Low Pressure Operational Business Plan

LOW

Scotia Gas Networks
in partnership with Mutual Energy

Statement from the CEOs of Scotia Gas Networks and Mutual Energy

John Morea
CEO Scotia Gas Networks

Paddy Larkin
CEO Mutual Energy

As CEOs of our companies we are delighted to bid together on this exciting opportunity to develop the gas market to the west of Northern Ireland. We believe the combined strengths of both our companies can best service the needs of the gas consumer and industry in this region.

We are submitting a linked bid for transmission and distribution, because by working together we can create significant synergies which ensure that the regulatory authority can achieve best value for the project.

Mutual Energy's mission is to provide a safe, reliable and efficient gas and electricity transmission service to our direct customers and to consumers throughout Ireland. We also maximise value to our stakeholders by operating efficiently and by reducing the cost of capital and operating costs. We operate both the SNIP subsea pipeline and in-country transmission infrastructure on a fully mutualised basis ensuring all value generated goes back to Northern Ireland energy consumers.

Scotia Gas Networks is the second largest operator of gas distribution infrastructure in the UK. We have been an active participant in the development of the gas market in Northern Ireland since our creation and our teams were responsible for the commissioning of the major transmission pipelines into and through the province. We provide various essential services to all the operators in the market, working with Phoenix Natural Gas, Bord Gais Eireann and Firmus Energy as well as Mutual Energy's gas businesses; providing maintenance, emergency response and gas control services. We also have a strategic linkage with Airtricity, the major gas supplier in Northern Ireland, who is owned by our largest shareholder.

Our joint approach will also allow us to fully utilise the logistics chain of the wider SGN group for both transmission and distribution, allowing the option of securing the transmission construction from a wider range of contractors rather than a single large multi functional contract.

Working in partnership we can deliver the economies of scale, engineering expertise and innovation of SGN together with the market knowledge and experience, focus on local service and financial efficiency of Mutual Energy to achieve the best result for this important project.

ONE

Chapter One

Business Plan Overview

1.1 Purpose of business plan

The purpose of this plan is to support our application for the Gas to the West (GTTW) low pressure licence. In this plan we will demonstrate how we will establish a business and services that will allow gas connections in the licence area to meet their maximum potential penetration.

We will also demonstrate our market leading capabilities to build and operate the infrastructure to the highest standards of safety, service and quality. We will show how we have derived our costs for establishing this new business and provide information that shows how we quickly move to provide best value services for the Northern Ireland (NI) consumer. We will also provide technical support to the entries in the data entry workbook and our assessment of Weighted Average Cost of Capital (WACC).

Innovation and knowledge transfer are critical to the long-term success of the initiative and also to the broader requirements of the gas consumer in NI. We have given examples of where innovation can directly address the immediate objectives of the plan and have also included an innovation annexe to showcase our capability across a range of initiatives.

1.2 Executive summary

Overview of Proposal

We welcome the opportunity to submit our application for the low pressure licence on the Gas to the West initiative. Scotia Gas Networks (SGN) has long been active in NI supporting both low and high pressure operators, as well as supporting the commissioning of existing pipelines; this opportunity allows us to develop our business relationships and share the benefits of developments in the GB regulatory market with NI.

We are jointly bidding with Mutual Energy as the lead for the high pressure network. We will be the construction partner for Mutual Energy and this will allow a co-ordinated approach to design between the high and low pressure networks and will allow us to cost optimise between both networks without the hindrance of different operators or ownership structures.

We believe that parts of the high pressure network could comfortably operate below 7bar reducing costs for gas consumers and that our co-ordinated approach will also allow us to plan works together to accelerate delivery of gas to local markets. We will use our internal resources, systems and procedures alongside external contractors to mobilise and deliver the infrastructure in a safe efficient and economic manner (see Chapters 2–5).

We currently manage 74,000km of distribution network infrastructure in Scotland and the South of England and our two networks have demonstrated a track record in both financial and operational excellence during the recent five year price control (GDPCR1). Our two networks are currently ranked first and second out of the eight networks for opex efficiency and have consistently delivered our 97% emergency standard (a key licence condition) even during extreme winters. The SGN group ranks first throughout GDPCR1 on customer service compared to other ownership groups and we have delivered all our mains replacement targets with the Health and Safety Executive (HSE).

During the last five years we have delivered around 100,000 new connections and have significantly exceeded our fuel poor connection targets with more than 20,000 customers connected to date. We are ranked as the number one GDN on customer service as measured by OFGEM and have introduced many innovations to support out interactions with customers. This demonstration of our overall focus on providing connections and our ability to support vulnerable customers, should give the Northern Ireland Authority of Utility Regulator (NIAUR) confidence we can meet the project expectations.

We believe that the key to success in developing the network is to give customers a proposition that addresses all their needs on the conversion to gas. We plan to form partnerships with gas suppliers, heating systems installers and other parties, so that we can address the customer's needs in a single visit. We have held initial discussions with Airtricity to develop this approach and believe that we will exceed the Fingleton McAdam (FMA) study forecasts. We plan to provide support to owner-occupiers for their costs to make the change. Alongside a focus on commercial and industrial customers in the early years and working in partnership with Northern Ireland Housing Association (NIHE), we believe that we will meet and then exceed the connections forecast of the FMA study (Chapter 7 details). We will set ambitious roll-out targets for our management to expand our customer base driving efficiency and meeting the goals of the initiative.

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We will also focus on best practice in communication with our stakeholders.

We will engage with stakeholders across all interest groups, including residential, industrial and commercial customers, landowners, NIHE, local councils and community groups. As gas is a new proposition in the eight towns, allowing parties to understand our offering and role in the community will improve take-up.

The published criteria highlight the importance of innovation and technology transfer for the development of the Northern Irish market. We believe we are best placed to achieve these goals. We see innovation as a way of adding value to our business whether through the introduction of process improvements or new engineering techniques, products of services. We have led the industry with introducing several ground breaking initiatives:

- We have introduced the core and vac technology to quickly repair damaged infrastructure.
- We introduced an online quote, pay and order system for connections.
- We launched the first commercial bio-methane gas to grid projects in the UK.

We have been recognised by both the gas industry and the broader utilities sector and have received national awards. In the Network Innovation Competition we were successful in being awarded funding by Ofgem for two projects:

- Robotics, where using CISBOT technology will allow extensive work to be carried out on the gas network without the associated disruption of road works; Robot technologies would work inside live gas mains to deal with any distribution issues.

- Opening up the gas market, where we aim to increase competition for network entry by demonstrating that gas that meets the European EASEE specifications but does not meet the GSMR standard, can still be safely distributed in the UK.

We believe such innovations can be transferred to the Northern Ireland market and details of these projects and other innovations are provided in our separate Innovation Annexe. We also believe that maintaining excellent relations with the Regulator is key to ensuring best value for customers and developing realistic plans for enhancing service. We have a track record of working with Ofgem (the Office of Gas and Electricity Markets) to improve gas distribution in the UK and we are very supportive of the RIIO framework introduced by them.

We have demonstrated in this application our ability to meet the financial standing criteria. The SGN Group has significant financial strength demonstrated by a RAV of almost £5bn, £1bn of equity/shareholder loans from our three shareholders (Scottish and Southern Energy plc, Borealis Infrastructure, Ontario Teachers' Pension Plan) and strong operational cashflow. This has led to an excellent liquidity profile which has all contributed to our ability to maintain solid credit ratings since inception in 2005 (Baa1 Moodys, BBB S&P and BBB+ Fitch – senior unsecured).

We have raised £3.5bn of bonds during the last eight years whilst maintaining a £280m bank facility and through these transactions, we have built an excellent working relationship with our banking group (Lloyds, RBS and RBC). Our shareholders structure has remained unchanged since inception which demonstrates their commitment to the long-term stewardship of our regulatory assets.

We have modelled both the capital and operational costs for the life of the licence, developing cost effective approaches to meet service standards and expected allowances. We have examined several approaches to mobilisation and believe we have a strategy to keep costs to the minimum (see Chapters 3, 8 and 9). We have taken professional external advice from utility industry specialist Oxera on a suitable cost of capital. We have been advised that suitable WACCs are 6.2% for the first five years and 5.5% thereafter. Our workbook modelling reflects these targets and is based on current market expectations of debt and equity premiums.

1.2.1 High level key business operational objectives

We have the following values that drive all our business operations:

Safety: All our activities must operate at the highest standards of safety, this feeds though to risk management, competence assessment and interactions with suppliers.

Communication: Good communication is at the heart of our business, we engage with both our internal and external stakeholders. Our employees and contractors understand the standards of work required and the processes that need to be followed. We also maintain open and productive relationships with Ofgem and other governmental and regulatory bodies.

Commercial management: Strong commercial management is key to ensuring good value to the gas consumer in NI. We will use a centralised procurement function to drive value and use best practice contractual and financial management processes to monitor and control our activities.

Operational Excellence: Best practice operations in the long term reduce costs and improve standards of service. We look to bring innovative solutions into our business to enhance all our activities. Strong processes combined with competent staff and contractors avoid rework and ensure work is completed efficiently.

Customer service: Understanding customer needs and meeting their expectations is key to developing the gas market in NI. We also recognise that maintaining the highest levels of responsiveness to reported escapes, customer concerns and enquiries, will be a foundation for success.

The key operational objectives for the mobilisation period are:

Establish the business: Set up corporate governance and initial management appointments; establish base level operational and safety systems; implement IT infrastructure; identify and procure premises; establish stakeholder engagement processes.

Design the Network: Validate the market forecasts of FMA, creating high level and operational designs for delivery of forecasts; define interfaces and communication strategy with high pressure network; identify procurement and service needs.

Establish external and governmental relationships: Establish strong working relationships with NIAUR. HSE, NIHE and DETI. Also set up process for dealing with local councils and other stakeholders who are directly (or indirectly) affected by our construction works or operations.

Establish the contracts: Carry out procurement process for materials and suppliers of works and services.

Establish the business partnerships: Develop marketing approach with suppliers, heating installers and other third parties, using their knowledge to co-ordinate our marketing plan and customer incentives.

1.2.2 Alignment with the Published Criteria

Throughout the plan we have demonstrated how our proposals align with the published criteria. The locations of specific criteria are detailed below:

(i) the Applicant's proposals as to engagement with key stakeholders:

We recognise that stakeholder engagement is key to the success of the initiative and within our plan we have a detailed stakeholder engagement plan in Chapter 3. We also recognise that stakeholder engagement is key to the business development activities in Chapter 7.

(ii) the skills and experience of its key members of staff:

We operate at scale in the UK and so have experienced staff in all aspects of the business. The following members of staff will play key roles in the establishment of the business:

Managing Director Scotland Gas Networks
Head of Business Development
Director of Financial Operations

These individuals have extensive experience of building and operating a gas distribution business as well as the management of finance and regulation. Our Head of Business Development also has experience of start up operations for new businesses. (Chapters 2–3 detail).

(iii) the skills and experience of any other persons on whom it proposes to rely, and the nature of its arrangements or proposed arrangements with those persons:

Although we have all the skills and resources within our business to manage and perform the activities of the initiative, we recognise that the use of contractors is most economic where volumes are high or activities are short lived. We propose to use the skills and resource of our existing businesses via managed service arrangements. We will also set tendered framework contracts with local contractors to provide emergency support and initial build out of infrastructure (Chapters 2 and 3 detail). We will also engage with suppliers, heating installers and other third parties to jointly develop the market (Chapter 7 details). As we are presenting a linked bid with Mutual Energy regarding the High Pressure network bid we will work with them to develop our knowledge of the local market and practices and will work within a joint venture for our joint activities.

(iii) its identification and proposals as to the management of risk:

The management of risk and safe control of operations are at the heart of our business; we will import our business processes in this areas to ensure the new operation benefits from the best practice procedures we currently operate. We manage risk at all levels within the business maintaining risk management processes at both corporate and operational levels, (Chapter 4 details).

(iv) its proposals as to the use of tendering arrangements:

SGN and our service providers operate a state of the art procurement management system as part of the Oracle financials suite. We will be fully compliant with the utilities procurement regulations where appropriate as well as using best practice procurement procedures throughout our activities. We can also take advantage of previous procurement exercises and our considerable buying power in both materials and services. (Chapters 3, 5 and 6 provide details).

The Applicant's description of how the data that is supplied in its completed Data Input Workbook was derived, including:

(i) the completeness with which it has described the derivation of that data:

We have attached an additional Excel workbook to outline the derivation of the core costs input to the Data Input Workbook in order to allow good visibility of the calculations and processes involved (see Annexe B).

(ii) its identification and application of cost drivers:

We have identified the length and maturity of the network and the expected number of connections as defined by the FMA study as the key cost drivers regarding the operational costs of the network.

Where resources are being provided from the existing SGN resource, we have used the proportion of the number of connections or length of network to allocate the cost pools.

In relation to the market development and associated incentive costs we have used the expected connections phasings and our existing relationships with branding and marketing specialists to define the levels of spend required to drive the market penetration (see also Chapter 8).

(iii) the robustness of any assumptions made by it:

Our assumptions have been based on our extensive experience as a gas distribution network operator. Where possible we have based cost calculations on existing rates, taking into account any cost variations appropriate to the specific NI market place.

As relevant we have referred to information available from the recent GD14 Price Control settlement in order to make estimations of workloads and associated operational costs. (Chapters 3 and 8 detail).

(iv) its use of evidence that is verifiable from its previous experience:

We have referenced our expertise and experience in terms of cost management as verified and published by Ofgem where relevant to the application, and have detailed this within all relevant chapters.

(v) its identification and quantification of risk:

We have a robust and detailed approach to risk management, as detailed in Chapter 4. This process has been applied to the risks perceived within the Gas to the West project. We have limited the risks listed to those deemed to have a significant potential impact on the project. Each risk has been assessed and scored to allow appropriate ranking and review. (Chapter 8 details).

(vi) its efficiency improvement plan; and

Our efficiency improvement plan focuses on the economies of scale that will be gained as the network develops in terms of length, maturity and customer numbers. We envisage that as construction workloads decrease (following the initial construction phase) and operational workloads stabalise, we will move from a contractor to a direct workforce model, with a view to reducing costs and driving excellence through our delivery of service.

Equally, as the network matures it is our view that costs associated with market development and incentivising connections will reduce as word of mouth, established brand confidence and the overall development of the gas market place in NI moves the marketplace from an initial drive from early adopters to the mature market experienced by our existing networks. (Chapter 8 details).

Innovation adds value to our business and our customers. We believe our resource, commitment and approach to innovation will provide a significant opportunity for technology transfer and will bring efficiency improvements to any network we operate in NI. (Our Innovation Annexe details)

Below we describe our ability to manage all the processes and resources necessary to build and operate the lower pressure network in a timely, efficient and safe manner under the licence (or extension of licence) if it were granted, in particular:

(i) Our experience of managing the processes and resources necessary to construct a lower pressure network and operating a lower pressure network:

We are the second largest distribution network operator in the UK, holding the gas distribution licences in Scotland and the south of England. We have constructed LP and HP pipelines at scale for our mains replacement programme, as well as for network extensions and reinforcements. We operate at the highest standard of safety and can exploit economies of scale that we enjoy throughout our business (Chapters 3–6 detail).

(ii) the skills and experience of any other persons on whom we propose to rely in managing the processes and resources necessary to construct or operate a lower pressure network and the nature of its arrangements or proposed arrangements with those persons:

We do not intend to rely on any parties outside our group to manage or operate the processes or resources necessary to construct the low pressure network. We may use contractors to perform specific activities (Chapters 2–5 detail).

(v) its proposals as to the securing, mobilisation and management of the internal resources necessary to construct a lower pressure network:

We will secure internal resources for mobilisation from our existing resource pool, wherever possible, with additional specific resources being provided under MSA from our group businesses. Key management appointments will be agreed at the board level and we will use an open recruitment process wherever possible (Chapter 2 and 3 details).

(vi) its proposals as to the securing, mobilisation and management of the external resources necessary to construct a lower pressure network:

We will secure external resources for mobilisation through existing framework agreements with suppliers, wherever possible. Where new relationships are required we will follow our procurement processes as detailed in Chapter 6 (Chapter 2, 3 also details).

The ability of the Applicant to maximise the number of premises connecting to a gas network under the licence (or extension of licence) if it were granted to the Applicant, and in particular:

(i) the Applicant's experience of achieving connections in any area not previously supplied with gas through a gas network;

We have significant experience in providing network extensions and new connections. During 2012/13, we completed 45km of new mains infrastructure to existing housing and completed 17,000 services. These were provided directly for owner occupiers or delivered in collaboration with local authorities, installers and third-sector organisations. Many of the projects have taken advantage of government funding and supplier-led schemes to support energy efficiency improvements. Since 2009 we have operated an Assisted Connections scheme that has to date delivered in excess of 20,000 services to fuel-poor or vulnerable customers (see Chapter 7).

(ii) the skills and experience of any other persons on whom it proposes to rely in achieving connections in areas not previously supplied with gas through a gas network, and the nature of its arrangements or proposed arrangements with those persons;

As discussed previously we will have a contract arrangement in place for the construction of the mains and services in each of the towns. The skills and competence of our contractors will be managed as detailed in Chapter 2, Section 2.1.3.

We will engage with local partners from the private, public or third sectors to help us complete appliance installations, shape our marketing incentives and identify areas or communities requiring connections. We will use their skills to provide advice and promote energy efficiency grants, or work with them to build their skills and competencies in gas utilisation such that they can be directed towards appliance installation services, encouraging potential commercial and domestic consumers to switch to gas.

This will be the means by which we will meet (and outperform) the expected pattern of connections and we will develop the necessary strategic alliances or partnership arrangements to enable this (see Chapter 7).

(iii) its proposals as to the development of relationships with businesses and social landlords, and experience of doing so;

By drawing on our group strengths we will create a separate unique brand identity for our licenced business in NI. We will engage locally with businesses by hosting events and seminars in each of the towns, designed to inform the business community and encourage connection applications.

In parallel, we will engage with trade associations, representative bodies and businesses with a national presence to promote the benefits of gas connections and gas as the fuel of choice. In addition we will proactively engage with business users on a one-to-one basis to provide technical advice and information about appliance conversion or new gas installations.

The NIHE is the main social landlord and we have already engaged with them to map out at a high level their properties in the towns of interest. Given their commitment to taking gas as a fuel of choice, then, as a preferred bidder, we will engage directly with the NIHE to review their budget plans and explore opportunities to defer (or bring forward) heat replacement projects across the licence area. This will be a key factor in developing our build plan and construction phasing and will be a model for discussions with other social housing providers.

Engagement of this nature is familiar to us through the promotion of our Assisted Connection scheme in our existing distribution networks. We regularly attend local or national forums to promote the scheme and provide a service to local authorities and other registered social landlords to review their housing stock for eligibility in our scheme and to propose projects that maximise the scheme's connections potential.

(iv) its proposals as to the promotion of connections to vulnerable consumers, and experience of doing so.

Within our existing networks we operate an Assisted Connections scheme that has on average provided each year since starting some 4,000 connections to the vulnerable or fuel poor. We can engage directly with customers but more often work with partners who have the skills and knowledge to progress the in-house works (insulation measures or heating installations) necessary for a successful extension project. We work closely with organisations such as the Energy Saving Trust, and private or third sector organisations with an interest in improving energy efficiency and protecting vulnerable groups. We have sponsored National Energy Action fuel poverty forums and worked with suppliers to develop schemes under the Carbon Emissions Reduction Target, which provided rebates to fuel poor customers.

It would be our intention to take this experience and apply it to providing connections for vulnerable customers in NI.

TWO

Chapter Two

Organisation

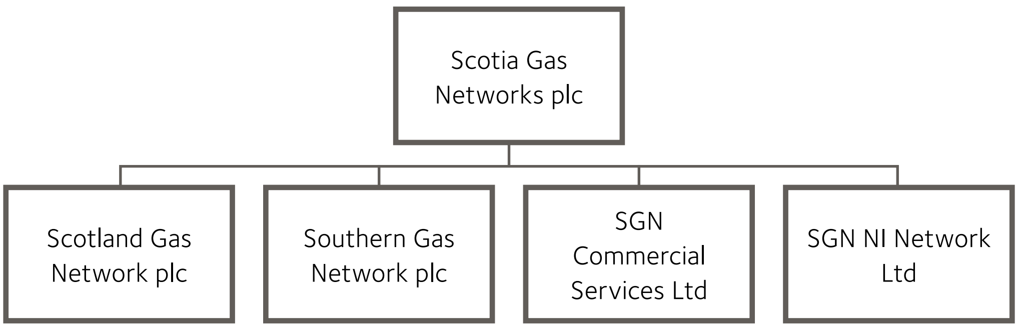
2.1 Structure

2.1.1 Rationale for organisational structure

We currently operate two regulated gas distribution networks in Great Britain, covering Scotland and southern England (south of the River Thames). We also operate an unregulated Commercial Services business, which primarily delivers the Meter Asset Management (MAM) activities for a number of Gas Suppliers including SSE and supports the licence requirement for the regulated businesses to act as Meter Provider of Last Resort.

To become the leading gas network in NI, we fully understand the twin responsibilities of developing a new connections market and establishing a safe, efficient and reliable gas network. A strong local presence supported by the group high-level structure shown in Figure 1 will allow us to draw on our existing strengths to develop the critical elements of governance and control that are essential for the network development and operation – and are key to ensuring successful delivery of our licence obligations.

Figure 1 – High Level Group Structure



We will appoint a Director, based in NI, who will be responsible for all our NI business (which will include involvement in the HP construction, should our joint venture bid with Mutual Energy be accepted). The supporting management team will comprise the Head of Engineering, Head of Business Development and a Head of Finance/Regulation. Collectively they will be responsible for liaising with the NIAUR and Government at a national and local level. They will be pivotal in establishing and maintaining the external partnerships that are essential for our success and ensuring the business remains focused on complying with our licence obligations and delivering gas safely, reliably and efficiently. Our proposed structure for the management of the network is shown in Figure 2.

The delivery of business objectives across these functions will be supported through Managed Service Agreements (MSAs) with other group companies. For example, financial functions provided under an MSA will include the provision of Accounts Payable and Accounts Receivable functions, Tax, Pensions, Insurance and Corporate Financing. Connections Design is another example of an activity that will be provided under an MSA.

We believe the provision of back office support through an MSA allows our management team in NI to resource for, and focus on, the essential key activities associated with growing the business and operating safely and efficiently, while taking advantage of our group strength and ability to operate at scale.

2.1.2 Explanation of the range of business activities and associated resource levels.

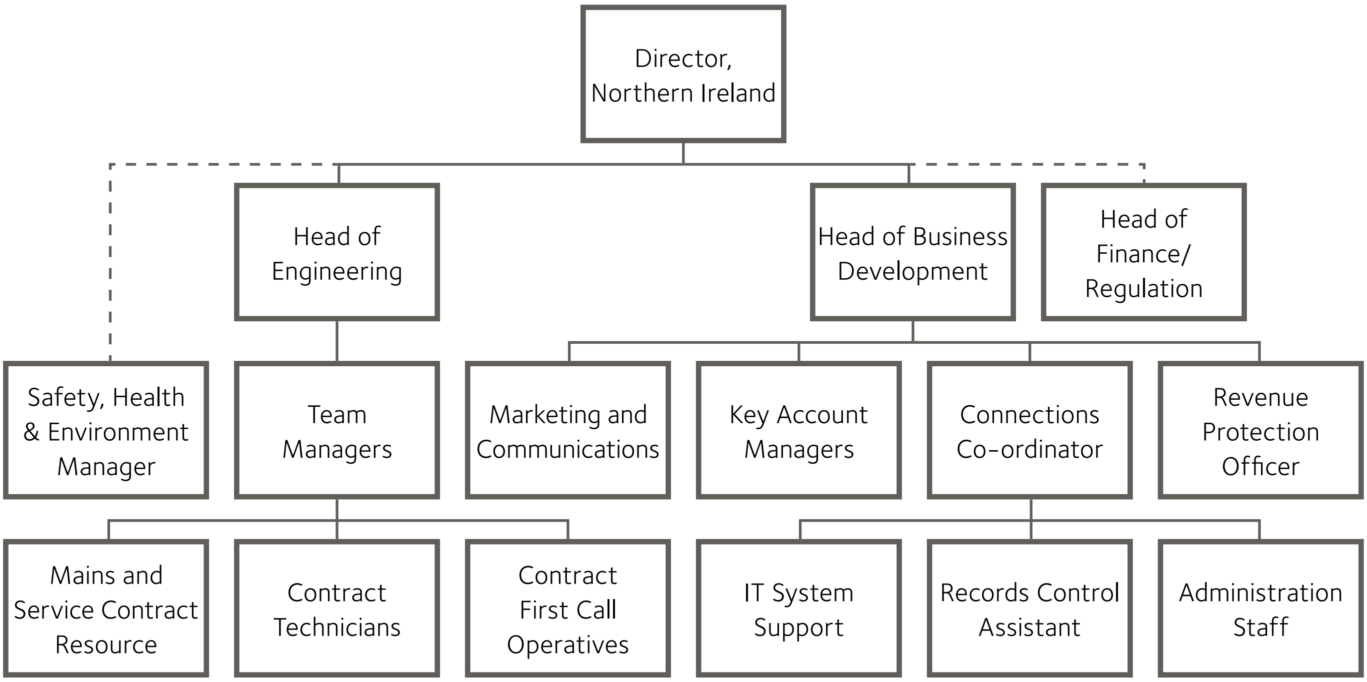
The Head of Engineering, supported initially by three (reducing to two in future years) directly-employed Team Managers, is responsible for the safe construction and operation of the network. Key tasks are the management of contractor resources involved in mains and service construction, the provision of the emergency response service, meters and pressure reduction installations (PRI) and commissioning.

The adoption of a predominantly outsourced labour model brings an appropriate scale to the business in the early years. This will not however, diminish our commitment to operate safely and ensure our customers' needs are fully met.

The Head of Business Development, along with 10 directly-employed staff, takes responsibility for establishing and maintaining the business relationships and strategic partnerships that will deliver our connection targets. Together with the Head of Engineering, they will ensure our construction plan is phased to meet customers' needs and efficiently maximises opportunities for connections. They will oversee the accurate collection of asset management data ensuring our supply point administration and metering systems, and other back office systems and processes are compliant and fit for purpose.

The Head of Finance and Regulation, supported by specialist staff from our group businesses, will provide support to the Director on cost control and analysis, management accounting and regulatory reporting. They will be expected to build a strong positive relationship with the NIAUR and lead on managing our licence obligations.

Figure 2 – Organisational structure



2.1.3 Proposals to manage contract operations

We have a robust management procedure for control of contractors that ensures contractors working on our behalf are competent to do so, follow safe systems of work, are compliant with all relevant legislation and conform to our internal procedures and instructions. These arrangements will be extended to cover our NI networks and means we will effectively control contractors through:

- inviting approved contractors and suppliers to tender or be employed
- pre-qualification to demonstrate their range of competence
- their experience of work execution and provision of safe systems of work (including use of appropriate tools and equipment)
- compliance with Procurement rules/directives (see Chapter 6)
- audit, inspection and quality assurance
- performance monitoring and review
- the requirement for Contractors to hold recognised competencies (eg Accredited Certification Scheme for Gas Safe registration; or appropriate Network Construction Operative qualifications) and
- monitoring their competence through our competency assurance scheme (through evidence of knowledge, skills, experience and qualifications).

Our contractor management processes will make clear our responsibility to:

- verify that each contractor has effective processes in place to ensure that their employees and any sub contractors working on our behalf are fully competent to carry out their duties
- ensure the contractor is provided with relevant information (eg – known hazards) to help them work safely
- establish clear lines of communication with the contractor
- evaluate the contractor's work method statements, including associated risk assessments to ensure all significant Safety, Health and Environment (SHE) hazards have been identified and adequately addressed and that proposed control measures are appropriate for that hazard and the work environment
- arrange a pre-start or inaugural meeting (where appropriate) to ensure that essential SHE information is shared between both parties
- ensure the principles of the Construction Design and Management Regulations are applied in the design and planning stages of construction projects
- ensure that work done by contractors is audited, inspected and the quality checked; and
- implement an appropriate regime for periodic reviews of contractor performance, particularly in relation to SHE performance and quality of outputs.

Our Team Managers will liaise with the contractors' agents and teams on a daily basis and take overall responsibility for ensuring the quality of work is maintained, our stakeholder engagement plans are implemented and that the contractor is complying with method statements that ensure the safety of the public and their own workforce. Our Team Managers will be assisted in this duty by a manager from our SHE team who will provide practical guidance and advice on SHE matters and carry out independent audits of work as required by our company policies and procedures.

Our Records Control Assistants will provide additional support to the Team Managers by being responsible for gathering accurate data on the contract performance. For example, the length, diameter, pressure regime and exact location of mains (or services) laid will be accurately recorded for the asset register and payment purposes.

The Connections Co-ordinator will work closely with the Team Manager and contractor representatives to ensure that issued work is appropriately targeted on effectively maximising the connection opportunities identified by the Business Development Team.

We will have a relationship with our contractor that takes advantage of the economies associated with our existing materials and metering contracts, whilst encouraging them to use our materials efficiently and to minimise waste.

The operation of the contract will be subject to regular joint review by senior management on both sides, with a view to improving performance and learning from best industry practice.

2.2 Resource levels

2.2.1 Explanation of internal and external resource levels and how these are made up

Our business delivery model is based on enhancing performance and utilising efficiencies by using a combination of direct-employed and out-sourced resources. Essentially the management team and a small number of support staff will be employed directly and will be responsible for managing the contractor resources delivering the mains construction, the services and meter installations, and the emergency response. With the construction workload reducing significantly over time, we believe this model offers the greatest flexibility and we will move to having more direct employees as justified by the changing workload over time.

Framework agreements will be established for the activities associated with network construction and operation, and we will develop alternative arrangements to engage external partners from within the licenced area or local communities to support customer engagement, heating installations and appliance conversions, such that when our distribution network is commissioned we will have a full range of capabilities to support and develop the market.

The management team will establish MSAs for specialist services including Procurement, Safe Control of Operations, Network Policy, Legal and Regulatory support. We will also draw significantly on our group resources for centralised services using an outsourced/in-house model. Services will include Customer Service, Finance Services, Corporate Communications and Human Resource Management.

The initial profile of internal and external resources is summarised in the figure below.

Figure 3 – Required internal and external resources

Year	1	2	3	4	5	6	7	8	9	10
Resources										
Director, Northern Ireland	1	1	1	1	1	1	1	1	1	1
Head of Engineering	1	1	1	1	1	1	1	1	1	1
Team Managers	3	3	3	2	2	2	2	2	2	2
SHE Manager	1	1	1	1	1	1	1	1	1	1
Records Control Assistant	2	2	2	1	1	1	1	1	1	1
Head of Finance/Regulation	1	1	1	1	1	1	1	1	1	1
Head of Business Development	1	1	1	1	1	1	1	1	1	1
Key Account Managers	2	2	2	2	2	2	2	2	2	2
Marketing and Communications	1	1	1	1	1	1	1	1	1	1
Connections Co-ordinator	1	1	1	1	1	1	1	1	1	1
Revenue Protection Officer	1	1	1	1	1	1	1	1	1	1
Administration	4	4	4	4	4	4	4	4	4	4
Total (Internal Resource)	**19**	**19**	**19**	**18**	**17**	**17**	**17**	**17**	**17**	**17**
Main Laying Operatives	20	16.5	11	5.5	5.5	5.5	5	5	5	5
Service Laying Operatives	0	16	10	8	8	8	8	7	7	7
First Call Operatives	0.04	0.4	0.51	0.59	0.76	0.86	0.95	1.04	1.13	1.22
Total External Resource*	**20.04**	**32.9**	**21.51**	**14.09**	**14.26**	**14.36**	**13.95**	**13.04**	**13.13**	**13.22**

- First Call Operatives are shown as Full Time (this includes for meter fitting and maintenance operatives)
- *Total External Resource relates only to network construction and operation activities. It excludes for example any of those strategic relationships that will be established to assist with the installation or conversion of appliances

2.2.2 Assumptions associated with the build up (including efficiency improvement plan)

We have assumed that gas is available at the Transmission AGIs in year 1. The management team will be in place prior to the year 1 start to begin discussions with stakeholders and key customers, set up of construction contracts and establish arrangements for working with delivery partners on customer engagement and appliance utilisation.

Chapter 3 describes our mobilisation plan for these activities.

In estimating the length of infill mains to be laid and the associated team resource, we have used cost information from the GD14 determination and the connections penetration assumptions contained in the FMA study. Our assumption therefore is that for Owner Occupiers and NIHE homes, the connections numbers shown in the NIAUR Annexe 10 spreadsheet represents 70% of those that might be connected. We have further assumed that the new build figures represent 100% of connections.

For gas emergency calls we have assumed a call rate in line with those detailed in GD14 of 3.5 emergency calls a day per 10,000 customers and 3.5 enquiry calls a day per 10,000 customers.

Our assumption on the make up of the meter population is that 65% will be pay as you go meters, 20% will be credit meters and 15% debt recovery meters. We estimate that each year, 3.7% of the meter population will require to be exchanged due to customer or supplier requests.

Project Management

Efficiency improvement plan

Synergies

In terms of overall project management, load and connections assessments and utilisation of resources, we believe there are efficiency gains to be made from our joint bid with Mutual Energy for the construction of the HP network.

Our initial assessment indicates that the proposed Medium Pressure distribution system could be operated at 2bar rather than 4bar. This would bring savings in terms of materials and reduce the risk to the public if the network is damaged.

While we will look to migrate to our existing IT systems in managing Meter Asset Management.

(MAM) services, supplier interfaces and other aspects of asset management, it is our intention to introduce cost effective systems that are simple and fit for purpose and to transition to core systems over time as the network develops and the number of connections and interactions increase.

Innovation

Innovation adds value to our business and our customers and can take many forms, from process improvements to the invention of new engineering techniques, products or services. We explore opportunities through engaging with our own employees and by establishing constructive relationships with key gas industry suppliers, companies and academic institutions across the energy sector.

Since 2008 we have commissioned around 150 projects that have allowed us to advance industry knowledge, technology, competition, products and services, and develop new ways of working. We have a proven track record of delivering outcomes and embedding innovation into business-as-usual. Examples of this are reflected in the cost efficiencies generated through projects such as our ‘Keyhole’ combined core and vac technology, or through successfully demonstrating enabling technology, such as the first ever UK biomethane-to-gas grid injection point in Didcot, Oxfordshire.

We are therefore confident there is significant opportunity for technology transfer from our current (and future) projects that will bring efficiencies to any network we operate in NI (see our separate Innovation Annexe for details).

Operational and Business Processes

The relationship between required resources and connections numbers is not linear and overall resources do not increase as we gain more connections. Our initial resource model will be based on outsourcing. As the Network is established and construction economies of scale reduce, we will move to an insourced model to improve efficiency and reduce cost.

We consider moving in time to a mainly direct labour workforce as being the most efficient delivery model and our analysis indicates this should occur during the period years 11-15. Prior to this, we will regularly review contractor rates to drive down costs as far as possible.

Additionally, we will aim to improve efficiency of our overhead absorption by driving to deliver an accelerated build and connections plan.

We understand the NIAUR is considering implementing more sophisticated demand forecasting processes and systems. We will bring hands on experience of the development and use of demand estimation, simulation and forecasting systems and will collaboratively support the development of a fit for purpose system, commensurate with the NI Network code, Operators Safety cases and EU Legislation Article 42.

We will take a leading role in challenging the provision of call handling services. We therefore expect to reduce the number of received emergency calls by communicating more clearly how customers can relay non emergency calls to our customer service centre. In addition we will introduce best practice from our current call handling arrangements with National Grid to ensure better categorisation and prioritisation of the calls received. Currently only 64% of emergency calls are uncontrolled, allowing better use of First Call resources.

We will discuss with the other NI DNOs how we could leverage advantage from our existing call handling arrangements and take a lead on and work with the other DNOs to consider alternatives to the current National Grid arrangements for call handling.

The form of Regulation in the UK changed to RIIO (Revenue = Incentives + Innovation + Outputs) in 2013. To maximise performance under this regime, SGN has developed its 'RIIO approach' which is now embedded in the business. The main thrusts are efficiency, customer service, innovation and stakeholder engagement. All business processes are subject to ongoing critical review to identify opportunities for improvements using the ERIC principle (Eliminate, Reduce, Innovate, Control) and all business functions have their own RIIO business plan. SGN is also very active in the field of innovation, as evidenced by their recent success in Ofgem's National Innovation Competition. Programmes are also in place with the objective of positioning SGN as the lead GDN in the UK for customer service and stakeholder engagement.

Our existing Networks already operate in the upper quartile of the GB, GDN efficiency benchmarks and would look to bring that best practice to NI. We will continue to benchmark our NI performance against our other networks, other DNOs and UK businesses in general.

The expected benefits from these RIIO initiatives and improvement plans will flow through and benefit consumers in NI.

We believe there are efficiencies to be had by reducing shrinkage through being proactive in the prevention of theft of gas and damage to our network.

2.2.3 Manpower numbers for all categories of personnel

Figure 4 – Manpower number for all categories of personnel

Year	1	2	3	4	5	6	7	8	9	10
Resources										
Director, Northern Ireland	1	1	1	1	1	1	1	1	1	1
Head of Engineering	1	1	1	1	1	1	1	1	1	1
Team Managers	3	3	3	2	2	2	2	2	2	2
SHE Manager	1	1	1	1	1	1	1	1	1	1
Records Control Assistant	2	2	2	1	1	1	1	1	1	1
Head of Finance/Regulation	1	1	1	1	1	1	1	1	1	1
Head of Business Development	1	1	1	1	1	1	1	1	1	1
Key Account Managers	2	2	2	2	2	2	2	2	2	2
Marketing and Communications	1	1	1	1	1	1	1	1	1	1
Connections Co-ordinator	1	1	1	1	1	1	1	1	1	1
Revenue Protection Officer	1	1	1	1	1	1	1	1	1	1
Administration	4	4	4	4	4	4	4	4	4	4
Total (Internal Resource)	**19**	**19**	**19**	**17**	**17**	**17**	**17**	**17**	**17**	**17**

2.2.4 Justification for the manpower numbers in relation to the range and volume of business activity

Engineering operations

We have based our organisation on utilising a mixture of direct-employed and out-sourced resources. We will move to direct employment as and when workloads justify, where possible working with businesses and partners in the local community to deliver services. The proposed resource levels shown below reflect this methodology.

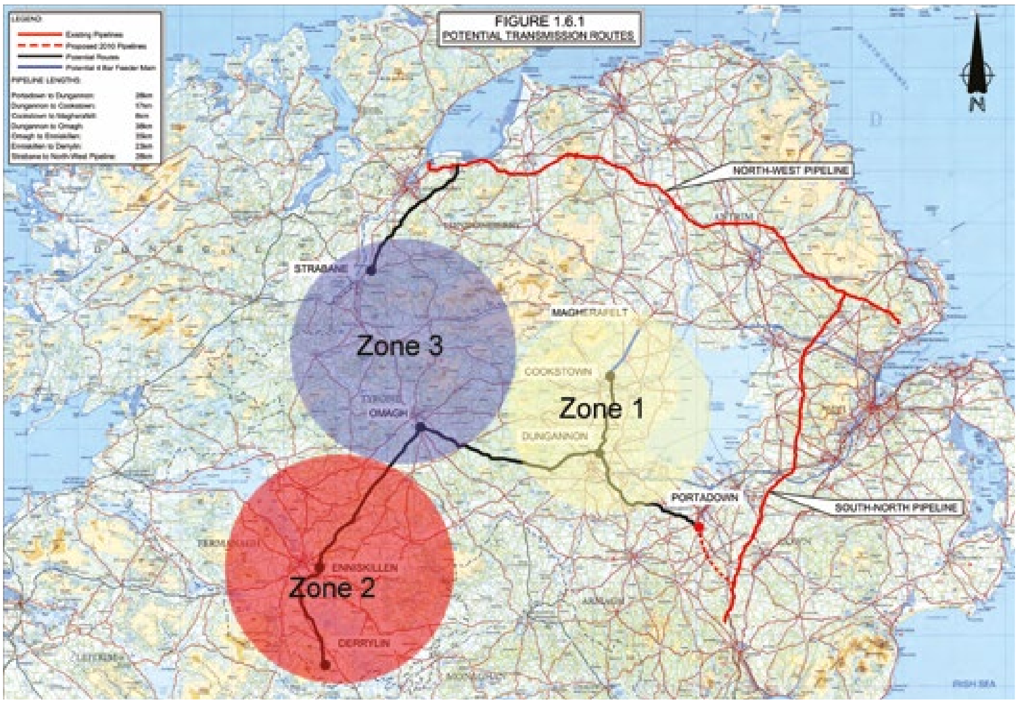
We will require a Team Manager to manage the mains and service construction, meter installations and emergency response in each of the three zones shown overleaf. Their deployment across the zones will be crucial to managing resources and building relationships with local stakeholders and customers in an area that has never before had natural gas. As the construction workload declines however, we expect the number of Team Managers to reduce to two in year four.

Background on operational zones

Due to the geography and travel distances, we believe operating our emergency response across three zones will provide the correct customer focus and allow us to meet our licence obligations and standards of service.

Zone 1 – Dungannon/Coalisland and Cookstown/Magherafelt,
Zone 2 – Enniskillen and Derrylin
Zone 3 – Omagh and Strabane.

We will have a Team Manager and sufficient contract resources available in each zone to provide the necessary emergency first response. The necessary resilience to provide out of hours cover will be provided by a combination of cross flexed contractor resources and competent local managers.



Travel distance and times in each zone

Town	Town	Within 1h	Miles	Minutes
Strabane	Omagh	Y	25.4	39

Town	Town	Within 1h	Miles	Minutes
Dungannon	Cookstown	Y	14.9	29
Dungannon	Magherafelt	Y	23.1	42

Town	Town	Within 1h	Miles	Minutes
Enniskillen	Derrylin	Y	21.2	37

Distribution activities

- **Mains construction**

This will be carried out by a contracted resource. We will retain overall responsibility for safety, performance and stakeholder engagement. Our estimate of the 10 year construction plan for the spine and infill mains is shown if Figures 5 and 6 respectively. The build plan for the spine main is based on the NIAUR Annexe 10 spreadsheet and the calculated unit cost of construction at £132.31/m.

Figure 5 – Spine main build plan (metres)

Year/Location	1	2	3	4	5	6	7	8	9	10
Dungannon & Coalisland	14,428	3,620	2,411	748	748	748	748	748	748	748
Cookstown & Magherafelt	15,721	9,659	6,439	2,010	2,010	2,010	2,010	2,010	2,010	2,010
Omagh	16,280	2,109	1,406	446	446	446	446	446	446	446
Enniskillen & Derrylin	6,235	3,681	2,449	771	771	771	771	771	771	771
Strabane	612	3,907	2,608	816	816	816	816	816	816	816
Total	53,276	22,976	15,313	4,792	4,792	4,792	4,792	4,792	4,792	4,792

Figure 6 – Infill main build plan (metres)

Year/Location	1	2	3	4	5	6	7	8	9	10
Dungannon & Coalisland	0	6,316	4,194	2,917	2,917	2,917	2,497	2,479	2,479	2,479
Cookstown & Magherafelt	0	6,746	4,539	3,130	3,142	3,149	2,691	2,704	2,704	2,704
Omagh	0	7,213	4,780	3,328	3,304	3,304	2,812	2,836	2,836	2,836
Enniskillen & Derrylin	0	5,281	3,525	2,435	2,449	2,435	2,089	2,104	2,104	2,104
Strabane	0	4,997	2,890	2,098	2,079	2,079	1,686	1,667	1,667	1,667
Total	0	30,552	19,928	13,909	13,892	13,884	11,776	11,789	11,789	11,789

In estimating the required number of teams for the infill mains construction, we have used the GD14 allowed construction cost per service and meter along with the connection costs and the spine mains unit cost from the FMA study to arrive at the estimated length of main to be constructed.

Based on the FMA study, we have also assumed that the existing housing connections detailed in the spreadsheet represent 70% of the total number of customers that need to be passed to achieve our expected connection numbers and that new housing connections will require 100% of the properties to be passed.

The total estimated main laying (two person team) resource level from year 1 to 10 is shown in Figure 7 below.

Figure 7 – Resource for mains construction (spine and infill)

Year	1	2	3	4	5	6	7	8	9	10
Total main laying teams	10.00	8.25	5.50	2.75	2.75	2.75	2.50	2.50	2.50	2.50

Our resource estimate is based on an assessment of the mains to be laid and an average level of productivity that addresses the need to minimise disruption and manage customer expectations. Under RIIO GD1, we continually bench mark teams, managers, labour resources, depots, networks and other GDNs to ensure we remain at the forefront of efficiency. To ensure maximum efficiency, these teams will be cross flexed to install mains and services and to carry out repair activities.

- **Service and meter installations**

Two person service-laying teams will be a contracted resource. Our estimated total annual team resource level from year 1 to 10 is shown below. We expect that our new meters will be installed by the service layers during the service laying activity. As such, meter installers will only be required for emergency related (or planned) meter work. These teams will also be cross flexed to install mains and repair activities to ensure maximum efficiency. Our team requirements are given in the Figure 8 below.

Figure 8 – Resource for service installations

Year	1	2	3	4	5	6	7	8	9	10
Total main laying teams	0.00	8.00	5.00	4.00	4.00	4.00	4.00	3.50	3.50	3.50

- **Pressure reduction installations and commissioning**

Resources have been determined on the basis that the majority of customers will be supplied from the 4bar MP system. We expect a number of customers (eg those in town centres) will be fed from the 75mbar Low Pressure system requiring a number of small Residential Regulator Installations (RRI) These RRIs will be commissioned by our contractor technicians.

- **Commissioning of medium, large and contract I and C customers**

We estimate that a two person team will take half a day/site to commission these service governors. Based on the FMA forecast, this will require 0.2 FTE contract technicians at peak volumes.

Figure 9 – Industrial and Commercial installations

Year	1	2	3	4	5	6	7	8	9	10	11
Total M, L & CI & C	15	86	41	33	33	33	33	33	33	33	0
FTE (Year)	0.04	0.20	0.10	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00

Emergency and metering activities

- **Gas emergencies**

We have assumed a call rate in line with those detailed in GD14 of 3.5 emergency calls a day per 10,000 customers and 3.5 enquiry calls a day per 10,000 customers. This will require 0.63 FTEs at year 10. The figures we have assumed for gas emergencies are shown below. We expect gas emergencies to include uncontrolled escapes, controlled escapes, fumes, meter faults and pressure problems

Figure 10 – Assumed emergency calls

Year	1	2	3	4	5	6	7	8	9	10
SGN Customers	15	2,696	4,471	5,841	7,195	8,541	9,746	10,963	12,180	13,397
Emergencies/Year	0.96	172.21	285.59	373.09	459.58	545.56	622.53	700.26	778.00	855.73
FTE (Year)	0.00	0.13	0.21	0.27	0.34	0.40	0.46	0.51	0.57	0.63

- **Meter exchanges and maintenance**

We believe that the meter population will have a high percentage of pay as you go meters (65%) and debt recovery meters (15%) with the remainder being made up of credit meters (20%). We expect some customers will change from a credit meter to a pay as you go meter and have assumed that 3.7% of the meter population will require to be exchanged each year due to a request from the supplier or the customer. We expect this will require 0.36 FTE at year 10.

Figure 11 – Number of meter exchanges per annum

Year	1	2	3	4	5	6	7	8	9	10
SGN Customers	15	2,696	4,471	5,841	7,195	8,541	9,746	10,963	12,180	13,397
Meter Exchanges	0	100	165	215	267	315	360	405	450	495
FTE (Year)	0.00	0.07	0.12	0.16	0.19	0.23	0.26	0.30	0.33	0.36

- **Pressure reduction installations maintenance**

We expect to start maintaining pressure reduction installations in year 3. This will be carried out under contract or via the MSA.

Figure 12 – Maintenance FTEs

Year	1	2	3	4	5	6	7	8	9	10
Maintenance FTE (Year)	0.00	0.00	0.08	0.08	0.15	0.15	0.15	0.15	0.15	0.15

- **Plant protection**

This is an important activity as third-party damage will be one of our most significant risks to security of supply. We will be proactive in protecting our assets but also anticipate a significant number of plant protection enquiries. Initial enquiries will be managed through an MSA and we have procedures to promote safe working in the vicinity of our network assets. This will include issuing detailed plant location drawings, providing the dial before you dig service, offering advice, providing briefings to third parties and site visits. Any site visits will be managed by our existing directly employed staff.

- **Operational Control Centre (OCC)**

Our emergency call handling will be managed under our existing contract with National Grid. Assumed volumes are shown in the table below. National Grid will pass these calls to our OCC who will dispatch our first call response resource.

Figure 13 – Expected emergency call numbers

Year	1	2	3	4	5	6	7	8	9	10
Cumulative Connections	15	2,696	4,471	5,841	7,195	8,541	9,746	10,963	12,180	13,397
Energy Calls	2	344	571	746	919	1,091	1,245	1,401	1,556	1,711

- **Distribution planning**

Directly employed staff (eg Team Manager or Records Control Assistant) will provide relevant criteria on loads, routes, engineering difficulty and surfaces. The distribution network design work will be completed under the MSA.

- **Construction planning**

Our Connections Co-ordinator will manage the issue of work to our contractor. With help from the contractor's planning team and our administration staff, they will plan adequate work loads for the contractor to achieve our mains laid target in each of the areas.

- **Connections planning**

Our Connections Co-ordinator will control work that we hand over to our contractor. With help from the contractor's planning team and our administration staff they will plan adequate work loads for the contractor to achieve our connections target in each of the areas.

- **Data collection and digitisation**

Data accuracy is essential from a safety, financial and regulatory point of view. Two Records Control Assistants (reducing to one in year 4) will record the distribution infrastructure as it is commissioned. The mains will be digitised under the MSA.

Figure 14 below identifies the expected workload. We expect to employ two RCAs in years 1 to 3. This will reduce to one RCA in year 4 onwards.

Figure 14 – Data collection and digitisation

Year	1	2	3	4	5	6	7	8	9	10
Total Mains	53,276	53,529	35,241	18,700	18,684	18,676	16,568	16,580	16,580	16,580
Total Mains/RCA	26,638	26,764	17,620	18,700	18,684	18,676	16,568	16,580	16,580	16,580
Total Mains/RCA/Week	605	608	400	425	425	424	377	377	377	377

- **Administration**

Four administration staff will undertake essential tasks in support of the Engineering and Business Development functions including the management of sitework processes, supplier switching, Supply Point Administration, network records and meter asset records.

They will also provide, for example, support on key accounts, customer contact, debt recovery and the necessary management information to allow the effective operation of the network.

- **Safety, Health and Environment**

The SHE Manager will provide support to the management team and will carry out independent audits on all business (but primarily operational) activities. They will support and work with the local management team but will report directly to the Group Head of Safety.

Grid control and demand forecasting

Our own Gas Control Centre (GCC) will provide 24/7 network monitoring. This will include monitoring inlet and outlet pressures, slam shut settings and intruder alarms on strategic pressure reduction installations as well as at system low points and on daily metered customer installations. Faults and alarms will be passed directly to NI resources for action. Based on current NI network code and practices, our GCC will also carry out daily demand forecasting throughout the day. These services will be provided under an MSA.

Business Development

The Head of Business Development will take responsibility for all aspects of market development activity and for ensuring appropriate systems and processes are maintained to manage the supply point administration agreement, the collection and recording of network and meter asset data, as well as the efficient and effective co-ordination of connections planning.

Market development

The marketing model proposed requires the management team and specifically the two Key Account Managers to establish partnerships and support relationships within the market that will drive connections' growth. The initial focus will be on the larger industrial and commercial market, homes owned by social landlords, developers of new housing and owner occupiers adjacent to the route of the spine mains.

A core part of our marketing strategy is to work with trusted, credible, local delivery partners. They will help us develop marketing incentives, and provide appropriate advice to customers on how to get a connection, or access grant funding. In addition they will be able to facilitate (or undertake) the installation of new (or the conversion of old) appliances. While central to promoting initial customer contact, the Key Account Managers will primarily be responsible for liaising with these partners to ensure they remain focused on our business aims and customer needs.


Talking Connections

They will also ensure that customers can engage with us through our interactive website and various social media platforms and will be proactive in keeping the public and private sectors informed as the project progresses. This will help drive the delivery of the connections profile outlined in the workbook.

The Key Account Managers will be supported by the Marketing and Communications Manager who will work closely with them in the promotion of our connection ambitions across the market (but in particular with the owner occupier sector). The Marketing and Communications Manager will also provide wider support to the business in terms of promoting the company, and gas more generally, in the community. Focused local marketing to towns will be aligned with delivery timetables to ensure rapid turnaround from marketing to delivery.

Connections Co-ordination

The Connections Co-ordination Manager has an essential role in making sure the phasing and progress of mains construction effectively maximises opportunities for gaining connections. They are a critical link between operations and the market and will be crucial to meeting the connections profiles expected.

Finance

Strong financial control is a key element of ensuring the efficiency of the network. To promote this the Head of Finance/Regulation, while providing direct support on finance information and controls to the Director, NI, will also be responsible for the provision of financial information. They will also undertake the production of the annual regulated accounts, liaise with the external auditor for both statutory and regulatory audits and provide to the NIAUR all financial reporting required under the licence.

Managed Service Agreements

Corporate Services, including: Customer Services, Human Resource Management, Corporate Communications, Training Services, Fleet Services, Property and Facilities Management, Procurement, Legal Services, Audit Services, Risk Management.

Network Services, including: Safe Control of Operations, Engineering Policy, Innovation, Network Strategy, Gas Control, demand forecasting and distribution design.

Finance Services, including: Payroll, Accounts Payable, Insurance, and Tax.

IT and Back Office Services, including: IT helps desk and support.

2.2.5 Our manpower cost build up process is specified to support cost forecasts entered in the workbook and takes account of the progressive development of the business

Details on the cost build up are given in Chapter 8. We expect reductions in direct employees to occur around year 4 but we do not see that change having any material impact on our manpower costs as this is related to the management of the construction workload.

2.3 Competence and accountabilities

2.3.1 Competence management arrangements

Our ability to operate and manage the network, while delivering services to our customers and ensuring the safety of our people, the general public and our assets, is underpinned by the capability of our employees and our contractors. It is therefore essential that we have clarity on the competencies (the skills, knowledge, experience and behaviours) required by our staff to fulfil their roles, comply with our Safety Case and contribute to the effective management of our health, safety, environment and other business risks.

We are a highly experienced and successful Gas Distribution company and we envisage extending our current systems for managing competencies to our operations in NI. Our Competency Assessment Framework (CAF) covers individuals involved in network design and connections, while our Competence Assurance System (CAS) covers all operational and technical staff who have responsibility for the safe flow of gas, or the provision of emergency services. Both systems provide a process through which the competencies of individuals to carry out specified, technical or safety-related activities are determined, achieved, documented and recorded. Their application allows us to comply with our safety case and ensure that only competent personnel carry out work on our behalf.

Our approach is enshrined in our Management Standard for Competence, SGN/MS/7 and the associated management procedure for our Competence Assurance System, SGN/PM/SHE/77.

We have a Head of Competency Development who leads a Competence Management Group which is responsible for maintaining the required competence and capability of our workforce. This covers training requirements across all aspects of the business (eg technical, administration, management training etc).

What we will do

1. We will establish systems, processes and procedures which document those job roles where formalised competency assessment is required and will set out the required performance levels and how these will be assessed and monitored. These processes/procedures will reflect:

    - the criticality of the tasks undertaken in terms of safety and/or process safety
    - defined criteria with which to assess individual performance and behaviours
    - the frequency of assessments
    - the competence requirements for assessors
    - legal requirements and best practice
    - the dynamic nature of competence requirements to deal with changing circumstances (eg new/modified tasks; learning and required changes resulting from the application of our group standards, in particular the Risk Management, Human Factors and Compliance and Assurance standards)
    - the requirement to identify any gaps between individual employee’s current competence and that required for their role; and
    - the records retention requirements.

2. We will have processes that link and align our competency assurance system to our safe control of operations procedures and the process for determining and approving technical authority levels.

3. We will have systems, processes and procedures that ensure training needs are identified and that suitable training is designed, delivered and recorded. These processes and procedures will reflect:

    - how we will achieve our learning and development objectives
    - where refresher/safety-related training is required
    - where Continual Professional Development (CPD) is required
    - the need to ensure that training is effective, understood and that proficiency is achieved and maintained
    - the need to assure the competence and credibility of training organisations, instructors and assessors
    - the varying requirements of different groups/individuals (eg new starters, role specific, young persons); and
    - the need for succession planning to ensure that the required level of capability is maintained – to ensure there are sufficient numbers of competent employees to carry out the full range of our current and planned activities.

All our operational and technical employees and our contractors are subject to either our CAS or CAF systems with key aspects of their job roles subject to regular audit to ensure they are working in accordance to the required standards. This formal inspection is in addition to routine performance monitoring by line managers.

All inspections and assessments are recorded and reported.

Our CAS Scheme has been subject to inspection by Lloyds Register auditors as part of our ISO 55001 accreditation.

2.3.2 Professional and academic qualifications and experience associated with key personnel

Until recruitment of the NI management team and staff, the initial activities associated with the creation of our NI business will be led by the Managing Director, Scotland, our Director of Financial Operations and our SGN Head of Business Development. They will be supported by members of the project team that has brought together our competition bid.

We will adopt an open recruitment process for senior management positions and hope to draw from highly qualified employees within our business, as well as attracting high calibre individuals from the market. We plan to recruit other positions from within our NI Licence footprint or from the broader local market.

Managing Director, Scotland

[redacted], chartered engineer (UK), a member of the Institution of Gas Engineers and Managers, and a member of the Institute of Directors. Qualifications include BSc and HNC in Gas Engineering. Over 30 years' experience in the gas industry. Member of the SGN Executive Board and has been responsible for all Distribution and Transmission Operations in Scotland since 2005 and successfully leading the GDN to be the top performing of the 8 UK GDNs. Latterly he has assumed responsibility for all Transmission Construction throughout SGN.

Head of Business Development (SGN)

[redacted] has over 25 years' experience working in variety of financial management and business development roles, in telecoms, gas and governmental roles. He is a Fellow of the Chartered Association of Certified Accountants and holds an MBA and a BSc (Hons) in Physics. He is currently responsible for expanding SGN business interests outside its core GDN activities, including its green gas initiative. He joined the gas industry in 2009 and has held senior management roles in finance and business development; he is also a director of Xoserve. Outside the gas industry he was responsible for establishing businesses in the USA and Europe in telecoms, infrastructure and outsourcing ventures. He has extensive experience in supporting and developing complex sales propositions and managing complex supplier relationships.

Director of Financial Operations

[redacted] has over 25 years' experience in the Gas Industry working in various financial roles. He joined British Gas in 1988 and is a Chartered Management Accountant. After joining NGG (formerly Transco) in 1995 he held roles within both Group Finance and NGG Central Finance with specific responsibilities for investment policy and providing financial support to the executive management team, including key strategic initiatives. He was a key member of the SGN Price Control Team for both the Current Control (RIIO) and the previous Control (GDPCR1). He is currently Director of Financial Operations, heading up corporate finance, management accounting, accounts receivable and regulatory finance. Mike is a key finance contact with many external stakeholders including Ofgem, Banks and Credit Rating Agencies. Mike is a Company appointed Pension Trustee for the defined benefit scheme and was a Director of Xoserve for three years (the Gas Transporters Agent responsible for amongst other things, accurate billing). He has a BSc (Hons) in Computer Studies.

Project Team

[redacted], a chartered engineer (UK), European Engineer (Eur Ing), a Fellow of the Institution of Gas Engineers and Managers (IGEM), member of the Institution of Civil Engineers. Qualifications include: MBA, BSc (Hons) Civil Engineering, ONC Engineering, ROSPA Managing Safely, Association of Project Manager (APM), DEA and GDA. Over 33 years' experience in the gas industry, the majority as a Senior Manager and is responsible for the delivery of Major Projects throughout SGN. Has previously held head of department in operational and commercial roles in Transmission, Distribution and Metering, including two overseas Transmission projects working to International Industry standards. Has been involved and supported the development of the Gas Industry in NI since 1996.

[redacted], Chartered Engineer, member of the Institution of Gas Engineers and Managers, with an Honours degree in Natural Gas Engineering. Over 35 years' industry experience in senior management positions covering all aspects of network management and operations, including Gas Control, Asset Management, Health and Safety and Network and Strategic planning.

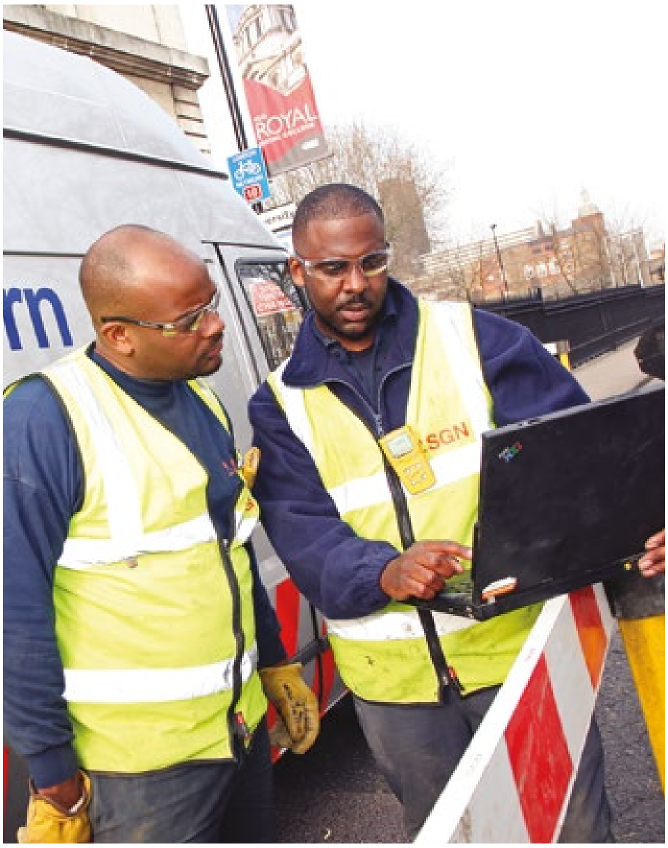
[redacted], an experienced CIMA qualified Finance Manager, has been working in the gas and utilities industry, both regulated and commercial for seven years. A qualified Prince2 practitioner with experience of working in major change projects. Rachael has spent the majority of her time in the gas industry working as a business partner to Operational functions, and is currently working in the Regulated Finance team, maintaining good relationships with Ofgem and worked in the Business to Business marketing environment prior to joining the utilities industry. She has a BSc Hons in Natural Science with Chemistry.

[redacted], Incorporated Engineer, member of the Institution of Gas Engineers and Managers, Member Chartered Management Institute, over 20 years' experience of the industry at senior manager level, working mostly in Distribution (<7bar) activities including design, commissioning construction and project management. Managed the provision of gas utility services – including design, quotation, all back office functions, and customer interface. Successfully established new office facilities and the migration/in sourcing off staff and service contracts, plus acquiring and retaining ISO 9001. Strong sense of customer engagement and providing customer focused services, qualified to Masters level in Business Administration and Organisational Psychology.

[redacted], 22 years' experience in the utilities industry including senior operational management positions in Glasgow, Edinburgh and London. He has successfully led numerous high profile new connections, mains replacement, repair and emergency projects. He has experience in managing major contracts as well as experience of working in the contracting environment. This also includes commercial experience involving company growth opportunities. Qualifications include Diploma in Management and HNC in Engineering.

2.3.3 Training and development arrangements for all employees

Employees' training and development needs are informed by changes in legislation, regulation or procedures, identified gap actions in the competency frameworks, nominations by line managers, or individual requests. The overall process is led by our Head of Competence Development and is managed by a dedicated team within Human Resources. Together they are responsible for our apprentice and graduate recruitment and development schemes – we have 186 apprentices currently undergoing training, ensuring that, where necessary, our employees hold recognised external qualifications and support competence development through training against agreed internal standards.



Training into Practice

The training provided covers all aspects of the business (eg technical, administration, management training etc) and a major focus within recent years has been the training of all operational first line managers (Team Managers). This has focused particularly on ensuring their compliance with our policies and procedures and to improve safety performance. Similar training packages will be used for managers in NI where required/appropriate.

In all of this they assess and develop appropriate courses and maintain external registrations and accreditations as necessary (eg Network Construction Operative, Gas Safe registration, Streetworks registration etc), with all records of training being retained in accordance with recommended best practice as acknowledged under our ISO 55001 accreditation.

Our engineering policies and standards are updated to reflect changes to industry practice. These changes are then communicated to our workforce through briefings or training. While individual training is provided in the classroom or workshop, team briefs are held on a monthly basis at depots. These highlight safety-related matters, near misses and new procedures (with minor changes). To ensure competence, individuals are assessed through the competency assessment process.

2.4 Deployment

2.4.1 Details of personnel deployment to operational locations in the licence area

Zone 1 (Dungannon, Coalisland, Cookstown, Magherafelt)

A Team Manager and sufficient contract operatives to provide first call and maintenance capability will be deployed in each zone. We estimate that the Team Manager will require the labour resources shown in Figure 15 below to achieve the service penetration levels and mains laid figures required to satisfy the criteria set out in the NIAUR Annexe 10.

Figure 15 – Resource deployment zone 1

	1	2	3	4	5	6	7	8	9	10
Total Mains Zone 1	30,149	26,342	17,584	8,806	8,819	8,825	7,947	7,941	7,941	7,941
Total Main Layers Zone 1	6	4	3	1	1	1	1	1	1	1
Total Services Zone 1	8	1,175	814	619	631	637	571	565	565	565
Total Service Labour Zone 1	0	4	2	2	2	2	2	2	2	2
Zone 1 Teams	6	8	5	3	3	3	3	3	3	3

Zone 2 (Enniskillen & Derrylin)

In Zone 2 a Team Manager and sufficient contract operatives to provide first call and maintenance capability will be deployed. We estimate that the Team Manager will require the labour resources below in years 1 to 3 to achieve the service penetration levels and main laying figures required to satisfy the criteria set out in the NIAUR Annexe 10 spreadsheet.

Figure 16 – Resource deployment zone 2 (first 3 years)

	1	2	3
Total Mains Zone 2	6,235	8,962	5,974
Total Main Layers Zone 2	1	1	1
Total Services Zone 2	3	461	301
Total Service Labour Zone 2	0	1	1
Zone 2 Teams Total Teams	1	3	2

Zone 3 (Omagh & Strabane)

To achieve the penetration levels and mains laid figures in the Regulator's spreadsheet, a Team Manager and sufficient contract operatives to provide first call and maintenance capability will be deployed to Zone 3. We estimate that the Team Manager will require the Main Layers and Service Layers shown in the table below to achieve these figure.

Figure 17 – Resource deployment zone 3 (first 3 years)

	1	2	3
Total Mains Zone 3	16,892	18,225	11,683
Total Main Layers Zone 3	3	3	2
Total Services Zone 3	4	1,045	660
Total Service Labour Zone 3	0	3	2
Zone 3 Total Teams	3	6	4

Zone 2 (Enniskillen & Derrylin) and Zone 3 (Omagh & Strabane) combined

From year 4 onwards we will no longer require the third team Manager and we will combine Zones 2 and 3. This zone will be covered by a single Team Manager.

Figure 18 – Resource deployment zone 2 & 3 combined (years 4 - 10)

	4	5	6	7	8	9	10
Total Mains Zone 2 & 3	9,894	9,865	9,851	8,621	8,639	8,639	8,639
Total Main Layers Zone 2 & 3	1	1	1	1	1	1	1
Total Services Zone 2 & 3	751	723	709	634	652	652	652
Total Service Labour Zone 2 & 3	2	2	2	2	2	2	2
Zone 2 & 3 Total Teams	3	3	3	3	3	3	3

THR

Chapter Three

Mobilisation

3.1 Plans and Proposals

3.1.1 Detailed plan and proposals for mobilisation

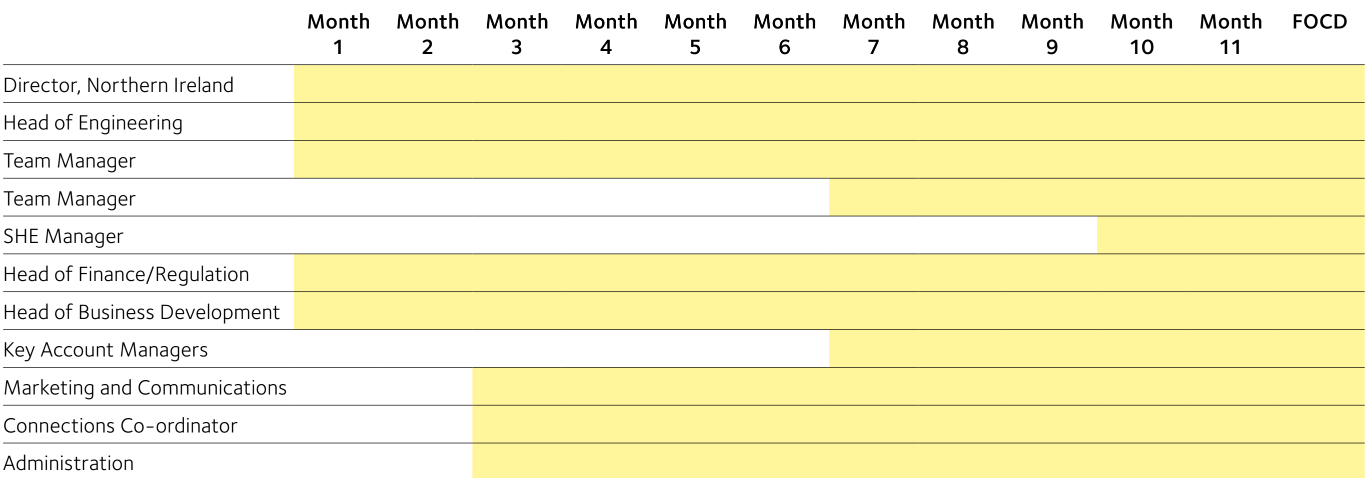
The internal and external resources required

During the mobilisation phase we will put in place the management, systems and relationships required to establish the business.

The Director, Northern Ireland, the Head of Business Development, Head of Finance/Regulation and the Head of Engineering Northern Ireland will establish the new business in NI. From licence award until the management team recruitment is competed, our Managing Director Scotland, SGN Head of Business Development and our Finance Director, as supported by the bid team, will lead on activities during the early stage of mobilisation (for example engagement with the NIAUR).

The initial profile of internal resource is summarised in Figure 1 below.

Figure 1 – Internal Resources



Resources in place

We will draw upon expertise within our group of companies for specialist requirements such as Safety Health and Environment (SHE), Regulatory support, Network Policy, Procurement and Legal Services. In addition we will also establish Managed Serviced Agreements (MSAs) for centralised services where significant economies of scale can be gained. These will cover areas including Customer Services, Plant Protection Services, Safe Control of Operations and Financial Operations.

We will establish framework agreements for mains and service construction, emergency and repair services and develop strategic partnerships for services such as appliance conversions or new heating installations, so that as our distribution network is commissioned we will have a full range of capabilities to support and develop the market.

How these resources will be secured and managed

We will adopt an open recruitment process for senior management positions and hope to draw from highly qualified employees within our business, as well as attracting high calibre individuals from the market. We plan to recruit other positions from within our NI Licence footprint or from the broader local market.

Senior managers will be accountable to the Director. In addition the Head of Finance/Regulation (and the SHE Manager) will have 'dotted-line' relationships with specialist functional departments within the group. This will allow best practice and expertise to be shared while retaining strong accountability. They will use our performance management framework to manage all staff within the NI organisation.

[redacted]

We will extend existing MSAs where they exist and develop new framework agreements for new activities in NI. Performance will be managed by Service Level Agreements (SLA) and internal management processes.

We will use existing contractual arrangements with external suppliers, minimising expensive procurement costs and benefiting from our group's considerable purchasing power. For new relationships we will utilise our group procurement function to develop contracts and manage tender processes where appropriate. See Chapter 6 for details our procurement capabilities.

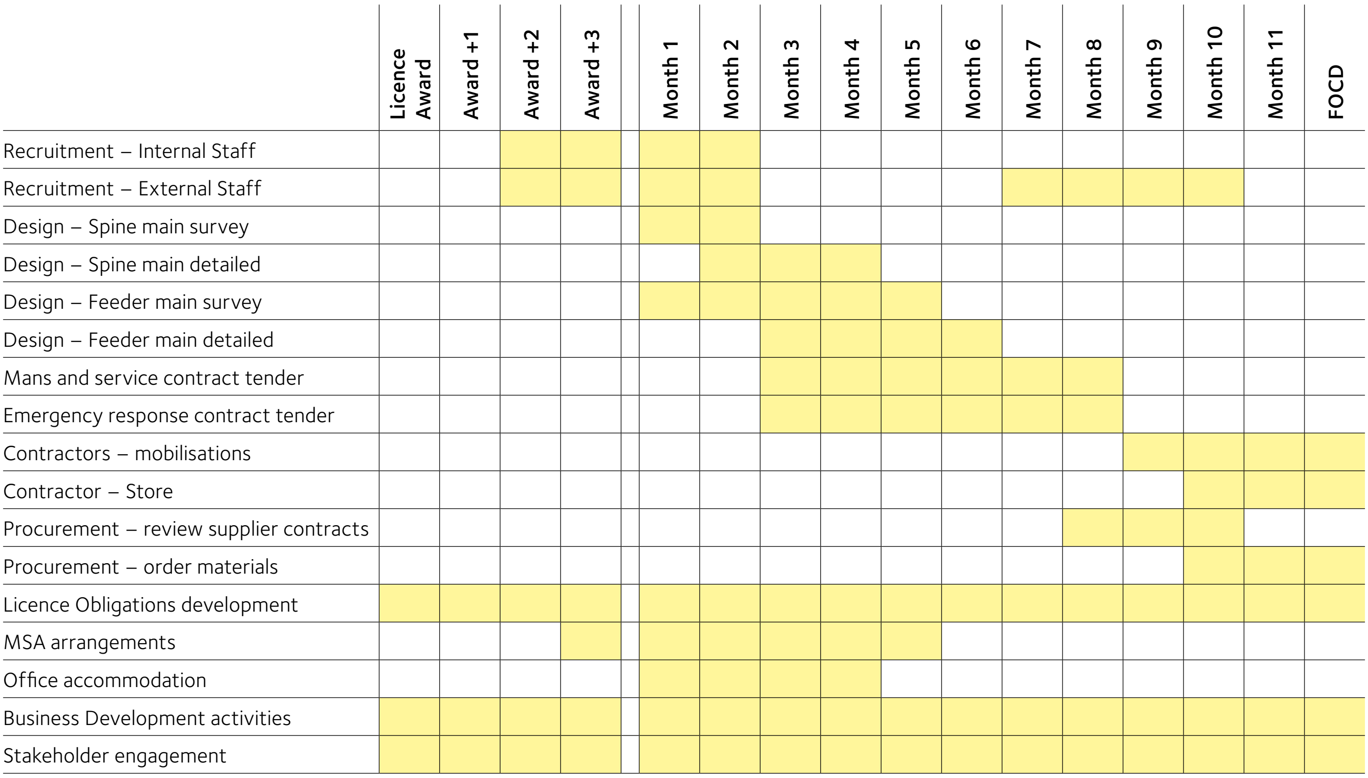
We will manage the quality and safety of third party suppliers through existing robust processes and procedures, to ensure the highest standards of performance and deliverables are achieved. Where possible we will remunerate based on clear outputs and KPIs.

Timetable for the overall delivery of the LP pipeline from licence grant to First Operational Commencement Date (FOCD). Applicants should explain the timetable, eg assumptions, key dependencies, and risks.

We have developed an outline project plan for the activities between licence award and FOCD.

We have summarised the key element in Figure 2 below.

Figure 2 – Outline mobilisation plan



Our programme reflects the need to begin licence obligation discussions with NIAUR at an early stage and also reflects the need to progress enabling activities, such as recruitment, stakeholder engagement and for example developing the necessary MSAs for construction design. It also shows the high level activities and lead in time associated with meeting the FOCD.

Our programme acknowledges the FOCD is dependent upon the transmission construction programme and that our full mobilisation plan would commence 12 months in advance of that date. The programme plan illustrates the commencement of certain activities at licence award, while demonstrating the key activities required in the lead up to the FOCD. We believe this aligns with the parameters of the Regulator's business plan forecasts.

Our joint venture bid with Mutual Energy for the HP licence and our potential involvement in the HP construction leaves us well placed to optimise our mobilisation plan such that we make gas available at the earliest opportunity.

We have also assumed that no challenges to the award of our licence or the HP licence will impair our ability to proceed with the implementation of the mobilisation plan.

It will be critical for the success of delivery that planning, wayleaves and other mandatory approvals are processed in a timely fashion. To maintain our progress, we have assumed that these processes will take between three and six months to complete.

We have assumed that we can secure competent resources in a timely and economic fashion. If necessary, we have a contingency plan to secure resources from the SGN group.

As detailed in Section 4.2, there are a number of licence conditions that need to be satisfied before gas can flow in the new networks. We will engage with the NIAUR on an ongoing basis to progress and agree our programme of works and Authority approvals to satisfy the Standard Licence Conditions in the lead up to the FOCD.

3.2 Resources

3.2.1 Organisational arrangements to secure and manage internal and external resources

As detailed in 3.1, we will deploy a range of internal and external resource to facilitate mobilisation.

3.2.2 Manpower numbers to manage the process

Figure 3 – Resource Table

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	FOCD
Director, Northern Ireland	1	1	1	1	1	1	1	1	1	1	1	1
Head of Engineering	1	1	1	1	1	1	1	1	1	1	1	1
Team Manager	1	1	1	1	1	1	1	1	1	1	1	1
Team Manager							1	1	1	1	1	1
SHE Manager										1	1	1
Head of Finance/Regulation	1	1	1	1	1	1	1	1	1	1	1	1
Head of Business Development	1	1	1	1	1	1	1	1	1	1	1	1
Key Account Managers							1	1	1	1	1	1
Marketing and Communications			1	1	1	1	1	1	1	1	1	1
Connections Co-ordinator			1	1	1	1	1	1	1	1	1	1
Administration			1	1	1	1	1	1	1	1	1	1
Total	**5**	**5**	**8**	**8**	**8**	**8**	**10**	**10**	**11**	**12**	**12**	**12**

3.2.3 Recruitment Arrangements

As discussed in 3.1, we will adopt an open recruitment process for senior management positions and expect to draw from highly qualified employees within our business, as well as attracting high calibre individuals from the NI market. For all other positions we will look to recruit locally from within our NI Licence footprint or from the broader local market.

3.3 Activities

3.3.1 Provide details of the proposed activities

Our mobilisation activities are taken to be those activities up to FOCD and will fall in to the following categories:

Establish the business: including key management appointments, business registrations, establish offices, development of business processes, recruitment arrangements, governance arrangements, funding and banking arrangements and initial IT facilities. We will use our existing business capability to accelerate these activities.

Regulatory and commercial arrangements: including, develop interactions with the Regulators, establish the network code and other licence condition requirements, agree co-ordination and operating arrangements with the transmission operator and working with the HSE NI and establishing our Safety Case.

Asset and business management processes: including, review core business standards and procedures for use in NI, establish arrangements for data capture, meter asset management and processes for capacity management, establish working arrangements with gas suppliers (including for example supply point administration).

Technical design and delivery programme: including initial design works, liaison with local authorities and local communities, load assessments, route selection and establishment of wayleaves, pressure reduction installations and project planning (as detailed in 3.6 below).

Marketing, sales and business development: including creating base volume profiles, develop strategic partnerships, branding and external communication strategy, key account identification, sales and marketing plans and consult on and develop incentives for customers.

Stakeholder engagement: including develop strategy and processes for stakeholder engagement, launch initial events, define and identify key stakeholders.

Procurement and supplier arrangements: including scope and launch tender process, supplier selection and engagement, public notices and framework agreements, engage with group suppliers where appropriate, establish MSAs, external arrangements with gas suppliers and supply point administrations.

Contractor mobilisation: including competence assessments, works programmes, training and inductions, works processes, reporting schedules, stores arrangements and material handling processes.

3.4 Costs

3.4.1 Details for each activity

The following figure summarises our mobilisation costs (see Chapter 8 for additional detail):

Figure 4 – Mobilisation Costs

Summary mobilisation costs	**(£m)**
Staff	0.575
IT	0.126
Building (rent and rates)	0.040
Office costs (telephones, stationery, utilities etc)	0.005
Insurance	0.011
Professional fees	0.058
Legal fees	0.050
Branding	0.030
MSA costs	0.101
Total	**0.996**

3.4.2 Details of how the cost forecasts entered in workbook are built up

The costs have been built up in accordance with the outline mobilisation plan and the resource and activity charts shown above.

Our detailed staffing requirements to deliver the above timetable are detailed in section 3.2, and the following table details their costs:

Figure 5 – Mobilisation Staff Costs

Required Staff	Pay (inc pension) (£m)	Employers NI (£m)	Car (£m)	Total Annual Cost (£m)	Mobilisation Cost (£m)	Recruitment Costs (£m)
Senior Management Team						
Subtotal	0.324	0.035	0.023	0.381	0.381	0.038
Stakeholder engagement and market development						
Sub total	0.074	0.008	0.003	0.086	0.043	0.013
Operational mobilisation						
Sub total	0.175	0.020	0.012	0.207	0.134	0.007
Total	**0.573**	**0.063**	**0.038**	**0.674**	**0.558**	**0.058**

IT

IT requirements to support the above activities will be supplied through the existing MSA. The costs detailed above include all the hardware and associated infrastructure necessary to support efficiently and effectively the Gas to the West LP network delivery.

Buildings and Office costs

We will procure appropriately-sized office space, providing a base for operational management and market development delivery. Our assessment of the costs of renting such a space include the mobilisation running costs of the office (rates, utility bills, telephones, stationery etc).

Insurance

The existing contingent liability insurance arrangements for SGN will be extended to cover the new regulated business in NI. The pro rata cost of this has been input on the basis of the maximum expected network length. During the mobilisation period, the operation will be significantly smaller, so 50% of the average annual insurance has been attributed.

Managed Service Agreements

The MSAs have been calculated in line with the 10 year costs shown in Chapter 8. We have assumed that in the mobilisation period, there will be an increased reliance on the wider SGN business to provide support and expertise especially in relation to the set up of critical network, regulatory and safety policies.

3.5 Systems

3.5.1 Arrangements to put in place required work and asset management processes

Arrangements for asset management will be based on our existing ISO55001 approved system. We currently utilise the 'Maximo for Utilities' package for asset management, and Customer Relationship Management processes. While we expect to extend that capability to support the NI business when justified by activity levels, we will implement appropriate interim solutions at business start up.

Meter assets and unique MPRNs will be generated and stored by the asset management system along with details of the meter asset provider, meter asset owner and meter asset maintainer. We already operate sophisticated systems and processes through Bsmart, that manage meter transactions and we will use these as the basis of implementing a fit for purpose solution to manage meter related supplier interfaces in NI.

ESRI provides the current platform for our geographic mapping and the recording of mains, services and equipment data. As NI operates on different mapping co-ordinates a new dataset instance of ESRI will be required to provide the necessary functionality.

Emergency call handling and dispatch will be managed using existing contract arrangements with National Grid and under our MSA.

The provision of streetwork noticing will be completed via the Insight system.

All financial transactions will be provided for using our existing Oracle based solutions.

Network and connections design tools will be provided under MSA as will other standard corporate systems for other general processes eg Safety and Environment Accident Reporting System (SEARS).

3.5.2 Arrangements to procure required information systems

Other than the revisions required to ESRI, we do not envisage any significant procurement events, as we plan to utilise and/or extend our existing systems to meet NI business requirements.

3.6 Low pressure system construction

3.6.1 Proposals

For engagement with external stakeholders (including but not limited to relevant regulatory authorities, statutory agencies, other licence holders, private entities) necessary to construct a ≤7bar gas distribution system.

We fully recognise the challenge of establishing new gas networks and the consequent need for a stakeholder engagement plan that is inclusive and can inform our decision making. We will welcome enquiries from all parties (whether public, private, communities or individuals) and will, where appropriate, share our answers with a wider audience. Our plan will be guided by the following key principles:

- communications will be open and honest
- we will be inclusive and work with anyone who has an interest in our activities
- our stakeholders and customers will feel listened to and understood
- ensure the input and feedback we receive is used to inform decision making; and
- we will provide regular updates on our relevant issues including for example, project progress.

Once appointed our senior management team will take responsibility for establishing these principles and the initial engagement with the relevant regulatory authorities and building our stakeholder engagement plan. For example, we envisage early discussions with the Consumer Council to share our construction plans and anticipated connections dates, seeking feedback on our proposals, such that they are reliably informed when dealing with the public. Similarly, another key early stakeholder is the licence holder for the transmission build. We believe our joint venture with Mutual Energy will simplify engagement and deliver significant benefits in overall project management.

As we populate our organisational structure, our Business Development team will play a key role in ensuring our consultations reach far and wide and are managed appropriately. We will also ensure we have internal processes to keep our operational staff and contractors informed so they can consult with roads, other utilities and community representatives and ensure views from those stakeholders are taken into account and that we keep them fully informed.

Figure 6 – Stakeholder table

Stakeholder	Message and rationale	Communications channels
Statutory Bodies		
Department of Enterprise Trade and Investment (DETI)	Ongoing engagement with the key Government department responsible for energy policy.	Continue to meet and provide detailed briefing on project plans.
Northern Ireland Authority of Utility Regulators (NIAUR)	Maintain engagement with the regulatory authority responsible for regulating the Gas to the West licence concessions.	Continue to provide detailed briefing on project plans. Engage positively with UREG on all aspects of proposed regulation impacting on the Gas to the West project.
Department for Social Development	Responsible for housing strategy/urban regeneration/low carbon agenda and energy efficiency/plans for NISEP – all pertinent to gaining connections.	Proactive discussions on project development and ongoing strategies for maximising connections.
Department for Regional Development (DRD)	Engage with DRD in relation to regional development context of Gas to the West and implications for infrastructure including roads.	Keep briefed. Meet as necessary.
Department of the Environment (DOE) Planning Service	Engage with planning authorities to on project plans, phasing and work practices.	Keep briefed. Meet as necessary.
DOE Northern Ireland Environment Agency (NIEA)	Consult with NIEA in relation to all of the environmental impacts arising in the context of the Gas to the West project.	Understand any concerns or implications associated with the network build. Maintain necessary dialogue on mitigations/conditions.
NI Consumer Council (CCNI)	Provide information around project benefits and construction phasing so they can inform the public. Take on board feedback	Provide regular updates. Provide an interface to deal with consumer issues.
Health and Safety Executive Northern Ireland (HSENI)	There should be continuous engagement with HSENI to obtain its advice and to outline to them the plans and procedures that will be put in place to ensure safety.	Consult on project proposals. Provide regular updates. Provide an interface to deal with HSE issues/and gather feedback.
Other operating Stakeholders		
Other holders of Distribution Licences	Areas of common interest in building gas market. Look to build relationships and for opportunities to work together.	Meetings as required to inform and develop common areas of interest.
Other utilities, NIE, NI Water, BT etc	Co-ordination with business plans of other utilities.	Maintain dialogue established in earlier phases.
Individuals/Communities		
Landowners	Negotiation and discussion of wayleaves. Maintain dialogue post construction – re operational access, pipe protection etc	Continue engagement during network construction. All landowners to be engaged individually face-to-face by project officers following commissioning. Addressing reinstatement concerns.
Farmers/Ulster Farmers' Union	Land issues and potential for connections. It is important to engage well with the Ulster Farmers' Union (UFU) and others who can advocate on behalf of farmers generally, but who can also provide very constructive assistance as an intermediary.	Dialogue to be maintained with meetings with farmers' groups and UFU.
General public	There is a general imperative to raise public awareness of the benefits of extending the natural gas network into the West of NI. Will help to drive connections.	Communications with the wider public during/after the construction phase will continue to be primarily via the network office and media (see below). We will run a professional social media presence for the project.
Public representatives		
Local authorities	Significant impact on communities and high level of understanding required on project impact and work approvals across most LA departments.	Regular face-to-face meetings with department officials/officers.

Stakeholder	Message and rationale	Communications channels
Local politicians/Councillors	Keeping the community informed. Detailed dialogue with community representatives is essential to inform the planning process and maximise connections opportunities. Local councillors will be intensely interested in how the project impacts their local area.	Briefings/presentations/formal meetings on specific issues to continue as necessary with representative groups or individual councillors.
MEPs, MPs and MLAs	Politicians can be influential in shaping public understanding of the project.	Meetings/briefings with all who are interested in the project.
Assembly Committees	The NI Assembly DETI Committee and the Assembly Environment Committee should be briefed because their views and reports are important in influencing the energy policy and regulatory environment for the project.	Regular briefings on construction progress and connections progress post commissioning.
Party energy/environment spokespersons	Influential in maintaining support. Essential they are well briefed.	Provide briefing material. Meet as required.
NI business community		
CBI/IoD/FSB and other business representative groups	The main business representative bodies are influential in determining public opinion and policy-makers' responses to business issues. It is important that they are well briefed in relation to the project.	Updated relevant briefing material should continue to be provided. Further direct engagement with business representative organisations as requested or deemed necessary. Senior management team to participate (as speakers etc) at business sector events. Carefully tailored exhibition and sponsorship platforms will be evaluated and activated where there is clear strategic value.
Local chambers/business forums	Essential for gaining connections in the business communities. Local chambers influence local opinion and briefing them is important.	Continue engagement and briefing during and beyond the construction phase.
Trade associations	Opportunity to promote connections/review industry skill sets in the business communities. Can influence local opinion and briefing them is important.	Continue engagement and briefing during and beyond the construction phase.
Other interested stakeholders, NGOs, interest groups		
Environmental groups, NGOs (NI Environment Link, Friends of the Earth, etc)	The overall project will attract interest from these groups. It is very important that there is a continuous constructive dialogue with this group of stakeholders and in particular with the more professional, active organisations operating in this sector.	Ongoing engagement communication and briefing will be continued during and beyond the construction phase.
Consumer (eg Energy Saving Trust, National Energy Action) groups	In addition to dialogue with the Consumer Council, we will engage with National Energy Action (NI) and the Energy Saving Trust etc as necessary to progress awareness and benefits of gas and strategies to reach vulnerable customers.	Briefings/presentations to provide information and shape strategy for connections to vulnerable groups. We will participate in relevant seminars/events.
Media stakeholders		
Local newspapers	Local newspapers vital for communicating with local communities on relevant issues.	Regular updates for editors and ensure they have access to information as required.
Regional newspapers	Regional Press will be useful in transporting information to the wider public and to highlight project milestones.	Dialogue to continue with editors and relevant business and environmental correspondents.
Broadcast media, TV and radio	TV and radio are important communication channels for providing information, influencing decisions and project publicity.	Meetings will continue with relevant producers and correspondents with updated briefing supplied. Potential for a sustained campaign.
Local business media	Local business media will be useful in informing the 'business public' and to highlight project milestones.	Briefings will continue with editors/journalists of Ulster Business and Business Eye and other similar outlets.
Commentators, opinion-formers, economists	There is a small but influential community of economic commentators in NI who can impact on how any project is perceived and understood. It is important to engage with them.	Project team to continue to work the list of 'influencers' and arrange briefing meetings at suitable junctures after the construction phase.
Social media	Social media is increasingly being used to communicate information and gain feedback from stakeholders.	We will extend our current social media interfaces to accommodate the Gas to the West project.

To establish the network design process (Applicants should demonstrate their ability to design an efficient network as part of the Operational Business Plan submission). This should include consideration of whether any high pressure pipelines could be substituted for low pressure pipelines, taking into consideration the most appropriate size of pipeline and the pattern of connections.

We have considerable experience in network design and the provision of new connections:

- We operate some **74,000km** of distribution mains and transmission pipelines
- We transport gas to around **5.8m** customers.
- Our Network Planning department designed **1,200km** of replacement mains and **1,500km** of reinforcement mains in 2012/13, including designs for **78** new district governors.
- We manage **948** Network models – essential for effective capacity management and safe operation of the networks.

Distribution Construction

A key objective of this activity is to develop efficient, economic design proposals while at the same time ensuring the Network is fit for purpose and provides security of supply to all customers. We have a demonstrable track record in providing new connections and system extensions. Operating across all distribution pressure tiers in 2012/13 we:

- Extended our network by designing, installing and commissioning **45km** of extension mains and provided **17,000** connections to existing housing.
- Provided mains and services, (together with the necessary meter installations) for **753** connections to the industrial and commercial customers.
- Commissioned some **20km** of mains and close to **4,000** connections to new housing.

All of the design work for this construction was managed internally using industry recognised design tools, modelling techniques, and based on our internal planning standards and procedures.

With regard to the LP network development in NI, our joint venture bid with Mutual Energy for the HP licence ensures that from a distribution perspective we can co-ordinate with all aspects of the Transmission design and construction. We will work closely to establish the existing and future load requirements and we will plan jointly with Mutual Energy the most suitable locations for the above ground off-take installations in order to optimise both distribution and transmission designs and construction plans.

We believe there are options to substitute sections of the proposed HP steel pipelines with LP alternatives and we would welcome the opportunity to discuss this further with the NIAUR. One example of this relates to the sections to Strabane, Coalisland, and Derrylin.

As part of our distribution LP design, we will carry out our own in-depth assessment of the market forecasts. We have existing policies and procedures in place to assess the anticipated demand and ensure our final design can meet existing and future demand to industrial, commercial and domestic gas consumers. We would also want to discuss with the NIAUR what account should be taken in the distribution design for potential loads in adjacent communities.

The policies and procedures that support our planning and design are compliant with best industry practice and recognised Institution of Gas Engineers and Managers (IGEM) standards and specifications[1] which are supported by our own internal suite of planning standards and management instructions. The application of these policies and procedures will ensure that individual elements of the design (such as diversity and gas velocity) are accounted for and that the system security standard can be met (that is, the system is designed to meet the peak aggregate daily demand which is likely to be exceeded in only one year out of 20 on average and to ensure that safe operating pressures are maintained at the system extremities).

[1] IGE/GL/1 Planning of gas distribution system for MOP not exceeding 16bar
IGE/TD/1 Steel Pipelines for High Pressure Gas Transmission
IGE/TD/3 Steel and PE pipelines for gas distribution mains
IGE/TD/4 PE and steel gas services and service pipework
IGE/TD/13 'Pressure regulation installations for natural gas liquefied petroleum gas and liquefied petroleum gas/air'

The management team in NI will take a lead on route selection and local liaison but the majority of the network design will be carried out under an MSA by experienced staff in our existing planning department. They have access to Synergy for modelling networks and Gasworks v9 for connections design.

To initiate materials procurement processes and award contracts

The majority of materials will be procured under existing framework agreements. Where there is a need for new contracts to be put in place, we will adopt best practice procurement principles in line with the EU regulatory procedures (see Chapter 6).

For preparation of construction, maintenance and specialist services contract tender documents

We will use an MSA or extend existing contracts where required and already have arrangements in place for specialist services that we expect will cover our arrangements in NI. Where new contracts are required, our tender timetable allows for early engagement with stakeholders to ensure efficient planning, execution and delivery of all tender activity, in readiness to place contracts on time (see also Chapter 6).

To initiate the competitive tender process

Please refer to Chapter 6 where we discuss our procurement arrangements in detail. However, in summary, the process to initiate the competitive tender processes will be:

- Determine style of contract.
- Define the selection criteria – eg size of organisation, capability.
- The Pre Qualification Questionnaire (PQQ) is sent to all bidders who meet the selection criteria.
- The PQQ is used to assess the technical capability of each bidder as well as other key considerations such as health and safety matters, financial considerations and environmental awareness.
- Bidders who pass the PQQ stage are sent an Invitation to Tender (ITT).

To award the construction, maintenance and specialist services contracts

Please refer to Chapter 6 where we discuss our procurement arrangements in more detail. However, in summary, the process to award the contracts will be:

- Tender documents (ITT) are only issued to bidders who have been successful at PQQ stage.
- The ITT contains the award criteria which is used to assess capabilities of bidders to deliver products/services in line with the actual specifications under the prospective contract.
- Commercial submissions are only considered if the bidder is adjudged to be technically competent.
- Final decision is made on the basis of Most Economically Advantageous Tender (MEAT).

3.7 Mobilisation operations management

3.7.1 Proposals

To establish the management team

We have detailed the processes of establishing our management in section 3.1.

To establish customer contact representatives

While we build capability in NI, initial customer contact will be facilitated through a dedicated phone number to our existing customer service centres, supported through social media and a dedicated website containing relevant information about the project and how to contact us.

As our management team is established in NI, part of their responsibility will be to meet with key customers and stakeholders (eg local businesses, health authorities and other public bodies with offices or other buildings that would benefit from connections) and begin the discussions that will lead to future connections. As our mobilisation progresses we will recruit dedicated Account Managers and support staff, who will have the capacity to meet companies, groups or individuals to discuss the project, connections opportunities, or any other matters of concern.

The Account Managers will also be responsible for proactively contacting businesses, organisations and individual customers as necessary to progress our connections agenda.

The Head of Business Development will be responsible for establishing partner arrangements with organisations who have the credibility and capability to meet with domestic customers and discuss home energy efficiency, boiler conversions and arranging gas connections.

To establish the information system to support management of the mobilisation process

We have significant experience and expertise in managing complex multi-faceted projects and will apply this to managing the mobilisation process.

We will establish a 'Project Board' with appropriate terms of reference to manage delivery of the project. A detailed project programme will be prepared showing all tasks, milestones and critical interdependencies. A suitable project management tool (most likely Microsoft Projects) will be used to give visibility to the programme and to track progress. The project team will submit regular progress reports to the project board.

A separate comprehensive risk register will be prepared for the project and risks will be reviewed (and actions agreed) at each project board meeting.

IT aspects of the project will follow the SGN IT Project Methodology which is based on the project management tool PRINCE2. The IT programme of work will be assigned to an IT Programme Manager to ensure that the delivery is to time, cost and quality. The Programme Manager will be supported by Project Managers, Business Analysts, Testers, Technical Architects, and Delivery Managers.

For mobilisation cost monitoring and control, including contingency costs

Financial performance and budgets will be reviewed at a functional and corporate level on a monthly cycle between the NI senior management and SGN group functions. Analysis will be provided on a historic and forecast basis to provide financial confidence and control in the progress of the operational business spend.

Connection and operational costs will be controlled using a project and task approach to drive robust management and review. This will allow comparison of performance across all areas of the business and reflects our existing culture where taking responsibility for spend and efficiency is second nature and ensures we derive maximum value from all that we do.

For risk assessment and proposals to mitigate/resolve identified issues

Our overall approach to risk management is detailed in Chapter 4 and the principles and processes described will be applied to this project.

However, as discussed above, a separate risk register will be created to capture and manage all risks associated with the mobilisation phase and beyond. The initial risk register will be populated via a risk analysis carried out by a multi-disciplined project team and all risks will have appropriate controls and/or mitigation identified.

Governance of the project risk management process will be through the project board, which will be responsible for ensuring all risks and issues have suitable controls or corrective actions identified and that these are being progressed to a satisfactory closure. The project risk register will be standing item at project board meetings.

Understanding the Risks

Chapter Four

Governance

4.0 Governance

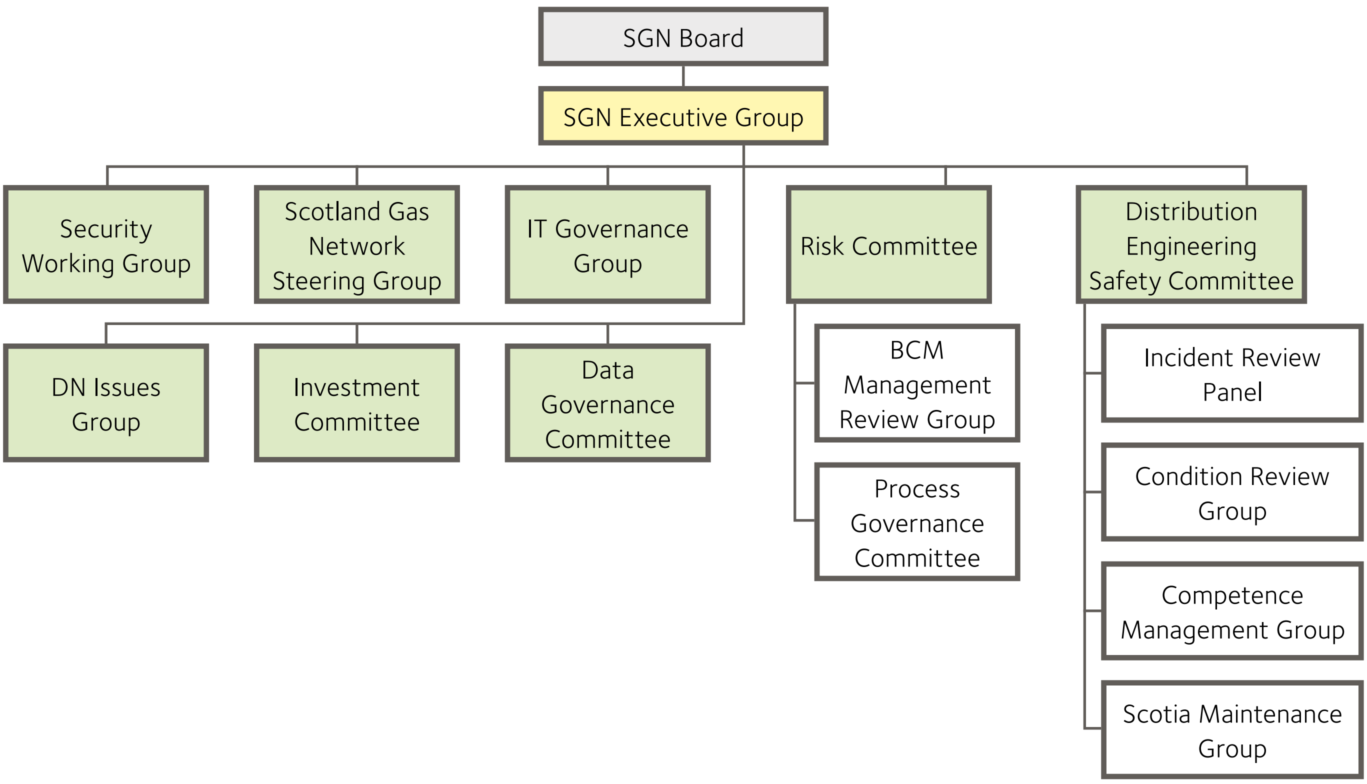
The Board of Directors is the principal decision making forum for SGN and is committed to the highest standards of corporate governance and believes that strong governance improves the performance of the Group.

The Company, being unlisted, is not subject to the UK Financial Reporting Council's Governance Code, but the Board applies the code where they believe it to be applicable.

The Board has established three standing committees and one non standing committee with specific responsibilities to ensure focused and effective leadership. These are the Audit Committee, the Safety, Health and Environment Committee, the People and Reward Committee and the Finance Committee (non standing). Each Committee's performance, constitution and terms of reference are reviewed annually to ensure they are operating effectively.

Below the Board, executive responsibility rests with the Chief Executive Officer and Chief Financial Officer, who are supported by an executive committee which meets monthly and is responsible for managing day-to-day operations of the business. A number of governance groups relating to the operation of our gas distribution networks report to the executive committee as illustrated in the diagram below.

Figure 1 – Governance structure

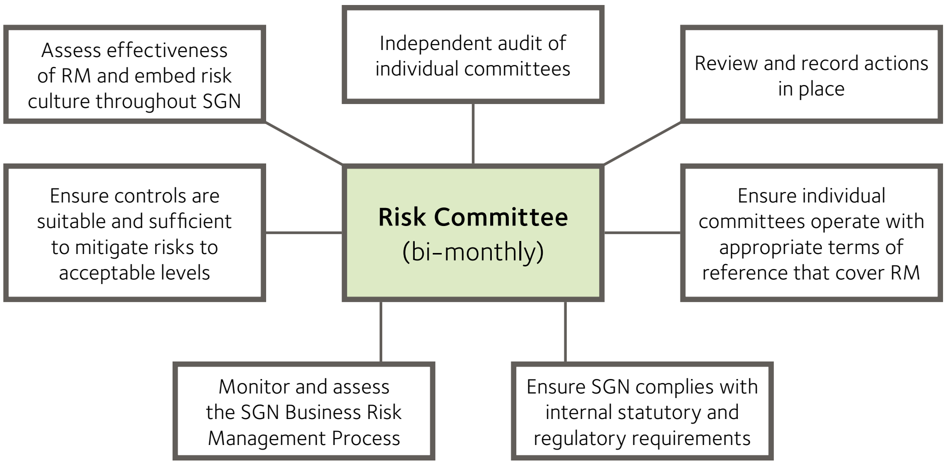


4.1 Risk management

4.1.1 Description of the policy and processes to identify and manage risk issues

We employ an Enterprise Risk Management approach to ensure that all risks to our business are identified and controlled. Our risk governance structure is underpinned by our risk management policy and procedures and covers all areas of our business (Engineering, Operations, IT, Finance etc). At a strategic level, our Risk Committee monitors the effectiveness of our risk processes and controls and provides assurance to our Executive and Board. The Risk Committee works in tandem with our Audit Committee via an audit charter. Outputs are made visible via risk registers, strategic risk bubble graphs and risk dashboards.

Figure 2 – Role of risk committee



SGN's Risk Management Policy plays a key role in the fulfilment of our business objectives. A robust system of risk management contributes to safeguarding our shareholders' investment and our assets. The outcome of Risk Management is a set of internal controls necessary to facilitate the effectiveness and efficiency of processes, to help ensure the reliability of reporting and to assist compliance with laws and regulations.

Our Risk Management Policy is applicable to all business processes and applies to all risks arising from and associated with, but not limited to, financial, operational, assets, contractual, regulatory and safety aspects of business.

We categorise risks into two types, strategic and operational:

- strategic risks are high level risks which are related to SGN and the Board. These risks are determined, owned and reviewed by the Board every six months. The majority of the Risk Committee is part of the Executive who also review the strategic risks
- operational risks are those risks related to the operational aspects of the business and each risk is assigned a Responsible Manager and/or Director

Our Business Risk Management Process includes the following elements:

- identification, assessment and documentation of business risks
- identification, prioritisation and documentation of required internal controls
- identification and documentation of Responsible Managers for risks and controls
- governance, monitoring and reporting mechanisms
- escalation and issue resolution

This framework applies to the SGN Group as a whole including the activities of all subsidiaries and related parties and will apply to our business in NI.

Safe Working Practices

The SGN Risk Manager is responsible for managing the business risk process and reviews existing risks, new identified risks, and manages the removal and archiving of redundant risks.

Managers and staff will have the required competencies to carry out their roles and responsibilities related to the business risk process.

Management procedures supporting our risk management framework set out the SGN-wide risk and control methodology and how it should be applied. This is founded on the risk-based methodology adopted by Group Audit and facilitates a common understanding of risk and control and makes the independent audit process more efficient.

All significant risks facing SGN are systematically and regularly identified, assessed, monitored and adequately controlled to ensure that SGN meets its objectives. Assessments consider the significance of the risks to SGN, the likelihood of the risks materialising, our ability to reduce the impact if the risk was to materialise and the costs of operating controls relative to the benefit obtained in managing the risks.

All Senior Managers:

- consider and identify risks in all aspects of their work
- evaluate the risks
- consider what is in place to mitigate the risk and whether it is appropriate and effective
- consider existing policies and procedures that may affect the response to a risk
- report to their manager any process or control improvements that could be made
- report to their manager any control weaknesses or breakdowns as soon as they are evident; and
- document the risk and its control assessment and any actions undertaken or planned for risks which may threaten the achievement of our strategy and objectives

Following the systematic risk assessment, and dependent on the acceptability of the risk identified, appropriate internal control measures are identified using the 'ERIC' principle:

- **Elimination** – removal of the root cause of the risk where either the realisation of risk is unacceptable under any circumstances (The Precautionary Principle), or elimination is cost effective
- **Reduction** – measures leading to reduction of probability or severity of the consequence of the risk
- **Isolation** – mitigates the consequences of the risk by quarantining it; therefore the risk is contained in such a way that the consequences of realisation of the risk are contained in such a way that makes occurrence acceptable
- **Control** – measures to control the consequences

Alongside appropriate internal controls, other external measures are also considered, such as transferring risks to third parties (eg insurance), sharing risks (eg joint ventures) or withdrawing from unacceptably risky activities.

Our Business Continuity Management system complements our risk management regime. The management system is currently externally certified to British Standard BS25999 and we expect to achieve certification to the new International Standard ISO22301 during 2014.

Our approach for managing risk is also enshrined in our Risk and Change Management Standard SGN/MS/1. This is a goal-setting standard that is effectively a 'statement of our intent'. We say what we will do and then implement it by applying appropriate procedures and processes.

1. We will have systems, processes and procedures in place for all areas of our business to deliver effective and consistent risk identification, risk assessment and implementation of appropriate risk controls to remove risk or manage any residual risk to acceptable/target levels (eg – as low as is reasonably practicable (ALARP)). Procedures to support our management of risk will include requirements for:

    - business risk processes to manage business and operational risks that reflect a 'whole life cycle assessment' approach
    - business continuity management processes to a recognised standard (eg BS25999) to control risks/threats to the continuity of critical business processes
    - a process to identify and assess changes to legislation and regulatory conditions
    - allocation of roles and responsibilities and approval/authorisation, including the role of safety forums and other governance groups
    - compliance with legislation intended to control risks (eg – COSHH, manual handling, employment of young persons)
    - the use of proactive and reactive approaches to risk management and the use of appropriate risk management tools and techniques (eg ERIC – eliminate, reduce, isolate, control; BATNEEC – best available technology not entailing excessive cost)
    - a methodology/process for hazard identification and documentation for all workplaces and work activities (eg operational sites, offices, warehouses) and how action will be decided and taken to control the risks
    - consideration of human factors as part of our risk assessment processes
    - a hierarchy of controls to reflect the level of risk (eg – generic risk assessment, site specific risk assessment, permit etc)
    - the need to review risk assessments in light of changes to work processes, new equipment, significant changes to existing safe systems of work and findings from audits, inspection or incident/accident investigations (or any other source of feedback)
    - where appropriate, a consistent qualitative or quantitative risk assessment methodology that reflects likelihood and consequence and allows prioritisation of risks and risk reduction action plans

- the documenting, monitoring and reporting of risks to the business
- providing assurance to the business and other inspecting bodies and stakeholders
- managing the need for specialist quantified risk assessments (eg – HP pipelines, storage sites)
- monitoring and testing risk control systems
- developing and monitoring action plans to address issues and improve performance
- employee involvement, including reporting any risk control weaknesses or breakdown
- effective communication on hazards, precautions and risk assessment across the business
- supervision to ensure that employees are following appropriate risk assessment systems for the activities being undertaken
- the competence requirements of personnel who will be undertaking risk assessments; and
- processes and controls to ensure the security of our people, information and assets

2. We will have processes and procedures in place such that temporary and permanent business changes are adequately assessed and managed to ensure that we maintain the capability and processes required to meet our obligations and to effectively manage our risks.

Business change procedures will prescribe the requirements for:

- allocating roles and responsibilities and an approval/authorisation process commensurate with the risk associated with the change
- evaluation that is timely and proportionate to the risk
- an impact assessment of the change – to include any human factors risks and an assessment of the effect on any of our systems and the SGN gas transporters safety cases
- the need to assess and control any interdependencies with other changes
- the need to review and, if required, revise statutory safety documents or reports, SGN policies and procedures, environmental permit submissions, and if necessary to inform the regulatory authorities of the change
- ensuring that technical changes to plant, equipment and systems are managed to ensure compliance with appropriate standards and guidance
- controlling the introduction of new products, equipment and techniques
- effective employee engagement and communication (including employee representatives)
- ensuring that the required levels of competence are maintained
- ensuring that organisational changes comply with all applicable human resources policies and procedures

- monitoring required during changes
- the records and documentation to be retained for all changes and the period of retention; and
- periodic reviews of the management of change system to monitor its effectiveness

A comprehensive suite of management procedures and work instructions is already in place to underpin achievement of our Risk and Change Management Standard.

SGN provides safe systems of work for its employees and contractors on operational and non-operational sites and ensures that employees and contractors use the safe systems provided. The safe systems of work are supported by a series of user-friendly task cards for key areas of risk. These include Cable (Plant) Avoidance Task Cards, Working in Confined Spaces Task Cards and Gas Emergency Task Cards.

Dynamic risk assessment is carried out by employees and contractors every day and at every new work site and recorded electronically or by paper-based systems before work commences. All operational employees have been issued with a suite of risk assessment forms and quick reference guides covering our significant five risks (work at heights, deep excavations, use of mechanical plant, lifting operations and confined spaces).

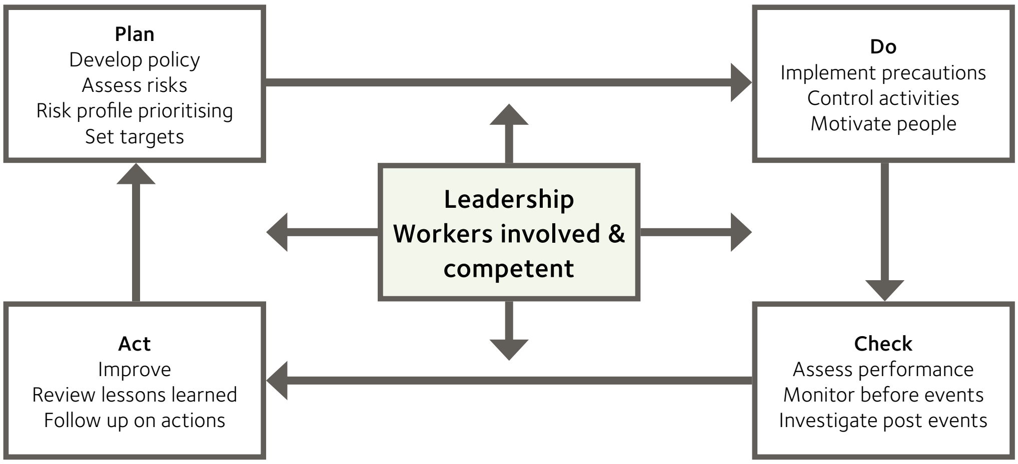
For new or uncontrolled risks, Management Action Plans are discussed by local Risk Assessment Groups (RAG) and shared with a wider audience as appropriate.

4.1.2 Identification and quantification of risk issues, including significant asset risk issues

Occupational and Process safety (managing risk) is at the heart of everything we do and we take very seriously our responsibilities to our employees, contractors and members of the public. Since the formation of SGN, we have made great strides in embedding a robust safety culture and safety management system in our organisation. This was recognised by the Gas Industry Safety Group at its ‘Decade of Excellence’ awards in 2010 when we won the prestigious Overall Safety Achievement Award. Our intention is to apply our successful culture and approach to operations for Gas to the West.

Our Safety Management Framework (SMF) is the core of our safety management system and is based on recognised best practice for safety management systems, such as the Health and Safety Executive (GB) document HS(G)65 'Successful Health and Safety Management' and British Standard OHSAS 18001 'Occupational Health and Safety'. The principles in these documents, as well as those in the BS EN ISO 14001 model for Environmental Management, are fully incorporated into the structure of our SMF, in that the components of our framework are designed to work together to drive continuous improvement through cycles of **Plan – Do – Check – Act.**

Figure 3 – Process cycle to drive continuous improvement



The SMF reflects our vision, values and policy statements for health and safety, environment and sustainability, and asset management. These documents sit at the heart of our SMF model and effectively shape how we do things. The intent within our policy statements is translated into the goal-setting standards that form part of the SMF.

Figure 4 – Safety management framework

Our Risk and Change Management Standard conveys our commitment to have systems, processes and procedures in place for all areas of our business to deliver effective and consistent risk identification, risk assessment and implementation of appropriate risk controls to remove risk or manage any residual risk to acceptable/target levels.

At an operational level, we have identified the key risk control systems that are intended to ensure the safety of people and the safe operation of our networks (process safety). We have a comprehensive set of performance indicators to monitor that these risk control systems are operating as intended, allowing improvement actions to be taken where required. Any such improvement actions are visible to our Executive Committee and/or our Distribution Engineering Safety Committee and are tracked to a satisfactory closure.

We are also actively involved in a number of UK gas transporter forums (eg National incident review panel, gas transporters safety group, distribution networks collaboration forum) as well as being a member of the Energy Networks Association. These serve as an industry wide source of intelligence on potential risks that may require implementation of additional controls.

Risk assessment is one of our Safety Golden Rules, reflecting our commitment to ensuring safe systems of work and safe working practices are implemented in all of our business activities, from the planning stage onwards. This includes a suite of generic risk assessments for all our activities as well as our risk assessment process and documentation for dynamic risk assessments in the field. We have produced a Safe Person Handbook which is issued to all our operatives. This includes guidance on typical hazards and the precautions that should be taken. The handbook also includes Safe Person Task Cards for higher risk activities such as working at height, street works, manual handling and lifting operations.

4.1.3 Description of the procedures to mitigate risk and monitor actions to completion

These aspects are substantially covered in the sections above, which describe our processes and governance regimes for risk management. The management information generated from those processes is used at all levels of our business to monitor our performance and/or to track corrective actions to completion (eg via the Risk Committee; the Distribution Engineering Safety Committee; Executive and Board oversight/ significant incident investigation tracker).

Significant operational risks are managed via the Safe Control of Operations (SCO) and Permit to Work processes. Minimum requirements are set for systems, procedures, training, record keeping and monitoring. The SCO process accepts only those with the relevant and current competencies as Competent Persons and Authorising Engineers. We currently have more than 300 registered Authorising Engineers and our SCO desk managed more than 1,500 notifiable operations and permits during 2013/14. Authorising Engineers must audit 10% of their permits on an annual basis and performance against this standard is monitored and reported monthly.

We will extend our existing established processes for SGN NI.

4.2 Interaction with the NIAUR

4.2.1 Principles/arrangements to be completed during mobilisation

SGN will engage with the Regulator at the earliest opportunity to agree a programme of works and Authority approvals to satisfy the Standard Licence Conditions in the lead-up to FOCD. The following will need to be completed during that period:

- a Network Code and modification rules (condition 2.4)
- a statement on Conveyance Charges (condition 2.2)
- a statement of Connection Charges (condition 2.3)
- System Operator Agreement with the TSO for Gas to the West (condition 2.5)
- sign on to/produce a Marketing Code (condition 2.13)
- a Consumer Information Code (condition 2.15)
- a Complaints Handling Procedure/ code of practice (condition 2.14)
- network demand forecasts (condition 2.11)
- arrangements for booking capacity (condition 2.19); and
- pay the licence fee to the Authority

4.2.2 Accountability for regulatory affairs identified in the organisation structure

Our proposed organisational structure will facilitate the required interactions with the NIAUR. A Head of Finance/Regulation will be part of the NI team and will be responsible for day-to-day regulatory matters. This role will be supported by expertise and experience of regulatory affairs provided from within our Group.

The Director, Northern Ireland (and SGN Executive Directors as required) will meet with the Authority as required on any matters of strategic importance or matters critical to NI consumers. This mirrors the successful structure employed within the broader SGN business which has an established record of good relationship with Ofgem. This is facilitated by ongoing engagement and commitment to communication as part of the SGN culture which gives a two-way benefit exemplified by SGN being the only British network not to receive any fines from Ofgem in the price control period up to 2013.

4.2.3 Proposals for periodic reporting of performance, including cost reporting, to the NIAUR

Reporting to the Regulator will be in accordance with Licence Conditions (eg standard condition 18) and/or as directed by the Authority (eg publishing performance against standards of service). The reporting regimes under our current licence as a UK Gas Transporter are comprehensive and well defined and we have implemented a reporting structure and systems to capture and report a wide range of key metrics to demonstrate the efficient and safe operation of our networks. We intend to apply the same rigorous approach and for our business in NI.

4.3 Policies and Procedures

4.3.1 Process for development of policies and procedures

All engineering and safety policies (standards) procedures and instructions are developed and approved in accordance with our SMF, in particular the management procedure SGN/SMF/1 Control of SHE and Engineering Documents. This procedure includes: the types of document; authority levels and processes for approval; and the implementation of documents. Documents are controlled via an Engineering Registrar and are created using a document development database which is designed to engage relevant staff in the process.

We intend to utilise our comprehensive suite of engineering and safety policies and procedures which cover all aspects of our operation as a gas transporter in the UK. Where appropriate, our documents are aligned with recognised industry best practice (eg The Institution of Gas Engineers and Managers). As a minimum, our procedures deliver compliance with all relevant UK legislation and regulations.

We intend to utilise our existing documents where relevant but recognise that an element of review will be required to ensure that they are fully compliant with NI regulations.

4.3.2 Process for maintenance/review of policies and procedures

We have a team of competent Policy Managers who are accountable for the upkeep of our suite of documents. All documents have planned review dates (nominally a frequency of five years) which are based on risk or informed by changes to legislation/regulations, working practices or learning from incident investigations.

4.3.3 Organisational arrangements for personnel access to current documents

All the documents in our safety management framework are available on our intranet 'sgnnet' and, therefore, current versions can be readily accessed by employees.

4.3.4 Proposals for communication of changes

Material changes to documents are communicated monthly via our 'Teamtalk' process which prescribes that all employees are briefed on matters relevant to them. Bespoke briefing or training is carried out where warranted. Teamtalk is also used as the vehicle to communicate safety alerts and bulletins. This information is also provided to around 1,000 contractor employees in some 40 different contracting businesses.

We will to apply our existing communication processes to our business in NI.

4.4 Inspection/review/QA/audit

4.4.1 Proposals identified for inspection/review/QA/audit

SGN has an internal audit function which will encompass our NI network. This will include regular audits of processes and procedures to ensure that all policies are being adhered to appropriately. The audit findings will be reported quarterly to the Audit Committee and shared with the Director, Northern Ireland to ensure that any issues identified are resolved in a timely manner. Outstanding issues will be reviewed at the Audit Committee and escalated as appropriate.

We will also apply existing audit and inspection regimes to Gas to the West. Our annual compliance and assurance plan is risk based and is carried out in accordance with SGN/PM/A/3 Management Procedure for Safety, Health, Environmental and Engineering (Process Safety) Auditing, which prescribes the requirement for targeting audits and inspections; the process for carrying out the examination; agreeing the findings and corrective actions; and reporting the findings to the business.

We will also apply our existing processes for quality monitoring and independent inspection of operational activities. This will be in accordance with SGN/PM/SHE/28 Management Procedure for Routine Quality Monitoring and Independent Assurance of Operational Activities, which prescribes the roles and responsibilities for carrying out routine and independent inspections; the recording of results; and implementing corrective actions.

4.4.2 Proposed range of operational activities covered

Our procedure SGN/PM/A/3 (as described above) will be applied to management systems and/or to test conformance to specific procedures or risk control systems – as determined by risk, changes to compliance requirements or intelligence from the business (eg incident investigations).

Procedure SGN/PM/SHE/28 (as described above) will be applied to all operational activities (eg construction, maintenance, emergency, connections). The frequency and number of inspections for each activity will be informed primarily by the level of risk involved.

4.4.3 Proposals to identify actions and manage to completion

We propose to use our existing processes for identifying and managing corrective or improvement actions.

The SGN Distribution Engineering Safety Committee (DESC) approves our compliance and assurance plan. The committee tracks the findings and agreed actions to closure and this metric is regularly reported to our Executive and Board. The DESC also receives management information from inspections carried out under SGN/PM/SHE/28 (as above) as well as our Incident Review Panel and determines appropriate actions as required – which are tracked to closure via an actions log.

4.4.4 Arrangements for feedback into review of policies and procedures

We currently operate with an ‘open channel’ for any employee to raise issues via our Engineering Registrar. Engineering policy and SHE are represented on our key governance groups (eg DESC, Incident Review Panel, Engineering Forum) and actions to review policies and procedures will normally be allocated directly via those routes.

4.5 Information systems

4.5.1 IT systems proposed to provide management information

Details of the proposed IT systems we will utilise for our NI network are included within the relevant sections of this business plan. These systems will have the capability to generate relevant management information to support the efficient operation of our network assets in NI. We will also utilise other existing applications to provide performance management information (eg, accident and incident metrics; and effectiveness of occupational and process safety risk control systems (via leading and lagging indicators).

4.5.2 Proposed approach to provide and disseminate operational activity based cost information

Our existing financial recording and reporting systems support the customisation of reports at the required level of granularity to satisfy the needs of all tiers of management (by activity, location, manager, process etc). We will employ these systems to create a bespoke suite of reports and metrics for dissemination to managers – to allow the ongoing monitoring and assessment of financial performance and operating/cost efficiency.

4.5.3 Support services requirements identified and resourced

We do not envisage a requirement for any additional external support services. We will put in place suitable MSAs for those areas where our NI business utilises services from SGN.

FIVE

Chapter Five

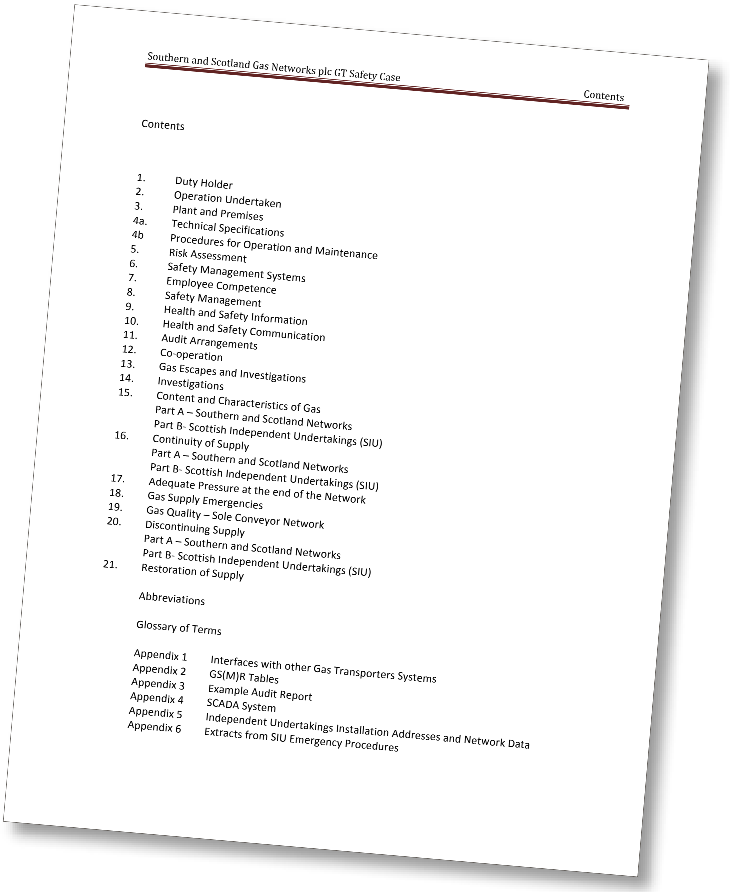
Technical

5.1 Safety Case

5.1.1 Proposed process and timetable for development

We have extensive experience in managing our safety cases in terms of general 'upkeep' and gaining HSE acceptance for specific material changes. A full review was carried out and accepted by the HSE in 2013 – the contents of our current safety cases are summarised in the extract below. Our existing safety cases can be readily adapted to suit the type and scale of our NI operation and in accordance with the Gas Safety (Management) Regulations (NI). Allowing six months for review/ acceptance by HSE(NI), we envisage that an accepted Safety Case for Gas to the West could be in place within 12 months from initiating the work.

Figure 1 – Summary of safety cases



Southern and Scotland Gas Networks plc GT Safety Case — Contents

Contents

1. Duty Holder
2. Operation Undertaken
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4b Procedures for Operation and Maintenance
5. Risk Assessment
6. Safety Management Systems
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   Part A – Southern and Scotland Networks
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Abbreviations

Glossary of Terms

Appendix 1 Interfaces with other Gas Transporters Systems
Appendix 2 GS(M)R Tables
Appendix 3 Example Audit Report
Appendix 4 SCADA System
Appendix 5 Independent Undertakings Installation Addresses and Network Data
Appendix 6 Extracts from SIU Emergency Procedures

Proposed arrangements for liaison with and submission to HSE

We will engage with the HSE(NI) at the earliest opportunity to agree a suitable programme for the safety case submission as well as agreeing ongoing interface arrangements.

5.1.2 <u>Proposed process for management of change in operational practices</u>

Changes will be managed in accordance with SGN/MS/1 (our risk and change management standard). This requires an assessment of impact on the safety case for organisational changes, changes to working practices or the introduction of new techniques, products or equipment.

5.2 Technical policies, procedures and reference standards

5.2.1 <u>Proposals to have policies covering all operational business activities</u>

Our Safety Management Framework (SMF) and our approach for developing engineering and safety policies and procedures are covered in Section 4 of the business plan. We will apply our comprehensive suite of documents to cover the full life cycle of gas transportation assets, including all aspects of the safe operation of those assets. We also have the required non-technical policies in place (HR, Finance etc) which we will utilise to support the efficient operation of our NI network.

5.2.2 <u>Proposals for training of personnel to ensure understanding</u>

In NI, we propose to apply the same approach and processes to competence assessment and training delivery as is currently used within SGN. This will apply to both direct and contractor employees, as we require contractors to demonstrate the same level of commitment to SHE and technical competence and performance as SGN staff.

Our approach is enshrined in our Management Standard for Competence, SGN/MS/7 and the associated management procedure for our Competence Assurance System, SGN/PM/SHE/77.

We have a Head of Competency Development who leads a Competence Management Group which is responsible for maintaining the required competence and capability of our workforce. This covers training requirements across all aspects of the business (eg technical, administration, management training etc).

Our Competence Assurance System (CAS) is the primary system for monitoring and assuring the competence of field staff and others in safety critical roles. This requires the periodic observation of operational activities against defined standards, with identified gap actions being addressed either through on-the-job coaching or training.

Training is focussed on improving the capabilities and performance of the workforce and ensuring that all work is carried out with due regard to safety and quality.

Field operatives are given the skills and experience to obtain nationally recognised qualifications as appropriate (for example, Network Construction Operations (NCO) National Vocational Qualifications (NVQ)), as well as additional training to improve safety performance. External registrations are managed where these are a requirement of the job role. For example, all of our First Call Operatives receive refresher training and are re-assessed every five years to retain their Accredited Certification Scheme (ACS) qualifications necessary to renew registration with the Gas Safe Register.

Assessment of operatives involved in PRI maintenance will be undertaken by qualified A1/D32 assessors via a rolling five-year programme where each candidate will be required to undertake all mandatory competence assessments identified for their role. Local management will be responsible for determining the requirement for each individual and for keeping appropriate records.

A major focus within recent years has been the training of all operational first line managers (Team Managers), particularly to ensure their compliance with our policies and procedures and to improve safety performance. These training packages will be used for managers in NI where required/appropriate.

We are also committed to developing capability for the long term, as evidenced by our apprenticeship scheme which is now successfully embedded in our business, with 186 apprentices currently in the scheme, covering all technical disciplines.

Testing of understanding is achieved via the CAS, at the time of training or via routine workplace and technical quality inspections and audits.

5.3 Compliance with relevant legislation industry standards and best practice

5.3.1 Proposals to incorporate into all policies, procedures and practices

We will use our existing processes which monitor changes to legislation and regulations using a range of data sources (eg Barbour, the HSE). The impact of changes is assessed and suitable action programmed if required. Our procedures also embrace recognised industry best practice such as the Institution of Gas Engineers and Managers (IGEM) Standards/Recommendations. We adopt these in full or align our procedures to them.

We will also extract value from our involvement in UK gas industry forums including the Gas Networks Collaboration Forum and the Gas Transporters Operations Safety Group.

5.3.2 Process to maintain awareness of industry practice

As mentioned above, we have strong links to IGEM and other industry players (we lead on a number of forums) that keep us at the forefront of industry practice. We are also very active in the area of innovation, as evidenced by our success in the Ofgem National Innovation Competition in 2013.

5.4 Network Code

5.4.1 Timetable for completion of the network code and any other appropriate contractual arrangements

To avoid adding complexity for Shippers, our intention (current working assumption) is that initially we will mirror the Pheonix Natural Gas and Firmus Energy Network Codes. On that basis, the development timeline will be relatively short and the Code could be in place well in advance of the FOCD.

However, we recognise the benefits of creating a single uniform network code and would be willing to actively engage in delivering this.

There will be a requirement to sign-on to an agreement with the Transmission System Operator (TSO) for our network operations. We anticipate that the TSO will utilise its existing agreements as a basis for this. We are very familiar with operating within the UK Uniform Network Code and the TSO/DSO operating arrangements that support it. As such, we do not envisage any time line issues in establishing the agreement.

5.4.2 Accountability for management of processes/compliance/issues identified in the organisation structure

The Head of Business Development will be accountable for managing processes and compliance. This individual will be able to call on the significant expertise that exists within SGN and our Group.

5.5 System performance monitoring, system control arrangements

5.5.1 System control arrangements

We control and monitor the performance of our existing networks in Scotland and Southern England from our Gas Control Centre at Horley. SGN is also contracted by Mutual Energy to provide Gas Control services for their networks in NI. The centre at Horley is fully replicated at Horsham to provide continuity in the event of the Horley centre being unavailable.

We propose to incorporate our NI network into our existing Gas Control operations, via an MSA. As the DSO, we will share (gain access to) the telemetry data gathered by the TSO at the entry points to the distribution networks.

The level and type of monitoring installed on the distribution networks will take cognisance of accepted best practice but will also be determined by the circumstances that exist for discrete parts of the network (eg type of equipment; level of resilience; number of customers downstream; and geographical remoteness). As a minimum, monitoring equipment will be installed to provide assurance that the networks are operating safely and within the expected tolerances. Monitoring will also be consistent with meeting the obligations on the DSO in Network Codes and TSO/DSO Operating Agreements, in particular the requirements for daily metered consumers and daily forecasting of gas demand in the distribution networks.

5.5.2 System performance principles and arrangements

System performance principles are designed to satisfy all our obligations relating to the safe and efficient operation of our networks as well as meeting stakeholder expectations (eg Safety Case; licence conditions; operating agreements; and new connections).

SGN/MS/9 is our Planning, Capacity and Security of Supply Standard that reflects how we will meet those obligations. The standard is underpinned by a suite of planning procedures covering all aspects of capacity management and safe operation (eg network analysis; pressure management; shrinkage; and assessing new connections).

Our Gas Control Centre operates under its complementary and comprehensive management system which includes the 'operating rules' for system performance monitoring, alarm management protocols and co-operation with other stakeholders (routine and during gas supply emergencies).

5.6 Asset records

5.6.1 Key records

We have a full suite of Records Procedures that prescribe the requirements for capturing and retaining records for all asset groups and we intend to utilise these for our NI business.

Key records to be captured/stored will be informed by industry best practice, in particular the Institution of Gas Engineers and Managers standards/ recommendations (TD/3, TD/4 etc). Our existing procedures are already aligned to these. We will capture and store the records required to manage assets over their life cycle, including:

- creating asset registers
- proof of construction integrity
- component traceability
- future location of plant
- damage avoidance
- work scheduling/maintenance
- recording of faults/condition monitoring
- pressure systems requirements
- regulatory reporting
- capacity management
- emergency procedures
- supply point administration including customer switching

5.6.2 Arrangements for collection/retention of key records

Given the scale and likely development of our NI network, we fully recognise the need to balance the accurate recording of asset and meter data against the economic provision of supporting systems. We will develop bespoke short term solutions with a view to migrating to existing records processes and systems where justified. We believe there are a number of innovation initiatives that could provide improved data recording solutions at a small marginal cost to SGN NI.

We are very active in a wide range of innovation initiatives that could yield improved records solutions that would be utilised in NI.

5.7 Asset management systems

5.7.1 Proposed approach to implement an asset management system

SGN already has a robust asset management system (covering the full asset life cycle) that is externally certified to BSI PAS55. We were audited by Lloyds Register in March 2014 and are being recommended for continued certification to the standard and to the new international standard ISO 55001.

We will apply our asset management system to operations in NI.

5.7.2 Demonstration that asset records are aligned/integrated with work and finance systems

Our established systems, through the functionality of the Oracle ERP and Maximo systems (in combination with our processes and procedures) provide for the reporting of costs and workload at sufficient detail to meet the stringent reporting requirements associated with our networks operation. The costs associated with our capital and replacement work are currently recorded through a projects ledger at a project and task level of detail; using the Fixed Assets functionality of the Oracle ERP system, then allows us to appropriately categorise them. The same approach to capital expenditure will be applied within SGN NI, providing the alignment of costs against assets and work undertaken.

We have discussed in Chapter 3 (Section 3.5.1) how we will develop our work and asset management systems and we will ensure that where interim solutions are selected (as might be dictated by activity levels) they reflect the principles described above and the requirements of our ISO55001 approved asset management system. We have a clear understanding of the key records associated with the operation of the network (see Section 5.6.1) and we will gather the correct information to allow for effective performance monitoring and informed technical and financial decision making.

5.7.3 Proposals for asset life cycle management

Our asset management system and safety management framework cover the full life cycle of all our assets using a plan-do-check-act approach. Specific procedures are in place for all asset groups for each part of the life cycle (eg construction procedures; operating procedures; maintenance procedures, and audit and inspection procedures).

5.7.4 Proposals to identify and manage developing risk issues

Asset faults are captured and reported in accordance with SGN/PM/FAULT/1 Fault Reporting Procedure as well as via Pressure Systems inspections and by Gas Control (where detected via system monitoring equipment). We operate an Engineering Forum which uses fault and other asset condition intelligence to identify developing risk issues and initiate corrective action. Incident investigation reports also feed into this process via our Incident Review Panel. As part of our current business plan, a system of asset health indices is being implemented for above ground assets as part of our condition monitoring regime.

We will use this approach for our business in NI.

Application of Reliability Centred Maintenance (RCM) principles to optimise activity

We currently apply RCM to those assets where sufficient fault and resilience data is available to support the use of RCM principles. We will apply RCM where it is feasible and cost effective to do so.

5.8 Emergency response

5.8.1 Set out standards of performance and rationale

We will work to the Regulator's recently published (March 2014) overall and individual standards of performance. These are very similar standards to those that apply in our existing networks in GB and we consistently meet the required planned performance levels. For example, in terms of emergency response to gas escapes, we have an excellent track record of achieving or exceeding the 97% standard and while other GDNs failed standards our networks successfully maintained standards during the severe 1:50 winter of 2010/11.

We are confident these experiences can be transferred to NI, allowing us to meet the performance levels expected by the NIAUR and customers alike.

5.8.2 Explain emergency procedures development during mobilisation stage (PREs (Public Reported Escapes), emergency incidents, supply constraint etc)

Managing emergency calls and gas supply emergency situations are major parts of our current operations and our safety cases and we have demonstrated to the HSE that we have robust arrangements in place. We have developed and implemented procedures and processes to apply a risk-based approach for gas emergencies (escapes) to reduce the overall risk to the public and optimise resources.

We have extensive experience in dealing with gas supply emergencies, including procedures for managing gas supply emergencies resulting from gas supply constraints and/or network capacity constraints.

A suite of gas supply emergency procedures was developed collaboratively by the TSOs, DSOs and the National Emergency Co-ordinator for the gas network in the UK. These procedures are regularly tested to provide assurance that they will be effective if required to be applied in earnest.

We will use similar processes and procedures but recognise the need for some customisation to reflect the operating environment/arrangements in NI.

5.8.3 Explain how resource arrangements align with progressive development of business

Our existing Emergency suite of procedures prescribes the requirement to regularly assess emergency resource levels and patterns to ensure we are adequately resourced and retain capability. This dynamic analysis takes account of the number of calls, the type and pattern of calls received and takes into consideration external factors such as the weather, to ensure sufficient capable resources are available to meet our service standards and maintain our standby arrangements.

Accessing Data

Scheduling and dispatching the work

From the onset we will operate our emergency response in a similar manner to our GB operations and make use of the NI emergency call number and extend our current emergency call handling arrangements with National Grid. They will route calls from NI to our Operations Control Centre (OCC) where highly trained competent staff will immediately dispatch jobs to the responsible manager in NI.

Given the scale of current operations, resources in the OCC will be sufficient to deal with both summer/winter variations and the extension of our NI network over time.

Labour Resources

During the initial stages of construction we will have sufficient cross flexed operatives within our contractor resource to provide both First Call response and Escape, Locate and Repair (ELR) capability.

As the network and number of connections grows we will dedicate resources to First Call response as set out Chapter 2 and retain sufficient cross flexed mains and service laying teams to provide the necessary ELR capability.

We will discuss how we can work with the other NI DNOs to provide emergency support for major incidents and will also be able to draw on our group strengths as necessary.

Our NI management team will be trained and competent to deal with all aspects of emergency response and will be in place from early in the mobilisation period to provide the necessary technical support and guidance.

5.8.4 Compliance with single Gas Emergency Number and interaction with other parties within the Utility Industry

We plan to use the 0800 002 001 emergency phone number currently utilised in NI. However, we will explore alternative arrangements for providing this service in collaboration with other interested parties. We recently initiated and led a similar piece of work in the UK to challenge the National Grid provision of call handling services and to assess the practicality and economics of utilising our own emergency call number. This resulted in improvements in both service quality and costs and we would be willing to discuss with the other NI DNOs how we might leverage our existing call handling arrangements to introduce the benefits to the NI gas industry.

5.8.5 Arrangements for personnel training and simulation exercises

The training and competence of FCOs and Managers directly involved in the 'day to day' response to emergency calls follows our existing processes for assuring competence and capability as described in section 5.2.2. FCO's receive refresher training and are assessed every five years to retain their Accredited Certification Scheme (ACS) and Gas Safe Register.

Additional specific training is provided to staff and managers who may be required to carry out one of the specified roles identified in our procedures for managing infrequent gas supply emergencies (eg Incident Controller; Operations Controller; Load Shedding Co-ordinator; and External Communications). This is a mixture of classroom-based training and participating in emergency exercises.

We regularly participate in National (UK) exercises to test emergency procedures for managing a gas supply emergency as well as in multi-agency exercises as part of our role in Civil Contingencies Planning. We also organise internal exercises to test our ability to deal with a major incident within our own operating footprint – the most recent exercise in 2013 involved the full SGN Executive team.

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Chapter Six

Procurement

6.0 Procurement

This chapter sets out our approach to procurement for the construction and operation of the LP Network. SGN operates as both a major contractor and operator of gas distribution networks within the UK and we use and promote the procurement practices both to provide value to the consumer and to comply with appropriate European wide utility procurement regulations. We manage our internal procurement arrangements through a managed service agreement from Scottish and Southern Energy (SSE). This will benefit the new business in NI as we enjoy significant buying power alongside economies of scale. For example, during 2013 we purchased over 2,600km of PE pipe from our suppliers.

Where there is a need for new contracts to be put in place, then we will look towards local suppliers and contractors in the first instance but in adopting best practice procurement principles we will ensure that the necessary economies and process improvements are delivered.

6.1 Principles

6.1.1 Identify accountability for development and management of processes in the organisation structure

The management of procurement will be shared between the NI business, the SGN Executive and Board and the SSE Procurement function, our shared service provider. The procurement director for SSE has accountability into both the SGN and SSE Board for procurement process governance and compliance. The Director, Northern Ireland will have responsibility for compliance within SGN NI.

To ensure compliance across the NI business, processes will be clearly defined, and, where possible, embedded within systems and subject to internal audit to ensure the effectiveness of controls and compliance. All procurement activity will be conducted in accordance with the policies and procedures documented in our Procurement Manual and included within our recently implemented Oracle based procurement system that assists the business in both control and compliance of procurement activities.

6.1.2 Proposed policies and procedures to ensure compliance with EU requirements

We have developed policies and procedures that fully reflect EU procurement regulations as well as procurement best practice for those situations where EU procurement thresholds are not triggered or applicable. These policies and procedures are captured within our Procurement Manual (which we will review and amend as necessary to reflect NI law) and they govern all procurement activities and bind every individual within our business.

In outline the policies and procedures for each stage of the process are:

Source potential bidders/invite to Pre Qualification Questionnaire (PQQ)

- For a competitive purchase sufficient tenderers need to be involved. The nature and value of the purchase will dictate whether the event will be governed by EU regulations and that requirement will be assessed by our procurement representative and the responsible manager.

- The PQQ is sent to all bidders who meet the selection criteria.

Evaluate bidders responding to PQQ

- The scoring mechanism will be set out in advance of the PQQ event and would typically include criteria such as technical capability, demonstrable expertise or experience, health and safety considerations, environmental awareness, access to resources and financial robustness.

Issue the Invitation to Tender (ITT) to successful PQQ bidders:

ITT evaluation/negotiation

- ITT evaluation will be as per the agreed weightings and scoring advised in the ITT worksheet. Assessment criteria will include for example tender price, technical expertise and capability, availability of resources and robust management systems.

Select preferred supplier(s)

- commercial submissions are only considered if the bid is technically competent and the final decision is made on the basis of Most Economically Advantageous Tender (MEAT).

6.1.3 Processes authority levels and financial controls

Structured financial authority levels and controls are in place and engrained within our business with sign-off as follows:

- [redacted] Procurement Officer and Budget Holder
- [redacted] Procurement Manager and Budget Holder
- [redacted] Head of Procurement and Chief Financial Officer (CFO)
- [redacted] Group Head of Procurement and Commercial Operations and CFO
- [redacted] Director of Procurement and SGN Board

6.1.4 Competitive tendering arrangements and timetable for these

Our tendering arrangements will follow the requirements of our Procurement Manual and we would draw on group procurement resources to support the NI business. The tender timetable will allow for early engagement with stakeholders to ensure efficient planning, execution and delivery of the tendering activity to ensure our readiness to place contracts on time.

Service Laying

The tendering arrangements and indicative times are shown for the various phases of activity, though we have in our mobilisation plan allowed six months for tendering the mains and service construction contract. To illustrate our capability, we recently successfully tendered a mains and service operations contract valued at £50m, involving the mobilisation of 27 contractors, in less than six months.

Sourcing/business strategy (two weeks):

- assemble cross-functional project team
- understand needs/specification, and current market; and
- draft and approve sourcing strategy

Pre-qualification (PQQ) (two weeks):

- issue PQQ containing capability questions; and
- design Pre-Qualification scoring criterion.

Evaluation of PQQ (two days):

- evaluate capability of each bidder on the basis of pre-defined scoring criterion; and
- communicate initial responses to bidders.

ITT (two weeks):

- issue commercial information and questions based on bidder's capacity/ technique of delivering business needs.

Evaluate ITT (one week):

- invite cross-functional team of stakeholders to evaluate responses from bidders.

Award and implementation (three months):

- make recommendation on the basis of business decision
- map out contracts management, implementation and governance plan; and
- inaugural meeting between business and supplier.

6.2 Materials

6.2.1 Proposals for contract development

As an existing operator of two large networks, we have strategic long-term framework contracts in place for the supply of the majority of materials necessary to construct the distribution network. In procuring materials for our work in NI we will use these framework arrangements and our group's associated buying power to bring advantage and best value to our customers.

Our materials are specified to a fit-for-purpose quality standard and sourced from financially robust and ethical suppliers. Operating within structured and efficient supply chains, we have worked with our suppliers to reduce delivery lead times and will ensure that our work in NI will be able to similarly benefit.

The majority of materials will be available through existing contracts. When procuring materials or products that are not included in our current framework arrangements (eg gas boilers), we will ensure that contracts are fully reflective of need and that we adopt best practice procurement practices in line with those described in Section 6.1.

6.2.2 Proposals for contract awards during mobilisation period

As outlined above we have significant contracts already in place for materials associated with the construction of the network. For example, where necessary contract awards will be as per the procurement process outlined in this chapter and will include contracts for:

- PE pipe and fittings: we ordered some 2,600 Km of PE pipe and associated fittings during 2013. These materials are readily available and we envisage no difficulty in reviewing our existing contracts to ensure the best arrangements apply to our business in NI.

- We also have contracts in place for the provision of meters. We would expect to be able to draw on these existing contracts to procure the necessary meter stock for use in NI.

- Pressure reduction equipment will also be procured from arrangements already in place with manufacturers.

- Reinstatement provision and materials will be provided under the construction contract. We would expect their arrangement to be significantly influenced by our emphasis on recycling of materials and the use 'keyhole' excavation techniques where possible. We would create Key Performance Indicators to encourage our contractor to develop best practice reinstatement services and to minimise waste.

6.2.3 Requirements planning arrangements proposed

We will plan and procure all primary materials. We will have an arrangement whereby the contractor will be recharged for use, as this will lead to the most effective and efficient use of the materials supplied.

Pipe will be delivered directly to site or held at the contractor's store. Pipe fittings and meters will be held centrally at our logistics centre and delivered to our contractor store as required.

Sundry materials will be sourced locally and managed by our contractor.

6.2.4 Stock holding arrangements proposed

As best suits operational requirements, we will arrange for our mains and service contractor to operate one or more stores facilities in NI. We would use our buying power to procure the necessary pipe, materials and meters, and will have arrangements in place for either direct delivery to site or to the contractor's store. We will encourage efficient use of material by charging the contractor for use.

In addition, Scotland Gas Networks is served by a modern warehousing and delivery facility located close to Glasgow. The facility currently provides all fittings and sundry materials used by SGN in Scotland as well as the NG Metering distribution facility for Scotland. Where appropriate this facility would be used to support our NI operation.

6.3 Construction, Maintenance and Specialist services

6.3.1 Proposals for services contract development

As new entrants to the NI market we recognise that we will need to establish a range of service contracts during both construction and for ongoing operations. Where these are required, they will be established during the mobilisation period.

We also recognise the benefits to the NI economy if the business employs local suppliers wherever possible. For smaller contracts such as facilities management, local support and maintenance activities, we will follow where possible a simplified procurement process that reflects the low value of the contracts.

Construction

We expect to place the tender for the main engineering contract for the construction of the mains and services during month three of the mobilisation period with expected award to be achieved by month eight.

We will adopt our standard procurement procedures detailed in section 1 of this chapter to ensure both compliance and the achievement of best value for the business.

We expect to use a local contractor or contractors for the construction of the distribution infrastructure and we will tender for this work under an appropriate form of contract.

Maintenance

We will use contract technicians or internal resources from group companies under the MSA agreement to provide for the necessary maintenance activity associated with industrial and commercial meters and for example pressure reduction installations. In the first instance we would look to employ contract technicians locally and will participate in the up-skilling of suitable resources if necessary.

Award winning robotics

Specialist services

We already have a number of specialist contracts in place to support operations in our existing networks. We will extend or renegotiate these as necessary to accommodate our work in NI, or look towards working with equally competent local providers. These specialist services will typically include pipeline emergency services for steel and non-steel distribution (and Transmission) assets, including the provision of technical advice and the availability 24/7 of specialist labour, materials and equipment. If working with a GB provider the Service Level Arrangements for NI would require them to be mobilised for the first available ferry.

In addition we will develop a number of partnership arrangements to support our Business Development activities. Given the scale and value it is unlikely that these will require to be tendered and they may not take the form of formal contracts. We will however follow our best procurement practices in the short listing and selection of such partners.

6.3.2 Proposals for contracts award during mobilisation period

We will use an MSA or extend existing contracts to cover for the necessary commissioning or maintenance of equipment. We already have arrangements in place for specialist services and we would expect to extend those arrangements to cover our operations in NI. Where new contracts are required, our tender timetable allows for early engagement with stakeholders to ensure efficient planning, execution and delivery of all tender activity, in readiness to place contracts on time (see also Chapter 3).

Where necessary, contract awards will be as per the procurement process outlined in the sections above and will include contracts for:

- mains and service construction
- emergency response (including metering); and
- specialist services

Mains Construction

SEV

Chapter Seven

Business Development

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7.1 Plans and processes to achieve targets for growth in demand/connections

7.1.1 Explanation of how the applicant will meet the pattern of connections set out in the FMA development plan

We have evaluated the pattern of connections set out in the NIAUR Annex 10 spreadsheet (as well as the FMA feasibility study) and believe that we can achieve, if not exceed the published expectations. We believe the key to this will be to develop an aggressive construction plan and to adopt a one stop shop approach to sales.

To support this joint approach, we will form strategic partnerships with both Suppliers, heating system installers and other organisations to provide downstream solutions for all sectors of the market. We have explored this concept with our affiliate company Airtricity and they believe this strategy will break down some of the barriers to change within the market. We plan to provide incentives to change for both owner occupier and small I&C customers. We will offer this partnership to all Suppliers to push forward a joint approach to the market.

Experience has shown that aligning the marketing of in-house measures (for example the installation of gas central heating systems) with the delivery of mains and service infrastructure is essential to maximise the connections opportunity. We will take an area based approach and focus our build plans and resources on those areas of greatest need and that have the highest probability of take up based on local knowledge and market demographics.

The RIIO based approach promotes focus on achieving agreed goals with the Regulator bringing benefits to gas consumer as a whole. This corporate approach will be exported to our NI business so that we can rapidly develop the market by understanding consumer needs and delivering an excellent service.

Justification

As a group we have considerable experience in providing new connections and system extensions. During 2012/13, we completed 45km of new mains infrastructure to existing housing and completed 17,000 connections. These were provided directly for owner occupiers or delivered in collaboration with local authorities, private partners and third-sector organisations. The projects have taken advantage of government funding and supplier-led schemes to support energy efficiency and we have (since 2009) operated an Assisted Connections scheme that has to date delivered in excess of 17,000 connections to fuel-poor or vulnerable customers and allowed us to outperform our original targets.

We offer the above by way of demonstrating our ability to work in partnership with others and as part justification for why we think our collaborative approach to gaining connections can be a success in NI. With regard to the other market segments and working across all pressure tiers, we have, this year, provided mains and service infrastructure (and the necessary meter installations) for 753 connections to industrial and commercial customers and commissioned some 20km of mains and more than 4,000 connections to new housing.

In addition, last year, we replaced or reinforced in excess of 2,500km of mains across our networks. This demonstrates our significant experience of managing the logistics of delivering high profile projects in a cost effective manner. Through close liaison with local authorities and other stakeholders, we are experienced in operating in congested town centres and deliver our projects on time with minimum disruption to the public.

We understand the challenge of building system extensions and the particular importance of establishing our brand and building confidence in natural gas as a safe energy source. Understanding our stakeholders' and customers' needs is essential, as is communicating and demonstrating our plans and capability to build the necessary infrastructure. These are all actions that will underpin the decision making in the different market segments and we will create appropriate interfaces across different media to ensure we interact with our stakeholders and customers accordingly.

Beyond the need to develop relationships with national bodies, we believe engaging with local partners from the private and public sectors will help us shape our marketing incentives and identify areas or communities requiring connections. We will use their skills to provide advice and promote energy efficiency grants, or work with them to build their skills and competencies in gas utilisation such that they can be directed towards encouraging potential commercial and domestic consumers to switch to gas. In parallel with a wider communications and marketing campaign, building these relationships will be a key focus for our Business Development team and will be the means by which we will meet (and outperform) the expected pattern of connections.

Accountability in the organisation structure

Ultimate accountability will rest with the Director, NI while day-to-day responsibility for meeting connections targets will rest with the Head of Business Development. The Director will ensure there is an alignment in the objectives set for the Head of Operations and Head of Business Development to promote collaborative working.

While the Head of Business Development will oversee all the key accounts within the Business Development team, individual Account Managers will be assigned responsibility for key Industrial and Commercial accounts and for maintaining close relationships with, for example, the Northern Ireland Housing Executive (NIHE), housing associations and new house developers. The Head of Business Development and the Communications and Marketing Manager will take general responsibility for promoting connections across the market segments. They will manage arrangements with potential local delivery partners, like, for example, Bryson Energy which currently manages the Department for Social Developments Warm Home scheme.

The Business Development team will be closely aligned with operational colleagues and together with the Connections Co-ordinator will ensure the construction and build plans reflect customer needs and maximise connection opportunities. This will provide a platform for building strong relationship with stakeholders in the local community.

Interaction with operations activities planning

While the initial focus will be on constructing the spine mains to supply the Industrial and Commercial loads, planning the operational build will be led from within the Business Development team. This will ensure that the planning is informed by the most recent market research, expressed customers' needs and the opportunity to maximise the number of properties/premises connected.

Interaction with customers

We currently supply 5.8 million customers across our existing networks and provided in excess of 33,000 connection quotations in 2013 and already successfully operate to a range of guaranteed standards of service. For example our performance for providing standard and non standard quotations is above 99%

We were the first Gas Distribution Network Operator to publish a customer charter and our workforce is highly trained and motivated to deliver against our charter promises and in 2012/13 our networks were placed first and third in terms of overall customer satisfaction score. We also out-performed the leading UK utility when benchmarked against the UK Customer Service Index. We believe these are experiences we can readily transfer to operations in NI.

Our Scotland Gas Network currently retains the number one spot when measured against other Gas Distribution Networks and we will draw on our current 10/10 approach to customer satisfaction when developing customer service initiatives in NI. We already operate an award-winning online interface for new connections and are rapidly developing our capability to interface with customers across other media platforms such as twitter and Facebook – although we also recognise the need to deal with telephone and paper enquires and demonstrate a strong local presence when responding to enquiries. We will assign key accounts, eg the NIHE, to local managers and operate in accordance with our stakeholder engagement principles (see Chapter 3, Section 3.7) to ensure that customers and stakeholders views are taken into account in all that we do.

We currently manage a metering portfolio with 256,000 assets: this consists of 159,000 Credit meters, 92,000 Prepayment meters and 5,000 Industrial and Commercial meters. We manage planned and unplanned meter work on behalf of 34 suppliers as well as facilitating customer debt recovery work. In 2013, we completed 54,548 domestic jobs and 37,952 prepayment meter exchanges. We operate as the MAM for one of the largest gas suppliers in the UK, managing 165,000 assets and our overall standard of performance for this contract in 2013 was 99.28%. More generally our metering team conduct a monthly customer satisfaction survey and the average customer satisfaction rating for 2013 was 96%.

We will ensure we transfer good practice in this key business area and use our MAM experience to benefit NI customers.

We take our responsibilities for promoting safety very seriously. This includes Carbon Monoxide (CO) safety and the protection of vulnerable customers, where our work has been widely recognised. We will use all our existing experience to develop appropriate responses and maintain our commitment to promote gas safety in the NI market.

7.2 Plans to maximise the number of premises connected to the gas network

7.2.1 Arrangements for engagement and development of relationships with businesses, social landlords, and potential customers

By drawing on our group strengths we will create a separate unique brand identity for our licenced business in NI. Promoting the brand and reinforcing our presence in the NI market will be an organisation-wide responsibility but will be significantly informed by the Business Development team. There would be several promotional themes including: gas safety and the emergency number; how to contact us; and the promotion of gas as a safe, convenient fuel of choice for energy efficiency improvements and carbon savings. We will use multi-media channels as well as face-to-face contact to communicate with these stakeholders and potential customers.

We also recognise the importance of promoting gas in NI as a whole and we will work with other Distribution Companies and Suppliers as appropriate to present consistent messages to the public.

We will engage with businesses by hosting events and seminars in each of the towns, designed to inform the business community and encourage connection applications. These forums will provide opportunities to discuss our construction and development plans and to allow comment on the planning process, and to promote gas as a fuel of choice. A key outcome will be valuable insight to the real needs of the business community and how we can work together to develop the gas industry across the licensed area. In parallel, we will engage with trade associations, representative bodies and businesses with a national presence to promote the benefits of gas connections and gas as the fuel of choice.

We will also proactively engage with business users on a one-to-one basis to provide technical advice and information about appliance conversion or new gas installations; providing or bringing together the necessary skills and knowledge to influence decision making and ensure the connection and meter work installation will be co-ordinated with the downstream installation. Co-ordination of connection projects and influencing the build plan for the network infrastructure will be a key role for the Business Development team.

The Business Development team will also be responsible for seeking out partner organisations which can provide the necessary technical skills to carry out the downstream installations in non-domestic (and domestic) premises. For example, helping to improve the skill set of local businesses (eg plumbers, heating or mechanical engineers) allowing them to become Gas Safe registered and hold the necessary competencies to carry out new installations and conversions on both domestic and non-domestic installations.

7.2.2 Arrangements for provision of connections to various categories of premise (owner occupied, NIHE, new build, small I&C, large I&C)

There are five market segments to be addressed: owner occupiers, private rented, social housing, new build and Industrial and Commercial. While there is cross-over in terms of providing the necessary infrastructure and similarities in how connections might be obtained, each segment is addressed individually below.

Owner occupier

This is a key market segment if connections targets are to be met and there is an overarching concern to quickly build out the mains infrastructure but to do so on an economic basis that maximises connection opportunities. While the initial focus will be on individual owner occupiers living in close proximity to the spine infrastructure, connection arrangements will be required to progress self-referred one-off enquiries and multiple requests from for example, owner occupiers in social estates (though it should be noted these are not mutually exclusive activities).

Self-referred one-off enquiries

These are requests from individual home owners, or parties acting on their behalf that arise from our marketing or construction activity. We will have systems in place to progress these 'one-off' enquiries whether received online (using a customised version of our award-winning connections quotation system) or through paper-based or telephone enquiries.

- It is important all of these enquiries have the opportunity to be assessed for eligibility under the Northern Ireland Sustainable Energy Programme (NISEP) or its replacement, as the availability of funding for gas central heating systems is a key requirement if the benefits of gas connections are to be realised.
- Having an informed and trusted local partner in place to assist with the assessment of eligibility, or to advise on other incentives or grant funding, is an important part of progressing these enquiries. Establishing these partner relations will be an essential step to gaining connections.
- Where Government-backed energy efficiency or heat replacement schemes are in place, we will work with the schemes managing agents to develop processes and procedures to confirm eligibility and progress gas connections.
- In other circumstances we will have appointed partners from the third sector to facilitate checking individual enquiries for eligibility and to provide advice on accessing the available grants or allowances that can underpin making energy efficiency improvements and opting for a gas connection.

We consider similar arrangements would be beneficial in NI where fuel poverty remains a significant issue.

Households that do not qualify for NISEP schemes may still be assisted through incentives that we will provide. We believe that some form of interest-free loan would be an effective incentive, and that we should work with partners to provide appliances or conversions. We will however, consult with the market before making a firm decision.

Multiple domestic enquiries

Beyond the installation of the spine mains, we expect the early construction phasing to be driven by a requirement for multiple connections to social housing, which will allow early engagement with the owner occupiers in those areas. This is a model that is very familiar to us. For example, in our Scottish network, we worked with Glasgow City Council and their delivery partner to provide the gas infrastructure to over 1,400 owner occupiers living predominantly in deprived areas.

Within each of the social schemes we will use local partners to carry out the assessment of owner occupiers' eligibility under NISEP type schemes and to identify those requiring gas connections.

- Beyond the social schemes we will also target owner occupier housing in areas where the age of the premises and heating systems may be a factor in prompting boiler replacement activity.
- In addition, we will look at areas where we can maximise the number of properties passed and increase the opportunity for owner occupied connections.
- Beyond the initial construction phase, the self-referral process will manage connection enquiries. However, we would expect to revisit and promote connections as self-referral rates, particularly among vulnerable groups, can be low.

In dealing with both multiple and one-off enquiries, we will look to use a proportion of our owner occupier marketing allowance in support of providing connections to those who are vulnerable but may not qualify for NISEP funding. The specifics of any incentive will be developed in conjunction with our local delivery partners and, for example, with advice from National Energy Action, NI. Any incentive will be designed to complement any NISEP type schemes in place at that time.

We will work to ensure that the provision of connections is associated with the installation of appliances and not taken simply as a result of availability. We are considering being proactive in facilitating the installation of downstream appliances or boiler conversations. We have wider group resources (eg Airtricity Home Services) that could be utilised, though we may choose to develop such resources internally by acquisitions, or acquire them through service contracts. We believe our active involvement in this area of the market will drive down installation costs for customers and support our preferred strategy of providing emergency First Call Operatives from external resources.

Private rented

This is a growing sector that can be a difficult to engage with. In most cases the landlord will be responsible for the provision of utility services and heating and while householders (as signatories to the tenancy agreement) can be eligible for in-house measures, improvements may not be progressed. High levels of vacant properties are another issue to be addressed.

We will work with the National Landlords' Association to publicise and promote our plans for the licensed area, and encourage their members to discuss their connections requirements with us or our partners.

We note the new legislation concerning registration of rented properties and while we are mindful of data protection issues we will be keen to work with district councils to identify and engage with the owners of vacant properties.

Tenants of private rented accommodation will receive the same information as owner occupiers regarding the benefits of gas and its availability in their communities.

Tenants will have the same opportunities to access our partners' expertise in assessing their eligibility under energy efficiency schemes and help in promoting their case to their landlord if required.

Social housing

We have considerable experience in our existing networks of working with the social housing sector and have many examples of working with social landlords. In Scotland, we helped Highland Council review their budget allocations and to identify 'easy wins' for connecting off-gas properties. We used our mapping systems to identify homes within areas of deprivation that would qualify for our assisted connection scheme and developed work programmes to deliver the necessary connections. We have also developed a number of schemes with Aberdeenshire Council that brought about the following response:

"Our work together has over the years developed into a full partnership with trust in SGN's advice and strategic direction. SGN has been of great assistance to the Council in the implementation of actions and initiatives towards achieving the targets and outcomes in the Fuel Poverty Strategy, Scottish Housing Quality Standard Delivery Plan and the Local Housing Strategy. We are grateful to SGN who worked together with the Housing Service to deliver programmes to assist in eradicating fuel poverty."

We recognise that the NIHE is the key player in this market in NI and that it is committed to a policy of taking gas as the fuel of choice when it is upgrading or installing new heating systems. We have already engaged with the NIHE, mapped the location of its properties and have an understanding of its existing budget plans for heat replacement over the coming years.

As the preferred bidder we will engage directly with the NIHE to review its budget plans and explore opportunities to defer (or bring forward) heat replacement projects in the towns of interest. This will be a key factor in developing our build plan and construction phasing.

The Business Development team will develop similar relationships with the housing associations which manage stock within the towns of interest and we will work to accommodate their needs in the development of our build programme.

Beyond ensuring our build plan reflects their capital programmes, we will look to create simple systems of referral where, as the distribution network expands, unplanned connection requests can be progressed quickly to facilitate, for example, the need for an emergency heat replacement to a vulnerable customer.

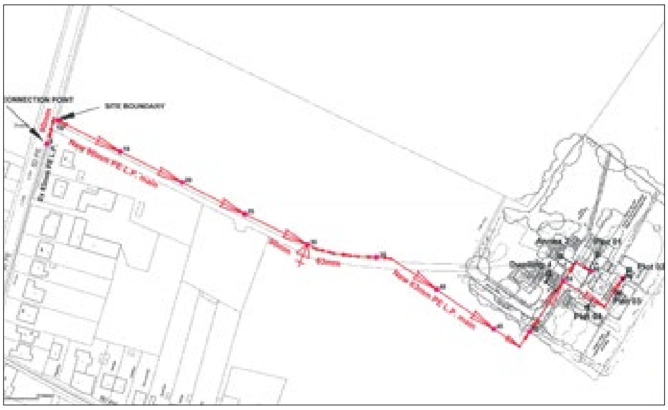
New build

We have an understanding of areas zoned for development within each of the towns and at the earliest opportunity we will liaise closely with local authority planning officers to better understand their requirements for promoting new build and regeneration projects.

We also recognise the important role played by the NIHE in co-ordinating the construction of new affordable homes for the social sector. We will work with them to ensure that where practical and economically possible, gas to new build locations is made available in an appropriate time frame to meet their strategic need.

In addition, our Business Development team will establish relationships with developers, builders, architects and others involved in the construction of new homes (and commercial estates). This will allow for the incorporation of proposed new developments into our build plan and provide information on the phasing of our infrastructure construction that will allow them to plan for future developments in the knowledge that gas will be available.

Our current experience suggests that providing a prompt response to enquiries concerning the availability of gas can be of particular importance to developers. We will ensure that our systems and processes for dealing with these initial enquiries are robust and that we are sufficiently resourced to consistently meet the required standards of service.



New Build

Where the planned development of new homes cannot be easily matched to our infrastructure construction plan, we will look to develop working practices and arrangements that will allow the site mains and service infrastructure to be installed, so that the speedy conversion of homes from LPG to natural gas can be facilitated at a later date.

Within our existing networks we actively promote builders installing their own infrastructure and have the capability to co-ordinate and deliver a multi-utility approach.

Industrial and Commercial connections

Operating across all pressure tiers, we have in the last year provided mains and service infrastructure and the necessary meter installations for 753 connections to the industrial and commercial sector. To facilitate connections in NI we will carry out market research to enhance the information provided in the FMA study, looking in particular at the appropriateness of the proposed designs to accommodate current requirements, new commercial developments and zoning changes.

During the mobilisation period we will engage directly with each potential industrial and commercial customer to ensure they have access to sufficient technical support to confirm their gas connections requirements and establish their preferred timeline to connection. This information will be built in to our connections planning to ensure we maximise connection opportunities with appropriate phasing of the infrastructure build.

We will engage directly with appropriate trade and representative bodies, national chains and local chambers of commerce to promote the benefits of gas as the fuel of choice for business consumers.

We will have technical resources within our business development team capable of discussing gas utilisation solutions for non-domestic premises and discuss options for conversion or replacement of existing technologies, as well as determining the best location for gas meters and services.

We will work closely with local installation businesses across the eight towns to ensure that they have the technical capability to carry out new installations and conversions. Our expectation is that they will proactively generate connections requests.

7.2.3 Specific proposals for promotion of connections for vulnerable customers

We have significant experience within our existing networks of delivering fuel-poor connections and supporting vulnerable customers. In 2012/13 we brought gas to more than 7,000 fuel-poor customers under our Assisted Connections scheme and laid 33km of associated mains infrastructure. We have a strong track record of working with partner organisations which have the necessary experience to assess vulnerability and to access the available external grants and funding that are required to maximise connections numbers. For example we have seen a 30% increase in acceptances under our Assisted Connections scheme (which tackles fuel poverty) in our southern network since appointing YES Energy Solutions as our scheme partner.

Under CERT (Carbon Emissions Reduction Target) and related to the provision of gas connections, we developed a fuel switching scheme with supplier partner SSE and latterly Carillion Energy Services. The scheme provided more than 12,500 energy saving measures and offset connection charges to customers by some £3m. In parallel the scheme also generated funds to support network extension projects and the promotion of energy efficiency. It has allowed us to contribute financially to the installation of gas infrastructure to park home sites, provided support for district heating schemes and in partnership with the Scottish Federation of Housing Associations, we have just launched an energy ideas fund that will allow their members to bid for funding in support of innovate projects that will improve the energy efficiency of their homes. We believe these examples demonstrate our ability to establish working partnerships and leave us well placed to develop proposals for connections to vulnerable customers.

We understand that support under the Northern Ireland Sustainable Energy Programme (NISEP) will be available during 2014/15 but that future provision of energy efficiency measures is under review. Our experience is that while connections can be provided on a free or no charge basis, access to funding under programmes like NISEP is crucial if the most vulnerable customers are to significantly benefit. On that basis we believe that the NISEP programme (or something similar) will continue into the future and that a strategy of working with lead partners will best support connections to vulnerable customers.

That strategy will use a 'top down' approach, where dedicated staff within our business development team, together with knowledgeable local partners will proactively assess each connections enquiry and make initial assessments of vulnerability and when they can be connected. Following the model we have used in our existing networks, we expect to include the managing agent for the government scheme as a close partner in this process. In addition, we will promote a 'bottom up' approach by liaising with the health or social services, third sector organisations and energy suppliers to identify those most in need and ensure our connections programme is sympathetic and responsive to those needs.

7.2.4 Standards of Service specified

We have many years' experience of working successfully to Guaranteed Standards of Performance and complying with our Special Licence Condition 10, where the required measuring and monitoring regimes are clearly set out. We note the recent publication of the Gas (Individual Standards of Performance) Regulations (Northern Ireland) 2014 and the intention to implement them from 1 April 2014. We are extremely confident of being able to meet the required standards.
We will build these requirements into our processes and resourcing to maintain our performance on customer satisfaction and ensure we have robust systems in place for capturing data and reporting performance to the Regulator.

7.2.5 Proposals for maximising connections for owner occupier and non-owner occupier customers

We fully recognise the distinction between the owner occupier and non-owner occupier market but consider the split between social landlords and the private sector (ie owner occupiers and private rented) to be more relevant in terms of where the funding comes from for home energy efficiency improvements. This may change as private landlords are compelled to make home improvements in the future. Our overall approach to each of the these sectors is set out above and is summarised below:

- Across the licence area there will be a marketing plan designed to raise general awareness of our brand, promoting natural gas as a fuel of choice and establishing lines of communication across the market segments.

- Prior to commencing our detailed planning we will begin a more focused process of communication with the public and private sector within domestic communities. This will be led by our Business Development team and will establish connection and construction priorities and develop the most efficient construction plan.

- While clearly recognising the responsibility to maximise connections rests with us, experience from our existing networks suggests that a partnership approach works best. We will establish positive relationships with gas suppliers, gas installers and technology providers, as well as organisations promoting energy efficiency to mobilise both sides of the domestic market.

- This 'general' approach, however, will not prevent us from developing strategic relationships to enable us to take a more proactive role in the downstream utilisation for both the provision of domestic appliances and boiler conversions.

7.3 Interaction with Suppliers

7.3.1 Arrangements for engagement proposed

We currently interface with some 34 suppliers on supply point administration and carrying out planned and unplanned meter work, facilitating, for example, new meter installations, exchanges and removals and the resolution of meter faults. However, we recognise the need for different relationships in NI. We will, therefore, have early and proactive engagement with suppliers to seek their support in reviewing and adopting a suitable version of the existing Network Code and the systems and interfaces necessary for supply point administration, the co-ordination of meter installation works and to generally manage the essential information flows between us.

Final Step

We also will develop joint marketing approaches to help develop the local markets. We share a common shareholder with Airtricity that has allowed us gain considerable market knowledge with regards to gas consumer behaviour in NI.

We will establish clear lines of communication between ourselves and Suppliers to manage: registration; nomination; isolation and withdrawal processes; and any other necessary processes within standards of service.

We will participate in existing Supplier forums and established groups such as the Gas Market Opening Group (GMOG).

We will keep Suppliers fully informed of our construction plans and discuss how we might take a collaborative approach to energising the gas connection market.

7.3.2 Explanation of how the applicants will co-ordinate with supply companies to meet respective licence obligations

We will build on our experience of managing Supplier interfaces (54,000 domestic jobs for 34 suppliers) to ensure that our 'Supplier facing' systems and processes are clear and consistent. In particular, this will apply to licence obligations to facilitate switching of Supplier; provision of information to Suppliers (eg customer information requests); identification of vulnerable and priority consumers; provision and return of gas meters. We will engage/consult with Suppliers operating in the NI market to establish the necessary systems and interfaces to collect, retain, manage and share data in accordance with our respective licence obligations and Network Code requirements. In so doing, we are mindful of the burden that working with different DNO arrangements could place on Suppliers and will seek to minimise this.

Where customers take connections but do not select or inform us of their preferred Supplier, we will have a relationship in place for one of the supply businesses to act as a default Supplier. In developing these arrangements we will consult with the NIAUR to ensure our process is fair and transparent and works in the best interest of consumers.

We will co-operate with Suppliers to promote the gas emergency number and explore how we might share our marketing message and the promotion of gas, such that customers are informed without feeling under pressure or subject to multiple visits from different organisations.

7.3.3 Proposals for planning and co-ordination of activity

We will ensure that our Business Development team establishes close relations with counterparts in Supplier organisations and we will regularly and openly share details of our build and marketing plans to allow suppliers the opportunity to influence our plans and to ensure they all have an equal opportunity to gain gas sales and new customers.

We will work with Suppliers to ensure that administration systems are in place in good time to manage sitework requests and that specific processes, for example, switching systems, are available, tested and fit-for-purpose prior to the first customers taking gas.

7.3.4 Proposals to act with industry forums as appropriate

Senior members of the NI management team with necessary support from industry experts (provided under our group MSAs) will participate in industry forums such as GMOG. We will seek to participate in these groups as soon as possible so they can help shape our development of procedures and systems. In addition, we will take a proactive approach to hosting workshops or seminars that will regularly bring together suppliers and other interested parties to review our progress and gain their feedback on the systems and processes we are developing.

It should also be noted that we currently participate in (and lead a number of) gas industry forums in the UK. Therefore, we are well placed to glean knowledge that could benefit the industry in NI.

7.3.5 Arrangements including all relevant systems to support a competitive retail market

We already have systems to manage siteworks and supplier interfaces and while they will inform the systems we will deploy in NI, we will take the opportunity to review their specification to reflect the scale and different operating practices of the NI market. Our siteworks request procedures will therefore have an interface for the scheduling, reporting and management of siteworks progress. Procedures will cover new installations or alterations and to manage for example, the removal or reconnection of meters, meter exchanges and isolations, requests for elevated pressure, or dealing with faults, meter tests, theft of gas and debt recovery.

We will have systems in place to manage site surveys and meet billing and invoicing requirements as well as to track and manage chargeable activities, eg the installation of data loggers.

Regular Information will be provided to suppliers on gas availability and project phasing within the licence area. We would expect to make this available via an interactive online medium although we will also provide specific information when requested.

7.4 Public Relations

7.4.1 Set out range of activities and stakeholders proposed and the rationale for these

We fully recognise the significance of gas being made available to these communities and of the need to have effective strategies in place to meaningfully communicate with the key stakeholders, and we have identified who can help us to deliver a successful project. These include: government organisations and representatives; Health and Social Care Trusts; local authorities; community groups; customer support groups; domestic and non-domestic customers; trade bodies; emergency services; local media; the NIHE; housing associations; and landlords (commercial and private). A more comprehensive list of stakeholders and proposed interactions is provided in Figure 6 in Chapter 3.

Using experience we have gained from developing our stakeholder engagement strategy in our existing networks, we will develop a comprehensive communications strategy to engage and inform, as well as listen to all who are impacted by our work in NI. This will include activities aimed at national and local levels, directed towards the public and private sectors, as well as communities and individuals.

The deliverable outputs from our communications strategy are to:

- provide key stakeholders and community groups with the right information to allow them to support the project where necessary
- provide customers with the right information to help them reach decisions; and
- respond to customers’ enquiries in a prompt and efficient manner.

The outcome of our communication strategy is for our customers to be satisfied with our service, fully understand our objectives and methods and to have an overall positive experience.

Communication Campaign

The project will use a variety of communication channels to reach the community in general and individual customers as required. These will include:

- press releases to local newspapers
- information leaflets
- project webpage as part of our website
- articles on stakeholder websites
- social media channels including Facebook, twitter and YouTube
- direct correspondence (by letter and email)
- personal conversations including some by telephone or at customers' properties; and
- meetings or briefings to present and discuss project plans with customers and key stakeholder groups

We already have a Corporate Communications team in place who will provide support to our management team in NI to organise and sustain our communication campaign over time.

A practical example of this approach are the information leaflets we prepare for all our major projects. They provide contact details for the responsible manager, how to report concerns out of hours and specific information about the project scope and duration.

EIGH

Chapter Eight

Operational Costs

8.1 Cost forecasts (work book submission)
8.2 Alignment with the business plan
8.3 Activity costs build up
8.4 Cost management
8.5 Efficiency Improvement Plans

8.0 Operational cost forecasts

Based on the FMA study, we detail our operational cost forecasts in this chapter. We also explain how our cost build up integrates with our business objectives and how we will manage costs and drive economies to ensure value for customers in NI (see also Annexe A).

8.1 Cost forecasts (work book submission)

8.1.1 Explanation of cost build up

Further details on the build up of the costs are outlined later in this Chapter (see Section 8.3), with Annexe B providing back up to this information. Other than overhead costs, all expenditure has been phased in line with the workbook volumes and the assumed workloads associated with this.

Overheads are predominantly fixed costs and therefore these vary only slightly over the 10 year period.

8.1.2 Explanation of assumptions used and their appropriateness

Costs have been built up over the first 10 years of the network based on the data available from GD14 on the existing networks in NI to give an indication of workloads that may be experienced. Our view is that this is the most current and relevant information on which to base our workload assumptions.

Where we have utilised the expertise of the wider SGN group, we have assigned the costs on an arm's-length basis. We have assumed a proportional allocation of costs relating to customer base for the purposes of the bid.

All costs are in April 2014 prices and no assumptions at this stage have been made for Real Price Effects. Whilst our current view is that these will be negligible over the first 10 years of the operations, we will review this on an ongoing basis.

Additionally we have assumed that all resources and skills required will be available in the NI marketplace and that an appropriate range of contractors will bid for work to ensure strong competition on delivery costs.

We have assumed that all costs associated with the marketing to Owner Occupiers including management of the process will be accounted for within the £425 per property incentive as detailed in the guidance; 15% of overheads have also been assigned to this.

Where relevant, the project management of the capital lay has also been assigned to the capital costs and excluded from the manpower figures, as per the guidance issued.

All management costs associated with the management of specific processes ie emergency, repair and maintenance have been allocated to these processes. They have therefore been excluded from the manpower costs.

8.2 Alignment with the business plan

Our overriding objective is to deliver a customer focused network that is safe, efficient and reliable. All our processes, activities and costs are focussed to this end. A key criteria for success is that we achieve sustainable market penetration as this will improve our economies of scale and build confidence in the gas proposition for consumers.

Customer focused

Ensuring that as many customers as possible have access to, and are able to take up, the benefits of a natural gas network is core to our proposition. To this end, we will offer a range of incentives to owner occupiers and small businesses to facilitate the uptake of connections. These costs have been phased in line with the connections phasing provided. All owner occupier incentives will be paid for through the £425 per customer outlined in the plan. The cost phasing for small industrial and commercial customers is also in line with the expected uptake provided. We will be communicating and marketing to customers through a multi-channel approach, which will include mail and telephone calls.

While we intend to consult with the market, our initial thoughts are that we will offer a financing option or an upfront contribution where we will be able to adjust the qualifying eligibility criteria to help drive connections and provide a robust basis for opening the market place to these new gas consumers.

We recognise the importance of consistency of customer experience and will align ourselves with other operators in NI by utilising the 0800 001 002 emergency number through National Grid.

We will manage the performance of our emergency and other services through robust and accurate performance indicators. We have structured SGN NI to achieve the same levels of overall customer satisfaction as we deliver within our Scotland and Southern networks, where in 2012/13 we were ranked 1st and 3rd respectively in the Ofgem customer service rankings. The cost of the training required to deliver this is included in the assessed expenditure.

We recognise how important communicating with customers and meeting their needs is to the provision of a well-managed network and we will do so through all stages of our work; from initial main lay, to service connection, to emergency response and support.

Safe

One of our key company values is safety. This is embedded in everything we do and safety messaging will form part of our branding. The safety of the network is critical to a robust company image and the associated positive uptake of connections. This branding and marketing will be predominantly funded by the owner occupier incentive. To reinforce branding and our values, a strong safety message will be promoted for all activities throughout the company including back office and head office functions.

We have planned a resource level sufficient to cover a 24/7 emergency response function over three zones. Standby will be shared between contracted and in-house resources. Senior standby will be shared between the senior engineering management team within the company. This arrangement will be the most efficient and effective way of providing an emergency service that will ensure all standards are met.

As the frequency of repairs is expected to be low, the teams used for mains and service laying will also support repair work. The FCO role will be to initially make safe any gas escape. This will minimise disruption to scheduled activities, whilst having a resource available to respond quickly to any emergency.

IT security is also important, and the safe delivery of secure data to comply with all Data Protection requirements is a critical element of the IT costs outlined. We will utilise systems that provide secure data storage and transfer.

Data protection and the protection of the customer is paramount and we will ensure that all meter point supplier changes are dealt with effectively and efficiently, in order to grow and maintain the strong brand reputation core to our business.

Efficient

Our expectation is that our marketing strategy will give a solid base to allow us to outperform the connections profile provided. We will ensure that as much of our owner occupier focused marketing will also provide penetration to the small/medium industrial and commercial markets, minimising any additional marketing costs.

Focused local marketing to the towns involved will be aligned with delivery timetables to ensure rapid turnaround from marketing to delivery. We aim to gain economies of scale through upfront design and production of marketing material to gain best benefit from the marketing spend undertaken.

We will optimise our resources by multi-skilling of our technical resources. Repair services will be provided at a marginal costs as these resources will also provide the connections function. It is our view that this is the most efficient way of delivering the high standards will be core to our NI brand. We will ensure non-critical activities will be undertaken during core hours to avoid any additional premium time payments.

Maintenance and emergency services will be provided by contractors so that the low workloads in the early life of the network can be efficiently resourced.

We will benefit from the economies of scale with the larger SGN group in regards to the National Grid Emergency Call Centre unit costs.

We will identify a head office location that is well placed to meet operational requirements and scaled to ensure that both the short and long term requirements of the network are provided for. This will minimise costs associated with any office moves.

We will scale our IT systems to be appropriate for the number of customers being served, with support provided through our existing SGN support structures in order to minimise operational support costs.

Reliable

We aim to deliver a network with the same reliability as our existing networks (99.997% over the last five years, see GDPCR1 Close Out Report) and our maintenance function will be critical to this. We will maintain all assets under our current policies, with the costs reflecting this frequency schedule.
The level of resources we have outlined in our costs assessment is the minimum that would be necessary to deliver the high quality of network we expect.

Our existing IT function provides a highly reliable service to our emergency and repair service, allowing us to guarantee a robustness of data regarding workloads etc. We will bring this expertise to NI through the expenditure outlined.

8.3 Activity costs build up

Annexe B outlines the range of and cost build up of activities.

Marketing

The core approach to our marketing strategy is to use third-party support. As there is a potential commercial benefit for a number of other parties (plumbers, gas suppliers etc) we would seek their support to help us to maximise the number of connections. However, as achieving these connections will be mutually beneficial, we do not expect to incur any additional expenditure beyond the marketing allowance.

Providing Advice

We expect to incur annual marketing costs in terms of advertising across all forms of media during the first 10 years, diminishing steadily over the last 30 years as word-of-mouth and public awareness become stronger drivers for new connections, which reflects our experience of demand for new connections within the established markets served by Scotland and Southern Gas Networks. We have assumed that the majority of marketing/branding costs will be associated with owner occupier customer development.

We will have a small internal team focused on marketing and sales, predominantly managing relationships with third parties. The majority of these costs will be absorbed by the owner occupier incentive. These costs have been excluded from the input to the workbook and this has been outlined in the analysis in Annexe B. The remaining costs which form part of the stated marketing allowance relate to the staff required to liaise with larger industrial and commercial customers, NIHE and new housing providers.

While it is our intention to consult with the market and stakeholders, it is our initial view that the incentive for owner occupiers to take a gas connection will be either, an upfront contribution (of up to £250) or the facility of zero percent finance over four years towards the cost of a new gas boiler. This is based on the assumption that some 44% of owner occupiers can be classed as fuel poor under current definitions and that while current (or similar) NISEP offerings are in place when the network is operational, only a proportion of those fuel poor customers will be in a position to take advantage of NISEP schemes for boiler installations. Our incentive would be therefore focus on those who would not be fully funded under NISEP.

We have further assumed that more than half of those owner occupiers who are eligible will take up the financing option, with around 10% taking the direct contribution option We will work with a financing partner such as Hitatchi Finance to provide this incentive and our calculations of the associated costs have been based on an average boiler and installation cost of £2,000, and average interest rate [redacted]

For small industrial and commercial customers we will only offer the zero percent finance option as our analysis indicates that this is most likely to incentivise them. We have assumed a 75% uptake of this offer. This offer will only be available for the first five years of the profiled roll out in order to drive take up of the connections in the early years of the distribution network.

The funding required for this is expected to slightly exceed the total owner occupier allowance. However, we see opportunity in forming appropriate partnerships with boiler manufacturers and installation firms in order to drive down installation and associated financing costs.

Figure 1 – Marketing analysis

Year	1	2	3	4	5	6	7	8	9	10
OO marketing costs	0.183	0.183	0.183	0.183	0.168	0.168	0.168	0.168	0.168	0.168
Overhead	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
Direct incentives	–	0.030	0.030	0.019	0.019	0.019	0.019	0.019	0.019	0.019
Financing costs	–	0.087	0.152	0.163	0.160	0.144	0.136	0.136	0.136	0.136
Total costs (£m)	**0.202**	**0.319**	**0.385**	**0.384**	**0.366**	**0.350**	**0.342**	**0.342**	**0.342**	**0.342**

Emergency Call Centre

We will benefit from the existing relationship between SGN and National Grid and the agreed rates for this service. Costs have been calculated on this basis, with calls being directed in the first instance to the SGN Operations Control Centre for issue to the relevant FCO. This will allow customers to benefit from the overall negotiating power of the SGN group, driving down the costs. An assessment of the cost of using the SGN Operational Control Centre has also been included in the rate, allocating costs based on the proportion of calls incurred by the NI network relative to the existing workload.

We have assumed a call rate in line with those detailed in GD14 of 3.5 emergency calls a day per 10,000 customers, and 3.5 enquiry calls a day per 10,000 customers and we have calculated costs on this basis with our current agreed charges from National Grid for each activity.

Figure 2 – Emergency call centre

Year	1	2	3	4	5	6	7	8	9	10
Connections (£m)	15	2681	1775	1370	1354	1346	1205	1217	1217	1217
Cumulative connections (£m)	15	2696	4471	5841	7195	8541	9746	10963	12180	13397
Emergency calls (£m)	2	344	571	746	919	1091	1245	1401	1556	1711
Enquiries calls (£m)	2	344	571	746	919	1091	1245	1401	1556	1711
Total cost (£m)	**0.000**	**0.005**	**0.008**	**0.011**	**0.013**	**0.016**	**0.018**	**0.020**	**0.023**	**0.025**

First Call Response

We plan for a one-in-three standby rota, shared between the FCOs and Team Managers, with support as necessary from the SHE Manager. The operatives will be provided by contractors paid on an hourly basis per escape with a daily retainer for standby. The senior level standby will be shared by the senior management team so no additional costs will be incurred as this will be part of their contractual obligations.

The costs outlined include the allocation of the management time associated with this workload. This assumption is to give a clean comparison between the repair and maintenance functions which also have this included.

Figure 3 – Emergency

Year	1	2	3	4	5	6	7	8	9	10
Workload	2	344	571	746	919	1,091	1,245	1,401	1,556	1,711
Total cost (£m)	**0.031**	**0.058**	**0.078**	**0.093**	**0.103**	**0.117**	**0.131**	**0.144**	**0.157**	**0.171**

Maintenance

The maintenance support required will be delivered through contractors with a similar cost approach to the FCOs. The levels of maintenance work required will be in line with the annual schedules and the costs have been calculated on the basis of the average number of jobs at the contract hourly rate. A standby retainer has been included to cover maintenance emergency call outs, with the costs of the Team Manager standby split between the maintenance and FCO function. An allowance for consumable materials has also been included.

Additionally, the contract Technicians will be responsible for the ongoing maintenance and life cycle workload detailed in the Capex costs.

Figure 4 – Maintenance

Year	1	2	3	4	5	6	7	8	9	10
Total cost (£m)	0.036	0.074	0.065	0.069	0.072	0.075	0.078	0.081	0.083	0.087

Repair

The repair function will be provided as part of the mains and service laying teams contract award. Our expectation is that additional repair jobs will be costed as part of the schedule of rates in the contract, inclusive of all materials associated with the repairs.

Figure 5 – Repair

Year	1	2	3	4	5	6	7	8	9	10
Expected repairs per annum	2	15	26	33	41	49	56	63	70	77
Total cost (£m)	0.004	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.018

Team Managers

Team Manager time has been apportioned to each activity according to workload. 5% is allocated to stakeholder engagement activities including gas safety liaison with local schools.

Figure 6 – Team Manager time allocation

Year	1	2	3	4	5	6	7	8	9	10
Capex %	92%	82%	78%	75%	73%	71%	69%	67%	65%	63%
Emergency %	1%	4%	7%	9%	11%	13%	15%	17%	19%	21%
Maintenance %	1%	8%	9%	10%	10%	10%	10%	10%	10%	10%
Repair %	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

Manpower

Analysis is provided in Annexe B of the associated costs of the structure outlined within the business plan. This details the elements that we expect to be associated with the Domestic Connections Incentive and the connections workload.
The costs associated with the management of the emergency response, maintenance and repair functions are also excluded from the final manpower figure (the MSA costs detailed below are included in the total manpower figure).

Figure 7 – Manpower

Year	1	2	3	4	5	6	7	8	9	10
Senior Management (£m)	0.192	0.197	0.198	0.197	0.196	0.195	0.193	0.191	0.190	0.189
Operations (£m)	0.056	0.056	0.056	0.056	0.054	0.054	0.054	0.054	0.054	0.054
Marketing, Admin and other (£m)	0.053	0.072	0.084	0.093	0.102	0.111	0.119	0.127	0.135	0.141
Total (£m)	**0.302**	**0.325**	**0.338**	**0.347**	**0.352**	**0.360**	**0.366**	**0.372**	**0.380**	**0.384**

In total we expect to have 19 direct staff at peak as outlined in Section 2, reducing to 17 as the connections programme steadies after year 4. The costs of staff attributable to the capital workload have been excluded from the Opex manpower analysis.

We will benefit from the economies scale within the group through the MSA. Accounts Payable and Receivable, Grid Control, Policy, and Corporate overhead support have been included in this figure. The allocation of these costs has been based on a customer numbers ratio to the existing customer base for SGN.

We have calculated the MSA charge on the basis of the non-operational work management and support services costs of the existing business attributable to Opex and the customer numbers ratio applied.

Figure 8 – Managed service agreements

Year	1	2	3	4	5	6	7	8	9	10
Cumulative customers	15	2,696	4,471	5,841	7,195	8,541	9,746	10,963	12,180	13,397
% Total customers	0.00%	0.05%	0.08%	0.10%	0.12%	0.15%	0.17%	0.19%	0.21%	0.23%
Opex (£m)	**0.000**	**0.020**	**0.034**	**0.044**	**0.054**	**0.065**	**0.074**	**0.083**	**0.092**	**0.101**

Office costs

We have estimated costs from the available offices researched, with assessments of the average rates, utility bills and associated stationery, postage and telephony costs. This is based on an office in a central location which will be large enough to support 19 core staff.

Insurance

Insurance costs have been calculated as an extension of the existing SGN insurance policy as a ratio based on maximum network length.

Professional and legal fees

Costs have been allocated to cover the ongoing professional membership of the NI senior management team. Other professional requirements will be sourced from the broader SGN and SSE business in the first instance prior to seeking external resource in order to minimise costs.

Legal advice will be supplied by group internal resources in the first instance, with the costs detailed relating to any requirement to utilise specialist advice. Our expectation is that this should be minimal, however there may be ongoing requirements regarding contractual arrangements.

IT

IT operating costs cover the ongoing support of the depot and core IT systems. A 5% cost for the upgrade of all systems has been factored into year 6 of the IT costs. On-site IT support is also included as this will be part of a bought-in service.

Miscellaneous

The additional costs within miscellaneous include ongoing training and development costs and travel and accommodation costs for senior NI staff to liaise with and utilise support of colleagues within the wider SGN business. We will ensure that all key staff are trained to the relevant levels for their roles and are fully compliant with all internal and external requirements for their professional development.

Tender events

In order to derive the best value for our customers and to utilise external expertise in SGN non-core skills, we will tender the branding and media marketing workload.

We will also source contractors to cover the emergency and maintenance workload. Repairs will be covered as a part of the connections capital expenditure tender.

Risks

We have identified risks below that we view could potentially impact on our operational cost forecasts.

Risk	Probability of risk	Consequence of risk	Inherent risk score	Mitigation
Significant changes to the current NISEP schemes that may impact on the ability of fuel-poor owner occupiers taking on the gas connection	4 These schemes are currently under review	4	16	We will proactively engage with stakeholders and lobby for the benefits of supporting gas as a greener and more economically viable to ensure that relevant schemes are available to support the NI consumer
Limited interest from the third parties in taking on the supply or the gas installation	2 This will be a commercial risk to others if they are not involved	2	4	We will liaise with all relevant third parties and undertake appropriate stakeholder engagement
Major incident on our gas networks impacting on consumer confidence and associated uptake	3 Gas will be new to the licence area and other utilities or construction companies may be unaware of risks	2	6	We will engage with relevant parties to minimise this risk utilising our expertise in Plant Protection processes. We will also use our marketing messaging to highlight the new utilities
Lack of appropriately qualified engineers in NI, resulting in additional travel and accommodation to provide support from Scotland/Southern networks	4 The gas network is not as mature in NI	3	12	We will work to develop this market over time and liaise with other gas distribution networks to promote the gas industry as a strong employment opportunity
Additional training costs due to a lack of appropriately qualified engineers	4 The gas network is not as mature in NI	3	12	We will work to develop this market
Major third-party incident on the network with insufficient insurance to compensate the network for works undertaken	3 Gas will be new to these areas and other utilities or construction companies may be unaware of risks	2	6	We will engage with relevant parties to minimise this risk
Any delays incurred in the delivery of the high pressure network will have an impact on the mobilisation costs as this may extend the period of mobilisation	2 We are submitting a paired bid with Mutual Energy	2	4	We will liaise internally to ensure that timescales align
Reduction in the cost difference between natural gas and oil	2	3	6	It is unlikely that gas and oil prices will align more closely than they currently are in the short term

8.4 Cost Management

8.4.1 Explanation of review processes for costs incurred

The NI senior management and corporate group functions will review financial performance and budgets at a functional and corporate level on a monthly cycle. Analysis will be provided on a historic and forecast basis to provide financial confidence and control in the progress of the operational business spend.

Connection and operational costs will be controlled using a project and task approach to drive robust management and review. This will allow comparison of performance across all areas of the business and reflects our existing culture where taking responsibility for spend and efficiency is second nature and ensures we derive maximum value from all that we do.

Costs will be shared with the Regulator on an annual basis to meet the licence obligations.

8.2.2 Explanation of information systems for managing costs

Costs incurred will be managed through our leading Oracle Financial ERP system. This provides strong governance through an authorised spend hierarchy which will ensure that all procurement is signed off in advance. We also use a contractor payment system that allows us to easily analyse, review and query all costs submitted by contractors.

The Oracle ERP provides detailed reporting at a line-by-line level for scrutiny of all costs. Any variances to budgeted spend will be investigated and reviewed. Monthly reporting will be undertaken to produce management accounts and provide management information on spend levels.

High level reporting will be delivered through the existing management information reporting tool.

8.5 Efficiency improvement plans

Synergies

In terms of overall project management, load and connections assessments and utilisation of resources, we believe there are efficiency gains to be made from our joint bid with Mutual Energy for the construction of the HP network.

Our initial assessment indicates that the proposed Medium Pressure distribution system could be operated at 2bar rather than 4bar. This would bring savings in terms of materials and reduce the risk to the public if the network is damaged.

While we will look to migrate to our existing IT systems in managing MAM services, supplier interfaces and other aspects of asset management, it is our intention to introduce cost effective systems that are simple and fit for purpose and to transition to core systems over time as the network develops and the number of connections and interactions increase.

Operational and business processes

The relationship between required resources and connections numbers is not linear and overall resources do not increase as we gain more connections. Our initial resource model will be based on outsourcing and as the Network is established and economies of scale reduce, we will move to an insourced model to improve efficiency and reduce cost.

As workloads increase, we will constantly review resource requirements. Our long-term aim is to deliver the operational workload through a mainly direct workforce. We view this as the most efficient delivery model when workloads are of a sufficient volume to allow us to gain economies of scale. Our analysis indicates that this is likely to be the case during the period year 11 to 15. Prior to this, we will regularly review contractor rates to drive down costs as far as possible.

We aim to reduce direct resources in line with workloads as relevant, for example reducing the number of team managers required as the capital workload steadies after year 3.

Additionally, we will aim to improve efficiency of our overhead absorption by driving to deliver an accelerated build and connections plan.

We understand the NIAUR is considering implementing more sophisticated forecasting processes and systems. We will bring hands on experience of the development and use of demand estimation, simulation and forecasting systems and will collaboratively support the development of a fit for purpose system, commensurate with the NI Network code, Operators Safety Cases and EU Legislation Article 42.

We have taken a leading role in challenging the provision of call handling services and we expect to reduce the number of received emergency calls by communicating more clearly how customers can relay non emergency calls to our customer service centre. In addition we will introduce best practice from our current call handling arrangements with National Grid to ensure better categorisation and prioritisation of the calls received. Currently only 64% of emergency calls are uncontrolled, allowing better use of First Call resources.

We would be willing to discuss with the other NI DNOs how we could leverage advantage from our existing call handling arrangements and take a lead on and work with the other DNOs to consider alternatives to the current National Grid arrangements for call handling.

The form of Regulation in the UK changed to RIIO (Revenue = Incentives + Innovation + Outputs) in 2013. To maximise performance under this regime, we have developed our 'RIIO approach' which is now embedded in the business. The approach focuses on improving efficiency, customer service, innovation and stakeholder engagement. All business processes are subject to ongoing critical review using the ERIC principle (Eliminate, Reduce, Innovate, and Control) and each business function has their own RIIO business improvement plan. The expected benefits from these RIIO initiatives and improvement plans will flow through and benefit consumers in NI.

Recent successes in Ofgem's National Innovation Competition (see Innovation Annexe) underlines our commitment to making innovation simply part of what we do, while we also now have programmes in place to drive us towards becoming the lead GDN in GB for customer service and stakeholder engagement.

Our existing networks already operate in the upper quartile of the GDN efficiency benchmarks and would look to bring that best practice to NI. We will continue to benchmark our NI performance against our other networks, other DNOs and UK businesses in general.

We also believe there are efficiencies to be had by being proactive in the prevention of theft of gas and preventing damages to our network - and reducing shrinkage as a result.

Innovation

Innovation adds value to our business and our customers and can take many forms, from process improvements to the invention of new engineering techniques, products or services. We explore opportunities through engaging with our own employees and by establishing constructive relationships with key gas industry suppliers, companies and academic institutions across the energy sector.

Since 2008 we have commissioned around 150 projects that have allowed us to advance industry knowledge, technology, competition, products and services, and develop new ways of working. We have a proven track record of delivering outcomes and embedding innovation into business-as-usual. Examples of this are reflected in the cost efficiencies generated through projects such as our 'Keyhole' combined core and vac technology, or through successfully demonstrating enabling technology, such as the first ever UK biomethane-to-gas grid injection point in Didcot, Oxfordshire.

We are therefore confident there is significant opportunity for technology transfer from our current (and future) projects that will bring efficiencies to any network we operate in NI. Our innovation in processes and technology are outlined in more detail in our Innovation Annexe.

In terms of innovation to the NI market, we will bring the technologies, advanced processes and efficient working practices from the GB market as and when the scale of the NI business will gain a cost benefit from this investment. This includes expanding the gas consumption forecasting process and ensuring that competition in terms of gas Suppliers is supported by the distribution network.

Benchmarking

We will bring our experience of the RIIO-GD1 price control and associated multi-network benchmarking to NI. We will liaise with NIAUR to develop a process that benchmarks the performance of the NI networks through the use of regressions to provide a like-for-like comparison. This will provide the opportunity to highlight areas where we can improve our operations to allow maximum benefit for customers.

We will also benchmark internally against the performance of our Scotland and Southern networks and indirectly through existing mechanisms against the other GB networks.

Focus on Customer Service

NINE

Chapter Nine

Capital Expenditure Costs

9.1 Alignment with the business plan

9.1.1 Explanation of how activity and cost forecasts in the workbook accord with stated objectives of this business plan

Customer focused

We have extensive experience of delivering connections programmes with excellent customer satisfaction scores. Word of mouth will be important but a core part of our marketing strategy is to work with trusted, credible, local partners, who will provide appropriate advice on getting a connection and installing new (or converting old) appliances. In addition customers can engage with us through our interactive website and various social media platforms. Our Account Managers will be proactive in keeping the public and other stakeholders informed as the project progresses. All this will help drive the delivery of the connections profile outlined in the workbook.

The workload will be managed through the Connections Co-ordinator, with a focus on minimising disruption to customers and ensuring the fastest possible connection to the network. We will try to facilitate the customer timescales as far as possible, within the standards set.

We believe the workbook details an achievable level of connections, and we would aim to outperform these levels through our marketing strategy, which will have a positive impact on the length of main that requires to be laid and the consequent opportunity for customers to connect.

Safe

Our SHE Manager will ensure that all work we undertake complies with the high safety standard that is core to our ethos. Safe working and ensuring that employees and members of the public come to no harm is absolutely critical to us. We will only appoint competent contractors that can prove that they will act in accordance with our standards and procedures.

We have analysed the expected work volumes within the workbook and concluded they can be delivered safely and at high quality within the costs outlined.

The safe construction and operation of the network will not delay works or increase costs as this will be part of the core ethos we expect.

Efficient

We have extensive expertise in managing cost effective network connections within our wider group and will bring this knowledge to the delivery of an efficient capital programme.

We will manage our contractors closely to ensure that all spend is controlled and reviewed. We will only issue contracts of work for three-year periods to allow retendering. This will ensure that costs remain competitive and that the best value is driven for customers. This follows the successful model we currently use in our Southern network.

It is our view that a focused approach to marketing will allow us to maximise opportunities for early connections and make for the most efficient design of the network possible.

By utilising our existing internal resources and expertise as far as possible and minimising the use of expensive external specialists, we will manage costs in line with the amounts detailed in the workbook submission.

Reliable

All works will be undertaken to our group standards in order to ensure that the extremely high reliability performance of our Scotland and Southern networks is repeated in NI. This will be monitored and delivered by the SHE Manager who will be inspecting the quality of work to pre-empt any potential issues.

9.2 Activity build up

9.2.1 Range of activities

Connections expenditure will include the following activities:

Connections Costs:

a) Existing housing

The costs associated with the installation and commissioning of the feeder main and any pressure reduction equipment required to feed the existing owner occupiers and the existing housing executive properties (29,040 properties in total) this includes:

plant, labour, reinstatement material, pipe, fittings, stakeholder engagement, traffic management, network design, recording of assets and SCO activities.

We will also install and commission the services and meters including plant, labour, reinstatement material, pipe, fittings, stakeholder engagement, traffic management, network design and recording of assets.

b) New houses

We will install and commission the feeder main and any pressure reduction equipment required to feed new houses (10,374 properties in total) including plant, labour, reinstatement material, pipe and fittings, stakeholder engagement, traffic management, network design, recording of assets.

We will also install and commission the services and meters including plant, labour, reinstatement material, pipe and fittings, stakeholder engagement, traffic management, network design and recording of assets.

c) Small I&C

We will install and commission the services and meters (446 in total) including plant, labour, reinstatement material, pipe and fittings, pressure reduction equipment, stakeholder engagement, traffic management, network design and recording of assets.

d) Medium I&C

We will install and commission the services and meters (310 in total) including plant, labour, reinstatement material, pipe and fittings, pressure reduction equipment including telemetry where necessary, stakeholder engagement, traffic management, network design and recording of assets.

e) Large I&C

We will install and commission the services and meters (36 in total) including plant, labour, reinstatement material, pipe and fittings, pressure reduction equipment including telemetry where necessary, stakeholder engagement, traffic management, network design and recording of assets.

f) Contract I&C

We will install and commission the services and meters (27 in total) including plant, labour, reinstatement material, pipe and fittings, pressure reduction equipment including telemetry where necessary, stakeholder engagement, traffic management, network design and recording of assets.

g) Connections cost

The combined cost and activities of a), b), c), d), e) and f) above.

h) Network cost

We will install and commission the spine main and any plant, labour, reinstatement material, pipe and fittings, pressure reduction equipment including telemetry where necessary, stakeholder engagement, traffic management, network design and recording of assets.

Capex £m

The combined cost and activities of g) and h).

Lifecycle expenditure

Meter replacement cost

Includes replacement of domestic meters from year 22 to year 40, 20 years after the installation of the meters. This includes labour, material and customer notification and any meter recycling.

Annual visit cost

Includes functional checks on the medium, large and contract I&C equipment every two years from year 3 to year 40. This includes labour, material and customer notification.

Domestic regulator and battery costs

Includes replacement of meter batteries and domestic regulators from year 12 to 40, 10 years after the original installation date. This includes labour, material and customer notification and any material recycling.

IPRS replacement costs

Include all of the costs associated with the replacement of the IPRS at Magherafelt including labour and material in year 21.

An allocation of time for Team Managers will form part of the Capex as detailed in Section 8. Additionally, the project management resources applicable to the capital works including Records Control Assistants, Connections Co-ordination and support from the wider group for IT systems have also been included in this area.

9.2.2 Rationale set out

From our extensive experience of managing large new connections schemes and our substantial replacement programme, we will manage the delivery of this workload through contractors in order to derive the best efficiency and least-cost option.

This will allow flexibility to the workforce in line with the expected construction and connections profile which varies significantly over the first five years. Equally, this will provide the flexibility to ramp up works in the early years should this be required.

The contractor will be responsible for the mains construction, service, meter, meter box installation and reinstatement.

All lifecycle costs will be delivered through our maintenance contractors, or for meter battery replacement, this will be delivered by FCOs. This will allow us to ensure the most efficient delivery of the workloads.

To drive an efficient cost base, Supply Point Administration will be undertaken by our administration team. Asset records will be detailed in the first instance by the Records Control Assistants and then digitised under our MSA.

Overall project management and control will be delivered by our internal resource to make sure that best benefit is gained from the wider group experience and expertise. It is paramount to us that our customers in NI benefit from our existing knowledge and skills.

9.2.3 Proposals for which activities will be tendered

Tenders

Contracts will be awarded for the delivery of:
- mains and service construction
- meter installation
- installation of RRIs; and
- reinstatement

These will include the provision of teams for any repair activity.
This will be a fully managed contract.

We will cover all other activities in-house or through our MSA.

9.3 Cost Management

We will manage costs for capital expenditure in the same way as with operational expenditure. However, as the workload will be delivered predominantly through the contractor agreements in place, there will also be a system of review and scrutiny of all contractors' invoices. These will be paid through our Contractor Payment System which will ensure full compliance with the Construction Contracts (Northern Ireland) Order 1997.

Our Records Control Assistants will verify the measures submitted by contractors, and manage the process of any change events. These will be agreed on a regular basis by the Team Manager, with any disputes being escalated to the Head of Engineering and the Head of Finance/Regulation.

We will manage costs incurred through our leading Oracle ERP system. This provides strong governance through an authorised spend hierarchy which will ensure that all procurement is signed-off in advance.

We will use a project and task approach to collect costs and drive robust management and review. This will allow comparison of performance across all areas of the business and reflects our existing culture where taking responsibility for spend and efficiency is second nature and ensures we derive maximum value from all that we do.

Large Diameter Main Laying

The Oracle ERP allows detailed reporting at a line-by-line level for scrutiny of all costs. Therefore any variances to budgeted spend will be investigated and reviewed. Monthly reporting will be undertaken to produce management accounts and provide management information on spend levels.

The hierarchy of review will be monthly discussions between the Head of Finance/Regulation and the Director, Northern Ireland, with additional review against budget with the SGN CEO, CFO and Director of Financial Operations. Ongoing forecasting will provide financial confidence in the progress of the operational business spend.

Costs will be shared with the Regulator on an annual basis to meet the licence obligations, with high-level reporting delivered through our management information reporting tool.

TEN

Chapter Ten

Finance Costs

10.1 WACC (work book submission)

Our assessment of an appropriate weighted average cost of capital (WACC) concludes:

WACC years 1–5	**6.2%**
WACC years 6–10	**5.5%***

*based on a real pre-tax cost of debt range (3.3% to 4.3%), real pre-tax cost of equity range (7.8% to 8.6%) and notional gearing of 55%

This is supported by a comprehensive assessment by Oxera.

This chapter sets out our proposed schedule for the Weighted Average Cost of Capital (WACC) for our submission that will be used to determine allowed prices in the first 10 years after the first delivery of gas.

The 10 year profile for the cost of capital in this chapter reflects the stated intention of the Regulator to set the WACC allowance for the first five years based on the winning business plan bid, and then to re-set the allowance in year six and every five years thereafter according to the capital asset pricing model (CAPM).

Our approach is anchored in the assessment of:

- capital market data
- relevant current regulatory precedent from the UK; and
- the approach used with Firmus Energy (Distribution) Limited (FE), the most recent NI ‘start up’ precedent.

We believe that it is appropriate to divide the WACC between years 1 to 5 and thereafter, as the first period contains material start up risk compared to later years. Importantly, unlike the Phoenix Natural Gas and FE licences, this proposal only has this start up risk for the first five years as opposed to 12 to 20 years respectively. In addition, having calculated a well justified longer term range for the WACC, we are proposing a figure at the lower end of this range.

In our assessment of an appropriate WACC we commissioned Oxera to provide supporting analysis and their report is attached in Annexe C.

Years 1 to 5 have been built up based on regulatory precedent and sense checked against the 2005 real pre-tax WACC for FE of 7.5% (with an appropriate adjustment for current real yields and a start up premium recognising its shorter duration). This produces a range of 6.2% to 6.9% of which we have adopted the low end.

Years 6 to 10 uses a CAPM methodology which also builds on well justified precedents and market data for the component parts. Our analysis produces a range of 5.3% to 6.3% and consistent with years 1 to 5, we are proposing a figure of 5.5% which is also at the lower end of the range.

It should be noted that our analysis of years 6 to 10 reflects market expectation that risk free rates will rise compared to the current estimates used in years 1 to 5. Additionally, years 6 to 10 also reflects the expectation for debt spreads to rise.

10.1.1 Explanation of build-up of the WACC (years 1 - 5)

Core Components of WACC Calculations

Figure 1 – Years 1–5 real pre-tax WACC

FE fixed real pre-tax WACC (2005) [1]	7.5%
Implied real pre-tax WACC for GDPCR (2007) [2]	6.1%
Total risk premium [3]=[1]–[2]	1.4%
NI risk premium on real pre-tax WACC [4]	0.4%
Start-up risk premium [5]=[3]–[4]	1.0%
Start-up risk premium – multiple [6]	1.5%
Risk premium [7]=[4]+[5]*[6]	1.9%
Implied real pre-tax WACC for RIIO GD1/ED1 (2012/3) [8]	4.3% – 5.0%
Real pre-tax WACC, years 1–5 [9]=[7]+[8]	**6.2% – 6.9%**

The key steps supporting the table above are outlined further below:

Risk Premium (1.9%)

In assessing an appropriate WACC for years 1 to 5, the starting point of our assessment is assessing the relative riskiness of the low pressure licence against appropriate benchmarks – the two existing licencees in NI and the regulated companies in GB. These risks are summarised in Figure 2 overleaf.

Figure 2 Summary of Relative Risk

	Risk relative to:		
	FE	**PNGL**	**GB NETWORKS**
Start up risk – Form of Price Control	Volume risk due to price cap. **Similar**	Volume risk due to price cap. **Similar**	Revenue cap. **Higher**
Start up risk – Asset Value Relative to Totex Spend	FE least mature of compensatures. **Similar**	More mature network. **Higher**	More mature networks. **Higher**
Start up risk – Impact of Profiling Adjustment	Same deferred revenue risk. **Similar**	Same deferred revenue risk. **Similar**	Less deferred revenue risk. **Higher**
Start up risk – Start Ups Not Have Established Customer Bases & Networks	FE least mature of compensatures. **Similar**	More mature network. **Higher**	More mature networks. **Higher**
Start up risk – Duration of Initial WACC to Compensate For Start Up Risk	WACC set for 12 years. **Higher**	WACC set for 20 years. **Higher**	Licences no longer reflect start up risk. **Higher**
Rolling Incentive Mechanisms	Similar Mechanisms. **Similar**	Similar Mechanisms. **Similar**	Under/overspends shared. **Higher**
Impact of 15% Opex Re-opener	Similar re-openers. **Similar**	N/A	Re-opens not reviewed annually. **Lower**
20 Year Exclusivity	**Same**	**Same**	No exclusivity. **Lower**

We believe Firmus Energy (FE) is the most relevant benchmark for the low pressure licence-holder due to the similarities in their risk profiles and FE's relatively immature network compared to those of the other benchmarks. The only aspect of the FE licence which differs materially from the proposed LP licence is the substantially longer period of the initial WACC.

Having established a suitable benchmark, the next stage of the assessment of the WACC is comparing FE project WACC to the closest GB price control (GDPCR1), to calculate a FE 'Total Risk Premium' of **1.4%**. This needs to be further analysed as follows:

NI Risk Premium (0.4%)

We then determine a NI risk premium of **0.4%** above the real pre-tax WACC, on the basis of the Competition Commission's implied uplift to NIE's pre-tax Cost of Debt and Cost of Equity. This uplift is due to additional risk taken by investors in NI relative to GB, as detailed respectively in section 2.8.1 and 2.8.2 of Oxera's report.

Start Up Risk Premium (1.0%)

Having taken into account the NI investment risk - the remaining net **1.0%** of the Total Risk Premium is thus the FE Start Up Risk Premium.

Risk Premium 1.5 multiple

The FE Start Up Risk Premium needs to be adjusted for the fact that as the low pressure licence holder we will have less time to be compensated for start up risk, being compensated for five years as compared to FE's 12 year's compensation. We have made a conservative estimate that on the basis that the initial determination period has more than halved – there should be a 50% increase (**1.5 multiple**) in the start-up risk premium for SGN NI Vs FE.

We then sum the NI risk premium and uplifted Start up Risk premium to calculate a Risk Premium of **1.9%**.

Year 1 - 5 real pre-tax WACC

The Risk Premium is added to recent Ofgem GB precedents of RIIO-ED1 and GD1 of 4.3% and 5.0%, respectively to calculate the real pre-tax WACC range of **6.2% - 6.9%**.

This approach is then cross checked by calculating the premium between the FE allowed return and forward linked gilt rates at the time the FE project started giving a range of **6.1% to 6.3%**.

Figure 3 – Cross-check on real pre-tax WACC, years 1–5

Maturity		Five-year maturity	Ten-year maturity
FE fixed real pre-tax WACC (2005)	[1]	7.5%	7.5%
Implied forward real yield on 30/06/2006 (as at 31/12/2003)	[2]	2.1%	2.2%
Premium over index-linked gilt yield	[3]=[1]–[2]	5.4%	5.3%
NI risk premium on real pre-tax WACC	[4]	0.4%	0.4%
Start-up risk premium	[5]	1.0%	1.0%
Residual risk	[6]=[3]–[4]–[5]	4.0%	3.9%
Start-up risk premium—multiple	[7]	1.5	1.5
Implied forward real yield in 28/02/2017 (as at 28/02/2014)	[8]	0.2%	0.4%
Real pre-tax WACC, years 1–5	**[9]=[4]+[5]*[7]+[6]+[8]**	**6.1%**	**6.3%**

10.1.2 Explanation of build-up of the WACC (years 6 - 10)

Core Components of WACC Calculations

In developing our assessment for an appropriate WACC, we have built up our calculations from the following building blocks:

Cost of Debt (years 6 - 10)

Our analysis gives a range of real pre-tax Cost of Debt of **3.3% - 4.3%**.

Oxera's analysis advises that an appropriate base Risk Free Rate of **1.25%-1.50%**, this is derived after assessing the expected increase in interest rates over the duration of the licence. We do not expect the current environment of low interest rates to persist as we expect the exceptional influence of central banks on the level of interest rates to decline. Further details on the impact of macroeconomic developments on interest rates, and a general analysis of RFR, are found in sections 4.1.1 and 4.1.3 of the Oxera report respectively.

In assessing the cost of debt we have also taken account of the following:

- the low pressure licence holder's debt premium, based on an assumption of a BBB credit rating, of **160bps to 210bps**. This is based on Oxera's analysis of the spreads of BBB rated corporate bonds over the last ten years, as detailed in section 4.4 of its report

- issuance costs of **20bps** as per the Competition Commissions final determination for NIE (2014)

- NI specific cost of debt risk premium of **25bps to 50bps**, based on the Competition Commission's final determination for NIE (2014), as detailed in section 2.8.1 of Oxera's report

The following table details our build:

Figure 4 – Real Pre-Tax Cost of Debt %

	Low	High
Real RFR [1]	1.25%	1.50%
BBB-rated spread [2]	1.6%	2.1%
Issuance premium [3]	0.2%	0.2%
NI premium [4]	0.3%	0.5%
Real pre-tax CoD [5]=[1]+[2]+[3]+[4]	3.3%	4.3%

Cost of Equity (year 6 - 10)

Our analysis gives a range of real pre-tax Cost of Equity of **7.8%-8.6%**.

We believe that the Equity Risk Premium (ERP) to be in the range of 5.25%–5.50%; this would be consistent with the proposed total market return and RFR ranges. This range is broadly in line with historical evidence and regulatory precedent, and is lower than forward-looking estimates. This is consistent with taking a longer-term view of capital market parameters.

In assessing the cost of equity for this project we have assessed the following factors:

- asset beta of **0.43-0.45** based on the more Capex intensive, and hence riskier, recent Ofgem precedents (SHETL/SPTL) where the similarly expansive nature of projects leads to a high Totex to asset value ratio. Additionally this range takes account of an upward adjustment of GB's utilities asset betas for NI risk and an allowance for debt beta due to the proposed gearing level of 55%

- notional gearing level of **55%** is in line with the RIIO-T1 Capex intensive projects and the high asset beta assumption and the cost of equity would rise with any increased gearing

- debt beta allowance of **0.1** as per Oxera's asset beta analysis

- These factors give an implied equity beta of 0.8-0.9 and an implied equity risk premium of **5.25–5.50%**

Taking the above, together with the risk free rate discussed earlier in the chapter gives a range of real post-tax Cost of Equity of **5.6%–6.3%**, as detailed in Figure 5 on the following page.

Figure 5 – Real Pre-Tax Cost of Equity %

	Low	High
Asset beta [6]	0.43	0.45
Gearing [7]	55%	55%
Debt beta [8]	0.1	0.1
Implied equity beta [9]=([6]–[7]*[8])/(1–[7])	0.8	0.9
ERP [10]	5.25%	5.50%
Real post-tax CoE [11]=[1]+[9]*[10]	5.6%	6.3%

Using the assumptions of a corporate tax rate of 20% and long-term RPI inflation forecast of 3%, as detailed respectively in sections 4.6 and 4.7 of Oxera's report, this gives a real pre-tax Cost of Equity of **7.8%-8.6%**, as calculated in table 4.4 (p28) of its report.

WACC Years 6–10

The intention of the NIAUR is to undertake the first price control, on the basis of the winning bid, and then set the WACC for years 6 to 10 based on CAPM analysis. Therefore this section details the calculation of WACC estimates for this period illustrated in Figure 6 below, each element being calculated using the CAPM analysis detailed in Section 10.1.2.

Figure 6 – Years 6–10 Real Pre-tax WACC %

	Low	High
Real pre-tax CoD [a]	3.3	4.3
Gearing [b]	55	55
Real pre-tax CoE [c]	7.8	8.6
GtW2 real pre-tax WACC = [c]*(1–[b])+[a]*[b]	**5.3**	**6.3**

Based on the analysis of the component variables in Section 10.1.2 of this chapter, the appropriate real pre-tax WACC lies between the range of **5.3%-6.3%**. We propose a WACC of 5.5% which is at the lower end of this range.

<u>**Normalisation of WACC over the 40 year licence period**</u>

The assessment methodology has stated the average WACC for the first 10 years will be used as the WACC for the remaining 30 years. It has also been stated that after year 5 the WACC will be subject to individual price control determinations.

Our intention is to reflect the start up premium in years 1 to 5 (6.2%) and then move to a long-term WACC of 5.5% thereafter. However, in order to achieve this we have to set years 6 to 10 at 4.98% in our LP workbook submission, with a consequent 5.59% WACC post year 10 long term.
In reality we would expect the WACC to be 5.5% from year 6 onwards to avoid this volatility.

ELEV

Chapter Eleven

Annexes and Glossary

11.1 Annexe A – Workbook

Operating Expenditure Years 1 -10

All numbers in blue are input by Utility Regulator	0.000
All numbers in black are calculated	0.000
Applicants only permitted to input data into blank cells	

Operating Expenditure Item		
Level 1	Level 2	Level 3
Mobilisation Costs		
Marketing, Advertising & PR for Non-Domestic Connections	Market Development & Advertising	
	Incentives	
	Total Marketing, Advertising & PR	
Emergencies and Network Maintenance	Emergencies	Emergency Call Centre
		First Calls
	Network Maintenance	Repairs
		Maintenance
	Total Emergencies and Network Maintenance	
Manpower		
Office	Buildings	
	Telephone, Postage and Stationary	
	Total Office	
Insurance	Business Insurance	
	Car Insurance	
	Building Insurance	
	Total Insurance	
Professional and Legal Fees		
Information Technology		
Miscellaneous		
Rates		
Licence Fees		
Total Other		
Total Operating Expenditure		

Year 11 Uplift	15.00%
Years 11 - 15 rate of increase	4.50%
Years 16 - 20 rate of increase	2.75%
Years 21 - 30 rate of increase	1.00%
Years 31 - 40 rate of increase	0.00%

Controlable Operating Expenditure £m										
	Price Control Period 1					Price Control Period2				
	1	2	3	4	5	6	7	8	9	10
	0.996									
	0.008	0.009	0.011	0.012	0.011	0.007	0.004	0.001		
	0.008	0.009	0.011	0.012	0.011	0.007	0.004	0.001	0.000	0.000
	0.000	0.005	0.008	0.011	0.013	0.016	0.018	0.020	0.023	0.025
	0.031	0.058	0.078	0.093	0.103	0.117	0.131	0.144	0.157	0.171
	0.004	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.018
	0.036	0.074	0.065	0.069	0.072	0.075	0.078	0.081	0.083	0.087
	0.071	0.143	0.160	0.182	0.198	0.220	0.239	0.259	0.278	0.300
	0.302	0.325	0.338	0.347	0.352	0.360	0.366	0.372	0.380	0.384
	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
	0.074	0.242	0.281	0.320	0.359	0.394	0.429	0.464	0.499	0.531
	0.025	0.025	0.025	0.025	0.025	0.050	0.050	0.050	0.050	0.050
	0.147	0.315	0.354	0.393	0.432	0.492	0.527	0.562	0.597	0.629
	1.581	0.850	0.920	0.991	1.051	1.136	1.192	1.252	1.312	1.369

Year	Total Opex
1	1.581
2	0.850
3	0.920
4	0.991
5	1.051
6	1.136
7	1.192
8	1.252
9	1.312
10	1.369
11	1.226
12	1.281
13	1.338
14	1.399
15	1.462
16	1.502
17	1.543
18	1.585
19	1.629
20	1.674
21	1.691
22	1.707
23	1.725
24	1.742
25	1.759
26	1.777
27	1.795
28	1.813
29	1.831
30	1.849
31	1.849
32	1.849
33	1.849
34	1.849
35	1.849
36	1.849
37	1.849
38	1.849
39	1.849
40	1.849

Capital Expenditurее Years 1 - 40

All numbers in blue are input by Utility Regulator	0.000
All numbers in black are calculated	0.000
Applicants only permitted to input data into blank cells	

		Period 1					Period 2					Period 3					Period 4				
Connection Numbers		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Existing Owner Occupied	Dungannon + Coalisland		256	256	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
	Cookstown + Magherafelt		282	282	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176	176
	Omagh		295	295	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
	Enniskillen + Derylin		220	220	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138
	Strabane		164	164	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103
	Total	0	1,217	1,217	761	761	761	761	761	761	761	761	761	761	761	761	761	761	761	761	761
Existing Housing Executive	Dungannon + Coalisland		215	54	54	54	54	21	21	21	21	21	54	54	54	54	54	54	54	54	54
	Cookstown + Magherafelt		221	55	55	55	55	22	22	22	22	22	55	55	55	55	55	55	55	55	55
	Omagh		244	61	61	61	61	24	24	24	24	24	61	61	61	61	61	61	61	61	61
	Enniskillen + Derylin		174	43	43	43	43	17	17	17	17	17	43	43	43	43	43	43	43	43	43
	Strabane		209	52	52	52	52	21	21	21	21	21	52	52	52	52	52	52	52	52	52
	Total	0	1,063	265	265	265	265	105	105	105	105	105	265	265	265	265	265	265	265	265	265
New Houses	Dungannon + Coalisland		53	71	71	71	71	89	71	71	71	71	71	71	71	71	71	71	71	71	71
	Cookstown + Magherafelt		58	58	58	70	76	58	70	70	70	70	70	70	70	70	70	70	70	70	70
	Omagh		46	46	69	46	46	46	69	69	69	69	69	69	69	69	69	69	69	69	69
	Enniskillen + Derylin		42	28	28	42	28	28	42	42	42	42	42	42	42	42	42	42	42	42	42
	Strabane		37	18	37	18	18	37	18	18	18	18	18	18	18	18	18	18	18	18	18
	Total	0	236	221	263	247	239	258	270	270	270	270	270	270	270	270	270	270	270	270	270
Small I & C	Dungannon + Coalisland		18	7	11	11	11	11	11	11	11										
	Cookstown + Magherafelt		28	11	17	17	17	17	17	17	17										
	Omagh		14	6	8	8	8	8	8	8	8										
	Enniskillen + Derylin		11	4	7	7	7	7	7	7	7										
	Strabane		8	3	5	5	5	5	5	5	5										
	Total	0	79	31	48	48	48	48	48	48	48	0	0	0	0	0	0	0	0	0	0
Medium I & C	Dungannon + Coalisland		9	4	5	5	5	5	5	5	5										
	Cookstown + Magherafelt		21	8	12	12	12	12	12	12	12										
	Omagh		12	5	7	7	7	7	7	7	7										
	Enniskillen + Derylin		8	3	5	5	5	5	5	5	5										
	Strabane		6	3	4	4	4	4	4	4	4										
	Total	0	56	23	33	33	33	33	33	33	33	0	0	0	0	0	0	0	0	0	0
Large I & C	Dungannon + Coalisland		4	4																	
	Cookstown + Magherafelt		4	4																	
	Omagh		5	5																	
	Enniskillen + Derylin		3	3																	
	Strabane		2	2																	
	Total	0	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contract I & C	Dungannon + Coalisland	4	3																		
	Cookstown + Magherafelt	4	3																		
	Omagh	3	3																		
	Enniskillen + Derylin	3	3																		
	Strabane	1	0																		
	Total	15	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Period 1					Period 2					Period 3					Period 4				
Connection Costs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Existing Houses	Dungannon + Coalisland	0	1,220,832	803,520	554,688	554,688	554,688	469,152	469,152	469,152	469,152	469,152	554,688	554,688	554,688	554,688	554,688	554,688	554,688	554,688	554,688
	Cookstown + Magherafelt	0	1,303,776	873,504	598,752	598,752	598,752	513,216	513,216	513,216	513,216	513,216	598,752	598,752	598,752	598,752	598,752	598,752	598,752	598,752	598,752
	Omagh	0	1,397,088	922,752	635,040	635,040	635,040	539,136	539,136	539,136	539,136	539,136	635,040	635,040	635,040	635,040	635,040	635,040	635,040	635,040	635,040
	Enniskillen + Derylin	0	1,021,248	681,696	469,152	469,152	469,152	401,760	401,760	401,760	401,760	401,760	469,152	469,152	469,152	469,152	469,152	469,152	469,152	469,152	469,152
2,592	Strabane	0	966,816	559,872	401,760	401,760	401,760	321,408	321,408	321,408	321,408	321,408	401,760	401,760	401,760	401,760	401,760	401,760	401,760	401,760	401,760
	Total	0	5,909,760	3,841,344	2,659,392	2,659,392	2,659,392	2,244,672	2,244,672	2,244,672	2,244,672	2,244,672	2,659,392	2,659,392	2,659,392	2,659,392	2,659,392	2,659,392	2,659,392	2,659,392	2,659,392
New Houses	Dungannon + Coalisland	0	51,304	68,728	68,728	68,728	68,728	86,152	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728
	Cookstown + Magherafelt	0	56,144	56,144	56,144	67,760	73,568	56,144	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760
	Omagh	0	44,528	44,528	66,792	44,528	44,528	44,528	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792
	Enniskillen + Derylin	0	40,656	27,104	27,104	40,656	27,104	27,104	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656
968	Strabane	0	35,816	17,424	35,816	17,424	17,424	35,816	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424
	Total	0	228,448	213,928	254,584	239,096	231,352	249,744	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360
Small I & C	Dungannon + Coalisland	0	69,786	27,139	42,647	42,647	42,647	42,647	42,647	42,647	42,647	0	0	0	0	0	0	0	0	0	0
	Cookstown + Magherafelt	0	108,556	42,647	65,909	65,909	65,909	65,909	65,909	65,909	65,909	0	0	0	0	0	0	0	0	0	0
	Omagh	0	54,278	23,262	31,016	31,016	31,016	31,016	31,016	31,016	31,016	0	0	0	0	0	0	0	0	0	0
	Enniskillen + Derylin	0	42,647	15,508	27,139	27,139	27,139	27,139	27,139	27,139	27,139	0	0	0	0	0	0	0	0	0	0
3,877	Strabane	0	31,016	11,631	19,385	19,385	19,385	19,385	19,385	19,385	19,385	0	0	0	0	0	0	0	0	0	0
	Total	0	306,283	120,187	186,096	186,096	186,096	186,096	186,096	186,096	186,096	0	0	0	0	0	0	0	0	0	0
Medium I & C	Dungannon + Coalisland	0	48,735	21,660	27,075	27,075	27,075	27,075	27,075	27,075	27,075	0	0	0	0	0	0	0	0	0	0
	Cookstown + Magherafelt	0	113,715	43,320	64,980	64,980	64,980	64,980	64,980	64,980	64,980	0	0	0	0	0	0	0	0	0	0
	Omagh	0	64,980	27,075	37,905	37,905	37,905	37,905	37,905	37,905	37,905	0	0	0	0	0	0	0	0	0	0
	Enniskillen + Derylin	0	43,320	16,245	27,075	27,075	27,075	27,075	27,075	27,075	27,075	0	0	0	0	0	0	0	0	0	0
5,415	Strabane	0	32,490	16,245	21,660	21,660	21,660	21,660	21,660	21,660	21,660	0	0	0	0	0	0	0	0	0	0
	Total	0	303,240	124,545	178,695	178,695	178,695	178,695	178,695	178,695	178,695	0	0	0	0	0	0	0	0	0	0
Large I & C	Dungannon + Coalisland	0	43,320	43,320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cookstown + Magherafelt	0	43,320	43,320	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Omagh	0	54,150	54,150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Enniskillen + Derylin	0	32,490	32,490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10,830	Strabane	0	21,660	21,660	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	194,940	194,940	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contract I & C	Dungannon + Coalisland	100,900	75,675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cookstown + Magherafelt	100,900	75,675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Omagh	75,675	75,675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Enniskillen + Derylin	75,675	75,675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25,225	Strabane	25,225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	378,375	302,700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Period 1					Period 2					Period 3					Period 4				
Total Capex £m		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Connection Costs	Dungannon + Coalisland	0.101	1.510	0.964	0.693	0.693	0.693	0.625	0.608	0.608	0.608	0.538	0.623	0.623	0.623	0.623	0.623	0.623	0.623	0.623	0.623
	Cookstown + Magherafelt	0.101	1.701	1.059	0.786	0.797	0.803	0.700	0.712	0.712	0.712	0.581	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667
	Omagh	0.076	1.691	1.072	0.771	0.748	0.748	0.653	0.675	0.675	0.675	0.606	0.702	0.702	0.702	0.702	0.702	0.702	0.702	0.702	0.702
	Enniskillen + Derylin	0.076	1.256	0.773	0.550	0.564	0.550	0.483	0.497	0.497	0.497	0.442	0.510	0.510	0.510	0.510	0.510	0.510	0.510	0.510	0.510
	Strabane	0.025	1.088	0.627	0.479	0.460	0.460	0.398	0.380	0.380	0.380	0.339	0.419	0.419	0.419	0.419	0.419	0.419	0.419	0.419	0.419
	Total	0.379	7.246	4.495	3.279	3.262	3.254	2.859	2.872	2.872	2.872	2.506	2.921	2.921	2.921	2.921	2.921	2.921	2.921	2.921	2.921
Network Costs	Dungannon + Coalisland	1.909	0.479	0.319	0.099	0.099	0.099	0.099	0.099	0.099	0.099	0.099									
	Cookstown + Magherafelt	2.080	1.278	0.852	0.266	0.266	0.266	0.266	0.266	0.266	0.266	0.266									
	Omagh	2.154	0.279	0.186	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059									
	Enniskillen + Derylin	0.825	0.487	0.324	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102									
	Strabane	0.081	0.517	0.345	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108									
	Total	7.049	3.040	2.026	0.634	0.634	0.634	0.634	0.634	0.634	0.634	0.634	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Capex £m	Dungannon + Coalisland	2.010	1.989	1.283	0.792	0.792	0.792	0.724	0.707	0.707	0.707	0.637	0.623	0.623	0.623	0.623	0.623	0.623	0.623	0.623	0.623
	Cookstown + Magherafelt	2.181	2.979	1.911	1.052	1.063	1.069	0.966	0.978	0.978	0.978	0.847	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667
	Omagh	2.230	1.970	1.258	0.830	0.807	0.807	0.712	0.734	0.734	0.734	0.665	0.702	0.702	0.702	0.702	0.702	0.702	0.702	0.702	0.702
	Enniskillen + Derylin	0.901	1.743	1.097	0.652	0.666	0.652	0.585	0.599	0.599	0.599	0.544	0.510	0.510	0.510	0.510	0.510	0.510	0.510	0.510	0.510
	Strabane	0.106	1.605	0.972	0.587	0.568	0.568	0.506	0.488	0.488	0.488	0.447	0.419	0.419	0.419	0.419	0.419	0.419	0.419	0.419	0.419
	Total	7.428	10.286	6.521	3.913	3.896	3.888	3.493	3.506	3.506	3.506	3.140	2.921	2.921	2.921	2.921	2.921	2.921	2.921	2.921	2.921
Lifecycle Expenditure	Meter Replacement Costs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Annual Visit Costs	0.000	0.000	0.005	0.005	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
	Domestic Regulators & Batt Costs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.398	0.304	0.220	0.220	0.220	0.188	0.199	0.199	0.199
	IPRS Replacement Costs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	0.000	0.000	0.005	0.005	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.408	0.314	0.230	0.230	0.230	0.198	0.209	0.209	0.209
Grand Total		7.428	10.286	6.526	3.918	3.906	3.898	3.503	3.516	3.516	3.516	3.150	3.329	3.235	3.151	3.151	3.151	3.119	3.130	3.130	3.130

Existing Domestic Connection Incentive	Dungannon + Coalisland	0.000	0.109	0.109	0.068	0.068	0.068	0.068	0.068	0.068	0.068
	Cookstown + Magherafelt	0.000	0.120	0.120	0.075	0.075	0.075	0.075	0.075	0.075	0.075
	Omagh	0.000	0.125	0.125	0.078	0.078	0.078	0.078	0.078	0.078	0.078
	Enniskillen + Derylin	0.000	0.094	0.094	0.059	0.059	0.059	0.059	0.059	0.059	0.059
425	Strabane	0.000	0.070	0.070	0.044	0.044	0.044	0.044	0.044	0.044	0.044
	Total	0.000	0.518	0.518	0.324	0.324	0.324	0.324	0.324	0.324	0.324

Period 5					Period 6					Period 7					Period 8					
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Total
160	160	160	160	160	160	160	160	160	160	160										4,992
176	176	176	176	176	176	176	176	176	176	176										5,492
184	184	184	184	184	184	184	184	184	184	184										5,742
138	138	138	138	138	138	138	138	138	138	138										4,304
103	103	103	103	103	103	103	103	103	103	103										3,212
761	761	761	761	761	761	761	761	761	761	761	0	0	0	0	0	0	0	0	0	23,742
54																				1,076
55																				1,101
61																				1,218
43																				861
52																				1,042
265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,298
71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	2,769
70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	2,688
69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	2,576
42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	1,582
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	759
270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	10,374
																				102
																				158
																				76
																				64
																				46
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	446
																				48
																				113
																				66
																				46
																				37
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	310
																				8
																				8
																				10
																				6
																				4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
																				7
																				7
																				6
																				6
																				1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27

Period 5					Period 6					Period 7					Period 8					
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Total
554,688	414,720	414,720	414,720	414,720	414,720	414,720	414,720	414,720	414,720	414,720	0	0	0	0	0	0	0	0	0	15,728,256
598,752	456,192	456,192	456,192	456,192	456,192	456,192	456,192	456,192	456,192	456,192	0	0	0	0	0	0	0	0	0	17,089,056
635,040	476,928	476,928	476,928	476,928	476,928	476,928	476,928	476,928	476,928	476,928	0	0	0	0	0	0	0	0	0	18,040,320
469,152	357,696	357,696	357,696	357,696	357,696	357,696	357,696	357,696	357,696	357,696	0	0	0	0	0	0	0	0	0	13,387,680
401,760	266,976	266,976	266,976	266,976	266,976	266,976	266,976	266,976	266,976	266,976	0	0	0	0	0	0	0	0	0	11,026,368
2,659,392	1,972,512	1,972,512	1,972,512	1,972,512	1,972,512	1,972,512	1,972,512	1,972,512	1,972,512	1,972,512	0	0	0	0	0	0	0	0	0	75,271,680
68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	68,728	2,680,392
67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	67,760	2,601,984
66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	66,792	2,493,568
40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	40,656	1,531,376
17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	17,424	734,712
261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	261,360	10,042,032
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	395,454
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	612,566
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	294,652
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248,128
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178,342
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,729,142
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	259,920
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	611,895
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	357,390
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249,090
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200,355
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,678,650
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86,640
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86,640
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108,300
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64,980
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43,320
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	389,880
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176,575
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176,575
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151,350
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151,350
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25,225
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	681,075

Period 5					Period 6					Period 7					Period 8					
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Total
0.623	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	19.322
0.667	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	21.186
0.702	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	21.453
0.510	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	15.634
0.419	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	12.199
2.921	2.233	2.233	2.233	2.233	2.233	2.233	2.233	2.233	2.233	2.233	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	89.794
																				3.499
																				6.338
																				3.091
																				2.452
																				1.807
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.187
0.623	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	22.821
0.667	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.524	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	27.524
0.702	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	24.544
0.510	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.398	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	18.086
0.419	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.284	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	14.006
2.921	2.233	2.233	2.233	2.233	2.233	2.233	2.233	2.233	2.233	2.233	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	106.981
0.000	1.110	0.848	0.659	0.576	0.565	0.523	0.523	0.534	0.534	0.314	0.356	0.356	0.356	0.356	0.356	0.356	0.356	0.356	0.356	9.390
0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.370
0.199	0.628	0.523	0.440	0.450	0.450	0.419	0.419	0.419	0.419	0.419	0.806	0.701	0.618	0.628	0.628	0.597	0.597	0.597	0.597	12.701
0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.021
0.230	1.748	1.381	1.109	1.036	1.025	0.952	0.952	0.963	0.963	0.743	1.172	1.067	0.984	0.994	0.994	0.963	0.963	0.963	0.963	22.482
3.151	3.981	3.614	3.342	3.269	3.258	3.185	3.185	3.196	3.196	2.976	1.434	1.329	1.246	1.256	1.256	1.225	1.225	1.225	1.225	129.463
																				0.694
																				0.765
																				0.796
																				0.601
																				0.448
																				3.304

Consumption and Revenue Years 1 - 40

All numbers in blue are input by Utility Regulator	0.000
All numbers in black are calculated	0.000
Applicants only permitted to input data into blank cells	

Consumption Therms pa				
480	480	400	29.3071	Kwh per therm

		Domestic Connections				Consumption Gwh's				
		Existing					Industrial & Commercial			
Year	PC period	Private	NIHE	New	Total	Domestic	Small	Medium	Large	Contract
1	1	0	0	0	0					155.542
2	1	1,217	1,063	236	2,516	17.420	3.340	9.961	11.787	466.627
3	1	2,434	1,328	457	4,219	46.560	4.675	13.946	35.362	622.169
4	1	3,195	1,593	720	5,508	67.037	6.679	19.922	47.149	622.169
5	1	3,956	1,858	967	6,781	84.460	8.683	25.899	47.149	622.169
6	2	4,717	2,123	1,206	8,046	101.741	10.687	31.876	47.149	622.169
7	2	5,478	2,228	1,464	9,170	117.962	12.690	37.852	47.149	622.169
8	2	6,239	2,333	1,734	10,306	133.239	14.694	43.829	47.149	622.169
9	2	7,000	2,438	2,004	11,442	148.587	16.698	49.806	47.149	622.169
10	2	7,761	2,543	2,274	12,578	163.935	18.701	55.782	47.149	622.169
11	3	8,522	2,648	2,544	13,714	179.282	18.701	55.782	47.149	622.169
12	3	9,283	2,913	2,814	15,010	195.755	18.701	55.782	47.149	622.169
13	3	10,044	3,178	3,084	16,306	213.353	18.701	55.782	47.149	622.169
14	3	10,805	3,443	3,354	17,602	230.952	18.701	55.782	47.149	622.169
15	3	11,566	3,708	3,624	18,898	248.550	18.701	55.782	47.149	622.169
16	4	12,327	3,973	3,894	20,194	266.148	18.701	55.782	47.149	622.169
17	4	12,327	3,973	3,894	20,194	274.947	18.701	55.782	47.149	622.169
18	4	13,849	4,503	4,434	22,786	292.546	18.701	55.782	47.149	622.169
19	4	14,610	4,768	4,704	24,082	318.943	18.701	55.782	47.149	622.169
20	4	15,371	5,033	4,974	25,378	336.542	18.701	55.782	47.149	622.169
21	5	16,132	5,298	5,244	26,674	354.140	18.701	55.782	47.149	622.169
22	5	16,893	5,298	5,514	27,705	369.874	18.701	55.782	47.149	622.169
23	5	17,654	5,298	5,784	28,736	383.745	18.701	55.782	47.149	622.169
24	5	18,415	5,298	6,054	29,767	397.615	18.701	55.782	47.149	622.169
25	5	19,176	5,298	6,324	30,798	411.486	18.701	55.782	47.149	622.169
26	6	19,937	5,298	6,594	31,829	425.356	18.701	55.782	47.149	622.169
27	6	20,698	5,298	6,864	32,860	439.227	18.701	55.782	47.149	622.169
28	6	21,459	5,298	7,134	33,891	453.097	18.701	55.782	47.149	622.169
29	6	22,220	5,298	7,404	34,922	466.968	18.701	55.782	47.149	622.169
30	6	22,981	5,298	7,674	35,953	480.838	18.701	55.782	47.149	622.169
31	7	23,742	5,298	7,944	36,984	494.709	18.701	55.782	47.149	622.169
32	7	23,742	5,298	8,214	37,254	503.226	18.701	55.782	47.149	622.169
33	7	23,742	5,298	8,484	37,524	506.392	18.701	55.782	47.149	622.169
34	7	23,742	5,298	8,754	37,794	509.557	18.701	55.782	47.149	622.169
35	7	23,742	5,298	9,024	38,064	512.722	18.701	55.782	47.149	622.169
36	8	23,742	5,298	9,294	38,334	515.887	18.701	55.782	47.149	622.169
37	8	23,742	5,298	9,564	38,604	519.052	18.701	55.782	47.149	622.169
38	8	23,742	5,298	9,834	38,874	522.217	18.701	55.782	47.149	622.169
39	8	23,742	5,298	10,104	39,144	525.383	18.701	55.782	47.149	622.169
40	8	23,742	5,298	10,374	39,414	528.548	18.701	55.782	47.149	622.169

	pence / Kwh	
	0.6636	0.5640

	Revenue £m		
Total	Domestic - Medium IC	Large - Contract IC	Total
155.542	0.000	0.877	0.877
491.715	0.204	2.698	2.902
676.152	0.433	3.709	4.141
695.919	0.621	3.775	4.396
703.900	0.790	3.775	4.565
711.881	0.958	3.775	4.733
719.860	1.118	3.775	4.893
727.841	1.272	3.775	5.048
735.822	1.427	3.775	5.202
743.801	1.582	3.775	5.357
743.801	1.684	3.775	5.459
743.801	1.793	3.775	5.568
743.801	1.910	3.775	5.685
743.801	2.027	3.775	5.802
743.801	2.144	3.775	5.919
743.801	2.260	3.775	6.035
743.801	2.319	3.775	6.094
743.801	2.435	3.775	6.211
743.801	2.611	3.775	6.386
743.801	2.727	3.775	6.503
743.801	2.844	3.775	6.619
743.801	2.949	3.775	6.724
743.801	3.041	3.775	6.816
743.801	3.133	3.775	6.908
743.801	3.225	3.775	7.000
743.801	3.317	3.775	7.092
743.801	3.409	3.775	7.184
743.801	3.501	3.775	7.276
743.801	3.593	3.775	7.368
743.801	3.685	3.775	7.460
743.801	3.777	3.775	7.552
743.801	3.833	3.775	7.609
743.801	3.854	3.775	7.630
743.801	3.875	3.775	7.651
743.801	3.896	3.775	7.672
743.801	3.917	3.775	7.693
743.801	3.938	3.775	7.714
743.801	3.959	3.775	7.735
743.801	3.980	3.775	7.756
743.801	4.001	3.775	7.777

Weighted Average Cost of Capital and Nett Present Value Years 1-40

All numbers in blue are input by Utility Regulator	0.000
All numbers in black are calculated	0.000
Applicants only permitted to input data into blank cells	

Depreciation Period (years): 35

Distribution Tariff	pence / Kwh	
Large + Contract I/C	85%	0.5640
Domestic + Small + Medium I/C	100%	0.6636

Social Discount Rate: 3.50%

Year	PC period	Pre Tax Real WACC	Asset Value: Opening	Capex	Depreciation	Closing	Annual Cost: Depreciation	Return on Capital	Domestic Incentive	Operating Costs	Total
1	1	6.20%	0.000	7.428	-0.212	7.216	0.212	0.224	0.000	1.581	2.017
2	1	6.20%	7.216	10.286	-0.506	16.996	0.506	0.751	0.518	0.850	2.624
3	1	6.20%	16.996	6.526	-0.693	22.829	0.693	1.235	0.518	0.920	3.366
4	1	6.20%	22.829	3.918	-0.805	25.942	0.805	1.512	0.324	0.991	3.632
5	1	6.20%	25.942	3.906	-0.916	28.932	0.916	1.701	0.324	1.051	3.992
6	2	4.98%	28.932	3.898	-1.027	31.803	1.027	1.512	0.324	1.136	3.999
7	2	4.98%	31.803	3.503	-1.128	34.178	1.128	1.643	0.324	1.192	4.287
8	2	4.98%	34.178	3.516	-1.228	36.466	1.228	1.759	0.324	1.252	4.563
9	2	4.98%	36.466	3.516	-1.328	38.654	1.328	1.870	0.324	1.312	4.834
10	2	4.98%	38.654	3.516	-1.429	40.741	1.429	1.977	0.324	1.369	5.099
11	3	5.59%	40.741	3.150	-1.519	42.372	1.519	2.323		1.226	5.068
12	3	5.59%	42.372	3.329	-1.614	44.087	1.614	2.417		1.281	5.311
13	3	5.59%	44.087	3.235	-1.706	45.616	1.706	2.507		1.338	5.552
14	3	5.59%	45.616	3.151	-1.797	46.970	1.797	2.588		1.399	5.783
15	3	5.59%	46.970	3.151	-1.887	48.234	1.887	2.661		1.462	6.009
16	4	5.59%	48.234	3.151	-1.977	49.408	1.977	2.729		1.502	6.208
17	4	5.59%	49.408	3.119	-2.066	50.461	2.066	2.791		1.543	6.400
18	4	5.59%	50.461	3.130	-2.155	51.436	2.155	2.848		1.585	6.588
19	4	5.59%	51.436	3.130	-2.245	52.321	2.245	2.900		1.629	6.774
20	4	5.59%	52.321	3.130	-2.334	53.117	2.334	2.947		1.674	6.955
21	5	5.59%	53.117	3.151	-2.424	53.844	2.424	2.990		1.691	7.104
22	5	5.59%	53.844	3.981	-2.538	55.287	2.538	3.050		1.707	7.296
23	5	5.59%	55.287	3.614	-2.641	56.260	2.641	3.118		1.725	7.483
24	5	5.59%	56.260	3.342	-2.736	56.866	2.736	3.162		1.742	7.640
25	5	5.59%	56.866	3.269	-2.830	57.305	2.830	3.191		1.759	7.780
26	6	5.59%	57.305	3.258	-2.923	57.640	2.923	3.213		1.777	7.913
27	6	5.59%	57.640	3.185	-3.014	57.811	3.014	3.227		1.795	8.035
28	6	5.59%	57.811	3.185	-3.105	57.891	3.105	3.234		1.813	8.151
29	6	5.59%	57.891	3.196	-3.196	57.891	3.196	3.236		1.831	8.263
30	6	5.59%	57.891	3.196	-3.288	57.799	3.288	3.234		1.849	8.370
31	7	5.59%	57.799	2.976	-3.373	57.402	3.373	3.220		1.849	8.442
32	7	5.59%	57.402	1.434	-3.414	55.422	3.414	3.153		1.849	8.416
33	7	5.59%	55.422	1.329	-3.452	53.299	3.452	3.039		1.849	8.340
34	7	5.59%	53.299	1.246	-3.487	51.058	3.487	2.917		1.849	8.253
35	7	5.59%	51.058	1.256	-3.523	48.791	3.523	2.791		1.849	8.163
36	8	5.59%	48.791	1.256	-3.347	46.700	3.347	2.669		1.849	7.865
37	8	5.59%	46.700	1.225	-3.088	44.837	3.088	2.558		1.849	7.495
38	8	5.59%	44.837	1.225	-2.936	43.126	2.936	2.459		1.849	7.244
39	8	5.59%	43.126	1.225	-2.859	41.492	2.859	2.365		1.849	7.073
40	8	5.59%	41.492	1.225	-2.783	39.934	2.783	2.276		1.849	6.908
				129.463	-89.529	39.934	89.529	99.995	3.304	62.468	255.295

Applicants need to set the Distribution Tariff for Domestic supply points so that the Allowed Collected Revenue Check is zero using the Goal Seek function, a macro has been built into this workbook for ease of use, this is activated by selecting Ctrl + q. In any event this will be done by the Utility Regulator before scoring the Application.

0.000	Allowed / Collected Revenue Check

	Profile Adjustment			
Opening Balance	Cost	Annual Return	Revenue	Closing Balance
0.000	2.017	0.000	-0.877	1.139
1.139	2.624	0.071	-2.902	0.932
0.932	3.366	0.058	-4.141	0.215
0.215	3.632	0.013	-4.396	-0.537
-0.537	3.992	-0.033	-4.565	-1.144
-1.144	3.999	-0.057	-4.733	-1.934
-1.934	4.287	-0.096	-4.893	-2.636
-2.636	4.563	-0.131	-5.048	-3.253
-3.253	4.834	-0.162	-5.202	-3.783
-3.783	5.099	-0.188	-5.357	-4.229
-4.229	5.068	-0.236	-5.459	-4.857
-4.857	5.311	-0.271	-5.568	-5.385
-5.385	5.552	-0.301	-5.685	-5.820
-5.820	5.783	-0.325	-5.802	-6.164
-6.164	6.009	-0.345	-5.919	-6.417
-6.417	6.208	-0.359	-6.035	-6.604
-6.604	6.400	-0.369	-6.094	-6.666
-6.666	6.588	-0.373	-6.211	-6.661
-6.661	6.774	-0.372	-6.386	-6.645
-6.645	6.955	-0.371	-6.503	-6.564
-6.564	7.104	-0.367	-6.619	-6.446
-6.446	7.296	-0.360	-6.724	-6.235
-6.235	7.483	-0.349	-6.816	-5.916
-5.916	7.640	-0.331	-6.908	-5.514
-5.514	7.780	-0.308	-7.000	-5.042
-5.042	7.913	-0.282	-7.092	-4.503
-4.503	8.035	-0.252	-7.184	-3.904
-3.904	8.151	-0.218	-7.276	-3.246
-3.246	8.263	-0.181	-7.368	-2.533
-2.533	8.370	-0.142	-7.460	-1.764
-1.764	8.442	-0.099	-7.552	-0.973
-0.973	8.416	-0.054	-7.609	-0.219
-0.219	8.340	-0.012	-7.630	0.479
0.479	8.253	0.027	-7.651	1.107
1.107	8.163	0.062	-7.672	1.661
1.661	7.865	0.093	-7.693	1.926
1.926	7.495	0.108	-7.714	1.815
1.815	7.244	0.101	-7.735	1.426
1.426	7.073	0.080	-7.756	0.823
0.823	6.908	0.046	-7.777	0.000
	255.295	-6.288	-249.007	

Net Present Value as per Published Criteria 3.15 Applicant Determined Cost	121.163

11.1 Annexe B – Summary Costs

Opex Cost Analysis (Chapter 8)

Figure 1 Marketing analysis

Year	1	2	3	4	5	6	7	8	9	10
OO marketing costs (£m)	0.183	0.183	0.183	0.183	0.168	0.168	0.168	0.168	0.168	0.168
Overhead (£m)	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
Max Direct incentives (£m)	-	0.030	0.030	0.019	0.019	0.019	0.019	0.019	0.019	0.019
Financing costs (£m)	-	0.087	0.152	0.163	0.160	0.144	0.136	0.136	0.136	0.136
Total costs (£m)	0.202	0.319	0.385	0.384	0.366	0.350	0.342	0.342	0.342	0.342

Figure 2 Emergency call centre

Year	1	2	3	4	5	6	7	8	9	10
Connections	15	2681	1775	1370	1354	1346	1205	1217	1217	1217
Cumulative connections	15	2696	4471	5841	7195	8541	9746	10963	12180	13397
Emergency calls	2	344	571	746	919	1091	1245	1401	1556	1711
Enquiries calls	2	344	571	746	919	1091	1245	1401	1556	1711
Total cost (£m)	**0.000**	**0.005**	**0.008**	**0.011**	**0.013**	**0.016**	**0.018**	**0.020**	**0.023**	**0.025**

Total management costs inc MSA where relevant	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Emergency (£m)	0.003	0.012	0.020	0.026	0.027	0.033	0.038	0.043	0.048	0.053
Maintenance (£m)	0.003	0.020	0.024	0.028	0.026	0.028	0.031	0.033	0.035	0.038
Repair (£m)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.006

This cost in this table are included in the costs below for emergency, repair and maintenance.

Figure 3 Emergency

Year	1	2	3	4	5	6	7	8	9	10
Workload	2	344	571	746	919	1,091	1,245	1,401	1,556	1,711
Total cost (£m)	0.031	0.058	0.078	0.093	0.103	0.117	0.131	0.144	0.157	0.171

Figure 4 Maintenance

Year	1	2	3	4	5	6	7	8	9	10
Total cost (£m)	0.036	0.074	0.065	0.069	0.072	0.075	0.078	0.081	0.083	0.087

Figure 5 Repair

Year	1	2	3	4	5	6	7	8	9	10
Expected repairs per annum	2	15	26	33	41	49	56	63	70	77
Total costs (£m)	0.004	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.018

Manpower (year 1)

Manpower	FTE	**Pay (inc pension) (£m)**	**Employers NI (£m)**	**Car (£m)**	**Total Annual cost (£)**
Senior Management	4	0.324	0.035	0.023	0.381
Operations	7	0.152	0.017	0.012	0.310
Marketing, Admin and other	8	0.127	0.014	0.006	0.229
Total	**19**	**0.602**	**0.067**	**0.041**	**0.920**

Figure 7 Manpower

Year	1	2	3	4	5	6	7	8	9	10
Senior Management (£m)	0.192	0.197	0.198	0.197	0.196	0.195	0.193	0.191	0.190	0.189
Operations (£m)	0.056	0.056	0.056	0.056	0.054	0.054	0.054	0.054	0.054	0.054
Marketing, Admin and other (£m)	0.053	0.072	0.084	0.093	0.102	0.111	0.119	0.127	0.135	0.141
Total (£m)	**0.302**	**0.325**	**0.338**	**0.347**	**0.352**	**0.360**	**0.366**	**0.372**	**0.380**	**0.384**

Figure 8 Managed service agreements

Year	1	2	3	4	5	6	7	8	9	10
Cumulative customers	15	2,696	4,471	5,841	7,195	8,541	9,746	10,963	12,180	13,397
% Total customers	0.00%	0.05%	0.08%	0.10%	0.12%	0.15%	0.17%	0.19%	0.21%	0.23%
Opex (£m)	0.000	0.020	0.034	0.044	0.054	0.065	0.074	0.083	0.092	0.101

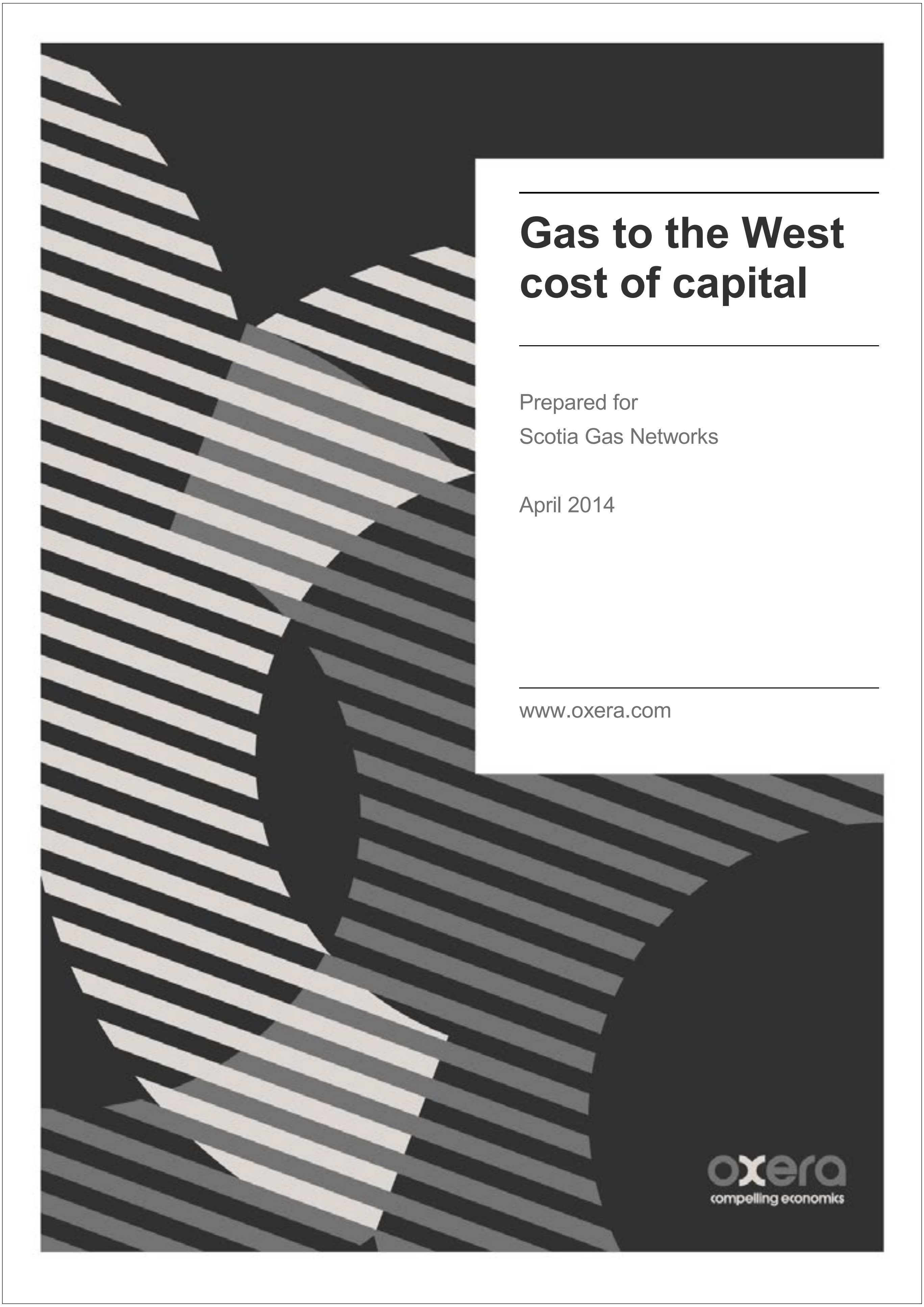
Overheads

	Total cost (£m)	Assigned to marketing (£m)	Submitted cost (£m)
Office costs	0.040	0.006	0.034
Utilities, telephones etc	0.006	0.001	0.005
IT	0.023	0.003	0.020
Professional and Legal fees	0.018	0.003	0.015
Insurance	0.021	0.003	0.018
Miscellaneous	0.015	0.002	0.013
Total	**0.124**	**0.019**	**0.105**

Manpower % Allocation

Year	1	2	3	4	5	6	7	8	9	10
Director NI										
Capex %	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Manpower %	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
Head of Engineering										
Capex %	93%	81%	76%	73%	71%	68%	66%	64%	61%	59%
Emergency %	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Maintenance %	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Repair %	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	6%	14%	17%	18%	18%	19%	19%	19%	20%	20%
Head of Business Development										
Capex %	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Emergency %	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Maintenance %	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Repair %	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
OO Marketing %	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Manpower %	53%	50%	48%	46%	44%	42%	40%	38%	36%	34%
Head of Finance/Regulation										
Capex %	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Manpower %	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Team Manager										
Capex %	92%	82%	78%	75%	73%	71%	69%	67%	65%	63%
Emergency %	1%	4%	7%	9%	11%	13%	15%	17%	19%	21%
Maintenance %	1%	8%	9%	10%	10%	10%	10%	10%	10%	10%
Repair %	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
SHE Manager										
Capex %	92%	82%	78%	75%	73%	71%	69%	67%	65%	63%
Emergency %	1%	4%	7%	9%	11%	13%	15%	17%	19%	21%
Maintenance %	1%	8%	9%	10%	10%	10%	10%	10%	10%	10%
Repair %	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Connections Coordinator										
Capex %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RCA										
Capex %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Revenue Protection Officer										
Capex %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Manpower %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Key Account Manager										
Capex %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Manpower %	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Marketing and Communications										
Capex %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Emergency %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maintenance %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Repair %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
OO Marketing %	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Manpower %	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Administration										
Capex %	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Emergency %	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Maintenance %	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Repair %	1%	1%	1%	1%	1%	1%	1%	1%	1%	5%
OO Marketing %	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Manpower %	38%	35%	33%	31%	29%	27%	25%	23%	21%	15%

11.3 Annexe C – Oxera: Gas to the West cost capital



Gas to the West cost of capital

Prepared for
Scotia Gas Networks

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www.oxera.com

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Contents

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1 Summary

Applicants for low-pressure gas distribution licences in Northern Ireland are required to submit a schedule for the weighted average cost of capital (WACC) that will apply to determine allowed prices in the first ten years after the first delivery of gas.

The ten-year profile for the cost of capital presented in this report reflects the stated intention of the regulator to set the WACC allowance for the first five years based on the winning business plan bid, and then to re-set the allowance in year six and every five years thereafter according to the capital asset pricing model (CAPM).[1] The analysis assumes first delivery in 2017, and therefore calculates rates of return relative to this period.

The approach is anchored in the assessment of capital market data, relevant current regulatory precedent from the UK, and the approach used for Firmus Energy (Distribution) Limited (FE) at the time when its initial licence was granted.

The findings of this report suggest that an appropriate WACC for Gas to the West (GtW) would be in the range of **6.2–6.9%** (real, pre-tax) for the first five years following the start of operations, and a WACC in the range of **5.3–6.3%** (real, pre-tax) thereafter.

1.1 Years 1–5

The starting point of Oxera's analysis is to assess the overall riskiness of the low-pressure licence relative to the two existing licensees and the regulated companies in Great Britain (section 2).

As a by-product of this exercise, we assess the case for a Northern Ireland (NI)-specific risk premium to be added to the licence-holder's WACC. This issue has been considered at length in the Competition Commission's (CC) review of the Northern Ireland Electricity (NIE) price control.[2] The CC found evidence that an NI-specific risk premium has existed in the past and may continue to exist. As the CC's approach to determining the cost of debt was based on bonds issued by NIE, any NI-specific risk premium would be captured within this estimate. Regarding the cost of equity, the CC adopted a range for the asset beta towards the upper end of the comparators to reflect that the comparators are not an exact match for NIE.

To quantify this premium, we proceed as follows:

- the NI-specific risk premium on pre-tax cost of debt is derived from the CC's analysis of the spread between the yield on NIE's bond and the yields on bonds issued by comparator companies in Great Britain;
- the NI-specific risk premium on pre-tax cost of equity is derived as follows:
  - the difference between the midpoint of the CC's range for NIE's asset beta and the range of longer-run estimates for GB regulated companies is converted into an uplift to NIE's equity beta;

[1] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.59.
[2] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March.

- using the CAPM, the implied uplift to NIE's equity beta is translated into an NI risk premium on pre-tax equity;
- the weighted average of these two NI-specific risk premiums yields a **40bp** total NI-specific risk premium on the pre-tax WACC. This is summarised in Table 1.1 below.

Table 1.1 NI-specific risk premium

		Asset beta		
		Low	**High**	**Average**
GB utilities	[1]	0.30	0.40	0.35
NIE	[2]	0.35	0.40	0.38
Uplift to NIE's asset beta	[3]=[2]–[1]			0.03
NIE gearing	[4]			45%
Implied uplift to NIE's equity beta	[5]=[3]/(1–[4])			0.05
ERP[1]	[6]			4.5%
NI risk premium on real post-tax equity	[7]=[5]*[6]			0.2%
NIE tax rate	[8]			20%
NI risk premium on real pre-tax equity	[9]=[7]/(1–[8])			0.3%
NI risk premium on debt	[10]			0.5%
NI risk premium on real pre-tax WACC	[11]=[9]*(1–[4]) + [10]*[4]			0.4%

Note: [1] Equity risk premium; in this table, the average ERP is presented. The tax rate is the UK corporate tax rate as at April 2015.

Source: Oxera analysis of Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and HMRC March 2013 budget.

As with the Phoenix Natural Gas Limited (PNGL) and FE licences, the WACC for GtW contains a premium for years 1–5 to account for uptake risk and other risks associated with a start-up company. Importantly, this proposal differs from PNGL and FE in that their licences contained a fixed WACC for approximately 20 years and 12 years respectively, whereas the proposal for GtW is to include the premium for five years only.[3]

The premium for GtW relative to FE is also increased in our analysis because FE was originally allowed to earn the 7.5% return on under-recoveries, whereas we understand that GtW will earn only LIBOR + 2% on under-recoveries.[4] This is different from the rate of return earned on the profiling adjustment component of the total regulatory value (TRV), which is explained in section 2.3.

The WACC for years 1–5 (section 3) is then calculated as follows:

[3] PNGL's licence ran from 5 September 1996 with a fixed WACC of 8.5% (real, pre-tax) until the end of 2016. This was reduced to 7.5% (real, pre-tax) in 2007. FE's licence came into force on 24 March 2005 with a fixed WACC of 7.5% (real, pre-tax) until the end of 2016.
[4] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.56.

- the FE premium is calculated relative to the allowed WACC in the GB gas distribution price control review (GDPCR) nearest the date on which the FE licence was granted;[5]
- this is decomposed into an NI-specific risk premium (see Table 1.1) and a start-up risk premium component.[6] The latter is adjusted to reflect the fact that the low-pressure licence-holder has less time to be compensated for start-up risk than FE did at the time when its licence was awarded in 2005, as GtW's WACC will be fixed for only five years, compared with FE's 12. This yields a total GtW risk premium of 1.9% (see Table 1.2);
- the recent relevant regulatory precedents are then catalogued and their WACC determinations are converted to a real pre-tax WACC (see Table 1.3);
- the adjusted risk premium of 1.9% is then added back to the cost of capital of the different regulatory precedents. This yields a range of **6.2–6.9%** for the GtW real pre-tax WACC.[7]

Table 1.2 GtW risk premium, years 1–5

FE fixed real pre-tax WACC (2005)	[1]	7.5%
Implied real pre-tax WACC for GDPCR (2007)	[2]	6.1%
Total risk premium	[3]=[1]–[2]	1.4%
NI risk premium on real pre-tax WACC	[4]	0.4%
Start-up risk premium	[5]=[3]–[4]	1.0%
Start-up risk premium—multiple	[6]	1.5
GtW risk premium	**[7]=[4]+[5]*[6]**	**1.9%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Ofgem (2007), 'Gas Distribution Price Control Review', Final Proposals, 3 December, p. 106; and Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38.

[5] The GDPCR WACC is calculated on a pre-tax basis by dividing the real post-tax equity component of the WACC by (1 – t), where t is the corporate tax rate. This underestimates the pre-tax WACC and hence overestimates the FE risk premium. However, this error is largely cancelled out when the GtW risk premium is added to the regulatory precedents in Table 1.3 where the same pre-tax WACC conversion is applied.

[6] These include risks such as regulatory risks, political and macroeconomic risks, stranding risk, financing risks, weather risks, and demand risks. While these are also faced by a mature company, a start-up is more exposed to these risks than a mature company with established networks and customer bases.

[7] There is no need to make an adjustment for the debt index that is in the RIIO-ED1 control because the GDPCR cost of debt fixed allowance was calculated under a similar approach to the ten-year average used in the RIIO-ED1 debt index. Consequently, the impact of the debt index cancels out in the process of calculating the GtW fixed rate of return, and results in a lower GtW risk premium relative to the Ofgem precedents compared to if the precedents were recalculated using a forward-looking cost of debt.

Table 1.3 GtW real pre-tax WACC based on recent regulatory precedents, years 1–5

Determination	RIIO-GD1	RIIO-ED1[1]
Sector	Energy	Energy
Regulatory body	Ofgem	Ofgem
Determination date	27/07/2012	17/02/2014
Real risk-free rate [1]	2.00%	1.30%
ERP [2]	5.25%	5.25%
Equity beta [3]	0.90	0.90
Real post-tax cost of equity [4]=[1]+[2]*[3]	6.7%	6.0%
Tax rate [5]	22%	20%
Real pre-tax cost of equity [6]=[4]/(1-[5])	8.6%	7.5%
Real pre-tax cost of debt [7]	3.0%	2.6%
Gearing [8]	65%	65%
Real pre-tax WACC [9]=[7]*[8]+[6]*(1-[8])	5.0%	4.3%
GtW adjusted risk premium [10]	1.9%	1.9%
GtW real pre-tax WACC [11]=[9]+[10]	**6.9%**	**6.2%**

Note: [1] Ofgem's latest reference point.

Source: Oxera analysis of the regulatory documents.

As a cross-check on this approach, the real pre-tax WACC for years 1–5 is recalculated as follows:

- the premium between the FE allowed return and the forward five- and ten-year index-linked gilt rates in 2006 (as at 31 December 2003)[8] is calculated;
- this premium is broken down into three elements: an NI-specific risk premium, a start-up risk premium, and a residual risk premium associated with the inherent riskiness of the assets;
- the start-up risk premium is then adjusted to reflect the shorter period for which the GtW rate of return will be fixed (five years compared with 12 years);
- the adjusted risk premiums are then added to the forward index-linked gilt rates in 2017 (as at 28 February 2014), which gives a 6.1–6.3% GtW rate of return based on the risk-free rate expected during years 1–5 of the project. This is summarised in Table 1.4.

[8] Given that FE's licence was awarded in early 2005, and its first price control covered the 2006–08 period, we have estimated the implied forward yield in 2006 as observed at the end of 2003.

Table 1.4 Cross-check on GtW real pre-tax WACC, years 1–5

Maturity		Five-year maturity	Ten-year maturity
FE fixed real pre-tax WACC (2005)	[1]	7.5%	7.5%
Implied forward real yield on 30/06/2006 (as at 31/12/2003)	[2]	2.1%	2.2%
Premium over index-linked gilt yield	[3]=[1]–[2]	5.4%	5.3%
NI risk premium on real pre-tax WACC	[4]	0.4%	0.4%
Start-up risk premium	[5]	1.0%	1.0%
Residual risk	[6]=[3]–[4]–[5]	4.0%	3.9%
Start-up risk premium—multiple	[7]	1.5	1.5
Implied forward real yield in 28/02/2017 (as at 28/02/2014)	[8]	0.2%	0.4%
GtW real pre-tax WACC, years 1–5	**[9]=[4]+[5]*[7]+[6]+[8]**	**6.1%**	**6.3%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and data from the Bank of England.

1.2 Years 6–10

The WACC for years 6–10 (section 4) is calculated using the CAPM:

- real equity market return of 6.5–7.0%, decomposed into:
  - risk-free rate 1.25–1.50 (section 4.1);
  - ERP 5.25–5.50 (section 4.1);
- asset beta 0.43–0.45 (section 4.2);
  - the more CAPEX-intensive end of the Ofgem precedents (Scottish Hydro Electric Transmission Limited (SHETL) and SP Transmission Limited (SPTL)): the nature of the GtW project is more similar to the CAPEX-intensive projects being undertaken by SHETL and SPTL to expand their respective networks than the replacement programmes being undertaken by the GB gas distribution networks (GDNs). This leads to a higher CAPEX (or TOTEX)-to-asset value ratio, raising the riskiness of the project;
  - allowance for NI risk and the additional risks of the GtW licence compared with GB utilities, principally the price-cap instead of the revenue-cap regulatory model and the associated profile adjustment;
  - allowance for debt beta: we consider that, with a proposed gearing level of 55% and the underlying risk of the project, debt will not be risk-free and the true debt beta is likely to be small and positive. For the same asset beta, the higher the risk undertaken by debt investors in financing the company's assets, the higher the debt beta;
- debt beta 0.1 (section 4.3);
- debt premium 205–280bp (section 4.4);

- spot and ten-year historical average of premium on BBB rated UK corporate bonds with 7–10-year maturities 160–210bp;[9]
- NI premium 25–50bp (section 2.8.1);
- allowance for issuance costs 20bp (based on the CC's Final Determination for NIE);[10]

- gearing 55% notional based on RIIO-T1 (SHETL/SPTL) due to their relatively high CAPEX required to expand the networks and for consistency with the asset beta assumption (section 4.5);
- tax 20% based on statutory rate (section 4.6);
- RPI inflation forecast 3% based on Bank of England's implied inflation (section 4.7);

The main factors driving the difference between the WACC for years 6–10 and years 1–5 are:

– removal of the start-up risk premium;
– reflection of the market expectation of increases in the risk-free rate;
– increase in debt spreads towards their longer-term average.

Table 1.5 below summarises the above components, which result in a **5.3–6.3%** range for the WACC (real, pre-tax) for years 6–10.

Table 1.5 Real pre-tax WACC, years 6–10

		Low	High
Real risk-free rate	[1]	1.25%	1.50%
BBB rated spread	[2]	1.6%	2.1%
Issuance premium	[3]	0.2%	0.2%
NI premium	[4]	0.3%	0.5%
Real pre-tax cost of debt	[5]=[1]+[2]+[3]+[4]	3.3%	4.3%
Asset beta	[6]	0.43	0.45
Gearing	[7]	55%	55%
Debt beta	[8]	0.1	0.1
Implied equity beta	[9]=([6]-[7]*[8])/(1–[7])	0.8	0.9
ERP	[10]	5.25%	5.50%
Real post-tax cost of equity	[11]=[1]+[9]*[10]	5.6%	6.3%
Inflation	[12]	3.0%	3.0%
Nominal post-tax cost of equity	[13]=(1+[11])*(1+[12])-1	8.8%	9.5%
Tax rate	[14]	20%	20%
Nominal pre-tax cost of equity	[15]=[13]/(1-[14])	11%	12%
Real pre-tax cost of equity	[16]=(1+[15])/(1+[12])-1	7.8%	8.6%
GtW real pre-tax WACC, years 6–10	**[17]=[16]*(1-[7])+[5]*[7]**	**5.3%**	**6.3%**

Note: As a sensitivity check, the GtW WACC has also been estimated assuming a notional gearing level of 60%. The results are insensitive to the choice of gearing: the WACC range remains 5.3–6.3%, as the cost of equity increases with the level of gearing.

Source: Oxera analysis.

[9] A notional BBB credit rating is consistent with the Utility Regulator's target rating for FE.
[10] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final determination, 26 March, pp. 13–15-16.

2 Risk

The allowed rate of return for the GtW licence-holder should reflect the risks associated with this specific project on a stand-alone basis. Ideally, the WACC would be estimated based on recent projects with similar risk characteristics. As Oxera is not aware of any such projects, we base our analysis on other companies that have undertaken similar projects in the past.

In this section, we assess the risks that are likely to be faced by the winner of the low-pressure licence relative to those faced by comparable licensees in NI and Great Britain. Specifically, we draw a comparison between the prospective GtW licence and those awarded to the two GDNs in NI (FE and PNGL), as well as gas and electricity transmission and distribution networks in Great Britain. This exercise aims to gauge how the proposed regulatory regime will affect the licence-holder's business risk compared with the aforementioned comparators.

This section is structured as follows:

- section 2.1 discusses the risk associated with the different forms of price control;
- section 2.2 assesses the risk associated with a low asset value-to-TOTEX ratio;
- section 2.3 investigates the impact of the profiling adjustment provision on risk;
- section 2.4 discusses the impact of the rolling incentive mechanisms on risk;
- section 2.5 assesses the impact of setting re-openers at 15% of OPEX on risk;
- section 2.6 discusses the impact of the exclusivity clauses on risk;
- section 2.7 explores the start-up risk in more detail;
- section 2.8 considers the case for an NI-specific risk premium;
- section 2.9 concludes on the overall riskiness of the low-pressure licence relative to the comparators listed above.

2.1 Form of price control

There are two predominant regulatory models employed in the regulation of gas distribution utilities in the UK:

- a price cap model, whereby the regulator sets the allowed maximum prices that the GDN can charge its customers;
- a revenue cap model, whereby the regulator determines the maximum allowed revenues that the GDN can aim to recover from its customers.

In terms of risk, a licence-holder under a price cap model is subject to volume risk, as variations in demand will result in variations in revenues, and ultimately in profits. This makes the licence more risky than a revenue cap, which the Utility Regulator has acknowledged.[11]

As set out in the Utility Regulator's Applicant Information Pack (2014), the regulator has proposed that the low-pressure licence-holder be regulated by a price cap regulatory model for the first ten years of the licence, with the option of switching to a revenue cap model thereafter. This intends to incentivise the licence-holder to develop gas connections as quickly as possible, and incentivise customers to switch to natural gas.[12]

The licences of FE and PNGL were both initially awarded based on a price cap model. In 2007, however, the PNGL licence was switched to a revenue cap model, after the Utility Regulator deemed PNGL's network to be sufficiently mature.[13] FE continues to operate under a price cap model, although the Utility Regulator is considering changing this to a revenue cap model as part of GD17.[14]

In Great Britain, gas distribution and transmission utilities are regulated under a revenue cap model by Ofgem.[15]

In this regard, this suggests that the low-pressure licence-holder will face volume risk similar to that faced by FE and PNGL at the time when their respective licences were awarded.

2.2 Impact of low asset value to TOTEX on risk

A higher ratio of costs to asset value increases the potential deviation of average return on assets from forecast. In fact, total cash costs (i.e. TOTEX) are an important factor for determining asset risk.

In its GD14 Final Determination (2014), the Utility Regulator compares asset value as a multiple of TOTEX for FE, PNGL and other regulated companies in Great Britain.[16] Figure 15 in the GD14 Final Determination shows that PNGL's total regulatory value (TRV)-to-TOTEX ratio is around 20, significantly higher than that of FE (8), NIE (6), the GB GDNs (7.5–10), and the GB gas transmission networks (10). The Utility Regulator argues that this suggests that PNGL faces lower risk than its comparators and, as a result, there is a case for lowering its allowed returns. It also argues that 'FE is at an earlier stage in the development of its network and consequently the proportion of its value represented by deferred revenue is smaller.'[17]

It is worth noting that the Utility Regulator's calculations rely on different definitions of asset values for each industry. Specifically, for the GB regulated industries (including gas transmission and distribution), asset values are defined by the regulatory asset base (RAB). For FE and PNGL, asset values are measured by the TRV, which, in addition to the standard regulatory asset base (RAB), includes deferred revenue (see section 2.3), revenue under-recovery (from pre-2007), and unspent allowances (including deferred CAPEX and

[11] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.23.
[12] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.51.
[13] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 2.19.
[14] Ibid., para. 16.17.
[15] Ibid., para. 12.31.
[16] Ibid., Figure 15.
[17] Ibid., para. 12.19.

historical outperformance).[18] This suggests that the comparison is not made on a like-for-like basis, and that excluding these elements from asset values would lower this multiple for FE and PNGL compared with their GB comparators.

Oxera's analysis suggests that the GtW project is likely to have a slightly lower TRV-to-TOTEX ratio because the low-pressure licence-holder will earn only LIBOR + 2% on its under-recoveries,[19] whereas FE was allowed to earn its fixed WACC of 7.5%.[20] This reduces the under-recoveries portion of its TRV, leading to a lower TRV-to-TOTEX ratio relative to FE at the time when its licence was awarded.

In light of the above, and taking into consideration the fact that FE is the least mature among the comparators, we find that FE represents the best available benchmark for the portion of asset risk associated with the size of TOTEX.

2.3 Impact of profiling adjustment on risk

The Utility Regulator intends to use a 'profiling adjustment' of revenues, which aims to keep tariffs broadly similar across the charging period. This works by deferring the recovery of some of the costs of developing the network from the earlier years of the charging period to later years. This reflects the fact that volumes will be low in the early years of the charging period. These deferred revenues are added to the depreciated asset value (DAV) and other elements (see section 2.2) to constitute the TRV.[21] As the profiling adjustment is a constituent of the TRV, the low pressure licence will earn the TRV rate of return on its deferred revenues, in line with the approach adopted by the Utility Regulator for FE and PNGL.[22]

This profiling adjustment reflects risk for the licence-holder, as it defers revenues from a period in which the GDN is incurring high costs to a later period when the GDN is incurring low costs.

The Utility Regulator proposes to employ this adjustment for 40 years.[23] This compares to a charging period of 50 years (extended from 20 years initially) for PNGL, and 30 years for FE, while GB GDNs are not subject to such mechanisms.[24]

Oxera therefore considers that the low pressure licence-holder is likely to face similar deferred revenue risk compared with the other two licensees in NI, while the GB GDNs do not face such risks.

2.4 Rolling incentive mechanisms and risk

Rolling incentive mechanisms are designed to encourage cost-efficiency measures on CAPEX and OPEX by allowing the licence-holder to retain outperformance relative to the regulatory settlement for a fixed number of years.

[18] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 12.13.
[19] This is different from the rate of return earned on the profiling adjustment component of the total regulatory value (TRV).
[20] Ibid., para. 10.46; Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.56.
[21] Ibid., paras 3.52–53.
[22] Utility Regulator (2014), 'Gas to the west – answers to clarification questions', 16 April, p. 24.
[23] Ibid., para. 3.54.
[24] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014-2016', Final Determination, 20 December, para. 2.19; Competition Commission (2012), 'Phoenix Natural Gas Limited price determination', 12 November, para. 5(a).

Symmetrically, the licence-holder is required to fund any underperformance relative to the regulatory settlement for a fixed number of years unless the GDN can provide evidence that these are not the result of any inefficient spending. While these mechanisms incentivise licence-holders to outperform on OPEX and CAPEX, they also expose the GDN to greater downside risk. This risk is greater when the incentive rate is high, or when the sharing factor (between the GDN and its customers) is low.

The Utility Regulator intends to allow for OPEX and CAPEX rolling incentive mechanisms whereby the low-pressure licence-holder can retain outperformance for five years, after which the licence-holder will need to return it to its customers. The GDN will earn depreciation and a cost of capital return on this outperformance. As for underperformance, unless the GDN can provide evidence that the underperformance is not due to inefficient spending, it will have to fund depreciation (with a cost of capital return) on the overspend for five years.[25] It not entirely clear whether these mechanisms will be ‘switched on’ or ‘switched off’ at the start of the price control.

Similar mechanisms are built into FE and PNGL’s licences. FE has both a CAPEX and an OPEX five-year rolling incentive mechanism which are both currently ‘switched off’. PNGL’s licence does not have such incentives, although, for CAPEX, its licence includes a retrospective adjustment mechanism that has similar effects.[26]

In Great Britain, Ofgem has adopted incentives for both gas transmission and distribution, whereby under-/overspends are shared between the regulated network and its customers.[27]

In light of the above, Oxera considers that, in terms of scope for over-/under-performance from regulatory settlements, the low-pressure licence-holder is likely to bear similar risk to the two NI licensees.

2.5 Impact of setting re-openers at 15% of OPEX

The Utility Regulator also intends to set re-openers at 15% of OPEX.[28] This reduces the risk faced by the licence-holder, as any deviations in OPEX of more than 15% from forecast would be felt only during the year in which the deviation occurs. Subsequently, the Utility Regulator would revise its OPEX allowances, thus limiting the licence-holder’s exposure to OPEX risk. Similarly, the Utility Regulator intends to allow re-openers if volumes deviate by more than 15% from forecast.[29] There will not be any such re-openers for CAPEX as the Utility Regulator intends to rely on uncertainty mechanisms instead.

The FE licence includes re-openers for OPEX and CAPEX, as well as volumes. For OPEX and volumes, the re-openers are set at 15%. For CAPEX, a special

[25] Utility Regulator (2014), ‘Gas Network Extensions in Northern Ireland’, Gas to the West: Applicant Information Pack, 6 February, paras 3.41–42.
[26] As part of GD14, the Utility Regulator has decided to ‘switch on’ the CAPEX rolling mechanism. Utility Regulator (2013), ‘GD14 Price Control for Northern Ireland’s Gas Distribution Networks for 2014–2016’, Final Determination’, 20 December, para. 2.19.
[27] Ofgem (2012), ‘RIIO-GD1 Final Proposals – Overview’, 17 December, para. 1.23; Ofgem (2012), ‘RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas’, 17 December, para. 1.58.
[28] Utility Regulator (2014), ‘Gas Network Extensions in Northern Ireland’, Gas to the West: Applicant Information Pack, 6 February, para. 3.48.
[29] Ibid., para. 3.65.

review takes place whenever FE's best estimate for CAPEX is likely to be in excess of its CAPEX allowances for that year.[30]

In its latest price control review of the GDNs in Great Britain (RIIO-GD1), Ofgem also set re-openers for some costs (street works, enhanced physical site security, connection charging boundary, connection of new large loads, innovation roll-out, and smart metering). However, allowances for these costs can be adjusted only once or twice (depending on the nature of the cost) during the eight-year control period (2013–21).[31] Similarly, as part of RIIO-T1, Ofgem has set re-openers for some of the costs incurred by National Grid Gas Transmission (NGGT) (pipeline diversion shocks, asset health shocks, quarry and loss of development claims, industrial emissions, enhancement of physical security, system operator (SO) security costs, and innovation roll-out). These re-openers can also be applied at two specific re-opener windows in 2015 and 2018.[32]

In light of the above, we conclude that the low-pressure licence-holder is likely to face similar OPEX risk as FE, and slightly lower risk than the GB GDNs and NGGT.

2.6 Exclusivity

One of the special conditions proposed by the Utility Regulator is that the licence-holder will be awarded exclusivity over gas distribution (but not gas supply) to the relevant towns for 20 years.[33] This has the effect of protecting the licence-holder from competition in its licence area, thus reducing the risk faced by the GDN.

This is similar to the exclusivity awarded to FE back in 2005 over its gas distribution operations in its Ten Towns licence area for 20 years,[34] and to PNGL in 1996 for 20 years over its conveyance of gas in the Greater Belfast Area and Larne.[35]

In Great Britain, the GDNs do not have such clauses in their licences. Therefore, Oxera considers that, in terms of exclusivity, the low-pressure licence-holder will bear risk similar to that borne by FE and PNGL when their licences were awarded, and lower risk than the GB GDNs.

2.7 Start-up risk

In a similar way to the PNGL and FE licences, the low-pressure licence-holder will bear uptake risk and other risks associated with a start-up company.[36] This reasoning is reflected in the CC decision to agree on a 7.5% fixed WACC (real, pre-tax) for PNGL's price control for the years 2012 and 2013.[37] In its report, the CC has agreed with the PC03 decision to fix PNGL's WACC at 7.5%, well above

[30] Bord Gáis Éireann (2013), 'Licence for the Conveyance of Gas in Northern Ireland', 30 May, Condition 4.7.
[31] Ofgem (2012), 'RIIO-GD1 Final Proposals - Overview', 17 December, Table 5.1.
[32] Ofgem (2012), 'RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas', 17 December, Table 4.7.
[33] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, paras 3.66–67.
[34] Bord Gáis Éireann (2013), 'Licence for the Conveyance of Gas in Northern Ireland', 30 May, Schedule 3, para. 2.1(a).
[35] Phoenix Natural Gas Limited (1996), 'Licence for the Conveyance of Gas in Northern Ireland', Condition 2.2.2.
[36] These include regulatory, political and macroeconomic risks, stranding risk, financing risks, weather risks, and demand risks. While a mature company faces these risks too, a start-up is more exposed to them than a mature company with established networks and customer bases.
[37] Competition Commission (2012), 'Phoenix Natural Gas Limited price determination', 12 November.

those earned by the Ofgem regulated utilities, even after PNGL's recovery period was extended from 20 to 50 years.[38]

Importantly, the GtW proposal differs from PNGL and FE in that these licences contained a fixed WACC for approximately 20 years and 12 years respectively, whereas the proposal for GtW is to include the premium for five years only.[39] This suggests that the low-pressure licence-holder has less time to be compensated for start-up risk than FE did at the time its licence was awarded in 2005.

Additionally, FE was originally allowed to earn the 7.5% return on under-recoveries, whereas we understand that the low-pressure licence-holder will earn only LIBOR + 2% on under-recoveries.[40] This is different from the rate of return earned on the profiling adjustment component of the TRV (section 2.3).

This suggests that the low-pressure licence-holder will require faster compensation for start-up risk relative to the other two licensees in NI.

2.8 Northern Ireland-specific risk

As the GtW project will take place entirely in Northern Ireland, Oxera has looked at the evidence to determine whether there is a case for extra compensation. This additional return would be rewarded for both equity and debt investors, albeit in different proportions. This issue was discussed extensively in the CC's review of the NIE price control.[41]

2.8.1 NI risk premium above pre-tax cost of debt

In its Final Determination for NIE (2013), the CC has analysed the yield differential between NIE's 2026 bond and bonds issued by comparable companies in Great Britain. This differential was around 100bp throughout 2011 and 2012, and ranged between 0 and 50bp in 2013. While the CC has acknowledged that part of this differential might be attributable to market concerns about ESB, it maintained that 'there appears to be a premium in the yield on NIE's debt compared with comparable instruments issued by other electricity distribution companies in the UK.'[42] The CC has based its estimate of the cost of existing debt on the actual costs of NIE's outstanding bonds, which implicitly incorporates any NI risk premium.

Similarly, the CC has also analysed the yield spread of NIE's 2026 bond and comparator bonds over the 2025 gilt. NIE's yield spread over the 2025 gilt peaked at 350bp in 2012, but has decreased since the beginning of 2013.

We have taken **50bp** as the central estimate for the NI risk premium on debt over the first five years of the low-pressure licence, after which it is likely to decrease to come within the **25–50bp** range as the NI market matures.

[38] Ibid., para. 7.82.
[39] PNGL's licence commenced on 5 September 1996 with a fixed WACC of 8.5% (real, pre-tax) until the end of 2016. This was later reduced to 7.5% (real, pre-tax) in 2007. FE's licence came into force on 24 March 2005 with a fixed WACC of 7.5% (real, pre-tax) until the end of 2016.
[40] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.56.
[41] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March.
[42] Ibid., pp. 13–12-13.

2.8.2 NI risk premium above pre-tax cost of equity

The CC has not made any explicit adjustments to the cost of equity for NIE. However, it has adjusted the asset beta upwards compared to the longer-run estimates of asset betas of the GB regulated utilities.

As the asset beta is a weighted average of the equity and debt betas, we use this asset beta uplift and the assumed notional gearing level for NIE to estimate the implied uplift to the equity beta. Multiplying this implied uplift by the ERP assumed by the CC gives the additional risk premium required to compensate equity investors in NI relative to Great Britain on a post-tax real basis. This additional risk premium is then calculated on a real pre-tax basis by adjusting for tax. The calculations show a NI-specific risk premium on equity of 30bp (real, pre-tax)—see Table 2.1.

Table 2.1 NI-specific risk premium

		Asset beta		
		Low	**High**	**Average**
GB utilities	[1]	0.30	0.40	0.35
NIE [2]	[2]	0.35	0.40	0.38
Uplift to NIE's asset beta	[3]=[2]–[1]			0.03
NIE gearing	[4]			45%
Implied uplift to NIE's equity beta	[5]=[3]/(1–[4])			0.05
ERP[1]	[6]			4.5%
NI risk premium on real post-tax equity	[7]=[5]*[6]			0.2%
NIE tax rate	[8]			20%
NI risk premium on real pre-tax equity	[9]=[7]/(1–[8])			0.3%
NI risk premium on debt	[10]			0.5%
NI risk premium on real pre-tax WACC	**[11]=[9]*(1–[4]) + [10]*[4]**			**0.4%**

Note: The tax rate is the UK corporate tax rate as at April 2015. [1] Average ERP.

Source: Oxera analysis of Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and HMRC March 2013 budget.

Taking the weighted average of the NI risk premium on debt (50bp) and equity (30bp) leads to a NI-specific risk premium of around 40bp.

This exercise slightly overestimates the NI risk premium on WACC as it implicitly assumes that the uplift in the asset beta is entirely attributable to an implied uplift in the equity beta, while assuming that the debt beta remains constant. In section 2.8.1, we noted that NIE's debt was viewed as being riskier than the debt of comparable companies in Great Britain. This translates into a slightly higher debt beta in NI relative to comparable GB companies. In turn, this implies that the NI-specific risk premium on equity (and hence on the WACC) is slightly overestimated. However, as we demonstrate in section 3, this leads to the start-up risk premium being underestimated, and therefore to an underestimation of the overall risk premium added to the GtW WACC for years 1–5.

2.9 Conclusions on risk

This section summarises the eight areas of risk discussed above and concludes on the level of risk likely to be borne by the low-pressure licence-holder.

- The low-pressure licence-holder is likely to face volume risk similar to that faced by FE and PNGL at the time their licences were awarded. Both FE and PNGL were initially regulated under a price cap, while GB networks regulated under the RIIO-T1 and RIIO-GD1 models operate under a revenue cap regime.
- The low-pressure licence-holder is likely to face a similar, albeit slightly lower, TRV-to-TOTEX ratio relative to FE, which in turn is significantly lower than that of PNGL, and lower than that of the GB networks.
- The low-pressure licence-holder faces deferred revenue risk similar to the other two NI licensees.
- The low-pressure licence-holder faces OPEX and CAPEX out-/under-performance risk similar to FE and PNGL due to the rolling incentive provisions and re-openers.
- Similarly to the other two licensees in NI, the low-pressure licence-holder will enjoy 20 years of exclusivity over its gas distribution operations.
- The low-pressure licence-holder is likely to require faster compensation for start-up risk compared with FE and PNGL given the shorter initial determination period.
- Oxera assumes that FE, PNGL, NIE and the low-pressure licence-holder all face similar NI-specific risk.

Taking into account all of the above, Oxera's analysis suggests that FE is the most relevant benchmark for the low-pressure licence-holder due to the similarities in their risk profiles and FE's relatively immature network compared with those of the other benchmarks. We consider that the only aspect of the FE licence that differs materially from the GtW proposed licence remains the likelihood that the latter will require faster compensation for start-up risk compared with FE. The adjustment to this start-up risk is discussed in more detail in the following section.

3 WACC (Years 1–5)

Now that we have positioned the riskiness of the GtW project relative to that undertaken by FE in 2005, we estimate the WACC for years 1–5 as follows:

- the FE premium is calculated relative to the allowed WACC in the GB GDPCR nearest the date on which the FE licence was granted;[43]
- this premium is broken down into a start-up risk premium component (see section 2.7) and a Northern Ireland-specific risk premium (see section 2.8). The latter is increased to reflect the shorter time period that the low-pressure licence-holder has to be compensated for start-up risk than FE did at the time its licence was awarded in 2005, as the GtW's WACC will be fixed for five years only compared with FE's 12. While we note that the period in which the licence-holder will face this start-up risk is less than half of that faced by FE, it is unlikely that the start-up risk premium earned by FE at the time its licence was awarded in 2005 should be doubled for the licence-holder for the following reasons:
    - Although GtW is losing seven years of start-up risk premium compared with FE, the discounted value of a year of risk premium in years 6–12 will be lower than the discounted value of a year of risk premium in years 1–5;
    - Investors are likely to perceive the regulatory regime in Northern Ireland as having matured since FE was awarded its licence in 2005, which reduces the perception of regulatory uncertainty faced by the licence holder.

  The start-up risk premium earned by FE is therefore assumed to increase by 50%. This yields a total GtW risk premium of 1.9% (see Table 3.1);
- the recent relevant regulatory precedents are then catalogued and their WACC determinations are converted to a real pre-tax WACC (see Table 3.2);
- the adjusted risk premium of 1.9% is then added back to the cost of capital of the different regulatory precedents to obtain a range of 6.2–6.9% for the GtW fixed rate of return.[44]

[43] The GDPCR WACC is calculated on a pre-tax basis by dividing the real post-tax equity component of the WACC by (1-t), where t is the corporate tax rate. This underestimates the pre-tax WACC and hence over-estimates the FE risk premium. However, this error is largely cancelled out when the GtW risk premium is added to the regulatory precedents in Table 1.3 where the same pre-tax WACC conversion is applied.

[44] There is no need to make an adjustment for the debt index that is in the RIIO-ED1 control because the GDPCR cost of debt fixed allowance was calculated under a similar approach to the ten-year average used in the RIIO-ED1 debt index. Consequently, the impact of the debt index cancels out in the process of calculating the GtW fixed rate of return, and results in a lower GtW risk premium relative to the Ofgem precedents compared to if the precedents were recalculated using a forward-looking cost of debt.

Table 3.1 GtW real pre-tax WACC, years 1–5

FE fixed real pre-tax WACC (2005)	[1]	7.5%
Implied real pre-tax WACC for GDPCR (2007)	[2]	6.1%
Total risk premium	[3]=[1]–[2]	1.4%
NI risk premium on real pre-tax WACC	[4]	0.4%
Start-up risk premium	[5]=[3]–[4]	1.0%
Start-up risk premium—multiple	[6]	1.5
GtW risk premium	**[7]=[4]+[5]*[6]**	**1.9%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Ofgem (2007), 'Gas Distribution Price Control Review', Final Proposals, 3 December, p. 106; and Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38.

Table 3.2 GtW real pre-tax WACC based on recent regulatory precedents, years 1–5

Determination	**RIIO-GD1**	**RIIO-ED1[1]**
Sector	Energy	Energy
Regulatory body	Ofgem	Ofgem
Determination date	27/07/2012	17/02/2014
Real risk-free rate [1]	2.00%	1.30%
ERP [2]	5.25%	5.25%
Equity beta [3]	0.90	0.90
Real post-tax cost of equity [4]=[1]+[2]*[3]	6.7%	6.0%
Tax rate [5]	22%	20%
Real pre-tax cost of equity [6]=[4]/(1-[5])	8.6%	7.5%
Real pre-tax cost of debt [7]	3.0%	2.6%
Gearing [8]	65%	65%
Real pre-tax WACC [9]=[7]*[8]+[6]*(1-[8])	5.0%	4.3%
GtW adjusted risk premium [10]	1.9%	1.9%
GtW real pre-tax WACC [11]=[9]+[10]	**6.9%**	**6.2%**

Note: [1] Ofgem's latest reference point.

Source: Oxera analysis of the regulatory documents.

As a cross-check on this approach, the real pre-tax WACC for years 1–5 is recalculated as follows:

- the premium between the FE allowed return and the forward five- and ten-year index-linked gilt rates in 2006 (as at 31 December 2003)[45] is calculated;
- this premium is broken down into three elements: an NI-specific risk premium, a start-up risk premium, and a residual risk premium associated with the inherent riskiness of the assets;
- the start-up risk premium is then adjusted to reflect the shorter period for which the GtW rate of return will be fixed (five compared with 12 years);

[45] Given that FE's licence was awarded in early 2005, and its first price control covered the 2006–08 period, we have estimated the implied forward yield in 2006 as observed at the end of 2003.

- the adjusted risk premiums are then added to the forward index-linked gilt rates in 2017 (as at 28 February 2014), which gives the GtW fixed rate of return based on the risk-free rate expected during years 1–5 of the project.

Table 3.3 Cross-check on GtW real pre-tax WACC, years 1–5

Maturity		Five-year maturity	Ten-year maturity
FE fixed real pre-tax WACC (2005)	[1]	7.5%	7.5%
Implied forward real yield on 30/06/2006 (as at 31/12/2003)	[2]	2.1%	2.2%
Premium over index-linked gilt yield	[3]=[1]–[2]	5.4%	5.3%
NI risk premium on real pre-tax WACC	[4]	0.4%	0.4%
Start-up risk premium	[5]	1.0%	1.0%
Residual risk	[6]=[3]–[4]–[5]	4.0%	3.9%
Start-up risk premium—multiple	[7]	1.5	1.5
Implied forward real yield in 28/02/2017 (as at 28/02/2014)	[8]	0.2%	0.4%
GtW real pre-tax WACC, years 1–5	**[9]=[4]+[5]*[7]+[6]+[8]**	**6.1%**	**6.3%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and data from the Bank of England.

The real pre-tax WACC estimated in Table 3.3 reconciles with the lower end of the range estimated in Table 3.2.

As noted in section 2.8.2, Oxera's analysis suggests that the NI-specific risk premium (40bp) is slightly overestimated. However, as we are breaking down the overall FE risk premium 'top-down' into an NI-specific component and a start-up component, this leads to an underestimation of the start-up risk premium. In terms of magnitude, the latter is larger (100bp compared with 40bp). Moreover, the start-up risk premium is adjusted upwards to reflect the shorter determination period relative to FE. As such, the net impact of overestimating the NI-specific risk premium is actually underestimating the start-up risk premium, and therefore underestimating the overall GtW risk premium.

4 WACC (Years 6–10)

The intention of the Utility Regulator is to undertake a price control and then set the WACC for years 6–10 based on the CAPM. Therefore this section provides WACC estimates for this period using the CAPM.

The section is structured as follows:

- section 4.1 discusses the appropriate ranges for the risk-free rate and ERP using market data, regulatory precedents and academic literature;
- section 4.2 sets out asset beta estimates by adjusting the GB regulatory precedents to account for higher systematic risk;
- section 4.3 sets out the debt beta estimate;
- section 4.4 quantifies the debt premium by adding up its various components;
- section 4.5 sets the notional gearing estimate;
- section 4.6 sets the tax rate assumption;
- section 4.7 explains the inflation forecast assumptions;
- section 4.8 summarises the real pre-tax WACC for years 6–10.

4.1 Risk-free rate and ERP

Applying the standard techniques used by regulators to estimate the allowed rate of return is challenging in the current market environment. Capital markets are influenced by macroeconomic policy, which has created an unusual source of uncertainty and volatility. While there is a reasonable amount of data on the costs of debt finance, forecasting the appropriate cost of equity for the next regulatory period is more difficult.

Government bond yields (which are typically used to proxy the risk-free rate) declined significantly in the aftermath of the global financial crisis, largely driven by the extraordinary loosening of central bank monetary policy to alleviate the impact of the crisis on the economy. In a number of major economies, including the UK and USA, real government bond yields have been persistently negative, implying that investors will receive less money in real terms in the future than they invest today. This is highly unusual and is not consistent with economic theory, which predicts that negative real interest rates will not persist because consumers have incentives to bring forward their consumption.

Evidence from forward markets implies that government yields are expected to rise, although how quickly they will do so is uncertain.

Government bond yields have also been volatile in the post-crisis period, especially in recent months, due to speculation about the timing of withdrawal of the unconventional monetary policy measures. The volatility of these yields seems incompatible with the notion of a risk-free asset in cost of capital models.

Notwithstanding this uncertainty, there is generally greater consensus among regulators on the appropriate level of total expected market returns than on its individual components, the risk-free rate and the ERP. Furthermore, the sensitivity of the cost of equity to the exact split between the risk-free rate and the ERP is relatively small for companies with equity betas close to 1, such as those in the typical range assumed for regulated utilities

Based on a review of long-term historical market evidence and regulatory precedent, Oxera considers that a range of **6.5–7.0%** for the total real market return is appropriate. We propose to decompose the total market return in a way that is consistent with taking a long-term view of the data: on this basis, our analysis suggests a risk-free rate of **1.25–1.50%** and an ERP of **5.25–5.50%.**

A risk-free rate of 1.25–1.50% is materially above current spot government bond yields. We consider this to be a reasonable approach given the expected increase in interest rates over the duration of the licence, the exceptional influence of central banks on the level of interest rates, and the significant volatility in these rates. All of these factors suggest that an approach that places more weight on longer-run evidence is appropriate so as to ensure that long-lived investments can be financed over the forthcoming price control period.

4.1.1 Macroeconomic developments

Since the end of 2008, UK government bond yields have declined materially, with spot yields for five-, ten- and 20-year index-linked gilts as at 28 February trading at –1.1%, –0.3% and 0.1%, respectively (Table 4.1). A couple of factors have contributed to the reduction in gilt yields:

- interventions by monetary authorities in financial markets—in particular, the reduction in the base rate and the Bank of England’s quantitative easing (QE) programme, which has put downward pressure on gilt yields. Bank of England research estimates that QE alone has reduced nominal gilt yields on average across a range of maturities by as much as 100–150bp;[46]
- flight-to-quality towards safer assets as a result of the EU sovereign debt crisis, which has increased demand for UK gilts.

Table 4.1 Real yields on benchmark UK government index-linked gilts (%)

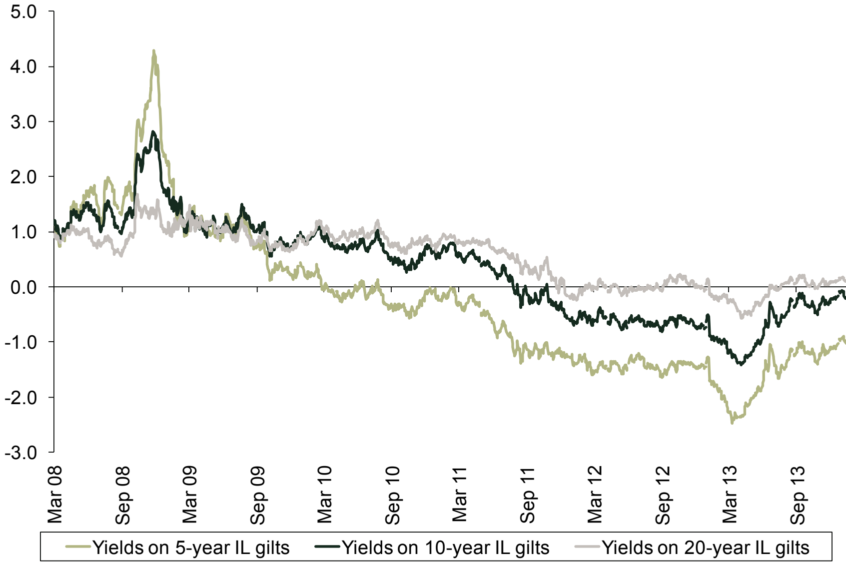
	5-year maturity	10-year maturity	20-year maturity
Spot	-1.1	-0.3	0.1
6-month average	-1.1	-0.2	0.1
10-year average	0.6	0.9	0.9
15-year average	1.2	1.3	1.3

Note: Data as at 28 February 2014.

Source: Oxera analysis of Bank of England data.

[46] Joyce, M., Tong, M. and Woods, R. (2011), ‘The United Kingdom’s Quantitative Easing Policy: Design, Operation and Impact’, *Bank of England Quarterly Bulletin* Q3, 19 September, p. 209; and Bridges, J. and Thomas, R. (2012), ‘The impact of QE on the UK economy – some supportive monetarist arithmetic’, Bank of England Working Paper no. 442, January, p. 4.

Figure 4.1 Yields on index-linked gilts (%)

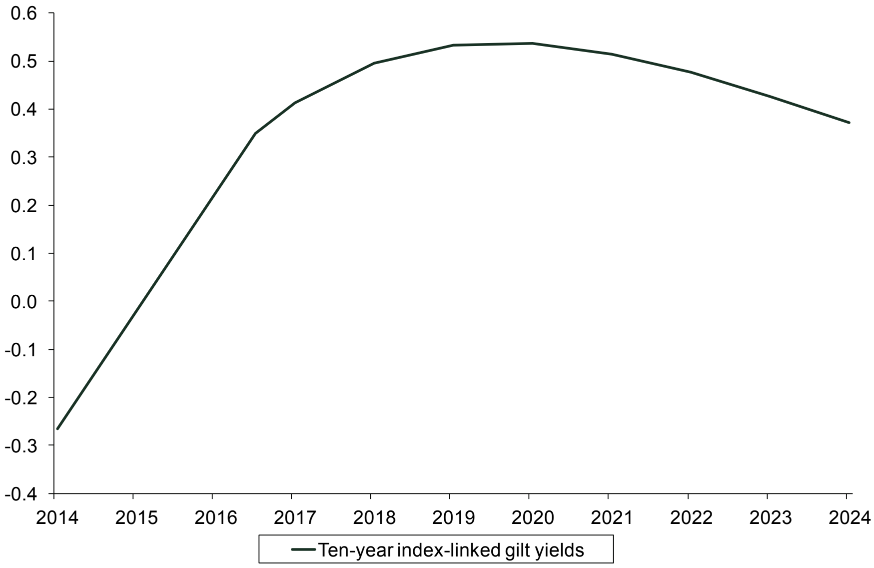


Note: Data up to 28 February 2014.

Source: Oxera analysis of data from the Bank of England.

However, yields have been increasing in recent months (Figure 4.1). This is also supported by evidence from forward markets, which implies that markets expect government bond rates to increase (Figure 4.2). The average real ten-year gilt yield over the duration of the prospective price control that is currently implied by forward markets is ~0.4%. This is 65bp higher than the spot real ten-year yield.

Figure 4.2 Implied real ten-year gilt yield



Note: As at 28 February 2014. ‘

Source: Oxera analysis of data from the Bank of England.

Government bonds have also been volatile since the crisis, especially in recent months, largely due to increased speculation about the timing of the withdrawal of some of the unconventional monetary policy measures that have tended to depress the level of interest rates.

4.1.2 Total equity market return

An approach to estimating the expected total equity market return is to consider the average long-run historical return. One of the most widely cited sources of historical evidence on market returns is the annual publication by Dimson, Marsh and Staunton (DMS), which estimates historical returns for 19 countries using data since 1900.

Using data from 1990 to 2013, the annual return on the UK stock market has averaged 7.2% and 5.3% on an arithmetic and a geometric basis respectively.[47] While there is debate around which is the most appropriate averaging method in any given context, the weight of opinion is in favour of using arithmetic averages when estimating required equity returns. Indeed, DMS (2014) themselves recommend the arithmetic average for use in 'asset allocation, stock valuation, and corporate budgeting applications'.[48]

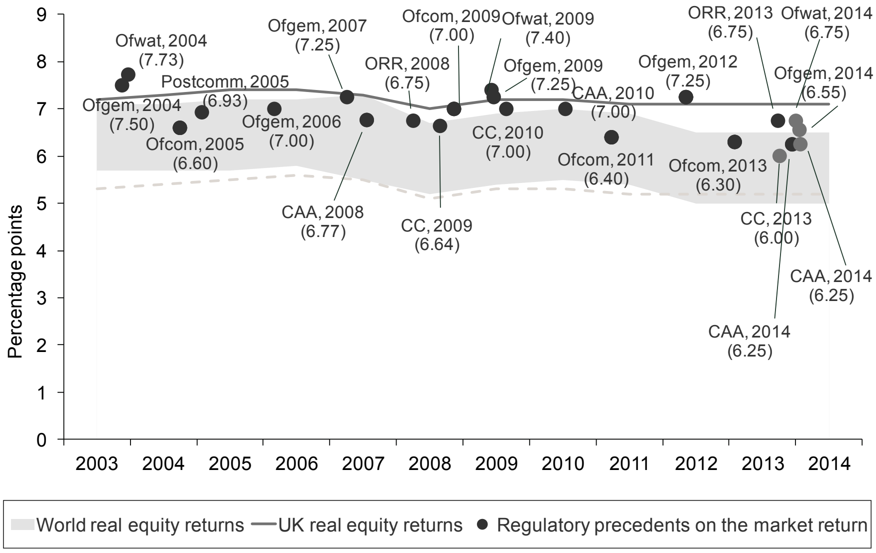
The use of the arithmetic mean ignores estimation error and serial correlation in returns. Unbiased discount factors have been derived that correct for both these effects. In all cases, the corrected discount rates are closer to the arithmetic than the geometric mean.[49]

In considering whether the historical return is an appropriate estimate of the forward-looking market return, DMS (2014) note that, after adjusting for non-repeatable factors of the past, such as the expansion in the price-to-dividends ratio, expected returns might be lower in the future.

As shown in Figure 4.3, recent regulatory decisions suggest a range of 6.00–7.25% for total allowed market return. The top end of this range is based on Ofgem's RIIO decisions (GD1 and T1), which used evidence dating back to 2010 and which apply to an eight-year price control. The low end of this range is based on the CC findings in the price control appeal by NIE, although these findings are provisional at this stage. Without the Ofgem and the CC precedent, regulatory decisions lie in the 6.30–7.00% range.

[47] Dimson, E., Marsh, P. and Staunton, M. (2014), 'Credit Suisse Investment Returns Sourcebook 2014', Table 2.
[48] Ibid., p. 34.
[49] Cooper, I. (1996), 'Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting', *European Financial Management*, **2**:2, p. 157.

Figure 4.3 Regulatory precedents on total equity market return



Note: ORR, Office of Rail Regulation. Grey dots denote initial proposals, not final decisions. The world and UK real equity market returns represent long-run historical averages based on the DMS database. The lower and upper bounds of the world and UK real equity returns represent geometric and arithmetic averages, respectively.

Source: Oxera analysis of regulatory determinations; Dimson, Marsh and Staunton (2014), 'Credit Suisse Investment Returns Sourcebook 2014'.

Taking into account both long-run historical evidence and recent final regulatory determinations, Oxera considers 6.5–7.0% to be an appropriate range for the total expected market return.

4.1.3 Decomposing the total market return

Recent movements in capital markets, and specifically in government bond yields, have been difficult to interpret as these movements have been heavily influenced by macroeconomic policy. This is why Oxera recommends decomposing the total market return in a way that is more consistent with longer-run evidence in this context.

Risk-free rate

Regulatory precedent suggests that UK regulators have taken into account the decline in yields by gradually reducing risk-free rate allowances, but have also consistently set the risk-free rate above spot market rates (see Figure 4.4 below). This mainly reflects the volatile nature of government bond yields and the effects of central bank intervention.

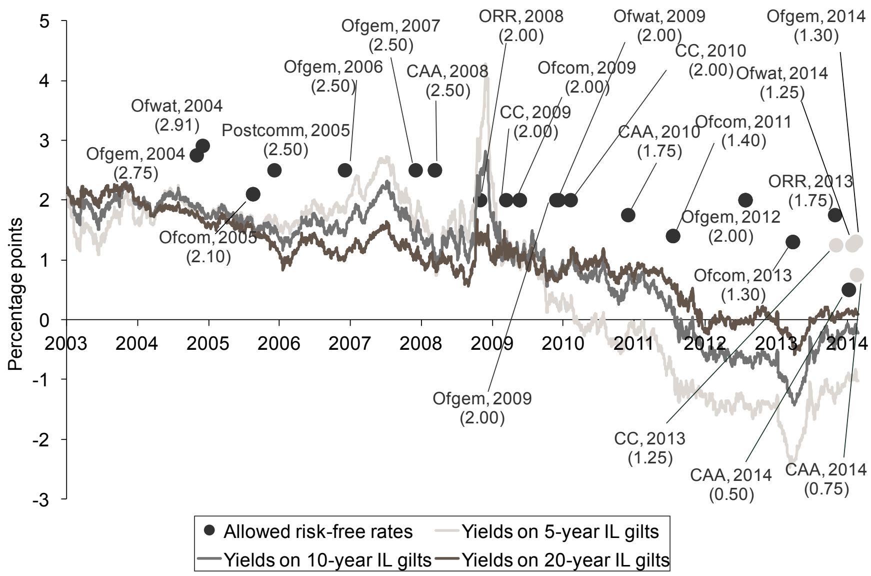
In the current market environment, it is appropriate to set the regulatory allowance for the risk-free rate higher than the spot yield in order to reflect the uncertainty over future levels of the risk-free rate, and hence the required return on equity.

- This reflects the asymmetry around the future path of interest rates, with a much greater probability of interest rates rising than falling over the duration of the low-pressure licence.

- Government bond yields have been volatile and continue to be heavily influenced by the uncertainty about future monetary policy rather than economic fundamentals.
- The long-lived nature of investment in the gas industry means that the risk of creating an underinvestment problem is an important consideration for the regulator. This is especially important when regulators have an explicit financing duty.

On the basis of these considerations, we propose a range for the real RFR of 1.25–1.50%. This range is broadly in line with regulatory precedent and longer-run evidence.

Figure 4.4 Allowed real risk-free rate and index-linked gilt yields



Note: Grey dots denote initial proposals, not final decisions. In determinations where the regulator sets a nominal rate of return (e.g. Ofcom), a real risk-free rate has been estimated using inflation assumptions reported by the regulator.

Source: Oxera analysis of regulatory documents, and data from Datastream.'

Equity risk premium

A range for the ERP of 5.25–5.50% would be consistent with the proposed total market return and risk-free rate ranges. This range is broadly in line with historical evidence and regulatory precedent, and is lower than forward-looking estimates. This is consistent with taking a longer-term view of capital market parameters.

Historical evidence

Table 4.2 presents the latest historical ERP estimates from DMS for the UK. Based on arithmetic averages, DMS estimates of the ERP in the UK lie between 5.0% and 5.2%. For geometric averages, the range is 3.6–3.9%. As explained in section 4.1.2, in a regulatory context it is appropriate to place greater weight on arithmetic averages.

Table 4.2 Dimson, Marsh and Staunton's ERP estimates for the UK (%)

	Geometric	Arithmetic
1900–2013	3.9	5.2
1900–2012	3.7	5.0
1900–2011	3.6	5.0
1900–2010	3.9	5.2

Note: The ERP is estimated relative to bonds.

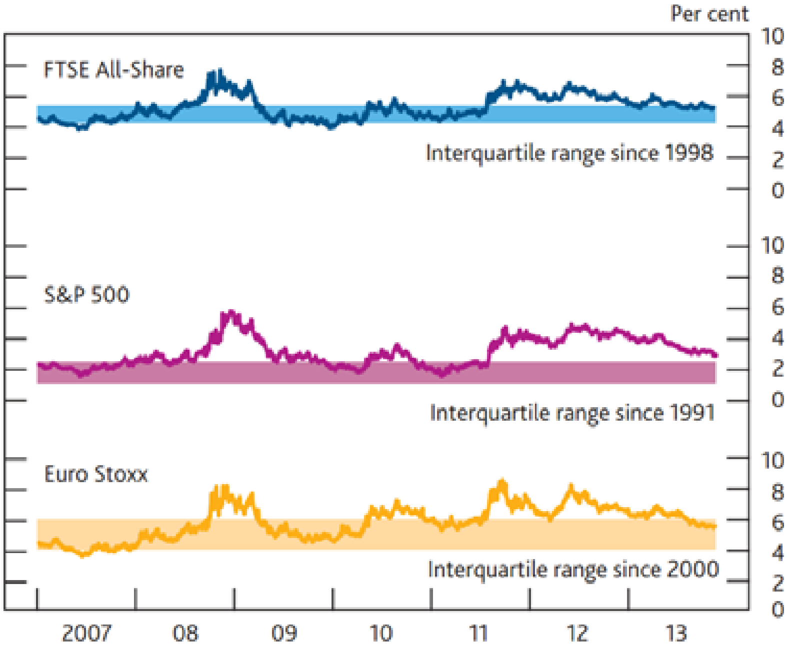
Source: Oxera analysis of Dimson, Marsh and Staunton.

Forward-looking evidence

Although historical estimates represent the best source of data available for the realised ERP, this approach is inherently backward-looking. Forward-looking models can provide a useful cross-check on the historical estimates.

Figure 4.5 shows the forward-looking estimates of ERP from a multi-stage DGM produced by the Bank of England.[50]

Figure 4.5 Bank of England estimates of the ERP



Source: Bank of England (2013), 'Financial Stability Report', November.

The estimates of the ERP produced by the Bank of England have been consistently above 5% since 2011.

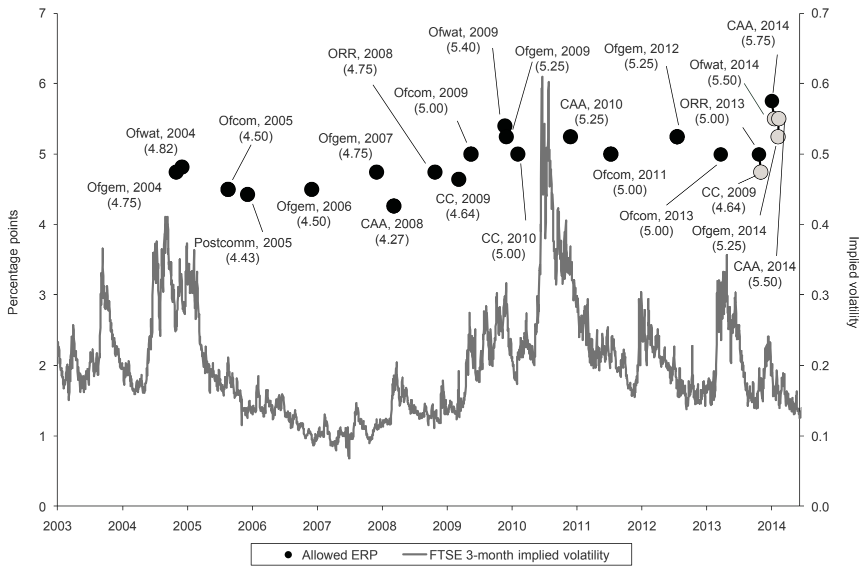
[50] These estimates are produced using a variant of the multi-period dividend growth model. In the near-to-medium term, dividend growth is proxied by earnings growth based on consensus earnings forecasts from the Institutional Brokers' Estimate System (IBES). The long-term growth rate is equal to an estimate of the potential growth of the economy. As the risk-free rate measure, 'rates inferred from zero-coupon government bond yield curves at maturities up to ten years' are used. Inkinen, M., Stringa, M. and Voutsinou, K. (2010), 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, **50**:1, pp. 24–33.

Consistent with the proposed approach of taking a longer-term view of the market parameters, we place less weight on these forward-looking estimates.

Regulatory precedent

Recent regulatory determinations on the ERP have been in the range of 4.50–5.75% (see Figure 4.6). However, the ERP of 5.75% used by the CAA is combined with a lower risk-free rate assumption than those of other regulators. The total market return assumed by the CAA is 6.25%. The lower end of the range of 4.50% is based on the provisional CC findings for NIE.

Figure 4.6 Allowed ERP and equity market volatility



Note: Grey dots denote initial proposals, not final decisions. In determinations where the regulator sets a nominal rate of return (e.g. Ofcom), a real risk-free rate has been estimated using inflation assumptions reported by the regulator.

Source: Oxera analysis of regulatory determinations, and data from Datastream.

Summary

Overall, historical estimates of the ERP suggest a value no lower than 5.0% based on arithmetic averages. Forward-looking models suggest estimates above 5.0%. Given the uncertainty in equity markets, regulatory estimates of the ERP have generally increased since the start of the financial crisis, with more recent final determinations suggesting a range of 5.00–5.75%.

This evidence confirms that the ERP range of 5.25–5.50% that is consistent with the proposed total market return and risk-free rate ranges is appropriate. This ERP range is broadly in line with historical ERP evidence and regulatory precedent, and is lower than forward-looking ERP estimates. This is consistent with the proposed approach to emphasising a longer-term view of the data.

4.2 Asset beta

As previous determinations were settled through negotiations between Utility Regulator on one side and FE and PNGL separately on the other, Oxera does not have any close precedents to build up a WACC using the CAPM.

Our approach therefore revolves around the GB regulatory precedents in transmission and distribution (RIIO-T1 and RIIO-GD1). While Ofgem does not report asset betas directly in its determinations, the asset beta for each business can be calculated from the gearing and equity beta estimates.[51] Table 4.3 summarises the equity beta, gearing level, and implied asset beta for each of the Ofgem regulated utilities.

Table 4.3 Implied asset beta by business

	Equity beta	Gearing (%)	Implied asset beta
RIIO-T1 (NGGT)	0.91	62.5	0.34
RIIO-T1 (NGET)	0.95	60	0.38
RIIO-T1 (SHETL)	0.95[1]	55	0.43
RIIO-T1 (SPTL)	0.95[1]	55	0.43
RIIO-GD1 (industry)	0.90	65	0.32
Average			**0.38**

Note: [1] Equity betas are also implied for SHETL and SPTL from the post-tax cost of equity, risk-free rate, and ERP.

Source: Oxera analysis of Ofgem (2012), 'RIIO-T1: Initial Proposals for National Grid Electricity Transmission plc and National Grid Gas plc, Initial Proposals', Finance Supporting document, 27 July; Ofgem (2012), 'RIIO-GD1: Initial Proposals', Overview Consultation, 27 July.

Oxera considers that the asset beta for the GtW project lies in the **0.43–0.45** range, for the following reasons:

- the more CAPEX-intensive end of the Ofgem precedents (SHETL/SPTL): the nature of the GtW project is more similar to the CAPEX-intensive projects being undertaken by SHETL and SPTL to expand their respective networks than the replacement programmes being undertaken by the GB GDNs. This leads to a higher TOTEX-to-asset-value ratio, raising the riskiness of the project;
- allowance for NI risk and the additional risks of the GtW licence compared with GB utilities, principally the price-cap instead of the revenue-cap regulatory model and the associated profile adjustment;
- allowance for debt beta: with a proposed gearing level of 55% and the underlying risk of the project, we consider that debt will not be risk-free and the true debt beta is likely to be small and positive. For the same asset beta, the higher the risk undertaken by debt investors in financing the company's assets, the higher the debt beta.

4.3 Debt beta

A debt beta of 0.1 is assumed, which we then apply consistently in the asset beta calculation and in calculating a levered equity beta.

4.4 Debt premium

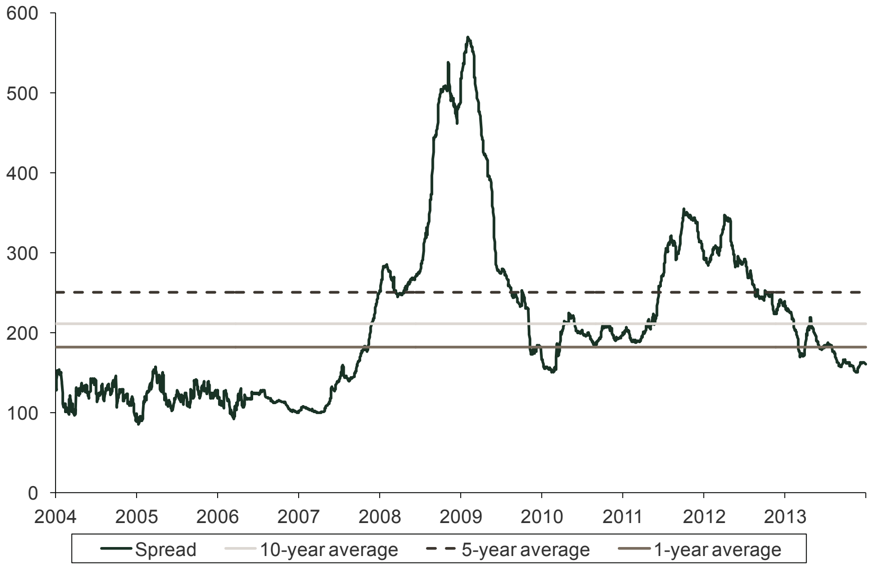
The next step is to estimate a debt premium to add to the risk-free rate in order to compute the appropriate pre-tax cost of debt. Given the small size of the project, it may be more realistic to assume financing through bank debt instead of bonds. However, analysis of bond yields can be used as a proxy measure of the cost of debt for a given level of risk and credit rating.

[51] $\beta_A = (1 - \text{gearing}) * \beta_E + \text{gearing} * \beta_D$. Ofgem assumes debt beta to be zero.

PNGL has a condition in its licence to maintain an investment-grade credit rating. FE does not have such a condition, but an investment-grade credit rating is targeted by the Utility Regulator nevertheless.[52] There do not seem to be any such conditions for the prospective low-pressure licence; however, we assume that a BBB credit rating (i.e. the lowest investment grade) would be a reasonable estimate for the low-pressure licence-holder.

As such, we estimate the low-pressure licence-holder's debt premium by looking at the yield spreads of UK BBB rated non-financial corporate bonds relative to gilts.[53] Figure 4.7 illustrates these spreads for the ten years ending 28 February 2014.

Figure 4.7 Spreads on BBB rated corporate bonds, 7–10 years (bp)



Note: Ten-year average, ~210bp; five-year average, ~250bp; one-year average, ~180bp.

Source: Oxera analysis of data from Datastream.

Figure 4.7 shows that the spreads on BBB rated corporate bonds increased substantially during the most recent financial crisis, before falling sharply back in its aftermath. More recently, the spreads have been on a downward trend for more than a year, and are currently moving back towards their pre-2007 levels. We estimate the forward-looking spread for BBB rated bonds as a range of **160–210bp**. The lower end of this range reflects the spot spread as at 28 February 2014, while the top end is the ten-year average spread on these bonds. To this, the **25–50bp** NI-specific risk premium on debt is added, as estimated in section 2.8.1, and 20bp for issuance costs to obtain a total debt premium of **205–280bp**.[54]

[52] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014-2016', Final Determination, 20 December, paras 13.18–19.
[53] The spread is defined as the spread over and above the United Kingdom Total 7–10 Years Datastream Government Index benchmark yield.
[54] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final determination, 26 March, pp. 13–15-16.

4.5 Gearing

A notional gearing level of 55% is adopted, based on RIIO-T1 (SHETL/SPTL), due to their relatively high CAPEX required to expand the networks and for consistency with the asset beta assumption.[55]

4.6 Tax rate

A corporate tax of 20% is assumed, based on the UK corporate tax rate that will apply from April 2015.

4.7 Inflation

An RPI inflation forecast of 3% is used, based on the Bank of England implied inflation.[56]

4.8 Summary CAPM WACC (Years 6–10)

In light of the above, Oxera considers that the appropriate real pre-tax WACC lies between the **5.3–6.3%** range. Table 4.4 summarises these results.

Table 4.4 Real pre-tax WACC, years 6–10 (%)

		Low	High
Real RFR	[1]	1.25	1.50
BBB rated spread	[2]	1.6	2.1
Issuance premium	[3]	0.2	0.2
NI premium	[4]	0.3	0.5
Real pre-tax cost of debt	[5]=[1]+[2]+[3]+[4]	3.3	4.3
Asset beta	[6]	0.43	0.45
Gearing	[7]	55	55
Debt beta	[8]	0.1	0.1
Implied equity beta	[9]=([6]-[7]*[8])/(1–[7])	0.8	0.9
ERP	[10]	5.25	5.50
Real post-tax cost of equity	[11]=[1]+[9]*[10]	5.6	6.3
Inflation	[12]	3.0	3.0
Nominal post-tax cost of equity	[13]=(1+[11])*(1+[12])-1	8.8	9.5
Tax rate	[14]	20	20
Nominal pre-tax cost of equity	[15]=[13]/(1-[14])	11	12
Real pre-tax cost of equity	[16]=(1+[15])/(1+[12])-1	7.8	8.6
GtW real pre-tax WACC, years 6–10	**[17]=[16]*(1-[7])+[5]*[7]**	**5.3**	**6.3**

Note: As a sensitivity check, we have also estimated the GtW WACC assuming a notional gearing level of 60%. The results are insensitive to the choice of gearing: the WACC range remains 5.3–6.3%, as the cost of equity increases with the level of gearing.

Source: Oxera analysis.

[55] Ofgem (2012), 'RIIO-T1: Final Proposals for SP Transmission Ltd and Scottish Hydro Electric Transmission Ltd', Final decision – Overview document, 23 July.
[56] This is the average of the five- and ten-year maturity one-year averages ending on 28 February 2014.

11.4 Glossary

AC	Assisted Connections, scheme to support fuel poor connections
ACoP	Approved Code of Practice
AGI	Above Ground Installation
ALARP	As low as is reasonably practical – associated with risk management
Alcatel Rules	Mandatory Standstill Period
ALO	Agricultural Liaison Officers
ArcGIS	Is a geographic information system for working with maps and geographic information
BATNEEC	Best available technology not entailing excessive cost
BCM	Business Continuity Management
Borealis	Borealis Infrastructure
C&I	Control and Instrumentation
CAD	Computer Aided Design
CAF	Competency Assessment Framework
CAPM	Capital Asset Pricing Model
CAS	Competency Assurance System
CBI	Confederation of British Industry
CIMA	Chartered Institute of Management Accountants
CCNI	NI Consumer Council
CDM	Construction Design Management
CER	Commission for Energy Regulation
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIPS	Contractpr Invoice Payment System
CMS	Construction Management System
Cognos	Business intelligence and performance management software
COP	Code of Practise
COSHH	Control of Substances Hazardous to Health
Cost Owners	Individuals Responsible for cost items
CP	Cathodic Protection
CPD	Continuous Professional Development
CWT	Cold Weather Technologies
DARD	Department of Agriculture and Rural Development
DCENR	Irish Department of Agriculture and Rural Development
DESC	Distribution Engineering Safety Committee
DETI	Department of Energy Trade & Investment
DG Energy	Director General for Energy
DN	Distribution Network
DNCS	Digital Network Control System
DNO	Distribution Network Operator
DOE	Department of the Environment

DRD	Department for Regional Development
DS33 assessor	Qualified NVQ Assessor
DSD	Department for Social Development
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations
DSO	Distribution System Operator
E&I	Electrical & Instrumentation
EC	Emergency Controller
EIA	Environmental Impact Assessment
ERIC Process	Eliminate, Reduce, Isolate, Control
ESD	Emergency Shut-down
ESRI	Provider of ArcGIS- basis for graphical systems
FCO	First Call Operatives
FE	Firmus Energy (Distribution) Ltd
FMA	Fingleton McAdam Limited
FOCD	First Operational Commencement Date
FSB	Federation of Small Business
GCC	Gas Control Centre
GDN	Gas Distribution Network
GD14	NIUR Price Control Period
GDPCR1	Gas Distribution Price Control Review 1
GIS	Geographic Information System
GL5	Procedures for managing new works, modifications and Repairs
GPRS	General Packet Radio Service
GPS	Global Positioning System
GTMBS	Gas Transportation Management and Billing System
GTTW	Gas to the West project initiative
HDD	Horizontal Directional Drilling
HMRC	HM Revenue & Customs
HP	High Pressure
HSENI	Health and Safety Executive Northern Ireland
HSMC	Health and safety Management Committee
HSSE	Health, Safety and Security Environment
HSE	Health and Safety Executive
IC	Incident Controller
IFI	Innovation Funding Incentive
IGEM	Institution of Gas Engineers & Managers
IME3	EU Third Internal Energy Package
IoD	Institute of Directors
ISO55001	Asset Management Quality Standard
ITT	Invitation to tender
JV	Joint Venture
KPI	Key Performance Indicator
LDZ	Local Distribution Zone
LP	Low Pressure

LTI	Lost Time Incident
LTO	Licence to Operate
MAM	Meter Asset Management
MAPD	Major Accident Prevention Document
Maximo	Computer based asset management system
MEAT	Most Economically Advantageous Tender
MEL	Mutual Energy Limited
MERC	Maintenance Emergency Response Contract
MP	Medium Pressure
MPOP	Maximum Permissible Operating Pressure
MPRN	Meter Point Reference Number
MSA	Managed Service Agreement
MTO	Material Take Off
MWC	Major Works Contractors
NDT	Non Destructive Testing
NGO	Non-Governmental Organisation
NIC	National Innovation Competition
NIE	Northern Ireland Electricity
NIHE	Northern Ireland Housing Executive
NIEA	Northern Ireland Environment Agency
NIFRS	Northern Ireland Fire Rescue Service
NILGA	Northern Ireland Local Government Association
NI-NEC	Northern Ireland Network Emergency Co-ordinator
NINOA	Northern Ireland Network Operators Agreement
NISEP	Northern Ireland Sustainable Energy Programme
NIUR	Northern Ireland Utility Regulator
NRO	Non Routine Operations
OCC	Operational Control Centre
Oracle ERP	Oracle Enterprise Resource Planning (ERP) which is a software application which includes Financials, Project Portfolio Management, Procurement, and Governance, Risk, and Compliance solutions
ORR	Operational Risk Register
P&L	Profit & Loss
PAS55	Asset Management Standards
PE	Polyethylene
PE100	High Density Polyethylene
PMC	Specialist Pipeline Repair Contractor
PNG	Phoenix Natural Gas
PQQ	Pre Qualification Questionnaire
PR	Public Relations
PREs	Public Reported Escapes
PRI	Pressure Reducing Installation
PSNI	Police Service Northern Ireland
QMS	Quality Management Systems

QS	Quantity Surveyor
RAG	Risk Assessment Group
RAID	Risk, Assumption, Issue and Dependency
RAV	Regulatory Asset Value
RCM	Reliability Centred Maintenance
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RIIO	Form of GB price control (Revenue = Innovation + Incentives + Outputs
ROSPA	The Royal Society for the Prevention of Accidents
Safety Case	The information required by Schedule 1 of the Gas Safety Management Regulations
SGN	Scotia Gas Networks
SCO	Safe Control of Operation
SCOTVEC	Scottish Vocational Education Council
SEARS	Safety and Environmental Acident Reporting System
SGN LDZ	Southern Gas Networks Local Distribution Zone
SHE	Safety Health & Environment
SIL	Safety Integrity Levels
SLA	Service Level Agreement
SMF	Safety Management Framework
SSE	Scottish and Southern Energy
SSO	Single System Operator
STC	Safety and Technical Competence
Symology	Company offering Infrastructure Asset Management Systems
Synergy	Network modelling software
Teachers	Ontario Teachers Pension Plan – infratrcuture investors
TNA	Training Needs Analysis
TSO	Transmission System Operator
UAG	Unaccounted for Gas
UREG	Northern Ireland Utility Regulator
UVDB	Utilities Vendor Database
WACC	Weighted Average Cost of Capital

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Gas to the West cost of capital

Prepared for
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Contents

1 Summary

Applicants for low-pressure gas distribution licences in Northern Ireland are required to submit a schedule for the weighted average cost of capital (WACC) that will apply to determine allowed prices in the first ten years after the first delivery of gas.

The ten-year profile for the cost of capital presented in this report reflects the stated intention of the regulator to set the WACC allowance for the first five years based on the winning business plan bid, and then to re-set the allowance in year six and every five years thereafter according to the capital asset pricing model (CAPM).[1] The analysis assumes first delivery in 2017, and therefore calculates rates of return relative to this period.

The approach is anchored in the assessment of capital market data, relevant current regulatory precedent from the UK, and the approach used for Firmus Energy (Distribution) Limited (FE) at the time when its initial licence was granted.

The findings of this report suggest that an appropriate WACC for Gas to the West (GtW) would be in the range of **6.2–6.9%** (real, pre-tax) for the first five years following the start of operations, and a WACC in the range of **5.3–6.3%** (real, pre-tax) thereafter.

1.1 Years 1–5

The starting point of Oxera's analysis is to assess the overall riskiness of the low-pressure licence relative to the two existing licensees and the regulated companies in Great Britain (section 2).

As a by-product of this exercise, we assess the case for a Northern Ireland (NI)-specific risk premium to be added to the licence-holder's WACC. This issue has been considered at length in the Competition Commission's (CC) review of the Northern Ireland Electricity (NIE) price control.[2] The CC found evidence that an NI-specific risk premium has existed in the past and may continue to exist. As the CC's approach to determining the cost of debt was based on bonds issued by NIE, any NI-specific risk premium would be captured within this estimate. Regarding the cost of equity, the CC adopted a range for the asset beta towards the upper end of the comparators to reflect that the comparators are not an exact match for NIE.

To quantify this premium, we proceed as follows:

- the NI-specific risk premium on pre-tax cost of debt is derived from the CC's analysis of the spread between the yield on NIE's bond and the yields on bonds issued by comparator companies in Great Britain;
- the NI-specific risk premium on pre-tax cost of equity is derived as follows:
  - the difference between the midpoint of the CC's range for NIE's asset beta and the range of longer-run estimates for GB regulated companies is converted into an uplift to NIE's equity beta;

[1] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.59.
[2] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March.

- using the CAPM, the implied uplift to NIE's equity beta is translated into an NI risk premium on pre-tax equity;

- the weighted average of these two NI-specific risk premiums yields a **40bp** total NI-specific risk premium on the pre-tax WACC. This is summarised in Table 1.1 below.

Table 1.1 NI-specific risk premium

		Asset beta		
		Low	**High**	**Average**
GB utilities	[1]	0.30	0.40	0.35
NIE	[2]	0.35	0.40	0.38
Uplift to NIE's asset beta	[3]=[2]–[1]			0.03
NIE gearing	[4]			45%
Implied uplift to NIE's equity beta	[5]=[3]/(1–[4])			0.05
ERP[1]	[6]			4.5%
NI risk premium on real post-tax equity	[7]=[5]*[6]			0.2%
NIE tax rate	[8]			20%
NI risk premium on real pre-tax equity	[9]=[7]/(1–[8])			0.3%
NI risk premium on debt	[10]			0.5%
NI risk premium on real pre-tax WACC	[11]=[9]*(1–[4]) + [10]*[4]			0.4%

Note: [1] Equity risk premium; in this table, the average ERP is presented. The tax rate is the UK corporate tax rate as at April 2015.

Source: Oxera analysis of Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and HMRC March 2013 budget.

As with the Phoenix Natural Gas Limited (PNGL) and FE licences, the WACC for GtW contains a premium for years 1–5 to account for uptake risk and other risks associated with a start-up company. Importantly, this proposal differs from PNGL and FE in that their licences contained a fixed WACC for approximately 20 years and 12 years respectively, whereas the proposal for GtW is to include the premium for five years only.[3]

The premium for GtW relative to FE is also increased in our analysis because FE was originally allowed to earn the 7.5% return on under-recoveries, whereas we understand that GtW will earn only LIBOR + 2% on under-recoveries.[4] This is different from the rate of return earned on the profiling adjustment component of the total regulatory value (TRV), which is explained in section 2.3.

The WACC for years 1–5 (section 3) is then calculated as follows:

[3] PNGL's licence ran from 5 September 1996 with a fixed WACC of 8.5% (real, pre-tax) until the end of 2016. This was reduced to 7.5% (real, pre-tax) in 2007. FE's licence came into force on 24 March 2005 with a fixed WACC of 7.5% (real, pre-tax) until the end of 2016.
[4] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.56.

- the FE premium is calculated relative to the allowed WACC in the GB gas distribution price control review (GDPCR) nearest the date on which the FE licence was granted;[5]
- this is decomposed into an NI-specific risk premium (see Table 1.1) and a start-up risk premium component.[6] The latter is adjusted to reflect the fact that the low-pressure licence-holder has less time to be compensated for start-up risk than FE did at the time when its licence was awarded in 2005, as GtW's WACC will be fixed for only five years, compared with FE's 12. This yields a total GtW risk premium of 1.9% (see Table 1.2);
- the recent relevant regulatory precedents are then catalogued and their WACC determinations are converted to a real pre-tax WACC (see Table 1.3);
- the adjusted risk premium of 1.9% is then added back to the cost of capital of the different regulatory precedents. This yields a range of **6.2–6.9%** for the GtW real pre-tax WACC.[7]

Table 1.2 GtW risk premium, years 1–5

FE fixed real pre-tax WACC (2005)	[1]	7.5%
Implied real pre-tax WACC for GDPCR (2007)	[2]	6.1%
Total risk premium	[3]=[1]–[2]	1.4%
NI risk premium on real pre-tax WACC	[4]	0.4%
Start-up risk premium	[5]=[3]–[4]	1.0%
Start-up risk premium—multiple	[6]	1.5
GtW risk premium	**[7]=[4]+[5]*[6]**	**1.9%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Ofgem (2007), 'Gas Distribution Price Control Review', Final Proposals, 3 December, p. 106; and Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38.

[5] The GDPCR WACC is calculated on a pre-tax basis by dividing the real post-tax equity component of the WACC by (1 – t), where t is the corporate tax rate. This underestimates the pre-tax WACC and hence overestimates the FE risk premium. However, this error is largely cancelled out when the GtW risk premium is added to the regulatory precedents in Table 1.3 where the same pre-tax WACC conversion is applied.
[6] These include risks such as regulatory risks, political and macroeconomic risks, stranding risk, financing risks, weather risks, and demand risks. While these are also faced by a mature company, a start-up is more exposed to these risks than a mature company with established networks and customer bases.
[7] There is no need to make an adjustment for the debt index that is in the RIIO-ED1 control because the GDPCR cost of debt fixed allowance was calculated under a similar approach to the ten-year average used in the RIIO-ED1 debt index. Consequently, the impact of the debt index cancels out in the process of calculating the GtW fixed rate of return, and results in a lower GtW risk premium relative to the Ofgem precedents compared to if the precedents were recalculated using a forward-looking cost of debt.

Table 1.3 GtW real pre-tax WACC based on recent regulatory precedents, years 1–5

Determination	RIIO-GD1	RIIO-ED1[1]
Sector	Energy	Energy
Regulatory body	Ofgem	Ofgem
Determination date	27/07/2012	17/02/2014
Real risk-free rate [1]	2.00%	1.30%
ERP [2]	5.25%	5.25%
Equity beta [3]	0.90	0.90
Real post-tax cost of equity [4]=[1]+[2]*[3]	6.7%	6.0%
Tax rate [5]	22%	20%
Real pre-tax cost of equity [6]=[4]/(1-[5])	8.6%	7.5%
Real pre-tax cost of debt [7]	3.0%	2.6%
Gearing [8]	65%	65%
Real pre-tax WACC [9]=[7]*[8]+[6]*(1-[8])	5.0%	4.3%
GtW adjusted risk premium [10]	1.9%	1.9%
GtW real pre-tax WACC [11]=[9]+[10]	**6.9%**	**6.2%**

Note: [1] Ofgem's latest reference point.

Source: Oxera analysis of the regulatory documents.

As a cross-check on this approach, the real pre-tax WACC for years 1–5 is recalculated as follows:

- the premium between the FE allowed return and the forward five- and ten-year index-linked gilt rates in 2006 (as at 31 December 2003)[8] is calculated;
- this premium is broken down into three elements: an NI-specific risk premium, a start-up risk premium, and a residual risk premium associated with the inherent riskiness of the assets;
- the start-up risk premium is then adjusted to reflect the shorter period for which the GtW rate of return will be fixed (five years compared with 12 years);
- the adjusted risk premiums are then added to the forward index-linked gilt rates in 2017 (as at 28 February 2014), which gives a 6.1–6.3% GtW rate of return based on the risk-free rate expected during years 1–5 of the project. This is summarised in Table 1.4.

[8] Given that FE's licence was awarded in early 2005, and its first price control covered the 2006–08 period, we have estimated the implied forward yield in 2006 as observed at the end of 2003.

Table 1.4 Cross-check on GtW real pre-tax WACC, years 1–5

Maturity		Five-year maturity	Ten-year maturity
FE fixed real pre-tax WACC (2005)	[1]	7.5%	7.5%
Implied forward real yield on 30/06/2006 (as at 31/12/2003)	[2]	2.1%	2.2%
Premium over index-linked gilt yield	[3]=[1]–[2]	5.4%	5.3%
NI risk premium on real pre-tax WACC	[4]	0.4%	0.4%
Start-up risk premium	[5]	1.0%	1.0%
Residual risk	[6]=[3]–[4]–[5]	4.0%	3.9%
Start-up risk premium—multiple	[7]	1.5	1.5
Implied forward real yield in 28/02/2017 (as at 28/02/2014)	[8]	0.2%	0.4%
GtW real pre-tax WACC, years 1–5	**[9]=[4]+[5]*[7]+[6]+[8]**	**6.1%**	**6.3%**

Source: Oxera analysis of Utility Regulator (2013), ‘GD14 Price Control for Northern Ireland’s Gas Distribution Networks for 2014–2016’, Final Determination, 20 December, para. 1.13; Competition Commission (2014), ‘Northern Ireland Electricity Limited Price Determination’, Final Determination, 26 March, pp. 13–38; and data from the Bank of England.

1.2 Years 6–10

The WACC for years 6–10 (section 4) is calculated using the CAPM:

- real equity market return of 6.5–7.0%, decomposed into:
  - risk-free rate 1.25–1.50 (section 4.1);
  - ERP 5.25–5.50 (section 4.1);
- asset beta 0.43–0.45 (section 4.2);
  - the more CAPEX-intensive end of the Ofgem precedents (Scottish Hydro Electric Transmission Limited (SHETL) and SP Transmission Limited (SPTL)): the nature of the GtW project is more similar to the CAPEX-intensive projects being undertaken by SHETL and SPTL to expand their respective networks than the replacement programmes being undertaken by the GB gas distribution networks (GDNs). This leads to a higher CAPEX (or TOTEX)-to-asset value ratio, raising the riskiness of the project;
  - allowance for NI risk and the additional risks of the GtW licence compared with GB utilities, principally the price-cap instead of the revenue-cap regulatory model and the associated profile adjustment;
  - allowance for debt beta: we consider that, with a proposed gearing level of 55% and the underlying risk of the project, debt will not be risk-free and the true debt beta is likely to be small and positive. For the same asset beta, the higher the risk undertaken by debt investors in financing the company’s assets, the higher the debt beta;
- debt beta 0.1 (section 4.3);
- debt premium 205–280bp (section 4.4);

  - spot and ten-year historical average of premium on BBB rated UK corporate bonds with 7–10-year maturities 160–210bp;[9]
  - NI premium 25–50bp (section 2.8.1);
  - allowance for issuance costs 20bp (based on the CC's Final Determination for NIE);[10]
- gearing 55% notional based on RIIO-T1 (SHETL/SPTL) due to their relatively high CAPEX required to expand the networks and for consistency with the asset beta assumption (section 4.5);
- tax 20% based on statutory rate (section 4.6);
- RPI inflation forecast 3% based on Bank of England's implied inflation (section 4.7);

The main factors driving the difference between the WACC for years 6–10 and years 1–5 are:

– removal of the start-up risk premium;
– reflection of the market expectation of increases in the risk-free rate;
– increase in debt spreads towards their longer-term average.

Table 1.5 below summarises the above components, which result in a **5.3–6.3%** range for the WACC (real, pre-tax) for years 6–10.

Table 1.5 Real pre-tax WACC, years 6–10

		Low	High
Real risk-free rate	[1]	1.25%	1.50%
BBB rated spread	[2]	1.6%	2.1%
Issuance premium	[3]	0.2%	0.2%
NI premium	[4]	0.3%	0.5%
Real pre-tax cost of debt	[5]=[1]+[2]+[3]+[4]	3.3%	4.3%
Asset beta	[6]	0.43	0.45
Gearing	[7]	55%	55%
Debt beta	[8]	0.1	0.1
Implied equity beta	[9]=([6]-[7]*[8])/(1–[7])	0.8	0.9
ERP	[10]	5.25%	5.50%
Real post-tax cost of equity	[11]=[1]+[9]*[10]	5.6%	6.3%
Inflation	[12]	3.0%	3.0%
Nominal post-tax cost of equity	[13]=(1+[11])*(1+[12])-1	8.8%	9.5%
Tax rate	[14]	20%	20%
Nominal pre-tax cost of equity	[15]=[13]/(1-[14])	11%	12%
Real pre-tax cost of equity	[16]=(1+[15])/(1+[12])-1	7.8%	8.6%
GtW real pre-tax WACC, years 6–10	**[17]=[16]*(1-[7])+[5]*[7]**	**5.3%**	**6.3%**

Note: As a sensitivity check, the GtW WACC has also been estimated assuming a notional gearing level of 60%. The results are insensitive to the choice of gearing: the WACC range remains 5.3–6.3%, as the cost of equity increases with the level of gearing.

Source: Oxera analysis.

[9] A notional BBB credit rating is consistent with the Utility Regulator's target rating for FE.
[10] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final determination, 26 March, pp. 13–15-16.

2 Risk

The allowed rate of return for the GtW licence-holder should reflect the risks associated with this specific project on a stand-alone basis. Ideally, the WACC would be estimated based on recent projects with similar risk characteristics. As Oxera is not aware of any such projects, we base our analysis on other companies that have undertaken similar projects in the past.

In this section, we assess the risks that are likely to be faced by the winner of the low-pressure licence relative to those faced by comparable licensees in NI and Great Britain. Specifically, we draw a comparison between the prospective GtW licence and those awarded to the two GDNs in NI (FE and PNGL), as well as gas and electricity transmission and distribution networks in Great Britain. This exercise aims to gauge how the proposed regulatory regime will affect the licence-holder's business risk compared with the aforementioned comparators.

This section is structured as follows:

- section 2.1 discusses the risk associated with the different forms of price control;
- section 2.2 assesses the risk associated with a low asset value-to-TOTEX ratio;
- section 2.3 investigates the impact of the profiling adjustment provision on risk;
- section 2.4 discusses the impact of the rolling incentive mechanisms on risk;
- section 2.5 assesses the impact of setting re-openers at 15% of OPEX on risk;
- section 2.6 discusses the impact of the exclusivity clauses on risk;
- section 2.7 explores the start-up risk in more detail;
- section 2.8 considers the case for an NI-specific risk premium;
- section 2.9 concludes on the overall riskiness of the low-pressure licence relative to the comparators listed above.

2.1 Form of price control

There are two predominant regulatory models employed in the regulation of gas distribution utilities in the UK:

- a price cap model, whereby the regulator sets the allowed maximum prices that the GDN can charge its customers;
- a revenue cap model, whereby the regulator determines the maximum allowed revenues that the GDN can aim to recover from its customers.

In terms of risk, a licence-holder under a price cap model is subject to volume risk, as variations in demand will result in variations in revenues, and ultimately in profits. This makes the licence more risky than a revenue cap, which the Utility Regulator has acknowledged.[11]

As set out in the Utility Regulator's Applicant Information Pack (2014), the regulator has proposed that the low-pressure licence-holder be regulated by a price cap regulatory model for the first ten years of the licence, with the option of switching to a revenue cap model thereafter. This intends to incentivise the licence-holder to develop gas connections as quickly as possible, and incentivise customers to switch to natural gas.[12]

The licences of FE and PNGL were both initially awarded based on a price cap model. In 2007, however, the PNGL licence was switched to a revenue cap model, after the Utility Regulator deemed PNGL's network to be sufficiently mature.[13] FE continues to operate under a price cap model, although the Utility Regulator is considering changing this to a revenue cap model as part of GD17.[14]

In Great Britain, gas distribution and transmission utilities are regulated under a revenue cap model by Ofgem.[15]

In this regard, this suggests that the low-pressure licence-holder will face volume risk similar to that faced by FE and PNGL at the time when their respective licences were awarded.

2.2 Impact of low asset value to TOTEX on risk

A higher ratio of costs to asset value increases the potential deviation of average return on assets from forecast. In fact, total cash costs (i.e. TOTEX) are an important factor for determining asset risk.

In its GD14 Final Determination (2014), the Utility Regulator compares asset value as a multiple of TOTEX for FE, PNGL and other regulated companies in Great Britain.[16] Figure 15 in the GD14 Final Determination shows that PNGL's total regulatory value (TRV)-to-TOTEX ratio is around 20, significantly higher than that of FE (8), NIE (6), the GB GDNs (7.5–10), and the GB gas transmission networks (10). The Utility Regulator argues that this suggests that PNGL faces lower risk than its comparators and, as a result, there is a case for lowering its allowed returns. It also argues that 'FE is at an earlier stage in the development of its network and consequently the proportion of its value represented by deferred revenue is smaller.'[17]

It is worth noting that the Utility Regulator's calculations rely on different definitions of asset values for each industry. Specifically, for the GB regulated industries (including gas transmission and distribution), asset values are defined by the regulatory asset base (RAB). For FE and PNGL, asset values are measured by the TRV, which, in addition to the standard regulatory asset base (RAB), includes deferred revenue (see section 2.3), revenue under-recovery (from pre-2007), and unspent allowances (including deferred CAPEX and

[11] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.23.
[12] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.51.
[13] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 2.19.
[14] Ibid., para. 16.17.
[15] Ibid., para. 12.31.
[16] Ibid., Figure 15.
[17] Ibid., para. 12.19.

historical outperformance).[18] This suggests that the comparison is not made on a like-for-like basis, and that excluding these elements from asset values would lower this multiple for FE and PNGL compared with their GB comparators.

Oxera's analysis suggests that the GtW project is likely to have a slightly lower TRV-to-TOTEX ratio because the low-pressure licence-holder will earn only LIBOR + 2% on its under-recoveries,[19] whereas FE was allowed to earn its fixed WACC of 7.5%.[20] This reduces the under-recoveries portion of its TRV, leading to a lower TRV-to-TOTEX ratio relative to FE at the time when its licence was awarded.

In light of the above, and taking into consideration the fact that FE is the least mature among the comparators, we find that FE represents the best available benchmark for the portion of asset risk associated with the size of TOTEX.

2.3 Impact of profiling adjustment on risk

The Utility Regulator intends to use a 'profiling adjustment' of revenues, which aims to keep tariffs broadly similar across the charging period. This works by deferring the recovery of some of the costs of developing the network from the earlier years of the charging period to later years. This reflects the fact that volumes will be low in the early years of the charging period. These deferred revenues are added to the depreciated asset value (DAV) and other elements (see section 2.2) to constitute the TRV.[21] As the profiling adjustment is a constituent of the TRV, the low pressure licence will earn the TRV rate of return on its deferred revenues, in line with the approach adopted by the Utility Regulator for FE and PNGL.[22]

This profiling adjustment reflects risk for the licence-holder, as it defers revenues from a period in which the GDN is incurring high costs to a later period when the GDN is incurring low costs.

The Utility Regulator proposes to employ this adjustment for 40 years.[23] This compares to a charging period of 50 years (extended from 20 years initially) for PNGL, and 30 years for FE, while GB GDNs are not subject to such mechanisms.[24]

Oxera therefore considers that the low pressure licence-holder is likely to face similar deferred revenue risk compared with the other two licensees in NI, while the GB GDNs do not face such risks.

2.4 Rolling incentive mechanisms and risk

Rolling incentive mechanisms are designed to encourage cost-efficiency measures on CAPEX and OPEX by allowing the licence-holder to retain outperformance relative to the regulatory settlement for a fixed number of years.

[18] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 12.13.
[19] This is different from the rate of return earned on the profiling adjustment component of the total regulatory value (TRV).
[20] Ibid., para. 10.46; Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.56.
[21] Ibid., paras 3.52–53.
[22] Utility Regulator (2014), 'Gas to the west – answers to clarification questions', 16 April, p. 24.
[23] Ibid., para. 3.54.
[24] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014-2016', Final Determination, 20 December, para. 2.19; Competition Commission (2012), 'Phoenix Natural Gas Limited price determination', 12 November, para. 5(a).

Symmetrically, the licence-holder is required to fund any underperformance relative to the regulatory settlement for a fixed number of years unless the GDN can provide evidence that these are not the result of any inefficient spending. While these mechanisms incentivise licence-holders to outperform on OPEX and CAPEX, they also expose the GDN to greater downside risk. This risk is greater when the incentive rate is high, or when the sharing factor (between the GDN and its customers) is low.

The Utility Regulator intends to allow for OPEX and CAPEX rolling incentive mechanisms whereby the low-pressure licence-holder can retain outperformance for five years, after which the licence-holder will need to return it to its customers. The GDN will earn depreciation and a cost of capital return on this outperformance. As for underperformance, unless the GDN can provide evidence that the underperformance is not due to inefficient spending, it will have to fund depreciation (with a cost of capital return) on the overspend for five years.[25] It not entirely clear whether these mechanisms will be ‘switched on’ or ‘switched off’ at the start of the price control.

Similar mechanisms are built into FE and PNGL’s licences. FE has both a CAPEX and an OPEX five-year rolling incentive mechanism which are both currently ‘switched off’. PNGL’s licence does not have such incentives, although, for CAPEX, its licence includes a retrospective adjustment mechanism that has similar effects.[26]

In Great Britain, Ofgem has adopted incentives for both gas transmission and distribution, whereby under-/overspends are shared between the regulated network and its customers.[27]

In light of the above, Oxera considers that, in terms of scope for over-/under-performance from regulatory settlements, the low-pressure licence-holder is likely to bear similar risk to the two NI licensees.

2.5 Impact of setting re-openers at 15% of OPEX

The Utility Regulator also intends to set re-openers at 15% of OPEX.[28] This reduces the risk faced by the licence-holder, as any deviations in OPEX of more than 15% from forecast would be felt only during the year in which the deviation occurs. Subsequently, the Utility Regulator would revise its OPEX allowances, thus limiting the licence-holder’s exposure to OPEX risk. Similarly, the Utility Regulator intends to allow re-openers if volumes deviate by more than 15% from forecast.[29] There will not be any such re-openers for CAPEX as the Utility Regulator intends to rely on uncertainty mechanisms instead.

The FE licence includes re-openers for OPEX and CAPEX, as well as volumes. For OPEX and volumes, the re-openers are set at 15%. For CAPEX, a special

[25] Utility Regulator (2014), ‘Gas Network Extensions in Northern Ireland’, Gas to the West: Applicant Information Pack, 6 February, paras 3.41–42.
[26] As part of GD14, the Utility Regulator has decided to ‘switch on’ the CAPEX rolling mechanism. Utility Regulator (2013), ‘GD14 Price Control for Northern Ireland’s Gas Distribution Networks for 2014–2016’, Final Determination’, 20 December, para. 2.19.
[27] Ofgem (2012), ‘RIIO-GD1 Final Proposals – Overview’, 17 December, para. 1.23; Ofgem (2012), ‘RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas’, 17 December, para. 1.58.
[28] Utility Regulator (2014), ‘Gas Network Extensions in Northern Ireland’, Gas to the West: Applicant Information Pack, 6 February, para. 3.48.
[29] Ibid., para. 3.65.

review takes place whenever FE's best estimate for CAPEX is likely to be in excess of its CAPEX allowances for that year.[30]

In its latest price control review of the GDNs in Great Britain (RIIO-GD1), Ofgem also set re-openers for some costs (street works, enhanced physical site security, connection charging boundary, connection of new large loads, innovation roll-out, and smart metering). However, allowances for these costs can be adjusted only once or twice (depending on the nature of the cost) during the eight-year control period (2013–21).[31] Similarly, as part of RIIO-T1, Ofgem has set re-openers for some of the costs incurred by National Grid Gas Transmission (NGGT) (pipeline diversion shocks, asset health shocks, quarry and loss of development claims, industrial emissions, enhancement of physical security, system operator (SO) security costs, and innovation roll-out). These re-openers can also be applied at two specific re-opener windows in 2015 and 2018.[32]

In light of the above, we conclude that the low-pressure licence-holder is likely to face similar OPEX risk as FE, and slightly lower risk than the GB GDNs and NGGT.

2.6 Exclusivity

One of the special conditions proposed by the Utility Regulator is that the licence-holder will be awarded exclusivity over gas distribution (but not gas supply) to the relevant towns for 20 years.[33] This has the effect of protecting the licence-holder from competition in its licence area, thus reducing the risk faced by the GDN.

This is similar to the exclusivity awarded to FE back in 2005 over its gas distribution operations in its Ten Towns licence area for 20 years,[34] and to PNGL in 1996 for 20 years over its conveyance of gas in the Greater Belfast Area and Larne.[35]

In Great Britain, the GDNs do not have such clauses in their licences. Therefore, Oxera considers that, in terms of exclusivity, the low-pressure licence-holder will bear risk similar to that borne by FE and PNGL when their licences were awarded, and lower risk than the GB GDNs.

2.7 Start-up risk

In a similar way to the PNGL and FE licences, the low-pressure licence-holder will bear uptake risk and other risks associated with a start-up company.[36] This reasoning is reflected in the CC decision to agree on a 7.5% fixed WACC (real, pre-tax) for PNGL's price control for the years 2012 and 2013.[37] In its report, the CC has agreed with the PC03 decision to fix PNGL's WACC at 7.5%, well above

[30] Bord Gáis Éireann (2013), 'Licence for the Conveyance of Gas in Northern Ireland', 30 May, Condition 4.7.
[31] Ofgem (2012), 'RIIO-GD1 Final Proposals - Overview', 17 December, Table 5.1.
[32] Ofgem (2012), 'RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas', 17 December, Table 4.7.
[33] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, paras 3.66–67.
[34] Bord Gáis Éireann (2013), 'Licence for the Conveyance of Gas in Northern Ireland', 30 May, Schedule 3, para. 2.1(a).
[35] Phoenix Natural Gas Limited (1996), 'Licence for the Conveyance of Gas in Northern Ireland', Condition 2.2.2.
[36] These include regulatory, political and macroeconomic risks, stranding risk, financing risks, weather risks, and demand risks. While a mature company faces these risks too, a start-up is more exposed to them than a mature company with established networks and customer bases.
[37] Competition Commission (2012), 'Phoenix Natural Gas Limited price determination', 12 November.

those earned by the Ofgem regulated utilities, even after PNGL's recovery period was extended from 20 to 50 years.[38]

Importantly, the GtW proposal differs from PNGL and FE in that these licences contained a fixed WACC for approximately 20 years and 12 years respectively, whereas the proposal for GtW is to include the premium for five years only.[39] This suggests that the low-pressure licence-holder has less time to be compensated for start-up risk than FE did at the time its licence was awarded in 2005.

Additionally, FE was originally allowed to earn the 7.5% return on under-recoveries, whereas we understand that the low-pressure licence-holder will earn only LIBOR + 2% on under-recoveries.[40] This is different from the rate of return earned on the profiling adjustment component of the TRV (section 2.3).

This suggests that the low-pressure licence-holder will require faster compensation for start-up risk relative to the other two licensees in NI.

2.8 Northern Ireland-specific risk

As the GtW project will take place entirely in Northern Ireland, Oxera has looked at the evidence to determine whether there is a case for extra compensation. This additional return would be rewarded for both equity and debt investors, albeit in different proportions. This issue was discussed extensively in the CC's review of the NIE price control.[41]

2.8.1 NI risk premium above pre-tax cost of debt

In its Final Determination for NIE (2013), the CC has analysed the yield differential between NIE's 2026 bond and bonds issued by comparable companies in Great Britain. This differential was around 100bp throughout 2011 and 2012, and ranged between 0 and 50bp in 2013. While the CC has acknowledged that part of this differential might be attributable to market concerns about ESB, it maintained that 'there appears to be a premium in the yield on NIE's debt compared with comparable instruments issued by other electricity distribution companies in the UK.'[42] The CC has based its estimate of the cost of existing debt on the actual costs of NIE's outstanding bonds, which implicitly incorporates any NI risk premium.

Similarly, the CC has also analysed the yield spread of NIE's 2026 bond and comparator bonds over the 2025 gilt. NIE's yield spread over the 2025 gilt peaked at 350bp in 2012, but has decreased since the beginning of 2013.

We have taken **50bp** as the central estimate for the NI risk premium on debt over the first five years of the low-pressure licence, after which it is likely to decrease to come within the **25–50bp** range as the NI market matures.

[38] Ibid., para. 7.82.
[39] PNGL's licence commenced on 5 September 1996 with a fixed WACC of 8.5% (real, pre-tax) until the end of 2016. This was later reduced to 7.5% (real, pre-tax) in 2007. FE's licence came into force on 24 March 2005 with a fixed WACC of 7.5% (real, pre-tax) until the end of 2016.
[40] Utility Regulator (2014), 'Gas Network Extensions in Northern Ireland', Gas to the West: Applicant Information Pack, 6 February, para. 3.56.
[41] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March.
[42] Ibid., pp. 13–12-13.

2.8.2 NI risk premium above pre-tax cost of equity

The CC has not made any explicit adjustments to the cost of equity for NIE. However, it has adjusted the asset beta upwards compared to the longer-run estimates of asset betas of the GB regulated utilities.

As the asset beta is a weighted average of the equity and debt betas, we use this asset beta uplift and the assumed notional gearing level for NIE to estimate the implied uplift to the equity beta. Multiplying this implied uplift by the ERP assumed by the CC gives the additional risk premium required to compensate equity investors in NI relative to Great Britain on a post-tax real basis. This additional risk premium is then calculated on a real pre-tax basis by adjusting for tax. The calculations show a NI-specific risk premium on equity of 30bp (real, pre-tax)—see Table 2.1.

Table 2.1 NI-specific risk premium

		Asset beta		
		Low	**High**	**Average**
GB utilities	[1]	0.30	0.40	0.35
NIE [2]	[2]	0.35	0.40	0.38
Uplift to NIE's asset beta	[3]=[2]–[1]			0.03
NIE gearing	[4]			45%
Implied uplift to NIE's equity beta	[5]=[3]/(1–[4])			0.05
ERP[1]	[6]			4.5%
NI risk premium on real post-tax equity	[7]=[5]*[6]			0.2%
NIE tax rate	[8]			20%
NI risk premium on real pre-tax equity	[9]=[7]/(1–[8])			0.3%
NI risk premium on debt	[10]			0.5%
NI risk premium on real pre-tax WACC	**[11]=[9]*(1–[4]) + [10]*[4]**			**0.4%**

Note: The tax rate is the UK corporate tax rate as at April 2015. [1] Average ERP.

Source: Oxera analysis of Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and HMRC March 2013 budget.

Taking the weighted average of the NI risk premium on debt (50bp) and equity (30bp) leads to a NI-specific risk premium of around 40bp.

This exercise slightly overestimates the NI risk premium on WACC as it implicitly assumes that the uplift in the asset beta is entirely attributable to an implied uplift in the equity beta, while assuming that the debt beta remains constant. In section 2.8.1, we noted that NIE's debt was viewed as being riskier than the debt of comparable companies in Great Britain. This translates into a slightly higher debt beta in NI relative to comparable GB companies. In turn, this implies that the NI-specific risk premium on equity (and hence on the WACC) is slightly overestimated. However, as we demonstrate in section 3, this leads to the start-up risk premium being underestimated, and therefore to an underestimation of the overall risk premium added to the GtW WACC for years 1–5.

2.9 Conclusions on risk

This section summarises the eight areas of risk discussed above and concludes on the level of risk likely to be borne by the low-pressure licence-holder.

- The low-pressure licence-holder is likely to face volume risk similar to that faced by FE and PNGL at the time their licences were awarded. Both FE and PNGL were initially regulated under a price cap, while GB networks regulated under the RIIO-T1 and RIIO-GD1 models operate under a revenue cap regime.
- The low-pressure licence-holder is likely to face a similar, albeit slightly lower, TRV-to-TOTEX ratio relative to FE, which in turn is significantly lower than that of PNGL, and lower than that of the GB networks.
- The low-pressure licence-holder faces deferred revenue risk similar to the other two NI licensees.
- The low-pressure licence-holder faces OPEX and CAPEX out-/under-performance risk similar to FE and PNGL due to the rolling incentive provisions and re-openers.
- Similarly to the other two licensees in NI, the low-pressure licence-holder will enjoy 20 years of exclusivity over its gas distribution operations.
- The low-pressure licence-holder is likely to require faster compensation for start-up risk compared with FE and PNGL given the shorter initial determination period.
- Oxera assumes that FE, PNGL, NIE and the low-pressure licence-holder all face similar NI-specific risk.

Taking into account all of the above, Oxera's analysis suggests that FE is the most relevant benchmark for the low-pressure licence-holder due to the similarities in their risk profiles and FE's relatively immature network compared with those of the other benchmarks. We consider that the only aspect of the FE licence that differs materially from the GtW proposed licence remains the likelihood that the latter will require faster compensation for start-up risk compared with FE. The adjustment to this start-up risk is discussed in more detail in the following section.

3 WACC (Years 1–5)

Now that we have positioned the riskiness of the GtW project relative to that undertaken by FE in 2005, we estimate the WACC for years 1–5 as follows:

- the FE premium is calculated relative to the allowed WACC in the GB GDPCR nearest the date on which the FE licence was granted;[43]
- this premium is broken down into a start-up risk premium component (see section 2.7) and a Northern Ireland-specific risk premium (see section 2.8). The latter is increased to reflect the shorter time period that the low-pressure licence-holder has to be compensated for start-up risk than FE did at the time its licence was awarded in 2005, as the GtW's WACC will be fixed for five years only compared with FE's 12. While we note that the period in which the licence-holder will face this start-up risk is less than half of that faced by FE, it is unlikely that the start-up risk premium earned by FE at the time its licence was awarded in 2005 should be doubled for the licence-holder for the following reasons:
  - Although GtW is losing seven years of start-up risk premium compared with FE, the discounted value of a year of risk premium in years 6–12 will be lower than the discounted value of a year of risk premium in years 1–5;
  - Investors are likely to perceive the regulatory regime in Northern Ireland as having matured since FE was awarded its licence in 2005, which reduces the perception of regulatory uncertainty faced by the licence holder.

  The start-up risk premium earned by FE is therefore assumed to increase by 50%. This yields a total GtW risk premium of 1.9% (see Table 3.1);
- the recent relevant regulatory precedents are then catalogued and their WACC determinations are converted to a real pre-tax WACC (see Table 3.2);
- the adjusted risk premium of 1.9% is then added back to the cost of capital of the different regulatory precedents to obtain a range of 6.2–6.9% for the GtW fixed rate of return.[44]

[43] The GDPCR WACC is calculated on a pre-tax basis by dividing the real post-tax equity component of the WACC by (1-t), where t is the corporate tax rate. This underestimates the pre-tax WACC and hence over-estimates the FE risk premium. However, this error is largely cancelled out when the GtW risk premium is added to the regulatory precedents in Table 1.3 where the same pre-tax WACC conversion is applied.

[44] There is no need to make an adjustment for the debt index that is in the RIIO-ED1 control because the GDPCR cost of debt fixed allowance was calculated under a similar approach to the ten-year average used in the RIIO-ED1 debt index. Consequently, the impact of the debt index cancels out in the process of calculating the GtW fixed rate of return, and results in a lower GtW risk premium relative to the Ofgem precedents compared to if the precedents were recalculated using a forward-looking cost of debt.

Table 3.1 GtW real pre-tax WACC, years 1–5

FE fixed real pre-tax WACC (2005)	[1]	7.5%
Implied real pre-tax WACC for GDPCR (2007)	[2]	6.1%
Total risk premium	[3]=[1]–[2]	1.4%
NI risk premium on real pre-tax WACC	[4]	0.4%
Start-up risk premium	[5]=[3]–[4]	1.0%
Start-up risk premium—multiple	[6]	1.5
GtW risk premium	**[7]=[4]+[5]*[6]**	**1.9%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Ofgem (2007), 'Gas Distribution Price Control Review', Final Proposals, 3 December, p. 106; and Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38.

Table 3.2 GtW real pre-tax WACC based on recent regulatory precedents, years 1–5

Determination	**RIIO-GD1**	**RIIO-ED1**[1]
Sector	Energy	Energy
Regulatory body	Ofgem	Ofgem
Determination date	27/07/2012	17/02/2014
Real risk-free rate [1]	2.00%	1.30%
ERP [2]	5.25%	5.25%
Equity beta [3]	0.90	0.90
Real post-tax cost of equity [4]=[1]+[2]*[3]	6.7%	6.0%
Tax rate [5]	22%	20%
Real pre-tax cost of equity [6]=[4]/(1-[5])	8.6%	7.5%
Real pre-tax cost of debt [7]	3.0%	2.6%
Gearing [8]	65%	65%
Real pre-tax WACC [9]=[7]*[8]+[6]*(1-[8])	5.0%	4.3%
GtW adjusted risk premium [10]	1.9%	1.9%
GtW real pre-tax WACC [11]=[9]+[10]	**6.9%**	**6.2%**

Note: [1] Ofgem's latest reference point.

Source: Oxera analysis of the regulatory documents.

As a cross-check on this approach, the real pre-tax WACC for years 1–5 is recalculated as follows:

- the premium between the FE allowed return and the forward five- and ten-year index-linked gilt rates in 2006 (as at 31 December 2003)[45] is calculated;
- this premium is broken down into three elements: an NI-specific risk premium, a start-up risk premium, and a residual risk premium associated with the inherent riskiness of the assets;
- the start-up risk premium is then adjusted to reflect the shorter period for which the GtW rate of return will be fixed (five compared with 12 years);

[45] Given that FE's licence was awarded in early 2005, and its first price control covered the 2006–08 period, we have estimated the implied forward yield in 2006 as observed at the end of 2003.

- the adjusted risk premiums are then added to the forward index-linked gilt rates in 2017 (as at 28 February 2014), which gives the GtW fixed rate of return based on the risk-free rate expected during years 1–5 of the project.

Table 3.3 Cross-check on GtW real pre-tax WACC, years 1–5

Maturity		Five-year maturity	Ten-year maturity
FE fixed real pre-tax WACC (2005)	[1]	7.5%	7.5%
Implied forward real yield on 30/06/2006 (as at 31/12/2003)	[2]	2.1%	2.2%
Premium over index-linked gilt yield	[3]=[1]–[2]	5.4%	5.3%
NI risk premium on real pre-tax WACC	[4]	0.4%	0.4%
Start-up risk premium	[5]	1.0%	1.0%
Residual risk	[6]=[3]–[4]–[5]	4.0%	3.9%
Start-up risk premium—multiple	[7]	1.5	1.5
Implied forward real yield in 28/02/2017 (as at 28/02/2014)	[8]	0.2%	0.4%
GtW real pre-tax WACC, years 1–5	**[9]=[4]+[5]*[7]+[6]+[8]**	**6.1%**	**6.3%**

Source: Oxera analysis of Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014–2016', Final Determination, 20 December, para. 1.13; Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final Determination, 26 March, pp. 13–38; and data from the Bank of England.

The real pre-tax WACC estimated in Table 3.3 reconciles with the lower end of the range estimated in Table 3.2.

As noted in section 2.8.2, Oxera's analysis suggests that the NI-specific risk premium (40bp) is slightly overestimated. However, as we are breaking down the overall FE risk premium 'top-down' into an NI-specific component and a start-up component, this leads to an underestimation of the start-up risk premium. In terms of magnitude, the latter is larger (100bp compared with 40bp). Moreover, the start-up risk premium is adjusted upwards to reflect the shorter determination period relative to FE. As such, the net impact of overestimating the NI-specific risk premium is actually underestimating the start-up risk premium, and therefore underestimating the overall GtW risk premium.

4 WACC (Years 6–10)

The intention of the Utility Regulator is to undertake a price control and then set the WACC for years 6–10 based on the CAPM. Therefore this section provides WACC estimates for this period using the CAPM.

The section is structured as follows:

- section 4.1 discusses the appropriate ranges for the risk-free rate and ERP using market data, regulatory precedents and academic literature;
- section 4.2 sets out asset beta estimates by adjusting the GB regulatory precedents to account for higher systematic risk;
- section 4.3 sets out the debt beta estimate;
- section 4.4 quantifies the debt premium by adding up its various components;
- section 4.5 sets the notional gearing estimate;
- section 4.6 sets the tax rate assumption;
- section 4.7 explains the inflation forecast assumptions;
- section 4.8 summarises the real pre-tax WACC for years 6–10.

4.1 Risk-free rate and ERP

Applying the standard techniques used by regulators to estimate the allowed rate of return is challenging in the current market environment. Capital markets are influenced by macroeconomic policy, which has created an unusual source of uncertainty and volatility. While there is a reasonable amount of data on the costs of debt finance, forecasting the appropriate cost of equity for the next regulatory period is more difficult.

Government bond yields (which are typically used to proxy the risk-free rate) declined significantly in the aftermath of the global financial crisis, largely driven by the extraordinary loosening of central bank monetary policy to alleviate the impact of the crisis on the economy. In a number of major economies, including the UK and USA, real government bond yields have been persistently negative, implying that investors will receive less money in real terms in the future than they invest today. This is highly unusual and is not consistent with economic theory, which predicts that negative real interest rates will not persist because consumers have incentives to bring forward their consumption.

Evidence from forward markets implies that government yields are expected to rise, although how quickly they will do so is uncertain.

Government bond yields have also been volatile in the post-crisis period, especially in recent months, due to speculation about the timing of withdrawal of the unconventional monetary policy measures. The volatility of these yields seems incompatible with the notion of a risk-free asset in cost of capital models.

Notwithstanding this uncertainty, there is generally greater consensus among regulators on the appropriate level of total expected market returns than on its individual components, the risk-free rate and the ERP. Furthermore, the sensitivity of the cost of equity to the exact split between the risk-free rate and the ERP is relatively small for companies with equity betas close to 1, such as those in the typical range assumed for regulated utilities

Based on a review of long-term historical market evidence and regulatory precedent, Oxera considers that a range of **6.5–7.0%** for the total real market return is appropriate. We propose to decompose the total market return in a way that is consistent with taking a long-term view of the data: on this basis, our analysis suggests a risk-free rate of **1.25–1.50%** and an ERP of **5.25–5.50%**.

A risk-free rate of 1.25–1.50% is materially above current spot government bond yields. We consider this to be a reasonable approach given the expected increase in interest rates over the duration of the licence, the exceptional influence of central banks on the level of interest rates, and the significant volatility in these rates. All of these factors suggest that an approach that places more weight on longer-run evidence is appropriate so as to ensure that long-lived investments can be financed over the forthcoming price control period.

4.1.1 Macroeconomic developments

Since the end of 2008, UK government bond yields have declined materially, with spot yields for five-, ten- and 20-year index-linked gilts as at 28 February trading at –1.1%, –0.3% and 0.1%, respectively (Table 4.1). A couple of factors have contributed to the reduction in gilt yields:

- interventions by monetary authorities in financial markets—in particular, the reduction in the base rate and the Bank of England's quantitative easing (QE) programme, which has put downward pressure on gilt yields. Bank of England research estimates that QE alone has reduced nominal gilt yields on average across a range of maturities by as much as 100–150bp;[46]
- flight-to-quality towards safer assets as a result of the EU sovereign debt crisis, which has increased demand for UK gilts.

Table 4.1 Real yields on benchmark UK government index-linked gilts (%)

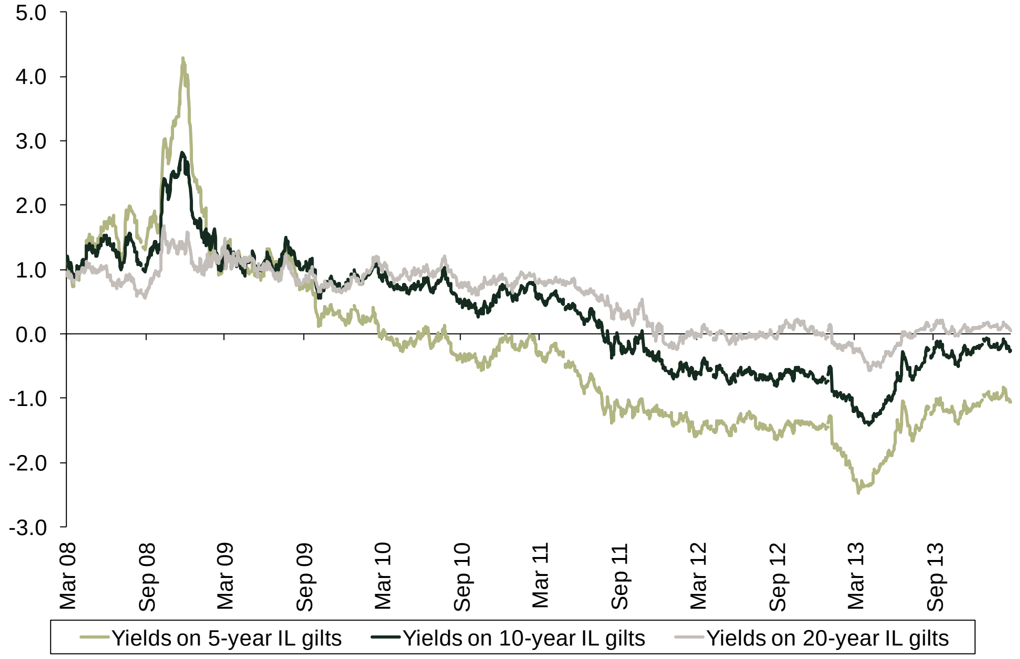
	5-year maturity	10-year maturity	20-year maturity
Spot	-1.1	-0.3	0.1
6-month average	-1.1	-0.2	0.1
10-year average	0.6	0.9	0.9
15-year average	1.2	1.3	1.3

Note: Data as at 28 February 2014.

Source: Oxera analysis of Bank of England data.

[46] Joyce, M., Tong, M. and Woods, R. (2011), 'The United Kingdom's Quantitative Easing Policy: Design, Operation and Impact', *Bank of England Quarterly Bulletin* Q3, 19 September, p. 209; and Bridges, J. and Thomas, R. (2012), 'The impact of QE on the UK economy – some supportive monetarist arithmetic', Bank of England Working Paper no. 442, January, p. 4.

Figure 4.1 Yields on index-linked gilts (%)

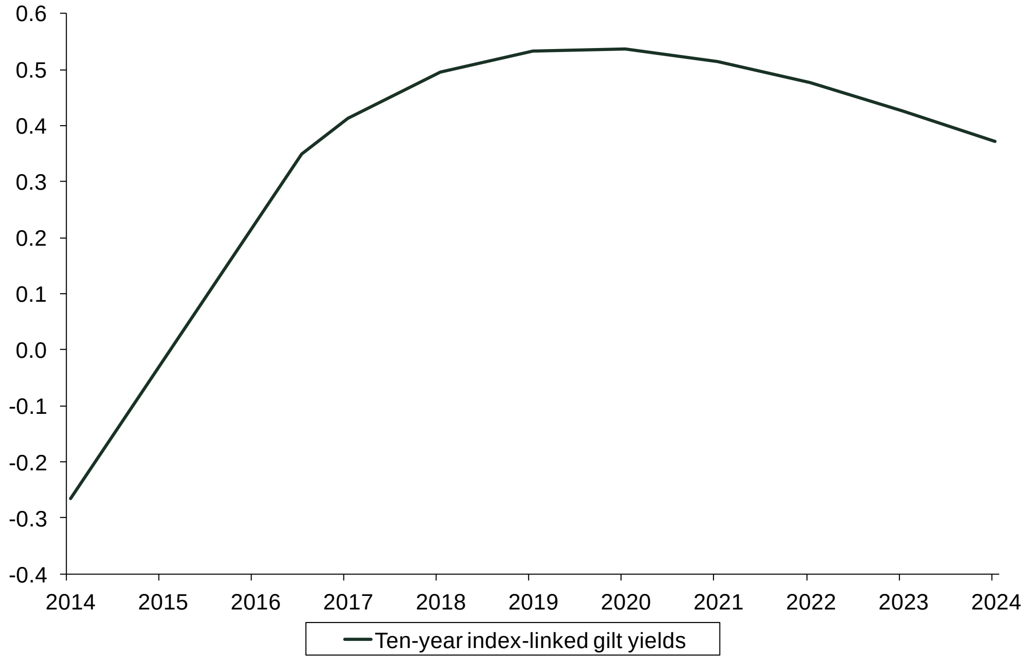


Note: Data up to 28 February 2014.

Source: Oxera analysis of data from the Bank of England.

However, yields have been increasing in recent months (Figure 4.1). This is also supported by evidence from forward markets, which implies that markets expect government bond rates to increase (Figure 4.2). The average real ten-year gilt yield over the duration of the prospective price control that is currently implied by forward markets is ~0.4%. This is 65bp higher than the spot real ten-year yield.

Figure 4.2 Implied real ten-year gilt yield



Note: As at 28 February 2014. ‘

Source: Oxera analysis of data from the Bank of England.

Government bonds have also been volatile since the crisis, especially in recent months, largely due to increased speculation about the timing of the withdrawal of some of the unconventional monetary policy measures that have tended to depress the level of interest rates.

4.1.2 Total equity market return

An approach to estimating the expected total equity market return is to consider the average long-run historical return. One of the most widely cited sources of historical evidence on market returns is the annual publication by Dimson, Marsh and Staunton (DMS), which estimates historical returns for 19 countries using data since 1900.

Using data from 1990 to 2013, the annual return on the UK stock market has averaged 7.2% and 5.3% on an arithmetic and a geometric basis respectively.[47] While there is debate around which is the most appropriate averaging method in any given context, the weight of opinion is in favour of using arithmetic averages when estimating required equity returns. Indeed, DMS (2014) themselves recommend the arithmetic average for use in 'asset allocation, stock valuation, and corporate budgeting applications'.[48]

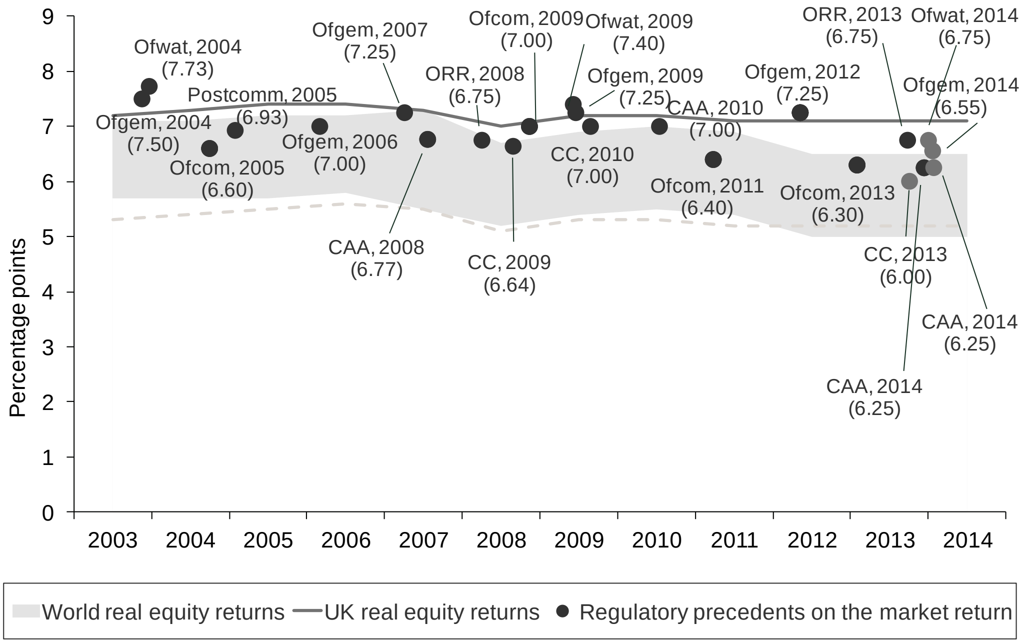
The use of the arithmetic mean ignores estimation error and serial correlation in returns. Unbiased discount factors have been derived that correct for both these effects. In all cases, the corrected discount rates are closer to the arithmetic than the geometric mean.[49]

In considering whether the historical return is an appropriate estimate of the forward-looking market return, DMS (2014) note that, after adjusting for non-repeatable factors of the past, such as the expansion in the price-to-dividends ratio, expected returns might be lower in the future.

As shown in Figure 4.3, recent regulatory decisions suggest a range of 6.00–7.25% for total allowed market return. The top end of this range is based on Ofgem's RIIO decisions (GD1 and T1), which used evidence dating back to 2010 and which apply to an eight-year price control. The low end of this range is based on the CC findings in the price control appeal by NIE, although these findings are provisional at this stage. Without the Ofgem and the CC precedent, regulatory decisions lie in the 6.30–7.00% range.

[47] Dimson, E., Marsh, P. and Staunton, M. (2014), 'Credit Suisse Investment Returns Sourcebook 2014', Table 2.
[48] Ibid., p. 34.
[49] Cooper, I. (1996), 'Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting', *European Financial Management*, **2**:2, p. 157.

Figure 4.3 Regulatory precedents on total equity market return



Note: ORR, Office of Rail Regulation. Grey dots denote initial proposals, not final decisions. The world and UK real equity market returns represent long-run historical averages based on the DMS database. The lower and upper bounds of the world and UK real equity returns represent geometric and arithmetic averages, respectively.

Source: Oxera analysis of regulatory determinations; Dimson, Marsh and Staunton (2014), 'Credit Suisse Investment Returns Sourcebook 2014'.

Taking into account both long-run historical evidence and recent final regulatory determinations, Oxera considers 6.5–7.0% to be an appropriate range for the total expected market return.

4.1.3 Decomposing the total market return

Recent movements in capital markets, and specifically in government bond yields, have been difficult to interpret as these movements have been heavily influenced by macroeconomic policy. This is why Oxera recommends decomposing the total market return in a way that is more consistent with longer-run evidence in this context.

Risk-free rate

Regulatory precedent suggests that UK regulators have taken into account the decline in yields by gradually reducing risk-free rate allowances, but have also consistently set the risk-free rate above spot market rates (see Figure 4.4 below). This mainly reflects the volatile nature of government bond yields and the effects of central bank intervention.

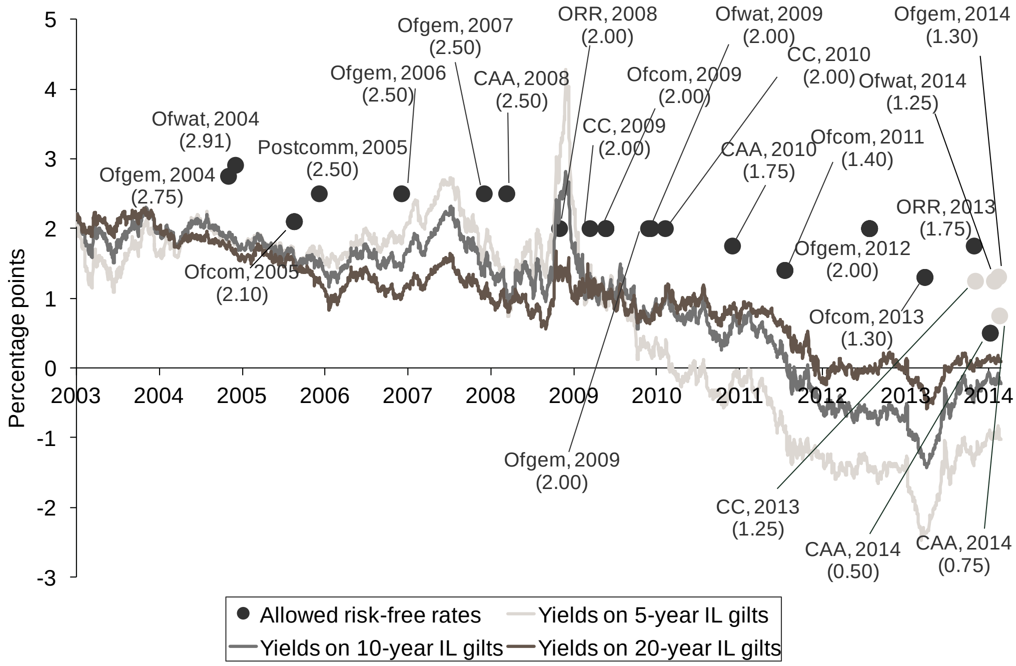
In the current market environment, it is appropriate to set the regulatory allowance for the risk-free rate higher than the spot yield in order to reflect the uncertainty over future levels of the risk-free rate, and hence the required return on equity.

- This reflects the asymmetry around the future path of interest rates, with a much greater probability of interest rates rising than falling over the duration of the low-pressure licence.

- Government bond yields have been volatile and continue to be heavily influenced by the uncertainty about future monetary policy rather than economic fundamentals.
- The long-lived nature of investment in the gas industry means that the risk of creating an underinvestment problem is an important consideration for the regulator. This is especially important when regulators have an explicit financing duty.

On the basis of these considerations, we propose a range for the real RFR of 1.25–1.50%. This range is broadly in line with regulatory precedent and longer-run evidence.

Figure 4.4 Allowed real risk-free rate and index-linked gilt yields



Note: Grey dots denote initial proposals, not final decisions. In determinations where the regulator sets a nominal rate of return (e.g. Ofcom), a real risk-free rate has been estimated using inflation assumptions reported by the regulator.

Source: Oxera analysis of regulatory documents, and data from Datastream.'

Equity risk premium

A range for the ERP of 5.25–5.50% would be consistent with the proposed total market return and risk-free rate ranges. This range is broadly in line with historical evidence and regulatory precedent, and is lower than forward-looking estimates. This is consistent with taking a longer-term view of capital market parameters.

Historical evidence

Table 4.2 presents the latest historical ERP estimates from DMS for the UK. Based on arithmetic averages, DMS estimates of the ERP in the UK lie between 5.0% and 5.2%. For geometric averages, the range is 3.6–3.9%. As explained in section 4.1.2, in a regulatory context it is appropriate to place greater weight on arithmetic averages.

Table 4.2 Dimson, Marsh and Staunton's ERP estimates for the UK (%)

	Geometric	Arithmetic
1900–2013	3.9	5.2
1900–2012	3.7	5.0
1900–2011	3.6	5.0
1900–2010	3.9	5.2

Note: The ERP is estimated relative to bonds.

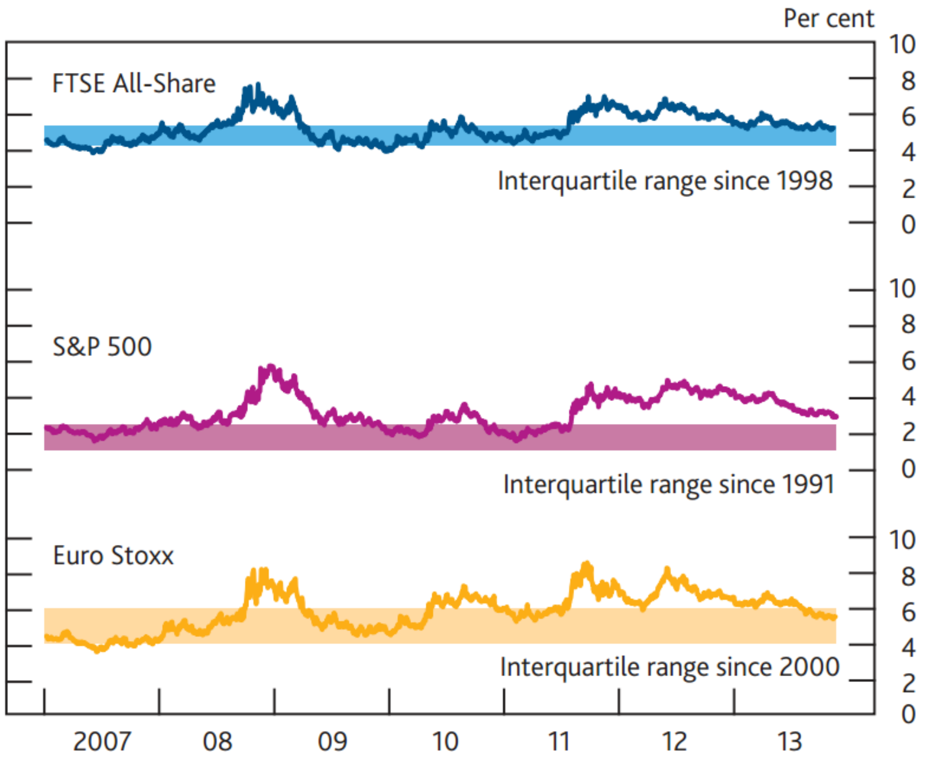
Source: Oxera analysis of Dimson, Marsh and Staunton.

Forward-looking evidence

Although historical estimates represent the best source of data available for the realised ERP, this approach is inherently backward-looking. Forward-looking models can provide a useful cross-check on the historical estimates.

Figure 4.5 shows the forward-looking estimates of ERP from a multi-stage DGM produced by the Bank of England.[50]

Figure 4.5 Bank of England estimates of the ERP



Source: Bank of England (2013), 'Financial Stability Report', November.

The estimates of the ERP produced by the Bank of England have been consistently above 5% since 2011.

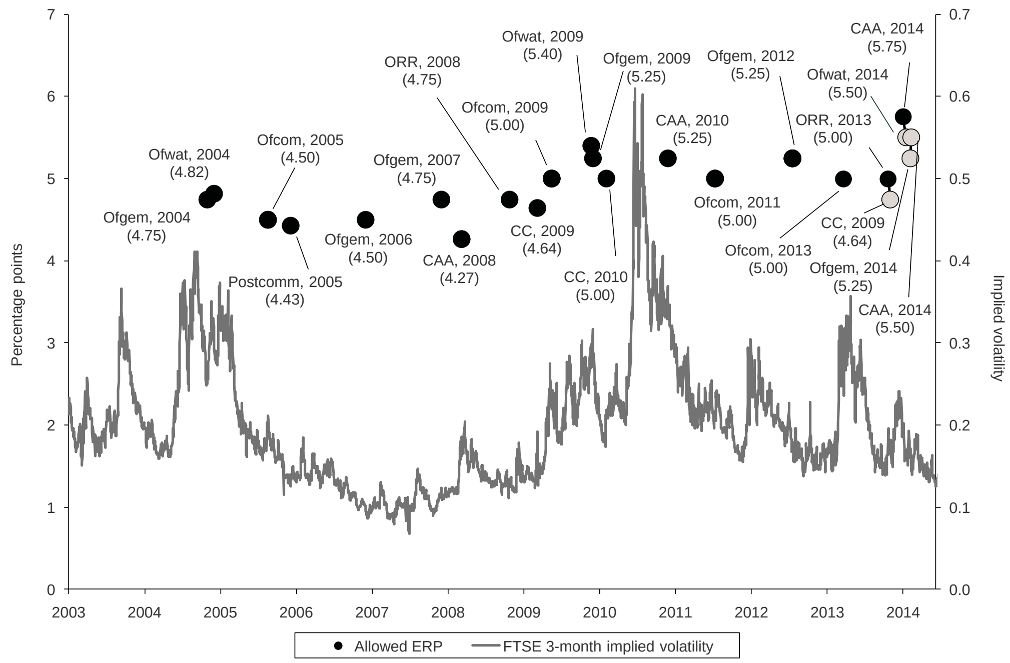
[50] These estimates are produced using a variant of the multi-period dividend growth model. In the near-to-medium term, dividend growth is proxied by earnings growth based on consensus earnings forecasts from the Institutional Brokers' Estimate System (IBES). The long-term growth rate is equal to an estimate of the potential growth of the economy. As the risk-free rate measure, 'rates inferred from zero-coupon government bond yield curves at maturities up to ten years' are used. Inkinen, M., Stringa, M. and Voutsinou, K. (2010), 'Interpreting equity price movements since the start of the financial crisis', *Bank of England Quarterly Bulletin*, **50**:1, pp. 24–33.

Consistent with the proposed approach of taking a longer-term view of the market parameters, we place less weight on these forward-looking estimates.

Regulatory precedent

Recent regulatory determinations on the ERP have been in the range of 4.50–5.75% (see Figure 4.6). However, the ERP of 5.75% used by the CAA is combined with a lower risk-free rate assumption than those of other regulators. The total market return assumed by the CAA is 6.25%. The lower end of the range of 4.50% is based on the provisional CC findings for NIE.

Figure 4.6 Allowed ERP and equity market volatility



Note: Grey dots denote initial proposals, not final decisions. In determinations where the regulator sets a nominal rate of return (e.g. Ofcom), a real risk-free rate has been estimated using inflation assumptions reported by the regulator.

Source: Oxera analysis of regulatory determinations, and data from Datastream.

Summary

Overall, historical estimates of the ERP suggest a value no lower than 5.0% based on arithmetic averages. Forward-looking models suggest estimates above 5.0%. Given the uncertainty in equity markets, regulatory estimates of the ERP have generally increased since the start of the financial crisis, with more recent final determinations suggesting a range of 5.00–5.75%.

This evidence confirms that the ERP range of 5.25–5.50% that is consistent with the proposed total market return and risk-free rate ranges is appropriate. This ERP range is broadly in line with historical ERP evidence and regulatory precedent, and is lower than forward-looking ERP estimates. This is consistent with the proposed approach to emphasising a longer-term view of the data.

4.2 Asset beta

As previous determinations were settled through negotiations between Utility Regulator on one side and FE and PNGL separately on the other, Oxera does not have any close precedents to build up a WACC using the CAPM.

Our approach therefore revolves around the GB regulatory precedents in transmission and distribution (RIIO-T1 and RIIO-GD1). While Ofgem does not report asset betas directly in its determinations, the asset beta for each business can be calculated from the gearing and equity beta estimates.[51] Table 4.3 summarises the equity beta, gearing level, and implied asset beta for each of the Ofgem regulated utilities.

Table 4.3 Implied asset beta by business

	Equity beta	Gearing (%)	Implied asset beta
RIIO-T1 (NGGT)	0.91	62.5	0.34
RIIO-T1 (NGET)	0.95	60	0.38
RIIO-T1 (SHETL)	0.95[1]	55	0.43
RIIO-T1 (SPTL)	0.95[1]	55	0.43
RIIO-GD1 (industry)	0.90	65	0.32
Average			**0.38**

Note: [1] Equity betas are also implied for SHETL and SPTL from the post-tax cost of equity, risk-free rate, and ERP.

Source: Oxera analysis of Ofgem (2012), 'RIIO-T1: Initial Proposals for National Grid Electricity Transmission plc and National Grid Gas plc, Initial Proposals', Finance Supporting document, 27 July; Ofgem (2012), 'RIIO-GD1: Initial Proposals', Overview Consultation, 27 July.

Oxera considers that the asset beta for the GtW project lies in the **0.43–0.45** range, for the following reasons:

- the more CAPEX-intensive end of the Ofgem precedents (SHETL/SPTL): the nature of the GtW project is more similar to the CAPEX-intensive projects being undertaken by SHETL and SPTL to expand their respective networks than the replacement programmes being undertaken by the GB GDNs. This leads to a higher TOTEX-to-asset-value ratio, raising the riskiness of the project;

- allowance for NI risk and the additional risks of the GtW licence compared with GB utilities, principally the price-cap instead of the revenue-cap regulatory model and the associated profile adjustment;

- allowance for debt beta: with a proposed gearing level of 55% and the underlying risk of the project, we consider that debt will not be risk-free and the true debt beta is likely to be small and positive. For the same asset beta, the higher the risk undertaken by debt investors in financing the company's assets, the higher the debt beta.

4.3 Debt beta

A debt beta of 0.1 is assumed, which we then apply consistently in the asset beta calculation and in calculating a levered equity beta.

4.4 Debt premium

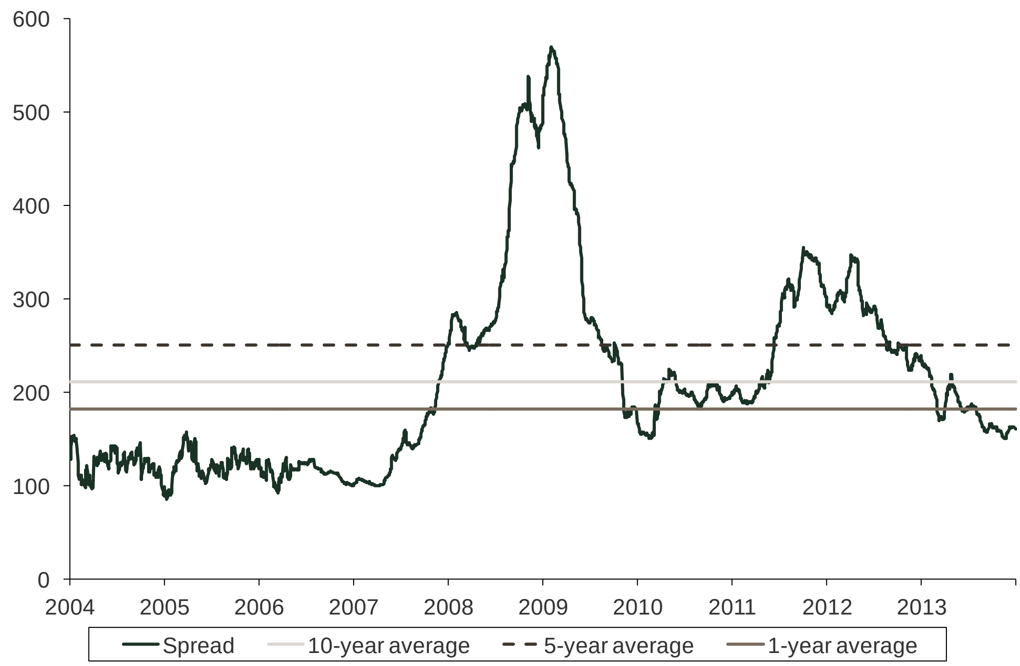
The next step is to estimate a debt premium to add to the risk-free rate in order to compute the appropriate pre-tax cost of debt. Given the small size of the project, it may be more realistic to assume financing through bank debt instead of bonds. However, analysis of bond yields can be used as a proxy measure of the cost of debt for a given level of risk and credit rating.

[51] β_A = (1 - gearing) * β_E + gearing * β_D. Ofgem assumes debt beta to be zero.

PNGL has a condition in its licence to maintain an investment-grade credit rating. FE does not have such a condition, but an investment-grade credit rating is targeted by the Utility Regulator nevertheless.[52] There do not seem to be any such conditions for the prospective low-pressure licence; however, we assume that a BBB credit rating (i.e. the lowest investment grade) would be a reasonable estimate for the low-pressure licence-holder.

As such, we estimate the low-pressure licence-holder's debt premium by looking at the yield spreads of UK BBB rated non-financial corporate bonds relative to gilts.[53] Figure 4.7 illustrates these spreads for the ten years ending 28 February 2014.

Figure 4.7 Spreads on BBB rated corporate bonds, 7–10 years (bp)



Note: Ten-year average, ~210bp; five-year average, ~250bp; one-year average, ~180bp.

Source: Oxera analysis of data from Datastream.

Figure 4.7 shows that the spreads on BBB rated corporate bonds increased substantially during the most recent financial crisis, before falling sharply back in its aftermath. More recently, the spreads have been on a downward trend for more than a year, and are currently moving back towards their pre-2007 levels. We estimate the forward-looking spread for BBB rated bonds as a range of **160–210bp**. The lower end of this range reflects the spot spread as at 28 February 2014, while the top end is the ten-year average spread on these bonds. To this, the **25–50bp** NI-specific risk premium on debt is added, as estimated in section 2.8.1, and 20bp for issuance costs to obtain a total debt premium of **205–280bp**.[54]

[52] Utility Regulator (2013), 'GD14 Price Control for Northern Ireland's Gas Distribution Networks for 2014-2016', Final Determination, 20 December, paras 13.18–19.
[53] The spread is defined as the spread over and above the United Kingdom Total 7–10 Years Datastream Government Index benchmark yield.
[54] Competition Commission (2014), 'Northern Ireland Electricity Limited Price Determination', Final determination, 26 March, pp. 13–15-16.

4.5 Gearing

A notional gearing level of 55% is adopted, based on RIIO-T1 (SHETL/SPTL), due to their relatively high CAPEX required to expand the networks and for consistency with the asset beta assumption.[55]

4.6 Tax rate

A corporate tax of 20% is assumed, based on the UK corporate tax rate that will apply from April 2015.

4.7 Inflation

An RPI inflation forecast of 3% is used, based on the Bank of England implied inflation.[56]

4.8 Summary CAPM WACC (Years 6–10)

In light of the above, Oxera considers that the appropriate real pre-tax WACC lies between the **5.3–6.3%** range. Table 4.4 summarises these results.

Table 4.4 Real pre-tax WACC, years 6–10 (%)

		Low	High
Real RFR	[1]	1.25	1.50
BBB rated spread	[2]	1.6	2.1
Issuance premium	[3]	0.2	0.2
NI premium	[4]	0.3	0.5
Real pre-tax cost of debt	[5]=[1]+[2]+[3]+[4]	3.3	4.3
Asset beta	[6]	0.43	0.45
Gearing	[7]	55	55
Debt beta	[8]	0.1	0.1
Implied equity beta	[9]=([6]-[7]*[8])/(1–[7])	0.8	0.9
ERP	[10]	5.25	5.50
Real post-tax cost of equity	[11]=[1]+[9]*[10]	5.6	6.3
Inflation	[12]	3.0	3.0
Nominal post-tax cost of equity	[13]=(1+[11])*(1+[12])-1	8.8	9.5
Tax rate	[14]	20	20
Nominal pre-tax cost of equity	[15]=[13]/(1-[14])	11	12
Real pre-tax cost of equity	[16]=(1+[15])/(1+[12])-1	7.8	8.6
GtW real pre-tax WACC, years 6–10	**[17]=[16]*(1-[7])+[5]*[7]**	**5.3**	**6.3**

Note: As a sensitivity check, we have also estimated the GtW WACC assuming a notional gearing level of 60%. The results are insensitive to the choice of gearing: the WACC range remains 5.3–6.3%, as the cost of equity increases with the level of gearing.

Source: Oxera analysis.

[55] Ofgem (2012), 'RIIO-T1: Final Proposals for SP Transmission Ltd and Scottish Hydro Electric Transmission Ltd', Final decision – Overview document, 23 July.
[56] This is the average of the five- and ten-year maturity one-year averages ending on 28 February 2014.

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