Ofgem under third package unbundling requirements and be appropriately licensed in order to be eligible to take part in a competition for delivery of a particular project. We would intend to change the conditions for applying for a licence to enable a wider group of parties to obtain a licence. As allowing greater competition in delivery could see new parties operating aspects of the system, we would make any changes required to the relevant Codes and other frameworks (e.g. charging) to ensure that all aspects of regulatory arrangements that ensure that the system operates effectively take account of this. We would propose to begin the process of making such changes following a final decision being made on Sustainable Network Regulation. However, it is also possible that further changes may be identified as part of applying our principles to inform our decisions on whether to give third parties a greater role in delivery.

13.25. Where we have identified a large, separable project with potential merit in giving third parties a greater role in delivery, we would expect the focus of our early stages in considering the option would be on developing a clear specification of the project. We would expect the specification to reflect, to some extent, company proposals and our assessment of the benefits of opening the build and design of the project to competition. It would also reflect the results of our engagement with technical experts and the relevant system operator, focused on ensuring that all issues relating to system integrity had been taken into account. The specification would also reflect the results of a detailed legal review to ensure compliance with EU and domestic legislation, including having taken account of the need to protect legitimate expectations of licensees with respect to asset transfers.

13.26. This would then be followed by a detailed cost benefit analysis to inform our decision on whether or not would give third parties a greater role in delivery. As noted elsewhere we would consider using expressions of interest, and our enhanced engagement processes, to elicit levels of interest and ideas on what benefits third parties might bring before moving ahead with any formal competitive process.

Designing and running the process

13.27. Where we decide to give third parties a greater role in delivery we would be responsible for designing and running the process to identify the most appropriate third party. We would develop guidance documents, pre-conditions with which participants would need to demonstrate compliance, and the criteria we would expect to use to assess bids, including any variant bids.

13.28. There are a number of different issues that would need to be considered when designing the process. A number of these are illustrated in Table 10, although the list is not exhaustive. When making our decisions on each aspect of the design we would take account of lessons learned from the UK offshore regime, and from other comparable regimes in GB or elsewhere. Ultimately, our decisions would be based on consideration of which aspects of design would be most likely to encourage bidders to participate and ensure effective competition during the process. We would also consider the costs and timing associated with running the process when choosing between different design options.

Table 10: Issues to consider when designing the process

Design feature	Discussion
Stages of the process	We would need to determine how the process from initiating a competitive process to identifying a preferred third party and giving them responsibility for delivery would work.
Reporting requirements	We would need to determine the reporting procedures and requirements to be followed by prospective bidders and the eventual winner.
Prescribed fee	We would need to determine the charges, if any, that would apply to participate in the process.

13.29. When deciding how we would identify the "preferred" third party in any competitive process, we would reserve the right to set out either an upfront view on what we thought the best approach would be or allow companies to bid both design and price for meeting a particular objective. Where we specify a preferred delivery solution it would not necessarily be the same as the plan submitted by the network company. This would particularly be the case if we were looking for third parties to bid not only on the build of a project but also on its design.

13.30. As part of the qualification criteria we would expect any potential bidder to acquire and hold a relevant licence. Any new licences issued would allow us the option to consider opening any future expansion works, within the area to which the licence pertains, to competition. We would also consider whether it was appropriate

for potential bidders to pay a fee to participate in the process. Although the relevant network company would not be allowed to bid into the process, subsidiaries of that company would be allowed to bid as long as they were compliant with license and third package requirements. The subsidiary would need to operate at arms-length from the core regulated business (and from the price control).

Evaluating bids and choosing the winner

13.31. We would also be responsible for evaluating bids and ultimately choosing the preferred third party. We would expect to have an evaluation panel comprising, for example, technical, regulatory and finance experts who would make recommendations to GEMA. As part of the guidance for prospective bidders we would clearly specify, upfront, how we would evaluate bids and how we would make decisions. In some cases long-term costs may be the key element driving our decision but in others we may be balancing a wider range of factors including, for example, impact on security of supply and delivery of environmental targets. The evaluation criteria are likely to vary to some extent according to the specific project being opened up to competition.

13.32. When making a decision GEMA would be guided by the assessment criteria set out in the process. These criteria would be clearly linked to GEMA's prevailing duties and to the objectives of Sustainable Network Regulation. GEMA's assessment of the criteria would be informed by relevant evidence put forward by interested third parties participating in the process including evidence that they could access appropriately experienced, qualified, and trained staff with a good track record of timely and effective delivery and evidence of the robustness of risk sharing arrangements.

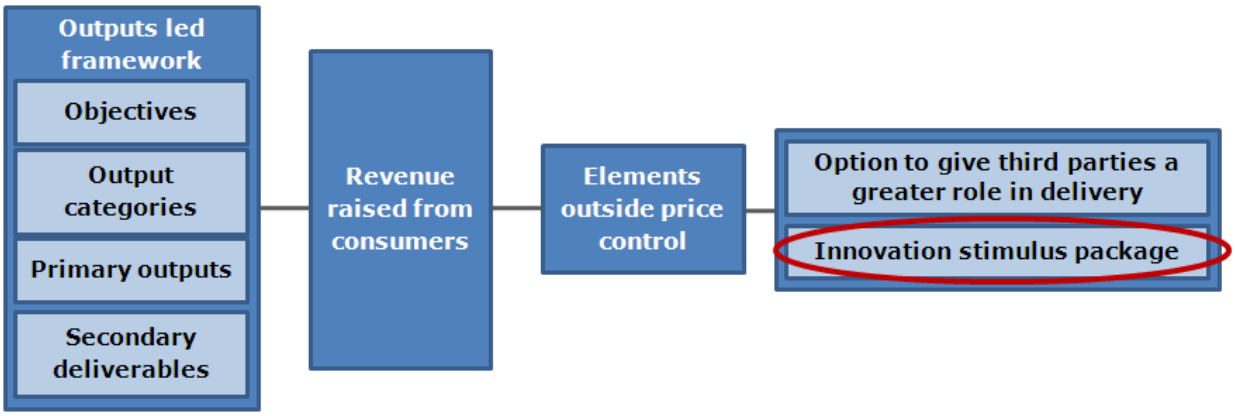
Regulating the third party given a greater role in delivery

13.33. As noted earlier, any third party given greater responsibility for delivery of key projects would hold a relevant licence for delivery of network services. Consistent with prevailing domestic and EU legislation (including the third package), responsibility and accountability for obligations relating to the relevant transmission or distribution assets would sit with this party. All other licensees, including the NETS SO and gas NTS SO, would retain their existing obligations. At the start of any process we would set out any specific licence conditions – in addition to common standard licence conditions – we would expect the third party to operate under. Licensees would be required to comply with industry Codes which would be adapted, wherever necessary, to accommodate any new organisations.

13.34. Any decision on whether and how to regulate the third party responsible for delivery of a key project would be made prior to the process being initiated as it would directly affect the likely interest of third parties. When considering any form of regulation we would be mindful of the need to consider interactions with the regulatory arrangements for existing network companies and the system operator.

14. Innovation stimulus package

Chapter summary
We set out why we think it is appropriate to include a time limited innovation stimulus package in Sustainable Network Regulation. We explain how the stimulus package would be designed.



14.1. Innovation will be key to enabling network companies to deliver the objectives of Sustainable Network Regulation, namely to play their role in the delivery of a sustainable energy sector and to deliver long-term value for money for existing and future consumers. This innovation could take many forms, including deployment of new technologies or the implementation of new operational processes and commercial arrangements.

14.2. Under an incentives-based regime network companies will innovate where they have confidence that they will achieve commercial benefits from doing so (the profit motive and reputational motive will be relevant here). In the context of delivering innovation related to meeting the requirements of the wider sustainable energy sector, where the commercial benefit of the innovation may not be as clear, network companies may be slow to deliver the level of innovation in the timescales required. There are a number of potential reasons for this including, but not limited to:

- the benefits could accrue to a wide range of parties;
- the upfront costs of innovation may be significant;
- the long-term private cost of choosing not to innovate may not be significant particularly if the costs are included in the price control;
- companies may discount the future benefits of innovation if the carbon price is low and they do not envisage that they will be able to obtain commercial benefits from sustainable solutions;
- companies may discount the future benefits of innovation if they doubt the political commitment to related targets; and
- the risks associated with potential failure.

14.3. In these circumstances the regulatory framework needs to provide the encouragement or stimulus to enable innovation on energy networks that is widely

agreed is needed for a sustainable energy sector but that the network companies might otherwise have little incentive to pursue. Under Sustainable Network Regulation we would provide this encouragement using a two-pronged approach:

- the longer-term, outputs-led, incentive-based, ex ante price controls would provide their own incentives to innovate, by giving companies commitment around the potential rewards that they could earn from successful innovations and committing not to penalise them for unsuccessful innovations; and
- providing partial financing for innovation related to delivery of a sustainable energy sector through an electricity networks innovation stimulus and a gas networks innovation stimulus.

14.4. We discuss both aspects here.

14.5. The design features of the innovation stimulus package discussed in this chapter could be implemented under existing powers and duties with the approval of the Secretary of State. The package would involve two separate funding mechanisms for gas and electricity financed through transfers of monies across network licensees. Third parties would have to obtain a new class of licence related to the innovation stimulus package. Should the opportunity arise, we would also consider developing the stimulus through a change in legislation. While this would not be necessary, it would make the package more transparent and streamlined.

Stimulating innovation with the price control framework

14.6. We describe in Chapters 5 to 12 how price controls would be set with Sustainable Network Regulation. Taken together as a package the framework is expected to encourage network companies to think differently about how best to deliver outputs over time and how best to deliver long-term value for money for existing and future consumers.

14.7. The package is intended to incentivise the network companies to find delivery solutions that are lower cost over the long-term. To do this effectively we anticipate that network companies would search for new ways to deliver the primary outputs. These may include the use of new technologies, new operational practices, new business structures, new financing arrangements and new commercial arrangements with users of the networks and potentially with other parties (e.g. communications providers). Where there is a strong commercial incentive to innovate and clear benefits from doing so, we anticipate that the network companies would respond to this.

14.8. Under Sustainable Network Regulation these incentives are expected to be stronger, and more focused on long-term value for money, than they were under the RPI-X framework. The key aspects of the framework that would encourage innovation are:

- the retention of ex ante incentive based price controls (discussed in Chapter 5);

- the extension of the price control period to eight years (discussed in Chapter 5);
- the efficiency incentive rate (discussed in Chapter 10);
- the focus on primary outputs and the use of secondary deliverables (discussed in Chapter 6) and output incentives (discussed in Chapter 9);
- our commitment not to make retrospective adjustments to revenue for variations between costs assumed for the price control and actual costs if outputs are delivered (discussed in paragraphs 10.23 to 10.27);
- clarity that investment included in the RAV would not be at risk (so long as outputs are delivered) even where an investment decision that was considered to be efficient in light of the information available at the time it was made, turns out, with the benefit of hindsight, to be less efficient than initially thought (discussed in Chapter 12);
- incentives to consider delivery in a longer-term context (longer than the price control length) and as part of this to take action to respond to anticipated future demand for network services where appropriate (discussed in Chapter 7);
- commitment to financial principles (discussed in Chapter 12);
- the increased focus on delivering against the needs of stakeholders (discussed in Chapter 3);
- the emphasis on the development of well-justified business plans (discussed in Chapter 7); and
- the potential for increased levels of competition in delivery which may inject new ideas on delivery into the networks (discussed in Chapter 13).

14.9. Where these elements of the framework provide the network companies with incentives to innovate and seek out new ways to deliver the primary outputs, we would expect the companies to include details of this in their well-justified business plans. We anticipate that the incentives to explore these new innovative solutions would be strengthened given the signal that we have provided that network companies should consider a range of options in determining the best way to deliver. If network companies were able to demonstrate that an alternative way of delivering, which may involve research and development (R&D) or trials, might result in lower costs over the longer term and that this approach had support from their stakeholders, this may be agreed as part of their final price control settlement.

14.10. We recognise however that the incentives in the price control may not be sufficient to deliver the type and scale of innovation needed to deliver a sustainable energy sector and value for money for existing and future consumers. There are a number of reasons for this but two in particular stand out[39]:

- first, it will take time for the incentives to be embedded within the network companies and, therefore, time for the required mindset and cultural change to feed through into commercially-driven decisions to innovate on a significant scale; and
- second, there are network-related innovations that are needed to deliver benefits for a sustainable energy sector but where the commercial benefits to the network

[39] These are discussed in further detail in our working paper "Regulating Energy Networks for the future: RPI-X@20, Innovation in energy networks: Is more needed and how can this be stimulated?", available from:http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=4&refer=Networks/rpix20/WorkingPapers and our consultation document "Regulating energy networks for the future: RPI-X@20 Emerging Thinking".

company itself are not as significant, even with the incentive provisions of the price control framework. This is particularly the case in the absence of a meaningful carbon price that feeds into commercial day-to-day decision-making. It is these innovations that are delivering benefits for the "greater good" rather than for the network company itself that are difficult to incentivise through the profit-motive or reputational incentives in the price control.

14.11. Bearing in mind these two considerations, amongst others, Sustainable Network Regulation has been designed to include a time-limited innovation stimulus for electricity networks and a time-limited innovation stimulus for gas networks. The aim is to encourage innovation in the provision of network-services related to delivery of a sustainable energy sector that may not develop in the absence of the innovation stimulus package. Save for the sectors in which they operate, both stimuli would work in the same way.

The Innovation Stimulus package

14.12. The following sections provide an overview of:

- the key elements of the innovation stimulus package;
- the way funding for the scheme would be raised;
- how we would determine the proportion of funding that would be available;
- the arrangements to allow for non-network parties to compete for funding;
- the way the competitive process would work; and
- the conditions that would need to be observed for the scheme to be removed.

Overview of the innovation stimulus package

14.13. The innovation stimulus package would provide partial funding for innovation projects that relate to the provision of network services and have as their intent delivery of a sustainable energy sector. There would be two separate "pots" of money available under the innovation stimulus package; one related to innovation on the gas networks; and the other related to innovation on the electricity networks. Under the package, network and non-network parties would be eligible to apply for funding to progress projects at any stage of innovation, from R&D to trials and pilot schemes. Partial funding would be awarded through a competitive process. An independent panel would be appointed to evaluate the bids submitted and GEMA would take the final decisions on the awarding of funding[40]. We would seek to facilitate sharing of intellectual property and lessons learned to ensure that the benefits attained through the innovation stimulus package were shared within the industry, and ultimately with consumers.

14.14. Many of the features of the proposed innovation stimulus package have similarities to the low carbon networks (LCN) Fund established as part of the recent

[40] Network companies would also be able to raise money from consumers under the price control by including innovation projects in their well-justified business plans. These projects may be akin to small scale projects that could be progressed under tier 1 of the LCN Fund.

Electricity Distribution Price Review[41]. In designing and implementing the innovation stimulus package, we would seek to learn lessons from experience of the LCN Fund.

14.15. When a final decision has been made (in Autumn 2010) on whether and how to take forward the innovation stimulus package we would consult on and decide how best to transition from the LCN Fund in electricity distribution to the innovation stimulus package. In any transition to the innovation stimulus package, we would ensure that we did not unduly disrupt the operation of the LCN Fund and this would be considered as part of any consultation on the implementation arrangements.

Raising money from consumers for the innovation stimulus package

14.16. Financing for the innovation stimulus package would be raised from use of system charges which would be recouped from consumers and the money raised would be transferred between licensees. Where third parties were awarded funding under the stimulus package, money would also be raised from consumers through use of system charges and network companies would transfer the required money to third parties. The amount raised from consumers would be a pass-through cost in the price controls of the regulated network companies. Network companies awarded partial funding for an innovation project may also wish to include provision for the outstanding required financing in their price control business plan. The decision on whether to allow this cost in the price control would depend on whether the requirements on the business plan had been met (as set out in Chapter 7) and on our assessment of the plan in the round (set out in Chapter 8).

14.17. As part of each sectoral price control review, we would set a cap on available funding for the innovation stimulus package and therefore determine the maximum amount of revenue that may be raised from consumers. As the next price control reviews are being conducted in parallel (TPCR5 and GDPCR2) for April 2013 we would consider the appropriate amount to raise through gas transportation charges and gas distribution charges for the gas network stimulus in parallel. When making decisions on the maximum amount of funding that may be raised from electricity transmission charges we would take account of the amount of money already being raised from electricity consumers, through distribution system charges, for the LCN Fund. Going forward, we would continue to consider the appropriate amount to raise from different network charges in the round, recognising that ultimately it is the same end consumer paying the cost.

14.18. Over time, as we begin to better understand the level of interest in the innovation stimulus package in each network sector, the funding levels set would evolve. At all times, but particularly in the early years of the innovation stimulus package, we would review the level of funding if any of the following trigger conditions were observed:

[41] The Low carbon networks (LCN) Fund will allow up to £500m support, over five years, to projects sponsored by the distribution network operators (DNOs) to try out new technology, operating and commercial arrangements. The objective is to help DNOs understand what they need to do to provide security of supply at value for money as Great Britain (GB) moves to a low carbon economy. For more information please see: http://www.ofgem.gov.uk/Networks/ElecDist/lcnf/Pages/lcnf.aspx

- the volume of funding was consistently less than necessary to support projects that the independent panel considered likely to have a high chance of success; or
- the volume of funding was consistently more than that required to support the projects that were successful in receiving approval.

14.19. If these conditions were observed during the price control period we would need to decide whether to accommodate a change in the level of funding available. Aside from the volume of financial support available, decisions on the scope and form of the innovation stimulus package would be taken outside of the price control.

Proportion of funding for projects

14.20. Under the innovation stimulus package a percentage of funding would be provided to projects that achieve approval from GEMA. This would represent the maximum proportion of funding available but there may be scope to award less funding, where appropriate. Although the maximum proportion of funding available would be fixed at first, we anticipate that the percentage of funding available would evolve over time as we obtained a better understanding of the proportion of funding that would be needed to facilitate network projects. We would need to take decisions on the appropriate percentage of funding that should be provided to support these projects. In taking such a decision, consideration would be given to the following issues and other considerations that appear relevant at the time:

- the percentage of funding provided under other innovation schemes, including the LCN Fund and government sponsored funds. We would need to assess the extent to which they were comparable and whether the level of funding available was considered appropriate in terms of stimulating required levels of innovation;
- parties progressing innovation should be exposed to some level of risk associated with the project. While it would be preferable for the level of funding provided to be proportionate to the level of risk associated with individual projects this would be a complicated approach. The fixed funding available for projects should reflect the level of risk that we determine to be appropriate for parties to be exposed to in progressing network projects; and
- evidence of take up, projects progressed, and lessons from the Innovation Funding Incentive (IFI) – a funding mechanism that has been introduced in all four sectors to provide support for qualifying research and development projects. In electricity distribution, this evidence suggests that companies have been generally successful in spending their IFI allocations, with funding used to support projects ranging from improvements in asset management techniques to investigations into the potential effects of climate change on electricity distribution networks[42].

[42] For more information, please see: http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/Initial%20Proposals_2_Incentives%20and%20Obligations.pdf and http://www.ofgem.gov.uk/Networks/Techn/NetwrkSupp/Innovat/ifi/Pages/ifi.aspx for summaries of Electricity Distribution IFI projects.

14.21. We would also expect further consideration would be undertaken on the role of rewards in the package. We focus below on setting out details of how the package would be used to provide rewards for commercial innovation.

Participation by non-network parties

14.22. As noted above, under the innovation stimulus package it would be possible for non-network parties to lead on projects financed under the stimulus. This would represent a departure from the LCN Fund where third parties are only involved in projects led by network companies.

Designating a new class of "Innovation Licence"

14.23. For non-network parties to be able to participate in the innovation stimulus package under existing legislation they would need to hold a relevant licence. This is because money raised from consumers can only be transferred between licence-holders. To facilitate this we propose that a new licence class is designated that is directly linked to the innovation stimulus package. Any party that was granted such a licence would be permitted to receive funds that were awarded under the innovation stimulus package. The scope of the licence would be restricted to activities related to the innovation stimulus package to ensure that parties that wished to progress innovation commercially, or under another scheme, would not be prevented from doing so. We set out here the process that would need to be followed for this class of licence to be created.

14.24. Section 7(3A)(b) of the Electricity Act 1989 and 7B(5)(b)(ii) of the Gas Act 1986 include provisions to allow payments to be made to parties that are licensed under the relevant sections of the respective acts. Section 56A of the Electricity Act and 41C of the Gas Act allow the Secretary of State to designate a new class of licensee. Under these provisions, we would need to make an application to the Secretary of State for an order to designate a new licensable activity. Approval of this application would be subject to consultation. In the event of an objection from an interested party, the matter would need to be referred to the Competition Commission for review.

14.25. The combination of these provisions would allow a new class of licensee to be designated in both gas and electricity and any such licensee would be able to receive funds from network companies. This would provide for licensed non-network parties to progress innovation with funding agreed under the innovation stimulus package by providing a route for network parties to transfer funds to them. The approach would also allow us to more easily regulate non-network companies that received support under the innovation stimulus package as they would be licensed.

14.26. In the interests of simplicity and uniformity, we expect that the stimulus package would be designed so that participation in the scheme by network and non-network parties alike would be contingent on holding an "Innovation Licence". This licence would:

- authorise the holder to receive and, in the case of network companies, disburse monies under the scheme;
- provide Ofgem with powers necessary to ensure the scheme is effectively administered, including through monitoring and assessing results; and
- contain provisions for information to be provided to Ofgem, on request.

14.27. The licence would have no application to activities outside the scheme including any other innovation projects the company or other parties may wish to pursue.

Eligibility criteria for non-network parties

14.28. When we have made a final decision on Sustainable Network Regulation (following consultation in summer 2010) we would develop a set of governance arrangements to enable us to implement the innovation stimulus package alongside TPCR5 and GDPCR2 price controls in the first instance. The governance arrangements would set out the detail of the eligibility criteria for participation in the innovation stimulus.

14.29. In addition to holding the new licence, a non-network party would have to demonstrate that it is well placed to undertake innovation related to network services. In light of our work to date on the innovation stimulus package, the following list includes some of the skills and experience that the non-network parties may need to demonstrate in order to be eligible to participate in the innovation stimulus:

- an understanding of the way that the network operates generally and more specifically of the potential impacts of the innovative project on the network;
- the inclusion of certain qualified specialists in their teams that have skills in certain areas;
- previous experience of working on relevant projects;
- a fully worked up proposal for an innovative project which adequately considers all of the prerequisite areas required by Ofgem as part of the innovation stimulus package as well as considering any other unintended consequences;
- ongoing proactive discussions with the network company about the interactions and potential impacts; and
- a provisional contract with the network company that sets out the relative responsibilities of the parties, the conditions for allowing access to the network and the arrangements to ensure ongoing quality of the network. Where non-network parties are unable to achieve this, we would have a role in arbitrating.

14.30. To ensure the stimulus package did not crowd out innovation that would have taken place anyway, we would develop assessment and eligibility criteria requiring network companies and non-network parties to demonstrate the factors associated with the outcomes of the project which meant that additional support was needed. This would place an onus on parties seeking financial support to demonstrate they had considered other sources of funding but decided that these were inappropriate to pursue further, citing the reasons why. The assessment panel should have a broad

understanding of the sources of funding available to support innovation to enable them to determine whether there are alternative schemes from which it would clearly be more appropriate for parties to obtain funding. This process would be facilitated where there was transparency about the support available for innovation.

Facilitating network access

14.31. If the innovation project proposed by a non-network company involves trialling on a network the non-network company may need access to a licensee's network. If this is the case, non-network parties should seek to arrange for this access in advance of making the bid for innovation stimulus funding. They should provide details of these contractual arrangements in their bids as well as an outline of how they would work with the network company to ensure that the provision of reliable, safe, secure and low carbon network services was not put at risk.

14.32. There may be situations, however, where a non-network company has a potentially attractive innovative project involving trialling on a live network but is unable to secure agreement from a network company to allow it to proceed with the trial on reasonable terms[43]. The governance panel of the innovation stimulus package would decide, in these cases, whether to recommend that Ofgem consider taking action to require a network company to facilitate access.

14.33. In the first instance we may just advertise that we are looking for a network company to support the bidder, to facilitate situations where the non-network party does not have access to the right group of people to identify a potential bidder. If none were forthcoming, we would seek to ask the network companies to provide details of the reasons why they were unable to allow access to their network for trialling of technologies by non-network parties. Where network companies were unable to provide robust reasons for their reticence to allow access, we would seek to further explore the potential arrangements to be put in place to facilitate this.

14.34. As set out in Chapter 6, we propose to develop primary outputs related to customer satisfaction. Any such primary outputs would seek to measure the satisfaction of a broad range of consumers, including network users, in relation to the network services that they receive. The range of consumers could include non-network parties seeking to trail innovative projects under the innovation stimulus package. If the network companies remained unwilling to allow non-network parties to take forward trials on their network, this could be reflected in their performance with respect to the customer satisfaction primary outputs. We would also consider whether it is appropriate to use new licence provisions which would place an obligation on network companies to provide access to non-network parties on reasonable terms. If a licence condition was introduced and network companies continued to prevent non-network parties to access their networks to trial projects, the possibility would exist for us to initiate enforcement action.

[43] 'Reasonable terms' imply that (a) the costs of accessing the network should be reflective of the costs that the network company would face in allowing access and (b) non-network parties should be granted sufficient access to trial the proposed project.

The competitive process

14.35. Where appropriate, the competitive process to access funding would take the same form as that developed under the LCN Fund and would include a "screening phase". We would make changes to the format developed for the LCN Fund if we found, through learning from experience, that there were specific areas that could be improved on.

14.36. The following list sets out some of the issues that the policy team may want to consider when deciding how best to design and run the competitive process:

- the arrangements for assessment of the proposals received across the network sectors and the different stages of innovation;
- the timings for bidding under the innovation stimulus;
- the representative parties that should sit on the independent panel;
- the way intellectual property issues would be dealt with;
- the assessment criteria that would be used to avoid crowding out existing projects that would have taken place anyway in the absence of the scheme;
- what arrangements could be put in place to ensure that learning from the project will be captured and disseminated widely; and
- the way that benefits would be most appropriately shared.

14.37. In general we expect funding under the innovation stimulus package should largely be allocated through the competitive process. This would allow both network companies and non-network parties equal opportunities to access the funding available. Network companies would also be incentivised to seek out innovative solution through the incentives that will be inherent within Sustainable Network Regulation, discussed above in paragraphs 14.6 to 14.11. Where network companies think there may be benefits from innovating to meet their primary outputs, the network company should include this as an option in their business plan.

Principles for removal of the stimulus package

14.38. The innovation stimulus package would be a time limited initiative, which would remain in place until the incentives inherent to Sustainable Network Regulation were found to be encouraging required innovation themselves or there was a reduction in the level of innovation required. To ensure we had clarity on the ongoing need for the innovation stimulus, we would undertake a review of the package at regular intervals (e.g. every two to three years). At each review we would decide whether to retain the package as is, whether to change the scope of the package (for example we could decide to remove the stimulus in one sector but not in the other) and/or whether to remove the package.

14.39. The review of the innovation stimulus would be separate from the price control review. As part of this review, we would undertake an assessment of network company behaviour over time to determine the extent to which they were responding to the incentives incorporated within the framework and hence the need for the continued operation of the innovation stimulus.

14.40. The review would also consider other factors outside of the regulatory framework which could trigger the removal of the innovation stimulus. These would include, but would not be limited to:

- the emergence of a meaningful carbon price which would impact on the incentives for investment in low carbon technologies by indicating the potential for commercial benefits from sustainable solutions;
- the emergence of contracts between network companies and third parties not directly involved in innovative projects to reflect the benefit that the third parties were obtaining from the innovation;
- the progression of network innovation (by networks or non-networks) without the support of the innovation stimulus package or any other fund;
- the roll out of innovative technologies proven successful under the innovation stimulus for which the costs had reduced;
- the need for innovation began to reduce as large innovative solutions were uncovered representing significant steps in facilitating the transition to a sustainable energy sector;
- the need for innovation began to reduce as government policy changed focus;
- the risks of taking forward innovation began to reduce as parties obtained a better understanding of the areas where innovation was needed and the areas where innovation had reached its potential. This should also inform their understanding of where innovation may be successful and where it is likely to fail; and
- the funding available under the innovation stimulus was no longer used as companies were taking forward innovation of their own initiative.

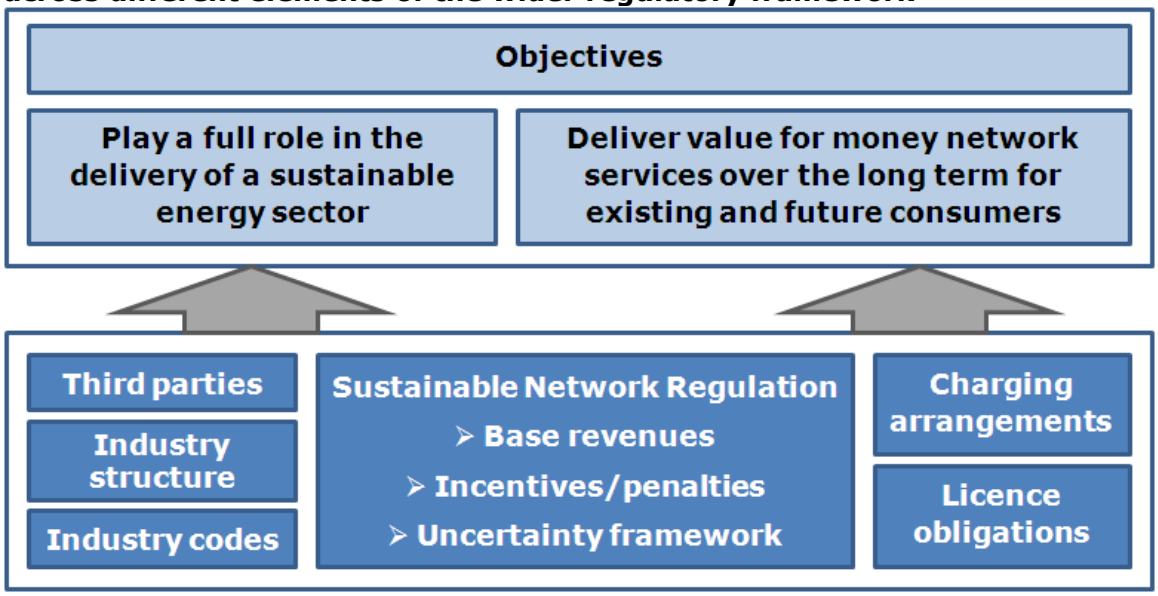
14.41. Should a review conclude that the innovation stimulus package was no longer needed we would consult on this decision and prepare a plan for winding down the package in a way that did not distort the decisions of network companies or non-network parties.

Rewards for commercial innovation

14.42. The contribution that network companies make to delivery of the objectives of Sustainable Network Regulation could be helped or hindered by the way in which they consider the interaction between the price control alongside wider aspects of their regulatory arrangements (see Figure 32). These wider aspects include, regulatory arrangements such as licence obligations, code arrangements and the charging structures. They also include the existing industry structure (e.g. the supplier hub) and the current arrangements (or absence of) for third parties to participate in delivery alongside the network companies.

14.43. It is outside the scope of our recommendations on Sustainable Network Regulation to change these other arrangements. However, we would expect network companies, in taking decisions about how best to deliver primary outputs and long-term value for money, to consider the interaction with these other arrangements. For example, we would encourage network companies to consider whether the outputs and long-term value for money delivered under the price control arrangements could be enhanced through changing the charging arrangements.

Figure 32: Opportunities for commercial innovation arising from interactions across different elements of the wider regulatory framework



14.44. Under the incentives of the price control framework energy network companies would be encouraged to pursue commercial innovation, in the same way as technical innovation, recognising the benefits this would bring in delivering outputs and long-term value for money. Developing new approaches to working with users of the network, introducing new charging arrangements and/or contracting to deliver outputs with other parties (e.g. a local community) are all examples of the types of commercial innovation that might be relevant.

14.45. Taking steps in this direction would require a significant mindset and cultural change by network companies. To encourage them to make such changes we would encourage commercial innovation, as well as technical innovation, through the innovation stimulus package.

- Network companies and non-network parties would be able to make bids for partial financing for commercial innovation projects upfront. For example, an energy supply company might make a bid for funding for a project that involved them teaming up with a network company to develop new commercial arrangements with consumers that enable active demand management solutions to be trialled. It would be possible for these types of projects to be progressed under the LCN Fund but the current arrangements mean that a network company would need to lead this.

- If a network company or a non-network party has taken forward a commercial innovation project they could make a bid to be awarded a reward for that innovation. For example, when the recommendations of our Code Governance Review are implemented, a supply company might push forward proposals for charging changes and seek a reward for encouraging development of commercial innovation in this area. In these cases upfront funding would not be provided but

there would be a potential "prize" where the expected benefits in terms of meeting the objectives of Sustainable Network Regulation were clear.

14.46. We would develop the specific details of the arrangements for the rewards for commercial innovation alongside other elements of the innovation stimulus package. We expect that parties would submit a bid for a reward, setting out the case as to why their commercial innovation project was contributing to delivery of the objectives of Sustainable Network Regulation. The bids would be reviewed by the stimulus panel and they would make recommendations on which parties might receive a reward. We would consider whether to allow parties to make a case at any time or whether we would have set times (e.g. annually mid financial year) when parties can bring forward bids for consideration.

14.47. When making decisions at a price control review on how much funding to raise from consumers for the innovation stimulus as a whole we would decide how much should be set aside for these rewards for commercial innovation. We would also consider whether the proportion would be fixed or whether there would be flexibility to move funding between the "upfront" support for projects and these rewards for commercial innovations after they have been progressed.

14.48. It is important to be clear that these proposals would not change any current arrangements in place. For example, we would continue to judge the appropriateness of proposed charging modifications using the prevailing criteria set out for this purpose.

Appendices

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Appendix 1 – The Authority's powers and duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008 and 2010) as well as arising from directly effective European Community legislation.

1.3. References to the Gas Act and the Electricity Act in this appendix are to Part 1 of those Acts.[44] Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This appendix must be read accordingly.[45]

1.4. The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them.

1.5. The Authority is generally required to carry out its functions in the manner it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition between persons engaged in, or commercial activities connected with:

- the shipping, transportation or supply of gas conveyed through pipes;
- the generation, transmission, distribution or supply of electricity; and
- the provision or use of electricity interconnectors.

1.6. Before deciding to carry out its functions in a particular manner with a view to promoting competition, the Authority will have to consider the extent to which the interests of consumers would be protected by that manner of carrying out those functions and whether there is any other manner (whether or not it would promote competition) in which the Authority could carry out those functions which would better protect those interests.

1.7. In performing these duties, the Authority must have regard to:

44 Entitled "Gas Supply" and "Electricity Supply" respectively.
45 However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them[46]; and
- the need to contribute to the achievement of sustainable development.

1.8. In performing these duties, the Authority must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[47]

1.9. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- promote efficiency and economy on the part of those licensed[48] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply,

  and shall, in carrying out those functions, have regard to the effect on the environment.

1.10. In carrying out these functions the Authority must also have regard to:

- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.11. The Authority may, in carrying out a function under the Gas Act and the Electricity Act, have regard to any interests of consumers in relation to communications services and electronic communications apparatus or to water or sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

1.12. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National

[46] Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Acts in the case of Electricity Act functions.
[47] The Authority may have regard to other descriptions of consumers.
[48] Or persons authorised by exemptions to carry on any activity.

Competition Authority under the EC Modernisation Regulation[49] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

49 Council Regulation (EC) 1/2003.