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RIIO ED1

Strategy consultation for the RIIO-ED1 electricity distribution price control

Outputs, incentives and innovation

Supplementary annex to RIIO-ED1 overview paper

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Overview:

The next electricity distribution price control, RIIO-ED1, will be the first to reflect the new RIIO model. RIIO is designed to drive real benefits for consumers; providing network companies with strong incentives to step up and meet the challenges of delivering a low carbon, sustainable energy sector at a lower cost than would have been the case under our previous approach. RIIO puts sustainability alongside consumers at the heart of what network companies do. It also provides a transparent and predictable framework, with appropriate rewards for delivery.

We are now consulting on the strategy for the RIIO-ED1 review. This supplementary annex to the main consultation documents sets out our proposals for the outputs that DNOs will need to deliver over the price control period, the associated incentive mechanisms and our proposals for innovation. This document is aimed at those who want an in-depth understanding of our proposals. Stakeholders wanting a more accessible overview should refer to the main consultation documents.

Associated documents

Strategy consultation for RIIO-ED1 - Overview
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConOverview.pdf

Links to supplementary annexes

- Strategy consultation for RIIO-ED1 - Outputs, incentives and innovation
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConOutputsIncentives.pdf
- Strategy consultation for RIIO-ED1 - Business plans and proportionate treatment
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConBusinessPlans.pdf
- Strategy consultation for RIIO-ED1 - Uncertainty mechanisms
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConUncertaintyMechanisms.pdf
- Strategy consultation for RIIO-ED1 - Financial issues
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConFinancialIssues.pdf
- Strategy consultation for RIIO-ED1 - Impact assessment
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConImpactAssessment.pdf
- Strategy consultation for RIIO-ED1 - Tools for cost assessment
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConCostAssessment.pdf
- Strategy consultation for RIIO-ED1 – Reliability and safety
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConReliabilitySafety.pdf
- RIIO-ED1 Glossary of terms
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1SConGlossary.pdf

Links to other associated documents

- Open letter consultation on the way forward for RIOI-ED1
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/consultations/Documents1/RIIOED1LaunchOpenLetter.pdf
- Handbook for implementing the RIIO model
http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/RIIO%20handbook.pdf
- Electricity Distribution Price Control Review 5 (DPCR5) Final Proposals
http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/FP_1_Core%20document%20SS%20FINAL.pdf

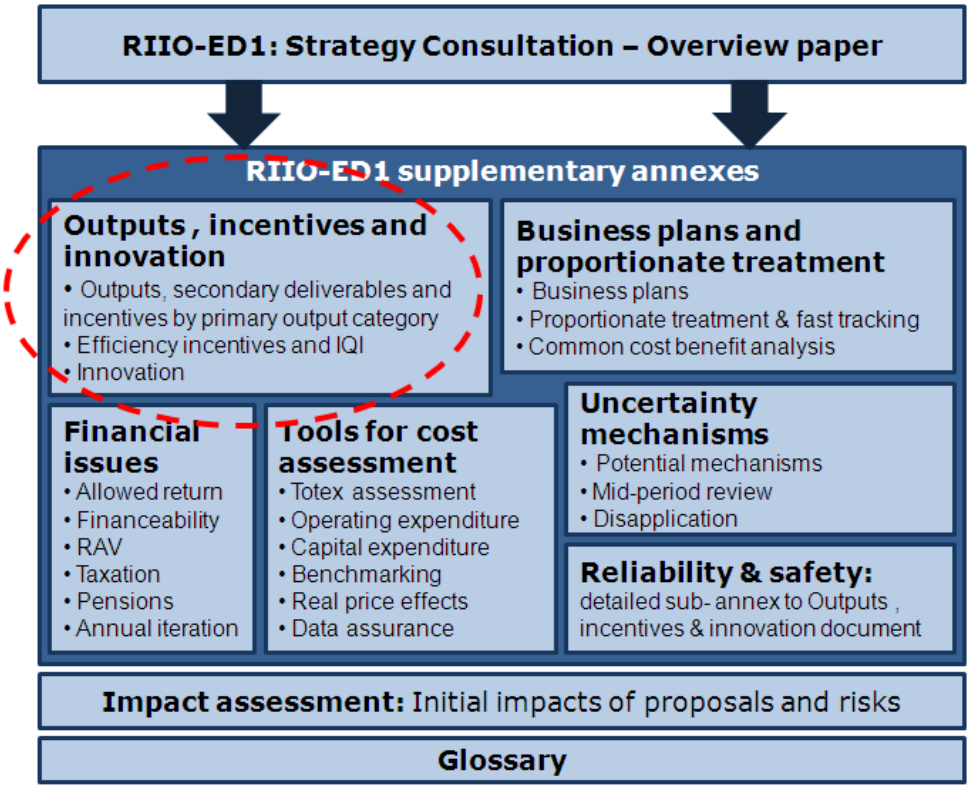
Contents

1. Introduction

1.1. This supplementary annex to the main RIIO-ED1 strategy consultation sets out our proposals for the outputs that DNOs will need to deliver over the price control period, and the associated incentive mechanisms. It also sets out our proposed approach to efficiency incentives and to the operation of the information quality incentive (IQI), as well as our proposals to stimulate innovation.

1.2. This document is aimed at those who want an in-depth understanding of our proposals. Stakeholders wanting a more accessible overview should refer to the 'Strategy Consultation for RIIO-ED1 - Overview'. Figure 1.1 below provides a map of the RIIO-ED1 documents published as part of this consultation.

Figure 1.1: RIIO-ED1 Supplementary annex document map



Links to these documents can be found in the 'Associated documents' section of this document

Facilitating the low carbon future

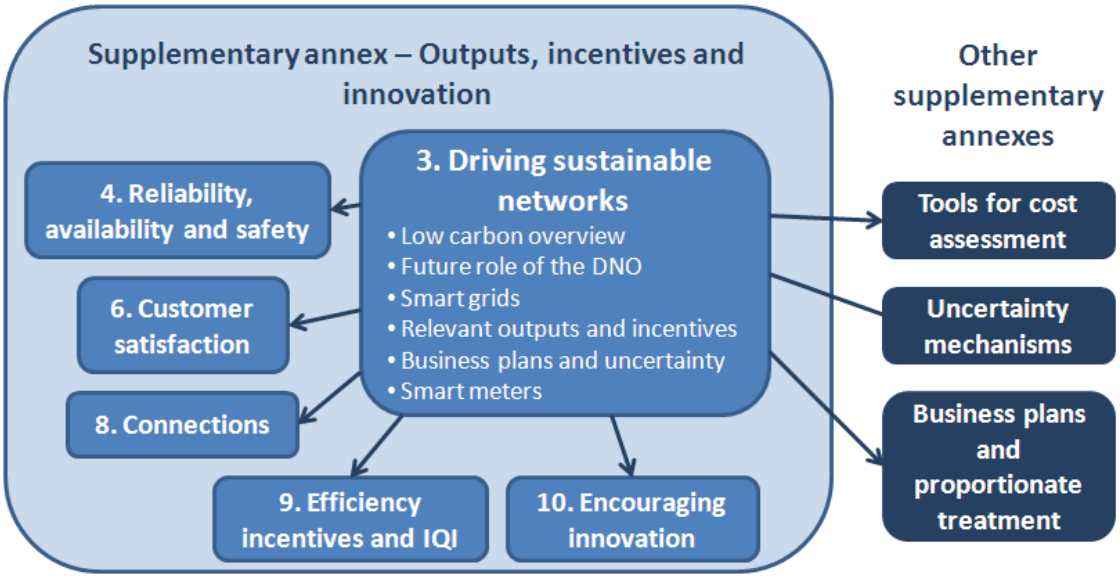
1.3. We think that the DNOs' key challenge for RIIO-ED1 is ensuring that they will be able to connect the new low carbon loads required to achieve the national

emissions targets. They will need to enable these loads and generation to connect in an appropriate timeframe, at appropriate cost, without causing network problems and without incurring excessive costs.

1.4. We believe this behaviour will be driven by a coherent and balanced package of outputs and incentives, alongside a combination of ex ante assessment and appropriate uncertainty mechanisms. Since these mechanisms are described in different chapters of this consultation, we have included a chapter at the start of this document (Chapter 3 - Driving sustainable networks) setting out how our individual proposals will incentivise the DNOs to ensure that their networks have the necessary flexibility and capacity to connect these new loads. A diagram of how the 'Driving sustainable networks' chapter links with other chapters and documents in this consultation is shown in Figure 1.2 below.

1.5. Smart grids solutions will be an important way of delivering the outputs at reasonable cost. However, they are a means of delivering an output, rather than an output themselves. We consider that DNOs' progress on enabling the transition to a smarter, low carbon network will be measured and incentivised through the package of outputs we have proposed. We have also set out our thinking on this in Chapter 3.

Figure 1.2: Map of the 'Driving sustainable networks' chapter and linked chapters and documents



Summary of proposed outputs and incentives

1.6. Table 1.1 below summarises the key elements of the proposed RIIO-ED1 outputs.

Table 1.1: Summary of RIIO-ED1 outputs framework

Primary output category	RIIO-ED1 proposals
Safety	• Achievement of Health and Safety Executive requirements.
Environmental impact	• Replace DPCR5 losses incentive with: an obligation, allowed expenditure to manage losses and a discretionary reward for efficient and innovative loss reduction initiatives. • Consulting on whether discretionary reward should be broadened to include other low carbon facilitation. • Maintain reputational incentive for business carbon footprint. • Maintain allowance for undergrounding overhead lines in areas of outstanding natural beauty and national parks.
Customer satisfaction	• Strengthen the Broad Measure of Customer Satisfaction (BMCS) introduced in DPCR5.
Social obligations	• Consulting on funding of specific activities or setting outputs (if they can be identified), especially with respect to DNOs improving their understanding of consumer vulnerability and working in partnership with other agencies. • Increase stakeholder engagement element of the BMCS to allow specific activities that address social issues to be highlighted and rewarded.
Connections	• Strengthen BMCS element relating to connection customer satisfaction and allow for differentiation of customer size. • Retain guaranteed standards of connection performance. • Introduce a new output on average time to connect (dependent on how much competition there is for connections work in each DNO's region).
Reliability and availability	• Continue existing interruption incentive scheme (IIS) with small improvements. Improve the consistency of the asset health and loading indices secondary deliverables. • Reduce the payment threshold under the guaranteed standards of reliability and ensure uniform coverage. • Consulting on the feasibility of an output for worst served customers and output on flood resilience.

Structure of document

1.7. The remainder of this document sets out our proposed output measures and incentive mechanisms for the six output categories, alongside our proposed approach to the efficiency incentive and IQI, and our proposals to stimulate innovation. The document leads with an overview of the outputs and incentives and how they are designed under RIIO. This is followed by an overarching chapter setting out how we think our RIIO-ED1 proposals will encourage DNOs to anticipate the low carbon future.

1.8. The chapters are set out as follows:

- Chapter 2: Overview of outputs and incentives
- Chapter 3: Driving sustainable networks
- Chapter 4: Reliability and safety
- Chapter 5: Environmental impacts
- Chapter 6: Customer satisfaction
- Chapter 7: Social obligations
- Chapter 8: Connections
- Chapter 9: Efficiency incentives and IQI
- Chapter 10: Encouraging innovation

2. Overview of outputs and incentives

Chapter Summary

This chapter summarises our overall approach to identifying the outputs that DNOs will need to deliver during RIIO-ED1, as well as our approach to the development of associated incentive mechanisms. We also discuss our proposed approach to regulatory reporting requirements which will support the outputs-based framework.

Question 1: We welcome respondents' views on the approach we have taken to develop the outputs framework.
Question 2: Do any of our proposed output measures present potential difficulties in ensuring the submission of accurate and comparable data?
Question 3: Should we use a percentage of allowed revenue or £m set using basis points of return on regulatory equity (RORE) to set caps and collars?
Question 4: Are there any aspects of our proposed outputs framework where the reporting requirements are likely to lead to disproportionate regulatory costs?

Outputs-led framework

2.1. Outputs are at the heart of the RIIO regulatory framework. Base revenues and incentives are linked to the delivery of these outputs. Their delivery should also form the core of the companies' business plans.

2.2. The outputs that DNOs are expected to deliver sit in six primary outputs categories:

- safe network services
- environmental impact
- customer satisfaction
- social obligations
- connections
- reliability and availability.

2.3. These categories reflect the broad role that network companies will need to play in facilitating the transition to a low carbon energy sector. Along with the outputs and secondary deliverables that sit within them, they will provide transparency to consumers with respect to what they are paying for. We intend to put strong incentives in place to encourage their efficient delivery.

Stakeholder engagement

2.4. Following our 'February open letter' which launched RIIO-ED1 we established a series of working groups[1] (listed below) to identify outputs and incentive mechanisms for each of the six output categories. The working groups comprised DNOs and other stakeholders including environmental, social, and customer representative groups. Our recommendations reflect the working group discussions as well as views expressed at other stakeholder forums. Our proposals have also been informed by discussions with the Consumer Challenge Group, a small group of consumer experts, which acts as a 'critical friend' to Ofgem in ensuring that the views of consumers are considered fully in the review.

RIIO-ED1 policy working groups

- Connections Working Group
- Cost Assessment Working Group
- Customer and Social Issues Working Group
- Environmental Issues Working Group
- Losses Working Group
- Innovation Working Group
- Flexibility and Capacity Working Group
- Reliability and Safety Working Group.

Output measures

2.5. The outputs framework comprises both primary outputs and secondary deliverables. Primary outputs concern aspects of the services that network companies provide directly to customers. Secondary deliverables are indicators of performance which may be used in support of the DNOs' required primary outputs. For example, the reliability of the networks directly impact consumers whereas asset health is a factor impacting reliability.

2.6. In identifying primary outputs, we have drawn on the principles set out in the RIIO Handbook.[2] This includes ensuring that they are: controllable by the DNOs, measurable, auditable and comparable. Where we have concerns about controllability, we will consider carefully the applicability of financial rewards or penalties.

2.7. The current electricity distribution price control, DPCR5, was a significant step towards the RIIO framework. It had an increased focus on outputs and looked at the role DNOs would need to play to facilitate the transition to a low carbon economy. Therefore, where components of DPCR5 are working well and satisfy

[1] Full details of all RIIO-ED1 workings groups, including minutes and slide packs can be found on our website: http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/riio-ed1/working-groups/Pages/index.aspx
[2] http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/RIIO%20handbook.pdf

the RIIO principles (such as the interruptions incentive and DNOs' reporting of their carbon footprint), we are looking to maintain them as part of RIIO-ED1.

2.8. If a DNO 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. We therefore expect DNOs to include in their business plans the costs required to deliver primary outputs in future price control periods. To ensure consumers do not pay unnecessarily high prices, DNOs will be expected to set out the rationale for expenditure in the context of a long-term strategy for delivery.

Setting baselines

2.9. For many of the outputs we plan to set the level (or baseline) to be delivered, taking into account stakeholder views. However for some outputs and secondary deliverables (such as the asset health and loading indices), DNOs will need to set out their proposed level of output delivery in their business plans. This level should be justified in terms of the costs and benefits to network users and should be informed by their stakeholder engagement.

Incentive mechanisms

2.10. For each output category, we have considered a range of incentive mechanisms to encourage DNOs to deliver the primary outputs and secondary deliverables at value for money to current and future consumers. These incentives include financial rewards/penalties and 'reputational' incentives. Our objective is to create a streamlined and balanced package of outputs and incentives which are clear to DNOs and do not create any perverse incentives. Our intention is that the total incentive package ensures that those DNOs that deliver for consumers earn an attractive rate of return, whereas those that demonstrably do not deliver will earn low returns.

2.11. The structure of the incentive mechanism, for example whether is it symmetric/asymmetric, and the basis for setting the reward/penalty depends on the output measure. If a DNO earns a reward, the amount of revenue it is allowed to raise from customers increases, thereby increasing its return. Conversely a penalty means that the amount of revenue it raises decreases and reduces its return.

2.12. We have not proposed financial incentive mechanisms for all output measures. For example, we have not proposed any financial incentives for the set of safety related outputs. For these outputs, DNOs need to comply with legal obligations, and are subject to Health and Safety Executive (HSE) enforcement action in the event of non-compliance.

2.13. We have designed the incentives taking into account the status of competition. This is particularly relevant for connections, where independent

providers can provide connections services as well as DNOs. Where effective competition exists to protect the customers' interests we have been mindful not to provide potential incentive benefits to DNOs that are not available to these independent providers.

2.14. The DNOs are incentivised to deliver the outputs at efficient cost. Our assessment of the business plans encourages the companies to propose solutions that offer value for money. Once the settlement has been determined, the efficiency incentive provides an ongoing incentive for them to seek out lower cost solutions and manage the cost of output delivery. (The efficiency incentive is described in more detail in Chapter 9). We expect that in many cases innovation, including the implementation of smart grids techniques (such as demand side response) should enable DNOs to deliver outputs at long-term lower costs than conventional solutions.

Caps and collars

2.15. For some outputs and incentives we propose to set upper and/or lower limits on the revenue adjustment. These limits are dependent 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, the extent to which there is useful information on customers' valuation of the outputs and the robustness of the information that is available both to set targets and measure performance against them. Where we use such 'caps and collars' we have designed them to limit any risk of creating perverse incentives at the margins and aim to make them as simple as possible.

2.16. Historically we have used two different mechanisms to set caps and collars. In DPCR5 we set caps and collars (for example for losses, reliability and broad measure of customer satisfaction) as fixed £m. These were set based on the potential DNO shareholder return from the incentive. We term this shareholder return as the return on regulatory equity (RORE), and set the £m limits based on the same number of basis points for each company.

2.17. In RIIO-T1 and GD1 we set caps and/or collars for several incentives (for example in customer satisfaction) in terms of a percentage of allowed revenues.

2.18. We are interested in stakeholders' views on which basis we should use to set caps and collars for RIIO-ED1. We are aware that many stakeholders find it easier to compare percentages of allowed revenues. However, some stakeholders have pointed out that DNOs have quite different allowed revenues and that allowed revenues are not correlated with return. In addition, where allowed revenues change materially between years, the exposure under a percentage of allowed revenue cap and collar will vary from year to year.

2.19. In this consultation we are using a mixture of both measures. However we are minded to use basis points to set caps and collars in our February strategy decision. We will also use the same basis to compare the potential return across all incentives, irrespective of whether they have caps or collars.

Recovery of incentive rewards or penalties

2.20. We are aware of stakeholder concerns about the volatility of network charges. In April 2012 we consulted on options to improve the predictability and reduce the volatility of charges arising from the price control settlement, including the impact of incentive rewards and penalties.[3] We intend to publish a decision on the consultation in October 2012.

2.21. Pending the outcome of that process, our current thinking for RIIO-ED1 is that we should define the incentives such that they are consistent with our proposals for reducing volatility. This means that we have designed them to operate with a two year lag on adjustments to allowed revenues arising from incentive rewards or penalties. Performance in one year will be reported in the next, and the reward or penalty will feed into allowed revenues (and therefore charges) the year after.

Monitoring output delivery and reporting

2.22. We will need to be able to monitor and evaluate the DNOs' performance against the proposed set of outputs. In the current price control our main reporting mechanism is the Regulatory Instructions and Guidance (RIGs), which provide a common framework for DNOs to report relevant performance data and cost information.

2.23. For RIIO-ED1, we will need to revise and expand the current RIGs to enable us to monitor DNOs' performance against the proposed output measures. We propose to start work early on the development of RIGs for RIIO-ED1 and to issue draft revised RIGs in advance of our Final Determination in November 2014. We will work with the industry in developing common reporting templates which will form part of the RIGs.

2.24. We welcome respondents' views on whether any of our proposed output and performance measures present potential difficulties in terms of ensuring accurate and comparable data submissions. We would also welcome respondents' views on whether there are any aspects of our proposed outputs framework where the data requirements are likely to result in a disproportionate regulatory burden.

[3] Mitigating network charging volatility arising from the price control settlement Ref:52/12 13/4/2012 available at http://www.ofgem.gov.uk/Networks/Policy/Documents1/Charging_Volatility_Cons.pdf

2.25. We have also set out in the 'Supplementary annex - Tools for cost assessment' our proposals for data assurance and compliance to ensure that DNOs report accurate data.

2.26. The RIIO model sets out a balanced scorecard approach to assessing company performance. The purpose of the scorecard is to provide a clear and simple way to convey information about network company performance and to facilitate a meaningful comparison of performance over time. We are using this approach in the existing electricity distribution annual report[4] which we will update in the first year of ED1 to reflect the RIIO-ED1 outputs.

Changes to outputs

2.27. Recognising the scope for significant changes in outputs during an eight-year price control period, the RIIO framework sets out a provision for a mid-period review of output requirements. In setting a mid-period review there is a risk that it could undermine the purpose of setting a longer price control period. Consequently, we propose to restrict the scope for the mid-period review to changes to outputs that can be justified by clear changes in government policy and the introduction of new outputs that are needed to meet the needs of consumers and other network users. This is discussed in more detail in the 'Supplementary annex – Uncertainty mechanisms'.

[4] The most recent report, for 2010-11, can be found at: http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/Electricity_Distribution_Annual_Report_for_2010_11.pdf

3. Driving sustainable networks

Chapter Summary

This chapter sets out how our proposals encourage and facilitate DNOs to fulfil their role in a low carbon economy. DNOs will need to be flexible in their investment plans and demonstrate that they can provide timely capacity in the most efficient way whilst maintaining reliability standards across a range of potential scenarios.

Question 1: Do you agree that a specific output or incentive focussed solely on the connection of low carbon technologies is not necessary?
Question 2: Do you agree with our proposals on the level of detail DNOs will be required to submit on the different scenarios in their business plans?
Question 3: Do you agree that an uncertainty mechanism is required to manage the uncertainty around the penetration of low carbon technologies?
Question 4: Do you agree with the three tier approach we propose to introduce for the recovery of the DNOs' costs during the smart metering roll-out?
Question 5: Should costs of load and generation growth for existing customers in profile classes 1-4 be socialised, until smart metering data is available?
Question 6: Should DNOs retain the ability to charge existing customers in profile classes 1-4 who install equipment which poses significant power quality issues for the network?
Question 7: If we socialise costs of existing profile classes 1-4 customers, will the use of system charging methodology need to be changed in order to protect IDNO margins?

Introduction

3.1. During ED1 (and beyond) we are likely to see the start of significant take up of heat pumps, photovoltaics, electric vehicles and distribution connected generation (DG) driven by the government's climate change targets. These appliances are collectively referred to as low carbon technologies. Distribution networks are not designed to accommodate large volumes of these technologies and their take-up may be an important driver of investment needs going forward.

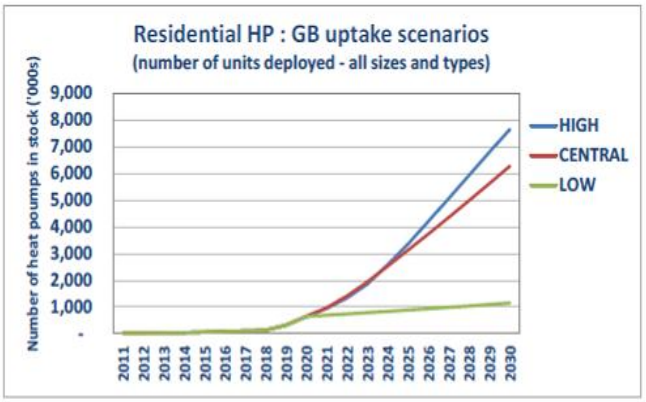
3.2. There is considerable uncertainty around the take-up of these technologies. Figure 1.1 illustrates the work undertaken by the Department of Energy & Climate Change (DECC) through work stream 1 of the Smart Grid Forum (SGF) to estimate their likely penetration.[5] The work stream has developed 4 separate scenarios under which Great Britain (GB) could meet its climate change targets out to 2030 in line with the 4th Carbon Budget.[6] Figure 3.1

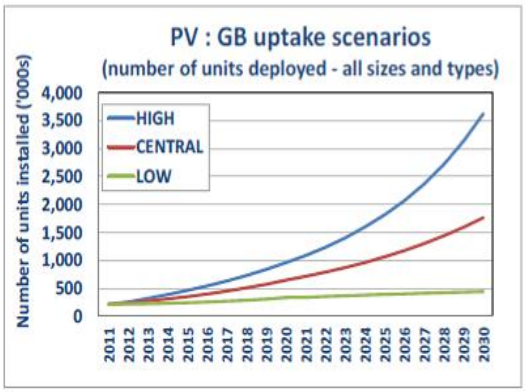
[5] The SGF was jointly established by Ofgem and DECC in May 2011 to provide leadership on Smart Grid issues.
[6] For further details on the 4th Carbon Budget, visit
http://www.decc.gov.uk/en/content/cms/emissions/carbon_budgets/carbon_budgets.aspx

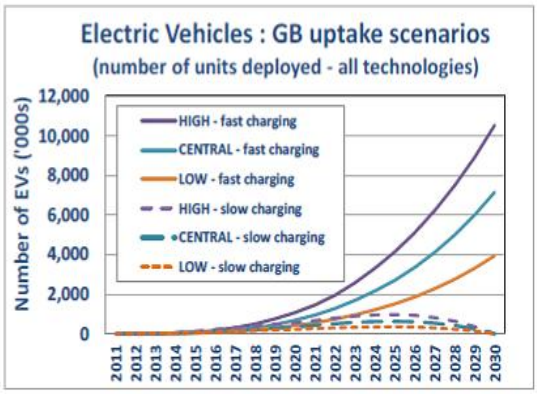
illustrates the take up of individual technologies under a high, central and low scenario.[7] These were combined to produce four separate low carbon scenarios with the same PV assumptions used throughout:[8]

i. A high scenario with high take up of all technologies
ii. A medium scenario with high take up of heat pumps and central take up of electric vehicles
iii. A second medium scenario with central take up of heat pumps and high take up of electric vehicles
iv. A low scenario with low takes up of all technologies.

Figure 3.1 – DECC projections for take up of low carbon technologies[9]







Source: SGF work stream 3, Assessing the impact of low carbon technologies on Great Britain's power distribution networks.[10]

[7] These three projections reflect varying assumptions including barriers to consumer uptake and assumptions regarding the rate of technology improvement and commercialisation. Technology projections for heat pumps and electric vehicles combine to make the DECC's scenarios to meet the UK's Fourth Carbon Budget.
[8] DECC are currently working on updating these in line with latest projections and DECC strategy on renewable energy deployment.
[9] Projections of future uptake of low carbon technologies will be updated by work stream 1 of the SGF in the light of new information. New data on uptake of these technologies is currently being analysed to develop new projections.

3.3. Figure 3.1 suggests a gradual growth in take up of low carbon technologies during ED1 with significant divergence between the scenarios starting to emerge at the end of ED1 and becoming more pronounced during ED2 and ED3. This suggests that DNOs will need to be proactive to be in a position to respond across the range of scenarios in ED1 and adapt and evolve their current practices.

Role of DNO in the transition to a low carbon economy

3.4. We consider that DNOs will have to facilitate low carbon technologies across any scenario which emerges in transition to a low carbon economy. In doing so, we expect DNOs to deliver the following in a cost efficient manner, using innovative solutions where appropriate:

1. Understand and respond to customer needs
2. Provide timely connection of new customers
3. Facilitate adequate capacity to accommodate increasing demand and generation from low carbon technologies
4. Maintain high standards of reliability and security of supply.

3.5. This chapter sets out the high level framework for outputs and incentives, which are designed to drive DNOs to fulfil their role in the move to a low economy during ED1. We propose mechanisms to enable them to do this across a range of scenarios and manage the associated uncertainty. Given the centrality smart meters can play in providing the necessary data for this role, the chapter outlines how we expect smart meter costs to be treated. In addition, we outline potential changes to the recovery of costs from customers. This is to provide them with greater certainty of income to allow them to be more proactive in making the required investments.

Use of smart grid solutions

3.6. To fulfil this role, DNOs' business practices will need to evolve both during ED1 and beyond. A key enabler for this evolution will be the availability of smart metering data. Under the government's vision, every household and small business in GB will have a smart meter installed by the end of 2019. This will provide consumption data to aid planning and operational services, electricity quality data and other services to help improve the customer experience.

3.7. We expect DNOs to make full use of this data in their business plans; using it to help facilitate smart grid solutions where appropriate. They should leverage

[10] http://www.ofgem.gov.uk/Networks/SGF/Publications/Documents1/WS3%20Ph2%20Report%20Issue%203-1%20-%2031-Jul-12.pdf

the learning from ongoing Low Carbon Networks Fund[11] projects to help understand where such solutions provide better value than traditional business practices. In addition, they should use the learning emerging from work stream 3 of the SGF. This group has developed a cost benefit assessment of where smart grid solutions represent a more efficient long term solution.[12] The model translates the impact of facilitating the DECC low carbon scenarios onto regional networks.[13] We note that there are a number of disclaimers around the assumptions used in the model and that it will require DNOs to work together to refine these. However, the methodology underpinning the model has clear merits and can be a useful tool to help DNOs understand the costs and benefits of smart grid solutions.

3.8. These solutions can help provide DNOs with the flexibility required to respond across a range of scenarios which could emerge in ED1. They can help defer investment decisions and buy time so that decisions are taken when there is greater certainty around the demands that networks will need to accommodate. This can help avoid both the risk of stranded assets but also investing in assets which have to be upgraded well before the end of their usual life. As such, we consider that smart grid solutions can provide a high option-value for DNOs and we would expect to see this value included in business plan justification.

3.9. As is set out in the 'Supplementary annex – Business plans and proportionate treatment', our assessment of costs and benefits across the useful economic life of the asset will ensure that smart grid solutions are considered on the same basis as business as usual. This should allow DNOs to make the case for expenditure in ED1 to set up enabling technologies to enable smart grid solutions in ED2, where they can demonstrate benefits.

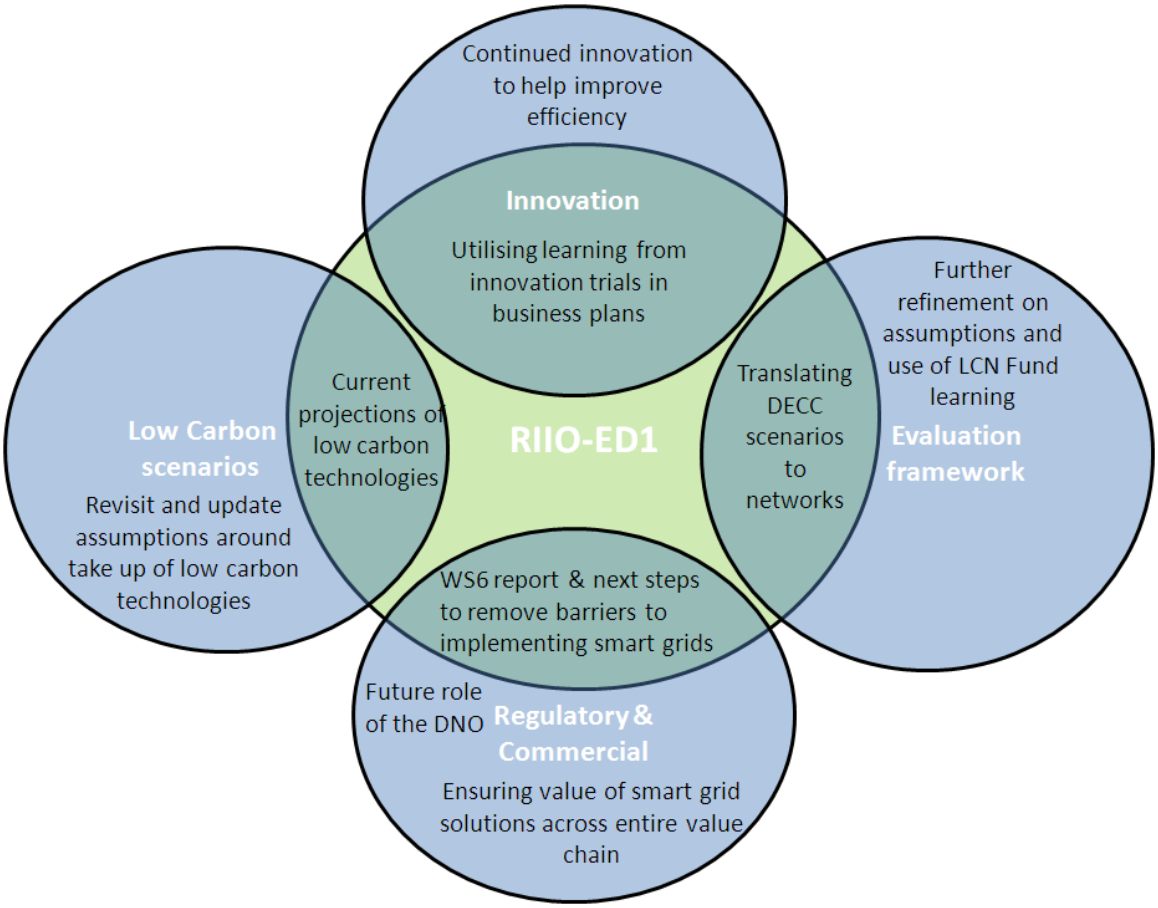
Distribution system operators

3.10. If, in the future, DNOs start to deploy a large number of smart grid solutions, they may have to start managing and co-ordinating demand side response, storage and send signals to consumers to manage their consumption. This would see them behaving more like distribution system operators. Work stream 6 of the SGF has specifically looked into regulatory and commercial barriers to implementing smart grid solutions. Its report[14] outlines that there are no specific regulatory barriers to this role evolving over time. However, the group did conclude that there are no mechanisms in the market to ensure that this role leads to the most efficient outcomes across the value chain.

[11] This provides funding for DNOs to trial innovative projects in anticipation of a low carbon future.
[12] A report from work stream of the SGF describing the model and methodology underpinning it can be found at:
http://www.ofgem.gov.uk/NETWORKS/SGF/PUBLICATIONS/Documents1/WS3%20Ph2%20Report%20Issue%203-1%20-%2031-Jul-12.pdf
[13] Each region will have different rate of take up of low carbon technologies under each scenario. However, when summed, the total of each region will equal the overall GB total for each scenario.
[14] http://www.ofgem.gov.uk/Networks/SGF/work-stream-6/Documents1/WS6%20report%20Aug12.pdf

3.11. The driver for any DSO role will be the penetration of renewable generation on the distribution network and volume of demand it is asked to accommodate. As demonstrated above, there is uncertainty around this penetration and the DECC scenarios illustrate that there may not be significant changes until ED2 or ED3. Consequently, we do not see this as an issue which we need to resolve in setting the price control for ED1. Rather, it can be explored as a parallel activity. Figure 3.2 below highlights how the work on smart grids is feeding into the setting of the price control but also some of the work which will continue and will provide learning to help DNOs fulfil their role during ED1.

Figure 3.2: Interaction between SGF and RIIO-ED1



Outputs and incentives

3.12. The uptake of low carbon technologies will present two very different issues on the network which we propose that DNOs should be incentivised to address:

1. Where the installation of low carbon technologies significantly changes the customers' demand but does not require any physical work at the premises.

2. Where the installation of low carbon technologies changes the customers' demand and requires work at the premises to provide a new connection or a modification of an existing connection.

3.13. In the first scenario the increase in usage may cause problems upstream on the network (depending on aggregate local demand) but the DNO may not have sight of this. We therefore need to ensure that DNOs are incentivised to take the necessary actions to avoid network problems that could arise. In the second scenario the customer must inform the DNO prior to any connection work, meaning that they have the opportunity to plan accordingly. We need to ensure that DNOs accommodate these connections in a cost effective and timely manner and maintain an appropriate customer relationship.

3.14. We consider that the proposed package for ED1 should incentivise these behaviours across the board. We are not proposing to introduce a specific output or incentive focussed solely on low carbon technologies. Table 3.1 below highlights which mechanisms we consider will incentivise DNOs to adopt these behaviours.

Table 3.1: DNO behaviours and incentives

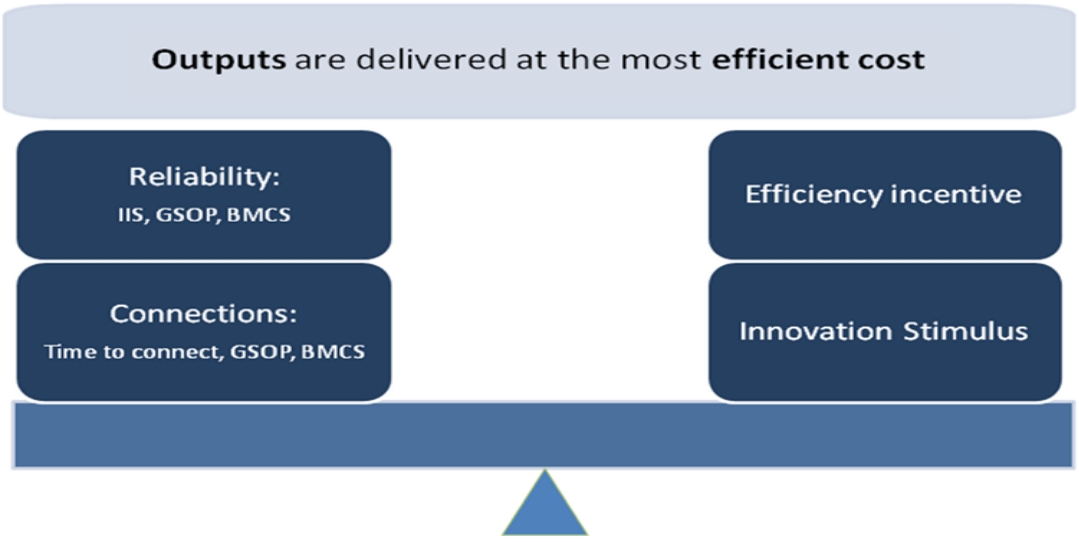
Behaviour we want DNOs to adopt	Proposed mechanisms to incentivise that behaviour	Further information
Facilitating timely connections and meeting customer requirements	1. Time to connect output and incentive 2. Broad Measure of Customer Satisfaction (BMCS) 3. Connections Guaranteed Standards of Performance (GSOP) 4. Information provision 5. Facilitating competition in connections	Chapter 8
Maintaining Network Reliability	1. Interruption Incentive Scheme (IIS) 2. Electricity, Safety, Quality and Continuity Regulations 2002 (ESQCR)[15] 3. GSOP 4. BMCS 5. Load and Health Criticality Indices	Chapter 4
Being cost-efficient	1. Efficiency incentive 2. Innovation stimulus[16]	Chapter 9 Chapter 10

[15] The ESQCR specify safety standards, which are aimed at protecting the general public and consumers from danger. In addition, the regulations specify power quality and supply continuity requirements to ensure an efficient and economic electricity supply service to consumers.
[16] The innovation stimulus consists of three measures: the NIC, the NIA and the Innovation Rollout mechanism.

3.15. This package of measures will drive the behaviours we want DNOs to demonstrate. The way they will do this is outlined in the examples below:

- **Facilitating low carbon technologies:** The IIS incentivises DNOs to anticipate what is required to enable householders to plug in electric vehicles or heat pumps without overloading network assets, such as cables or transformers, and causing interruptions.
- **Facilitating distributed generation (DG):** The time to connect incentive will ensure that DNOs connect DG in a reasonable time, whilst the efficiency incentive will ensure that they manage the cost of connection. The large customer differentiation in the BMCS will incentivise DNOs to work closely with their DG customers and understand their individual needs.
- **Adopting smart solutions (including demand side response, DSR):** DNOs will be incentivised to deliver the required outputs at lowest long-term cost. Companies will therefore have a natural incentive to adopt smart solutions where these are lower cost than conventional ones. This includes the option of delaying investment using alternative contractual relationships with demand or generation customers. We are working with the SGF to identify any barriers to DNOs implementing smart solutions.

Figure 3.3: Balance of proposed incentives for RIIO-ED1



Scenarios and uncertainty

Scenarios

3.16. As referred to in the introduction, the government has set out a range of scenarios through which GB can achieve its climate change targets. The mix of low carbon technologies in each scenario will have a different impact on the network and require different amounts of investment. The companies have committed to provide Ofgem with the indicative materiality of the impact of

each DECC scenario compared to a business as usual base case, in December 2012.

3.17. For the submission of business plans, we propose that each DNO selects a 'best view' scenario which reflects their view on the likely impact of accommodating low carbon technologies on their network. This view could be one of the DECC scenarios or a different scenario the DNO has constructed through informed stakeholder engagement. Alongside this best view, we propose that DNOs should also provide an appropriate level of information on the forecast relating to the impact of all four DECC scenarios on their area. We anticipate that we will require the business plans to include full details of the cost impact of addressing a common scenario (the 'reference case') from which we can assess each DNO's 'best view'. We propose that this reference case should be the DNO-specific equivalent of the DECC low scenario. This reference case will allow us to compare DNOs' costs against a common scenario. In the strategy decision document we will provide clarity on the level of detail we expect DNOs to provide across all scenarios once we have reviewed the data DNOs submit in December.

3.18. We acknowledge that the DNOs 'best view' may not be the scenario which materialises. Therefore, as indicated above, we expect DNOs to present a narrative on how their investment strategy can flex to meet demands associated with any of the DECC scenarios. We propose that this should include a mixture of ex ante allowance and uncertainty mechanisms to share the risk of this uncertainty between companies and consumers.

Uncertainty mechanisms

3.19. We expect DNOs to bear their own business risk and manage uncertainty during the price control. The proposed efficiency incentive shares risk between customers and the DNO for any over or under spend in relation to the ex ante allowance. This would distribute the risk of the uncertainty with respect to the volumes and costs of accommodation of low carbon technologies. The DECC scenarios demonstrate the high level of uncertainty over the future impacts on the network. We do not consider that it would be appropriate to manage this uncertainty through the ex ante allowance and efficiency incentive since the penetration of low carbon technologies which emerge is outside the DNOs' control. The danger of managing this uncertainty through the allowance is that you either set the allowance too high, leading to windfall gains for companies, or the allowance is too low leading to companies being unable to finance their activities.

3.20. In DPCR5 there is an uncertainty mechanism which allows for the variability in the number of new demand connections (for further information see the 'Supplementary annex – Uncertainty mechanisms'). We consider that this may not adequately address the uncertainty over the penetration of low carbon technologies since it relies on the DNOs creating an ex ante forecast of low carbon technology volumes and costs. Presently, DNOs do not have a reliable view of this information. Therefore, we propose that a new specific uncertainty

mechanism is required for RIIO-ED1 to manage the risk and uncertainty over reinforcement costs driven by low carbon technology.

3.21. Uncertainty mechanisms can vary in design depending on the risk they are trying to mitigate. These options are set out in detail in Chapter 2 of 'Supplementary annex – Uncertainty mechanisms'. With respect to reinforcement required on the distribution network, we consider the uncertainty is primarily focussed around the volume of low carbon technologies connecting and the resultant cost impacts on the network. Therefore, a volume driver may be the most appropriate mechanism for managing some of this uncertainty and allowing DNOs to move from a steady state, funded through the ex ante allowance, to a higher or lower scenario if necessary. We think there is merit in having a common volume driver across DNOs to ensure appropriate interaction with the ex ante allowance and to aid transparency for stakeholders. The 'Supplementary annex – Tools for cost assessment' sets out two volume drivers which DNOs have proposed along with our assessment of strengths and weaknesses. We propose to continue to work with stakeholders to develop a common volume driver for the February strategy decision document.

Other tools to manage uncertainty

3.22. DNOs can also manage uncertainty by making strategic investments in anticipation of increases in demand or generation. Some stakeholders consider that a lack of 'strategic investment' in anticipation of future demand may be a barrier to the take up of low carbon technologies. A number of DNOs responded that they believed that Ofgem is not in favour of DNOs investing strategically, and that they were discouraged from doing so by the regulatory framework. Their main concern was that strategic investment may be deemed inefficient and disallowed from their Regulatory Asset Value (RAV).

3.23. We wish to make clear that we consider strategic investment to be a useful tool. We expect DNOs to use it where it is in the interests of consumers, taking into consideration other options available to them (such as smart grid solutions).

Smart metering

Background

3.24. Another uncertainty for DNOs is the costs associated with the smart meter roll out. The government's vision is for every home and smaller business in GB to have smart electricity and gas meters. In accordance with their licence obligations, energy suppliers are expected to complete the roll-out of smart meters by the end of 2019.

3.25. There are two types of costs related to the smart metering programme that may be incurred by the DNOs – costs related to the roll out of smart meters ie costs related to DNOs being called out to consumer premises ('call out costs'), and costs related to the DNOs' use of smart metering data. The latter would include costs/fees that will be charged to the DNOs for use of the DataCommsCo (DCC) services as well as costs for the DNOs' IT systems, including data aggregation systems, that would enable the DNOs to effectively use smart metering data.

Call-out costs during roll-out

3.26. Some network companies have estimated that they could experience a substantial increase in their costs caused by potential activities during the smart meter rollout. These relate to:

- extra emergency call-outs due to issues identified during smart meter installations
- resolution of on-site issues before a smart meter can be installed
- smart meter installations identifying further issues that network companies may need to address.

3.27. At this stage the DNOs have been unable to identify accurately what the types of costs could be and their materiality. It is noted, however, that while some metering related costs are incurred by the DNOs in their normal business, the compressed timetable of the smart meter roll-out will arguably increase these costs.

3.28. Consideration needs to be given as to how any increased costs will be treated so they are borne by the parties that are able to control them to ensure the most efficient outcome for customers. Given the potential magnitude of these costs we need to ensure that strong incentives are placed on all parties involved in the roll out to cooperate and keep costs to their most efficient level.

3.29. We understand that suppliers and network companies are intending to develop Service Level Agreements (SLAs).[17] These are expected to cover network companies delivering remedial work to properties within set timeframes, in exchange for granular planning information from suppliers. While we expect these SLAs to be developed and put in place by the relevant parties, it will be important to consider carefully how any costs arising might fit within RIIO-ED1.

[17] http://www.dcusa.co.uk/Public/CP.aspx?id=174

3.30. To ensure related costs during the smart meter roll out are kept at an efficient level, we propose to introduce a three tier approach to the recovery of these costs:

Tier 1: As part of their business plans, DNOs should include efficient costs that the DNO would normally bear (ie emergency call outs, remedial work, etc, covered above). These costs should be based on the business as usual unit cost for a call out and a reasonable (ie high probability of occurrence) volume of call outs. We will benchmark these costs across all DNOs during our assessment of the business plans.

Tier 2: A volume driver, based on the business as usual unit costs, will fund any additional call outs in excess of the 'reasonable' volume included under tier 1. This volume driver will apply to costs incurred for DNO related issues only.

Tier 3: Any additional costs caused by issues that do not relate to DNOs eg call outs that incur higher unit costs (eg work conducted out of normal hours) or aborted call outs should be funded by the suppliers under their SLAs with the network companies.

Costs related to the use of smart metering data

DataCommsCo (DCC) costs / fees

3.31. The functionality and costs of the smart metering data and communications systems currently being procured by DECC are still unknown and are expected to be clearer early next year.

3.32. The DECC procurement process is exploring the cost of different levels of functionality and capacity for both smart metering and smart grids requirements. The DNOs' stated requirements have been included in the specifications. The final requirements will be informed by a business case which takes account of the costs and the evidence on benefits that has been provided by the DNOs. In addition, scalability and flexibility of the solutions are included as explicit criteria in the procurement evaluation framework. DECC will continue to engage with DNOs as firmer cost information is provided by bidders. If the DNOs needed to invest in additional data and communications systems to enable the development of smart grids solutions during ED1, the costs of these systems would need to be justified against, and offset by, the relevant benefits.

3.33. Notwithstanding the level of functionality delivered through the DECC procurement process, DNOs are expected to pay at least some of the fixed costs of the provision of the DCC data and communications services. This is because the core functionality procured by DECC includes DNO related functionality which is additional to that required by the suppliers. DNOs will need to include these costs (which will be in the form of service fees) in their

business plans. They will also need to explain how they plan to use and benefit from these services.

3.34. There is an outstanding question regarding when the DNOs are expected to start paying for the DCC services. We will continue to discuss these issues with DECC.

DNOs' data systems

3.35. DNOs need to include the cost of any IT systems and processes necessary to utilise smart metering data in their business plans. These costs should be justified by the corresponding benefits. The DNOs should also include the costs of any systems and processes for aggregating (in accordance with DECC's data privacy policies) consumption data which they need for planning and operational purposes.

Charging for and notification of demand and generation increases

3.36. In a world with smart meters, data will be available to help detect when a domestic customer has increased their electricity usage such as through installing new appliances such as low carbon technologies. It will also be possible to monitor the contribution they make to the local peak on the network and if they are contributing to the need for reinforcement. However, without this increased visibility, we consider that there are a number of issues in trying to maintain the current policy of targeting costs on domestic customers who connect new appliances. The current charging arrangements were not designed to deal with large scale take-up of low carbon technologies and subsequent increases in demand and generation at existing domestic premises. This section outlines our proposals on how to amend them prior to the availability of smart metering data.

3.37. In general, DNOs recover costs from customers to cover the costs incurred on the network. At present they do this through two different mechanisms.

- An upfront 'connection charge' levied on new customers who request a connection which triggers upstream reinforcement or existing customers who increase load or generation and trigger upstream reinforcement.[18] This charge is levied by the DNO directly on the customer triggering the costs.
- An ongoing charge for use of the distribution system – 'use of system charges' levied on all customers. These charges reflect the cost of maintaining and replacing assets used by more than one customer. These

[18] Customers will continue to pay for any 'sole use' assets required to meet their demand or generation. Any reinforcement required at two voltage levels above the point of connection is funded by the DNO.

are paid by every customer as part of their overall supply bill to reflect the costs of transporting electricity through the distribution network.

3.38. The connection charge is designed to send a cost reflective signal to the customer about the costs they are imposing on the network. We consider that it is vital to maintain this signal for new customers connecting to the network. However, as explained below, we are concerned that it may currently be impractical to send this signal to existing domestic and small non-domestic customers who increase their demand[19] and cause costs on the network. As a result, we are consulting on the merits of moving the costs these existing customers would currently pay through a connection charge into the wider use of system charges which are spread across all customers. This is commonly known as socialisation. This would provide DNOs with the certainty of income to ensure that they make the necessary investments in order to ensure their networks are capable of accommodating the demands which materialise. As highlighted below, it can also avoid unfair charging of consumers, which could act as a barrier to take up of low carbon technologies.

Current situation

3.39. The low voltage network for domestic customers is designed on the basis of a notional per household capacity, which is not well communicated to the customer. In addition, with the exemption of generation, there is no process for customers to notify the DNO when they connect new appliances which increase load.[20] Consequently, an individual domestic customer can increase their usage beyond their notional level without the DNO knowing about it. However, this increase may not require any reinforcement to the network because their neighbours are consuming below their notional level. This has implications for the use of new appliances such as heat pumps, electric vehicles and micro-generation. If all customers use these appliances at local network peak and exceed their notional capacity, they may trigger upstream reinforcement. However, if a customer uses them outside of network peak, then they are unlikely to trigger upstream reinforcement. At present there is no practical way to monitor when a domestic customer uses these new appliances as they are not half hourly metered.

3.40. The same is true of all customers who do not have a defined capacity agreement with the DNO and half hourly meter readings to monitor compliance with this agreement. Typically this is not just domestic customers (profile class[21] 1 and 2) but also covers small businesses, classified as profile

[19] When we refer to demand we mean wider demand on the network which could include generation.
[20] The rules around notification for generation are set out in Engineering Recommendation G83. This states that single unit installations below 16 amps per phase must notify the DNO within 28 days after connection. For multiple units, or installations above 16 amps per phase, the DNO must be notified prior to connection.
[21] Customers are allocated to profile classes for charging purposes. Each profile class share common characteristics in terms of their size, usage, tariff structure and impact on the network. Further details can

class 3-4 non domestic customers. Profile class 5-8 customers are also currently not metered on a half hourly basis, although they will have advanced metering with this functionality in place by 1 April 2014. Consequently, we consider that the issue for ED1 will be with profile class 1-4 customers.

Socialisation proposal: merits

3.41. We consider that there may be merits in socialising the costs of upstream reinforcement triggered by load or generation increase from specific existing customers (profile class 1-4). Such a move would avoid levying a connection charge on customers who use appliances which do not contribute to local network peak. In addition, it is easier for DNOs to receive notification of some new appliances (typically the low carbon ones which register for subsidies) than others, such as power showers and hot tubs. We would not want to single out low carbon appliances for connection charges and not other appliances which can trigger similar costs simply because it is easier to get visibility of them.

3.42. In the absence of half hourly consumption data it seems impractical to make a distinction between customers who trigger costs and those who do not. Rather than risk charging customers who do not impose costs, we believe there may be greater merit in socialising costs for all these customers and marginally raising use of system charges. We acknowledge that once half hourly consumption data is available via smart meters, it may enable accurate charging of only those who contribute to local network peak and cause costs on the network. At such a point, it may be sensible to revisit the charging arrangements.

3.43. Our proposal would mean that customers who are not adopting high consumption equipment will in effect be paying for those who do through marginally raising use of system charges. This may have greatest impact on the fuel poor. However, a system that targets costs at individual domestic customers may not only be impracticable, as described above, but also costly as DNOs would need to identify and approach individual customers to recover charges. The impact of this is likely to be to increase DNOs overall costs which are passed through to all consumers.

Socialisation proposal: associated issues

3.44. We are aware of a number of issues that could arise if these costs are socialised.

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be found on p2 of an Elexon report into load profiles: http://www.elexon.co.uk/wp-content/uploads/2012/01/load_profiles.pdf. Further detail is outlined in the glossary.

3.45. Firstly, some devices have particular network impacts over and above their peak kW demand. For example, certain designs of heat pumps can cause more significant voltage issues on the network than others. Typically, such voltage issues would cause lights to flicker in all premises connected to the same feeder. The same is also true for welding equipment. At present, DNOs can recover the network costs caused by the used of these devices through a connection charge on the individual customers triggering them. If these costs are socialised there is no incentive on customers to consider purchasing equipment that has less impact on the network. This could result in a higher overall cost to all consumers. Consequently, if our socialisation proposal is introduced, there may need to be a 'carve out' to enable charges to be levied for certain equipment in order to incentivise customers to consider alternatives which have a lesser impact on the network.

3.46. Secondly, our proposal requires a distinction to be made between profile class 1-4 customers and others. Occasionally, the installation of low carbon technologies could be driven by a landlord (such as a housing association) across multiple profile 1-4 properties. Since multiple installations are being installed, there is much higher likelihood that the use of some of these will coincide with peak demand and consequently trigger costs on the network. Under our proposal, these costs would also be socialised and we acknowledge that there may need to be a separate 'carve out' to ensure that organisations installing multiple units will bear the associated costs.

3.47. Thirdly, socialising these costs may impact on the 'margin' that Independent Distribution Network Operators[22] (IDNOs) can earn.[23] IDNOs are subject to a relative price control which caps the charges they can levy on their customers to the level charged by the host DNO.[24] They receive a fixed income for each site they operate and are not able to spread reinforcement costs across their customer base by increasing their charges (as a DNO would do). Consequently, under our proposal, there is a danger that IDNO 'margins' could be squeezed if they have to undertake reinforcement triggered by domestic load growth on their network. The use of system charging methodology in place treats IDNOs as a distinct customer set and employs a separate basis to calculate the charges IDNOs should pay. This is known as the price control disaggregation model and tries to allocate DNO costs to voltage tiers using cost drivers. For direct costs such as reinforcement, real data is used as the basis of the cost driver. The charges levied on IDNOs try to reflect the avoided cost of the network (typically the LV network) which the IDNO is providing in place of the DNO.[25] As such, the charging methodology tries to ensure that if

[22] IDNOs compete with DNOs to build and operate new distribution networks. These are typically but not exclusively new housing or commercial developments.
[23] By 'margin' we refer to the difference between the upstream distribution use of system charge levied by the DNO on the IDNO, and the 'all the way' charge that the IDNO recovers from its end customers.
[24] This is set out in special licence condition BA2 of the Electricity Distribution Licence. Host DNO refers to the DNO in whose distribution services area the IDNO is operating.
[25] Further details can be found on p14 of the following document:
http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Documents1/Appendix%20B_CDCM%20Methodology.pdf

the IDNO has to replace and reinforce its network at the same rate as a DNO, then it will receive the same income as the DNO to undertake this work.

3.48. We recognise that our proposal could lead to a perverse incentive on developers to request a connection based on a low per household capacity and subsequently, following connection, install low carbon technologies so that the costs are socialised. In order to guard against such an incentive we consider that there may be a need to agree a standard per house capacity threshold for new build housing estates. This threshold would be based on an assumption of a certain level of high demand devices, including low carbon technologies. Such a threshold may also reduce the number of circumstances where new build IDNO networks require reinforcement and therefore place them on an equal footing with DNOs.

3.49. Lastly, a move to socialise these costs would remove the upfront incentive on customers to enter into a bilateral demand side response (DSR) arrangement with a DNO in order to accommodate new appliances without triggering costs. However, these customers could still provide DSR once their appliance has been connected in return for payment. This could be to a DNO or other industry party.

Implementing the socialisation proposal

3.50. If we conclude that the merits of our proposal outweigh the disadvantages then we would expect DNOs and/or industry parties to bring forward the required changes to regulatory arrangements. These would be through modifications to documents like the common connection charging methodology, DCUSA[26] and the national terms of connection. In case DNOs or industry are not forthcoming with such proposals, we will consider our ability to require the necessary changes and whether such a step would be appropriate.

[26] This is an industry code which governs the arrangements in place between IDNOs and DNOs and other industry parties such as suppliers, generators and transmission operators.

4. Reliability and safety

Chapter Summary

This chapter summarises our proposals for the output areas of reliability and safety in RIIO-ED1. It gives an overview of the package of proposals, covering primary outputs, secondary deliverables and incentives in these two areas.

We have set out full details of our proposals in the 'Supplementary annex – Reliability and safety'.

Question 1: What are your views on the primary outputs and secondary deliverables for reliability and safety? In particular:
(a) Do you agree that these are appropriate areas to focus on?
(b) Are there any other areas that should be included?

Background and context

3.1 The long-term safety and reliability of the electricity distribution networks and their impact on customers are key priorities for Ofgem. Customers expect the DNOs to maintain a safe network while minimising the number and duration of supply interruptions. We also expect DNOs to use their price control funding to prevent longer-term deterioration of network resilience.

3.2 Whilst working to improve reliability and restoration, DNOs must maintain compliance with their overall requirement to ensure that their networks are designed and operated in a way that ensures the safety of the public and their employees.

Primary outputs

3.3 The HSE, as determined by legislation, monitors and enforces performance in the area of safety. As one of the output categories under the RIIO framework, we have looked into whether a safety output, beyond complying with HSE legislation and directives, can be developed for RIIO-ED1.

3.4 The number and duration of supply interruptions are the current primary outputs for network reliability. Delivery of these outputs is measured through the IIS and through performance against relevant Guaranteed Standards of Performance (GSOP). We introduced the IIS in 2001-02 to encourage DNOs to manage the number and duration of supply interruptions that occur on the network, taking account of customers' willingness to pay for performance improvements. The scheme sets DNO-specific targets for the number and duration of interruptions on an annual basis. These targets are set based on a combination of the DNO's own historic performance for particular voltages and

benchmarked frontier performance where interruption performance can be compared across DNOs.

3.5 DNOs receive an annual financial reward or penalty depending on their annual performance against these targets. Performance that is better than the target delivers a reward whilst performance that is worse than the target incurs a penalty. Since we introduced the scheme, it has brought about a significant improvement in network reliability.

Secondary deliverables

3.6 As part of DPCR5 we supplemented to the IIS reliability incentive by introducing the Health Index (HI) and Load Index (LI). These were designed to tie specific price control network investment to specific in-period risk reduction associated with the condition and loading of assets. These metrics link the longer-term reliability benefits of healthier and less highly-loaded assets to a measurable deliverable within the price control. Without these deliverables in place, DNO performance against the primary reliability outputs could suffer in the long term. Within the RIIO framework, these are referred to as secondary deliverables.

Proposals for RIIO-ED1

Safety

3.7 We propose that the primary output for safety should be that DNOs comply with their statutory requirements. Our proposals for including safety risk in the asset risk index should help to ensure the long-term delivery of these statutory requirements. At the Reliability and Safety working group (RSWG) meetings, we have considered a number of options for alternative financial and reputational incentives on safety, but feel that these could have unwanted implications for the reporting of incidents. Full details of the considerations and work that has been undertaken can be found in the 'Supplementary annex – Reliability and safety'.

3.8 We also set out the full details of the considerations and options we have explored through the RSWG, as well as the specific consultation questions on which we are seeking views on from stakeholders. Our proposals for RIIO-ED1 are summarised below.

Interruptions Incentive Scheme

3.9 We propose to retain the IIS in RIIO-ED1, making improvements to the scheme where needed. The IIS has been shown to improve DNO performance, is readily measurable, controllable and can be consistently measured and compared. We explain this in more detail below.

Incentive rates

3.10 We are proposing that the IIS incentive rates should be aligned with those proposed as part of the RIIO-T1 Energy Not Supplied incentive. Based on our initial analysis this change would not result in significantly different incentive rates to those currently used in DPCR5. We are also inviting views on the need for a rolling incentive mechanism to apply to the IIS (as has been proposed for the shrinkage incentive in RIIO-GD1).

Revenue exposure

3.11 We propose to increase the overall revenue exposure to the IIS from 139 return on regulatory equity (RORE) basis points for DPCR5 to a point between 250 and 300 RORE basis points for RIIO-ED1. We are also considering the re-introduction of an upside cap on the amount of money that can be earned by a DNO in any given year through the IIS. We would envisage that this cap would be set at an equivalent level to the downside cap to make the scheme symmetrical. The cap would protect customer exposure over the longer period of RIIO-ED1, but could also discourage investment benefitting customers at specific points in time.

Separating planned and unplanned targets

3.12 We are proposing to have separate targets for planned and unplanned interruptions and minutes lost.

Planned target setting

3.13 A certain level of prearranged interruptions will inevitably be required to allow for the necessary asset expenditure plans in RIIO-ED1. As customers are inconvenienced less by planned outages where sufficient notice is given, they are weighted at 50 per cent relative to equivalent levels of unplanned interruptions. We are consulting on two options for improving and simplifying the methodology for setting the target number and length of planned interruptions. The options we are considering are to allow DNOs to set out the level of interruptions they feel is required as part of their business plans, or to set a prearranged target based on a rolling three-year average of planned interruption performance. We propose that this rolling average would have a two-year lag before performance impacts on the target. In both cases, we propose that DNOs would be rewarded or penalised based on the difference between their actual performance and the target, using an incentive rate that is half that of unplanned interruptions.

Unplanned target setting

3.14 For both DPCR4 and DPCR5, unplanned interruptions and minutes lost targets have been set using a combination of DNO own and industry average for Low

Voltage (LV), Extra High Voltage (EHV), and 132kV whilst the High Voltage (HV) element is benchmarked from the HV disaggregated reporting for the minutes lost targets. For RIIO-ED1, we have outlined a number of options for setting targets, and have indicated that the DPCR5 approach, after being slightly amended, is our preferred option. In the 'Supplementary annex – Reliability and safety' we have also outlined indicative targets for RIIO-ED1 based on our preferred option from amongst those proposed.

Exceptional events

3.15 We propose to maintain the severe weather exceptional event threshold at eight times the average daily fault rate at HV and have updated the threshold numbers using the most recent data. We propose to maintain the one-off exceptional event mechanism, but are considering reviewing the thresholds of 25,000 customers interrupted and/or 2 million customer minutes lost which currently apply for these exceptional events. For the one-off events we also propose to review whether to introduce potentially replacing exceptional event days with that period's average performance.

Cut out failures

3.16 We are considering, and inviting views on, whether to include interruptions resulting from a single premise cut-out fault within the IIS.

Short interruptions

3.17 Having explored the possible approaches to incentivising the reduction of short interruptions, we propose that it is not appropriate to implement such an incentive for RIIO-ED1. Our proposal is based on our research on customer willingness to pay, and awareness of the potential for adverse interaction and overlaps between a scheme to reduce short interruptions and the IIS.

Guaranteed Standards of Performance

3.18 As detailed in the 'Supplementary annex – Reliability and safety', as part of the review on how we apply the IIS to RIIO-ED1, we have reviewed the associated guaranteed standards relating to quality of network service, SI No. 698, 2010.[27] We are interested in stakeholder views on our proposals to:

- reduce the 18 hour normal weather interruption duration standard to 12 hours, and review the payment levels of this standard
- remove the Highlands and Islands exemption from specific guaranteed standards

[27] http://www.legislation.gov.uk/uksi/2010/698/pdfs/uksi_20100698_en.pdf

- remove the DNO exemption from paying out in the event of a one-off exceptional event
- consider whether to up-rate payments in line with inflation at the end of DPCR5, or set out the payment levels for each year of RIIO-ED1 based on forecast inflation rates
- consider the introduction of penalties on DNOs for failing to make payments to eligible customers
- explore whether payments to customers on the priority service register should be made automatically.

Secondary deliverables

Load Index (LI)

3.19 The LI provides a measure of the loading of the substations on each DNO's primary network.

3.20 We propose to work with industry to develop greater consistency in calculating loading and the classification of substations into LI ratings. We set out our proposed approach for the LI1 - LI5 ratings in the 'Supplementary annex – Reliability and safety'. We are also proposing that the DNOs' business plans set out the funding that they will need to maintain a specific average level of loading across substations rather than being funded for a specific level of improvement. The supplementary annex also sets out our views on how the impact of DG growth should be captured in the LI framework.

Health Index (HI)

3.21 We propose to encourage industry to develop greater consistency across DNOs on how the five HI ratings are determined and the assets that they are applied to. We also propose to combine the impact of asset failure (the 'criticality') with the HI measure of the probability of failure to create an overall risk index (RI) for each relevant asset type. Where it can be shown to be in the interests of customers, we propose to introduce arrangements to allow for over delivery against the agreed deliverable in RIIO-ED1.

3.22 We propose to include safety as one of the elements of asset criticality that will be considered in prioritising the replacement of assets, which is also relevant to our wider work on safety outputs.

Worst Served Customer mechanism (WSC)

3.23 As detailed in the 'Supplementary annex – Reliability and safety', we propose to develop the existing WSC mechanism by following one of the following options:

- Option 1 – keep the existing WSC mechanism, whilst amending the scheme parameters to encourage wider industry take-up
- Option 2 – discontinue the existing mechanism and introduce a new incentive scheme where DNOs are rewarded or penalised based on the number of customers experiencing a large number of interruptions each year
- Option 3 – develop new guaranteed standards to drive service improvements for WSCs.

3.24 We welcome respondents' views on the options we have set out.

Resilience

3.25 We have been exploring whether the cost assessment approach we have proposed for flooding can be developed into a secondary deliverable for resilience. Under that proposal, DNOs would be funded based on a benchmarked cost of removing a specific level of flooding risk. We believe that this could be extended into a metric to track delivery of risk removal. A similar approach could also be taken to fund and measure resilience to a black-start event as well.

5. Environmental impacts

Chapter Summary

This chapter sets out the outputs that we propose for DNOs to reduce their business carbon footprint and contribute to meeting GB carbon targets. These include measures to address electricity distribution network losses; a review of the approach to undergrounding in Areas of Outstanding Natural Beauty and National Parks; a requirement to report on business carbon footprint (BCF); and our proposed approaches to managing Sulphur Hexafluoride (SF_6); fluid filled cables and noise reduction. We also consider whether an environmental discretionary reward is required.

Question 1: Will our proposed approach ensure effective losses reduction actions?
Question 2: Will our proposed losses discretionary reward provide the required incentive on DNOs to reduce losses? Should this be awarded twice during ED1 or more frequently?
Question 3: Should DNO actions to identify and address electricity theft be encouraged through an approach outside of any losses reduction mechanism? Do you have any views on the proposed approach, or any alternate proposals, that we should consider?
Question 4: Do you think that further guidance should be provided with regard to the use of the '10% allowance' for undergrounding? If so, what form should this guidance take?
Question 5: Are National Scenic Areas (NSAs) sufficient to allow for effective use of the scheme in Scotland in the protection of visual amenity?
Question 6: Do you agree with our proposals with regard to DNO assessment and stakeholder engagement within the undergrounding scheme?
Question 7: Do you agree with our proposed approach for BCF? Do you consider there are any additional elements that should be included within the BCF reporting scope?
Question 8: Do you agree with our proposed approach to SF_6 monitoring, reporting and management?
Question 9: Do you agree with our approach for fluid filled cables?
Question 10: Do you agree with our approach to noise reduction?
Question 11: Do you agree with our assessment of the need for an additional environmental discretionary reward?

Background and context

5.1. The RIIO framework requires companies to reduce their business carbon footprint (the narrow environmental objective) as well as contribute to meeting GB carbon targets (broader environmental objectives).

5.2. We have proposed environmental outputs to meet the RIIO criteria to address these objectives. Where the environmental mechanisms put in place in

Distribution Price Control 5 (DPCR5) are fit for purpose, we propose to continue them with some revisions.

5.3. In this chapter we set out our proposals on:

- electricity losses
- undergrounding in Areas of Outstanding Natural Beauty (AONB) and National Parks (NPs)
- Business Carbon Footprint (BCF)
- Sulphur hexafluoride 6 (SF_6)
- fluid filled cables (FFC)
- noise reduction
- environmental discretionary reward.

5.4. Our proposals reflect input from two workgroups (one on losses, one on other environmental issues) made up of relevant stakeholders including DNOs, suppliers and interest groups.

Electricity losses on the distribution network

Background

5.5. Electricity losses are an inevitable consequence of transferring energy across electricity distribution networks. These losses can be minimised through various actions on the part of distribution network operators (DNOs) and other stakeholders. Electricity losses are a significant source of greenhouse gas (GHG) emissions representing approximately 1.5 per cent of total GB GHG emissions.[28] DNOs do not pay for electricity lost on their network and therefore have no inherent incentive to control losses. Effective losses management is necessary to protect customers from unnecessary cost increases. As such we place a high value on addressing losses.

5.6. Ofgem introduced a losses incentive mechanism in the third distribution price control (DPCR3), which was continued into DPCR4.[29] The mechanism provided a financial incentive (reward or penalty) based on measured losses (measured as the difference between electricity onto the system and electricity sold to consumers) assessed against a fixed target set per DNO licence area. For the sake of continuity the mechanism allowed DNOs to retain the methodologies they were using to measure losses at the time the incentive was introduced.

[28] 2007-08; due to the problems measuring losses described in this chapter, this figure cannot be accurately updated.
[29] The DPCR3 price control period ran from 1 April 2000 to 31 March 2005; the DPCR4 price control period ran from 1 April 2005 to 31 March 2010; and the DPCR5 price control period is from 1 April 2010 to 31 March 2015.

5.7. In the most recent price control (DPCR5) we required DNOs to report their losses performance using a common methodology based on settlements data.[30] However, ongoing difficulties with data integrity resulting more recently from abnormal data correction activities[31] have highlighted that this type of mechanism cannot be continued into the RIIO-ED1 price control period. We have recently raised the possibility of not activating the DPCR5 losses incentive.[32] Stakeholders have also expressed strong concerns at the impact of the government's smart metering rollout on settlements data over the RIIO-ED1 period. (It is expected that as meters are replaced, previous metering errors will be identified and data corrected).

5.8. We have discussed this with the DNOs and other stakeholders and have concluded that there is currently no reliable source of data common to all DNOs for measuring distribution losses. We do not think it is therefore possible to set a measurement-based losses output for RIIO-ED1.

5.9. Any approach to losses reduction should encourage DNOs to manage their network losses through investing in optimal low loss equipment and through their network operation (including through addressing theft). Where possible DNOs should also encourage other stakeholders to undertake actions to reduce losses. The RIIO-ED1 mechanism should therefore focus on actions undertaken by DNOs which lead to reduced losses.

5.10. Any proposed approach should address RIIO principles and consider key aspects such as proportionality; adaptability and commitment; consistency; clarity and controllability; transparency; and credibility. The specific requirements of the new RIIO-ED1 approach to losses reduction are that it should:

- be applied consistently across all DNOs
- be applicable for the full period of the price control
- not rely on settlements data
- be sufficiently measurable (while we cannot measure actual losses, we can measure the improvements achieved through losses reduction actions)
- allow DNOs to recover efficient costs associated with losses reduction actions
- not create windfall gains or losses for the DNOs.

[30] All licensed distribution companies are signatories to the Balancing and Settlement Code (BSC) which clears all settlement data for billing purposes.
[31] A number of consultation documents have been published between 2010 and 2012 relating to data integrity issues and the losses incentive. These can be found at http://www.ofgem.gov.uk/Networks/ElecDist/Policy/losses-incentive-mechanism/Pages/index.aspx
[32] http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=6&refer=Networks/ElecDist/Policy/losses-incentive-mechanism

5.11. The losses working group considered a number of possible approaches to reduce losses[33] and decided that there are limited options that address most of the criteria set out above.

5.12. The working group also concluded that a modelled approach to losses is not feasible because the impact of losses reduction activities cannot be isolated from other variables affecting network performance which could, in certain circumstances, counter or mask any improvements achieved. They considered that two of the possible options were practical: a duties-based approach, and an allowance based approach based on losses reduction actions. The group did not consider the other options were viable for reasons relating to complexity, measurability and proportionality. Our preferred approach combines components of both the duties and allowance based options. We set out the details of these approaches below.

5.13. The group considered whether the proposed approach should also address electricity theft. Previous mechanisms, by incentivising losses reduction based on a measure of the electricity lost between the entry onto the distribution system and the customer bill, have included units lost due to theft.

5.14. More recently developments under gas arrangements have focussed on supplier actions through a supplier licence condition, as well as a stated intention to establish a Theft Risk Assessment Service (TRAS), with an associated Gas Theft Code of Practice and an incentive scheme, to be finalised early in 2013. We set out our proposals to adopt a similar approach for electricity theft at the end of this section (paragraph 5.26 onwards).

Duties-based approach

5.15. A duties-based approach to losses would place an obligation on DNOs to undertake actions to reduce losses to a level 'as low as reasonably practicable'. This would aim to achieve an appropriate level of losses taking into account the costs and the benefits of the proposed actions. The key components of this approach are set out below.

- A licence obligation would ensure that DNOs are obliged to undertake actions necessary to reduce losses. Failure to do so would be seen as a licence breach. The obligation could be drafted to ensure compliance with an existing (but currently outdated) engineering standard[34] for the design of distribution networks to take account of losses, which would provide a more uniform approach by DNOs.

[33] http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=78&refer=Networks/ElecDist/PriceCntrls/riio-ed1/working-groups

[34] ENA Engineering Standard (T8/6)

- A strategy statement published by each DNO would indicate how they plan to address losses reduction throughout the price control period. The statement would outline how losses would be valued and the period over which the value is calculated.
- A provision for Ofgem to be able to audit a DNO's loss reduction activities.

5.16. This approach is simple and ensures that DNOs will undertake at least some losses reduction activity. However we have concerns that it does not address:

- how to define and assess actions that are 'reasonably practicable'
- the lack of a direct financial incentive which could mean that DNOs undertake the bare minimum of losses reduction action
- what criteria would be used to assess the strategy statement and ensure actions are cost-effective.

Losses allowance approach

5.17. The second approach would be to provide DNOs with an explicit allowance which would be used to undertake losses reduction actions. This approach assumes that DNOs would undertake no losses reduction activities without such an allowance. We have listed the key components of this approach below:

- DNOs set out their losses reduction strategy in their business plans. An allowance would be agreed to undertake identified actions (on a 'use-it-or-lose-it' basis) on the basis of the strategy. These actions would be funded on a pass-through basis.
- DNOs would be required to report annually on actions undertaken in the previous year and planned for the following year, setting out the costs and losses reductions. This would provide a reputational incentive on the DNOs to ensure that they spent the allowance on actions which a) achieved losses reduction and b) were justified.
- A provision for Ofgem to audit a DNO's losses reduction activities.

5.18. This approach has the benefit that it allows us to provide funding for justified losses reduction actions, without which any targeted actions would be unlikely. However our concerns are:

- no specific obligation (or incentive) to do anything to reduce losses
- difficulties in establishing adequate criteria to approve justifiable losses reduction investments
- difficulties in establishing whether this expenditure has already been included in the overall revenue allowance where companies should be pricing in externalities
- the lack of a direct incentive (positive or negative)
- how to measure whether actions undertaken are cost effective.

Proposed losses reduction mechanism

5.19. The approaches mentioned above share some similar components, but neither fully addresses the key aims for the mechanism or the concerns identified. We therefore propose an approach which combines aspects of both in order to provide a more balanced mechanism. The key components of this approach are set out below.

- A licence obligation to ensure that DNOs are obliged to design and operate their networks to ensure that losses are as low as reasonably practicable, subject to the benefits of any loss reduction measures outweighing the cost of these measures.
- DNOs include a strategy in their business plans setting out the approach to losses reduction. This would include specific projects or actions and their impact on overall losses as well as the associated additional costs.
- Overall allowed revenue should ensure that DNOs have the necessary funds to undertake the required actions, through companies considering the losses reduction actions and associated benefits (ie carbon abatement) in their whole life costing and cost benefit analysis (CBA).
- An annual reporting requirement setting out losses reduction activities undertaken in the year, a rolling assessment of improvements achieved in the year and cumulatively, and actions planned for the following year.[35] This would supplement enhanced asset reporting of relevant information regarding low loss transformers, cables and any other assets specific to reducing losses.
- A provision for Ofgem to be able to audit a DNO's losses reduction activities. Any enforcement would be similar to that taken for any other breach of licence.

5.20. The testing of innovative approaches to reducing losses could be considered for funding under the innovation stimulus mechanisms (Chapter 10 – Encouraging innovation), in circumstances where they meet the relevant criteria.

5.21. We would expect DNOs to include low loss equipment expenditure and other proposed actions to reduce losses in their business plans, where the expected loss reduction justifies the incremental expenditure. In the 'Supplementary annex – Business plans and proportionate treatment' we set out the common cost benefit analysis which we are proposing that DNOs use to justify expenditures. This provides guidance on the valuation of lost energy and carbon abatement.

[35] This reporting requirement will be similar to the distribution losses reporting requirement currently being discussed in relation to potential changes to the DPCR5 losses incentive mechanism. For further information http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=6&refer=Networks/ElecDist/Policy/losses-incentive-mechanism

5.22. We would also expect DNOs to adequately demonstrate in their business plan that they have a good understanding of how losses can best be minimised across their networks, as well as how best practices can be shared within the industry. We would also expect them to set out proposals for establishing a reliable baseline of losses during RIIO-ED1 so that a more robust financial losses incentive could be considered for RIIO-ED2. Companies should consider how power system modelling could assist in this process.

5.23. While the above approach addresses many of the key objectives of a losses reduction mechanism, we consider that there may still be a gap in providing sufficient incentive for DNOs to undertake more than a minimal approach to losses reduction actions. As such we are considering introducing a losses discretionary reward (DR) specifically focussed on losses reduction actions undertaken. The aim of this DR would be to encourage DNOs to find more cost effective and innovative ways of utilising the allowed revenue to achieve additional effectiveness, ie DNOs would need to demonstrate that the allowed expenditure had achieved substantially more than forecast, or that they have achieved the targeted reduction with lower expenditure than the efficient level originally approved.

5.24. We propose implementing a DR of up to £32m across all DNOs, to be awarded twice during the ED1 period in two tranches (one tranche of up to £16m in year four and a further tranche in the final year of the RIIO-ED1 price control period). We will consult separately on the key strategic and operational objectives against which any DNO's performance will be measured and scored. The amount of the DR has been proposed after considering the following points.

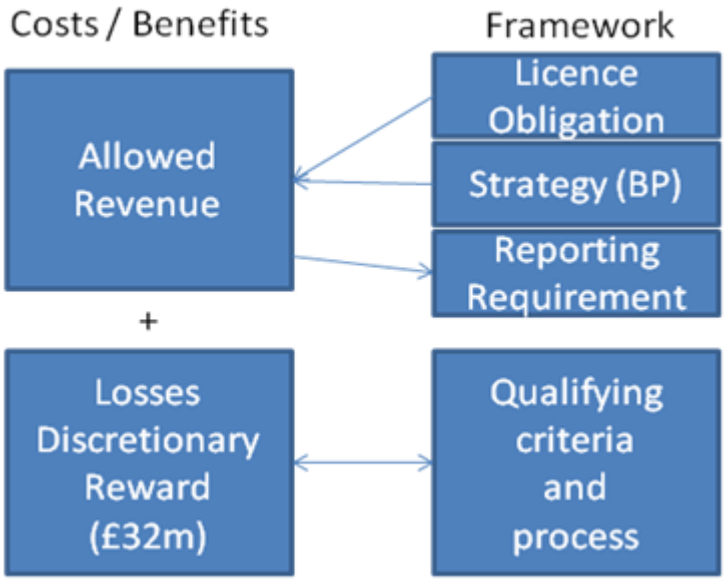
- The RIIO-T1 environmental discretionary reward[36] of £32m over the price control period (£4m per annum) to complement and reinforce other environmental incentives. There is no financial incentive for reducing electricity losses (other than reputational based on performance against their approved strategy). The gas SO has a financial incentive to reduce shrinkage.
- The RIIO-GD1 discretionary reward scheme (DRS) of £12m (three tranches of £4m) is for environmental outputs not funded through other incentives. The specific criteria have not yet been finalised but will exclude activities covered by the shrinkage allowance and Environmental Emissions Incentive (EEI).

5.25. We have concluded that a sufficiently strong incentive is required to ensure that DNOs place an appropriate level of focus on losses reduction activities, and to highlight the importance that we place on the contribution of losses reduction to carbon emissions as well as the implicit impact of losses on customer bills. At the same time we have to balance this by considering our

[36] http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO-T1%20-%20Environmental%20Discretionary%20Reward%20(EDR)%20decision%20letter.pdf

inability to accurately measure the outputs and benefits of any losses reduction measures at this time. We consider that a DR of £32m will achieve the desired result.

Figure 5.1: Proposed losses reduction mechanism components



Theft of electricity

5.26. Theft of electricity increases the costs paid by customers and can have serious safety consequences. It leads to misallocation of costs among suppliers that can distort competition and hamper the efficient functioning of the market. It also has links to organised crime, and in particular cannabis cultivation.

5.27. The amount of theft is unclear but some estimates put it at around £400m per year. Currently, suppliers and DNOs report that they find around 25,000 to 30,000 thefts per year which is around ten times more than the number of theft cases identified in the gas industry.

5.28. Electricity suppliers have licence obligations to detect and prevent electricity theft. However, they have strong commercial disincentives to do so. In particular, suppliers can incur energy and network charges as well as costs for investigation and meter replacement that they may not be able to recover from the customer.

5.29. DNOs do not have specific licence requirements to tackle electricity theft. However, as noted earlier, the historical losses incentive aims to encourage them, amongst other things, to reduce theft. Some DNOs provide revenue protection services which are used by suppliers to help detect theft and are often helpful in identifying theft proactively.

5.30. In the document published in March 2012 entitled 'Tackling gas theft: the way forward'[37] ('March document') we have committed to review the arrangements for tackling electricity theft independently from the review of DNO losses incentives. The possible removal of the DPCR5 losses incentive and the potential for RIIO-ED1 not to reinstate incentives on DNOs to reduce overall losses could impact on DNO incentives to support the arrangements for tackling theft. Action is therefore required in the short term as well as on a more enduring basis to ensure that arrangements are in place to protect consumers' interests.

5.31. Our March document set out a package of measures for tackling gas theft. These measures sought to put in place appropriate incentives and obligations on suppliers and gas transporters. We propose a similar package for electricity theft and list the core elements below.

- To require DNOs to tackle theft where a supplier is 'not responsible'. This is based on our view that, where possible, the link between the supplier and the customer should be maintained. We are minded to clarify these responsibilities by amending the standard conditions of DNO and supplier licences. We also propose that DNOs should be able to recover their reasonable costs associated with this activity.
- To introduce licence requirements for electricity suppliers, in relation to tackling theft, which are equivalent to our updated proposals for gas suppliers.
- To identify principles for a scheme to address the disincentives that suppliers face in detecting theft. Our initial view is that our proposals for the gas market would be appropriate and should be introduced by a modification to an industry code. For the avoidance of doubt, we are not proposing that DNOs should be incentivised.
- To require suppliers to put in place a central service (equivalent to the Theft Risk Assessment Service (TRAS) in the gas market) to analyse data and provide information to suppliers (and network companies) to help them meet their obligations to detect theft.
- To require that DNOs should maintain current levels of support for tackling electricity theft until robust alternative arrangements are established. We consider that this is important in the context of the change to DNO incentives to detect theft and the materiality of this issue for consumers.
- Suppliers and DNOs should move to implement, where appropriate, the additional measures that we identified as supporting the arrangements for tackling gas theft. We consider that these additional measures should be introduced through existing industry code governance arrangements.

37 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=100&refer=Markets/RetMkts/Compl/Theft

Undergrounding in Areas of Outstanding Natural Beauty (AONB) and National Parks (NPs)

Background

5.32. The present non-mandatory undergrounding scheme was first established in DPCR4 to allow for the undergrounding of existing overhead lines in two designated areas: AONBs and NPs. The primary objective is the protection of visual amenity in line with specific statutory requirements.[38]

5.33. The scheme is largely stakeholder-led, with interest groups and National Park authorities proposing potential undergrounding projects to DNOs. DNOs recover the costs of undergrounding projects (up to a fixed cap) at the end of the price control period, subject to demonstrating that they have taken the advice of local groups and planning authorities as relevant in prioritising expenditure. The scheme is relatively flexible. It is up to the DNO and the relevant stakeholders to consider the most appropriate and cost-effective use of the funds to maximise the benefits in terms of visual amenity within these designated areas. Therefore, alternatives to undergrounding can be considered, eg relocation of overhead lines or camouflage of infrastructure, where this is reasonable.

5.34. For DPCR5, there is an overall expenditure cap across all DNOs of £60.6m. This is translated into an allowance for each DNO based on the amount of overhead lines in AONBs and NPs in their area.

5.35. The allocation of the pot amongst the DNOs reflects our view that visual amenity spending should be informed by cost-benefit analysis, which extends to the idea of a notional allowance that specific interest groups may have open to them in each DNO licensed region. We believe this encourages the prioritisation of spending on those undergrounding projects, which have the potential to offer best value to customers.

5.36. The allowance is not intended to fund a DNO's entire undergrounding programme. There are benefits associated with undergrounding which mean that DNOs will be undergrounding in other situations (eg where planning permission requires it). We welcome any cooperation with stakeholders to seek out alternative sources of funding, either in addition to the funding under this scheme or for other undergrounding projects. We expect DNOs to share best practice approaches to undergrounding and its alternatives.

[38] Electricity Act 1989; National Parks and Access to Countryside Act 1949 (as amended by Environment Act 1995); Countryside and Rights of Way Act 2000

Key issues and proposals

5.37. Visual amenity continues to be important to some stakeholders. The scheme allows these stakeholders to influence the process, prioritise specific projects within the designations and realise the protection of visual amenity through engagement with the DNOs.

5.38. We intend to continue this scheme for RIIO-ED1. As in DPCR5, we propose that lines in areas that are given either AONB or NP status during RIIO-ED1 will become eligible for this scheme. However, an increase in eligible lines will not affect a DNO's allowance for DPCR5.

5.39. Following discussions with stakeholders, we are considering specific modifications and clarifications which we set out below.

'10% allowance'

5.40. In DPCR5, we gave each DNO the ability to spend up to ten per cent of their allowance on undergrounding overhead lines that are located outside the boundaries of designated areas, ie AONBs and NPs. DNO and stakeholder feedback is that due to the lack of clarity on this, it has been underutilised to date. This provision was included to encourage flexibility and cooperation within the undergrounding scheme.

5.41. Where DNOs have used this allowance, they have done so where an overhead line covers a larger area than the specific project so that it does not make sense to underground only certain parts of this line.

5.42. Furthermore, where DNOs share specific AONB or NP areas, some have coordinated between themselves to complete a specific project across the boundaries of their licensed regions.

5.43. We believe that all DNOs could provide this flexibility as necessary and that these could be situations where the ten per cent allowance could be used.

5.44. Whilst we wish to maintain flexibility for DNOs to use this allowance appropriately, we are aware that DNOs and interest groups may need to be clear on the situations that warrant its use. We are asking for views regarding the need for guidance in order to encourage the use of this provision.

Scope in Scotland

5.45. The scheme is targeted at the undergrounding of existing overhead lines in

specific areas of recognised national importance in order to protect visual amenity. To date there are 46 AONBs covering England, Wales and Northern Ireland[39] and 15 NPs crossing all of the UK, with two of these in Scotland.[40] The designation of AONBs does not apply in Scotland, where they have NSAs, as designated by Scottish Natural Heritage

5.46. In March 2012, we included NSAs as part of the definition of AONBs in the glossary of terms for the DPCR5 regulatory reporting.[41] This was in recognition that NSAs are a comparable designation for Scotland. However, the funding pot and allocation to each DNO remained at the level set in DPCR5, prior to the inclusion of NSAs.

5.47. For RIIO-ED1 we propose to continue to include NSAs within the scheme and calculate the total funding pot for ED1 on this basis. This is considered in a later section of this paper. We note that there are issues with the NSA inclusion including:

- **There are a large number of NSAs currently defined in Scotland which could impact the size and proportion of the total funding pot.** There are currently 36 NSAs in Scotland[42] in comparison to 46 AONBs across England, Wales and Northern Ireland. The willingness to pay survey that we conducted when developing this scheme, focussed on specific questions about undergrounding in AONBs and NPs and not NSAs. However, there appear to be relatively few distribution line crossing NSAs and therefore this is expected to have a small impact on setting the funding pot. We intend to use the existing willingness to pay measure, ie 1.5 per cent to calculate the funding pot for RIIO ED1.
- **In some instances, NSAs can include areas that fall within National Parks.** The scheme includes National Parks and Scottish DNOs have been, and will continue to be, able to apply for undergrounding in National Parks. We expect that DNO calculation of lines to be undergrounded will take care not to double count lines where NSAs fall into NPs.

Funding pot

5.48. The customer willingness to pay research we conducted in DPCR5 indicated that on average, customers are willing to pay £2.29 for the undergrounding of 1.5 per cent of the overhead lines in National Parks and AONBs over the course of a five-year price control (ie: 46 pence per year). Multiplying this up

[39] http://www.aonb.org.uk
[40] Cairngorms and Loch Lomond and the Trossachs; http://www.nationalparks.gov.uk/map-nationalparksaonbs-names.gif
[41] http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=664&refer=Networks/ElecDist/PriceCntrls/DPCR5
[42] http://www.snh.gov.uk/docs/B699724.pdf

by the number of customers and the five years of DPCR5 gave a total funding amount for undergrounding of £60.6 million for DPCR5.

5.49. Individual DNO allowances were calculated by dividing the total pot between DNOs first by number of customers and second by the length of lines to be undergrounded in each licensed region. The undergrounding allowance for each DNO was calculated as the average of these two values.

5.50. We propose to use the same method to calculate and allocate the funding pot for RIIO-ED1, adjusting it (pro rata) for the longer price control period and including the designation of NSAs in the allocation of the total pot to individual DNOs.

5.51. In RIIO-T1, we have proposed an initial expenditure cap of £100 million for TOs deliver visual amenity improvements from the start of the price control period while they complete further willingness to pay analysis to inform the level of the enduring expenditure cap for the rest of RIIO-T1.[43] We may take into account, where relevant, the results of these future studies on willingness to pay in calculating the funding pot for RIIO-ED1.

Assessment policy

5.52. The scheme is designed to be flexible and therefore does not currently have any restrictions on the type of terrain in which undergrounding can take place.

5.53. We understand there is a potential issue arising over undergrounding in peat lands, which lie in designated areas in Scotland. This is because the excavation and cutting of peat can release potentially large quantities of carbon and can cause scarring of the landscape. This can conflict with the objective of protecting the specific designated area of visual amenity. We note that there are environmentally sound techniques of excavating in peat, which reduce the carbon release and minimise scarring of the terrain. Those DNOs affected by this issue are already using these techniques to reduce their impact on the landscape when undergrounding.

5.54. We consider that each potential case of undergrounding, including those in peat, should be considered on a case by case basis taking into account all competing priorities associated with the project.

5.55. We do not believe that providing prescriptive guidance on DNOs' approach to undergrounding in peat, or more generally, would be proportionate. However, we consider that this represents an example of the competing factors that

[43] http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO%20T1%20NGGT%20and%20NGET%20Outputs%20and%20incentives.pdf

DNOs should consider when reviewing the cost-benefit of prospective undergrounding projects.

5.56. We expect DNOs to consider the full range of competing factors and environmental implications when reviewing and prioritising undergrounding projects submitted to them. We therefore propose that DNOs should set out, in published policy issued to their relevant stakeholders, their approach to assessing undergrounding projects particularly taking into account their approach to any competing factors. We consider that this will also encourage greater clarity for interest groups when preparing undergrounding projects for submission, in line with DNOs broader stakeholder engagement objectives.

Stakeholder participation

5.57. The undergrounding scheme is a stakeholder-led process. We understand that some interest groups are suffering resourcing constraints, especially where they rely on voluntary staff, and that this may affect their ability to identify suitable projects to their DNO. This could reduce the number of projects submitted to DNOs, the types of interest groups that approach them for undergrounding and therefore the overall amount of funding committed to projects.

5.58. Some DNOs have provided project support to these stakeholders, eg funding for a project officer, or establishment of steering groups to allow interest groups to interact in a common forum to support and submit collectively prioritised projects.

5.59. We consider that all DNOs should be able identify those interest groups that may be in need of support and provide assistance. We note that the stakeholder engagement component of the Broad Measure of Customer Satisfaction, Chapter 6, is designed to ensure that DNOs remain engaged and mindful of their stakeholders.

5.60. We expect DNOs to outline in published policy issued to their relevant stakeholders, the approach they will take to identify and support interest groups and the means available to stakeholders to request support from project application to delivery.

Business Carbon Footprint (BCF)

Background

5.61. The intention of the BCF scheme, introduced in DCPR5, is to encourage DNOs to consider the direct carbon impact of conducting their operations and to be proactive in the reduction of emissions.

5.62. BCF is a reputational incentive. DNOs report annually to Ofgem on the total CO2 equivalent emissions of their company. We then publish an annual league table of emissions reductions by DNO. We have committed to publish the first annual league table in our forthcoming Electricity Distribution Annual Report.

5.63. In DPCR5, we concluded that it would take time before the reported data was sufficiently reliable to form the basis of a financial incentive, especially considering variations in the scope of the reporting, such as contractor emissions. We still believe this to be the case and therefore we are not proposing to introduce a financial incentive for RIIO-ED1.

5.64. However, we propose to strengthen the reputational incentive by making it clearer what activities DNOs have undertaken to reduce emissions against their baseline. This should act as a means of sharing best practice and we expect DNOs to learn from and incorporate the improvements made by others.

5.65. We therefore intend to require, as part of the BCF reporting requirements, DNOs to describe their actions to reduce their BCF and identify the relevant contribution. We will publish these actions alongside the company BCFs and the league table of reductions. We expect DNOs to prioritise those emissions reduction activities that are most cost-effective, whilst still delivering the greatest carbon savings in order to improve their overall performance against the BCF baseline.

Sulphur hexafluoride (SF_6)

Background

5.66. Sulphur hexafluoride is used in the insulation of switchgear equipment. It poses an environmental risk if it leaks as it is a very potent greenhouse gas. One tonne of SF_6 is equivalent to 23,900 tonnes of CO2. At present there are no alternatives to this gas in its use for switchgear equipment.

5.67. Switchgear is manufactured and tested to ensure that it operates within certain SF_6 leak rate thresholds. Typically, the leak rate threshold may be in the range of one or two per cent, though as equipment ages, the leakage rate may increase. We understand that overly leaky equipment will not operate to its optimal level for network efficiency and therefore it would be expected to be repaired or replaced.

5.68. DNOs currently report SF_6 as a fugitive emission in the BCF annual reporting requirements and are required to provide additional data as part of the regulatory reporting. This includes the asset replacement, cost and volumes of SF6 reduction plus 'actuals' data on total SF_6 on the system as well as leakage. We propose that these SF_6 reporting arrangements, should remain in place for RIIO-ED1.

5.69. Under RIIO-T1, we proposed in our strategy decision[44] that the reduction of SF_6 has a financial incentive. However, as we noted in DPCR5, the volumes of SF_6 on the transmission system are significantly greater than those in the distribution system.

5.70. There is a concern that SF6 usage on the distribution system is not adequately monitored and managed particularly when considering the potential equivalent carbon impact. It is not clear whether DNOs are considering the potential for older equipment to release more emissions than it should and whether they have monitoring and repair/replacement strategies in place to manage this.

5.71. Given the extended period of the RIIO-ED1 price control and the expected increase in SF_6 emitting switchgear on the network, we need to understand how much will be installed throughout the period, the potential scale of leakages, and what steps DNOs will take to minimise leakage.

5.72. Therefore, we propose to include a requirement for forecast data as part of RIGs reporting requirements and to require greater clarity in existing asset replacement reporting in the RIGS on the proportion of SF_6 specific switchgear being replaced, and its age. Furthermore, we propose that the BCF proposal above should include details of reduction strategies taken to reduce SF_6.

5.73. We expect DNOs to comply with international standards and to be strengthening their management of SF_6, particularly inventory management and replacement/repair strategies, in preparation for greater scrutiny of their emissions under new requirements. DNOs should be compliant with the international standards below, which should form part of their reporting and monitoring procedures:

- new unit purchases must be compliant with IEC 62271 standard (relating to gas tightness)
- record keeping must be in line with a minimum standard, eg ENA Engineering Recommendation s38 and/or PAS 55 asset management standard
- requirements under F gas regulations 2009, ie staff training and qualifications for recovery and maintenance; correct labelling of equipment, particularly on older equipment where labelling may be non-compliant and could be now the DNO's responsibility to correct; end of life disposal.

5.74. In addition, we are aware that government is in the process of developing stringent reporting requirements under Greenhouse Gas Emissions (Director's Report) Regulations 2013 and that there are revisions planned for the F Gas Regulations. We consider that DNOs should be aware of and make

[44] http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/T1decisionoutput.pdf

precautionary allowance to expand their SF6 management procedures to accommodate potential changes to the equipment thresholds and forthcoming reporting requirements.

Fluid filled cables (FFC)

Background

5.75. Some underground cables are fluid (oil) filled. There is an environmental risk that these cables can leak fluid, which has particular implications for the integrity of groundwater sources. This is a diminishing issue as more eco-friendly insulating materials are now available and in use.

5.76. As part of recent DCPR5 RIGs revisions,[45] 'actuals' reporting on fluid filled cables year on year, has been included as part of environmental reporting requirements. DNOs also report costs and volumes associated with fluid filled cables (FFC) as part of their environmental expenditure reporting.

5.77. The Environment Agency (EA) and the Energy Networks Association (ENA) have created an Operating Code to promote best practices for FFC operational management. This code includes a risk-based approach to strategic replacement. It also aims to benchmark current environmental performance and set improvement targets and milestones.

5.78. In DCPR5, we concluded that since there was an external code in place with another regulator it would not be necessary to consider any additional incentives. We consider that this remains true for RIIO-ED1.

5.79. We propose that forecast data should be included as part of RIGs reporting for RIIO-ED1. We intend that this forecast data should include details of planned replacement.

Noise reduction

Background

5.80. Noise reduction was not considered within DPCR5 Final Proposals. However, in their regulatory reporting, DNOs report their expenditure on noise reduction.

45 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=664&refer=Networks/ElecDist/PriceCntrls/DPCR5

5.81. Noise reduction reporting does not include any indication of what action has been taken to reduce noise, what noise reduction is understood to mean by each of the DNOs or whether a DNO has considered the cost efficiency of a particular action.

5.82. We note that the other two components of the environmental expenditure reporting, (fluid filled cables and SF6), are monitored elsewhere as part of broader environmental reporting.

5.83. We therefore intend to remove the requirement to report on noise reduction. Instead, we expect DNOs to operate within the parameters of the noise policy statement for England[46] administered by the Department for Environment, Food and Rural Affairs (DEFRA), as part of normal business operations.

Environmental discretionary reward

Background

5.84. The RIIO framework identifies two environmental objectives: to ensure that companies contribute to the wider environmental objectives, eg by maximising the volume of low-carbon flows on the network and promoting energy efficiency ('broad impact'), as well as minimise the 'narrow' environmental impact of their own activities. We have set out earlier in this chapter how our proposals should encourage the companies to reduce their 'narrow' environmental impact. In this section, we discuss the broader impact.

5.85. In RIIO-T1, we set out our decision to establish an Environmental Discretionary Reward (EDR) scheme for Transmission Owners (TOs) and the System Operator (SO). The scheme aims to embed environmental concerns, specifically in relation to renewable and low carbon targets. The scheme intends to reward TOs and SO where they can demonstrate that they have facilitated the growth of low carbon energy within business practices and strategic development, over and above any existing incentives.

5.86. The RIIO-T1 scheme is worth £32m over the eight year price control period, and is awarded according to an environmental balanced score card, comprising six key strategic and operational environmental issues:

- Strategic understanding of and commitment to low carbon objectives and the role of the TO/SO in their facilitation
- Involvement in whole electricity system planning for a low carbon future including the integration with DNOs and involvement in the development of demand side interventions

[46] http://www.defra.gov.uk/publications/files/pb13750-noise-policy.pdf

- Approach taken to connections for low carbon generators
- Quality of innovation work and use of new ideas and results of innovation projects across the transmission network
- Development of a network availability policy that considers alternatives to building/reinforcing, eg smarter network use, demand side response and energy storage
- Direct environmental impact of activities, and associated reporting and business greenhouse gas emissions management.

5.87. In Chapter 3 we have set out how we are designing RIIO-ED1 to encourage the DNOs to anticipate the impact of the low carbon future on their networks, and the role that they will need to play. We have set out how we propose that they should be incentivised to anticipate new low carbon technologies and generation connecting to their networks so that they can connect in appropriate time, at appropriate cost, without causing network problems. We have also set out our proposals for incentivising DNOs to consider smart grids solutions, including demand side response, and the work that we have undertaken to identify any barriers to these solutions.

5.88. We consider that our proposals for connections (including DG), low carbon technologies, innovation and the use of smart grids solutions mean that a reward using the same criteria as RIIO-T1 would be highly duplicative.

5.89. We therefore question whether the DNOs need further incentives to manage their broad environmental impact.

5.90. Earlier in this chapter, we propose the introduction of a discretionary reward (DR) to incentivise the DNOs to reduce distribution losses. Any broader environmental reward we may consider would be incorporated into this so that there was a single reward covering both elements.

5.91. We welcome views on whether there are any gaps in our proposed package of outputs and incentives for RIIO-ED1 that means that DNOs would not be sufficiently incentivised to deliver on their broader environmental role. We would welcome supporting evidence with any responses we receive

6. Customer satisfaction

Chapter Summary

This chapter outlines the measures we are proposing for RIIO-ED1 to improve how DNOs respond to the needs of their customers. Our proposals are intended to improve the service received by customers who have an interaction with the DNO (ie those who require a new connection, or have experienced an interruption to their supply or have a general enquiry). We also propose a range of outputs and incentives to improve the manner in which DNOs deal with complaints and their approach to engaging with stakeholders.

Question 1: Do you agree with our proposal to retain the Broad Measure of Customer Satisfaction (BCMS) and increase the maximum revenue exposure?
Question 2: We seek views on the approach to setting targets for the RIIO-ED1 period, including whether these targets should be fixed for the price control period or should be responsive to changes in industry performance.
Question 3: We seek wider stakeholder views on whether interruption customers that have been proactively contacted by the DNO via new methods of communication (eg social media) should be included in the customer satisfaction survey.
Question 4: Should the provision of information to connections customers be taken into account when calculating the score of the customer satisfaction survey?
Question 5: Should the number of unsuccessful calls be taken into account when calculating the score of the customer satisfaction survey?
Question 6: What indicators should we use to measure complaints performance? How should these be weighted?
Question 7: How should we calculate the BMCS complaints metric target for RIIO-ED1? How should we calculate the score at which the DNO incurs their maximum penalty exposure?
Question 8: Do you agree with the proposed approach to assessing stakeholder engagement?

6.1. This chapter sets out our proposals to ensure DNOs satisfy the needs of customers in RIIO-ED1. Although anyone connected to the distribution network could be classified as a customer, we have focused our proposals on those customers that have a meaningful interaction with the DNO (eg received a connection, encountered a supply interruption or made a complaint). We also want DNOs to understand the changing requirements of customers and expect them to proactively engage with a range of stakeholders to ensure that the service they provide meets the needs of customers.

6.2. Customers seeking a new connection to the network rely upon the DNO to provide them with a critical service. This chapter provides an overview of the output measures and incentives that we plan to introduce for all customers, including arrangements for demand and generation connections customers. The connections chapter (Chapter 8) goes on to explore the issues facing this particular group of customers and how these arrangements will apply to different groups of connections customers.

Broad Measure of Customer Satisfaction (BMCS)

6.3. At DPCR5 we introduced a Broad Measure of Customer Satisfaction (BMCS)[47] to drive improvements in the quality of the overall customer experience by capturing and measuring customer contacts with their DNO across a range of services and activities. The BMCS is intended to replicate the sorts of measures typically used by consumer-facing businesses in competitive markets to monitor and improve the service they offer their customers. The measure comprises three different components:

(i) customer satisfaction survey

(ii) complaints metric

(iii) stakeholder engagement

6.4. A DNO's performance in each of the three components of the BMCS is subject to a separate financial incentive (see Table 6.1 for more information on the maximum level of reward/penalty associated with each component). The combined DPCR5 revenue exposure of the BMCS is +/- one per cent of annual allowed revenues.

6.5. As the BMCS was a new initiative for DPCR5 the arrangements were developed and trialled during the first two years of the period and the incentive went live on 1 April 2012. Although it has only recently been introduced, we believe that the BMCS is an effective way of ensuring that DNOs fully consider the needs of their customers. We therefore propose to retain the BMCS for RIIO-ED1.

6.6. As the BMCS was a new and untested mechanism, we adopted a cautious approach to setting the financial incentive for DPCR5. We now have a greater confidence in the effectiveness of the output measure and we propose to increase the size of the associated financial incentives. We provide further explanation of our proposals for setting the revenue exposure for individual components of the BMCS later in the chapter.

6.7. Our proposed maximum revenue exposures for the three components of the BMCS are highlighted in Table 6.1 below. These are compared against the current arrangements for DPCR5.

6.8. We set out in the remainder of this chapter more detail on our proposals for each element of the BMCS.

[47] The DPCR5 arrangements are outlined in 'Electricity Distribution Price Control Review Final Proposals – Incentives and Obligations' (7 Dec 2009) http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/FP_2_Incentives%20and%20Obligations%20FINAL.pdf

Table 6.1: BMCS maximum revenue exposure (as a percentage of annual allowed revenues) for RIIO-ED1 proposals compared to DPCR5

Incentive			RIIO-ED1 proposals maximum reward/penalty (per cent of allowed revenue)	DPCR5 maximum reward/penalty (per cent of allowed revenue)
Customer satisfaction survey[48]	Connections	Minor connections	+0.5/-0.5	+0.32/-0.2
		Major connections [49]	0/-0.5	
	Interruptions		+0.3/-0.3	+0.32/-0.2
	General enquiry		+0.2/-0.2	+0.16/-0.1
Complaints metric			0/-0.5	0/-0.5
Stakeholder engagement			+0.5/0	+0.2/0
Maximum aggregate penalty/reward exposure			**+1.5/ -2.0**	**+1.0/-1.0**

BMCS customer satisfaction survey

6.9. The BMCS customer satisfaction survey is intended to incentivise DNOs to provide customers with a service that satisfies their requirements.

DPCR5 arrangements

6.10. The customer satisfaction component of the BMCS surveys three categories of customers separately.

- **Connections**: customers that have received a connection quotation or a completed connection.

[48] The DPCR5 customer satisfaction survey exposure was +0.8/-0.5 per cent of allowed revenue with overall performance weighted 40 per cent interruptions, 40 per cent connections and 20 per cent general enquiries.
[49] The sub-division between major and minor connections is explained in further detail in the connection chapter (Chapter 8).

- **Interruptions**: customers that have experienced a planned or unplanned supply interruption.
- **General enquiry**: customers that have raised a general enquiry with the DNO.

6.11. All the DNOs use the same methodology to conduct the survey and this is set out by us in the Quality of Service Regulatory Instructions and Guidance (RIGs) document.[50] The DNOs use the same market research company and the results are reported to us on a quarterly basis.

6.12. The telephone based survey asks a random sample of customers several questions about their interaction with the DNO, from initial contact through to resolution. The introductory survey questions vary according to the customer category. These preliminary questions provide the DNOs with detailed information on the key drivers of overall satisfaction, but also encourage the customer to consider all aspects of the service received before answering the final question. The final survey question for all customers asks, "overall how satisfied were you with the service that you received?" It is only the answer to this 'killer question' that is used to measure performance. The DNOs' average score in each category of customer determines the level of financial reward or penalty.

6.13. DNOs are subject to financial rewards and penalties for their service level performance in each of the customer categories, and also for their overall performance. The overall performance score is an aggregation of scores from all customers interviewed.[51]

6.14. For DPCR5, the target for each customer category and the overall score is based on annual average industry performance in that customer category. This means that the target alters over time to reflect changes in industry performance. As the target is based on an average of industry performance, it is not possible for all DNOs to incur a penalty or a reward in any one year.

RIIO-ED1 proposals

6.15. We propose to retain the three customer categories and the approach used to survey the customers. The survey questions will be reviewed by the Customer and Social Issues Working Group (CSIWG) and will be consulted upon at a later date.

[50] The survey is outlined in Appendix 2 of "Electricity Distribution Price Control Customer Service Reporting – Regulatory Instructions and Guidance: Version 2" (30 March 2012) http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/Customer%20Service%20Reporting%20RIGs%20v2%20-%20FINAL.pdf

[51] The overall score is calculated using the following weightings; 40 per cent connections score, 40 per cent interruptions score and 20 per cent general enquiries score.

Size and calculation of BMCS customer satisfaction survey incentive

6.16. We propose to increase the overall maximum revenue exposure applied to the BMCS customer satisfaction survey (proposals outlined in Table 6.1 above). This is in order to ensure that the DNOs are sufficiently incentivised to improve the service they provide to customers over a longer term price control period. Specifically this should require the DNOs to focus more on providing a better service to customers seeking a connection. We explore this issue in more depth in the connections chapter (Chapter 8).

6.17. Several DNOs have proposed that rather than using rolling targets based on the average level of performance across DNOs, we should set fixed targets for the RIIO-ED1 period. Using fixed targets presents the possibility that all DNOs could receive a penalty or a reward in any one year. This approach may diminish any competitive pressures between DNO groups to improve service levels. This lack of competitive pressure may encourage the DNOs to only focus on specific customer groups that will deliver a large increase in performance scores, rather than incentivising the DNOs to maximise the level of service provided to all customers. Further, this approach may not incentivise those DNOs already performing above the target score to continue to improve performance.

6.18. However, a fixed target approach would avoid the risk of rewarding DNOs for a level of performance that, whilst better than other DNOs, may not be considered 'good' when compared to other industries. The DNOs argue that this approach therefore will be a more effective means of ensuring good levels of service for customers.

6.19. Overall, we consider that the proposal to have a fixed target does have some merits. We seek views from stakeholders on the most appropriate approach to setting targets.

Scope of BMCS customer satisfaction survey

6.20. The DPCR5 arrangements for the BMCS customer satisfaction survey samples customers (restricted only to those who have contacted the DNO) to calculate the average level of performance. The following types of customer interactions are captured in the current survey sample:

- All **connection** customers regardless of the method of communication (ie telephone, email, website applications) used to contact the DNO.
- Only **general enquiries** and **interruptions** customers that contact the DNO via the telephone.

6.21. The Customers and Social Issues working group recommended that the scope of the survey could be expanded for RIIO-ED1 to include all incoming general

enquiries and interruptions customers (where the DNOs have contact details), regardless of the communication channel used (eg email, website).

6.22. The working group did not reach consensus on whether interruption customers that have received an update that was broadcast by the DNO via media such as twitter, facebook etc should be included in the sample. Whilst these interactions demonstrate DNOs using innovative ways to communicate with customers, the depth of engagement for individual customers is hard to gauge. The large volume of customers that may be contacted through these media could inundate the sample population used for the survey.

6.23. We seek stakeholder views on whether to include these types of customer interactions in the interruptions survey.

6.24. During DPCR5, the DNOs reported data on the number of unsuccessful calls made to their telephone lines (eg calls terminated by the DNO or calls abandoned by the customer in the queue). Since the customer has not made contact with the DNO, unsuccessful calls are not included in the BMCS survey sample; however some DNOs consider that these customers should be taken into account when assessing the DNOs' quality of service performance.

6.25. We seek views from stakeholders on whether the number of unsuccessful calls should be factored into the DNOs' overall BMCS customer satisfaction score.

Connection customers

6.26. Connecting customers to the network is a critical function of the DNOs that delivers benefits both to individual customers and society more broadly. A good service that aligns with customers' needs allows for new homes to be habitable, businesses to commence operations and distributed generators to export low carbon energy. We remain concerned that, in some instances, the service these customers receive falls short of expectations.

6.27. As outlined in further detail in Chapter 8 we propose to split the connections customer element of the BMCS survey and introduce a new survey to specifically canvass the views of larger, often commercial, customers requiring a major connection (these would include large metered demand connections, all unmetered connections and all new generation connections). Although these customers are currently captured in the existing survey, they may be relatively small in number when compared to the volume of other, smaller, customers interviewed. There is therefore a concern that a DNO could score highly in the incentive by focusing only on the needs of the large volume of smaller customers.

6.28. The proposed new survey for larger, connections is likely to be more qualitative in nature and, in addition to specific questions relating to the connection service provided, would assess the DNOs' wider engagement with

these customers. For reasons that are outlined in Chapter 8, there is no upside to this incentive. Any DNO that performs below the target level of performance will be exposed to a penalty of up to 0.5 per cent of annual allowed revenues.[52]

Provision of information

6.29. Some stakeholders have stressed to us the importance of DNOs providing good quality information at an early stage in the connections process, for example information on capacity availability, costs and projected timescales. If this is made available prior to formally requesting a quotation it can allow customers an early and informed view on the viability of their connection requirements. It can also make customers aware of the range of connection options available to them, so that they can choose the most suitable connection solution. We are therefore considering whether to factor in DNO performance in this area when determining overall performance in the customer satisfaction survey. This issue is explored in more detail in Chapter 8.

BMCS complaints metric

6.30. The BMCS complaints metric incentivises DNOs to handle complaints effectively. Specifically the incentive encourages DNOs to resolve disputes quickly, to the customers' satisfaction and to avoid customers having to repeatedly complain about an issue.

DPCR5 arrangements

6.31. To assess the quality of the DNOs' complaints handling procedures, the current BMCS complaints metric measures performance on four indicators that are weighted to calculate a composite score (the weightings are shown in brackets):

- the percentage of total complaints outstanding after one day (10 per cent)
- the percentage of total complaints outstanding after 31 days (20 per cent)
- the percentage of total complaints that are repeat complaints[53] (50 per cent)
- the percentage of Energy Ombudsman decisions that find in favour of the complainant (20 per cent)

[52] The size of the overall penalty exposure will be determined by the number of relevant market segments in the DNO's area that have passed the Competition Test (see Chapter 8 for details.
[53] A repeat complaint is where the customer makes contact to express dissatisfaction with the same or substantially the same matter that was the subject of a previously resolved complaint within a 12 month period.

6.32. A DNO's performance against the four key measures outlined above results in the calculation of an overall score.[54] The target is based on annual upper quartile performance across the industry and responds to changes in industry performance. Any DNO that outperforms the target will not incur a penalty. For those that perform below the target, the size of the penalty is calculated on a sliding scale basis relative to the maximum penalty score. An overall score of 70 would result in a DNO receiving the maximum level of penalty.[55]

6.33. The BMCS complaints metric is a penalty only incentive because we consider it inappropriate for a company to earn additional revenue for performance in relation to their complaint handling service. In a competitive environment, organisations may lose customers as a result of poor levels of complaints handling, but are unlikely to gain new customers as a result of good complaints handling.

RIIO-ED1 proposals

6.34. We consider that the BMCS complaints metric remains a useful method of ensuring DNOs manage complaints effectively. The DNOs are currently performing relatively well as part of the BMCS complaints metric and we do not believe that it is necessary to increase the overall penalty exposure. We therefore propose to retain the BMCS complaints metric for RIIO-ED1 and keep the maximum exposure of the incentive at -0.5 per cent of allowed revenue.

6.35. The current level of performance illustrates that all DNOs are performing significantly better than the maximum penalty level, (eg the worst performing licensee area for the 2011-12 trial had a score of 31.75[56] and in total only two licence areas scored above 20[57]). As a result, the size of penalty for companies that perform below the target is relatively small.

6.36. We propose to review the maximum penalty levels to ensure there is a sufficient incentive on DNOs to improve their complaint handling performance. We will consult how the maximum penalty level will be calculated in our Draft determination document.

[54] DPCR5 composite complaints metric score is calculated using the following formula (percentage outstanding after 1 day x 10) + (percentage outstanding after 31 days x 20) + (percentage of repeat complaints x 50) + (percentage Energy Ombudsman decisions that go against the DNO x 20)
[55] There are numerous ways that a complaints metric score of 70 could be achieved. For illustration, based on the DPCR5 weightings, a score of 70 would equate to 100 per cent of complaints outstanding after 1 day, 100 per cent of complaints outstanding after 31 days, 40 per cent of repeat complaints and 100 per cent of Energy Ombudsman findings being found against the DNO.
[56] In the 2011-12 trial the worst performing DNO had 61 per cent of complaints outstanding after 1 day, 27 per cent outstanding after 31 days, 0.25 per cent of repeat complaints and 100 per cent of Energy Ombudsman decisions against the DNO.
[57] There are numerous ways that a complaints metric score of 20 could be achieved. For illustration, based on the DPCR5 weightings, a score of 20 would equate to 60 per cent of complaints outstanding after 1 day, 15 per cent of complaints outstanding after 31 days, 2 per cent of repeat complaints and 50 per cent of Energy Ombudsman findings being found against the DNO.

6.37. We believe that the four measures used to assess performance during DPCR5 (outlined above) are appropriate indicators of the quality of complaints handling and we will therefore retain them for RIIO-ED1. We may however change the weighting of the Energy Ombudsman measure as outlined below.

6.38. The number of cases referred to the Energy Ombudsman is very low for some DNOs.[58] Consequently the percentage of Energy Ombudsman findings in favour of the complainant is based on a very small sample size.

6.39. To overcome this issue, we propose that either the overall weighting applied to the Energy Ombudsman element of the BMCS complaints metric score is reduced (currently it represents 20% of the overall BMCS complaints metric score) or the indicator should change to reflect the percentage of total complaints that are referred to the Energy Ombudsman and found in favour of the complainant. The advantage of using the second approach is that it would increase the sample size that the percentage value is based upon.

6.40. We seek wider stakeholder views on the indicators used to measure the quality of the DNOs' complaint handling processes.

BMCS stakeholder engagement incentive

6.41. To ensure the ongoing delivery of an efficient network that embraces wider social and environmental objectives, DNOs need to engage with a range of stakeholders. For example engaging with government could inform policy that will affect how the network is used, engaging with customer representative groups could provide insight on factors that may influence future consumer behaviour and engaging with individual customers could provide valuable feedback on how to improve customer service. Key stakeholders will include parties that are affected by, or represent those affected by, decisions made by the DNOs.

DPCR5 arrangements

6.42. Good stakeholder engagement is expected to be a standard part of any well justified business plan, and is necessary for efficient business practice on an ongoing basis. The BMCS stakeholder engagement element incentivises the DNOs to perform beyond business as usual standards and to excel in seeking timely input and feedback from stakeholders on relevant issues, business activities and other developments. We expect that the DNOs will use this feedback to inform their current business operations and future decision making.

[58] In 2011-12 the Energy Ombudsman only issued 75 final decisions in relation to the DNOs. 10 electricity distribution licence areas had fewer than five final decisions issued by the Energy Ombudsman.

6.43. We believed that since the incentive is intended to reward exceptional stakeholder engagement, it would not be appropriate to include a penalty for DPCR5. This approach also acknowledges the potential for a degree of subjectivity in an assessment of the stakeholder engagement activities. DNO performance in this area is therefore only exposed to a financial incentive of up to +0.2 per cent allowed revenue.

6.44. To measure how well the DNOs are engaging with stakeholders, DNOs are required to submit a stakeholder engagement report to us on an annual basis. We then assess the submissions against a set of minimum requirements.

6.45. Those DNOs that satisfy minimum requirements are forwarded for assessment by an independent panel. The panel assesses the submissions against a set of predetermined criteria and awards an overall score for each licensee. The financial reward is based on the score awarded by the independent panel.

6.46. We provide annual guidance on how we will assess submissions. The breadth of stakeholders included in the submission is dictated by the DNOs' business activities and priorities. We update the guidance annually to take into account the lessons learned and best practice demonstrated by the DNOs.

6.47. We trialled the BMCS stakeholder engagement incentive arrangements for the first two years of DPCR5 (2010-11 and 2011-12) and our final decision on the approach used to assess DPCR5 BMCS stakeholder engagement incentive will be published in Autumn 2012. The incentive went live in April 2012 and the first full assessment will take place in summer 2013, assessing performance in the 2012-13 regulatory year.

RIIO-ED1 proposals

6.48. Stakeholder engagement will be an important activity for DNOs to undertake in RIIO-ED1, and will be a powerful tool in managing uncertainty across the longer eight year price control period. Since the BMCS stakeholder engagement incentive is relatively new, we do not propose to make any significant changes to the scope of the incentive or the method of assessment used.

6.49. However, we propose to increase the overall exposure of the incentive from +0.2 per cent to +0.5 per cent of allowed revenue. RIIO-ED1 will cover an eight year period in which the requirements of stakeholders may undergo fundamental changes. We believe it is critical that DNOs are incentivised to explore a range of issues with stakeholders proactively and to respond accordingly. The increased exposure of 0.5 per cent of allowed revenue aligns with the maximum revenue exposure proposed for the GDNs under RIIO-GD1 and reflects the greater degree of confidence we now have in the rigorousness and transparency of our assessment following the trials.

6.50. In addition, to encourage DNOs to engage with a wide range of stakeholders, we specifically intend to use this incentive to encourage DNOs to address key social issues (eg fuel poverty and consumer vulnerability). The BMCS stakeholder engagement incentive provides us with a mechanism to make financial rewards for activities that have led to significant benefits for key groups of stakeholders. We discuss this in more detail in the social obligations chapter (Chapter 7).

7. Social obligations

Chapter Summary

This chapter outlines the role we want DNOs to play in addressing social issues, including fuel poverty and consumer vulnerability. We expect DNOs to be proactive in identifying the issues that are associated with their activities and in which they can play a role in delivering benefits to society. In doing so we expect DNOs to work in close partnership with other organisations to ensure that the right solutions are delivered by the most appropriate agency.

Question 1: Are there additional social issues that the DNOs should address?
Question 2: Are there any specific outputs that the DNOs could be responsible for delivering?
Question 3: Should a separate funding allowance be provided to enable DNOs to carry out activities in response to social issues?
Question 4: Are DNOs adequately incentivised to engage with social issues as part of the BMCS Stakeholder Engagement Incentive?

7.1. We believe that DNOs have an important role in helping to address certain social issues. For instance, due to the essential nature of the service they provide, DNOs need to be able to identify and, where appropriate, meet the requirements of consumers in vulnerable situations.

7.2. We want DNOs to address those social issues that are associated with their activities. We have highlighted in our new Consumer Vulnerability Strategy[59] the need for network companies to help deliver solutions for vulnerable and fuel poor customers. We consider DNOs should adopt a strategic approach, with emphasis on joint working with a range of stakeholders across industry (gas distribution network operators (GDNs) and suppliers), government and other agencies to address key issues around fuel poverty and other forms of consumer vulnerability

7.3. In our 'February open letter' we invited stakeholders' views on the social issues that DNOs could play a role in addressing. The responses identified three main issues:

[59] Available on the following page of our website:
http://www.ofgem.gov.uk/Sustainability/SocAction/Pages/SocAction.aspx

Fuel poverty	Some households spend a considerable proportion of their income on energy bills. Currently we classify those that spend more than 10 per cent as 'fuel poor'. DECC's latest Fuel Poverty review recommends adopting a Low Income High Cost (LIHC) indicator of fuel poverty. This approach to fuel poverty would mean that any household that requires fuel costs above the median level and, if they were to spend that, are left below the official poverty line, should be defined as 'fuel poor'.[60] DNOs may have a role to play in identifying these customers and enabling access to more affordable energy solutions that reduce their financial burden.
Consumer vulnerability	Customers that are in situations which render them vulnerable to interruptions in their electricity supply or in need of additional services from a DNO (for example as a result of disability, physical and mental health conditions, age or learning difficulties). In line with our initial proposals on our Consumer Vulnerability Strategy, we encourage the DNOs to take a perspective on consumer vulnerability that takes into account the dynamic and multi-dimensional nature of personal situations, including short term situations (eg a family with a new-born baby).
Safety	The distribution of electricity carries associated risks to the public. DNOs have an important role to ensure that the public is aware of the dangers associated with their assets and that their assets are operated/ maintained safely.

7.4. There are already controls in place that govern DNO activities in relation to the above issues. For instance DNOs have legal obligations to ensure that they operate their work/assets safely for their employees and members of the public. Chapter 4 outlines the RIIO-ED1 arrangements for safety in more detail.

7.5. DNOs also have a licence obligation to maintain a Priority Services Register (PSR) capturing information on any customers attached to their network that are vulnerable to supply interruptions (eg those dependent on electricity for medical reasons, those of pensionable age or chronically sick). Licensees must provide special services to these customers in the event of a supply interruption. Suppliers and organisations in other regulated sectors, such as water, also maintain their own PSRs, or equivalent. As part of the work programme under our Consumer Vulnerability Strategy we will review the licence requirements on suppliers and distributors in relation to PSRs and whether there are opportunities for more co-ordination on PSRs across the industry.

7.6. During DPCR5, the Discretionary Reward Scheme (DRS) was the primary mechanism we used to incentivise DNOs to undertake activities that delivered

[60] http://www.decc.gov.uk/en/content/cms/consultations/fuel_poverty/fuel_poverty.aspx

social benefits beyond their licence obligations. The DRS was a voluntary incentive split into three main categories (corporate social responsibility, wider communication strategies and priority customer care). The categories alternated each year and a reward of up to £1 million per annum was available across all DNOs.

7.7. We consulted on the future of the DRS in November 2011.[61] The majority of the respondents considered that since the BMCS incentive (particularly the stakeholder engagement element) was being introduced in April 2012, an additional incentive on the DNOs in this area was unnecessary. Therefore in March 2012 we discontinued the DRS for the remainder of DPCR5.[62]

RIIO-ED1 proposals

7.8. To help deliver solutions for vulnerable and fuel poor customers DNOs must have a good understanding of their consumer base. Good quality information allows the DNO to ensure that they maintain the provision of essential services.

7.9. One method of identifying customers who might require additional assistance is through the PSR. The effectiveness of the PSR in enabling priority services to be provided to the right customers depends on the quality of information it contains. If the DNO is unaware that a customer may require additional support then there may be little they – or others - can do to assist in times of need. We therefore want DNOs to outline in their business plans how they intend to improve the information they hold in the PSR. This should include the additional steps they will take to ensure that all consumers that should be on the PSR are identified.

7.10. As well as improving the information they hold in the PSR, we expect DNOs to maximise its utilisation. The PSR currently requires DNOs to give appropriate notice and information to PSR customers in advance of planned interruptions and, as far as reasonably practicable, provide prompt updates to these customers during an unplanned supply interruption.

7.11. In Chapter 4 we outline our proposals to make automatic Guaranteed Standards of Performance payments to PSR customers that are eligible to receive them.

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[61] 'Open letter on Ofgem's review of the Electricity Customer Service Reward Scheme', 30 November 2011, http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=274&refer=Networks/ElecDist/QualofServ/CustServRewSch

[62] 'Ofgem Decision on Electricity Discretionary Reward Scheme (DRS)', 20 March 2012, http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=275&refer=Networks/ElecDist/QualofServ/CustServRewSch

7.12. Beyond these requirements, we believe DNOs could do to more to ensure help is provided to customers. For instance, DNOs could liaise with other organisations, such as local authorities and charities that work with particular groups of consumers, to identify needs and offer additional support during supply interruptions (eg agencies that provide hot meals or alternative accommodation for vulnerable customers).

7.13. In addition to explaining how they will improve the quality and extend the reach of their PSRs, we also want DNOs to outline in their business plans how the information held in their PSR could be used to benefit customers. Specifically we want DNOs to set out how they plan to work in partnership with other stakeholders (eg suppliers, other distributors, local authorities and devolved administrations and other utility providers such as water) to share and use information on consumer vulnerability more strategically during RIIO-ED1.

7.14. We recognise that data protection legislation potentially limits the sharing of information, however we expect all parties to work constructively to overcome this restriction.

7.15. DNOs will have a crucial role to play in seeking solutions for certain consumers. For instance, DNOs may be well placed to identify off-gas grid fuel poor customers and could help in the delivery of additional assistance. This assistance could involve liaising with a gas network to enable a connection to the gas grid, or helping to identify alternative electric heat technologies or household efficiency improvements.

7.16. We are continuing to look at what specific DNO activity might arise as a result of the above and whether this might require funding. Similarly, we are also considering what outputs might be delivered through these activities and whether we can set a financial incentive for their delivery. We would like to hear from respondents to this consultation (or from DNOs in their business plans) of any potential activities or measurable social outputs that DNOs may be best-placed to deliver.

7.17. We recognise that during RIIO-ED1 DNOs may identify activities that they could undertake that would deliver real benefits to consumers, but which have not been specifically funded under RIIO-ED1. We have noted that some stakeholders and DNOs have proposed that a 'pot' of price control revenue should be made available for DNOs to fund such activities. Under these proposals, DNOs would be able to come forward with proposed activities during the period and, if deemed appropriate, the requested revenue would be made available to fund the specified work. Although we have not defined how this might work, it could be a similar arrangement to the proposed Network Innovation Allowance (NIA) outlined in Chapter 10. The NIA enables DNOs to implement small scale innovative projects during the course of RIIO-ED1, provided these fulfil eligibility criteria and are consistent with a DNO's Innovation Strategy.

7.18. It has been suggested that instead we may want to introduce a separate discretionary reward scheme to incentivise DNOs to work with others in developing and strategically using the information they hold in their PSR on consumer vulnerability. We invite views on this suggestion, although we note that the BMCS stakeholder engagement incentive may already provide sufficient incentive to reward DNO efforts to collaborate with other stakeholders to address social issues. To ensure this happens, we propose to incorporate engagement activities that lead to actions which address social issues into the evaluation criteria used to determine the allocation of reward. We also propose to increase the potential maximum reward from +0.2 to +0.5 per cent of allowed revenue.

7.19. We welcome views on our approach to funding and incentivising DNO activities in relation to social issues. Specifically we seek views on whether we should provide a mechanism that allocates funding for activities, or instead put in place arrangements that would provide financial rewards to DNOs that demonstrate the right behaviours. With the latter, we also seek views on whether this should be incorporated within the BMCS stakeholder engagement incentive or under a separate discretionary reward-type mechanism.

8. Connections

Chapter Summary

This chapter outlines our proposals to improve the connections service DNOs provide to customers. We outline how we will use the customer satisfaction survey to incentivise the DNOs to improve the service they provide to all connections customers. We also propose the introduction of a new Average Time to Connect Incentive to drive efficiency improvements in the end to end connections process. In the latter section of the chapter we explain how the arrangements we propose for RIIO-ED1 will be affected by the extent to which there is sufficient competition in the connections market.

Question 1: Do you consider that our proposed package will drive the appropriate behaviour for connecting both demand connections and generation connections?
Question 2: Is it appropriate to remove the DG incentive?
Question 3: Do you agree that we should split the BMCS customer satisfaction survey into major and minor connections customers? If not, why not?
Question 4: How should we set targets for the BMCS customer satisfaction survey?
Question 5: We invite views on our proposals for the Long Term Development Strategy (LTDS), Distributed Generation (DG) Connection Guide and Information Strategy (IS).
Question 6: Are additional or alternative incentives required to encourage the DNOs to provide better information to connection customers upfront? If so, what would these measures and incentives be?
Question 7: We seek stakeholders' views on the introduction of a new Average Time to Connect Incentive.
Question 8: We seek views on which aspects of service should be measured, the approach used for target setting and whether any exemptions should be applied under the Average Time to Connect Incentive?
Question 9: Do you agree with our proposed approach for the treatment of connection customer contributions by the DNOs during RIIO-ED1?
Question 10: Are additional incentives needed to encourage the DNOs to provide high-quality, timely non-contestable work? If so, what incentives should be applied?
Question 11: We seek views on the financial exposure and scope of incentives for those market segments that have/have not passed the Competition Test.

Background and context

8.1. This chapter sets out our proposals to improve the service provided by DNOs to connections customers in RIIO-ED1 and the impact of competition on the application of the proposed outputs and incentives. Chapter 6 provides an overview of our proposals in relation to customer satisfaction and the proposals that relate to the satisfaction of connection customers are explored in more detail below.

DNO Connection Services

8.2. This chapter relates to a customer's requirement for a new or a modified connection. There will be instances where a customer's demand increases such that it causes problems (and costs) elsewhere on the network without affecting the customer's connection. This issue is discussed in Chapter 3.

8.3. Under the Electricity Act 1989, DNOs are obliged to offer a connection to any customer that wishes to connect to the network. The customer seeking the connection has to pay for the cost of the connection.

8.4. Customers seeking a new connection rely upon the DNO to provide them with an efficient service. When customers are not connected in the timescales they require this can result in significant consequences, both to individual customers and to society more generally; new businesses are unable to open their doors, new housing is not made available and low carbon generators are unable to export to the market.

DPCR5 Activities

8.5. At DPCR5 we sought to address long-standing concerns with the connections service by introducing a range of measures to improve performance. These measures included:

- Guaranteed Standards of Performance (GSOP) in connections
- the BMCS (detailed in Chapter 6)
- obligations on the DNOs to produce a LTDS, have an Information Strategy in place to meet customer needs and produce a DG Connections Guide
- DG Incentive to incentivise DNOs to be efficient when connecting uncertain volumes of DG
- measures to enable competition in the provision of connection services.

RIIO-ED1 Proposals

8.6. Feedback from stakeholders (eg from the 2011 Ofgem DG Forum events, Ofgem research into connection timescales and the BMCS customer satisfaction survey results) has highlighted that connections remain critically important and that the service provided does not meet customers' requirements on a consistent basis. Our proposals for RIIO-ED1 therefore address three key issues:

- **Quality of connections service:** We believe that more can be done to satisfy the needs of connections customers. We are also concerned that certain customer types, notably those seeking a high value, large connection, currently may not receive an appropriate level of attention.
- **Provision of information:** Stakeholders have stated that the amount of useful connection information available upfront is limited. For some customers, receiving a formal connection quotation may be the only

method of securing the information needed to inform the viability of a connection request. This can be an unnecessarily time-consuming process for both the customer and the DNO. We, therefore, want to ensure that DNOs are encouraged to provide prospective customers with better quality information at an early stage in the connections process.

- **Timeliness of connections:** Stakeholders have also raised concerns, supported by our own research, with the timeliness of connections. We believe that an incentive to reduce the overall time taken to connect should drive efficiencies throughout the connections process. We also propose a change to the treatment of customer contributions towards high cost, low volume connections to remove any disincentive for strategic investment in anticipation of future demand.

8.7. Since many of the obligations and incentives established under DPCR5 are still relatively new, we propose to build upon the existing arrangements as well as introduce new measures and, in some instances, we propose to remove existing features of the regulatory arrangements. When developing these proposals, we have also taken into account the development of competition and the impact this should have in driving improvements to service.

8.8. The following table outlines the list of proposed measures (and the associated maximum revenue exposure) to improve the service provided to connections customers in RIIO-ED1.

Table 8.1: Maximum revenue exposure for RIIO-ED1

Incentive/Measure			**Maximum reward exposure (per cent of allowed revenue)**	**Maximum penalty exposure (per cent of allowed revenue)**	**Purpose**
Guaranteed standards of performance (GSOP) (minimum service level)			None	0/As per the requirement	- provision of services within minimum timescales
Broad measure of customer satisfaction (BMCS)	Customer satisfaction survey	Minor connections	+0.5	- 0.5	- overall service quality - provision of information
		Major connections	None	(-0.5)*	- overall service quality - provision of information
Average Time to Connect incentive *(new incentive)*			+0.4	(-0.4)*	-timeliness of connections
Total Penalties/Rewards			**+0.9**	**-0.5 to -1.4**	

* dependent upon number of relevant market segments that have passed the Competition Test

8.9. In our consideration of the above issues, we recognise that the experience of some types of customers, such as those connecting DG to the network, may be different from those of others. We have tried to ensure that the concerns raised have been addressed in our proposals, but within an overall approach that does not differentiate in the treatment of either demand or generation connections.

8.10. For instance, some customers, in particular those seeking to connect DG to the network, have complained that they are required to contribute towards 'general reinforcement' costs and that they feel these costs should be socialised. All connections are subject to a 'shallow-ish' connection charging boundary, such that customers contribute towards reinforcement required to provide their connection up to one voltage level above the voltage at which they connect to the existing network. The cost of reinforcement at higher voltage levels costs is socialised. Therefore, connections customers only contribute to the costs they impose on the network. DNOs are not allowed to charge in excess of the charge associated with the minimum scheme to connect a customer. Where the DNO chooses to carry out reinforcement works in excess of the minimum required to connect a customer, the DNO bears the additional costs.

8.11. We consider that these charging arrangements are fair and appropriate and increase network efficiency by providing a locational signal to all customers. As outlined below, we consider that better upfront provision of information should help all types of customers understand and manage the likely costs of a connection.

8.12. Although we do not propose to change the charging arrangements, we consider that smart grid solutions have the potential to lower the cost (and potentially timescales) of all connections, particularly DG. Under the LCN Fund there are a number of projects which are exploring connecting DG through innovative means to avoid reinforcement for new connections.

8.13. In seeking to ensure we have a consistent approach in our treatment of all connections we have reviewed the requirement for the DG incentive. In the fourth distribution price control review (DPCR4)[63] we introduced this mechanism to incentivise DNOs to be efficient when connecting uncertain volumes of DG. We retained the mechanism for DPCR5, recognising that there was significant uncertainty around the volume, generation type, location and voltage of DG that would connect in DPCR5 and that it would be very difficult for DNOs to anticipate the cost of connecting DG to the network.

[63] This came into effect in April 2005 and ran until April 2010.

8.14. The broad characteristics of the DG incentive framework are that:[64]

- the costs incurred by the DNOs to provide network access to DG are given a partial pass-through treatment
- the DNOs are then given a further supplementary £/kW revenue driver (or incentive rate) to incentivise efficient connection of DG to the network.

8.15. In this chapter and Chapter 6 we set out how our package of outputs, incentives and uncertainty mechanisms should drive the right behaviour from the DNOs in connecting all types of customers, regardless of the technology type and volume. We consider that the same behaviour is required for both generation and demand customers, and that consequently, there is no requirement to maintain the DG incentive for RIIO-ED1.

Quality of connections service

Electricity connections Guaranteed Standards of Performance (GSOP)

8.16. The connections GSOPs were introduced in DPCR5 and set out minimum timescales for the delivery of specified connections services. These services reflect a range of activities, from the issuing of a budget estimate through to the energisation of a connection. If the DNO fails to meet the prescribed standard, then they must pay a prescribed level of compensation to individual customers. For example a DNO must provide a budget estimate for a metered connection under 1MVA within 10 working days or pay £50 compensation to the customer.[65] Failure to meet the standard of performance on at least 90 per cent of occasions constitutes a breach of the DNO's licence.

8.17. The connection GSOPs help protect customers against unacceptable levels of service. We therefore propose to retain the current arrangements for all connections customers. We are considering increasing connection GSOP payments to reflect levels of inflation. We propose two options, please see Chapter 4 for more information on the proposed approaches.

Broad Measure of Customer Satisfaction (BMCS)

8.18. The BMCS encourages the DNOs to satisfy customer needs, deal with complaints effectively and engage with stakeholders. The BMCS consists of three components: a customer satisfaction survey, a complaints metric and a

[64] More information can be found on p17 of DPCR5 Final Proposals incentives: http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/FP_2_Incentives%20and%20Obligations%20FINAL.pdf

[65] For more information on Connections Guaranteed Standards timescales and compensation payments then please refer to 'Standard Licence Condition 15A Guidance' (8th Sept 2012) http://www.ofgem.gov.uk/Networks/ElecDist/QualofServ/GuarStandds/Documents1/Connections%20GSOP%20guidance%20Sept_0809.pdf

stakeholder engagement incentive. The BMCS is explained in full in Chapter 6. We set out below more information on the rationale for our proposals in relation to connections customers and how these arrangements will be applied.

8.19. We propose to retain the BMCS customer satisfaction survey with connections customers, but increase the size of the incentive associated with performance. This increased exposure should ensure DNOs have a greater focus on responding to the changing requirements of connections customers.

8.20. Customers that require low value, often domestic, demand connections form the majority of the new connections market in terms of volume. These customers are typically individuals or groups of up to four domestic homes. The requirements of these customers may differ significantly from those requiring a high value, more complex connection. Examples of these latter types of customers would include large demand customers (eg a retail park development), unmetered demand connections (eg street lighting) and DG customers (eg a new wind-farm). The BMCS currently weights the views of all respondents equally. As smaller connection customers form the majority of the connections sample surveyed, DNOs might be encouraged to focus on meeting their particular needs, potentially paying less attention to the views of others.

8.21. To ensure DNOs are also focused on meeting the individual needs of larger connection customers, including DG, we propose to develop a new survey specifically for this customer category. DNO performance in this survey will still be part of the BMCS, but will be subject to a separate financial incentive to the one applied to smaller connection customers.

8.22. The new survey might be more qualitative in nature and, in addition to asking questions specific to the connection service, could assess the DNOs' wider engagement with these customers. This should ensure that DNOs better understand the needs of these customers, particularly where they are a new type of customer with specific requirements, ie DG customers.

8.23. Due to the high cost of completing complex connections, customers requiring larger connections may be more attractive for independent connection providers. We are currently assessing the development of effective competition in various segments of the market (the DPCR5 Competition Test). The exact RIIO-ED1 arrangements for larger connections customers will depend upon the outcome this process. In paragraph 8.44 onwards of this chapter we discuss the impact of the Competition Test in more depth.

Assessment and Design (A and D) Fees

8.24. In addition, we consider that a reduction in speculative connection applications could enable DNOs to provide better service to connection customers. At present, in the absence of regulations proposed in the Electricity Act 1989 (the

Act), DNOs are unable to charge for assessment and design (A and D) fees in advance of the customer accepting a formal connection offer. [66] Since there is no cost associated, many customers use the connection quotation process as a method of collecting information. Consequently, A and D costs for customers that accept connection offers are increasing and the number of applications is causing delays in the provision of quotes.

8.25. Reducing the number of speculative requests will enable DNOs to devote more time to each application and proceed with the certainty that the application is genuine. This would allow them to fully consider the connection options including smart grid solutions, which may provide quicker and lower cost means of connection. It could also allow DNOs more time to discuss the specific requirements of certain customers (eg DG and the best way to accommodate them). Providing DNOs are able to demonstrate the direct benefit to customers of introducing upfront A and D charges, we will support an application to DECC to make the necessary regulations required under the Act to charge for A and D upfront.

Provision of information

Licence Requirements

8.26. Since DPCR4, connection customers have had access to a LTDS that enables potential connection customers to understand available network capacities at EHV levels. For RIIO-ED1 we propose to keep the LTDS as we believe customers, especially larger, more technically informed customers, benefit from access to this information. Each DNO's LTDS is available on its website.

8.27. During DPCR5, we introduced a licence obligation on DNOs to produce a common DG Connection Guide to help prospective customers understand the connections process. The guide should be tailored to different customers' needs and reviewed annually. We propose to retain this requirement for RIIO-ED1, as we consider it is important that high level guidance on the connections process is provided to customers in a consistent manner across the industry.[67]

8.28. During DPCR5, we also required DNOs to develop an Information Strategy demonstrating how they will provide an adequate service and information to DG customers. The Information Strategy is intended to encourage the DNOs to think about who their customers are and provide them with suitable, tailored information that satisfies their needs. Continued stakeholder

[66] For further detail please see our August 2008 open letter: http://www.ofgem.gov.uk/Networks/Connectns/CompinConn/Documents1/A%20and%20D%20fees%20consultation.pdf

[67] Links to DG Connection Guide should be found on the Energy Network Association (ENA) website http://www.energynetworks.org/electricity/engineering/distributed-generation.html

engagement is needed to achieve this and the BMCS results should reflect the quality of information provided to DG customers.

8.29. We believe it is essential that each DNO has in place an Information Strategy to meet the requirements of its customers. However, we propose to remove the licence obligation on DNOs to produce an Information Strategy for RIIO-ED1, as we believe the current licence condition is a relatively ineffective at ensuring DNOs provide customers with the information they require. By strengthening the incentives on the DNOs to meet customer information needs, we believe we can remove the more prescriptive requirement to produce an Information Strategy.

Incentive to produce good quality information

8.30. We believe that DNOs may be able to provide more information to customers earlier in the process, such as the likely costs and timescales for a connection, and alternative connection options that may better suit the customer. The provision of this type of information might allow certain types of customers to modify their requirements prior to requesting a detailed quotation.

8.31. We consider that the BMCS customer satisfaction survey might provide a vehicle to incentivise DNOs to make more information available to connection customers, including DG, earlier in the process. As part of the current survey arrangements, customers are asked about their satisfaction with the provision of information. However, their response to this question is not used directly to determine their overall performance. We are therefore considering specifically factoring performance in relation to the provision of information into the calculation of the DNO's overall score.

8.32. We note that some DNOs are already employing innovative methods to provide prospective customers with early sight of useful information. These types of activities are not yet common across the industry and we seek views on how to incentivise the DNOs to provide customers with good quality information.

Timeliness of connections

Average Time to Connect Incentive

8.33. We believe that over the course of RIIO-ED1, customers should be able to connect to the network in timescales that, on average, are shorter than at present. To achieve this, we expect DNOs to review their end-to-end business processes on an on-going basis and seek opportunities to identify efficiencies and reduce timescales. These process improvements may involve changes in their approach to planning and strategically investing in network reinforcement, greater use of online tools (and other technologies) to facilitate

speedy transactions and a reduction in the time spent processing speculative applications.

8.34. The BMCS customer satisfaction survey, together with cost efficiency incentives (see Chapter 6 – Customer satisfaction), may encourage these improvements. However we do not believe these pressures alone are sufficient to deliver an adequate level of change to business as usual practices.

8.35. In order to incentivise the DNOs to improve connection timescales we propose to introduce an Average Time to Connect Incentive for RIIO-ED1.

8.36. Some stakeholders have suggested that driving the DNOs to shorten the end-to-end connection process may encourage them to do so at the cost of customers' preferences. We want to ensure that DNOs' prioritise meeting the specific needs of individual customers over delivering connections within an average timescale. We, therefore, propose that the financial incentive for the Average Time to Connect Incentive will be smaller than the incentive associated with the connections category of BMCS customer satisfaction survey. We are also considering exemptions under this time to connect incentive for those customers that proactively request connection timescales that are considerably longer than the average time for that type of connection.

8.37. The proposed incentive could measure performance for two key elements of the connection service:

- average time to produce a quote
- average time taken from quotation acceptance to completion of works.

8.38. Performance will be assessed relative to a target based on current levels of performance. In order to ensure DNOs sustain their focus on process improvements, we propose that this target is ratcheted up across RIIO-ED1. We will consult on how this will be achieved once we have considered responses to this consultation.

8.39. We are considering whether to establish a single target level of performance across all DNOs, or to introduce individual targets for each licensee that take into account the physical constraints faced by different networks. We are also considering whether it is appropriate to set separate targets for different types of connections customers (eg demand and DG connections), reflecting the additional complexity that might accompany certain projects.

8.40. The scope of the incentive and our approach to target setting will be affected by the outcome of the DPCR5 Competition Test process. This is outlined at the end of the chapter.

Treatment of customer contributions by the DNOs

8.41. The treatment of customer contributions[68] towards high cost, low volume connections under DPCR5 may provide a disincentive to DNOs investing strategically in anticipation of future demand. This in turn may impact upon the time taken to connect to the network.

8.42. At present, DNOs' baseline allowance in respect of high cost, low volume connections is based on estimated customer contributions, but their recorded spend is adjusted to take actual customer contributions into consideration. Consequently, the more costs a DNO recovers via connection charges, the better the DNO performs against its allowed revenue, and the more it benefits via the efficiency incentive. At the same time, the current connection charging arrangements prevent DNOs from recovering costs in respect of assets provided in advance of any connection via connection charges. The combination of these two factors may incentivise DNOs to always wait for customers to request a connection before undertaking any reinforcement, where it may be more efficient to commence work at an earlier stage.

8.43. For high volume, low cost connections, the DNOs' baseline allowance and recorded spend is adjusted to take into consideration actual customer contributions. As a result, DNOs should be broadly neutral between recovering costs via connection and Use of System (UoS) charges. We propose to extend this approach to cover all connections during RIIO-ED1.

Impact of DPCR5 Competition Test on RIIO-ED1 proposals

Background

8.44. Unlike the majority of the DNOs' work, the installation of new connection assets is not a natural monopoly. Independent Connections Providers (ICPs) and licensed Independent Distribution Network Operators (IDNOs) can compete with DNOs to complete some connection activities.

8.45. The activities that ICPs can undertake are detailed in the connection charge methodology statement and are described as 'contestable' activities and include the design, procurement and construction of the sole use connection assets.

8.46. Those activities that can only be carried out by the DNO are described as 'non-contestable'. The DNO may decide that some additional activities are non-contestable for safety reasons. An individual connection may contain both

[68] Costs recovered from connecting customers via connection charges.

contestable and non-contestable work. Some of the principle non-contestable activities are:

- determination of the point of connection to distribution system
- approval of an ICP/DNO's connection design
- reinforcement/diversionary work on the upstream distribution system
- inspection and monitoring of work.

8.47. During DPCR5 we set out arrangements to facilitate the development of competition for contestable services in the electricity connections market. This was due to the lack of competition demonstrated at the time, relative to connections markets in other industries (eg gas distribution), and concerns that this was contributing towards poor levels of customer service.

8.48. We specified segments of the market (the Relevant Market Segments) in which we believed competition was viable. These are set out in the table below.

Table 8.2: Excluded and Relevant Market segments

Excluded Market Segments (metered and demand only) – minor connections *Market Segments where we consider that competition is unlikely to develop*	
LV connection activities relating to no more than four domestic premises or one-off industrial and commercial work (ie, one to four houses)	
Connection activities in respect of a connection involving three-phase whole current metering at premises other than Domestic Premises. (ie, one off LV connections)	
Relevant Market Segments – major connections *Market Segments where we consider that competition is likely to develop*	
Metered Demand Connections	Low Voltage (LV) Work - LV connection activities involving only LV work, other than in respect of the Excluded Market Segments.
	High Voltage (HV) Work: LV or HV connection activities involving HV work (including where that work is required in respect of connection activities within an Excluded Market Segment).
	HV and Extra High Voltage (EHV) Work: LV or HV connection activities involving EHV work.
	EHV work and above: extra high voltage and 132kV connection activities.
Metered Distributed Generation (DG)	LV work: low voltage connection activities involving only low voltage work.
	HV and EHV work: any connection activities involving work at HV or above.
Unmetered Connections	Local Authority (LA) work: new connection activities in respect of LA premises.
	Private finance initiatives (PFI) Work: new connection activities under PFIs.
	Other work: all other non-LA and non-PFI unmetered connections work

8.49. DNOs are required to come forward with evidence to demonstrate whether effective competition exists in each of the Relevant Market Segments. This process is called the Competition Test. If we agree that effective competition has been established (ie it passes the Competition Test) then we will lift price

regulation on contestable connection services in each segment. This process is ongoing until December 2013. We will review any of the Relevant Market Segments that have not passed the Competition Test in 2014 and may consider referral to the Competition Commission under competition legislation.

8.50. Although it is not possible to know at this stage which Relevant Market Segments will have passed the Competition Test by the start of RIIO-ED1, the outcome of the process has implications for the scope and applicability of the proposed RIIO-ED1 connection incentives. The table below sets out how the incentives we propose to introduce under RIIO-ED1 might be applied to different market segments, depending on the outcome of the Competition Test process. The following paragraphs explore these issues in more detail.

Table 8.3: The potential impact of the DPCR5 Competition Test on the applicability of the proposed RIIO-ED1 incentive package.

Incentive/Measure		**Excluded market segments**	**Relevant market Segments that pass the Competition Test**		**Relevant market segments that don't pass the Competition Test**
			Contestable	**Non-contestable**	
Guaranteed Standards of Performance		✓	✓	✓	✓
Broad measure of customer satisfaction (BMCS)	Customer satisfaction survey	✓	x	x	✓
	Complaints Metric	✓	Seek views	Seek views	✓
	Stakeholder Engagement	✓	✓	✓	✓
Average Time to Connect Incentive		✓	x	x	✓

Excluded Market Segments

8.51. We have stated that we do not believe that effective competition is viable in these segments. These market segments primarily cover low value connections that are unlikely to attract competitors (eg domestic work). To ensure that customers' interests are protected, we propose that all connections elements of the BMCS, together with the Average Time to Connect Incentive should apply to customers in these market segments.

Relevant Market Segments that pass the Competition Test

8.52. We do not believe it is appropriate for DNOs to be subject to a range of performance-linked incentives for the customer service they provide in market segments that have passed the Competition Test. In these circumstances we

consider that the pressure of effective competition should ensure that customer interests are met by either the DNO or a competitive alternative.

8.53. Whilst it is straightforward to apply this principle to the provision of contestable services, we recognise that connection customers in market segments that pass the Competition Test will remain dependent upon the DNO for non-contestable services. We have considered and propose not to apply the customer satisfaction survey and Average Time to Connect Incentive to non-contestable activities for these market segments.

8.54. There are two reasons why we propose that the BMCS customer satisfaction survey should not apply to customers for these non-contestable services. Firstly, we do not believe the BMCS would accurately measure the performance of the DNO in delivering non-contestable services. A customer that chooses an ICP for the contestable services may have little visibility of the performance of the DNO in providing the non-contestable service. We also acknowledge the risk that their perception of the DNO's performance in providing non-contestable works could be influenced by the ICP's delivery of the contestable elements.

8.55. Secondly, we believe that safeguards are already in place to protect customers. Standard Licence Condition 15 of the DPCR5 electricity distribution licence establishes minimum performance standards for non-contestable works, where only non-contestable work has been requested. Standard Licence Condition 19 prohibits DNOs from discriminating between the non-contestable services they provide to ICPs seeking to conduct contestable works and the DNO's own business. In addition, the Competition Test process incentivises DNOs to provide a service for non-contestable works that does not restrict the development of competition. We believe that these safeguards should be sufficient to maintain appropriate service standards in the provision of non-contestable services by DNOs.

8.56. As explained above, the Average Time to Connect Incentive is intended to drive improvements in a DNO's end-to-end connections process. Non-contestable works are discrete activities within that process and have licence conditions to support their delivery within minimum timescales. We therefore propose that the Average Time to Connect Incentive will not apply to these activities.

8.57. Whilst we do not believe it is appropriate to apply either the BMCS customer satisfaction survey or the Average Time to Connect Incentives to these customers, we are keen that DNOs provide a good level of service to customers requiring non-contestable services. This may be in the time it takes to complete the works, or the overall quality of service they provide. We seek views on whether additional measures are required to ensure improvements in the provision of non-contestable services to customers in these segments.

8.58. Stakeholders have also questioned whether the BMCS complaints metric and stakeholder engagement incentive should apply to customers in these segments.

8.59. We agree in principle that a customer in a competitive market segment complaining solely about the contestable services provided by the DNO should not be included in the BMCS complaints metric.

8.60. Equally, we believe that customers in these segments whose complaint encompasses the provision of non-contestable services should be included. We would like further information on the volume of complainants that might be excluded from the current metric due to the application of this principle. We would also welcome views on the practicalities of sifting complaints by market segments, and whether the issues relate to contestable/non-contestable activities. We will form our view on whether or not to include customers in these market segments in the BMCS complaints metric after taking account of the responses we receive.

8.61. The scope of DPCR5 BMCS Stakeholder Engagement incentive is dictated by the DNOs' own activities and priorities and we are not prescriptive about which stakeholder groups should be included in the DNO's BMCS Stakeholder Engagement submission. We do not propose to limit the scope of the BMCS stakeholder engagement incentive during RIIO-ED1. However, we will take account of the impact upon competition when assessing and issuing rewards for these aspects of a DNO's stakeholder engagement submissions.

8.62. We recognise that even in the market segments that have passed the Competition Test, the DNO is still the connections provider of last resort.[69] We will therefore retain the protection provided by the connections GSOP.

Relevant Market Segments that do not pass the Competition Test

8.63. Where a relevant market segment has not passed the Competition Test we propose to implement a range of additional measures to ensure customer interests are protected. In developing these proposals we have been mindful not to introduce any perverse incentives on DNOs. We do not want DNOs to seek to fail the Competition Test in order to be eligible for financial rewards under the RIIO-ED1 arrangements.

8.64. We therefore propose that the BMCS customer satisfaction and Average Time to Connect Incentives will apply to all connection customers in these market segments. These incentives, in principle, will operate on a penalty only basis to ensure they do not act as an incentive to fail the Competition Test. The size

[69] DNOs are the only organisations that are obliged to provide a connection quotation to any customer that requests one.

of the penalty will be dependent upon the number of market segments that have failed to pass the Competition Test (see below).

The size and structure of proposed RIIO-ED1 incentives

Broad Measure of Customer Satisfaction (BMCS)

8.65. As set out above, the applicability of the incentive will vary depending upon the market segment. For the service provided to customers in the excluded market segments, DNOs will be exposed to a financial penalty or reward of +/- 0.5 per cent of annual revenues depending on their performance. As outlined in Table 6.1 the Customer satisfaction chapter (Chapter 6), this is more than the maximum exposure of +0.32/-0.2 per cent of allowed revenue that was placed on the equivalent elements in DPCR5. We have increased this exposure as we believe DNOs need to strengthen their efforts to improve the service they provide to connection customers.

8.66. We propose to apply an additional penalty only customer satisfaction survey with an exposure of up to -0.5 per cent of annual allowed revenues in relevant market segments that have not passed the Competition Test. The overall penalty exposure will be scaled to reflect the number of relevant market segments that have not passed the Competition Test up to a maximum of -0.5 per cent of allowed revenue, ie a DNO that has not passed in any of the market segments will be exposed to penalties up to the full –0.5 per cent of allowed revenues, whereas a DNO that has passed the Competition Test in eight out of nine market segments will be exposed to a proportionately smaller maximum penalty.

Average Time to Connect Incentive

8.67. We propose a reward only incentive of up to +0.4 per cent of allowed revenue for the Average Time to Connect Incentive for customers in excluded market segments. The size of reward is smaller than the BMCS customer satisfaction survey exposure to ensure that the DNOs are primarily incentivised to meet customers' requirements.

8.68. We propose to apply an additional financial penalty only exposure of -0.4 per cent of allowed revenue to DNOs that fail to deliver, on average, quotations and completed connections within target timescales to customers in relevant market segments that have not passed the Competition Test. Similar to the arrangements for the BMCS survey, the overall penalty exposure will be scaled to reflect the number of relevant market segments that have not passed the Competition Test, up to a maximum of -0.4 per cent of allowed revenue.

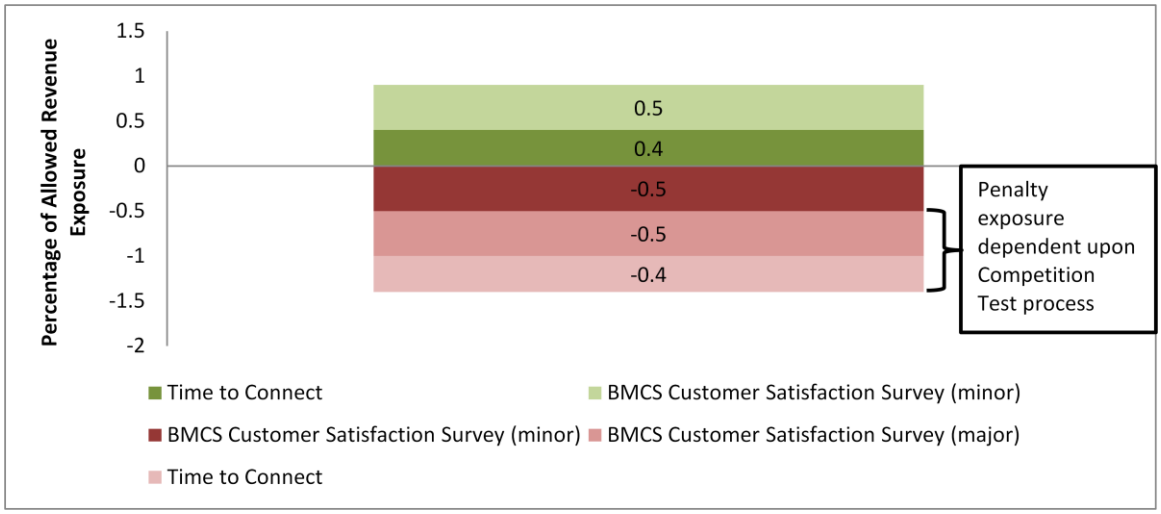
8.69. In setting targets for both smaller and larger customers we will take account of current performance and what level we believe is appropriate to be subject to reward or penalty. For the reward only element, we may choose a target

point that is above the current average of performance, so that DNOs will only be able to earn a reward under this incentive where they perform better than they do at present.

8.70. Similarly, we believe that DNOs should not be penalised for delivering connection times that are better than the industry average. Therefore we may choose to set a target for the penalty only incentive, so that only those DNOs performing at or below current levels of performance are penalised.

8.71. Our proposal is to tighten these targets over the course of the RIIO-ED1 period in order to maintain a continuous incentive on DNOs to seek process improvements. We will develop our proposals for ratcheting up these targets in more detail and following input from other stakeholders.

Figure 8.1: Potential connection incentives reward and penalties



9. Efficiency incentives and IQI

Chapter Summary

This chapter sets out our proposed approach to efficiency incentives and to the operation of the information quality incentive (IQI). It summarises the role of the efficiency incentive rate in the RIIO framework and provides further information on how the efficiency incentive rate would be implemented. The level of the efficiency incentive rate for each company would be determined through the IQI. We provide our proposed approach to the calibration of the IQI, including the range for the efficiency incentive rate that we envisage across the DNOs.

Question 1: Do you agree with our proposed range for the efficiency incentive rate?
Question 2: Do you agree with our proposed approach to the calibration of the IQI?
Question 3: What are your views on the indicative IQI matrix?
Question 4: What do you consider are the appropriate rewards for fast-track companies compared to non fast-track companies? Should we have a differential between the two?
Question 5: Do you agree with our proposals for the same efficiency incentive rate to apply to all areas of expenditure that will be included within the IQI?
Question 6: Do you agree with our proposed treatment of DNOs within a single ownership group?

If you disagree with our proposals in these areas, please explain the basis for an alternative approach.

Efficiency incentive rate

9.1. We want to ensure that network companies face strong financial incentives to deliver outputs at an efficient cost and to seek out and implement delivery approaches that provide better value for money for existing and future consumers.

9.2. Two elements of the RIIO framework are designed, in particular, to achieve this:

- We will determine a fixed and symmetric "efficiency incentive rate" for each company. This will give companies a clear and strong financial stake in managing, and where possible reducing, the costs of delivering outputs.
- We will not make retrospective adjustments to revenue in the event that costs turn out to be different to what was assumed in the price control itself, save through the application of the efficiency incentive rate and uncertainty mechanisms. We will only consider using 'ex post adjustments' if outputs are not delivered or a company has manifestly wasted money.

9.3. Further information on these elements of RIIO is provided in the 'RIIO Handbook'.

9.4. The efficiency incentive rate represents a commitment to the way that the revenues that a network company is allowed to collect from consumers will adjust upwards or downwards in light of what it actually spends during the control period.

9.5. If the efficiency incentive rate is set at 40 per cent, the intention is that a company's investors will earn £40 profit (after tax) for each £100 that the company saves during the price control period and bear £40 (after tax) of each additional £100 the company spends. The remainder will be passed on to consumers through lower or higher network charges in the future.

9.6. The efficiency incentive is about risk-sharing. Investors and consumers will share the benefits when the company delivers outputs for less money than we envisaged when setting the price control. Similarly, investors and consumers will share the additional costs if the company spends more money than envisaged. The level of the efficient incentive rate determines the extent to which additional costs or savings are borne by investors or consumers. The higher the efficiency incentive rate, the more investors are exposed to the network company delivering at higher cost than expected and the more they stand to gain if the network company can deliver at lower cost.

9.7. The network company will face the same efficiency incentive rate for the duration of the price control period and regardless of whether it has spent more or less than envisaged. The same efficiency incentive rate will also apply to operating expenditure and capital expenditure. This will reduce the risk that decisions may be distorted in favour of capital expenditure solutions.

9.8. Our RIIO Handbook elaborated: "The Information Quality Incentive (IQI) is used to set the strength of the upfront efficiency incentives each company faces according to differences between its forecast and our assessment of its (efficient) expenditure requirements. The aim of the tool is to encourage companies to submit more accurate expenditure forecasts to Ofgem".

9.9. How we set the efficiency incentive rate for each DNO is dependant on their performance under the IQI. We explain this further in the IQI section later in this chapter.

Implementation of the efficiency incentive rate

9.10. In line with RIIO-T1 and GD1, we are making two changes to the way that the efficiency incentive rate is implemented compared to in DPCR5.

- The efficiency incentive rate will be applied through revenue adjustments made annually during the price control period, rather than waiting to the

next price control review. We propose that any revenue adjustment due under the efficiency incentive rate is made two years after the relevant expenditure is incurred. This time delay is needed because of the delay in expenditure data becoming available and so that revenue adjustments can be calculated in good time to enable notifications to network users of changes in charges.

- The level of the efficiency incentive rate will determine the extent to which totex is 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 will be an upward adjustment to totex but, as the incentive rate will be above zero, the adjustment will be smaller than the overspend itself. The higher the incentive rate, then more of any over spend is borne by the company. The difference between the actual over spend and the totex adjustment will therefore be greater. The 'Supplementary annex – Financial issues' sets out our proposed annual iteration process for determining allowed revenues during RIIO-ED1.

9.11. This is the approach included in our RIIO recommendations.

Interaction with uncertainty mechanisms

9.12. The Supplementary annex - Uncertainty mechanisms' sets out our proposed approach to managing uncertainty for RIIO-ED1 and the potential areas we currently believe may require uncertainty mechanisms. It is important to understand the interaction the efficiency incentive has, or can have, with the proposed mechanisms. In general, we would expect to set the uncertainty mechanisms for RIIO-ED1 such that any qualifying expenditure would be subject to the efficiency incentive rate. In practice this would mean that for a company with a threshold set at say £10 million, and an efficiency incentive rate of 50 per cent, then only where they have spent £20 million would they be deemed to have met the re-opener threshold. Expenditure below the re-opener threshold, or in unanticipated areas not subject to a re-opener, would again be subject to the efficiency incentive rate.

Information quality incentive (IQI)

9.13. We introduced a mechanism to incentivise accurate cost forecasts and efficient capital expenditure at the DPCR4 price control (then known as the 'sliding scale mechanism' but now referred to as the information quality incentive or IQI). The IQI has subsequently been refined in GDPCR, DPCR5 and RIIO-T1 and GD1. At DPCR5 the scope of expenditure covered by the IQI was extended, and it included network operating costs and closely associated indirect costs.[70]

[70] Indirect costs are broken into two categories: business support, and closely associated indirect costs. Closely associated indirect costs include network policy (including research and development), network

9.14. In RIIO-ED1 we intend to continue to use the IQI to encourage DNOs to provide business plans that reflect best available information about future efficient expenditure requirements.

9.15. In particular, the IQI will 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.

9.16. We will calibrate the IQI 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.

9.17. To illustrate the calibration of the IQI, we consider the case of a company which submits a forecast of its expenditure requirements over the price control period that matches our own assessment of that company's efficient expenditure requirements. In this case, the company's forecast is 100 per cent of our assessment. Our proposal is that we would calibrate the IQI so that such a company would be able to achieve a return equal to our estimate of its cost of capital, if it were then to spend, over the price control period, the amount it had forecast (leaving aside the impact of other incentive schemes on the company's returns). Again this is different from current price control reviews where a company with 100 per cent would earn additional returns on top of baseline cost of equity.

9.18. Under this approach, companies that submit expenditure forecasts that are higher than our assessment of their efficient expenditure requirements could earn returns lower than our estimate of their cost of capital unless they were able to deliver outputs at lower costs than our assessment or to earn financial rewards through other incentive schemes. Our estimate of companies' efficient expenditure requirements will be reasonable, and based on a range of information. For more information see 'Supplementary Annex – Tools for cost assessment'.

9.19. A necessary feature of IQI is that companies will face different efficiency incentive rates where the ratio between our view of required expenditure and their view of required expenditure differs. The efficiency incentive rate for a specific DNO will depend on the ratio between its expenditure forecast and our

design and engineering, engineering management and clerical, wayleaves administration, control centre, system mapping and health and safety functions.

assessment of its expenditure requirements as well as the parameters used to calibrate the IQI. Whilst this means that we may not apply the same efficiency incentive rate across all companies, we can operate the IQI in a way that allows us to set the broad level and spread of the efficiency incentive rate up front.

9.20. We are considering whether it is appropriate to increase the strength of efficiency incentives for RIIO-ED1. We welcome views on the appropriate range.

9.21. Table 9.2 shows an indicative IQI matrix. This would contain a possible range of efficiency incentive rates from 50-70 per cent if company forecasts were between 90-130 per cent of our baseline.

9.22. During the price control review we will adjust the IQI matrix/calibration, if necessary, to ensure that by the Draft Determination the actual efficiency incentive rates that companies would face would not lie significantly outside our desired range.

Efficiency incentive: excluded costs

9.23. In DPCR5 we drew a distinction between direct costs (and closely associated indirects) which were subject to an efficiency incentive rate in the range of 45-51 per cent, and business support and non-operational capex which were fully expensed and effectively subject to a 100 per cent incentive rate or sharing factor.

9.24. Experience suggests that this was an unnecessary complexity and that including all costs within the scope of a single efficiency incentive would be simpler to operate and would eliminate boundary issues.

9.25. We intend to take this simpler approach for RIIO-ED1, as we have for RIIO-T1 and GD1, and are looking to compensate for this widening of the scope of equalised incentives and the removal of cost categories attracting 100 per cent by increasing the efficiency incentive rates that apply. Table 9.1 below shows the combined upper and lower range of efficiency incentive rates in DPCR5 when bringing the separate areas together.

Table 9.1: Upper and lower combined DPCR5 efficiency incentive rates

	DPCR5 efficiency incentive rate	Expenditure subject to efficiency incentive	Expenditure subject to 100 per cent	Percentage of expenditure subject to efficiency incentive	Percentage of expenditure subject to 100 per cent	Combined efficiency incentive
DNO A	45%	£868m	£156m	85%	15%	53%
DNO B	49%	£443m	£114m	80%	20%	59%

9.26. In DPCR5 real price effects (RPEs) were excluded from the application of the IQI matrix but subject to the efficiency incentive rates. For RIIO-ED1 we are proposing that RPEs should form part of the application of the IQI matrix together with other costs. This helps to ensure that companies have appropriate incentives to submit robust forecasts for RPEs. We welcome views on this proposal.

9.27. A few small cost categories, such as traffic management costs (excluding admin), in order not to alter the marginal penalty rate as set by the Department for Transport, and guaranteed standards of performance payments, will be excluded from the application of the efficiency incentive rate and continue to attract a 100 per cent incentive rate.

Treatment of groups

9.28. It is our intention to continue the practice of RIIO-T1, GD1 and DPCR5 in establishing IQI ratios by assessing the sum of all expenditure forecasts of DNOs within a single ownership group.

9.29. Where one DNO within a group is fast-tracked and the remaining licensee(s) within that group are not fast-tracked, we will set out the methodology for equalising the efficiency incentive rates in Draft Determination. Our view at this stage is that this should be done based on the proportion of totex allowances for each DNO within the ownership group. Ie where DNO A has a proposed totex allowance of £750 million and DNO B £250 million, with proposed efficiency incentive rates of 70 per cent and 50 per cent respectively, then the equalised rate across the group would be 65 per cent.

Additional income: the point of comparison

9.30. For the RIIO-T1 price control review the fast-tracked companies received a reward of two and a half per cent of totex. We would welcome views on whether this level of reward is appropriate for RIIO-ED1 and the extent of differential with non fast-track companies. For each DNO that is not fast-tracked, we will produce our own view of its expenditure requirements (drawing on the DNO's business plans, and revisions to the plans, where these are well-justified). We are considering a number of potential options for setting the IQI in terms of whether it is based on the DNO's first submission or later updated submissions. We would welcome views on this.

9.31. More generally, common assumptions on output levels and volumes will be essential across the different business plans at each stage of comparison. Our assumptions and company assumptions would need to be common at each stage. We propose that we would compare 'normalised' outputs in determining where DNOs are in the matrix. Where a DNO opts to include additional outputs over and above those we believe are required, then we would include such differences in the calculation of the matrix.

Table 9.2: Indicative IQI matrix

IQI MATRIX (For information only)									
DNO:Ofgem Ratio	90	95	100	105	110	115	120	125	130
Efficiency Incentive	70%	68%	65%	63%	60%	58%	55%	53%	50%
Additional income (£/100m)	1.5	0.7	0.0	-0.9	-1.8	-2.8	-3.8	-4.9	-6.1
Rewards & Penalties									
Allowed expenditure	97.50	98.75	100.00	101.25	102.50	103.75	105.00	106.25	107.50
Actual Exp									
90	6.7	6.6	6.5	6.1	5.7	5.1	4.5	3.6	2.7
95	3.2	3.3	3.2	3.0	2.7	2.3	1.7	1.0	0.2
100	-0.3	-0.1	0.0	-0.1	-0.3	-0.6	-1.1	-1.6	-2.3
105	-3.8	-3.5	-3.3	-3.2	-3.3	-3.5	-3.8	-4.2	-4.8
110	-7.3	-6.9	-6.6	-6.4	-6.3	-6.4	-6.6	-6.9	-7.3
115	-10.8	-10.2	-9.8	-9.5	-9.3	-9.2	-9.3	-9.5	-9.8
120	-14.3	-13.6	-13.1	-12.6	-12.3	-12.1	-12.1	-12.1	-12.3
125	-17.8	-17.0	-16.3	-15.7	-15.3	-15.0	-14.8	-14.7	-14.8
130	-21.3	-20.4	-19.6	-18.9	-18.3	-17.9	-17.6	-17.4	-17.3
135	-24.8	-23.7	-22.8	-22.0	-21.3	-20.7	-20.3	-20.0	-19.8
140	-28.3	-27.1	-26.1	-25.1	-24.3	-23.6	-23.1	-22.6	-22.3
145	-31.8	-30.5	-29.3	-28.2	-27.3	-26.5	-25.8	-25.2	-24.8
150	-35.3	-33.9	-32.6	-31.4	-30.3	-29.4	-28.6	-27.9	-27.3

10. Encouraging innovation

Chapter Summary

This chapter sets out how innovation is supported within the RIIO framework, including the provision of a time-limited innovation stimulus. The innovation stimulus is currently being implemented for RIIO-T1 and GD1, and we propose to adopt it largely unchanged for ED1. In this chapter we are consulting on the level of funding for the electricity Network Innovation Competition (NIC) and guidance on the contents of a DNO's innovation strategy.

Question 1: Do you agree that the cap on funding for the electricity NIC should be within the range of £60m and £90m for 2015-16 and 2016-17? Please provide evidence to support your suggested level of funding.
Question 2: Do you agree that the level of funding for the rest of the ED1 period should be reviewed in 2016 following a review of the LCN Fund?
Question 3: What are your views on the information DNOs should provide in their innovation strategies? How can DNOs best demonstrate that their approach to innovation is sufficiently well justified and robust?
Question 4: Do you agree that it would be valuable for DNOs to consult and update their innovation strategies regularly during the price control period?
Question 5: Are there any aspects of the innovation framework for ED1, which you think should differ from the arrangements from RIIO-T1 and GD1? If yes, please explain why.

Background and context

10.1. The Distribution Network Operators (DNOs) face significant challenges over the coming years. They need to facilitate the move to a low carbon economy while maintaining safe, secure and reliable energy supplies at long-term value for money to consumers.

10.2. During the ED1 period we are likely to see changes in the use of the distribution network as a result of the take up of low carbon technologies such as EVs, heat pumps, pV and DG such as small wind farms. The networks were not designed to accommodate large volumes of these technologies and conventional approaches to managing their connection could be costly. Therefore DNOs will need to innovate to explore smarter ways to integrate these technologies onto their networks and to support customers in managing their demand effectively.

10.3. Under RPI-X regulation we recognised that there was little to encourage this innovation from the DNOs. Therefore in the last distribution price control review (DPCR5), we established the LCN Fund. The LCN Fund allows up to £500m to be spent on projects sponsored by DNOs to trial innovative technological, operating and commercial arrangements to facilitate the transition to a low carbon Great Britain whilst maintaining safe, secure and reliable energy supplies at value for money for consumers. Since it began in

2010, we consider the LCN Fund has worked well to date and it is widely considered to have significantly improved the DNOs' attitude to innovation, knowledge sharing, anticipating the low carbon future and collaborative working with third parties

10.4. In addition to the LCN Fund, since DPCR4 the Innovation Funding Incentive (IFI) has provided DNOs with funding equivalent to 0.5 per cent of their allowed revenues to spend on research and development (R&D) projects focussed on the technical development of their networks.

RIIO and business as usual innovation

10.5. The RIIO framework has been designed to recognise the significant challenges faced by Britain's gas and electricity network operators over the coming years. Many elements of the framework are intended to encourage innovation. These include the strong emphasis on delivering outputs and lengthening the price control period, to provide companies with more certainty of the rewards for successful innovation. The framework provides a strong incentive to innovate and for DNOs to adopt a range of innovative and conventional approaches across all aspects of their business.

10.6. We expect DNOs to clearly demonstrate throughout their business plans that they have considered the use of alternative techniques (such as innovative technical, operational, commercial and contractual arrangements) in all areas of their business to deliver their outputs more efficiently and reduce costs.

10.7. We also expect that some of the projects funded under the IFI and LCN Fund will have delivered valuable learning that DNOs can utilise within their businesses. Therefore, we expect to see evidence of DNOs sharing learning and rolling out successful LCN Fund and IFI projects. This will be a key consideration when assessing if a DNO should be subjected to proportionate treatment or fast-tracking. We will also take account of the level of past and future innovation funding provided to DNOs in setting the efficiency frontier for the period (ie we would expect high levels of innovation funding to date to allow DNOs to achieve results more quickly). Further information with respect to innovation in the business plans can be found in the 'Supplementary annex - Business plans and proportionate treatment'.

Innovation stimulus

10.8. In our RIIO decision we recognised that although the RIIO framework provides strong incentives to innovate as part of normal business (as set out above), certain research, development, trials and demonstration projects are speculative in nature and yield uncertain commercial returns. In addition, where benefits are linked to the decarbonisation of the network, it may be difficult to commercialise the respective carbon and/or environmental benefits and shareholders may be unwilling to speculatively fund such projects. We therefore set out a time-limited innovation stimulus package within the RIIO

framework to provide additional funding for innovation that the companies would not otherwise do as part of 'business as usual'.

10.9. We have developed this innovation stimulus package in more detail as part of RIIO-T1 and GD1. We expected that many aspects would apply to the DNOs, and therefore have developed our proposals with a stakeholder working group including the DNOs (the Innovation Working Group, IWG). We have also consulted separately to the RIIO-T1 and GD1 documents.[71]

10.10. The innovation stimulus consists of three components:

- The Network Innovation Competitions (NIC): an annual competition for electricity transmission and distribution that funds large scale, low carbon and environmental innovative projects. In addition to the transmission and distribution companies, other network licensees can also bid for funding[72].

- The Network Innovation Allowance (NIA): a set use-it-or-lose-it allowance that each DNO receives to fund small-scale innovative projects as part of their price control settlement. The value of the NIA is based on a company demonstrating it has a well thought through plan for how it will focus its development efforts over the price control period.

- The Innovation Roll-out Mechanism (IRM): a revenue adjustment mechanism designed to make funding available for the roll-out of proven low carbon or environmental solutions within the price control period.

10.11. For RIIO-ED1 we intend to implement the innovation stimulus broadly as it has been designed in RIIO-T1 and GD1 since we have designed the elements also considering electricity distribution. We are proposing limited changes, specifically:

- the level and duration of electricity NIC funding
- guidance on the innovation strategy.

Network Innovation Competition (NIC)

10.12. In RIIO-T1 we have set out that the electricity NIC (which will eventually include both the transmission and distribution companies) will start at 1 April 2013, but will only be open to transmission until the start of RIIO-ED1 as

[71] http://www.ofgem.gov.uk/Networks/nic/Pages/nic.aspx
[72] All network licensees are eligible to lead bid for funding. This includes offshore transmission owners (OFTOs) and independent network operators (IDNOs). More information on this decision can be found here: http://www.ofgem.gov.uk/Networks/nic/Documents1/March%20decision%20document%20Final.pdf

DNOs have access to the LCN Fund until then. We have stated that up to £27m per annum can be awarded to successful projects led by electricity transmission licensees[73] based on the potential for innovation in the transmission networks, but that we would review the total amount in RIIO-ED1 in light of the DNOs joining.

10.13. The key components of the electricity NIC are as follows:

- it is aimed at larger innovation projects with potential low carbon or environmental benefits that create learning for the whole industry
- it funds all types of innovative solutions: technological, operational, commercial and/or contractual
- it is funded by monies raised through transmission use of system charges and transferred to the implementing licensee
- licensees are expected to collaborate with a range of non-network parties and leverage additional external funding where possible
- funding is provided up to a maximum of 90 per cent of project costs
- the amount of funding available represents the maximum funding award in any year and Ofgem is under no obligation to award this each year.

10.14. The governance framework for the electricity NIC is currently under development in conjunction with the IWG. The electricity NIC has been based on the design of the Second Tier of the LCN Fund and we have used our experience from running this competition to develop these arrangements. In some instances, there are differences between the two competitions, which have resulted in changes to the NIC governance framework in comparison to the LCN Fund arrangements. For example, the NIC will include projects with environmental as well as low carbon benefits; both distribution and transmission network licensees will be eligible to lead bids for NIC funding[74] and funds are collected through transmission rather than distribution use of system charges.

10.15. We do not anticipate that extensive changes need to be made to NIC governance arrangements for ED1. However, we have previously committed to review the level of funding that is available for the competition once DNOs can enter the competition in 2015.[75]

Level and duration of NIC funding

10.16. In setting the amount available under the NIC from 2015 onwards, we are considering the following points:

[73] In addition £3m is available for the successful delivery reward or cost-overuns 'pot'.
[74] TOs and OFTOs from 2013 and DNOs and IDNOs from 2015.
[75] http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/T1decisionbusplan.pdf

- we have committed £27m per annum for the electricity NIC until the end of T1
- whether the current level of funding in the LCN Fund competition (£64m per annum) is delivering value for money
- whether a similar amount of funding will provide value for money into the future.

10.17. Under the RIIO framework specific innovation funding is intended to be time-limited. DNOs have been provided with similar funding throughout DPCR5 to encourage a step change in how they approach innovation within their business. This funding is intended to kick start a cultural change where DNOs establish the ethos, internal structures and third party contacts that facilitate innovation as part of business as usual.

10.18. To date, we have completed two rounds of LCN Fund competitions and we will publish the results of the third competition at the end of November 2012. Projects awarded funding have been of varying size (between £3.1m and £27.6m) and scope (eg trialling new DSR contracts with customers, new network communication tools and new engineering practices to release additional network capacity). There has been strong competition for funding since the competition began. For example, this year, over £83m of funding has been requested, exceeding the £64m available[76].

10.19. We consider that most of the LCN Fund projects that have been awarded funding to date are making good progress, and we are encouraged by the DNOs' engagement in the process and their attitude toward the opportunity provided by the LCN Fund. DNOs are now considering different approaches, working with other non-network licensees and sharing learning through a variety of means.

10.20. We also need to be confident that consumers are getting value for money in providing this additional innovation stimulus funding and for funding they have provided in the past through the LCN Fund and IFI. We are keen to understand the value of the benefits derived from these projects before committing additional NIC funding for the full duration of ED1. However projects are not scheduled to complete until 2013 at the earliest, and so it is not possible for us to assess their value for money at this time.

10.21. We therefore consider there is merit in undertaking a comprehensive review of the benefits that have been delivered from the LCN Fund, once a majority of projects have been completed. We expect this to be the case by 2016[77] so we think it is appropriate to conduct this review in late spring 2016. We intend to use the outcome of the review to set the level of electricity NIC funding for the

[76] Information on all proposed projects and projects being implemented can be found here: http://www.ofgem.gov.uk/Networks/ElecDist/lcnf/Pages/lcnf.aspx
[77] The last competition will run in 2014 and most projects run for approximately 3 to 4 years.

remainder of ED1; including the profile of the funding cap (ie whether it should remain flat or decrease over time) and whether the funding should cease beyond 2021.

10.22. In the meantime, we consider that for the first two years of ED1 (2015-16, 2016-17), an appropriate level of funding for the electricity NIC is between £60 and £90m per annum. This includes the £27m already set for the duration of RIIO-T1. The top end of this range assumes an additional amount similar to that available under the LCN Fund and the lower end assumes an additional amount equivalent to the amount set in RIIO-T1. The total electricity NIC funding will be available to both transmission and distribution from 2015 (ie there will not be set allowances for each sector).

10.23. We consider that the level of funding made available should be representative of challenges facing the industry and the required levels of innovation over the coming years. The competition for LCN Funding to date suggests there is still significant appetite to trial innovative projects that help us transition to a low carbon energy sector. To provide funding towards the top end of the proposed funding range we would need sufficient evidence to demonstrate this appetite will continue and the scale and nature of the low carbon/environmental challenges will persist at their current levels. We will only continue to fund projects which are of sufficient quality to deliver value for money for consumers.

Network Innovation Allowance (NIA)

10.24. We propose to introduce the same NIA as set out for RIIO-T1 and GD1. It is a set allowance that each of the DNOs will receive to fund smaller-scale innovative projects as part of their price control settlement and DNOs will be able to pass through up to 90 per cent of project costs. DNOs will be able self-certify projects for NIA funding against the eligibility criteria which will be set out in the NIA governance document.

10.25. The NIA will replace the funding available under the IFI and the First Tier of the LCN Fund. Currently DNOs can spend up to 0.5 per cent of allowed revenues for the IFI and there is £16m allocated across all DNOs on an annual basis for the First Tier of the LCN Fund.

10.26. For RIIO-T1 and GD1, we decided that a company's NIA would be set between 0.5 per cent and 1 per cent of allowed revenues, based on the quality and content of its innovation strategy, which formed part of their business plan submission. At a minimum, this maintained the level of funding available under the IFI in the previous price controls, but allowed companies to justify the need for additional funding up to 1 per cent of allowed revenues recognising that approximately 1 per cent is currently available to DNOs. Once determined, the NIA is set for the full duration of the price control. We have recently completed our initial assessment of the transmission and gas

distribution companies' innovation strategies which was published in July 2012 within the RIIO-T1 and GD1 Initial Proposals document[78].

10.27. We propose to introduce the same arrangements for ED1 as exist for RIIO-T1 and GD1, whereby we will set the value of each DNO's NIA between 0.5 and 1 per cent of allowed revenues. The actual level of funding will be set based on an assessment of the quality and content of the company's innovation strategy. We consider that a DNO that has a well developed strategy in place for developing and then integrating innovative projects into business as usual will be able to translate this approach into a strong innovation strategy that helps to ensure value for money for consumers.

Innovation strategy

10.28. The innovation strategy is intended to provide companies with an opportunity to demonstrate the role of innovation in their business to their stakeholders and Ofgem. It should include their innovation implementation strategy and how they will deliver value for money when progressing innovative projects which have been funded by consumers. The innovation strategy is intended to be a working document and not a one-off product developed to receive enhanced NIA funding.

10.29. For RIIO-T1 and GD1 we set out the following minimum requirements that we expected to be included in an innovation strategy:

- the high-level problems or challenges which the company/sector expects to face over the period, and the justification for initiating projects to address these
- what the company will be monitoring in order to judge what the focus should be for innovation in later years of the price control
- demonstration that the problems/challenges have been identified in consultation with stakeholders
- discussion of the relative priorities, risks, benefits, value for money and potential customer impacts
- discussion of what will happen if innovation didn't occur
- deliverables and potential deliverables from the innovations[79].

10.30. These requirements are what, at a minimum, we would expect to see in an innovation strategy. For a DNO to justify funding beyond the default of 0.5 per

[78] http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=376&refer=Networks/GasDistr/RIIO-GD1/ConRes and http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=214&refer=Networks/Trans/PriceControls/RIIO-T1/ConRes

[79] This is not intended to achieve a detailed list of specific projects but instead provide an indication of the types of deliverables that can achieved eg introduce new DSR commercial arrangements.

cent of allowed revenues we would expect a DNO to produce an innovation strategy that exceeds these requirements and provides clear justification for why funding beyond 0.5 per cent will deliver value for money for consumers and help the DNO to address the specific challenges it faces.

10.31. We seek views on whether we should revise this guidance. We are interested in stakeholders' views about what essential information should be provided in an innovation strategy and how DNOs can best demonstrate that their approach to innovation is sufficiently well considered and robust.

10.32. The production of an innovation strategy is not intended to be a one-off exercise that DNOs complete at the business planning stages of the price control. We think there is value in DNOs regularly reviewing, updating and publishing their strategies to reflect their changing priorities. However we would still expect the updated strategy to be consistent with the guidance outlining minimum requirements and with the project eligibility criteria for the NIA.[80]

10.33. We do not think it is feasible for the strategy to be updated every year of the price control, but we would expect over the course of the eight years that a DNO's strategy will need to adapt to any significant changes in the external or internal environment. Therefore we think it would be beneficial for a DNO to update, following consultation with their stakeholders, their innovation strategy during the price control period. This could be on a regular basis or when a DNO deems necessary, such as after a major change has taken place.[81]

Innovation roll-out mechanism (IRM)

10.34. We consider that under RIIO there are strong incentives for a DNO to roll-out, into business as usual, successful innovation projects funded either under the LCN Fund, IFI, NIC or NIA.

10.35. At the start of the price control, DNOs can base their ex ante funding request in their business plans on utilising innovative approaches and techniques.

10.36. Within the price control period, where innovation projects prove that a new technique or practice can lower costs or help the DNO better meet its outputs, the efficiency incentive allows the DNO to share the benefits of any savings with consumers.

10.37. However, in RIIO-T1 and GD1 we recognised that there may be need for a facility to roll-out new proven solutions that were not identified at the time the

[80] This will be set out in the NIA governance document.
[81] From 1 April 2015 a DNO's NIA will remained fixed for the ED1 period.

business plan was submitted, and which benefit customers but are not commercially viable within the price control period. We have therefore designed the IRM, a revenue adjustment mechanism to prevent delays to rolling out innovations. We think this need also applies for the DNOs. We are therefore proposing to replicate the IRM in RIIO-ED1.

10.38. We propose that DNOs will be able to apply for funding at specific times during the price control, and will only receive funding through the IRM where the Authority is satisfied that the project will:

- contribute to the development of a low-carbon energy sector in GB or provide any wider environmental benefits
- provide long-term value for money for electricity consumers
- not enable the licensee to receive commercial benefits from the roll-out (for instance; where a project pays for itself through cost savings then this would not be eligible) within the remainder of the price control period and
- not be used to fund any of the ordinary business arrangements of the licensee.

10.39. As part of its proposal, a DNO will need to demonstrate the costs associated with the roll-out are material, propose relevant outputs or other end products against which the roll-out will be assessed and describe the impact of the roll-out on the delivery of its outputs and the associated incentive payments.

10.40. We propose that there are two application windows where a DNO may propose a revenue adjustment through the IRM. We will look to align these windows with the other reopeners in the RIIO-ED1 package.

10.41. We propose that the threshold for triggering the IRM reopener is where the proposed expenditure multiplied by the DNO's efficiency incentive rate is greater or equal to one per cent of the DNO's base revenues.

Appendices

Index

Appendix 1 - Consultation response and questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 23 November 2012 and should be sent to:

- Anna Rossington
- RIIO-ED1
- 9 Millbank, London, SW1P 3GE
- 0207 901 7401
- RIIO.ED1@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to issue a Strategy Decision in February 2013. Any questions on this document should, in the first instance, be directed to:

- Anna Rossington
- RIIO-ED1
- 9 Millbank, London, SW1P 3GE
- 0207 901 7401
- RIIO.ED1@ofgem.gov.uk

CHAPTER: Two

Question 1: We welcome respondents' views on the approach we have taken to develop the outputs framework.
Question 2: Do any of our proposed output measures present potential difficulties in ensuring the submission of accurate and comparable data?
Question 3: Should we use a percentage of allowed revenue or £m set using basis points of return on regulatory equity (RORE) to set caps and collars?
Question 4: Are there any aspects of our proposed outputs framework where the reporting requirements are likely to lead to disproportionate regulatory costs?

CHAPTER: Three

Question 1: Do you agree that a specific output or incentive focussed solely on the connection of low carbon technologies is not necessary?
Question 2: Do you agree with our proposals on the level of detail DNOs will be required to submit on the different scenarios in their business plans?
Question 3: Do you agree that an uncertainty mechanism is required to manage the uncertainty around the penetration of low carbon technologies?
Question 4: Do you agree with the three tier approach we propose to introduce for the recovery of the DNOs' costs during the smart metering roll-out?
Question 5: Should costs of load and generation growth for existing customers in profile classes 1-4 be socialised, until smart metering data is available?
Question 6: Should DNOs retain the ability to charge existing customers in profile classes 1-4 who install equipment which poses significant power quality issues for the network?
Question 7: If we socialise costs of existing profile classes 1-4 customers, will the use of system charging methodology need to be changed in order to protect IDNO margins?

CHAPTER: Four

Question 1: What are your views on the primary outputs and secondary deliverables for reliability and safety? In particular:
(a) Do you agree that these are appropriate areas to focus on?
(b) Are there any other areas that should be included?

CHAPTER: Five

Question 1: Will our proposed approach ensure effective losses reduction actions?
Question 2: Will our proposed losses discretionary reward provide the required incentive on DNOs to reduce losses? Should this be awarded twice during ED1 or more frequently?
Question 3: Should DNO actions to identify and address electricity theft be encouraged through an approach outside of any losses reduction mechanism? Do you have any views on the proposed approach, or any alternate proposals, that we should consider?
Question 4: Do you think that further guidance should be provided with regard to the use of the '10% allowance' for undergrounding? If so, what form should this guidance take?

Question 5: Are National Scenic Areas (NSAs) sufficient to allow for effective use of the scheme in Scotland in the protection of visual amenity?
Question 6: Do you agree with our proposals with regard to DNO assessment and stakeholder engagement within the undergrounding scheme?
Question 7: Do you agree with our proposed approach for BCF? Do you consider there are any additional elements that should be included within the BCF reporting scope?
Question 8: Do you agree with our proposed approach to SF_6 monitoring, reporting and management?
Question 9: Do you agree with our approach for fluid filled cables?
Question 10: Do you agree with our approach to noise reduction?
Question 11: Do you agree with our assessment of the need for an additional environmental discretionary reward?

CHAPTER: Six

Question 1: Do you agree with our proposal to retain the Broad Measure of Customer Satisfaction (BCMS) and increase the maximum revenue exposure?
Question 2: We seek views on the approach to setting targets for the RIIO-ED1 period, including whether these targets should be fixed for the price control period or should be responsive to changes in industry performance.
Question 3: We seek wider stakeholder views on whether interruption customers that have been proactively contacted by the DNO via new methods of communication (eg social media) should be included in the customer satisfaction survey.
Question 4: Should the provision of information to connections customers be taken into account when calculating the score of the customer satisfaction survey?
Question 5: Should the number of unsuccessful calls be taken into account when calculating the score of the customer satisfaction survey?
Question 6: What indicators should we use to measure complaints performance? How should these be weighted?
Question 7: How should we calculate the BMCS complaints metric target for RIIO-ED1? How should we calculate the score at which the DNO incurs their maximum penalty exposure?
Question 8: Do you agree with the proposed approach to assessing stakeholder engagement?

CHAPTER: Seven

Question 1: Are there additional social issues that the DNOs should address?
Question 2: Are there any specific outputs that the DNOs could be responsible for delivering?
Question 3: Should a separate funding allowance be provided to enable DNOs to carry out activities in response to social issues?
Question 4: Are DNOs adequately incentivised to engage with social issues as part of the BMCS Stakeholder Engagement Incentive?

CHAPTER: Eight

Question 1: Do you consider that our proposed package will drive the appropriate behaviour for connecting both demand connections and generation connections?
Question 2: Is it appropriate to remove the DG incentive?

Question 3: Do you agree that we should split the BMCS customer satisfaction survey into major and minor connections customers? If not, why not?
Question 4: How should we set targets for the BMCS customer satisfaction survey?
Question 5: We invite views on our proposals for the Long Term Development Strategy (LTDS), Distributed Generation (DG) Connection Guide and Information Strategy (IS).
Question 6: Are additional or alternative incentives required to encourage the DNOs to provide better information to connection customers upfront? If so, what would these measures and incentives be?
Question 7: We seek stakeholders' views on the introduction of a new Average Time to Connect Incentive.
Question 8: We seek views on which aspects of service should be measured, the approach used for target setting and whether any exemptions should be applied under the Average Time to Connect Incentive?
Question 9: Do you agree with our proposed approach for the treatment of connection customer contributions by the DNOs during RIIO-ED1?
Question 10: Are additional incentives needed to encourage the DNOs to provide high-quality, timely non-contestable work? If so, what incentives should be applied?
Question 11: We seek views on the financial exposure and scope of incentives for those market segments that have/have not passed the Competition Test.

CHAPTER: Nine

Question 1: Do you agree with our proposed range for the efficiency incentive rate?
Question 2: Do you agree with our proposed approach to the calibration of the IQI?
Question 3: What are your views on the indicative IQI matrix?
Question 4: What do you consider are the appropriate rewards for fast-track companies compared to non fast-track companies? Should we have a differential between the two?
Question 5: Do you agree with our proposals for the same efficiency incentive rate to apply to all areas of expenditure that will be included within the IQI?
Question 6: Do you agree with our proposed treatment of DNOs within a single ownership group?

If you disagree with our proposals in these areas, please explain the basis for an alternative approach.

CHAPTER: Ten

Question 1: Do you agree that the cap on funding for the electricity NIC should be within the range of £60m and £90m for 2015-16 and 2016-17? Please provide evidence to support your suggested level of funding.
Question 2: Do you agree that the level of funding for the rest of the ED1 period should be reviewed in 2016 following a review of the LCN Fund?
Question 3: What are your views on the information DNOs should provide in their innovation strategies? How can DNOs best demonstrate that their approach to innovation is sufficiently well justified and robust?
Question 4: Do you agree that it would be valuable for DNOs to consult and update their innovation strategies regularly during the price control period?

Question 5: Are there any aspects of the innovation framework for ED1, which you think should differ from the arrangements from RIIO-T1 and GD1? If yes, please explain why.