



Cross-sector infrastructure

Consultation on remedies

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Closing date for responses: 16 July 2015



About this document

This consultation seeks views on a package of remedies aimed at making the process of crossing or otherwise ‘interacting’ with incumbent utility networks easier, quicker and cheaper. This reflects concerns with the efficiency of installing infrastructure, especially in light of the significant sums to be spent in the next 5-10 years. The proposals reflect the views of infrastructure installers, utility networks and public agencies that raised concerns about the processes and practices in place to agree construction designs, asset protection agreements and other measures necessary before construction work that may affect a utility network’s assets can be undertaken.

This project forms one part of our work on infrastructure investment.¹ The other workstreams include:

- an Investor Guide² to support the investment community in its understanding of how the UK regulated utility sectors work;
- a summary report on enabling innovation³ that focuses on current practices across the regulated sectors and the way that each regulator supports or promotes innovation.

Other related UKRN work include:

- our report on network resilience and the role and duties of economic regulators in supporting cross-sector resilience⁴; and
- our project looking at the factors affecting affordability of utility services for households, considering how affordability issues are approached in different regulated sectors, outcomes for households and the role of regulators in addressing affordability.⁵

This consultation closes on 16 July. Please contact John Holmes (John.Holmes@orr.gsi.gov.uk) or Stephen Beel (Stephen.Beel@ofgem.gov.uk).

About UKRN

UKRN is a network formed by the UK’s economic regulators:

- The Civil Aviation Authority (CAA)
- The Financial Conduct Authority (FCA)⁶, including the Payment Systems Regulator (PSR)
- Northern Ireland Authority for Utility Regulation (NIAUR)
- Office of Communications (Ofcom)

¹ Further details of this project is available on the UKRN website: http://www.ukrn.org.uk/?page_id=182

² The UKRN investor guide is available on the UKRN website here: <http://www.ukrn.org.uk/wp-content/uploads/2014/07/UKRN-Investor-Guide.pdf>

³ The enabling innovation report is available on the UKRN website here: <http://www.ukrn.org.uk/wp-content/uploads/2014/07/Cross-sector-infrastructure-investment-enabling-innovation.pdf>

⁴ Our phase one report on cross sector resilience is available here: <http://www.ukrn.org.uk/wp-content/uploads/2015/04/Cross-sector-resilience-phase-1-final.pdf>

⁵ Our phase I report on understanding affordability issues is available here: <http://www.ukrn.org.uk/wp-content/uploads/2015/01/UKRN-Affordability-Report.pdf>

⁶ Although it has competition and consumer protection functions, the FCA is not classed by HM Government as an economic regulator

- Office of Gas and Electricity Markets (Ofgem)
- Water Services Regulation Authority (Ofwat)
- Office of Rail and Road (ORR)

Monitor, the sector regulator for health, participates in the network and its projects as appropriate. The Water Industry Commission for Scotland (WICS) and Legal Services Board (LSB) are contributing members which generally participate in projects as observers.

Contributors to this document

This document has been produced by:

- Ofcom;
- Ofgem
- Ofwat; and
- ORR.

The production of this document was supported by input from CAA and the NIAUR.⁷

⁷ NIAUR continues to develop annual reporting by local network companies and will consider whether to introduce some or all of the reports proposals, when and where appropriate, as part of new company reporting requirements.

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I. Summary

- I.1. This consultation outlines a package of measures to improve the process, and so reduce the cost, of installing new infrastructure where it crosses the in-situ assets of regulated utility networks. It also applies where landowners or others must work near existing assets, and obtain the network's permission or supervision to do so. Over £300 billion will be spent on infrastructure projects by 2020/21 and, potentially, over £13 billion of this investment spent on asset protection and diversionary works: uncertainty or delay with agreeing works to cross in-situ assets may delay the cost-effective completion of new infrastructure projects.
- I.2. In November 2014, UKRN published the findings of its call for evidence on cross-sector infrastructure interactions.⁸ We found concerns with the process of 'interacting' with incumbent networks, specifically respondents noted difficulties with: getting the right point of contact; the process and consistency for approval of designs or provision of works; transparency of charges or fees for works; accuracy of asset information; and concerns with some of the obligations or terms that must be met. Further research has confirmed that these issues are a fair reflection of problems that may arise from time to time with infrastructure projects.
- I.3. However, we have also seen examples of good practice amongst network operators and industry more widely when agreeing the works and terms necessary to cross in-situ assets, or in other analogous activities such as street works or provision of connections. Our proposals, therefore, aim to strengthen and spread this good practice. Our package of remedies include:
- **A statement of good practice principles**, to be adopted by network operators and ideally other infrastructure operators to guide or influence their practices and behaviours towards clients crossing their assets;
 - **An annual report by network operators**, affecting networks above a minimum scale and proportionate to the effect on clients, with the first report expected within 12 months of our final proposals (expected to be published in the summer), outlining how operators have adopted the principles and improved the experience of clients; and
 - **A follow-up review of outcomes by UKRN for the 2016-17 business year**, to judge the success of these measures and any others that industry may have adopted.
- I.4. These three measures should give clients confidence in the process and information they need to cross or work near network operators' assets, greater certainty about timescales and service standards and greater clarity about the charges they may be asked to pay. It should also help network operators to keep their services to clients under review and responsive to clients' needs. In addition, we raise a number of other issues, including: how to address concerns with the quality of information about network assets, the indemnity required of crossing parties and whether further steps can be taken by networks or other parties to raise the profile and importance of interactions.
- I.5. Our **consultation closes on 16 July**. Please see Annex I for how to respond.

⁸ The November 2014 infrastructure interactions report is available here: <http://www.ukrn.org.uk/wp-content/uploads/2014/07/UKRN-infrastructure-interactions-FINAL.pdf>

- 1.6. Many aspects of our proposals are targeted at regulated network operators: businesses that operate the monopoly gas, electricity and water distribution networks and also other important sectors including railways and telecommunication companies. As stewards of our national infrastructure, we consider that operators should facilitate other infrastructure projects. Further, regulated network operators stand to benefit if the process of ‘interacting’ with third parties works more smoothly, not least as many regulated networks must also cross existing assets as they manage and develop their own networks.
- 1.7. We expect that network operators, their trade associations or professional bodies should play a leading part in shaping and implementing these proposals; with appropriate support from government. Economic regulators are, however, committed to seeing improvements to interactions, and will consider whether more direct intervention is necessary if self-regulatory measures fail to improve outcomes. The ultimate objective is to reduce the costs to any firm – including regulated networks – when crossing in-situ assets.

2. Purpose of this consultation

Introduction

- 2.1. This consultation sets out a package of remedies to help address issues affecting infrastructure and other works when installation must cross or work near the in-situ assets of regulated network operators, including water, gas, electricity and rail networks. **See Chapter 5 for our proposed remedies and Annex I for details of how to respond.** These remedies focus on strengthening transparency and accountability for the service that network operators provide to clients, i.e. those third parties that are arranging to cross or work near the assets of regulated network operators. **This consultation closes on the 16 July.**
- 2.2. Our aim is to develop a package of actions that can help reduce the costs of infrastructure development, whilst balancing the interests of consumers and network operators. To do this successfully, the views and support of regulated utility network operators, other infrastructure developers, trade and professional bodies and consumer representatives are essential. We expect that industry, trade or professional bodies would be well placed to act on our final proposals to ensure effective implementation. **We aim to publish final proposals in the summer.**

Economic regulators' concern with interactions

- 2.3. The UK's regulated utilities operate extensive networks of pipes, wires and other assets necessary for the safe delivery of essential services. New infrastructure development, or other work by land owners, can often disturb or cross these assets. Agreement of incumbent utility network operators is needed to protect in-situ assets, which may require diversionary works to ensure utility services are not interrupted. This process of 'interactions' with clients is often managed successfully by network operators, and we note a number of good practice examples below. However, if interactions are not undertaken efficiently, and agreements with network operators are costly or difficult to reach, new infrastructure development may not deliver value for money.
- 2.4. As regulators, we are concerned with two issues:
- Whether the sectors we regulate, which invest significant sums in new infrastructure, are facing higher costs when they interact with other regulated sectors; and
 - Whether regulated utility networks overall are raising the cost for other types of infrastructure investment, for example renewable energy, highways, environmental improvements amongst others.
- 2.5. Government is also concerned with value for money from infrastructure projects, and has examined the causes of higher costs and ways of improving project delivery and management.⁹ The government's study found that higher costs often occurred in the early project formulation and pre-construction phase of infrastructure projects. It set a target of 15 per cent reduction in the costs of infrastructure delivery.

⁹ See the ['Infrastructure Cost Review: Measuring and Improving Delivery'](#), HM Treasury.

- 2.6. The UK has a significant programme of investment planned for the years ahead, whilst growing population density, travel and working patterns suggest that disturbance of in-situ assets will become increasingly common. Ultimately, consumers of utility services may bear the costs of any inefficiency that arise, whether through bills, taxes or disruption to daily life.

Our evidence base and reasons for consulting on draft remedies

- 2.7. This consultation builds upon the findings of UKRN's Call for Evidence¹⁰, the results of which we summarised in our November 2014 Next Steps document. We noted three gaps in our understanding: the scale and impact of these problems; the cause and sectors where the problems occurred; and the role of economic regulation on promoting or undermining cost-effective interactions. We have since undertaken further desk research, meetings with trade bodies, industry and clients affected by interactions, including public bodies, and sought views from policy experts within sector regulators. Where possible we have looked for good practice or analogous cases that offer lessons or example solutions to similar issues.
- 2.8. We are grateful for contributions to the project. Many of the responses to UKRN were confidential. We have outlined the points made, whilst ensuring that confidentiality is respected. The commercial sensitivity of infrastructure projects has also meant that views and comments have often been expressed in meetings, rather than written examples of good or poor practice, or stakeholders have not been in a position to share their concerns with us.
- 2.9. Given the evidence, we consider there is an opportunity to improve the process of interactions, addressing the 'frictional cost' of agreeing terms and installing new infrastructure across in-situ assets. A key issue arising is the challenge of co-ordinating works between incumbent network operators and clients where the incentives to co-operate are not always well aligned. These remedies therefore focus on strengthening transparency and accountability to clients. We do not consider that there is evidence to support firmer regulatory measures at this time and, in the first instance, our preference is to support greater self-regulatory or industry-led approaches.

Structure of this consultation

- 2.10. This consultation is organised as follows:

- Chapter 3 presents the background and regulatory context of cross sector interactions;
- Chapter 4 set out our findings on the problems with interactions;
- Chapter 5 presents our proposed remedies and asks for views;
- Annex 1 advises how responses can be submitted and includes the consultation questions;
- Annex 2 summarises findings from our review of network operators' websites;
- Annex 3 summarises the regulations that affect utility connections in gas, electricity and water, noting the service standards, requirements for charging and dispute resolution that affect regulated network operations;

¹⁰ The infrastructure interactions call for evidence is available here: <http://www.ukrn.org.uk/wp-content/uploads/2014/07/Call-for-Evidence-Cross-sector-infrastructure-interactions.pdf>

- Annex 4 lists the regulated network operators, and their ownership, potentially affected by these proposed remedies; and
- Annex 5 presents a draft impact assessment, considering the implementation, compliance, and economic costs and benefits from the remedy options considered.

3. Cross sector interactions: background and context

The scale and significance of interactions

3.1. Interactions can affect a wide range of infrastructure projects and other work, this is because:

- Utility networks cover a wide geographic area, serving millions of homes and businesses; and
- Significant infrastructure investment is planned over coming years, for example over £100 billion capital spending is planned for regulated sectors by 2020 and over £300 billion infrastructure investment across the economy as a whole.¹¹

3.2. Some estimates of the costs of managing interactions provided by stakeholders suggested a range of 2-10 per cent of project budgets that may be dedicated to planning interactions and meeting the costs of diversionary works. Over the next five years, based on projections from the national infrastructure pipeline, this could mean over £13 billion may be spent on interactions.¹² This excludes any additional costs incurred if interactions are 'inefficient', for example additional management time or costs arising if projects fall behind schedule. Respondents to our information requests estimated that drawn out negotiations or processes could add 12 – 18 months to projects in some cases. Overall, this leads to a greater frequency, and perhaps complexity, of projects where existing in-situ assets must be crossed and arrangements made to protect those assets.

Box 1: The scale of infrastructure projects and impact on cross-sector interactions

Some infrastructure projects may be designated 'Nationally Significant Infrastructure Projects' (NSIP), which has a special regime to grant planning permission designed to streamline the process. Examples include renewable energy schemes, road and rail development, power stations etc. and often involve significant budgets. The permission for NSIPs often include 'protective provisions', designed to protect the assets of incumbent networks affected by the new infrastructure; whilst also ensuring that the incumbent network completes work within reasonable timescales and at reasonable cost.

Typically, infrastructure projects that cross or otherwise interact with the in-situ assets of incumbent utility network operators will be of a much smaller scale. These projects are subject to normal planning requirements with more modest (albeit still significant) budgets.

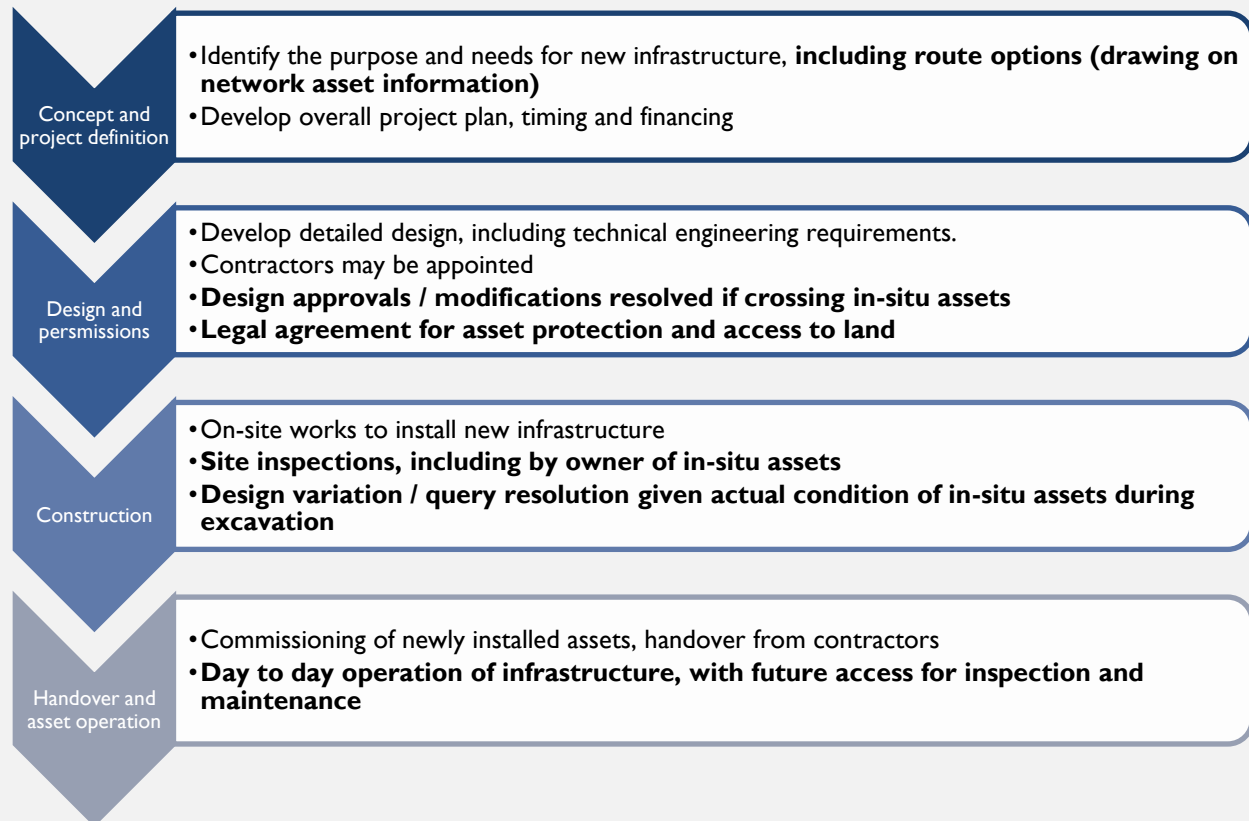
Responses to our Call for Evidence suggest that regardless of the scale or size of the infrastructure project, interactions with incumbent network operators can face similar problems. Large projects may have longer lead times and greater capacity to liaise with incumbent networks, allowing for more effective co-ordination between parties. However, the type of issues experienced, and potential impact on the crossing party appear the same regardless of project scale. The remedies consulted upon in this document therefore apply to all types of infrastructure project.

¹¹ See the [UKRN Investors Guide](#) and the [National Infrastructure Pipeline](#).

¹² This is based on the total investment across sectors by 2020/21 (£326 billion) identified in the NIP and assumes that 5% of all project budgets is dedicated to meeting the planned cost of interactions, the figure is in 2013/14 prices.

Box 2: Engineering project life-cycle

This project is considering the impacts and interactions between infrastructure construction projects. Any engineering project will follow a project life-cycle or development process necessary to install new infrastructure, from conception to operation of new assets. The following sets out a generalised development process for installing new infrastructure assets (see HM Treasury [Project Initiation Routemap](#) and the Royal Institute of British Architects [RIBA Plan of work 2013, Overview](#)). It notes those stages, in bold, where interaction with in-situ asset owners may be necessary before, during and after construction.



The role and functions of regulated network operators

- 3.3. The infrastructure for water, gas, electricity, telecoms and rail connects millions of homes and businesses, or provides millions of journeys, forming a complex and widespread network of pipes, wires, civil engineering structures (bridges, embankments) and other equipment. These networks may be installed underground, often along roads, or overground and cover a wide geographic area, in urban and rural locations. These networks must be managed so as to meet demand from consumers and business, whilst operating services safely.
- 3.4. Network operators, responsible for managing our national infrastructure, may be privately owned, publicly listed or state owned and funded and each differs in scope and scale. For example, in the water sector, United Utilities is a publicly listed company that offers water and sewerage services, with a regulated asset base of over £9.5 billion; while Sutton and East Surrey are a privately owned water-

only business with regulated assets of £206 million; see Annex 4 for more details about the relevant networks.¹³ Each network holds the monopoly within a specific area and, as a result, are subject to regulation affecting its pricing, financial management and standards of reliability, environmental and social impact. Networks' performance at meeting its duties and service levels is monitored, with results usually published by firms or the relevant regulator.

- 3.5. Network operators must maintain their existing assets, usually to a standard necessary to meet regulated performance requirements, and extend the network to connect new customers. Service standards set by regulators may cover network reliability and performance. For example, the number and duration of planned or unplanned supply interruptions; or design requirements, for example gas distribution networks must ensure capacity to meet gas demand in a '1 in 20 worst winter' case. Customer service standards may establish compensation regimes or performance standards, for example customers connecting to the gas network benefit from guaranteed standards of performance linked to a compensation scheme if these standards are missed (see Annex 3 for examples related to connections).
- 3.6. As part of its management of a utility network, operators should recover the costs incurred to manage interactions and undertake any necessary approval, site supervision or diversionary works. These costs are imposed by the (usually commercial) activities of other networks or infrastructure developers crossing in-situ assets, and are not costs that networks should necessarily recover from customers connected to their network.

Example 1: Effective co-operation with network operators

We have seen a range of examples where network operators have agreed working practices with clients, to improve communications and the processes each party follows. These can take the form of formal memorandum of understanding (MoU) between two organisations, or guidance developed in association with trade bodies, often comprising technical or expert guidance.

Network Rail has entered into an MoU with the Highways Agency (now Highways England) and with the Crown Estate. The agreement with Highways England is focused on strengthening co-operation and communication between the parties. It offers a framework to identify and address issues of joint concern. For example, it commits to better commercial relationships by making communication between these organisations more timely, and through development of template agreements. The MoU with the Crown Estate serves a different purpose, focusing on specific issues of mutual concern: coastal defences, assets where ownership is unclear, renewable energy cables crossing the railway and access to network rail property on the Crown Estate.¹⁴ The MoU recognises the wider public interest of developing offshore renewable energy, and focuses on establishing standard agreements and timeliness of the Network Rail process to reduce project delays.

Trade bodies can often play a key role in developing guidance, bringing together parties with different interests. For example, the Highway Authorities and Utilities Committee (HAUC), with members from government, local highway authorities and utility companies, issue a range of good practice guidance notes.¹⁵ For example, HAUK UK has developed an advice note on diversionary works, aimed at clarifying the interaction between statutory undertakers and highway authorities, including issues such as cost sharing and

¹³ Financial information sourced from Ofwat's 2014 price review final determination [company specific Annex](#).

¹⁴ The MoU and press release is available [here](#).

¹⁵ See [HAUC UK's main website](#) for more details.

pro-forma notices, and linking to existing regulations affecting street works. However, these are not mandatory, and may not be followed by all members.

Other examples include guidelines developed between the Crown Estate and Subsea Cables UK (SCUK), an association of companies operating subsea cables.¹⁶ This brings together a range of advice and experience from those engaged in laying subsea cables or operating offshore energy on the issues to consider when identifying the location of wind farms and submarine cables in proximity to one another. The document provides parties a starting point for discussions with one another, to ensure safe laying of cables and access to apparatus once installed for repair and maintenance.

Other examples of industry co-operation are detailed below, see examples 2 and 6.

What lessons can be drawn?

Effective working arrangements between specific organisations can be agreed on a bilateral basis, as illustrated by the MoUs, although in these cases the parties involved represent the largest organisations, providing most of the services in their sectors. Trade bodies can be especially effective at developing industry-wide technical guidance but adoption or compliance with this guidance often remains voluntary. Despite these positive examples of co-operation, it seems that the incentives to agree common working practice may not always be strong enough on individual firms or other parties in the absence of a co-ordinating body.

Economic regulation

- 3.7. Economic regulation is a specific approach to protecting the interests of consumers, often focused on promoting better outcomes by setting an incentives and penalties framework within which businesses operate. Economic regulators have a specific set of objectives or duties, commonly set out in statute, for example:
- Protecting the interests of consumers, often by promoting competitive markets;
 - Ensuring regulated businesses can finance their activities;
 - Ensuring that networks are operated efficiently and safely; and
 - Overseeing or setting a range of service or performance standards, in particular where the business remains a monopoly.
- 3.8. Duties will often describe the commercial or economic activities and the types of people or organisations over which the regulator has jurisdiction. For example, Ofgem has a principal objective to “protect the interests of existing and future consumers in relation to electricity conveyed by distribution systems or transmission systems”. Ofgem’s functions are to be carried out in the manner that best furthers the principal objective “wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.”
- 3.9. The functions of regulators are focused on meeting its statutory objectives. To do this, regulators can draw on a range of tools. These include setting price controls, which limit the amount of revenue or level of prices a network operator can charge, whilst setting minimum service standards for customers. The critical nature of most network utilities means that businesses must usually be licensed or given

¹⁶ See <http://www.subseacablesuk.org.uk/about-us/>

permission to operate these services. Regulators may oversee this process and ensure network operators can work effectively with other parts of industry, such as energy suppliers or train operating companies.

- 3.10. Regulators operate within a clear process and legal framework, able to develop general duties or specific obligations for firms through a process of consultation. Regulators may require a network operator to take specific actions, if consistent with its duties, and take enforcement action to ensure compliance. The decisions of regulators can be subject to legal challenge however, usually to ensure that decisions have followed an appropriate process and considered all relevant information.

The regulation of utility connections

- 3.11. The regulation of connections by customers to utility networks provides an illustrative example of how regulation can govern service standards and transparency. It is also a process with some analogies to interactions. This is considered below.
- 3.12. Water, gas and electricity network operators must manage the process for customers to connect to their networks (see Annex 3 for more details). To do this, network operators may undertake the connection work itself, or oversee connections where much of the work has been undertaken by an independent connection provider. Delays in the connection process can have a direct cost on property developers or individual customers wishing to connect to a utility. To avoid this each sector has developed rules or regulations that share some common features:
- Statutory duties on the networks to *offer terms* for connection and in some cases *an obligation* to connect (usually) domestic customers;
 - Principles or rules that utility networks must follow to help determine the level or type of costs recovered from customers connecting to the network;
 - Design or engineering standards to ensure the existing network is protected;
 - Requirements to be transparent about charging methods or levels of charges;
 - Regulated service standards and compensation arrangements for customers if these standards are not met;
 - Powers for the regulator to settle disputes between customers and network operators;
 - Links to wider incentives, usually through a price control, to develop economic and efficient networks that meet current and future needs. This is mainly seen in the promotion of stakeholder input into business plans of networks; and
 - A growing emphasis on monitoring performance based on the views and experiences of customers being connected to the network.
- 3.13. Some of the processes to make a connection, such as design approval, site works and safety standards, are similar to the practical steps undertaken to cross, or work near, in-situ assets. However, connecting to a utility network is not wholly analogous to infrastructure interactions:
- Utilities are recognised as providing essential services, with the *rights to connect* to these networks established in primary legislation

- The importance of utility services means that continuity of supply (and the integrity of in-situ assets) is a priority, for the benefit of customers consuming energy, water etc.
- Trade-offs between different types of customers are addressed within the statutory framework. For example, not all customers must pay the full costs of upgrading the existing network if necessary to connect them. Domestic customers often benefit from greater protection in these cases, for example a right to connect, limits to the type, amount or proportion of upgrading cost they need to meet and guaranteed customer service standards.

The role of other regulations

3.14. In addition to economic regulation network operators are subject to a range of other legislation and obligations that affect their day to day operations. These fall into three areas:

- Powers to undertake street works, in order to maintain or install assets, whilst also required to co-operate with highway authorities to plan such works to ease the impact on road users;
- Planning rules, which grant networks, as 'statutory undertakers', a privileged role within the planning system, for example being exempt from planning permission for works necessary to maintain their networks, able to apply for Compulsory Purchase Orders, able to object to planning applications that may affect the operation of their networks; and
- Safety regulation, usually enforced by the Health and Safety Executive although air and rail safety is also the responsibility of the relevant economic regulators.

3.15. It is network operators' responsibility to ensure they comply with any obligations or duties that arise from these other pieces of legislation, including the planning regime.

4. Our findings

Introduction

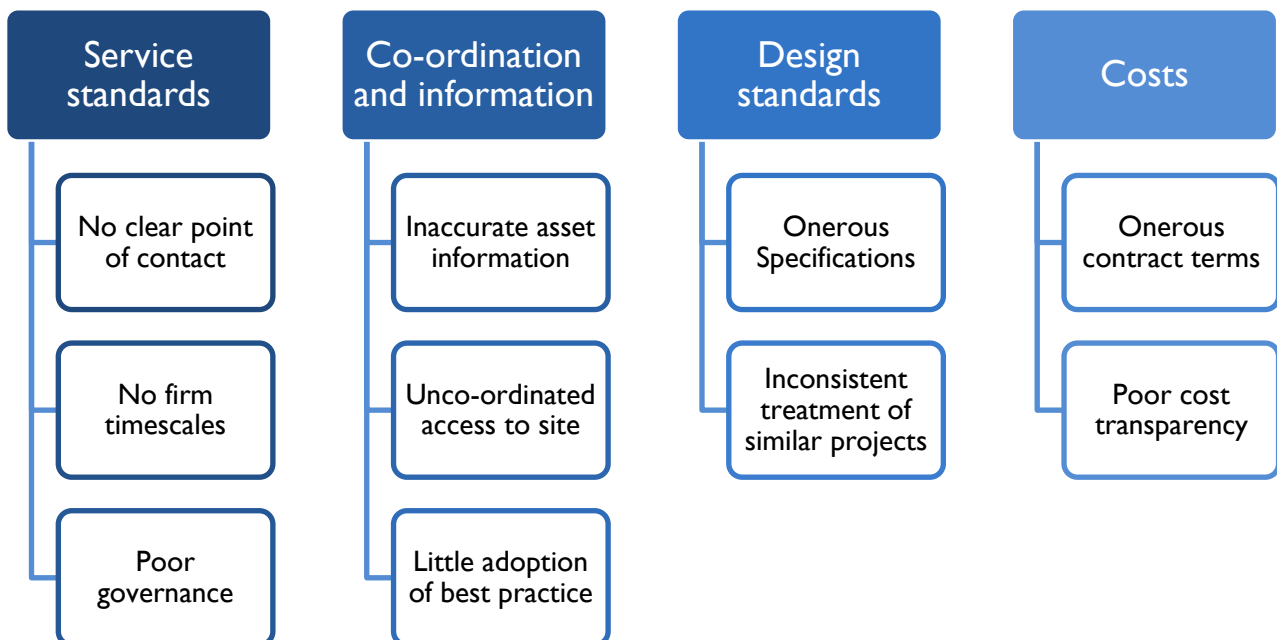
4.1. This Chapter categorises the problems with interactions identified from our evidence, and presents a summary of our findings in each case. Our main sources of evidence are:

- Responses to UKRN’s Call for Evidence;
- Desk research, including a sample review of network operators’ websites;
- Information provided by economic regulators on their practices and experience with specific infrastructure projects within their sectors;
- Meetings and written submissions by stakeholders, including public agencies involved with interactions and major infrastructure schemes; and
- A number of cases studies and analogous examples of practices by networks, clients or trade bodies.

Categorising the problems with interactions

4.2. Respondents to our Call for Evidence described a range of experiences when crossing or working near the assets of network operators. Not all of these experiences were poor, but the responses did allow problems to be categorised as follows:

Figure 1: Categorising issues with interactions



Box 3: Interactions with telephone and broadband networks

Telecom and broadband services are delivered through fixed line assets, often extensive copper and fibre optic cables, with mobile services also partly carried over such fixed assets. The arrangements that telecom networks enter to install networks and deal with highways and landowners are governed by the Electronic Communications Code. This code governs the voluntary relationships between landowners and telecom networks, but also provides a route for court judgements to ensure access to land necessary to install equipment for the wider public interest. The code also governs access to highways by 'code operators', i.e. networks' right to undertake street works to install or maintain equipment. In addition, electricity suppliers are specifically referenced as being required to agree engineering principles and costs in the case of installing plant close to telecommunications apparatus (and vice versa).

Relatively few comments or issues were raised by or about telecom and broadband networks. In part, this is likely to reflect the more straightforward engineering needed when crossing or working near telecom or broadband networks. In essence, these networks present less of a technical challenge for crossing parties and do not raise the same type of safety critical issues. Such third party interactions are likely to be covered under the principles of The New Roads and Streetworks Act 1991. BT Openreach's and Virgin Media's Network Protection / Planning teams both aim to respond to network diversion requests within 20 working days. The Electronic Communications Code may also facilitate the process when working with telecom networks.

However, anecdotal comments suggest that telecom networks themselves can face challenges, in particular when interacting with long, linear assets such as railways or waterways. The issues raised in this consultation could therefore be relevant to telecom networks when they act as clients. To the extent that the remedies we are consulting on are consistent with the Electronic Communications Code, they should apply to telecom networks. However, telecom networks may also wish to comment on their experiences as clients, and the extent that our remedy proposals may help the roll-out or maintenance of their networks.

Priority issues and sectors

- 4.3. Our subsequent evidence has confirmed that Figure 1, above, provides a reasonable description of the problems or issues that may arise with interactions. Our findings suggest that clear communication channels and governance to agree working arrangements are critical to ensure effective interactions; albeit that each type of issue could arise depending upon the type of project and circumstances of the respondent. On balance, these types of 'frictional' costs, experienced when trying to talk with and agree working arrangements to cross in-situ assets appear to be of greater concern than direct financial costs or fees, although some parties expressed concerns with the levels of liability required of clients to protect in-situ assets.
- 4.4. We have not found that any particular sector, industry or business is especially difficult to deal with. Respondents noted that practices can vary significantly between firms within a sector, or even within firms from time to time. Instead, the geography of utility networks, and the types of projects undertaken by clients, dictates which assets must be crossed and therefore which assets are 'in the way'. As a result, electricity distribution and rail services were more often noted as a source of frequent interaction and, subsequently, problems.

Example 2: Ensuring clear lines of communication

Forest Enterprise England (an Executive Agency of the Forestry Commission) manages and protects around 215,000 hectares of open access public forest and some 35,000 hectares of associated open habitat and infrastructure. They plant and harvest many millions of trees each year and undertake extensive leisure and conservation activities.¹⁷ As one of the largest landowners in England its commercial activities, particularly tree felling, often require close working with utilities to ensure the safety of staff, members of the public and timber contractors, as well as to protect utility assets.

To do this successfully, FEE has agreed a working procedure with Northern PowerGrid to share work plans, when forestry work near to over-head power lines is required, and when asset maintenance on forestry land is required. This accord establishes the points of contact and sets out the process that must be followed to notify each other, and those on the ground, of planned work, and includes the documentation required to enable works. Both parties benefit from knowing each other's plans and priorities well in advance so that opportunities to co-ordinate efforts can be taken.

Establishing this procedure requires commitment by both parties to regular communication, and to agree and abide by shared working practices. Works on public forest land, whether commercial tree felling or maintenance to electrical equipment, must take place in any event but FEE consider that effective and regular liaison saves all parties additional cost and delay.

Service standards

4.5. Three issues were raised in response to our Call for Evidence that we categorise as 'service standards':¹⁸

- establishing a clear point of contact with incumbent network operators to arrange interactions;
- working to clear timescales, in particular that incumbents provide approval or undertake site works within the time agreed; and
- clear decision making and governance to allow clients to proceed with planned work.

4.6. Collectively, these service standards cover the necessary processes to reach agreement on crossing or working near assets.

4.7. Respondents noted that standardised terms or template agreements could support an effective process (although noting that some projects require a bespoke agreement). It was clear that these service standard elements of the interaction process were considered critical:

"[There are] [n]o published Service Level Agreements or Levels of Service that we can hold other providers to – we are dependent on when they choose to provide a service"

"Main difficulties are finding the correct contact, getting responses back in a timely fashion and lack of flexibility in approach. Demands of other parties increase costs."

"[The main problem is] [t]he amount of time taken by other infrastructure operators to approve method statements..."

¹⁷ See Forestry Facts and Figures <http://www.forestry.gov.uk/forestry/inf-d-7aqf6j>

¹⁸ See paragraphs 3.12 – 3.23 of the Call for Evidence.

- 4.8. Our sample review of network operators' websites found a range of practices or information (see Annex 2). On balance, information and advice is targeted predominantly at those connecting to networks rather than crossing them, but for the national transmission system and rail services where information is focused on safety or asset protection. Some operators in the sample provided standard forms or requirements for minimum information that clients should provide if planning to cross in-situ assets. Although some indicative dates for works were given, few firm time commitments were offered. Only the water sector appeared to offer clearer or firmer timescales. Information on standard processes or requirements tended to focus on technical information, mostly aimed at 'self-lay' or independent connection providers, rather than the process to agree interactions and related service standards.
- 4.9. Public sector agencies and our meetings with major infrastructure schemes confirmed the significance of point of contact, reliable timescales and clear process. It was emphasised to us that clear points of contact, with the authority to make decisions, were important to help resolve issues effectively as they arose during an infrastructure project. Some respondents noted that different parts of the interactions process would be dealt with by different departments or teams within an incumbent network operator, which could cause additional difficulty if internal processes were not aligned. Clarity of the process was also considered important to ensure negotiations progressed, so that issues previously settled were not reopened or new issues introduced late into the project. Clarity of process would also help when the incumbent network operator changed staff, which can mean that working relationships and local knowledge may be lost.

Conclusions

- 4.10. On balance, information on the formal processes for interactions, including timescales, decision making processes or standardised terms, can be improved. A critical element of effective interactions is a clear and accountable point of contact.

Example 3: Local Government Association (LGA) / National Joint Utilities Group (NJUG) 'what good looks like'

The needs and objectives of highway authorities and utility companies can, potentially, conflict: utility companies need prompt access to the streets to install or repair assets, whilst highway authorities wish to keep traffic moving and limit disruption to the local community. The Joint Authorities Group estimate that about 4 million road works are undertaken annually, 55 per cent of these by utility networks. NJUG, on behalf of utility companies, has committed to a common aim to minimise disruption and inconvenience when delivering essential utility services. This has led to a statement of shared understanding with highway authorities of what good looks like, based on five principles:¹⁹

- **Cooperation**, in order to maximise opportunities for co-operation and planned works, share and promote best practice
- **Communication**, to help advise the public on planned works and its impact
- **Quality**, to ensure works are undertaken by qualified people and to agreed standards, with an inspection regime aimed at improving performance

¹⁹ See NJUG's website for [what good looks like](#).

- **Safety**, best practice in safety management is followed, including compliance with any relevant codes of practice

- Impact reduction, to account for the impact on third parties and the public, such as managing working hours to minimise impact on both congestion and premises.

What lessons can be drawn?

The LGA/NJUG approach helps to ensure a clear and shared understanding of i) the most important issues that affect all parties and ii) the practical measures or behaviours that are expected to address these issue. A statement of 'what good looks like' can itself support additional measures, for example best practice guidance or codes of practice, which deliver on specific needs or priorities, and give a common reference points between parties when resolving disputes.

Co-ordination and information

4.11. Easy access to information, which is presented clearly, is important for all of the issues identified affecting interactions. However, three specific types of issues fall under this heading:

- **Asset information**, installation of infrastructure depends upon easy access to accurate data about existing in-situ assets, with asset records kept and supplied by utility network operators;
- **Learning lessons**, to adopt lessons to improve working practices by network operators across or between sectors; and
- **Joint planning**, once assets are installed, sharing information on planned maintenance or other works to enable the co-ordination of work between asset or land owners where helpful.

Asset information

4.12. Respondents to our Call for Evidence noted a number of cases where asset records were of poor quality, which resulted in additional on-site cost to vary engineering plans to cope with the actual assets position or condition. It was reported that in some cases the condition of assets was much poorer than initially expected, leading to more complex construction methods and therefore greater cost.

We have found that on occasion a lack of up to date information held by [...] infrastructure operators on their apparatus has resulted in [...] more expensive construction methods than were actually required.

[The e]xtent of utilities works [...] significantly increased due to non-existent or inaccurate asset condition information. Generally assets were in a poorer condition than [we] had been led to believe.

4.13. Our sample review of network operators' websites and meetings with third parties found a number of initiatives in place to supply asset information to developers or others in order to protect in-situ assets from planned works:

- Telephone based enquiries – these include 'dial before you dig' style approaches, targeted at ensuring asset protection, or via a general contact telephone number;
- On line enquiries – Some network operators can be contacted via webforms or email addresses. A number of web-based enquiry services are also available, with specific network operator's usually choosing to use just one service. Online enquiry services include, for example, linesearchbeforeUdig.co.uk, [EAGLES](#) (Electricity and Gas Location Enquiry System) and

linewatch.co.uk (focused on the gas and oil industry pipelines). Enquiries are usually passed onto the relevant network operator to then liaise directly with the client. A key purpose of these services is to promote safe working in proximity to pipelines; and

- Third party initiatives to collate and make available asset information, often by adding additional data sources or aims, see examples 4 and 5.

4.14. Network operators do not follow a uniform approach to provision of asset information: some operate dedicated services, other use a default contact for customers and clients. Asset enquiries by clients can often be managed by connections teams.

Example 4: Scottish Road Works – accessing and sharing asset information

The post of Scottish Road Works Commissioner was established by the Transport (Scotland) Act 2005. The Commissioner's aim is to improve the planning, co-ordination and quality of road works throughout Scotland, and includes monitoring performance and promoting good practice across utility companies and road authorities.²⁰

Part of the process to co-ordinate road works is ensuring prompt and accurate access to asset information, covering the various pipes, cables or wires that may lay under the road; alongside efforts to co-ordinate works between road authorities and utilities. Two schemes have been developed to promote access to asset information.

First, for developers that are not 'statutory undertakers' a 'dial before you dig' freephone number is available.²¹ The service provides free information on infrastructure assets that may be at the location of planned works. Details of these planned works are recorded on the Scottish Roads Works Register, and shared with all road authorities and utilities who then contact the works promoter directly if their assets may be affected. The purpose of the scheme is to prevent injury from excavations and protect underground assets.

Second, building on the Scottish Road Works Register, which holds records of current and planned road works, is an online system called VAULT.²² This system collects information on buried utility assets and road works in one place. It produces a single map, using common symbols and terminology and allows users to specify the scale of plans or asset type displayed, relevant to their planned works. VAULT offers a 'one stop shop', cutting the administrative time and complexity of bringing together asset plans from a range of utilities, which can often be in different formats, with details of where works are taking place. Access to VAULT is available to road authorities and statutory undertakers (i.e. utilities); and all road authorities and utilities with the exception of major telecom companies have supplied data. Potentially, with full coverage and guaranteed data accuracy, the system could supplant the need to approach individual organisations for site plans.

What lessons can be drawn?

The Scottish approach to recording asset information offers some clear savings. First, savings can be achieved from reducing the administrative costs of requesting and compiling asset information. Second, 'economies of scope' may be possible, by pulling together information on planned works with multi-utility asset information, via a single web-based portal. A statutory underpinning supports the process, with road authorities and utilities required to submit information on planned road works to the Scottish Road Works Register. Mandatory provision of asset information does not extend to VAULT, instead the community involved with road works are strongly encouraged to comply, with clear benefits to participants. There may

²⁰ See the [website](#) of the Office of the Scottish Road Works Commissioner for more details about its functions.

²¹ See this [link](#) for more details.

²² See this [link](#) for more details.

be some risks that a centrally planned model may mean innovations from competing providers are lost. However, this would need to be balanced with the costs of fracturing data across two or more platforms. Further, there are clearly network benefits from including a wide number of participants, making a single data set more valuable if it has greater coverage.

Example 5: Innovation with use of asset information

There are a number of initiatives to build on and improve the access and use of utility asset information (also see example 4). Many of these are able to take advantage of new digital and smart technology to introduce additional functions, not traditionally offered by an individual network operator, and to make this information available more easily 'in the field'. Two examples are outlined here.²³

The National Underground Asset Group ([NUAG](#)) is a non-profit company, comprised of a steering group of utility network operators, professional bodies and planning authorities. The origin of NUAG was to provide 'one voice' on the challenges of capturing, managing and exchanging asset records, representing a wide range of stakeholders, and supporting the Department for Transport's Traffic Management Act objectives.²⁴ NUAG has two main functions. First, it acts as a trade body to influence policy and practices on the collection, storage and use of data relating to underground utility assets and street works. In this role it helped to develop a revised 'records code of practice', and subsequently to become a centre of excellence for the standards on information capture and exchange. Second, through the non-profit company it aims to develop and manage a records management service, dealing with asset information requests on behalf of members. It aims to develop and improve the quality and compatibility of the information kept by street and road works undertakers, and to roll-out a national records service across GB.

The Joint Authorities Group (JAG), representing highway authorities on HAUC, note that a wide range of data is needed to plan and co-ordinate street works as effectively as possible. This data can cover over- and under-ground assets, heritage sites or properties, existing or planned works in the same area and traffic or passenger flows. Much of this data may be held by different organisations and possibly in different formats. JAG is developing proposals for a single data portal, which would draw these existing sets of data into a single, freely accessible, service. The proposal would aim to draw data from regulated utilities, highway authorities, English Heritage. The service would then combine this data into a comprehensive picture of assets, street conditions and planned works for any specified location.

What lessons can be drawn?

It is widely recognised by industry, professional and trade bodies and government that accurate recording and exchange of asset records is a key process for efficient infrastructure works that avoid disruption to road users and others. There has been a concerted effort, by many parties, to address these problems; and with the close involvement of utility network operators who are able to draw on their expertise and practical experience of using this data. However, there are clearly significant practical challenges to enable wide-spread adoption of compatible information systems. There can also be different aims and purposes for information, with greater 'value-added' possible by combining different types of information in different formats. Further, these efforts do not address the underlying accuracy or quality of asset records, which remains the responsibility of individual network operators.

²³ For more information on initiatives for recording underground asset information, see the Institution of Civil Engineers [website](#).

²⁴ See DfT's [website](#).

Box 4: Regulators' focus on improving the quality of asset information

Good quality asset information is vital to operate a utility network economically and efficiently. One feature of many regulated networks is the legacy from adopting many very long-life assets, many of which did not have their quality or other details as accurately recorded as is possible with today's technology. As a result, many regulators include specific obligations on the firms they regulate to ensure asset quality improves and that records of new asset condition and location are recorded accurately. Examples of approaches taken by regulators follow.

Water mains: The licence of regulated water companies includes a condition requiring them to “establish and maintain methods and procedures for the purposes of: (1) keeping under review, collecting Information in respect of, and carrying out surveys of, the state, condition, capacity and performance of Network Assets.”

Rail: Network Rail, the principal operator of UK railway assets, has a specific licence condition to “maintain appropriate, accurate and readily accessible information about the relevant assets, including their condition, capability and capacity” (licence condition 1.20). To support Network Rail in meeting this condition, the ORR set asset quality as a key regulated output as part of its 2013 price review. This means that a range of specific actions and targets affecting tracks, signalling and other civil engineering structures are monitored and reported on. Failure to meet the specified data quality for the relevant assets could lead to a breach of licence and subsequent enforcement action.

Learning lessons

- 4.15. From the Call for Evidence, and our discussions with parties, it seems that only major projects are likely to have a dedicated focus on collecting and sharing learning; either to apply to their own project, or to share with other major projects. However, there are examples of industry initiatives to promote and share best practice.

Example 6: Utility strike avoidance group

The utility strike avoidance group is an initiative by the Energy Networks Association (ENA), representing regulated gas and electricity networks, to share and promote best practice when undertaking works to avoid in-situ assets. The ENA provides secretariat support, with commitments by members to support initiatives to reduce strikes, maintain co-operation with existing groups working in the same area (for example NJUG and NUAG) and keep regular contact between members. The initiative is supported by a charter, comprising utility network operators and civil engineering contractors, and is signed by senior directors. The charter reiterates key safety and working practices are met, and any damage to in-situ assets is investigated.

Joint working

- 4.16. Evidence submitted by NJUG cited a number of examples of successful joint working. Other respondents noted the practical challenges with co-ordinating work planning across sectors, with the additional management costs making smaller projects unfeasible for such co-operation.
- 4.17. Public sector agencies noted that experiences varied between individual network operators when sharing information or undertaking joint planning. Although they reported positive experiences (see example 2), they also noted cases where information had been provided to network operators, but it had not been acted upon when preparing planned maintenance. The costs of not co-ordinating planning generally fell on the third party. It was queried whether a potential cause of this was the incentives created by the regulatory ‘performance regimes’, which seek to ensure continuity of supply for connected customers (see Box 5 below). The exchange of information and active communication was seen as a significant advantage to help make site access more cost effective:

“The greatest priority is maintaining a consistent and effective dialogue at a level that provides continuity if local engineers and technicians change.”

“[...] we are looking at sharing GIS data and associated [long term] plans with timelines to allow [network operators] to seek synergies between the programmes [...] This has been ongoing with the [network operators] for a number of years however the benefits to date have been poor as [network operators] have appeared unable to integrate our plans [...]”

Conclusions

- 4.18. All parties would benefit from better quality and easier to access information on the location and condition of in-situ assets. This common interest is reflected in a range of initiatives in place or under development to make sharing asset information easier, quicker or add additional information to make the overall data more useful. This has been developed through public initiatives, for example VAULT, private commercial services or a combined effort between industry, professional bodies and government. Despite this, the basic provision of information by network operators appears to vary widely, for example stored or referenced in different places, with different terms and levels of detail, whilst information is not always clearly targeted at developers or others installing infrastructure, or sufficiently accurate.
- 4.19. The practices, and incentives, of network operators to co-ordinate their planned maintenance with third parties also varies. We do not consider that regulatory performance regimes should discourage network operators to co-ordinate planned maintenance with third parties where practicable, but we would welcome further evidence of where this may have been the case. Finally, lessons learned from managing interactions are, at present, only likely to be shared between major projects. However, trade and professional bodies may have initiatives in place that address this, but which may need greater visibility or promotion.

Box 5: The impact of economic regulation on interactions

Some stakeholders suggested that the reasons given by network operators that failed to meet an agreed commitment or deadline with clients was the incentives or costs imposed by economic regulation. We have undertaken an initial review across regulators to understand the extent that economic regulation may adversely affect interactions. Overall, we have not found any firm evidence that the regulatory regime causes regulated network operators to act in a way that may harm interactions. However, economic regulators have not, in the past, systematically considered interactions when developing incentives or regulations for network operators, given the focus on high-level benefits for consumers using utility services.

The key regulatory tool for monopoly utility networks to protect consumers’ interests is price controls. Generally, these controls set a forecast allowable revenue alongside commitments to minimum (or improving) services levels. These may often include financial or other incentives to encourage the network operator to exceed expected efficiency improvements. Each network regulated in this way is subject to a price control. The details of each control vary but, broadly, the process involves careful scrutiny of a proposed business plan to determine if cost savings and performance levels match that expected from reasonable comparators or well run businesses. None of the price controls explicitly consider the service levels for, or impact on, third party interactions. Revenue earned by the network operator from third party interactions is typically used to offset the overall revenue that the operator is allowed to earn from customers using its network.

In many cases, network operators are actively encouraged or required to include a wide range of representative customers to challenge their business planning and consider the trade-offs between price and service level. The end goal is to set the basis on which the network operator will set its charges, which are ultimately met by consumers, for a given quality of service. In other cases, networks must develop and

publish long term plans for their business. In developing these plans networks are required to consult affected stakeholders. Third parties involved in interactions are not specifically identified as mandatory 'consultees' in this process, albeit that any interested party may make representations to the network operator.

Monopoly networks can also be subject to specific licence conditions that require it to deal fairly with other stakeholders. These are often described as 'non-discrimination' or 'impartiality' obligations. In most cases, these additional conditions do not extend to third party interactions. Instead, these conditions benefit firms that must supply material or services to the network operator; or who depend upon the network to deliver utility services to consumers of utility services, for example electricity suppliers. Most economic regulators also hold concurrent competition enforcement powers. This allows action to be taken where a firm abuses a dominant position, harming the markets it operates in and preventing rival firms from competing effectively to the detriment of consumers. Any use of competition law would be assessed on a case by case basis, given the legal tests and evidence required.

Design standards

4.20. Two issues fall under design standards:

- The detail or specification requirements of designs set by incumbent network operators that clients must meet in order to receive agreement to cross in-situ assets; and
- The extent that standardised or similar design requirements may be applied to similar schemes, instead of requiring fully bespoke designs.

4.21. Respondents to the Call for Evidence raised concerns with the extent that design or option appraisal may be required for specific projects, which was not always considered justified or reasonable. Others raised concerns with a lack of standardisation.

[The network operator] are insisting that we demonstrate that we have considered all other technically feasible options in preference to an underground crossing and that we have considered all technically feasible crossing points, regardless of cost.

4.22. Our review of network operators' websites found little information about standard design requirements or practices, or the circumstances when standard or bespoke designs may be necessary. Technical standards or information was supplied in some cases, often targeted at 'self-lay' firms that may be building gas, electricity or water connections for customers. For major projects, where significant interactions occur with a number of network operators, the working arrangements tend to be unique to that project and allow for the development and discussion of design requirements to cross in-situ assets. However, these parties noted the wide variety of practices or requirements across different network operators and sectors, which can impose additional management or compliance costs.

Conclusions

4.23. Overall, although the evidence remains largely anecdotal, there appears to be a lack of clarity or explanation about the processes or design standards that may apply to clients (see also service standards above).

Example 7: Design specifications and guidance

The Highway Authorities and Utilities Committee (HAUC) is a co-ordination group comprising government, local highway authorities and utility companies.²⁵ Its purpose is to improve the co-ordination and compliance with regulations affecting street works (i.e. utility work in roads that may lead to travel disruption) and provide guidance to members. HAUC is comprised of two representative groups: the National Joint Utilities Group (NJUG), a trade association representing utility companies and contractors; and the Joint Authorities Group (JAG), representing local highway authorities.²⁶

As part of its role, HAUC (UK) produces guidance for members on meeting statutory requirements and ensuring take-up of best practice. These advice notes cover a wide range of street work issues.²⁷ For example, guidance is available on reinstatement of trenches, use of specific materials, guidance on utility diversion work covering civil engineering issues and cost sharing amongst others. The advice notes are developed by industry experts or working groups and agreed by the HAUC committee. The guidance itself is not compulsory, but instead represents a sharing of best practice across a range of specific issues.

Costs

4.24. The issues raised with costs included:

- The costs related to the agreement for crossing or working near in-situ assets, including the risks and liabilities that the client was being asked to cover or other measures to protect in-situ assets; and
- Clarity with the basis of charges or fees, in part to ensure that scope and costs of works to the existing network are proportionate and could be challenged.

4.25. A number of respondents to the Call for Evidence raised concerns with the cost of meeting the liability levels demanded by in-situ asset owners. These costs included the direct insurance costs and also the time spent in negotiation to settle on final liability terms.

Whilst [we] looked for [the network operator] to undertake the works to its assets given that it is its core business, agreement over terms was so protracted [...] (particularly indemnities required and zero liability for delay) that [we] had to take over responsibility for delivery of the works [...] through a work package agreement (employing [network operator] approved contractors).

4.26. Our sample review of network operators' website found few specific fees listed, with these relating mainly to the initial application costs. Network Rail's sample asset protection agreements provides some details of the types of costs that may be incurred, but does not provide specific fees in most cases. For most network operators, clients are advised about the level of fees after their application is made. We found no information on how fees may be calculated, or any other charging method information, which is in contrast to the requirements for connection charges (see paragraphs 3.11 to 3.13 above and Annex 3). The views of public sector agencies were mixed as to whether access terms or transparency of fees were a concern. For those with established agreements or long term practices there was relatively little concern, albeit that issues could arise on some specific projects.

²⁵ See [HAUC UK's main website](#) for more details.

²⁶ For Scotland a [Road Works Commissioner](#) has been established, as an independent public official, under section 16 of the Transport (Scotland) Act 2005. The Commissioner's aim is to improve the planning, co-ordination and quality of road works throughout Scotland. The Scottish Equivalent of HAUC is the Roads Authorities and Utilities Committee (Scotland) (RAUCs).

²⁷ See [HAUC website](#).

Conclusions

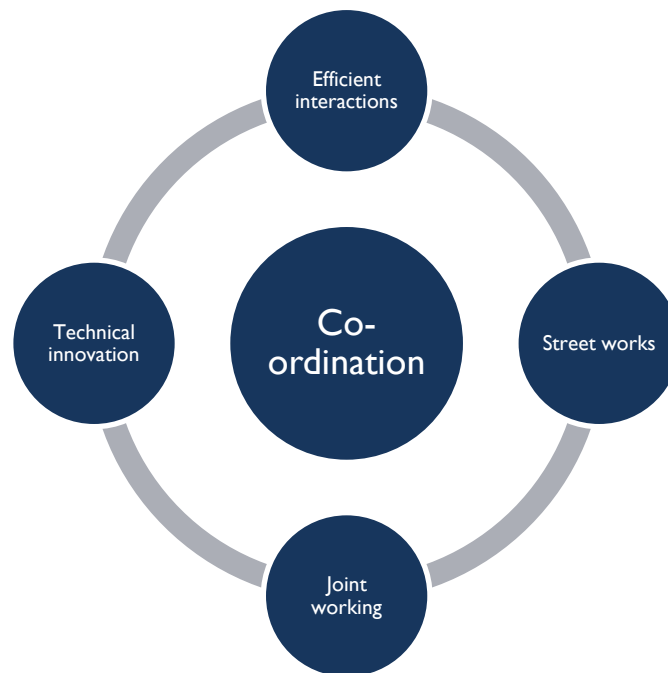
4.27. Our initial call for evidence indicated some concerns with the level of liability demanded by incumbent networks, but little further evidence of this has been provided to us. However, the fees or charges to clients do not appear to be clear or transparent. This is in contrast to other services that network operators provide, for example connections for new customers, where charges and the rationale for how charges are determined are published and arrangements for 'self-lay' (where a third party does most of the work) are explained.

5. Proposed remedies and consultation questions

Key conclusions

- 5.1. Our review of cross-sector infrastructure interactions has shown that these issues form part of a wider inter-dependency between parties undertaking or affected by infrastructure development. Successful installation of infrastructure depends upon many organisations, often with different incentives and funding, co-operating and co-ordinating effectively: interactions form one of these relationships.

Figure 2: Co-ordination across infrastructure issues



- 5.2. The evidence available to us suggests a clear priority of addressing the ‘frictional’ costs of engaging with and agreeing terms with incumbent network operator. The priority for action is to ensure clear points of contact and governance, so that clients of network operators have confidence in a process to agree firm timescales and work within clear service standards.
- 5.3. Effective co-ordination and communication ‘on the ground’ between network operators and clients, whether businesses or public bodies, on a day to day basis is essential to address the issues identified. We have seen a number of good examples and practices where network operators and others have taken the initiative to develop or strengthen their relationships or develop and adopt guidance. There is also a keen interest on improving the quality and access of essential information, necessary for all parties to co-ordinate effectively.
- 5.4. As a result, we propose a range of measures to strengthen transparency and accountability for the service that network operators provide to clients, i.e. those third parties that are arranging to cross the assets of regulated network operators. Given the good practice we have seen, we consider that industry, trade and professional bodies are well placed to support remedies. However, we propose that UKRN should review progress on interactions in the 2016-17 business year, in part to assess the success of our final recommendations but also to consider if direct regulatory measures are necessary.

Questions

5.5. We ask specific questions in respect of each draft remedy set out below. We consider four remedies are well supported by the evidence, and form part of an initial package: a statement of good practice principles, underpinning the behaviours we expect of network operators; and an annual report by operators on their experience of interactions with clients, followed by a progress review by UKRN to assess the effectiveness of remedies, whilst regulators also include interactions in impact assessments. We ask for views on a number of other issues. These include areas where we have been unable to draw firm conclusions, but where obvious concern has been expressed by some stakeholders: the quality and access to asset information and the indemnity required by incumbent network operators. We also ask what additional actions network operators or others should take to raise the importance of interactions in their organisations, and so demonstrate support to improving efficiency of infrastructure delivery. Finally, we ask for views on the evidence presented, our conclusions and whether any other actions should be considered. Annex 5 includes a draft impact assessment, focusing on remedies 1 and 2 below, on which views are invited.

Proposed remedies

5.6. This section covers four main remedies:

- A statement of good practice principles;
- Annual reports by network operators;
- A follow-up review by UKRN; and
- Impact assessments by regulators to include interactions.

I. A statement of good practice principles

Our proposal

- 5.7. We set out proposed 'good practice principles' below. A key issue affecting interactions is effective communication and co-ordination between clients and incumbent network operators. The evidence available highlighted a wide range of practices in managing clients' requests to cross assets, with many infrastructure developments dependent upon local agreements or established working relationships. Developing a set of principles is aimed at the behaviours of firms and individuals. Success of principles largely depends upon attracting support or sponsorship. As stewards of our national infrastructure, we expect network operators to adopt the principles as a guide to their approach to interactions.
- 5.8. Additionally, many utility networks will also interact other large infrastructure assets, for example gas and oil pipelines, highways, flood defences etc. These other infrastructure operators, whether in the private or public sectors, should consider adopting these principles, and where possible engage with their implementation.

Good practice principles for managing infrastructure interactions

Principle 1: The role of infrastructure owners

Infrastructure owners recognise the stewardship role they play for consumers in developing, owning and operating our national infrastructure, and that the effective delivery of infrastructure, across all sectors, benefits everyone.

Principle 2: Efficiency and economy

Without prejudicing the needs of customers or funders, network operators of in situ assets should act with efficiency and economy with regard to interests of clients.

Principle 3: Transparent processes and practice

Network operators should be transparent with all parties about service standards. This should include, at least:

- Providing easy access to clear and accurate network asset information, working with partners to improve or innovate access over time, so as to facilitate new infrastructure investment or co-ordination of works
- Point of contact – an operator will provide a clear and easily accessible point of contact for clients who can support the process of interactions
- Simple process – a clear and consistent process will be set out and followed to reach access or design agreements, ensure site visits or supervision and undertake necessary works to in-situ assets in a timely manner
- Ongoing communication – an operator will inform clients of expected deadlines and promptly inform them of any changes to those wherever practicable
- Effective resolution of disputes – an open and supportive process to resolve disputes, allowing escalation to senior management or external arbitration
- Periodic reporting of service or performance standards

Principle 4: Clear, transparent and appropriate pricing

Any fees, charges or costs that must be paid to the network operator (including the costs for works) will be clearly explained and/or itemised. Where possible, the operator will publish a statement of its prices, or basis of how charges are calculated, which should reflect appropriate costs and risks aimed at, where reasonable, facilitating infrastructure projects without exploiting unfair commercial advantage.

Principle 5: Continuous learning and best practice

The lessons and experiences of best practice in managing interactions within the firm or outside are pro-actively gathered and applied, with a commitment to training and support of staff managing interactions.

5.9. **Embedding and reporting on the principles.** We have proposed that outcomes and progress with delivering efficient interactions are reported and published (see 2. below). The principles will form part of this reporting, and we will want to understand how network operators, and other bodies, have adopted these principles in practice.

5.10. **Future developments.** We hope that the principles would form the basis of specific industry action to develop more practical guidance for firms, affecting how a network operator would deal with clients. For example, detailed guidance has been issued for street works by the DfT, jointly branded by HAUC (UK). We have seen through the HAUC process that utility network operators have experience of developing and adopting common standards and practices in a largely self-regulated framework. Detailed guidance is likely to be more technical in nature, with UKRN members not best placed to develop this detail, and could cover issues such as:

- Adoption of common methods – design approval standards or calculation of fees could follow common methods. The methods may need to be sector specific, draw on existing engineering practice or follow a set of costing principles. A costing principle could be:

Fees charged to clients should be calculated on the basis of a transparent method, which must be developed to ensure fees reflect costs incurred for the benefit of the client but net of benefit gained by the network operator of in-situ assets

- Adoption of common terms – this would standardise the underpinning asset protection agreements or other terms that bind clients. This requires some discussion on the balance of risk between parties.
- Compensation payments – a set schedule of payments if prescribed timescales (or other aspects of performance) are missed.
- Dispute resolution – a process and requirement to abide by a dispute resolution service. This could be provided by a third party or via a sponsoring body.

Why we consider this suitable

5.11. We want to raise the profile of interactions, and support industry and others that are best placed to develop practical approaches that smooth day to day interactions between clients and network operators. The principles would underpin a greater profile for interactions, and help ensure that all parties understood what was expected when arranging to cross or work near in-situ assets.

The outcomes we would like to achieve

5.12. Clients should have a clear understanding of the process, timing and fees or costs incurred when interacting with network operators. The principles are adopted by industry, trade and professional bodies, and lead to more practical guidance where this is needed to address the concerns raised about service standards and transparency of process and charges.

Question 1, good practice principles:

- Do you agree with establishing good practice principles to be adopted by network operators, and perhaps other organisations? If you disagree, please explain why.
- For each principle, please explain whether you consider it addresses the key concerns we have set out in this consultation and, if appropriate, propose alternative wording.

- c. Are there any additional principles that you consider important? Please explain the purpose of the principle or issues it would address.
- d. In addition to Network Operators, what other organisations should these principles apply to?
- e. How can these principles best be implemented or embedded? In particular,
- i) which organisations are best placed to support implementation?
 - ii) what specific actions should network operators take to demonstrate commitment to these principles?
 - iii) what specific support from economic regulators would be necessary to promote implementation?
- f. To what extent do these principles complement **or** conflict with existing obligations or practices that affect interactions, for example the protective provisions in the NSIP regime or guidance from trade associations? How could any conflict be resolved?

2. Annual reporting by network operators

Our proposal

- 5.13. An annual report to be published by major utility network operators. This report would:
- Describe the volume or level of activity with interactions, for example number of requests by clients to cross in-situ assets, fees recovered, works completed etc.;
 - Report on performance at delivering services to clients, for example the proportion of works undertaken within agreed timescales or against other service levels;
 - Review the effectiveness of the operators' processes for handling interaction requests by clients, noting specifically how significant or repeat issues raised by clients that undermine the efficiency of interactions have been tackled;
 - State how the operators' processes and practices are consistent with or support good practice principles (referred to in 1. above), including any good practice adopted or bespoke working agreements/ practices developed with third parties; and
 - State the planned changes or actions to improve the efficiency of interactions in the year ahead.
- 5.14. We propose that major network operators should **publish their first report within 12 months of our final proposals** (expected to be published in the summer).
- 5.15. Our focus is on those network operators with widespread regional or national networks. Networks that publish a report should be those that regularly interact significantly with clients; this is likely to be related both to the geographic extent of the networks concerned and the scale of the challenge they represent to clients, for example due to the technology or engineering required to cross the asset. The detail of the report itself should also be proportionate to the impact or issues facing clients dealing with that the operators' infrastructure. Some sectors may present a greater or lesser problem. In particular, telecoms is characterised both by a high number of networks, many of which are of very restricted scope, and by having infrastructure characteristics that generally result in relatively low impacts on clients. Consequently, it is proposed that a proportionate "scale and impact" threshold is applied that would mean that many such networks with low aggregate impact are excluded.

- 5.16. **Options for developing the report.** Regulated networks already produce a range of reports on their business performance or delivery of services. For example, the water industry recently agreed a range of voluntary service standards for provision of connection services to property developers, for which it would report against key performance indicators.²⁸
- 5.17. There are broadly two approaches to developing reports:
- Prescribed approach – common content, format and definitions are prescribed and applied to all operators within a sector (e.g. electricity distribution), or across all sectors; or
 - Bespoke approach – network operators adopt their own approaches to reports, based on some minimum common requirements, the principles (remedy 1. above), their own historic practice and nature of their businesses, with reports improved over time drawing on examples, perhaps leading to more common approaches in due course.
- 5.18. There are a number of examples where regulators specify the format and content of public reports produced by regulated networks. For example, Ofgem has consulted on its guidance for annual reports on environmental performance.²⁹ Its guidance sets out the structure that reports should follow, mandatory content and discretionary or advised content and the format in which certain information should be supplied. In other cases, regulators collect information from network operators and publish this, often in a format that allows comparison between different businesses and using agreed templates or pro-forma. For example, the Gas Distribution annual reports set out a range of data against specified performance standards covering safety, reliability, customer services amongst others.³⁰
- 5.19. The views of clients, i.e. those organisations that interact with network operators when crossing or working near in-situ assets, are important to understand what works well and what needs to change. An annual report could be an opportunity to gather and report on the experience and views of clients or other relevant stakeholders. Further, one role of these reports would be to inform the follow-up review that UKRN proposes (see remedy 3. below). This may mean that greater comparability is desired, albeit that a prescribed approach would need to be informed by expertise from industry, trade or professional bodies and clients.
- 5.20. Figure 3 summarise some of the strengths and weaknesses of both approaches.

Figure 3: Strengths and weaknesses of producing a prescribed or bespoke report

Prescribed approach	Bespoke approach
<p>Strength:</p> <ul style="list-style-type: none"> • Reports would be more comparable between network operators, helping to identify strong or poor performance between operators 	<p>Strength:</p> <ul style="list-style-type: none"> • Reports can reflect the circumstances and approach of each individual firm and their main clients • A range of reports can produce useful innovations in terms of content or presentation • Reports can be more responsive to

²⁸ See [Water UK](#) and [Better Connected](#), a practical guide to utilities for home builders.

²⁹ See consultation on the draft [RIIO-EDI Environment Report Guidance Document](#).

³⁰ See [RIIO-GDI Annual Report 2013-14](#), Ofgem, for an example.

examples of good practice or changes in circumstances or clients' needs over time	
<p>Weakness:</p> <ul style="list-style-type: none"> • The prescription of content requires suitable expertise, to ensure it is relevant to clients and proportionate for network operators • Potential innovation in the scope and content of reports can be lost 	<p>Weakness:</p> <ul style="list-style-type: none"> • Simple comparability of firms' performance may be lost, for example if definitions are not consistent

5.21. Our current thinking is that a bespoke approach is preferable, allowing greater scope for different sectors and individual networks to reflect the needs and concerns of their own networks and the clients that cross them. We consider that the reports must contain some common minimum information on performance or clients' experience, however. This information should reflect the core activities that almost always arise with interactions and which address concerns with securing a clear point of contact, meeting agreed timescales for works and transparency of process and fees.

Why we consider this suitable

5.22. Many respondents expressed a degree of frustration about the process and quality of engagement experienced from network operators from time to time. A public report would encourage network operators to strengthen and improve their processes and practices dealing with interactions, and identify weaknesses in their processes. Greater transparency would help to share good practice, whilst building greater confidence by infrastructure developers in the process. Overall, we consider this would support more efficient infrastructure investment. We would like to see widespread voluntary adoption of this approach by network operators. Voluntary adoption would help ensure a proportionate response, for example if some sectors impose little or no cost on clients (see Box 3 above) or because few clients cross their networks.

The outcomes we would like to achieve

5.23. The report would be a public commitment by network operators to deliver and improve interactions with clients. It would help to publicise and share good practice within and across regulated sectors. It would help to identify common problems or challenges in balancing the needs of customers with clients, and the solutions for this.

Questions 2, annual reporting:

a. Do you agree with this proposal for an annual report? If not, please explain your reasons and whether you favour any alternative approaches.

Who should produce the report?

b. Which network operators should produce this report? For example, would a report be less suitable for some utility sectors (which sectors and why), or for some networks given their scale or geography, and how should we identify such networks? How should any threshold used to determine who should report be defined?

c. Should any other organisations produce an annual report, for example other public or private organisations that manage significant infrastructure? Please explain your reasons.

How often, and by whom, should the report be produced?

d. Should the report be produced annually, or more or less frequently? Please explain your reasons.

e. Who should publish the reports, network operators, regulators or some other body?

What should be included in the report?

f. Do you consider the approach to developing the report should be *prescribed*, or *bespoke*? Please explain your reasons.

g. If *prescribed*, how would the guidance best be developed? For example, which organisations are best placed to develop guidance?

h. What is the *minimum* information that should definitely be included in a report?

i. What other information would be useful or desirable?

j. How can the views and experiences of clients' best be reflected in the report?

k. Should a report also include the network operator's own experience of interactions when acting as a client?

3. A follow up review by UKRN

Our proposal

5.24. We intend for UKRN to assess the experience of clients and success of these remedies in the 2016-17 business year. This would focus on whether the issues identified to date have improved, if new issue have arisen and whether, on balance, network operators are making progress meeting the principles (see remedy 1. above). It would consider whether any remaining or new problems would benefit from more direct regulatory intervention. The review would draw on the reports developed by network operators (remedy 2. above), likely supported by additional research.

Why we consider this suitable

5.25. We want to ensure that our contribution to this problem is helpful and proportionate, and that these proposals have helped reduce the costs of interacting with networks. In particular, the inter-dependence between our sectors, and potentially higher costs imposed on consumers, means we have an interest in addressing problems with interactions. A commitment by regulators to return to this issue should help to support industry or client-led action to address problems.

The outcomes we would like to achieve

5.26. That a self-regulatory approach has developed to successfully address the problems identified and promotes continuous improvement when dealing with interactions.

Question 3, follow up review: Do you agree that UKRN should return to this issue? If not, is any other organisation better placed to undertake a follow-up review?

4. Impact assessments by regulators

Our proposal

5.27. Regulators, as part of the process to develop regulation, undertake impact assessments. In future, regulators will ensure that, where appropriate, the impact of a proposal on cross-sector interactions is considered as appropriate within the impact assessment process.

Why we consider this suitable

5.28. Some respondents queried whether aspects of the regulatory regime may promote or encourage behaviour that adversely affects clients. We've found no strong support for this. But, to guard against this, we want to ensure any potential impact is explicitly considered. However, this would not mean that interactions would be given special priority or influence over other stakeholders; and regulators will continue to undertake their functions in a way that meets their statutory objectives (see paragraphs 3.7 to 3.10 above).

The outcomes we would like to achieve

5.29. A good understanding by economic regulators of the potential effect on clients interacting with network operators that arise from the regulatory regime.

Question 4, impact assessments: Do you agree with this proposed remedy? If not, please explain why.

Other issues

5. The quality of, and access to, network asset information

5.30. A number of respondents raised comments about the quality of asset information held by regulated networks. We have also seen a number of initiatives, at different stages of development, to improve quality and access of information, to support co-ordination across street works, interactions and potentially other areas. These initiatives often focus on bringing together information from many asset owners across sectors into a single hub or portal.³¹

5.31. The general principle of greater transparency and free access to data has been promoted in a number of public service areas. This has been termed 'open data'. It is guided by the idea that transparency and access to data improves service quality and creates additional 'value added', whilst being sensitive to personal or other information concerns.³²

5.32. We have proposed that principle 3 (see remedy 1. above) includes a commitment by network operators to promote access to accurate data, and work with partners to achieve this. In addition, economic or safety regulators often have incentives or requirements in place to improve the quality of asset information (see Box 4 above).

5.33. We would like to support network operators working effectively with partners so that asset information is easily available to relevant stakeholders to co-ordinate infrastructure works.

Question 5, quality and access to asset information:

³¹ In particular, we would note the implementation of EU Directive 2014/61/CE that Government is about to consult on which includes measures on ensuring access to and transparency of information about physical infrastructure.

³² See the [government digital service](#).

a. Are there any measures you consider that economic regulators should take to promote: i) the quality of; and ii) access to the asset information held by network operators?

b. Should provision of asset information by network operators to one or more central 'hubs' be mandatory? What are the pros and cons of this?

6. The balance of risk faced by network operators

5.34. As outlined above (see paragraphs 4.24 to 0 above) some respondents to UKRN's call for evidence expressed concern with the level of indemnity required by incumbent network operators of clients crossing their assets. The indemnity relates to the risk and cost faced by incumbent networks should their services to consumers be disrupted. All networks face strong regulatory incentives to ensure a safe and reliable service and are responsible for making compensation payments should services be significantly disrupted.

5.35. Although construction or operation of assets by third party clients could damage an incumbent network's assets, new infrastructure can itself be important to consumers and customers; for example, by securing energy supplies, better transport links or protecting land and homes from environmental damage. The challenge is therefore how to balance the risks and benefits between consumers using network services, the up-front costs faced by infrastructure developers and wider social or public interests from developing new infrastructure. As noted above, if inefficiencies exist, households may face higher costs either through bills, taxes or disruption.

Question 6, balance of risk:

a. Do you consider that the level of indemnity required of clients is a material issue that may adversely affect interactions or new infrastructure development? Please explain the reasons for your views.

b. Are there practical solutions or examples to improve the pricing or balance of risk by network operators of infrastructure projects crossing their assets?

c. Is there a specific role that economic regulators, government, regulated networks or other parties should play to address the costs of indemnity?

7. Other measures to raise the profile and importance of interactions

5.36. We have noted examples throughout this consultation of good practice by network operators and others when dealing with interactions. A greater profile or importance of infrastructure interaction within network operators, or more widely, may help promote this good practice. We have seen other areas, for example street works, develop award schemes that recognise and promote customer service or innovation. Senior management accountability can also be an important tool to embed good customer service and a greater interest in improving services. It may also be possible to recognise good practice with interactions more formally, for example by adopting training or qualifications to explicitly address this issue.

Question 7, raising the profile of interactions:

a. What additional actions could individual network operators take to strengthen or embed a good quality service when managing interactions?

b. Is there a role for industry, trade or professional bodies to encourage and promote more effective interactions? If yes, how may this be achieved?

c. What role should economic regulators take, if any, in this process?

Views on overall evidence and conclusions

Question 8: Do you agree with our characterisation of the issues, and their relative importance, affecting interactions? If not, please explain how and why you disagree. If relevant please include any additional or supporting evidence.

Question 9: Do you consider there are any other issues or impacts related to interactions that should be addressed? If yes, please describe these issues and explain what actions should be taken and by whom.

Question 10: Are there any additional actions that you consider economic regulators should take *now* to address issues affecting interactions? If yes, please explain what these actions are and why you consider regulators should act.

Question 11: Do you consider there is any direct, adverse, impact on interactions from the price controls or other regulations affecting network operators? If so, please describe the specific regulations and their impact. What actions would address any adverse impact?

6. Annex I – Responding to this consultation

- 6.1. We invite stakeholders' responses to this call for evidence to be made by 5 pm on 16 July.
- 6.2. Responses can either be emailed to john.holmes@orr.gsi.gov.uk or posted to:
- John D Holmes
Office of Rail and Road
One Kemble Street
London
WC2B 4AN
- 6.3. If you have any questions, please email john.holmes@orr.gsi.gov.uk or telephone 020 7282 3739.
- 6.4. All responses should be accompanied by a cover sheet setting out:
- the name of the respondent, the organisation being represented and relevant contact details;
 - whether you consider that part, or all, of your response should be treated as confidential, with any relevant explanation; and
 - that you agree to the publication of your response on the UKRN website.
- 6.5. We will seek to publish all responses to this call for evidence on the UKRN website (where appropriate). If part of your response is confidential, it would be helpful if you could also submit a non-confidential version of your response redacting all confidential information, and clearly marked as such.

Summary of questions

- 6.6. The following lists all questions raised in Chapter 5.

Question 1, good practice principles:

- a. Do you agree with establishing good practice principles to be adopted by network operators, and perhaps other organisations? If you disagree, please explain why.
- b. For each principle, please explain whether you consider it addresses the key concerns we have set out in this consultation and, if appropriate, propose alternative wording.
- c. Are there any additional principles that you consider important? Please explain the purpose of the principle or issues it would address.
- d. In addition to Network Operators, what other organisations should these principles apply to?
- e. How can these principles best be implemented or embedded? In particular,
 - i) which organisations are best placed to support implementation?
 - ii) what specific actions should network operators take to demonstrate commitment to these principles?
 - iii) what specific support from economic regulators would be necessary to promote implementation?

f. To what extent do these principles complement **or** conflict with existing obligations or practices that affect interactions, for example the protective provisions in the NSIP regime or guidance from trade associations? How could any conflict be resolved?

Questions 2, annual reporting:

a. Do you agree with this proposal for an annual report? If not, please explain your reasons and whether you favour any alternative approaches.

Who should produce the report?

b. Which network operators should produce this report? For example, would a report be less suitable for some utility sectors (which sectors and why), or for some networks given their scale or geography, and how should we identify such networks? How should any threshold used to determine who should report be defined?

c. Should any other organisations produce an annual report, for example other public or private organisations that manage significant infrastructure? Please explain your reasons.

How often, and by whom, should the report be produced?

d. Should the report be produced annually, or more or less frequently? Please explain your reasons.

e. Who should publish the reports, network operators, regulators or some other body?

What should be included in the report?

f. Do you consider the approach to developing the report should be *prescribed*, or *bespoke*? Please explain your reasons.

g. If *prescribed*, how would the guidance best be developed? For example, which organisations are best placed to develop guidance?

h. What is the *minimum* information that should definitely be included in a report?

i. What other information would be useful or desirable?

j. How can the views and experiences of clients' best be reflected in the report?

k. Should a report also include the network operator's own experience of interactions when acting as a client?

Question 3, follow up review: Do you agree that UKRN should return to this issue? If not, is any other organisation better placed to undertake a follow-up review?

Question 4, impact assessments: Do you agree with this proposed remedy? If not, please explain why.

Question 5, quality and access to asset information:

- a. Are there any measures you consider that economic regulators should take to promote: i) the quality of; and ii) access to the asset information held by network operators?
- b. Should provision of asset information by network operators to one or more central 'hubs' be mandatory? What are the pros and cons of this?

Question 6, balance of risk:

- a. Do you consider that the level of indemnity required of clients is a material issue that may adversely affect interactions or new infrastructure development? Please explain the reasons for your views.
- b. Are there practical solutions or examples to improve the pricing or balance of risk by network operators of infrastructure projects crossing their assets?
- c. Is there a specific role that economic regulators, government, regulated networks or other parties should play to address the costs of indemnity?

Question 7, raising the profile of interactions:

- a. What additional actions could individual network operators take to strengthen or embed a good quality service when managing interactions?
- b. Is there a role for industry, trade or professional bodies to encourage and promote more effective interactions? If yes, how may this be achieved?
- c. What role should economic regulators take, if any, in this process?

Question 8: Do you agree with our characterisation of the issues, and their relative importance, affecting interactions? If not, please explain how and why you disagree. If relevant please include any additional or supporting evidence.

Question 9: Do you consider there are any other issues or impacts related to interactions that should be addressed? If yes, please describe these issues and explain what actions should be taken and by whom.

Question 10: Are there any additional actions that you consider economic regulators should take *now* to address issues affecting interactions? If yes, please explain what these actions are and why you consider regulators should act.

Question 11: Do you consider there is any direct, adverse, impact on interactions from the price controls or other regulations affecting network operators? If so, please describe the specific regulations and their impact. What actions would address any adverse impact?

7. Annex 2 – Summary conclusions from web review of sector processes

- 7.1. We reviewed the websites of 11 firms covering energy and water distribution, transmission and rail in the south and northwest of England, East Anglia and Scotland.³³ The focus of the review was to assess what information is offered publicly to those wishing to interact with a regulated utility. We looked at how and where information was presented on network operators' websites, covering:
- the transparency or clarity of the process for crossing in-situ infrastructure;
 - relevant contact details;
 - the extent of standardisation, in terms of process and documents;
 - performance or service standards offered to clients;
 - the types of fees levied, clarity of information on fees or how they are calculated; and
 - dispute settlement procedures.
- 7.2. Our headline conclusions are:
- Contact information is available, but not always easy to find and often not targeted at third parties crossing, rather than connecting to, a utility network;
 - Only rail provided guidance on a schedule of minimum information for obtaining approvals and sample standardised contracts;
 - No firm timescales, service or performance levels are offered, but at best provided on an indicative basis;
 - Very little information on the level of fees is provided and none on the basis of how fees are calculated; and
 - Only for rail is any information on dispute settlement provided, and this is not easily available.
- 7.3. On balance, information and advice is targeted predominantly at those connecting to networks, or, for the national transmission system and rail services, are also focused on safety and asset protection.
- 7.4. Comparing the scope of information provided to the list of concerns raised about interactions we find some support for the concerns raised:
- **Firm timescales.** Although some indicative dates were given few firm time commitments were offered. Only the water sector appeared to have clearer or firmer timescales.
 - **Design specification and information.** Some technical information is provided, but this is mostly aimed at 'self-lay' or independent connection providers. The sample reviewed did not offer clear explanations or principles of how diversion or other works are designed or priced.

³³ This was based on a search of websites accessed between November and December 2014.

- **Costing transparency.** Some fee information was available, usually for initial asset searches. More detailed method, or schedule of charges, was only supplied for connection work.
- **Consistent treatment.** Practices within and between sectors vary by the level of detail provided, or the processes applied to arrange to cross in-situ assets.

7.5. There are limitations to the strength of these conclusions: the sample size was small, and clearly practices do vary between companies; and we have considered only information available via websites and not the ‘inside’ information, contacts or expertise of firms that regularly liaise with utility networks are likely to possess. The sector specific results from this sample are set out in the tables below.

Energy and water distribution

	Gas distribution	Electricity distribution	Water
Transparency / contact details	‘Dial before you dig’ style schemes and online access to asset location records was available. Safety information was targeted at householders and commercial firms.	Information is focused on, and reached via, connections information. This included advice to developers for ‘competition in connections’ and safety. In one case information was offered on asset locations and on diversion work. Most contact information was targeted at existing customers or developers seeking connections.	Water and wastewater are treated differently. Information is more clearly targeted at ‘builders and developers’. <u>Water</u> – most information is targeted at those wishing connections to the main. <u>Wastewater</u> – Public sewers are treated differently, with clear application arrangements for those that wish to build over a public sewer (often necessitating diversion works)
Standardisation	No information on standard processes or forms is provided.	Only in one case was a process outlined for site visits and quotations for diversions. Some technical information was provided, aimed at firms providing competitive connections.	A clearer ‘pre development’ process is in place, but mainly targeted at developers wishing connections or for diversion of public sewers. This process is also linked to local planning applications / building regulations, allowing water companies to object to plans.
Performance standards	No information was provided.	The only performance standards related to connections work. In one case, asset information was available online and a timescale was offered for quotations for diversion works.	Early engagement is encouraged, with indicative or estimated timescales provided in some cases.
Fees	Initial asset enquires are often free. Other reasonable costs may be	Little information in fees is offered. One case made it clear that fees are	Some information on fees, for example applications. Most fees are provided via

	recovered, but no further details are provided.	individually quoted for diversion works.	individual quotations. No information on method of calculation is provided.
Dispute settlement	No information is provided.	No information is provided.	No information is provided.

Rail and energy transmission

	Rail	Energy transmission
Transparency / contact details	Information on the web directs people to regional asset protection managers.	'Dial before you dig' is clearly presented to allow contact with the plant protection team. Asset information is provided via an electronic register, where users can submitted proposed work and are advised on any relevant assets in the area.
Standardisation	<p>A standard process is in place for wayleaves, which is different for 'statutory' network operators and other infrastructure providers.</p> <p>Standard asset protection agreements with explanatory notes are available online; and a schedule of minimum scheme information.</p>	No standard process, beyond making contact with the plant protection team, is provided. Safe working advice is offered for contractors and landowners.
Performance standards	Indicative timescales are offered, including for providing clearance for third parties to undertake work.	No information is provided.
Fees	The types of cost recovered are listed. No information is provided on fee levels or method of calculation, but are advised on application.	<p>Initial asset information, and a 'mark-up service' is offered free of charge.</p> <p>No other information on fees or method is provided.</p>
Dispute settlement	No information is provided on the website. Details are provided in the asset protection agreement, which includes a formalised process for escalating disputes and allows construction contract to be referred to adjudication under the <i>Housing Grants, Construction and Regeneration Act 1996</i> .	No information is provided.

8. Annex 3 – Regulation of connections to energy and water distribution networks

- 8.1. This Annex sets out a brief summary of the regulatory duties and obligations affecting gas, electricity and water network operators when connecting new customers to their distribution networks.

Electricity distribution

- 8.2. The distribution system comprises 14 privately owned and operated networks in separate geographic areas. It connects customers, including domestic, commercial and industrial, to the national transmission system. The network operates at voltages from 132kV down to 230V in England and Wales (in Scotland 132kV is considered to be a part of transmission rather than distribution). Smaller distribution systems may also be developed, for example for a business park or housing estate.
- 8.3. *Duties and obligations:* Distribution network operators (DNOs) are subject to duties under the Electricity Act 1989 including a requirement to make a connection to customer's premises for the purposes of supply of electricity on request.³⁴ The Electricity Act also sets out certain obligations on the customer requesting a connection, in terms of the information provided to the DNO, and on the DNO to include the terms on which it will connect the customer.
- 8.4. *Charging arrangements:* DNOs must establish a 'charging methodology', designed to meet certain objectives,³⁵ and publish a 'connections charging statement'. The statement gives the basis for calculating the charges paid by individual customers. The DNO licence requires the charging statement to be clearly presented and easily available. The licence also sets out the principles of the types of costs that may be recovered from customers, in this case based on the 'minimum scheme' necessary to meet the customer's needs and limiting the contribution to overall system reinforcement.³⁶ A DNO may also charge for 'use of system', which allows it to recover costs incurred in repairs, maintenance and operation of connection assets over time. Use of system charges are limited by the overall price control, and must be charged in line with a methodology that determines how much different types of customer may pay.
- 8.5. *Service levels:* Service standards for electrical connections are set for i) providing estimates and quotations for different types of connection, ii) performance levels for customer contacts and iii) performance levels for timely completion of works. The standards have been prescribed in regulations and include a compensation payment to customers where these are not met.³⁷

³⁴ Section 16(1) Electricity Act 1989. Note that the duty to make a connection is subject to limited exceptions (section 17 Electricity Act 1989).

³⁵ DNO Standard Licence Condition 13 requires the development of a methodology, approved by the regulator, and includes the 'relevant objectives' that the method must meet. These objectives include facilitating the licensee in meetings its obligations under the Act or licence, facilitating competition and developing cost reflective charges amongst others.

³⁶ System reinforcement is additional capital spending to increase capacity of the system, see Ofgem's [A guide to electricity distribution connections policy](#), 16 April 2014.

³⁷ In addition to the [statutory instrument](#), Ofgem is [consulting](#) on guidance for these service standards.

- 8.6. *Engagement:* As part of the wider regulation of DNOs Ofgem introduced various incentives to encourage engagement with customers and other stakeholders.³⁸ This includes conducting a regular survey of customers' satisfaction with connections.
- 8.7. *Dispute resolution:* The Electricity Act allows certain disputes to be referred to Ofgem for determination.³⁹ Ofgem has developed guidance for this process.⁴⁰ Where a dispute cannot be settled between the DNO and customer (or by use of alternative dispute resolution services, such as the Energy Ombudsman), Ofgem can make a decision binding on the parties in dispute.⁴¹ Ofgem requires parties to submit evidence and may use external technical advice to reach a judgement. Final decisions are published on Ofgem's website.

Gas distribution

- 8.8. Gas distribution networks are split into eight distinct geographic regions, each connected to the high pressure national transmission system.⁴² The distribution networks connect domestic customers and many industrial or commercial customers. The gas network in the UK is not as extensive as the electricity network: UK wide about 10 per cent of households are not connected to the mains network.⁴³
- 8.9. *Duties and obligations:* The Gas Act 1986 requires a gas transporter to connect premises within 23m of a gas main, or premises that could be connected to such a main by a pipe laid by the owner or occupier of the premises.⁴⁴ Customers can be required to meet the costs of connection.
- 8.10. *Charging arrangements:* The licence of gas transporters requires the publication of an approved charging methodology.⁴⁵ The charges can recover the costs of making a connection, subject to specific allowances for domestic premises where pipes are laid in public land, and to reinforce the existing gas main if necessary.⁴⁶ The charging method must be designed to meet specific 'relevant objectives'.⁴⁷ Once connected, customers will face use of system charges, which are regulated as part of the price control for gas distribution businesses and charges must be determined in line with an agreed methodology.
- 8.11. *Service levels:* The Gas Act enables Ofgem to establish standards of service for gas transporters. Guaranteed standards of performance were introduced from 2005 covering timeliness of quotations, commencing and completing works. These standards are prescribed in regulations and monitored by Ofgem.⁴⁸ In addition, the standards require compensation in each case where the standard is not

³⁸ See Ofgem's [website](#) for details.

³⁹ See [Section 23](#) of the Electricity Act 1989.

⁴⁰ Ofgem [guidance on the determination of disputes for use of system or connection to energy networks](#), 24 August 2012.

⁴¹ Ofgem may also recover its costs in handling determinations, which is more likely in cases where the parties could have resolved the dispute before reference.

⁴² See further information from [Ofgem](#) and the [Energy Networks Association](#).

⁴³ See [DECC statistics](#) 'subnational estimates of households not connected to the gas network'

⁴⁴ Section 10 of the Gas Act 1986

⁴⁵ See standard licence condition 4B, of the gas transporter licence (<https://www.ofgem.gov.uk/licences-codes-and-standards/licences/licence-conditions>).

⁴⁶ SLC 4B does not allow for direct recovery of costs of pipes laid up to 10 metres in public land.

⁴⁷ See SLC 4B(5).

⁴⁸ Link to current 2005 regulations: <http://www.legislation.gov.uk/ukxi/2005/1135/made>, as amended by 2008 regulations: <http://www.legislation.gov.uk/ukxi/2008/696/made/data.pdf>

met.⁴⁹ Performance is also monitored through broader satisfaction surveys of customers that have connected to the network.

- 8.12. *Engagement:* As with DNOs, Ofgem's price control (established from April 2013 until March 2021) promoted customer engagement in the development of business plans. This process covered a wider range of issues than just connections.
- 8.13. *Dispute resolution:* The Gas Act enables Ofgem to determine certain disputes between customers and gas transporters. This is in addition to other means for customers to resolve disputes, such as using the energy ombudsman.

Water mains connections

- 8.14. Water companies are licensed on a regional basis to distribute drinking-quality water to homes and businesses. Water companies in some regions also provide sewerage services. Services to non-domestic customers are open to competition.
- 8.15. *Duties and obligations:* The Water Industry Act 1991 (WIA 91) requires water companies to connect customers for domestic use and, to the extent it does not affect existing supplies, for non-domestic use.
- 8.16. *Charging arrangements:* Water companies may recover the reasonable costs incurred in providing a connection, including provision of mains and reinforcement of the existing network. The WIA 91 sets out the rules for charging customers for this work.⁵⁰
- 8.17. *Service levels:* Guaranteed standards are in place for customers connected to the water mains, but do not cover provision of connections.⁵¹ In co-operation with government and Ofwat, water companies have developed voluntary service standards for connections to their networks.⁵² These standards provide timescales for key steps in the process of securing a connection, including quotations, ground and connection works. The industry is trialling these standards, with the intention to publish league tables of companies' performance from April 2015.
- 8.18. *Engagement:* As part of Ofwat's price review, it required much greater engagement by water companies in developing their business plans. This mainly focuses on the ongoing service quality and charges for those connected to water companies' networks.
- 8.19. *Dispute resolution:* The WIA 91 allows disputes about connections to be determined by Ofwat.⁵³

Arrangements in Scotland

- 8.20. Scottish Water is the publicly owned water and sewerage company serving consumers in Scotland. As a public monopoly, Scottish Water is subject to regulation on its charges and service levels by the Water Industry Commission for Scotland. This includes regulation of connections and connection

⁴⁹ See [Ofgem's website](#) for more details.

⁵⁰ The Water Act 2014 will allow Ofwat to set rules for connection charges, allowing greater flexibility than rules enshrined in primary legislation.

⁵¹ See [Ofwat's website](#) for more details.

⁵² The service standards and details are available from [Water UK](#).

⁵³ See [Ofwat's website](#).

standards. Unlike in England and Wales, only non-domestic connections are formally regulated via an Operational Code.⁵⁴ This Code governs interactions between Scottish Water and the Licensed Providers. Similar to codes in comparable industries, the Operational Code can be modified by Scottish Water and the Licensed Providers. WICS retains certain powers to make changes and to block changes. Domestic connections, although not regulated, have service standards that generally mirror the levels in the Operational Code. In addition, WICS approves a standard connection charge, with non-standard connection charges limited to recovering reasonable cost.

⁵⁴ The market for the provision of retail water and sewerage service to non-household customers in Scotland is open to competition. The regulated company maintains ownership of the water and wastewater network and acts as the wholesaler to Licensed Providers competing in the retail market. When a new connection is required, the Licensed Provider can either request that Scottish Water makes the connection or communicate that it wishes to proceed using a certified third party called Accredited Entity (the accreditation scheme is the same Lloyd's Register scheme used in England and Wales).

9. Annex 4 – Regulated utility network operators

Sector and operator	Ownership
Electricity distribution	
Electricity North West Ltd	Private
Northern Powergrid (Northeast) Ltd	Private
Northern Powergrid (Yorkshire) plc	Private
Scottish Hydro-Electric Power Distribution Ltd	Subsidiary of listed company
Southern Electric Power Distribution plc	Subsidiary of listed company
SP Distribution plc	Private with listed parent
SP Manweb plc	Private with listed parent
London Power Networks plc	Private
South Eastern Power Networks plc	Private
Eastern Power Networks plc	Private
Western Power Distribution (East Midlands) plc	Private with listed parent
Western Power Distribution (West Midlands) plc	Private with listed parent
Western Power Distribution (South West) plc	Private with listed parent
Western Power Distribution (South Wales) plc	Private with listed parent
Northern Ireland Electricity Ltd	Private
Independent distribution network owners (IDNOs)	Various
Electricity transmission	
National Grid Electricity Transmission plc	Subsidiary of listed company
Scottish Hydro Electric Transmission Ltd	Subsidiary of listed company
Scottish Power Transmission Ltd	Private with listed parent
Northern Ireland Electricity Ltd	Private
Gas distribution	
National Grid Gas plc	Subsidiary of listed company
Northern Gas Networks Ltd	Private
Wales & West Utilities Ltd	Private
Scotia Gas Networks Ltd	Subsidiary of listed company
Phoenix Natural Gas Ltd	Private
Firmus Energy (supply) Ltd	Private
Independent gas transporters (IGTs)	Various
Gas transmission	
National Grid Gas plc	Subsidiary of listed company
Rail infrastructure	
Network Rail Ltd	Publicly owned
Crossrail Ltd	Publicly owned

HSI Ltd	Private concession
Translink (Northern Ireland)	Publicly owned
Telecoms: Fixed-line⁵⁵	
BT plc	Listed company
VirginMedia	Subsidiary of listed company
Telecoms: Mobile	
Vodafone Ltd	Subsidiary of listed company
Telefónica UK Ltd	Subsidiary of listed company
EE Ltd	Private with listed parent
Hutchison 3G UK Ltd	Private
Water and sewerage	
Albion Water Ltd	Private
Anglian Water Services Ltd	Private
Dwr Cymru Cyfyngedig Ltd (Welsh Water)	Company limited by guarantee
Northumbrian Water Ltd	Private
Severn Trent Water Ltd	Subsidiary of listed company
Southern Water Services Ltd	Private
South West Water Ltd	Subsidiary of listed company
Thames Water Ltd	Private
United Utilities Group plc	Listed company
Wessex Water Ltd	Private
Yorkshire Water Services Ltd	Private
Scottish Water	Publicly owned
Northern Ireland Water Ltd	Publicly owned
Water only	
Affinity Water Ltd	Private
Bristol Water plc	Private
Cholderton and District Water Company	Private
Dee Valley Water plc	Subsidiary of listed company
Portsmouth Water Ltd	Private
Semcorp Bournemouth Water Ltd	Private with listed parent
South East Water Ltd	Private
South Staffordshire Water plc	Private with listed parent
Sutton and East Surrey Water services Ltd	Private with listed parent

⁵⁵ There are an undefined number of fixed line telcos who operate physical infrastructure that may be affected by interactions with other sectors' projects – these are the biggest in scale and scope.

10. Annex 5 – Draft impact assessment

10.1. This is a draft impact assessment focusing on the proposals to introduce an annual report, which itself is closely linked to a statement of principles (remedies 2 and 1 respectively in Chapter 5). The preferred remedy, in Chapter 5, and other remedies (below) include a range of options for implementation. Assessing their impact is therefore open to judgement as to the likely general impacts on broad groups of affected stakeholders, and any sector specific effects, which may depend upon the final form of the remedy. However, this draft assessment allows us to consider the potential impacts and the key stakeholders affected. We invite more detailed evidence on the costs that some stakeholders may bear to implement or comply with these options; and the benefits to stakeholders if these remedies were in place.

The issue

10.2. Chapter 4 presents our evidence of the experience and impacts on clients when interacting with incumbent network operators. We have identified four main categories of issues with interactions:

- The service standards offered, principally clear points of contact, consistent process and timescales that provide confidence to third parties
- Difficulties with co-ordination and information, including the quality of asset information
- Design standards that set engineering requirements for the client, and the extent that similar projects are treated consistently
- Costs, specifically the transparency of how costs are determined and some of the terms, such as liability requirements

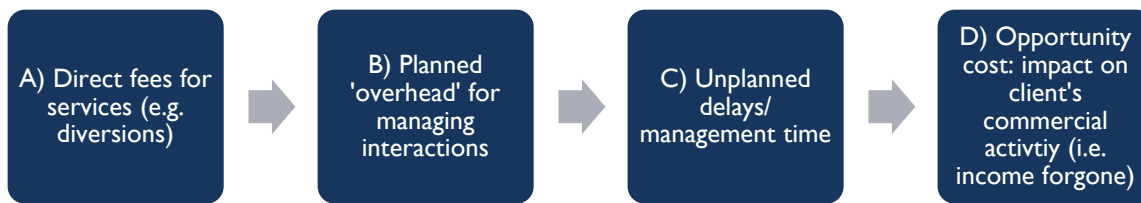
10.3. Given the evidence, the priority issue focuses upon the service standards offered to clients and transparency of the process and related costs. These mainly reflect the ‘frictional’ cost of negotiating and managing arrangements to work near an incumbent’s in-situ assets, and the delivery of the services by the incumbent network that are necessary to allow work to proceed, including design approval, site supervision and diversion works. However, not all projects or all networks necessarily incur or impose these costs, with some examples of good practice evident across network operators.

The types of costs affecting clients and others

10.4. Network operators hold the monopoly over the services required by clients. These services could therefore be subject to market failure: either exploitative practices by a dominant network, which raises the cost of its service above an efficient level; or inefficiency arising from weak competitive or regulatory incentives, resulting in an externality that must be borne by the client.

10.5. We have identified four types of cost that clients may bear, see Figure 4, with costs A and B anticipated by the client (and built into the project budget), and C and D unanticipated:

Figure 4 – potential costs incurred with interactions



10.6. As noted in Chapter 3, incumbent networks should aim to recover the costs incurred when facilitating or enabling third party infrastructure to cross their assets. However, if these costs are inefficient, for example due to delays, clients and ultimately funders and households will bear these greater costs.

Scale of the issue

10.7. Paragraphs 3.1 and 3.2 above set out the scale of planned infrastructure investment. Over £13 billion may be spent on interactions by 2020/21, and this estimate excludes the costs clients' bear from delays or project overruns. However, projects vary significantly in size, scale and complexity, making a generalised estimate of the cost of interactions or size of any inefficiency unreliable. Further, respondents to our information requests have been cautious about disclosing information, given the commercial sensitivity of some projects and value of existing relationships with network operators. This has meant that a precise estimate of the harm or impact from the issues raised with interactions has not been possible.

10.8. Despite this, it is clear that even small improvements with the process of interactions may amount to significant savings to the cost of infrastructure projects; for example a 5 per cent reduction in costs would save over £650 million over the next five years (based on figures from the national infrastructure plan). Our evidence also suggests that the incidence with which interactions arise will increase, with subsequent increase in costs in the future. This mix in evidence – that interactions do have a significant impact on infrastructure projects, but with few parties able or willing to place absolute figures on the cost of inefficiency – underpins our approach to support greater self-regulation, as consulted upon in Chapter 5 and in the appraisal of options below.

Objective

10.9. Our objective is to address the 'frictional' costs incurred, from time to time, by clients when they interact with network operators; principally by enabling network operators to improve their services to clients by adopting greater clarity of process, timeliness and service standards, whilst accounting for the interests of consumers that depend upon these networks. Our ultimate aim is to make the process of interacting with incumbent utility networks easier, quicker and cheaper.

Option selection and appraisal

10.10. The main remedies considered in this impact assessment are those that address the service standards offered to clients and transparency of costs. The evidence available suggests that network operators vary widely in their practices, with a number of examples of good or best practice and bespoke agreements with specific clients to improve interactions between them. It is also evident that, in many cases, networks are best placed to make judgements about the measures needed to protect their assets, and ensure continuity of supply to their connected customers or passengers. As a result, our selection of options is based on:

- A focus on addressing service standards and transparency of costs;
- The extent that good practice can be promoted or shared amongst network operators; and
- The effectiveness of a remedy to introduce improvements for clients within a reasonable timescale.

10.11. We have considered the following range of options. The remedies consulted upon in Chapter 5 are covered by option 1 below.

Option	Description
<p>Option 0 – ‘do nothing’</p>	<p>This option is our base case, which involves no specific interventions by UKRN or economic regulators generally. As noted, a range of good or poorer practice can be observed across incumbent networks (see Chapter 4). Overall, outcomes experienced by clients would continue to depend upon arrangements that individual clients could agree with the networks they cross, or provisions that can be secured via other means such as the NSIPs regime. Absent UKRN’s proposed remedies, we do not anticipate action by government, networks, trade or professional bodies to address the concerns identified.</p>
<p>Option 1 – Promote good practice and transparency</p>	<p>This option reflects the package proposed in this consultation. The focus of this impact assessment is on the adoption of good practice principles, in particular principles 3 (transparent processes and practice) and principle 4 (clear, transparent and appropriate pricing); and the annual public reporting of performance by networks.</p> <p>We are consulting on the details of this option, which will affect its likely costs of implementation and compliance, but also the effectiveness of the remedy at addressing our concerns.</p> <p>Network operators will need to review their current practices to assess how well they reflect the principles, and subsequently amend their processes, systems, legal agreements, management information systems and make other changes as necessary to adopt the principles. Changes to the information provided to clients may also be necessary. No uniform code of practice or standardised processes are proposed for network operators, but these are not precluded should trade associations or professional bodies wish to develop these in accordance with the principles.</p> <p>The public reporting of outcomes, which invites views from clients, and subsequent improvement to processes forms an important part of the remedies package in Chapter 5. It forms a public commitment by networks to improve the process of interactions. The consultation proposes two broad approaches to the development of a report:</p> <ul style="list-style-type: none"> • Prescribed approach – where the reporting by networks must follow set guidance that defines the content and presentation of information; • Bespoke approach – where the reporting follows looser guidance, likely including a minimum set of information but any additional content or its format is left open for individual networks.
<p>Option 2 – Legislative reform</p>	<p>This option would adopt an approach would introduce a general duty on incumbent network operators to facilitate new infrastructure developments or other works where their assets must be protected. In effect, it would be similar to the obligations on statutory undertakers under the New Roads and Street Works Act. Consideration would be needed whether any infrastructure project or development should benefit from this duty, or whether it should be limited to specific types of infrastructure or scale of project, for example those defined as NSIPs.</p> <p>The practical outcome would be to require greater transparency and reporting as outlined for option 1, but also enabling clients to challenge incumbent networks’ decisions more easily. A code of practice, developed or authorised by government, would set out the specific obligations and processes necessary to meet the legal requirements on network</p>

operators. It could go further by mandating that network operators produce specified information on their processes and performance in meeting the needs of clients; and establish an alternative dispute mechanism.

Option 3 – Regulated standards of performance and charging methodology

This option would mandate:

- Minimum information disclosure to clients to explain the process and information requirements of the incumbent network
- Timescales to undertake specific steps of the process, for example initial responses to requests for asset plans, timescales to turnaround design approvals, timescales to undertake diversion works
- Cost transparency, with requirements to produce charging methodologies modelled on the approach for utility connections. This would include obligations to ensure charges reflected costs and the benefit accrued by the incumbent from undertaking works, for example the benefit of replacing aged assets with new

Measures could also encourage consistent treatment between projects and introduce an appeal or dispute resolution method for clients. Regulatory guidance would specify how network operators should meet the regulated standards, drawing on similar approaches to the regulation of connections.

Overall, this option would significantly extend the role of formal regulation and sector regulators over interactions.

Each economic regulator operates under sector-specific legislation. The exact mechanism to introduce these mandated requirements would vary from sector to sector. In some cases there may be a need for legislative support to enable regulated action. In other sectors, the process to introduce regulations (usually through licence conditions) is already in place.

Who may be affected?

10.12. The following categories of business or person may be affected by these options.

Affected stakeholder	Description and issues to consider
Network operators	<p>This includes the businesses licensed to distribute or transport electricity, gas, water and to undertake rail services.</p> <p>The exact scope of licensed network operators affected could be limited, for example excluding those that serve private networks, or those with physical network scope or customer numbers below a certain threshold.</p> <p>Network operators, in this category, will mainly be affected by implementation and compliance costs.</p>
Clients	<p>This covers three distinct groups:</p> <ul style="list-style-type: none"> • Any non-regulated party promoting or installing infrastructure • Any regulated network operator installing its own assets across another sector’s utility assets • Landowners undertaking work that may affect the assets of an incumbent network operator. Landowners could include a very wide range of person, from individual domestic property owners to large public landowners <p>All clients may potentially benefit from the remedy options considered.</p>
Other infrastructure operators	<p>This includes private and public infrastructure operators that are not subject to economic regulation. For example, oil pipelines, highways, flood defences.</p>
Consumers	<p>Consumers are the end-users of the product distributed or transported by regulated</p>

	networks or passengers of rail services. Consumers connected to regulated networks must, in most cases, meet the costs incurred by networks through their utility bills or fares.
Funders	This represents the immediate funders of projects. Funders may be wholly private, whether individuals or institutions, supported by public subsidy or directly funded by state grants.
Households and businesses	Most utility services are essential services, meaning the households and many businesses have no discretion over whether to purchase services or not. The cross-sector nature of this issue means that impacts by one utility sector on another may, ultimately, be borne by households or business.
Economic regulators	Means the organisations formed by statute with regulatory oversight of defined activities and firms affecting utility and rail services, specifically Ofgem, Ofwat, Ofcom and ORR. The main impact in regulators is the cost of implementing or acting on remedy options. This category also includes UKRN, should regulators choose to use this network to co-ordinate or promote implementation.
Government	Other parts of central, national (Westminster or Scotland), or local government potentially affected by or implementing options.

The types of impact

10.13. We can identify a number of common, potential impacts likely to arise with any remedy proposal. For the range of options assessed in this case, we do not consider that social or environmental impacts are relevant, as we are not proposing a change to the underlying activity of installing or maintaining infrastructure.

Impact type	Description
Economic and Market impacts	<p>These can cover specific impacts, including:</p> <p><u>Economic activity.</u> The improvements, or costs, to economic activity by any of the affected parties; either affecting some relevant goods or services or the wider economy more broadly. This can include impacts on the technical, productive or allocative efficiency of individual firms or sectors; or impacts on household budgets or spending patterns; or impacts on the wider economy, such as labour markets, demand for public services or infrastructure etc.</p> <p>In this case, the main impact is on the development of infrastructure and management of utility networks. Clients' focus is on the economic installation of new assets crossing incumbent networks. Utility networks must effectively operate and manage their networks, ensuring continuity of supply to customers and provision of new connections. Both of these activities can affect the wider economy.</p> <p><u>Competition.</u> This is the impact on the strength or character of competition between rival firms and the ability of consumers to exercise choice. This can include competition 'in the market', where firms compete directly for customers; or 'for the market' where firms compete for an exclusive contract (e.g. franchise) or the technology or economies of scale tip the market toward an exclusive provider. It can include the impact on barriers to entry, market concentration or comparison and switching costs amongst others.</p> <p>In this case, competition can be relevant to the extent that infrastructure projects, affected by interactions, form part of a wider competitive process, for example where parties compete to win contracts to install infrastructure.</p>

Social impacts	Social impact affect communities through distributional impacts, i.e. changing the incomes or purchasing powers of different segments or society, impacts on the services used by communities (e.g. schooling, health services) or impact on equality or civil rights.
Environmental impacts	Environmental impacts are those that may cause or exacerbate a positive or negative effect on the natural or built environment; or may be affected by environmental effects, such as flood risk.

10.14. Two additional impacts arising, usually directly affecting those subject to, or affected by, remedy actions:

- **Implementation.** This is the direct impact on those that must adopt or meet the requirements of a proposed option, and represents the immediate costs incurred to implement the option. These costs may include changes to business processes and practices, training, IT or equipment costs, contractual or legal costs and management time. Generally, implementation costs are a one-off expenditure.
- **Compliance.** The costs incurred by different parties to ensure compliance with the remedies. This would include any auditing or inspection costs and, potentially, legal and enforcement costs.

10.15. Implementation and compliance costs can fall upon the implementing regulator or government, the firms or persons directly affected by the requirements of obligations, or the customers of these organisations.

Impact assessment and appraisal

10.16. Appraisal is made against the option 0 (do nothing), considering the costs and benefits to different parties (where relevant) as a result of the proposed option. Therefore, only the costs and benefits that are additional (i.e. incremental or marginal costs and benefits) to those that would have been incurred if no action were taken (i.e. versus the 'do nothing' option) are relevant.

General considerations

10.17. Each option has been selected because it has the potential to meet our objectives, addressing the evidence of harm presented in this consultation (see Chapter 4). In appraising these options some general issues should be considered:

- Net costs and benefits. Network operators may act as clients from time to time. This means that any individual network operator may face a net benefit or net cost from each option depending upon the geography of its network, and the types of infrastructure projects it undertakes.
- Effectiveness. Effective co-ordination between clients and network operators is essential to improve interactions, and the greater number of parties adopting a remedy, the more successful it is likely to be. The remedy options should also be consistent with, or supportive of, other obligations on network operators arising from street works or the planning regime.
- This draft appraisal does not reflect any specific or unique circumstances relevant to different sectors or networks. Network operators and sectors vary in their approach to interactions; which may lead to more or less change needed to meet the different remedy options. For example, technology, operational practice or market structure may affect the extent that changes to current practices need to be made or the ease of adopting change across a sector as a whole, such as

where a concentrated market means fewer firms need adopt changes in order to affect most clients.

- These are draft options. A range of details are yet to be finalised. Not least for option 1, with the potential principles and reporting requirements falling between a prescribed and bespoke approach, each with different potential impacts. In addition, we have not yet received detailed or specific evidence as to the magnitude of costs or benefits from these proposals. Many of the projects undertaken are commercially sensitive, with network operators and clients cautious of revealing information to third parties (including UKRN). This has limited the extent that any quantitative assessment of impact has been feasible.

Option 1 – promoting good practice and transparency

Option 1	Impacts and stakeholders affected
Implementation	<p>The costs of implementing this option may initially fall on the following stakeholders.</p> <p><u>1) Network operators</u></p> <p>There are certain points in the engineering process (see Box 2, Chapter 3), where clients will need to interact with network operators. Each network operator will currently have in place some form of process to manage requests by clients and enter into agreements to protect in-situ assets, approve designs, supervise works and undertake diversions amongst other things.</p> <p>This assessment assumes that all network operators would be subject to the remedy. For very small regulated networks, these measures may be disproportionate given the volume of interactions, but we have no evidence to support this view at present. Other sectors may present less of an obstacle to clients, for example due to more straightforward engineering that makes crossing those assets less costly or an easier legal framework that makes agreements easier to reach.</p> <p>The implementation impact will depend upon how closely existing processes are to meeting the principles. We do not know what additional changes that network operators may need to take to meet the principles, not least because of the wide range of practices within and between sectors. However, it appears likely that network operators must review their current approach against the principles, expending management and legal resources to:</p> <ul style="list-style-type: none"> • Establish or update service standards to clients • Review charging practices and method of determining charges • Review dispute escalation process • Review relevant contracts and terms required of clients • Establish a process and management information systems to monitor volumes of interactions and performance against service standards • Inform and train staff of changes to processes • Amend the information provided to clients, for example through changes to websites, standard terms, schedules of charges etc. <p>Network operators must also implement a regular report. This should draw from information established to implement the principles, in particular monitoring performance against the service standards offered to clients. Whether prescribed or bespoke, implementation of a report may lead to the following additional costs:</p> <ul style="list-style-type: none"> • Processing and presentation of data on volumes of interactions and performance • Collection of clients' views. This could be built into the process followed with clients, ask for informal feedback or undertake professional surveys

- Design, drafting and publication of a report. Reports need not be lengthy, but could be short, factual documents published electronically
- Management time reviewing and responding to findings of the annual report, potentially leading to process and system changes to improve service to clients

The overall costs incurred may be influenced by two other factors. First, network operators may act as clients from time to time, and may therefore benefit from an improved process. Second, sector network operators could share some of the costs through support from trade or professional bodies, developing standard or model processes, forms, contract terms or performance measures. These bodies could offer a method to gather clients' feedback too, which may be preferable should clients have concerns over the impact on commercial relationships from providing feedback.

II) Economic regulators / UKRN

Economic regulators and/or UKRN will incur most costs in developing and reviewing the results of the annual reports:

- A prescribed approach imposes a cost on regulators to develop detailed guidance;
- A bespoke approach may lead to additional cost in assessing or analysing the overall picture presented by the reports, albeit that specifying a minimum set of information may mitigate this.

III) Clients, consumers and other infrastructure operators

To make this option as effective as it should be, clients and other infrastructure operators should participate in the implementation process, requiring some management cost.

To the extent that network operators incur significant costs, these may in part be recovered from clients (albeit that implementation costs are a one-off type of expenditure).

Compliance

I) Network operators

The final form of the reports are not yet finalised, including whether the reports should be annual or less frequent and the extent that a common approach may be developed (either prescribed by regulators or developed by industry, trade or professional bodies.)

Networks would likely face some ongoing costs: compiling an annual report, drawing on the management information systems established to monitor performance indicators; additional one-off costs should changes to interaction processes or practices be necessary.

II) Economic regulators

These proposals commit regulators, through UKRN, to a follow-up review drawing on the evidence presented in the annual reports amongst other things. No on-going monitoring is envisaged, with the industry being largely self-regulatory based on meeting the proposed principles.

III) Clients

Clients would be expected to support the annual reports, by providing feedback or sharing their views. To make this effective, clients may need to develop or keep their own records on interactions and the delivery and performance standards provided by network operators.

Effectiveness

This remedy option is voluntary: no formal processes are proposed to oblige or require regulated network operators to adopt the principles, annual reporting or any other

	<p>measure. This has a number of pros and cons.</p> <p>First, these proposals may be relatively quick to implement. No legislative process means that network operators may begin to adopt improvements promptly, albeit that co-ordination within a specific sector to standardise the process for interactions may take longer to implement. Trade or professional bodies may play a role in smoothing the adoption of clearer processes. Second, the solutions developed are likely to respond to clients' needs more quickly, making the outcome relevant to clients' practical concerns.</p> <p>Drawbacks arise if some network operators do not participate, directly undermining our aim to make interactions quicker, easier and cheaper. This is especially critical given the growing frequency of interactions. However, as noted in Chapter 4, there are examples where industry has led on the implementation and improvement of common practices or issues. Whilst, network operators stand to be net beneficiaries depending upon the extent they act as clients.</p> <p>More generally, other infrastructure operators are not bound by this process, but are a potential cause of problems if clients interact with their assets.</p>
<p>Economic impacts</p>	<p><u>I) Network operators</u></p> <p>These proposals do not affect operators' ability to recover costs reasonably incurred when providing services to clients interacting with their assets. As noted above, the net impact for operators depends upon the extent they act as clients.</p> <p><u>II) Clients</u></p> <p>This option may reduce some of the direct fees or charges faced by clients. However, by acting on the 'frictional' costs of managing interactions, the 'externality' that clients currently face from project overruns or uncertainty should be addressed. Previous evidence suggested a potential impact of 12-18 months to the length of a project.</p> <p><u>III) Other stakeholders</u></p> <p>Consumers and, ultimately, funders and households stand to benefit from an overall improvement to interactions, reducing the aggregate cost incurred.</p>
<p>Competition impacts</p>	<p>There may be no net impact on competition, to the extent that clients competing to own or install certain infrastructure projects benefit equally from these measures. The interaction services provided by network operators to clients are generally non-contestable, with the network retaining the monopoly over measures to protect its in-situ assets.</p>

Option 2 – Legislative reform

Option 2	Impacts and stakeholders affected
<p>Implementation</p>	<p><u>I) Network operators</u></p> <p>In practice, the impacts are likely to be similar to option 1. The experience with street works suggests that trade associations can be an effective mechanism to reduce the burden on individual networks.</p> <p><u>II) Clients</u></p> <p>As with option 1, participation of clients in developing any supporting code of practice would be welcome, but require commitment of relevant management and legal resources.</p>

	<p><u>III) Government / Economic regulators</u></p> <p>The underlying legislation, code of practice, monitoring and enforcement regime would be led by central government. Economic regulators may play a role in the ongoing monitoring of final arrangements.</p>
Compliance	<p><u>I) Network operators</u></p> <p>Operators would need management information systems to demonstrate compliance with the code of practice and their duty to co-operate with infrastructure projects.</p> <p><u>II) Government / Economic regulators</u></p> <p>The ongoing monitoring arrangements would need to be included within the scope of legislation. This could introduce a formal role for regulators.</p>
Effectiveness	<p>A legislative approach, leading to a mandatory code of practice, would ensure that all relevant Network Operators are subject to the obligations. However, to fully address the costs faced by clients other infrastructure operators should be included within scope. Further, the strength of current evidence, which indicates a mix of good and poorer practice, does not support a legislative measure in the short term.</p>
Economic impacts	<p>As option I, clients, including network operators, stand to benefit from greater clarity with the process of interactions, reducing ‘frictional’ costs. Further, a statutory recognition of the importance of clients, and their role in installing new infrastructure, may strengthen the overall bargaining position of clients when agreeing terms.</p>
Competition impacts	<p>Infrastructure projects or clients that are not recognised within the legislation may face a poorer experience (and potentially higher cost), as network operators prioritise services to connected customers or passengers and to clients identified within the legislation.</p>

Option 3 – Regulated standards

Option 3	Impacts and stakeholders affected
Implementation	<p><u>I) Network operators</u></p> <p>Management and legal resources of each affected network operators would be dedicated to the process of defining and developing the minimum information disclosure to clients, regulated timescales for different parts of the interaction process and charging methodology.</p> <p><u>II) Clients</u></p> <p>As with option I, participation of clients in developing the regulated standards would be welcome, but require commitment of relevant management and legal resources.</p> <p><u>III) Economic regulators and government</u></p> <p>Regulators would expend significant resources to develop appropriate licence conditions, supporting guidance and monitoring regime. In addition, depending upon the sector, supporting legislative reform may be necessary to ensure that the process of interactions clearly fell within regulators’ remit, and the relative weight this is to be given compared to regulators’ other statutory duties.</p>
Compliance	<p><u>I) Network operators</u></p> <p>Operators would need management information systems to demonstrate compliance with its regulated standards, and provide further information on request by the sector regulator.</p>

II) Economic regulators

Some resource is required to monitor compliance with the regulated standards. Enforcement processes are already established and could readily be extended to cover these regulated standards.

Effectiveness	This option would cover all regulated network operators. Other asset operators would not be covered by this regime, with a potential impact on clients crossing those assets. A regulated approach may be less responsive to the needs of individual clients, if it hinders network operators from improving their processes in response to clients' feedback. As for option 2, the strength of evidence currently available does not support a regulated approach in the short term.
Economic impacts	Economic impacts are similar to option 1, reducing frictional costs of interactions.
Competition impacts	None anticipated, given the non-contestable nature of network operators' services to clients.