

Chief Minister's Gas Regulatory Review Committee

Report

**Cabinet Office
February 2019**

Foreword by Chief Minister

I thank my Committee for its work. The 2015 Regulatory Agreement was a first step in regulating gas on the Isle of Man. It is right that we have now reviewed the agreement's effectiveness and the protection it provides to gas consumers. The Committee's report clearly shows the need for tightening the agreement and we need to renegotiate the agreement urgently.

The Manx public has my personal assurance that the recommendations will be taken forward post-haste; and I hope that Manx Gas recognises that negotiations need to be concluded as swiftly as possible to ensure that Manx Gas customers get the best possible deal.

**Hon Howard Quayle MHK
Chief Minister**



Foreword by Chair



The Committee thanks the Chief Minister for the opportunity to examine this important matter, and is grateful for the cooperation and goodwill it has received from the various parties to the Regulatory Agreement and other stakeholders during preparation of the report.

We sought to engage and look afresh at a range of issues in respect of policy regarding the regulation and supply of gas in the Isle of Man. This concluding report captures and analyses the various submissions and independent analysis, and presents the committee's conclusions with recommendations.

As is clear from the report's conclusions, the concerns that were held by some when the regulatory agreement was being put in place can now be seen as valid concerns. A new regulatory agreement – with better mechanisms and governance – is needed as soon as possible. This means that negotiations for a fairer charging structure for gas customers should be concluded urgently.

I hope Manx Gas and its owners will enter into negotiations in the spirit in which they have participated in this review. Mr Ian Plenderleith (group managing director of IEG, Manx Gas's parent) was right that it was important for Manx Gas to:

"Stand back and listen to the concerns of both the public and MHKs and understand the problems and details" before deciding on next steps "to achieve a charging structure customers understand and which is fair to them and the gas they are using"¹.

¹ Friday 9 March 2018, IOM Today, ['Manx Gas boss Ian Plenderleith speaks about his vision for the business'](#)

But now is the time for action to put in place a fairer charging regime and better arrangements.

As Mr Plenderleith said:

"If Manx Gas doesn't stand comparison with the best utility companies in the UK in the next two years I will be disappointed²".

I commend the conclusions and recommendations in this report to the Chief Minister, Council of Ministers, Tynwald Members and the wider public.

The Committee recommends that:-

- i. This report is published immediately;**
- ii. Council of Ministers mandates Cabinet Office, Treasury and HM Attorney General's Chambers, supported by external technical regulatory expertise, to take forward negotiations with Manx Gas to establish a new voluntary regulatory agreement that conforms to UK regulatory best practice and includes:**
 - A flat rate standing charge for domestic customers with more control over standing charges and gas tariffs. Consideration should be given to offering more than one pricing package,**
 - A rate of return in any future regulatory agreement should be significantly lower than the current rate. This rate of return should be open to review in line with changing economic circumstances and business risks;**
 - A revised reimbursement mechanism in order to repay customers sooner and more fairly; and**
 - Regulation of 'non-price factors', including customer service and measures to mitigate fuel poverty.**
- iii. The new gas pricing and regulatory arrangements should include the evolving policy response to decarbonisation, and should be integrated into any new regulatory approach.**

**Hon Chris Thomas MHK
Minister for Policy and Reform**

² *Ibid*

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1. INTRODUCTION

- 1.1 The Chief Minister's Gas Regulatory Review Committee was established on 30 October 2017 as a Committee by the invitation of the Chief Minister.
- 1.2 The purpose of the Committee is to consider and provide recommendations and policy advice to the Chief Minister in respect of policy on gas regulation and supply.
- 1.3 The Chief Minister commissioned the Committee to review the current agreement between Manx Gas Limited and the Office of Fair Trading, Treasury and Department for Environment Food and Agriculture and consider the following questions:
 - a. Whether the current regulatory agreement offers a good deal for consumers?
 - b. What alternatives to the current regulatory agreement there might be?
 - c. Whether the profits made by Manx Gas are fair?
 - d. Comparisons to other, similar jurisdictions?
- 1.4 In order to answer the questions above the Committee has reviewed information about the evolution of the regulatory agreement, considered submissions from numerous stakeholders and commissioned a review from independent experts specialising in economic regulation.

2. BACKGROUND

- 2.1 [Manx Gas Ltd](#) is part of the International Energy Group (IEG) which also owns the gas undertakings in Jersey and Guernsey and which is owned by [Ancala Partners](#).
- 2.2 In 2015, the Department of Economic Development³, the Treasury and the Office of Fair Trading (OFT) signed an agreement with Manx Gas that was intended to provide 'light touch' regulation of the Isle of Man gas market.
- 2.3 The voluntary [regulatory agreement](#), dated 24 April 2015, fixes the profitability of Manx Gas at a Return on Capital Employed (ROCE). The agreement is subject to review every five years but includes a clause which allows either party to give 6 months' notice for termination of the agreement after four years.
- 2.4 The regulatory agreement states that Manx Gas sets prices intended to achieve an annual ROCE of 9.99%. This profit percentage and calculation methodology is set using procedures laid down in schedules to the agreement.
- 2.5 Manx Gas is obliged to keep detailed records of the actual cost incurred on an "open book" basis with strict confidentiality, providing specified information to either the OFT or the Treasury whenever reasonably required for the purposes of verification.

³ The Department of Economic Development became the Department for Enterprise in November 2017. The vires for the Department of Economic Development being a signatory came from its energy policy role; which in November 2017 passed to the Department of Environment, Food and Agriculture.

- 2.6 The regulatory agreement is silent on the level, numbers and types of tariffs and on the amount and method of determining standing charges to be levied on consumers. Manx Gas introduced a system of banded standing charges in October 2015.
- 2.7 Variance between the target ROCE and adjusted or actual ROCE is calculated annually and determines the amount that needs to be recovered or repaid to consumers for Manx Gas to achieve the agreed target ROCE.
- 2.8 The under and over recovery mechanism specified in the agreement is for recovery of each annual variance equally over the following three years by adjusting the standing charges. The agreement specifies that the variance is allocated across Manx Gas's customer base, but is silent about how this is done. Moreover in practice tariff changes have been made during each year which has also affected earnings before interest and taxes (EBIT) and ROCE for the year.
- 2.9 The voluntary agreement has roots in both the public investment in the extension of the natural gas network in 2010 and as an alternative to a statutory sectoral regulator regime as previously envisaged.
- 2.10 Government investment in the natural gas network was underpinned by agreement with Manx Gas that the Government would recoup the cost of the capital infrastructure over 40 years through capital charges levied by the system operator (the statutory board, the Manx Utilities Authority). The charges include financing at 6.0% per annum. Further information on the charging relationship for the provision of gas between Manx Gas and the Manx Utilities Authority is included as Annex 3.
- 2.11 The price of gas has been subject to investigation previously under the provisions of the Fair Trading Act 1996; these investigations were carried out in [2000](#), [2007](#) and [2008](#). Further research was commissioned jointly by the Office of Fair Trading and the former Department of Economic Development on possible models of regulation. However the decision was taken to embark on the form of voluntary regulation in existence today.
- 2.12 The Committee noted the significant public dissatisfaction over the current cost of domestic gas; perceived unfairness of the banded standing charge system; and perception that the regulatory agreement and system is not serving the interests of customers.

3. GOVERNANCE

3.1 The Committee was established by the Chief Minister as a standalone Committee on 30 October 2017⁴. In the carrying out of its work, the Committee has invited relevant stakeholders, Departments, Boards and Offices to participate through meetings or written submissions.

3.2 The membership of the Committee comprises:

Hon C C Thomas MHK, Minister for Policy and Reform (Chair)⁵
Mrs C A Corlett MHK, Member for the Department of Health and Social Care and Department of Education, Sport and Culture,
Mr L L Hooper MHK, Member for the Department for Enterprise and Department of Education, Sport and Culture.

3.3 The Committee has been supported in its work by officers from Cabinet Office and Treasury.

4. SUBMISSIONS

4.1 The Committee has considered submissions, both through meetings and in writing, from a wide range of relevant stakeholders. These included:

Manx Utilities Authority (MUA)

4.2 The Committee met with the Chief Executive, Director of Finance, and Energy Trading Optimisation Manager to consider the MUA's involvement and approach to energy markets including natural gas. In summary information was provided on:

- The gas pipeline, spur and interactions with Bord Gáis Éireann and connected entities.
- Past programmes of network extension, including interface points, capital costs, funding and ancillary accounting matters.
- Seasonal variation in network usage.
- Gas purchases by Manx Gas and transmission payments at entry/exit. Network and throughput charges are also paid to the MUA on a "pass through" basis.
- Onshore downstream contracts with Manx Gas were noted, alongside extension charges, and gas supply costs.
- The Committee queried the regulatory structure regarding the hypothetical entry of a new gas supplier to the market. It was noted that the MUA cannot sell gas to another gas supplier unless the entity was considered a 'Public Gas

⁴ GRRC Minute number 04/17 refers

⁵ Following the appointment of Hon D Ashford MHK as Minister for Health and Social Care.

Supplier' under the Gas and Electricity Act 2003 and appropriate statutory requirements were also met.

- The Committee also noted the perceived benefits of competition from an external perspective, but noted the regulatory issues surrounding this, particularly on third party access to Manx Gas's infrastructure.
- The Committee queried how the MUA arrived at the rates charged to Manx Gas. MUA representatives advised that this was revisited at set junctures and that Manx Gas' contributions would be reassessed for proportionality in 2023 after the lease expired.

Isle of Man Office of Fair Trading (OFT)

4.3 The Committee met with the OFT Director and Chairman and received information about OFT's engagement with Manx Gas Limited in respect of the regulatory agreement. In summary:

- The OFT advised that the present arrangement did not interfere with the internal workings of the company (Manx Gas Limited) but delivered the required outcomes, as per the Regulatory Agreement.
- Regarding ROCE, the OFT advised of the rationale for the present calculation and that Treasury were kept regularly updated in line with reporting requirements.
- The OFT explained there was a "bridge" to the original 2007 regulatory arrangements in respect of the 2015 update.
- The OFT advised that the market remained in line with projected modelling, noting the specifics of an Island location.
- The Committee queried how ROCE was calculated, and how the OFT assessed figures that comprised this. The OFT advised that this was arrived at by categorisation, in line with the relevant accounting standards, taking account of capital calculations, and that the Treasury would be in a position to advise further. The OFT received quarterly management accounts which evidenced this in practice.
- Regarding affordability, the OFT referenced the OFT Debt Counselling Service quarterly statistics and consumer assistance with budgeting and advice.

Graih (Homelessness Charity)

4.4 The Committee met with a representative from Isle of Man charity Graih. The Committee received a substantive overview of vulnerable sections of the Isle of Man community. In summary, this noted:

- Background detail on the work of Graih and linkages to certain aspects of fuel poverty, as experienced by those individuals assisted by Graih.
- The Committee queried if fuel/gas poverty was something Graih had seen as a regular occurrence for vulnerable people. Graih advised that they assisted

clients who frequently had fuel poverty concerns due to numerous factors, including financial and budgeting difficulties and individual personal circumstances.

- Graih advised that gas was used by the majority of Graih clients in bedsits, houses with multiple occupation etc.
- Graih advised of an increase in the number of clients experiencing difficulty raising the gas supply deposit. Cited circumstances where clients were not using gas to heat accommodation – due to concerns about exceeding their budgeting, and due to existing arrears.
- Graih advised there is a need for greater understanding when dealing with vulnerable consumers, and that vulnerable consumers may have difficulty with reading and writing, and be intimidated by correspondence.
- Graih cited the valuable work of the Salvation Army (Isle of Man) in respect of a “Fuel Deposit Scheme” and the work of the Office of Fair Trading’s Debt Counselling Service in assisting vulnerable consumers approaches to suppliers, and with structured payment plans.
- Suggested that suppliers might allocate specially trained staff /welfare officers to assist vulnerable consumers.

Manx Gas Standing Charges Protest Group

4.5 The Committee met with representatives from the Manx Gas Standing Charges Protest Group – a group comprised of concerned consumers. The Committee received an overview of the reasons why the group had been formed, its interaction with Manx Gas, and its concerns. In summary:

- The group had been active on social media and with public protests, which suggested a level of public concern and interest on this topic.
- A representative queried the availability of information and transparency in respect of gas regulation and pricing; citing the existing regulatory agreement and banding charges, and querying whether price reflected usage.
- A representative considered that consumers would be empowered by more choice and transparency; and suggested that increasing the range of tariffs and structures might enable consumers to choose a model that better suited their individual needs.
- A representative queried the rate of return on capital and ‘de-risking’ and considered that consumers appeared to ‘bear risk’.
- A representative raised the income of vulnerable consumers and the financial outlay requirement for gas, which they considered required redress.
- A representative advised their primary concern centred on the public perception of ‘unfairness’ and variance in charging, particularly around the standing charges.

- A representative advised of the difficulties faced by those seeking to move from gas to another heating source, with cost representing a barrier to low income households.
- A representative considered that the balance between standing charges and usage required review, citing the example of standing charge payments in summer, despite not consuming gas.

4.6 The Committee noted there is significant public disquiet over the current cost of domestic gas, with an impression that it is more expensive, and that the regulatory agreement is potentially no longer providing consumers with a perceived fair deal.

The Salvation Army (Isle of Man)

4.7 The Committee received written evidence from the Captain of the Salvation Army (Isle of Man) in respect of fuel poverty. The Committee received the charity's Community Relief and Fuel Payment statistics. In summary, the submission noted:

- That the Salvation Army (Isle of Man) would support a reduction in the gas deposit from £250 to half of this.
- That the Salvation Army (Isle of Man) has a scheme with Manx Gas in that if a person is referred to the charity, it can pay their bond, which is then refunded after the deposit period (if the account is not in debt).
- On gas bills, the Salvation Army (Isle of Man) suggest that the contact details of the Office of Fair Trading Debt Counsellors are included for people in difficulty, noting referrals for help with gas come from them, but often the situation arises when a person has already got into debt, rather than before.

The Douglas Coal Fund

4.8 The Committee received written evidence from the Douglas Coal Fund in respect of fuel poverty and the work of the charitable fund. In summary, the submission noted:

- The Fund provides time-limited vouchers which can be used in payment of all types of fuel. These are given to those who are resident in Douglas, and in some surrounding areas, and who qualify for assistance.
- The Fund provides one voucher per household, per month, from November to March, with five maximum (but do not always make a distribution in March).
- The Fund does not specify what type of fuel the vouchers should be used for, so those receiving vouchers can use them for coal, logs, oil, gas or electricity.

Manx Gas Limited

4.9 The Committee met with representatives of Manx Gas Limited (Managing Director, Director of Corporate Affairs, and representative of Ancala Partners LLP). The Committee received an overview of the corporate structure and regulatory agreement. In summary:

- Ancala Partners LLP representative advised that it was a fund manager with a long term investment strategy. The IEG was one of the firm's largest investments, alongside bioenergy projects, green technology ventures and traditional utilities provision.
- Manx Gas noted the fluctuation of gas pricing.
- It also suggested the different risk profile of the UK gas distribution network and the Isle of Man situation.
- Manx Gas representatives identified the following key areas for internal future improvement by the company going forward:
 - Measurable customer service standards;
 - Further tariff structure simplification;
 - Natural gas extension programme;
 - Network safety measures; and
 - Reliability/resilience of infrastructure measures.
- The Committee was advised that the following areas were being looked into by Manx Gas to assist these goals:
 - Community obligations, fuel poverty, social/vulnerable persons aspects;
 - Carbon monoxide awareness raising projects;
 - Increased Corporate Social Responsibility; and
 - Performance standards with macro level indicators.
- Manx Gas representatives noted that the standing charge was potentially perceived as too complex, and recognised that it had not been well received by consumers.
- Manx Gas representatives undertook to listen and further build on communication; with clearer tariff structures and customer comprehension.
- Manx Gas representatives noted that banding standing charges were implemented before Ancala Partners LLP's acquisition of Manx Gas, and that the company remained 'open minded' as to future solutions.

5. INDEPENDENT ECONOMIC ANALYSIS

- 5.1 The Committee agreed that it required specialist expertise in reviewing whether the current regulatory agreement offers a good deal for consumers, what alternatives to the current regulatory agreement there might be, whether the profits made by Manx Gas are fair and comparisons to other similar jurisdictions.
- 5.2 The Committee specified a detailed scope of work in a "Terms of Engagement" to deliver technical support. This was procured by obtaining quotations from economic consultancies specialising in the energy regulatory field.
- 5.3 NERA Economic Consulting (NERA) was commissioned, and has provided the Committee with substantive independent analysis and support.
- 5.4 NERA was provided with a range of evidence collated by the Committee, including relevant documentation from the Isle of Man OFT and Manx Gas Limited.
- 5.5 The full report by NERA is appended as Annex 1.
- 5.6 Manx Gas was provided with the draft of the NERA report in order to comment on factual accuracy. Following this, NERA produced the final version of their report.
- 5.7 In the interests of balance Manx Gas has been afforded opportunity to comment on the final version of the report. Manx Gas's response document is included as Annex 2.

6. RESPONSE TO QUESTIONS

- 6.1 At its outset the Committee was tasked by the Chief Minister to answer four questions. Each of these questions will now be considered.

Whether the current regulatory agreement offers a 'good deal' for consumers?

- 6.2 The Committee has reflected at length as to whether the current regulatory agreement offers a 'good deal' for consumers, and considers that whilst it delivers the provision required, there nonetheless remains an ongoing public perception that consumer disadvantage remains.
- 6.3 The representations of gas consumers have been carefully considered by the Committee, with particular regard to wider comprehension of pricing structures and accessibility of tariffs.
- 6.4 On balance, the Committee finds that the agreement broadly operates in line with expectations and adheres to mutually agreed outcomes. However, the Committee recalls that the 2015 agreement represented the first exploratory steps in a regulatory framework for the Island's gas market. Prior to this, the Committee notes that no other comparable structure existed, other than arrangements regarding the Fair Trading Act 1996 process. As of 2019, the context for regulatory oversight in both the Isle of Man, and elsewhere, has continued to mature, and the Committee therefore considers there now exists an opportunity to look afresh at the agreement's efficacy and operational effectiveness going forward.
- 6.5 At the Committee's invitation, NERA has considered whether recent changes to the charging structure (i.e. the standing charge) for consumers were equitable –

assessing this by comparing the Manx Gas structure of charges to other comparable jurisdictions⁶. NERA has advised that the proportion of charges recovered through the standing charge element is higher than UK, but lower than comparable Isles.

- 6.6 In Section 3⁷ of its report, NERA has assessed Manx Gas' target ROCE relative to allowed returns set by UK regulators at recent reviews, and assessed whether profits made by Manx Gas under this agreement are 'fair'.
- 6.7 The Committee has reviewed NERA's assessment and considers that the agreement may have benefited from further strengthening in this area at the outset.
- 6.8 On the issue of standing charges, NERA advised the Committee that:

"In 2016, Manx Gas changed the structure of its standing charges from a single fixed charge to banded standing charges. Our analysis shows that the effect of these changes was to increase some customer bills by up to around £100 per annum, and decrease some customer bills (and notably those relatively few customers with high consumption) by up to £250 per annum, although the number of customers experiencing such changes will be very small, e.g. there are only around 300 customers with annual consumption greater than 30,000 kWh where the greatest incidence effects are felt. Under the regulatory arrangements, there is no overall net effect on the revenues recovered by Manx Gas⁸".

- 6.9 In light of the above, on balance, the Committee concludes that the current regulatory agreement – in the context of 2019 – cannot be said to offer the perception of an ongoing 'good deal' for consumers going forward.

What alternatives to the current regulatory agreement there might be?

- 6.10 In considering what alternatives there might be to the regulatory agreement, the Committee notes that the case for alternative regulation is finely balanced.
- 6.11 In section 5 of its report, NERA has provided an overview of the different forms of regulation, including incentive based and cost of service (or "rate-of-return" regulation) noting that "incentive regulation promotes cost efficiency but [with] higher regulatory costs⁹ "
- 6.12 NERA's analysis has also comprised assessment of the Cost of Service Regulation, the GB RIIO¹⁰ framework, price control reviews, and an overview of revenue setting / building blocks.
- 6.13 NERA advises that Ofgem¹¹ have introduced reforms to their framework, including moving to a low carbon energy sector, and have provided the Committee with

⁶ 2018 12 10, *Review of Gas Regulation in the Isle of Man*, NERA Economic Consulting, s4, p. 25-35.

⁷ *Ibid*, p.12

⁸ *Ibid*, Executive Summary (iii), p.11

⁹ *Ibid*, p.36

¹⁰ RIIO (Revenue=Incentives+Innovation+Outputs), Ofgem's (UK Office of Gas and Electricity Markets) performance-based framework to set network price controls. <https://www.ofgem.gov.uk/network-regulation-riio-model>

commentary on incentive based models and reflection on the Jersey and Guernsey Gas sector, noting that Jersey Electricity has informal regulation, whilst Guernsey Electricity (GEL) is state-owned.

- 6.14 As NERA advises, *'...the Gas sector in Guernsey is not subject to economic regulation. The Guernsey Gas company is the monopolist supplier on the island and is owned by IEG, as is the case in Jersey. In both Jersey and Guernsey, gas is transported to the island on container ships, before being pumped into a network to serve end customers on the Island'*¹².
- 6.15 At the request of the Committee, reference was made to the Isle of Man's regulatory activities in the telecoms sector alongside consideration of other potential optimal forms of regulation.
- 6.16 In summary, NERA advise that "The consideration of the optimal form of regulation for Manx Gas depends on the likely improvements in cost efficiency versus regulatory costs"¹³.
- 6.17 On the potential cost of regulation, NERA advises that "an incentives based form of regulation is likely to be accompanied by an increase in regulatory costs, for both the regulator and the regulated entity which would need to be recovered from end-users in the form of higher charges"¹⁴.
- 6.18 The Committee notes that increased cost to consumers should be avoided, noting representations received from gas users and wider public feedback.
- 6.19 NERA concludes and the Committee concurs that the case for Incentive Based Regulation is therefore finely balanced:

"Based on the above, we consider that the regulatory costs associated with incentive based regulation would be £0.5 million per annum based on 2011 OFT estimate, and assuming that the costs for Manx Gas would be equivalent to those incurred by the IOM Government. The cost estimate for the regulation of electricity in Guernsey also appears to broadly support this figure, as does those of CICRA¹⁵, observing that the latter undertakes wider competition and regulatory duties.

On balance, therefore, the net benefits of incentive based regulation is finely balanced: a reduction in opex costs of 10 per cent is likely to offset the expected increase in regulatory costs. Any improvement in capital expenditure efficiency, feeding through eventually into lower depreciation and return elements of 5 per cent should more than cover the regulatory costs. However, the reduction in depreciation and return elements will only be realised over a period of time, say ten years. In the short-term, there may be no net reduction in bills; in the medium term the overall reduction in allowed revenues could be of the order of £0.5 million

¹¹ Ofgem (UK Office of Gas and Electricity Markets)

¹² *Ibid*, p.47

¹³ *Ibid*, p.48

¹⁴ *Ibid*, p.52

¹⁵ CICRA (the Channel Islands Competition and Regulatory Authorities) comprises the Jersey Competition Regulatory Authority (JCRA) and the Guernsey Competition and Regulatory Authority (GCRA), and is independent of the States of Jersey and Guernsey.

or £20 per customer per annum. However, there is great uncertainty around the expected improvement in cost efficiency which we have set out; and some uncertainty over regulatory costs. The case studies for RIIO-1 also shows the potential costs to consumers of forecast¹⁶”.

- 6.20 In summary, the Committee notes the weight of evidence and that a thorough examination of the alternatives to the current regulatory agreement has been undertaken, the results of which are annexed to this report, which should be taken into account as the next steps are taken.
- 6.21 The Committee considers it is content with the principle of a regulatory agreement – as opposed to statute.
- 6.22 Furthermore, the Committee recognises the importance of obtaining appropriate professional support in the form of regulatory expertise for the next stage of the process.

Whether the profits made by Manx Gas are fair?

- 6.23 The Committee has considered the Chief Minister’s question as to whether the profits made by Manx Gas are ‘fair’, taking into account various factors and drawing on the attached analysis, considering also NERA’s assessment of Manx Gas capital expenditure overall.
- 6.24 As NERA states: *“We have undertaken a high-level comparison of capital cost expenditure levels between GB gas distribution networks and Manx Gas, as required by the scope of work. We compare the capital expenditure (capex) to comparable companies, taking into account differences in the size of the businesses¹⁷”.*
- 6.25 In summary, the Committee considers that profits are generated in line with the current 2015 regulatory agreement – with procedures adhered to. Nonetheless, the Committee also notes the prevailing public perception of potential unfairness, and the findings of NERA’s assessment of what the agreement might look like if it was to be renegotiated today, and believes the rate of return would be lower.

Comparisons to other, similar jurisdictions?

- 6.26 As per the Committee’s terms of reference, NERA has conducted comparisons across similar jurisdictions to the Isle of Man. These have included an assessment of the annual bill by gas usage across jurisdictions¹⁸.
- 6.27 Comparisons undertaken have also included Jersey Gas, and Guernsey Gas. The NERA analysis advises that the tariffs for Manx Gas are higher than those for Firmus Energy (Northern Ireland) and British Gas, but lower than those for Guernsey and Jersey Gas.

¹⁶ *Ibid*, p.53

¹⁷ *Ibid*, p.49

¹⁸ *Ibid*, Fig 4.6, p.32

6.28 NERA also conducted a comparison of annual gas bills and analysis across jurisdictions (Figure 4.7) and finds that the relative proportions of standing charges to variable tariffs are similar across Guernsey, Jersey, GB and the Isle of Man.

6.29 A comparison of Manx Gas Levels of Charges with IEA Countries was also undertaken, and NERA advised:

"...as shown in Figure 4.8 below, the Isle of Man has relatively expensive gas compared to other IEA countries. Consumers in the Isle of Man pay almost forty per cent higher than the IEA average at 8.45 pence per kilowatt-hour (kWh). In comparison, the UK has much cheaper gas for domestic consumers, at 4.32 pence per kWh. The difference in charges may reasonable[ly] reflect the difference in the size of Manx Gas compared to GB, with GB GDNs and suppliers benefitting from economies of scale in provision of network and retail services¹⁹".

6.30 In summary, the Committee is satisfied that it has sufficiently examined other jurisdictions and comparable markets, and has used the findings of this data to inform its final conclusions below.

¹⁹ *Ibid*, p.33

7. CONCLUSIONS

Conclusion 1

We need a new regulatory agreement that conforms to UK regulatory best practice.

- a) The Committee has been advised that capital calculations should exclude financing and intercompany loans.

Conclusion 2

There should be a flat-rate standing charge for domestic customers, not a banded one.

- a) The Committee is concerned that the introduction of banded standing charges was a source of consumer dissatisfaction and public concern. Instead, there should be a simple and clear pricing structure, which includes the standing charge. Manx Gas has an obligation to ensure that price changes are communicated effectively to customers.
- b) Changes to gas pricing in the future, should be considered and approved by the regulatory body – not just noted.
- c) The request from the Manx Gas Protest Group, and the offer from Manx Gas regarding choice of tariff structure is one worthy of further consideration.
- d) There is also the matter of what a standing charge should cover, and this should be explored further.

Conclusion 3

The rate of return in any future regulatory agreement should be significantly lower than the current fixed rate. This rate of return should be open to review in line with changing economic circumstances and business risks.

- a) In reaching this recommendation, the Committee has taken into consideration the detailed economic analysis it has received and the Committee has been made aware of the developing regulatory framework and norms in the UK.
- b) The Committee recognises the importance of reliability of supply in the local gas market, but believes there is also an important social-economic impact of gas pricing. So balancing the interests of all of those involved is paramount.

Conclusion 4

The 2015 Regulatory Agreement should have been clearer on elements such as the definition of ROCE including the treatment of inter-company loans, and it should have controlled the introduction of banded standing charges, and gas pricing more generally.

- a) Notwithstanding the above, Manx Gas has in recent months placed renewed focus and resource in upskilling its lines of communication and customer care. The taking forward of a Customer Service Charter is noted, alongside the launch of a 'Rant & Rave' customer experience platform.
- b) The Committee notes Manx Gas's offer to take 'non-price proposals' into any future Regulation Agreement.

Conclusion 5

Negotiations with Manx Gas to establish a new voluntary regulatory agreement that conforms to UK regulatory best practice should commence immediately.

- c) The current Regulatory Agreement has no formal end date; however on or after 1 January 2019 any of the signatories can terminate by giving notice in writing of six calendar months to the remaining parties. There is also a 'change process procedure'.
- d) These negotiations should be informed by the Committee's conclusions.

Conclusion 6

The Committee considers that the reimbursement mechanism in the regulatory agreement needs to be changed, in order to repay customers sooner and more fairly.

- a) Any new regulatory agreement will need to deal with residual repayment during the transition to a new agreement.

Conclusion 7

The Committee notes the Programme for Government workstream on modernising regulation and considers that the output of this work may offer insight for future gas regulation.

- a) The Committee notes that the independent economic analysis shows that it is finely balanced as to whether an alternative regulatory model would offer tangible benefits to the customer.
- b) The Committee recommends that the Programme for Government's work on regulation is considered in relation to future gas regulation.

Conclusion 8

A solution should be found to help those on low income to meet the cost of adequately heating their homes.

- a) The Committee notes the Programme for Government action regarding the production of a 'Cold, Hunger and Homelessness Action Plan' and ongoing Government initiatives to target assistance to those most in need.
- b) The Committee also notes Manx Gas has raised the possibility of the introduction of a "Social Tariff", or an alternative social measure, and welcomes the intention, subject to further analysis, particularly regarding operational delivery.
- c) In particular the Committee considers that Manx Gas should lower its gas supply deposit.

Conclusion 9

The Committee recognises the changing position regarding energy supply and potential reduced gas usage in light of the decarbonisation of society and the economy.

- a) The Committee considers that the future of the energy supply markets should be factored into any future discussions and negotiations regarding gas regulation, particularly in the light of current and forthcoming climate change policies and actions.

8. NEXT STEPS

In summary, the outcome of the review and next steps are that:

The Committee recommends that:-

- i. This report is published immediately;**
- ii. Council of Ministers mandates Cabinet Office, Treasury and HM Attorney General's Chambers, supported by external technical regulatory expertise, to take forward negotiations with Manx Gas to establish a new voluntary regulatory agreement that conforms to UK regulatory best practice and includes:**
 - A flat rate standing charge for domestic customers with more control over standing charges and gas tariffs. Consideration should be given to offering more than one pricing package,**
 - A rate of return in any future regulatory agreement should be significantly lower than the current rate. This rate of return should be open to review in line with changing economic circumstances and business risks;**
 - A revised reimbursement mechanism in order to repay customers sooner and more fairly; and**
 - Regulation of 'non-price factors', including customer service and measures to mitigate fuel poverty.**
- iii. The new gas pricing and regulatory arrangements should include the evolving policy response to decarbonisation, and should be integrated into any new regulatory approach.**



Review of Gas Regulation in the Isle of Man

A report for the Isle of Man Government

10 December 2018

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Executive Summary

The Isle of Man Government commissioned NERA Economic Consulting (NERA) to support the Gas Regulatory Review Committee (Committee) in its review of the Agreement for the Regulation of the Gas Market in the Isle of Man (“2015 Agreement”), which governs the revenues that Manx Gas recovers from its customers. We consider the ROCE Manx Gas has realised under the Agreement; whether the 9.99 per cent ROCE is reasonable; the structure of charges in comparison with others; and alternative options to the current regulatory regime.

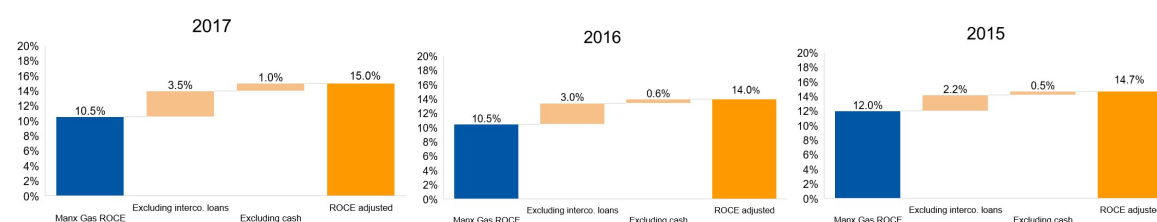
Adjusting Manx Gas ROCE Calculations to Align with CMA Practice, Increases its Realised ROCE by 2.7 to 4.5 per cent

Manx Gas’ calculations show that it has a realised ROCE of between 10.5 per cent and 12.0 per cent over the first three years of the Agreement. Under the Agreement, any ROCE in excess of the target ROCE 9.99 per cent is reimbursed to consumers over a three-year period through the “reimbursement mechanism”.

We have considered whether the ROCE calculation has been implemented as expected with respect to the Agreement and common practice. The Agreement does not provide a prescriptive approach to the calculation of the ROCE in a number of areas. Drawing on how we would expect the ROCE to be calculated, our review suggests that Manx Gas’ calculation correctly takes out the gains and losses due to revaluation of assets and pension deficit, but it includes part of the intercompany loans and cash in its capital employed.

UK CMA’s approach to ROCE calculations, as practiced in competition investigations, recommend adjusting the EBIT and capital employed to exclude any financing elements, such as inter-company loans and cash balances. Adjusting Manx Gas’ calculation to exclude all intercompany loans and borrowing, and cash, increases Manx Gas realised ROCE by 2.7 to 4.5 per cent over the past three years, i.e. Manx Gas reported ROCE understates the ROCE calculated on the CMA approach.

Figure 1: Excluding All Inter-Company Loans and Cash Increases ROCE by ca 3-4 Per Cent



NERA analysis of Manx Gas accounts

Historically Agreed 2015 ROCE is Above Recent UK Network Regulatory Determinations

The 2015 Agreement stipulated a target ROCE of 9.99 per cent, which was based on the weighted average cost of capital (WACC) methodology. Consistent with the 2015 Agreement, we estimate the cost of capital drawing on the WACC methodology, which states that the cost of capital is a weighted average of the cost of equity and debt finance, where the weights are equal to the respective shares of equity and debt finance (or gearing).

To estimate the WACC, we draw on recent regulatory determinations for UK networks. Based on UK decisions, we estimate the expected ROCE for Manx Gas to be in the range of 6.1 to 8.4 per cent (nominal) with a mid-point of 7.2 per cent, i.e. 280 bps lower than the historically agreed 2015 ROCE. Our analysis considers UK regulators' treatment of Manx Gas specific risk factors, notably its small network size, by reviewing determinations for comparably small NI GDNs and small water-only-companies operating in England and Welsh regulatory regime. For example, we assume higher costs for debt issuance to reflect the higher financing costs associated with Manx Gas size.

The reason for our estimate of a materially lower WACC relative to the 2015 Agreement is that UK regulators' allowed returns have declined substantively over the past ten years; we understand the 2015 ROCE was itself based on an earlier OFT study.

Table 1: We Estimate an Updated WACC of 7.2 Per Cent, Below 2015 Target ROCE

Parameter	2015 Agreement			Updated UK regulatory decisions		
	Lower bound	Upper bound	Central case	Lower bound	Upper bound	Central case
Real risk-free rate	2.0%	2.5%		-0.5%	1.3%	
Inflation	2.5%	3.5%		3.2%	3.2%	
Nominal risk-free rate	4.5%	6.1%		2.7%	4.5%	
Equity risk premium	5.3%	6.1%		5.3%	6.0%	
Real TMR (RFR + ERP)	7.3%	8.6%		5.5%	6.5%	
Equity beta	0.7	1.3		0.70	0.86	
Asset beta (implied)	0.4	0.7		0.35	0.43	
Small company premium (SCP)	0.8%	1.5%		-	-	
Cost of equity (nominal), %	9.1	15.8	12.4	6.4	9.6	8.0
Cost of equity (real), %	6.4	11.9	9.1	3.2	6.4	4.8
Cost of Debt (nominal), %	7.5	9.0	8.2	5.8	7.1	6.4
Cost of debt (real), %	4.9	5.3	5.1	2.6	3.8	3.2
Gearing	50%	50%	50%	50%	50%	50%
Cost of capital (nominal), %	8.3	12.4	10.3	6.1	8.4	7.2
Cost of capital (real), %	5.6	8.6	7.1	2.9	5.1	4.0

Source: NERA analysis

In its presentation to the Committee, Manx Gas claims that its ROCE of 9.99 per cent provides for a lower return than GB GDNs over RIIO-GD1 based on GB GDNs return on regulated equity (RORE) of around 10 to 11 per cent.¹ We consider that Manx Gas is wrong to make this comparison for three reasons. First, the GB GDNs RORE is not comparable to a ROCE: RORE reflects the return on leveraged equity only rather than capital employed. Second, the RORE over GD1 reflects systematic outperformance by the sector far greater than envisaged by Ofgem in setting the price control. Third, the comparison confuses nominal and real figures.

A more accurate comparison is provided by the allowed cost of capital of around 4 per cent over RIIO-GD1 (real, RPI-deflated), which should be compared to a real target ROCE for

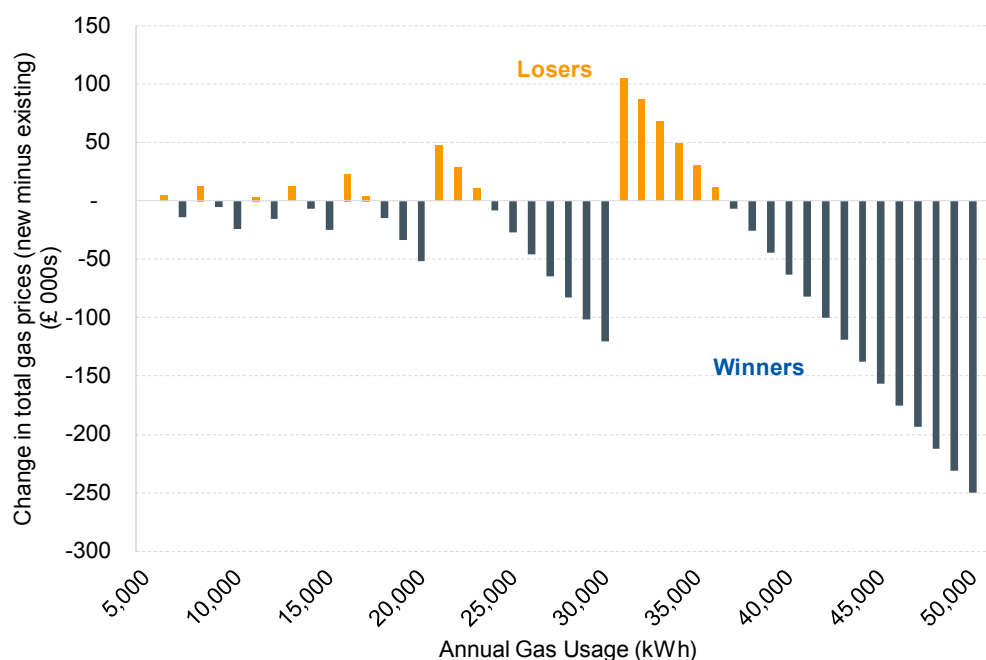
¹ "Manx Gas Presentation to the Gas Regulatory Review Committee", 15th June 2018.

Manx Gas of around 7 per cent (i.e. 9.99 per cent minus 3 per cent RPI). Therefore, the 2015 Agreement ROCE is higher than Ofgem’s proposed allowance at the GD1 2013 price review. As we describe in this report, Ofgem (along with other regulators) have determined lower cost of capital allowances in the period since the RII0-GD1 determination in 2013, and the allowed cost of capital is expected to decline further at the forthcoming RII0-2 price controls (2021).

Manx Gas Proportion of Charges Recovered from Customers through Standing Charge Higher than UK, but Lower than Isles

In 2016, Manx Gas changed the structure of its standing charges from a single fixed charge to banded standing charges. Our analysis shows that the effect of these changes was to increase some customer bills by up to around £100 per annum, and decrease some customer bills (and notably those relatively few customers with high consumption) by up to £250 per annum, although the number of customers experiencing such changes will be very small, e.g. there are only around 300 customers with annual consumption greater than 30,000 kWh where the greatest incidence effects are felt. Under the regulatory arrangements, there is no overall net effect on the revenues recovered by Manx Gas.

**Figure 2: Banding of Standing Charges:
Customers Up To £100 worse-off; Others Up To £250 Better-Off**



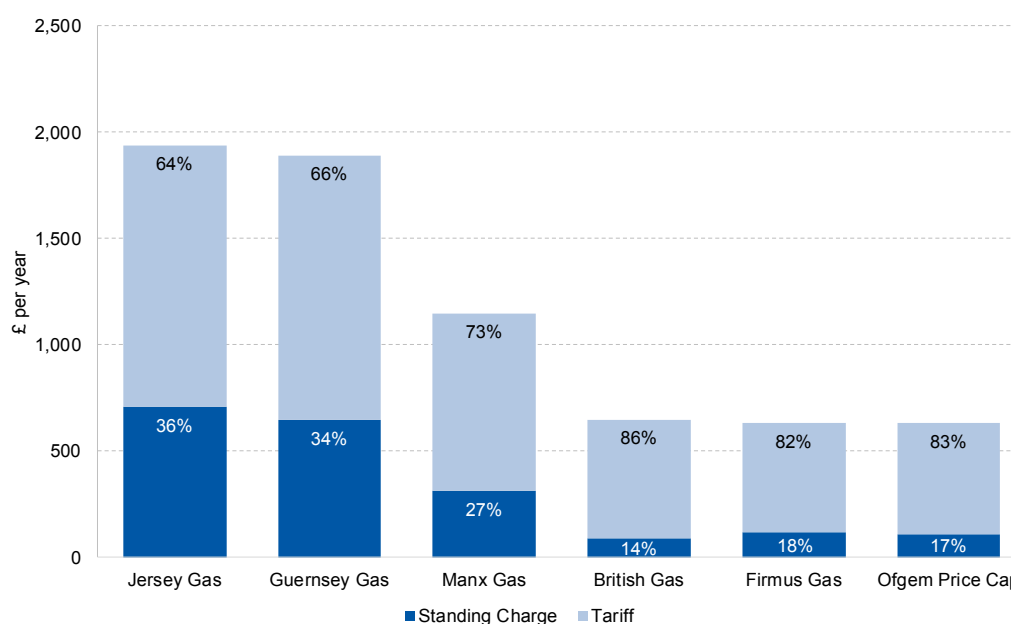
Source: NERA analysis of Manx Gas standing charges and tariffs

We have considered Manx Gas structure of charges relative to GB, NI, Jersey and Guernsey. Our analysis shows that Manx Gas’ banded standing charges arrangement is broadly in line with the arrangement observed comparable isles, Jersey and Guernsey, but different to those observed in GB and NI (Firmus Energy) which typically have a uniform flat standing charge.

We show that the proportion of charges recovered through the standing charge is 27 per cent for Manx Gas, and around 14 to 18 per cent in GB and NI respectively, for a standard GB

consumption level (of 14K kWh/per annum), i.e. the overall proportion of costs recovered through standing charge for the typical gas consumer is high relative to UK, but low relative to other Isles. The proposed banding may increase administrative costs to customers and Manx Gas where the customer's consumption changes relative to the expected consumption and band, requiring the customer to provide updated information to Manx Gas.

Figure 3: Manx Gas Standing Charge Share Is High Relative to UK; Low Relative to Isles



Note: Figures are based on the UK average annual domestic gas consumption (temperature-adjusted) of 14,000 kWh.

The Case for Adopting Incentive Based Regime is Finely Balanced

We have reviewed the forms of regulation for GB and NI GDNs, as well as regulation of the energy sector in Jersey and Guernsey, to consider the costs and benefits of potential changes to the Manx Gas regulatory regime.

There are two broad forms of regulation: incentive based regulation which provides an ex ante revenue allowance and incentivises companies to minimise costs but involves higher regulatory costs, and rate-of-return regulation, as provided for by the 2015 Agreement.

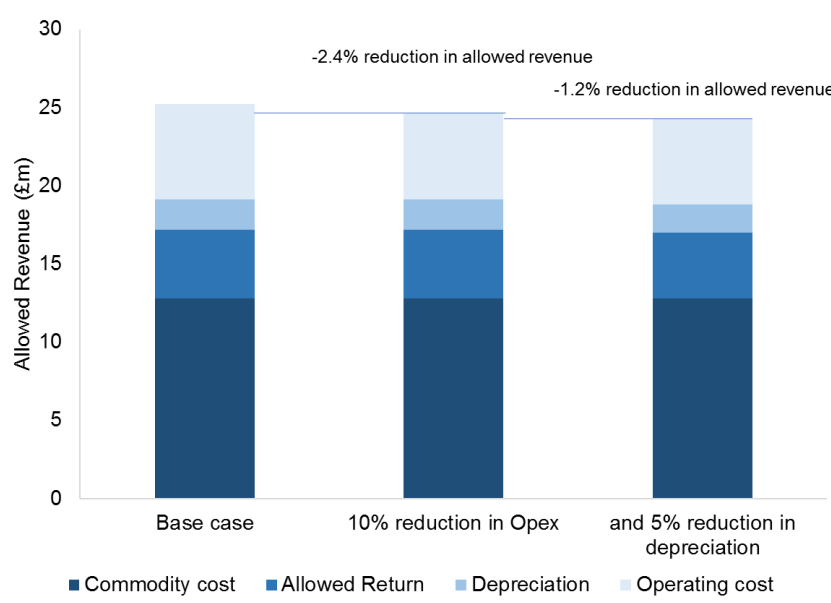
The consideration of the optimal form of regulation for Manx Gas depends on the likely improvements in cost efficiency versus the increase in regulatory costs.

We have considered the impact on allowed revenues and customer bills under incentive-based regulation. By way of example, if incentive-based regulation results in a 10 per cent reduction in operating expenditures, the allowed revenue and average customer bill would be 2.4 per cent lower or a reduction of £0.61 million in annual revenues. Further, if we assume a reduction in capex that eventually leads to a 5 per cent reduction in capital employed over time, and thereby a reduction in depreciation and return elements of revenue, the allowed revenue would be reduced by an additional 1.3 per cent, or an annual reduction of £0.32 million.

The realisation of a reduction of a 5 per cent in capital employed may take some years to achieve, e.g. around ten years, as there will be a substantive element of legacy capital costs that will need to be recovered through bills over many years to come.

Our example shows that there could be around 4 per cent, or £1 million reduction in annual allowed revenues if incentive-based regulation leads to 10 per cent opex reduction and 5 per cent reduction in capital employed (and thereby depreciation and return elements), as illustrated below.

Figure 4: Example of Reduction in Allowed Revenues from Improved Cost Performance



Source: NERA calculations based on data from Manx Gas financial accounts

An incentive based form of regulation is likely to be accompanied by an increase in regulatory costs, for both the regulator and the regulated entity which would need to be recovered from customers.

Drawing on our case studies, we consider that the regulatory costs associated with incentive based regulation would be of the order of £0.5 million per annum based on 2011 OFT estimate, and assuming that the costs for Manx Gas would be equivalent to those incurred by the IOM Government. The cost estimate for the regulation of electricity in Guernsey also supports this figure, as does the costs for CICRA, observing that the latter undertakes wider competition and regulatory duties.

On balance, therefore, the net benefits of incentive based regulation is finely balanced: a reduction in opex costs of 10 per cent is likely to offset the expected increase in regulatory costs. Any improvement in capital expenditure efficiency, feeding through eventually into lower depreciation and return elements of 5 per cent, should mean that in combination the improvements in cost efficiency more than off-set the regulatory costs. However, the reduction in depreciation and return elements from lower capex will only be realised over a period of time, say ten years, as the existing capital value has to be recovered. In the short-term, there may be no net reduction in bills. In the medium term the overall reduction in allowed revenues could be of the order of £0.5 million or £20 per customer per annum.

However, there is considerable uncertainty over this figure, given the uncertainty around the expected improvement in cost efficiency.

1. Introduction

The Isle of Man Government commissioned NERA Economic Consulting (NERA) to support the Gas Regulatory Review Committee (Committee) in its review of the Agreement for the Regulation of the Gas Market in the Isle of Man (“2015 Agreement”)², which governs the revenues that Manx Gas recovers from its customers.

The remainder of the report is structured as follows.

- In Section 2, we assess whether the ROCE calculations made by Manx Gas conform to the 2015 Agreement, and compare its approach to calculating its ROCE to that of the UK’s Competition and Markets Authority (CMA)
- In Section 3, we assess Manx Gas’ target ROCE relative to allowed returns set by UK regulators at recent reviews, and assess whether profits made by Manx Gas under this agreement are “fair”
- In Section 4, we consider the evidence on whether the changes to the charging structure (i.e. the standing charge) for consumers is reasonable by comparing Manx Gas structure of charges to other comparable jurisdictions
- In Section 5, we present alternative regulatory regimes, and consider the costs and benefits of a switch to incentive based regulation

² Isle of Man Government (24 April 2015), Agreement for the Regulation of the Gas Market in the Isle of Man

2. How Does the Approach to the ROCE Calculations Align with Common Practice?

In this section, we review the historical profitability made by Manx Gas under the Agreement. We review whether the ROCE calculations conform to the 2015 Agreement, and compare Manx Gas approach to that of the UK Competition and Markets Authority (CMAs) approach to ROCE. We also consider the operation of the reimbursement mechanism.

The Agreement is not prescriptive for the ROCE calculation. Drawing on expected practice, we identify two areas where Manx Gas approach differs from a standard ROCE calculation: the inclusion of inter-company loans and cash. Our calculations suggest that the inclusion of these items in the capital employed measure leads to profits for Manx Gas of around 3 to 4 per cent higher on average over the three year period than the level reported by Manx Gas.

2.1. Summary of the 2015 Agreement

Manx Gas is an integrated gas utility operating in the Isle of Man and is a part of the International Energy Group (IEG), which also owns the gas utilities in Jersey and Guernsey. Manx Gas is currently subject to a form of cost-plus regulation, underpinned by the Agreement signed by the Department of Economic Development, the Treasury and the Office of Fair Trading (OFT) with Manx Gas.

Under the Agreement, Manx Gas prices, including the standing charges and the variable tariffs, are set to achieve a target nominal Return on Capital Employed (ROCE) of 9.99 per cent. In each year, any under or over recovery of the target return will be recovered or repaid to customers through adjusting the standing charges over the following years.

The Agreement provides details on the calculation of the ROCE, and the definition of costs that will be recognised in the ROCE calculation. Manx Gas is obliged to provide detailed records of the actual costs incurred on an “open book” basis to the OFT or the Treasury, whenever reasonably required for verification³, and must provide data to OFT such that the ROCE calculations can be validated.⁴ The agreement also specifies a remuneration mechanism that determines the recovery of each annual variance the equally over the following three years by adjusting the standing charges. The regulatory agreement has been in place since January 2015, and the terms of the agreement allow for its renegotiation after four years.

The Schedule 4 of the Agreement sets out the calculation methodology for ROCE, which is calculated as Earnings Before Interest and Tax (EBIT) divided by a measure of capital employed.

The Agreement defines the elements of ROCE as follows⁵:

- “EBIT actual” is equal to the operating profit before interest and tax of the gas supply business only, excluding any unrealised gains or losses on derivatives, and any gains or losses on the disposal or revaluation of assets; and

³ 2015 Agreement, p. 6, Art. 9 “Open Book Calculation”

⁴ 2015 Agreement, p. 5, Art. 3.2

⁵ Schedule 4, Calculation of Return, p 20.

- “Modified Asset Value” (MAV) is the net book value of the assets deployed in the gas supply business only, excluding the value of assets employed in any non-gas supply business. MAV is calculated as the fixed assets, plus the current assets, minus the current liabilities.

2.2. Review of Manx Gas RORE Calculations

Below we review MG’s accounting and financial data supporting the ROCE calculations, drawing on the approach adopted by the UK competition authorities in measuring ROCE in competition cases.

Table 2.1 summarises the ROCE calculations for the financial year 2015 to 2017.

Table 2.1: Manx Gas Calculation of Actual ROCE under the 2015 Agreement

	31/12/2017	31/12/2016	31/12/2015
	£ 000s	£ 000s	£ 000s
Fixed assets (non-current asset)	38,772.8	38,671.4	38,685.3
Less FRS 102 PPE uplift	(10,671.7)	(10,968.1)	(11,264.6)
Fixed assets, excluding revaluation	28,101.1	27,703.2	27,420.7
Current assets	49,205.5	44,227.2	
Less Inter Company loan (to Jersey Gas)	(27,000.0)	(27,000.0)	
Current assets, excluding loan to Jersey Gas	22,205.5	17,227.2	14,871.5
Current liabilities	(6,355.8)	(5,275.9)	(5,677.7)
Add back over earning accrual			247.2
Current liabilities, excluding earning adjustment	(6,355.8)	(5,275.9)	(5,430.5)
Modified Asset Value ("MAV")	43,950.8	39,654.4	36,861.7
Operating Profit	4,510.1	5,071.4	3,732.1
Add back over earning adjustment	319.0	-	741.6
Less prior year over earning accrual reversal	-	(576.8)	-
Add back depreciation on PPE uplift	296.4	296.4	296.4
Add back FRS 102 actuarial valuation	29.0	30.0	625.0
Less actual annual pension costs paid	(528.0)	(669.0)	(971.0)
Earnings Before Interest and Tax ("EBIT Actual")	4,626.6	4,152.1	4,424.0
ROCE Actual (= EBIT Actual / MAV)	10.5%	10.5%	12.0%
Target EBIT (= 9.99% * MAV)	4,390.7	3,961.5	3,682.5
Over/(under) recovery (= EBIT Actual – EBIT Target)	235.9	190.6	741.6

Source: NERA calculations based on Manx Gas financial data

As shown in Table 2.1, Manx Gas’s calculated ROCE has been above 9.99% target ROCE in the first three years of the regulatory agreement. We would not expect Manx Gas to earn 9.99 per cent ROCE in any specific year, given the uncertainty over the revenues that it will recover in any one year. The reimbursement mechanism is designed to ensure that Manx Gas does earn the stipulated ROCE over the Agreement period, as we discuss in section 2.3.

2.2.1. UK's CMA defines RORE for use in competition investigations

Beyond the broad definitions for EBIT and MAV described in section 2.1 above, the Agreement does not provide a prescriptive approach as to the calculation of the ROCE. We have compared the approach adopted by Manx Gas to the approach we would have expected, drawing on regulators' approaches.

The UK CMA has set out a methodology for calculating RORE that it uses in market investigations. It has defined the following principles⁶:

“The general principle is therefore that all revenues, costs, assets and liabilities necessarily arising from the operation of the business in the specified markets should be included. In practice, this means that the following items should be excluded:

- a. financing costs both of a profit & loss and balance sheet nature, e.g. interest and sources of finance regardless of whether they are short or long term. These include inter-company loans and cash and bank balances;*
- b. taxation on income and any associated corporation tax or deferred tax; and*
- c. inter-company payments that do not reflect the provision of goods or services but that serve to transfer funds between entities.”*

In principle, this means removing the effect of all items relating to financing activities (e.g. short-term debt, cash balances, interest payable, inter-company loans), taxes, and any pension deficit or surplus. The CMA's rationale is that in a competition analysis, the profitability of the relevant business activities should be assessed independently of how those activities are financed.⁷ As a result, ROCE should only be based on the operational profits and capital employed by the relevant businesses, excluding any elements of financing. In Box 1, we set out the context and further details of UK CMA's approach to ROCE analysis.

⁶ UK Competition Commission (2012), Profitability analysis of private hospital operators: planned methodology, November 2012, para 43.

⁷ Competition & Market Authority (7 July 2015): Energy Market Investigation provisional findings report, Appendix 10.3: Analysis of retail supply profitability – ROCE and economic profit, p A 10.3-5.

Private Healthcare Market Investigation

In 2012, the UK's Competition and Markets Authority (CMA, then Competition Commission or CC) launched a market investigation to assess whether there are competition problems in the private hospital operators market, and to identify the features causing them. In order to decide whether there is an adverse effect on competition, CMA considers, among other issues, the profitability of the firms in the industry. CMA's approach to assessing the profitability includes a comparison of the companies' ROCEs and the pre-tax weighted average costs of financing. In determining the ROCE, CMA considers that financing costs should be excluded from both of a profit & loss and balance sheet nature, including the interest and sources of finance, as well the inter-company loans and cash and bank balances. CMA also excludes any inter-company payments that do not reflect the provision of goods or services but that serve to transfer funds between entities.

Energy market investigation

In 2014, the UK CMA launched an investigation into the energy market in Great Britain to examine whether there was an adverse effect on competition. As part of the investigation, CMA assessed profitability of energy firms, including Centrica, EDF Energy, E.ON, RWE, SSE and Scottish Power, by calculating the ROCEs earned by their retail supply businesses. In its ROCE analysis, CMA reviewed the financial information provided by the energy firms and noted three broad issues that it considered would require adjustments in order to come to a view on economic profitability. One major issue noted by CMA is that there are several types of current assets and liabilities that do not reflect an operational capital requirement at the balance sheet date, but rather comprise either financing or relate to the timing of tax payments. CMA considered that these items should be excluded from the ROCE calculations. In particular, CMA notes that intercompany loans, whether borrowed by or lent to the supply businesses, are financing balances, which should be excluded from the operational capital employed.

Box 1. UK CMA's approach to ROCE analysis

Source: UK Competition Commission (2012), Profitability analysis of private hospital operators: planned methodology. UK Competition & Market Authority (7 July 2015): Energy Market Investigation provisional findings report, Appendix 10.3: Analysis of retail supply profitability – ROCE and economic profit.

In our review of Manx Gas' ROCE calculations from 2015 to 2017⁸, we identify two areas where Manx Gas' ROCE calculation potentially differs from the CMA's ROCE methodology: i) inclusion of intercompany loans, and ii) inclusion of cash.

Inclusion of intercompany loans

Manx Gas has circa £38 million "amount due from fellow group undertaking" under the current assets in 2017, which comprises intercompany loans to fellow group companies⁹, and

⁸ File received from OFT: 2018 03 26 MG ROCE Calculation Dec 17_Submitted.xlsx

⁹ In 2017, Manx Gas holds a loan to Jersey Gas Company Limited (£27 million) and a loan to IEG Holdings Limited (£10.5 million).

reimbursements due from fellow group undertakings. In its calculation of ROCE for 2016 and 2017, Manx Gas excludes the £27 million loan to Jersey Gas Limited from the capital employed, consistent with CMA’s guidance. However, Manx Gas’ calculation for 2015 to 2017 retains the loan to IEG Holdings Limited and the reimbursements due from fellow group undertakings in the capital employed. Based on the description in financial accounts, these inter-company loans seem to satisfy CMA’s criteria of “*inter-company payment that do not reflect the provision of goods or services, but that serve to transfer funds between entities*”¹⁰. If so, these loans should be excluded from the measure of capital employed, assuming they are only financing elements and not form part of the operational business, as per CMA’s guidance. Similarly, Manx Gas retains the “amounts due to fellow group undertakings” in the current liabilities, which should also be excluded as per CMA guidance.

The inclusion of inter-company loans and borrowings in current assets and current liabilities increases the value of capital employed, and reduces Manx Gas’ calculated ROCE than it would be otherwise. Table 2.2 shows that excluding all inter-company loans and borrowings from assets and liabilities would increase ROCE by 2.2 to 3.5 per cent.

Table 2.2: Excluding All Inter-Company Loans Increases ROCE by 2.2-3.5 per cent

	2017	2016	2015
ROCE excluding all intercompany loans (%)	14.0	13.4	14.2
ROCE calculated by Manx Gas (%)	10.5	10.5	12.0
Difference (%)	+3.5	+3.0	+2.2

Source: NERA calculations of Manx Gas financial accounts from 2015 to 2017, and files received from OFT

Inclusion of Cash

Manx Gas has circa £1.1 million to £2.2 million cash under its current assets from 2015 to 2017, which are included in its calculation of ROCE. In principle, if the cash item in Manx Gas’ balance sheet does not reflect an operational capital requirement, but is a financing balance, then it should be excluded from the ROCE calculation as per CMA’s guidance.¹¹ Since the financial accounts do not provide any explanation of the use of the cash item, we are unable to distinguish the cash for operational requirement and cash balances without further information.

If we assume that the cash item is not used for operational purposes, then excluding the cash from ROCE calculation would increase the capital employed and reduce ROCE. Table 2.3 shows that Manx Gas’ ROCE would have been 0.4 to 0.6 per cent higher if cash were excluded, holding others unchanged.

¹⁰ UK Competition Commission (2012), Profitability analysis of private hospital operators: planned methodology, November 2012, para 43.

¹¹ UK Competition Commission (2012), Profitability analysis of private hospital operators: planned methodology, November 2012, para 43.

Table 2.3: Excluding Cash Increases ROCE by 0.3-0.6 per cent

	2017	2016	2015
ROCE excluding cash (%)	11.1	10.8	12.4
ROCE calculated by Manx Gas (%)	10.5	10.5	12.0
Difference (%)	+0.6	+0.3	+0.4

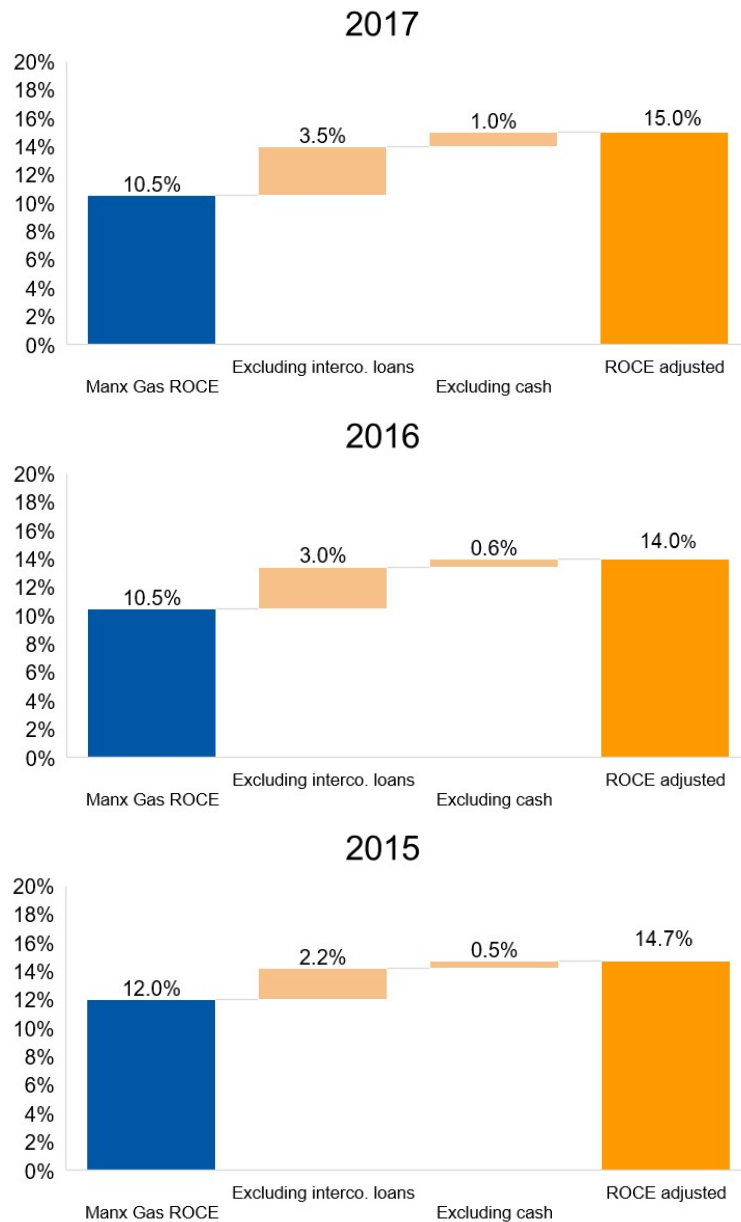
Source: NERA calculations of Manx Gas financial accounts from 2015 to 2017, and files received from OFT

Other adjustments

In Manx Gas' calculation of ROCE, we also identify some other adjustments: i) FRS 102 Plant, Property and Equipment (PP&E) uplift, and ii) current pension service costs per FRS 102 Actuarial Valuation. We understand that Manx Gas' adjustment undoes the impact of revaluation of fixed asset and pension service costs due to the FRS 102 accounting rule change. The adjustment is consistent with how we would expect the ROCE calculation to be undertaken, even though these adjustments are not prescribed in the Agreement.

As shown in Figure 2.1, adjusting Manx Gas' ROCE calculation by excluding intercompany loans and cash increases the ROCE by around 2.7 per cent in 2015, 3.5 per cent in 2016, and 4.5 per cent in 2017, holding others constant.

Figure 2.1: Excluding All Inter-Company Loans and Cash Increases ROCE by ca 3-4 Per Cent



Note: The cash adjustment impacts on ROCE shown in figure are different from Table 2.3, because the impact shown in the figure is calculated on an incremental basis, thus excluding all inter-company loans, while the impact in Table 2.3 is calculated by holding others unchanged, thus including intercompany loans.

Source: NERA calculations of Manx Gas financial accounts from 2015 to 2017

2.3. Review of Manx Gas reimbursement mechanism

The Schedule 4 of the Agreement also sets out the remuneration mechanism for Manx Gas, which determines the amount to be recovered or repaid to achieve the target ROCE. In each year, if the outturn profit is greater or less than the target profit, then Manx Gas can change its standing charges to adjust for the variance allocated across Manx Gas' customer base. The Agreement allows Manx Gas to recoup the variance equally over a period of three years,

including an element of interest that compensates for the time value of money measured by target ROCE of 9.99 per cent. This process is repeated annually, and the standing charges in any year t will include an adjustment K_t :

$$K_t = \frac{1}{3} * (EBIT\ target_{t-1} - EBIT\ adjusted_{t-1}) * (1 + 9.99\%) \\ + \frac{1}{3} * (EBIT\ target_{t-2} - EBIT\ adjusted_{t-2}) * (1 + 9.99\%)^2 \\ + \frac{1}{3} * (EBIT\ target_{t-3} - EBIT\ adjusted_{t-3}) * (1 + 9.99\%)^3$$

where “EBIT target _{t} ” is equal to the target ROCE of 9.99 per cent multiplied by the MAV in year t , and “EBIT adjusted _{t} ” is equal to “EBIT actual” minus any over or under earning recovered or repaid during the recent fiscal year.

As set out above, Manx Gas has earned a ROCE of 12 per cent in 2015, in excess of the stipulated arrangement by £0.74m. As a consequence, this over-recovery leads to negative adjustments in the following three years, with £0.27m in 2016, £0.30m in 2017, and £0.33m in 2018, including the time-value-of-money adjustment on these amounts at the target ROCE.

2.3.1. How reimbursement mechanism works in GB

We have compared the “reimbursement mechanism” to the approach adopted in GB regulation, and particularly adopted by Ofgem in its RIIO controls. In GB energy, any over or under-recovery of revenues is trued-up (with a two-year lag) via a so-called “k-factor”.¹²

Conceptually, the mechanism works in the same way at the Manx Gas reimbursement mechanism. However, there are two differences: first the time-value-of-money is set at the Official Bank Rate as opposed to the GDNs’ WACC.¹³ (The Bank Rate is currently 0.75 per cent.) Second the mechanism includes a penalty where the GDNs revenue forecast is more or less than 6 per cent of allowed revenues.¹⁴

If there are concerns with Manx Gas level of under or over-recovery, then the IOM government could consider a similar penalty mechanism where the actual ROCE deviates from the target ROCE by more than a specified value.

¹² The RIIO-GD1 regime operates under a revenue cap framework which means that gas distribution networks (GDNs) do not bear any volume risk. In order to recover their revenue allowance, GDNs forecast future demand for gas to translate allowed revenues into a set of network charges recovered from shippers. There is a requirement for a true-up to correct for forecast error.

¹³ The Official Bank Rate is also referred to as “Bank of England base rate”. Source: <https://www.bankofengland.co.uk/monetary-policy/the-interest-rate-bank-rate>

¹⁴ The k-factor calculation includes an asymmetry in the time-value-of money adjustment which penalises gas distribution networks for inaccurate forecasts. The K-factor is calculated as: $K_t = (Outturn\ revenue_{t-2} - Allowed\ revenue_{t-2}) * (1 + \frac{t-2+PRt}{100}) * (1 + \frac{t-1+1.5}{100})$, where PRt is the interest rate adjustment which increases with the inaccuracy of revenue (and hence demand) forecasts: PRt takes the value 1.5 except where: i) outturn revenue exceeds 106 per cent of allowed revenue, where PRt=3; ii) outturn revenue is less than 94 per cent of allowed revenue, PRt = 0. It means the average value of the Bank of England’s Official Bank Rate. Source: Southern Gas Networks Plc Gas Transporter Licences Special Conditions, Special Condition 1B; Scotland Gas Network Limited Gas Transporter Licences Special Conditions, Special Condition 1B.

We do not see any imperative to change the time-value-of-money factor from the target ROCE to the Bank Rate.

2.4. How the reimbursement is reflected in customers' bills

We were asked to consider how customers' bills should be adjusted to reflect any under or over-recovery of revenues through the reimbursement mechanism.

The Agreement does not specify how customer bills should be adjusted to reflect any under or over-recovery. We understand that the standing charge is adjusted based on the customer's most recently observed gas consumption, as opposed to the customers' consumption in the year in which the over/ under-charge occurred. As described above, the adjustment is also spread over three years. The implication is that customers will not necessarily receive the full benefit or incur the full cost of any previous over or under-recovery.

An alternative would be to calculate the adjustment based on the consumption of the customer for the year in which the over or under recovery of revenues took place. However, we understand that there are also billing software constraints around the treatment of over or under-recovery of revenues; and the costs of any system re-write to enact a change to the treatment of the reimbursement could increase overall charges to customers. The potentially fairest option, where the customer receives or pays the amount equal to his or her over or under-charge, has to be balanced against the costs of implementing the approach.

For UK energy and water networks, we have not identified any published rules on how the correction for under- or over-recovery of revenues should be reflected in customers' bills. However, based on our experience, the correction for under or over-recovery is not allocated to customers to correct for the specific under or over-recovery to the customer, but to ensure the company recovers only the correct level of revenues, and to ensure customers as a whole pay the correct level of charges.

2.5. Summary of review

Manx Gas' calculations show that it has earned a ROCE of between 10.5 per cent and 12.0 per cent over the first three years of the Agreement. The Agreement is silent on many elements of the details of the ROCE calculation, including the treatment of inter-company loans and cash. We have compared the approach to expected practice.

Relative to expected practice, Manx Gas' correctly removes the gains and losses due to revaluation of assets and pension deficit, but it includes part of the intercompany loans and cash in its capital employed. CMA's approach to ROCE adjusts the EBIT and capital employed to exclude any financing elements, such as inter-company loans and cash balances. Adjusting Manx Gas' calculation to exclude all intercompany loans and borrowing, and cash, increases Manx Gas ROCE by 2.7 to 4.5 per cent over the past three years.

3. Are Profits Made by Manx Gas “Fair” Drawing on Comparable UK Network Allowed Returns?

The Agreement limits Manx Gas to earning the agreed cost of capital (or ROCE). We assess whether Manx Gas target ROCE is fair relative to allowed returns for comparable UK regulated networks. We conclude that an updated fair rate of return, based on recent UK regulators’ decisions since the 2015 decision, lies in the range of 6.1 to 8.4 in nominal terms.

3.1. Manx Gas Allowed Return on Capital Employed (ROCE)

Under the Agreement, Manx Gas earns a return on capital employed (ROCE) which remains in place for the period of the Agreement. The Agreement stipulates a nominal return in range of 8.3 to 12.4 per cent, with Manx Gas agreeing to a voluntary reduction to the central case of 10.3 per cent, providing an allowed ROCE of 9.99 per cent.

Table 3.1 below sets out the components of the cost of capital as set out in the Agreement¹⁵, which we understand itself was based on an earlier IOM OFT study.

Table 3.1: The 2015 Agreement Specifies a 9.99 per cent Nominal Return on Capital Employed (ROCE)

	Lower bound	Upper bound	Central case
Real risk free rate	2.0%	2.5%	
Inflation	2.5%	3.5%	
Nominal risk free rate	4.5%	6.1%	
Debt premium	2.9%	2.9%	
Cost of debt	7.5%	9.0%	8.2%
Equity risk premium	5.3%	6.1%	
Real TMR (RFR + ERP)	7.3%	8.6%	
Equity beta	0.7	1.3	
Asset beta (implied)	0.4	0.7	
Small company premium (SCP)	0.8%	1.5%	
Cost of equity	9.1%	15.8%	12.4%
Gearing	50%	50%	50%
Cost of capital	8.3%	12.4%	10.3%

Source: NERA analysis of Agreement.

The Agreement limits Manx Gas to earning the agreed cost of capital (or ROCE). An assessment of whether Manx Gas profits are fair involves an assessment of whether the ROCE established in 2015 is reflective of investors’ cost of capital. We undertake this assessment relative to today’s evidence, focusing on UK regulatory determinations since the 2015 Agreement.

¹⁵ Isle of Man Government (24 April 2015), Agreement for the Regulation of the Gas Market in the Isle of Man, p 18.

3.2. Comparison of Manx Gas ROCE and regulatory decisions

3.2.1. Methodology

Consistent with the 2015 Agreement, we estimate the cost of capital drawing on the weighted average cost of capital (WACC) methodology, which states that the cost of capital is a weighted average of the cost of equity and debt finance, where the weights are equal to the respective shares of equity and debt finance (or gearing). The WACC can be stated as:

$$(1) \text{ Cost of capital} = (1-g)*R^e + g*R^d$$

where g equal the proportion of debt in overall financing.

In estimating the cost of equity for Manx Gas, we apply the capital asset pricing model (CAPM). The CAPM is universally applied by UK regulators in determining the cost of equity at recent reviews. The familiar CAPM can be written as:

$$(2) R^e_i = RfR + \beta_i*ERP$$

Where R^e_i is the expected return on equity; β_i is the equity beta which measures the systematic risk of the equity of the regulated firm; RfR is the risk free rate; and ERP is the equity risk premium which is equal to the total market return (TMR) minus the RfR .

Equation 1 can therefore be re-stated as:

$$(3) R^e_i = (1-\beta_i)*RfR + \beta_i*TMR$$

As can be seen from Equation 2, in the CAPM, the expected return on equity can be expressed as a weighted average of the RfR and the TMR with the weights depending on the equity beta. Where the equity beta is close to 1, or the average for the market (as is the case for most GB networks at notional gearing), the weight on the RfR is low and the far greater weight rests on the TMR. As a consequence, the determination of the TMR is critical in determining a fair return on equity.¹⁶

In the following sub-sections, we consider each individual WACC parameters based on the recent UK regulatory decisions.

3.2.2. TMR: Range of 5.5 – 6.5 per cent (real)

To inform the common market wide parameters (the TMR, and its separate components, the ERP and RfR), we have reviewed regulatory determinations for energy as well as water and transport networks. As set out in Table 3.2, TMR decisions have declined from around 7 per cent in 2010 to around 6.5 per cent for the most recent set (CMA NIE and Bristol Water in

¹⁶ Mason, Miles and Wright, academics that advised GB regulators at previous reviews and at the current set of reviews, have noted that the focus of GB regulators should be on estimating the TMR given its dominance in the determination of the cost of equity for regulated networks. They also noted that this is fortunate, as there is far greater certainty about the value of the TMR, and far less certainty about the true historical risk free rate and by implication the ERP, which have demonstrated greater volatility over time. Most GB regulators, as well as the Competition and Markets Authority (CMA), have focussed on the estimation of the TMR in determining the allowed return on equity, as opposed to estimating the ERP directly. The CMA explained that its reason for adopting such an approach is that it provides more stable estimates: “Our preferred approach is to deduct our estimate of the RFR from our estimate of the equity market return [TMR] to derive the ERP. [...] the market return has tended to be less volatile than the ERP [...], and there is some evidence of the ERP being negatively correlated with Treasury bill rates over the short term.”

2014 and 2015 respectively). At the CMA Northern Ireland Electricity 2014 determination, the CMA determined 5 per cent as an appropriate lower bound figure, noting that it would wish to avoid the licence holder’s cost of capital being too low.¹⁷ However, it also noted it considered that the evidence for 5 per cent was not well-supported, and the *weight of evidence* supported a range between 5.5 and 6.5 per cent.¹⁸

Ofgem and Ofwat are both in the process of consulting on forthcoming energy network (2021) and water network (2020) price controls, which involves determination of the allowed rate of return. Both regulators have stated their intention to set the TMR lower than the top end of the most recent CMA determinations of 6.5 per cent. For example, Ofwat has recently published an “early view” of its TMR for PR19 (which will set prices for the period 2020-25) equal to 5.44 per cent with a range of 4.85 to 6.13 per cent.¹⁹ The UK Regulators Network recently published a report which proposed a TMR range of 5 to 6 per cent (RPI deflated)²⁰, and Ofgem has stated that it will draw on such guidance in its RIIO-2 determination.²¹

As set out in Table 3.2, up-to-date UK regulators’ determinations or consultations of around 5.5 to 6.5 per cent (RPI deflated) are around 200 bps lower than the 2015 Agreement which was based on a TMR of 7.3 to 8.6 per cent .

¹⁷ CMA (March 2014) op. cit., para. 13.147

¹⁸ CMA (March 2014) op. cit., para. 13.38

¹⁹ Ofwat (2017) Delivering Water 2020: Our methodology for the 2019 price review Appendix 12: Aligning risk and return. Link: <https://064f1d25f5a6fb0868ac-0df48efcb31bcf2ed0366d316cab9ab8.ssl.cf3.rackcdn.com/wp-content/uploads/2017/12/Appendix-12-Risk-and-return-CLEAN-12.12.2017-002.pdf>

²⁰ Wright, Stephen et al (2018) Estimating the cost of capital for implementation of price controls by UK regulators, p. 8. The authors recommend a TMR of between 6 and 7 per cent in real CPI terms, implying a TMR of around 5 to 6 per cent in RPI terms based on RPI-CPI wedge of around 100 bps. Link: <https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf>

²¹ Ofgem has stated that it accepts the recommendations of the UKRN report in relation to the RFR and TMR. Ofgem (July 2018) RIIO-2 Decision, p. 56

Table 3.2: TMR Decisions Have Declined to 6.5 per cent. Recent Guidance is Lower.

Company	Total Market Return (Real, RPI, %)
MG (2015 Agreement)	7.3-8.6
Decisions	
CC Bristol (2010)	7.0
Ofgem RIIO-GD1/T1 (2012)	7.25
CMA NIE (2014)	6.5
Ofgem RIIO-ED1 (2014)	6.5
Ofwat PR14 (2014)	6.75
CMA Northern Ireland Elec (2014)	6.5 (range: 5.5 – 6.5)
CMA Bristol (2015)	6.5 (range: 5.5 – 6.5)
UR GD17 (2017)	6.5 (range: 5.5 – 6.5)
Recent Consultations/ Reports	
Ofwat Guidance (PR19) ¹	5.44 (range: 4.85 – 6.13)
UK Regulators Network Report (2018) ²	5-6

Source: NERA analysis of regulators’ decisions. (1) Ofwat (December) Delivering Water at 2020: Our methodology for the 2019 price review, Appendix 12 – Aligning risk and return, p. 16; (2) UKRN (2018) Estimating the cost of capital for implementation of price controls by UK regulators, p. 8. The authors recommend a range of 6 to 7 per cent in CPI deflated terms, corresponding to a range of ca 5-6 per cent in RPI deflated terms.

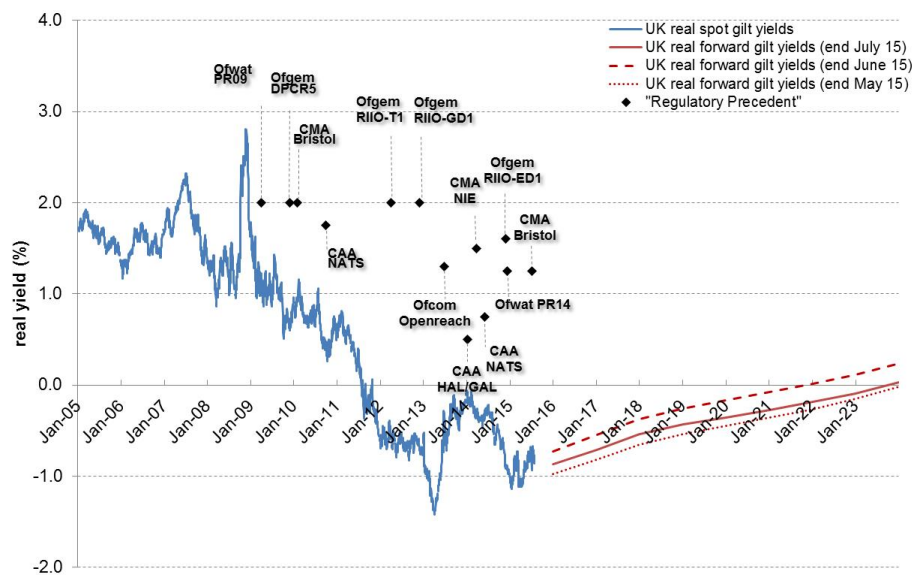
We therefore consider that a range of 5.5 to 6.5 per cent (real, RPI) provides a reasonable estimate of the TMR for investors in the Isle of Man, drawing on UK regulators’ decisions.

3.2.3. Decomposing TMR into RFR and ERP

The decomposition of the TMR into the RFR and ERP is generally far less important than the level of the TMR itself: as set out in section 3.2.1. Indeed, if the equity beta is 1, then the decomposition has no effect on the overall cost of equity.

In decomposing the TMR estimates into the constituent RfR and ERP elements, recent determinations by UK regulators are around 1 per cent in real terms, striking a balance between UK government gilt rates, which are negative in real terms and at historic lows, and the long run average RfR of around 2 per cent (see Figure 3.1 below).

Figure 3.1: Most UK regulators acknowledge inverse relationship, and set RfR above spot, and instead based on LR historical



Source: NERA analysis of regulators’ decisions

However, more recently regulators have proposed using current market evidence, and have proposed much lower RfRs than those historically. For example, in its recent methodology decision, Ofwat has estimated the nominal RfR range to be 1.69 per cent to 2.50 per cent, with a point estimate of 2.10 per cent, and a real RfR of -0.88 per cent based on RPI.^{22,23} UKRN report has recommended using the yield on indexed linked gilts, i.e. drawing on current market evidence.²⁴

In past decisions, CMA has analysed RfR based on short-dated and long-dated index-linked and nominal gilt yields, as well as regulatory precedent. In Bristol Water 2015 and Northern Ireland Electricity 2014, CMA adopted a range of 1 to 1.5 per cent for the real RfR, with a point estimate of 1.25 per cent at the most recent Bristol Water decision.^{25, 26}

²² Ofwat (December 2017): op. cit. Appendix 12: Align risk and return, p. 67

²³ Ofwat has adopted its consultant Europe Economics’ approach to RfR, which uses spot UK government bond yields adjusted for forward-looking expectations. The lower end of this range is based on the spot 10-year gilt yield as of March 2017 (1.20%), adjusted for the lower end of expected increase in interest rates in 2020-2025 period (0.49%). The upper end is based on the spot 20-year gilt yield as of March 2017 (1.91%), adjusted for the upper end of the expected rise in interest rate in 2020-2025 period (0.59%). Source: Europe Economics (December 2017), op. cit. p.25-26

²⁴ UKRN (2018) Estimating the cost of capital for implementation of price controls by UK regulators, p. 8.

²⁵ CMA (October 2015) Bristol Water price determination, p. 329-330, para 10.170-174

²⁶ For NIE, CMA noted that “the lower end of this range is well above current short-term real interest rates (which are negative). In addition, the upper end of the range is well above the long-term rate of interest on Treasury Bills of 1.1 per cent”. CMA (March 2014) NIE price control determination, p.13-25, para 13.128-129. The CMA considered this range should adequately allow for the possibility of an interest rate rise, and did not allow for an uplift for forward-looking expectations. CMA (March 2014) NIE price control determination, p.13-25, para 13.128

CMA has also noted that since it started with a TMR estimate, the exact figure used for RfR has a limited effect on the overall cost of capital.²⁷

Table 3.3: Regulatory Precedent on RFR Determinations

	Real Risk-free rate (%)
Decisions	
CC Bristol (2010)	2.0
Ofgem RIIO-T1 (2012)	2.0
Ofgem RIIO-GD1 (2012)	2.0
CAA Heathrow/Gatwick	0.5-1.0
CMA NIE (2014)	1.5
Ofgem RIIO ED1 (2015)	1.6
Ofwat PR14 (2014)	1.25
CMA BW (2015)	1.25 (range: 1 to 1.5)
UR GD17 (2017)	1.25
Recent Consultations/ Reports	
Ofwat PR19 Guidance ¹	-0.88 (range: -1.27 to -0.48)
UKRN 2018	“Yield on ILG” – no stated value

Sources: CMA (2015) Bristol Water price determination, p. 329. (1) Ofwat (2017) Delivering Water 2020: Our methodology for the 2019 price review, Appendix 12: Align risk and return, p. 17; (2) UKRN (2018) Estimating the cost of capital for implementation of price controls by UK regulators, p. 8

Based on UK regulatory precedent, we identify a range for the RFR of around -0.5 per cent (reflecting current market data, and towards the top-end of Ofwat’s recent PR19 guidance) to 1.25 per cent (CMA recent decision), with an implied ERP of 5.25 (=6.5 *minus* 1.25) to 6 per cent (5.5 *minus* -0.5).

3.2.4. Beta risk and Manx Gas specific risks

Beta risk is the CAPM factor which relates specifically to the risks faced by Manx Gas. As our starting point, we will review wider utility network beta decisions since the 2015 Agreement. For example, Ofwat determined an asset beta of 0.3 at PR14 (price control 2015-20). At the most recent RIIO-1 energy price controls (2013 and 2015), Ofgem determined a beta of 0.32 for gas distribution networks (GDNs) and electricity distribution networks (DNOs) at their respective reviews (2013-21, and 2015-23).

Utility Regulator in Northern Ireland has also recently determined asset betas for PNG and firmus, two gas distribution networks operating in Northern Ireland, which are more comparable in size to Manx Gas. In the respective cases, the Utility Regulator determined asset betas of 0.4 with a debt beta of 0.1, which is equivalent to an asset beta of 0.35 assuming a debt beta of zero.²⁸

²⁷ CMA (October 2015) Bristol Water price determination, p330, para 10.174

²⁸ UR also assumed a debt beta of 0.1, and therefore the figure is not directly comparable to Ofgem and Ofwat (which do not apply debt betas). Applying a debt beta of zero, the asset beta is equal to 0.35. Source: UR (2016) Price Control for Northern Ireland’s Gas Distribution Networks GD17, p.275. Link: https://www.uregni.gov.uk/sites/uregni/files/media-files/2016-09-15_GD17_Final_Determination_-_final_1.pdf

Table 3.4: Regulatory Asset Beta Decisions Lie in Range of 0.3 to 0.43

	Beta decisions (zero debt beta)
Decisions	
Ofgem RIIO-T1 (2012)	0.34-0.43 (fast track TOs)
Ofgem RIIO-GD1 (2012)	0.32
CMA NIE (2014)	0.33-0.38
Ofgem RIIO ED1 (2015)	0.32
Ofwat PR14 (2014)	0.30
CMA BW (2015) ¹	0.32 (range: 0.30 to 0.34)
UR GD17 (2017)	0.35
Consultations	
Ofwat PR19 Guidance ²	0.3 (range: 0.31 to 0.33)

Note: We derive the implied asset beta from the allowed equity beta/cost of equity using the Miller formula and assuming a zero debt beta for comparison on a like-for-like basis. (1) Competition and Market Authority (October 2015), Bristol Water plc, A reference under section 12(3)(a) of the Water Industry Act 1991, Report., p333; (2) Ofwat (2017) Delivering Water 2020: Our methodology for the 2019 price review, Appendix 12: Align risk and return, p. 17

Sources: Review of regulatory decisions. Source: Calculations based on Ofgem, Ofwat, CMA and UR decisions.

3.2.4.1. Manx Gas specific risk factors

Manx Gas is a much smaller network than most UK networks, based on number of connections (see Figure 3.2). Therefore, we have considered UK regulators’ allowance for a small company premium on equity costs (we consider debt costs separately below). For example, in relation to the size of the operations, the 2015 Agreement allowed for a small company premium or SCP of between 80 and 150 bps for equity costs.²⁹ Recent UK regulators’ decisions on the SCP include:

- Ofwat decision for water companies at PR14, and PR19 Guidance
- CMA decision for Bristol Water (2015)
- Utility Regulator in NI 2017 decision for Phoenix Natural Gas (PNG) and firmus, two gas network distribution entities operating in Northern Ireland, as noted above

In these cases, none of the regulators have provided for a specific uplift on equity to compensate companies for their relative size. For example, Ofwat did not provide any SCP on equity at PR14 and at PR19 it has stated that there is no robust argument for smaller water-only-companies to have higher assets betas.³⁰ As an example of the differences in scale in the GB water sector, Portsmouth Water has a regulated asset value of around £136 million compared to the sector average of around £4 billion, or around 3 per cent.³¹ In its

²⁹ There are two potentially reasonable approaches to allowing for a small company premium on equity: either as an uplift to the asset beta, or as a bps uplift to the overall cost of equity, as per the 2015 Agreement.

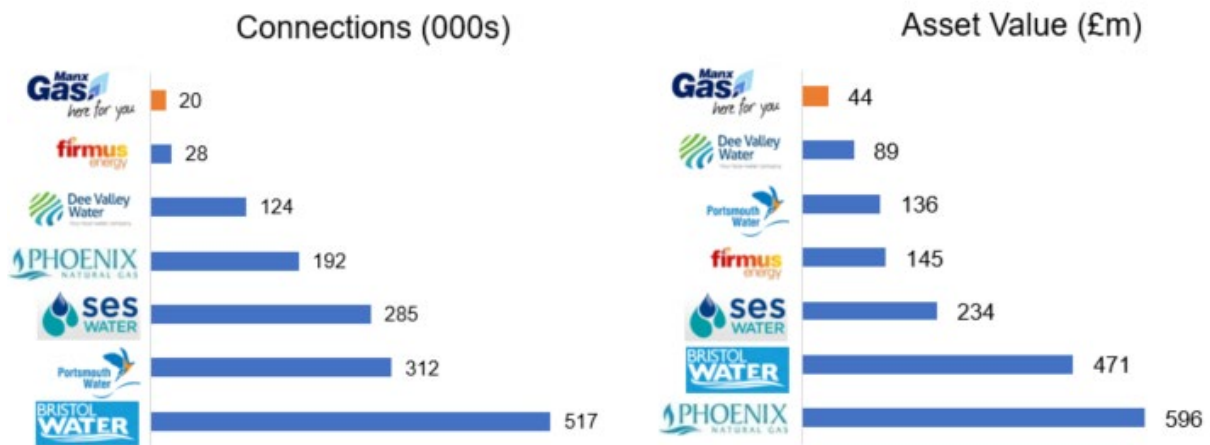
³⁰ Specifically, Ofwat rejects CMA’s arguments around higher operational leverage asserting that the adjustments made by CMA at Bristol Water appeal in 2010 and 2015 were “unreliable and unworkable across the water only companies”. Ofwat (December 2017), Appendix 12: Aligning Risk and Return, p. 87

³¹ Source: <https://www.ofwat.gov.uk/publication/regulatory-capital-value-2017/>

2015 Bristol Water decision (asset value of £470 million³²), CMA determined an asset beta of 0.32, slightly higher than Ofwat’s determination for all other companies of 0.30. However, the increase relative to Ofwat’s industry determination of 0.3 reflected CMA’s interpretation of the empirical evidence and an uplift for so-called “operational leverage” rather than a small company premium per se.³³

UR also did not allow for a specific SCP on equity for either PNG or FE at the recent GD17 determination but concluded that PNG and FE risk was broadly the same as UK network betas, despite the much smaller scale of PNG and FE compared to GB GDNs.³⁴ FE has a network asset value of around £145 million or around 6.5 per cent relative to the average GDN RAV of around £2.3 billion.³⁵

Figure 3.2: Manx Gas Is the Smallest of the Small Regulated UK Networks, by Asset Value



Source: NERA analysis of data from Manx Gas, Ofwat, Firmus energy and Phoenix Natural Gas. Manx Gas’ connections are based on the number of customers in Manx Gas’ presentation to OFT. Manx Gas’ asset value is based on the Modified Asset Value of Manx Gas reported in Manx Gas’ ROCE calculation.

As well as the small size, Manx Gas has also identified other factors that it considers imply it is higher risk than UK (gas) networks. These are:³⁶

- different scope of services relative to most GB networks, including both commodity, supply and retail businesses
- uncertain recovery of costs post the Agreement period. (We interpret this to mean that Manx Gas faces potentially merchant risk.)
- under the current approach to regulation, it also bears inflation risk

³² Source: <https://www.ofwat.gov.uk/publication/regulatory-capital-value-2017/>

³³ Competition & Market Authority (October 2015), op. cit., p333

³⁴ UR (September 2016) Price control for NI’s Gas Distribution Networks, GD17. para. 10.38. p. 278

³⁵ Firmus vs. GB Networks and PNGL

³⁶ These comparative risk factors were identified by Manx Gas in its presentation: “Manx Gas Presentation to the Gas Regulatory Review Committee”, 15th June 2018.

- No formal appeals mechanism
- No financing duty placed on the regulator

We agree that these factors may point to greater risk for MG, although it is difficult to translate these risks into an adjustment to beta risk or the cost of capital. The set of beta decisions set out in Table 3.4 also capture potentially comparable risk factors in terms of magnitude of risk, if not the factors identified by Manx Gas per se. For example, the RIIO-T1 beta decisions reflect the very high levels of capex spend relative to the regulated asset base expected of the Scottish TOs at RIIO-T1 (2015-21).

In relation to inflation risk, it may be desirable to remove this risk from MG. That is, as an alternative to setting a nominal ROCE, the future Agreement could determine a real ROCE with an additional inflation component of the target ROCE based on outturn inflation.

3.2.4.1.1. Other risks not identified by Manx Gas

Although not mentioned by Manx Gas in its presentation to the Committee, it also faces potential risks from the decarbonisation of the heat sector. For example, in UK the government and other stakeholders have identified substantial changes to the heat (and other sectors, e.g. transport) to achieve UK’s carbon emission reduction target of 80 per cent by 2050. Some future UK energy scenarios based on the potential replacement of natural gas with low-carbon alternatives with potentially reduced flows and asset redundancy for natural gas networks.³⁷

At RIIO-GD1, Ofgem did not make an allowance for beta risk related to GB’s decarbonisation strategy.³⁸ Instead, Ofgem decided to apply a front-loaded, i.e. a sum-of-years’-digits (SOYD), depreciation profile instead of a straight-line method.³⁹ Ofgem decision to change the depreciation profile was aimed at reducing risk of future price increases in case of lower utilisation of gas distribution networks in the future.⁴⁰ At GD17, UK did not make any adjustment to the allowed return for decarbonisation noting that the risk was small, especially given the NI Government’s support for gas.⁴¹

In addition to decarbonisation, there is also an offsetting risk to those factors identified by Manx Gas: it operates under cost-of-service regulation, whereas GB network operate under incentive based regulation. Incentive based regulation exposes networks to greater beta or systematic risk as revenues can deviate from costs during the review period, in contrast to the 2015 Agreement which allows for the recovery of Manx Gas’ actual costs.

³⁷ See for example, National Grid SO (2018) Future Energy Scenarios, Link: <http://fes.nationalgrid.com/media/1363/fes-interactive-version-final.pdf>

³⁸ DECC (2012): *The Future of Heating: A strategic framework for low carbon heat in the UK*, March 2012, p. 5, 18-21.

³⁹ SOYD depreciation front-loads the depreciation of the asset relative to a straight-line depreciation method. For example, under SOYD, an asset with a lifetime of 40 years is 50 per cent depreciated by year 12 year relative to 20 years under straight line. Source: Ofgem (2010), Consultation on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1 Financial issues, 17 December 2010, p17.

⁴⁰ Ofgem found a lower utilisation of gas distribution networks was likely under various scenarios. See Ofgem (2011), Decision on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1 Financial issues, 31 March 2011, paras. 2.46.

⁴¹ UR (2016) Gas Distribution Networks GD17, Final Determination para 10.34

For example, beta evidence from US networks that operate mainly under cost of service regulation suggest asset betas in the range of 0.25 to 0.35.⁴²

3.2.4.2. Conclusions on beta risk

For our beta risk parameter, we assume Manx Gas risk lies in the range of beta values determined by UK regulators of 0.35 to 0.43. The lower bound reflects the beta determination for NI GDNs, which are closest in size to Manx Gas. Although UR did not make an allowance for size per se in determining the allowed cost of equity, its determination reflects the potentially higher risk for NI GDNs relative to GB GDNs (where Ofgem determined a value of 0.32). We may expect investors in Manx Gas to have a similar view of relative risk. The upper-bound reflects the highest beta determination at all recent reviews for energy networks.

3.2.5. Cost of Debt

For the 2015 Agreement, the cost of debt was based on a risk-free rate plus debt premium. The more common approach at recent UK regulatory decisions is to set a cost of debt based on a benchmark index, e.g. iBoxx Corporate non-financial index of A and BBB rated bonds with 10Y+ maturity. These are the indices employed by Ofgem to determine cost of debt allowances⁴³; Ofwat will also draw on such indices to determine debt costs at PR19⁴⁴; and UR will determine new debt costs based on iBoxx BBB indices for PNG and FE at GD17.⁴⁵ We discuss UK regulators’ approaches to cost of debt indexation for Manx Gas in more detail in Appendix A.

In sectors with a single company, the regulator also considers companies’ actual debt costs. Taking these two approaches, we estimate debt costs for Manx Gas as follows:

- Based on a Corporate Index, the 10-year trailing average for the iBoxx Corporate Non-financial index of 10Y+ maturity for BBB rated bonds (drawing on the specific rating adopted by UR for NI GDNs) provides a cost of debt allowance of 1.6 per cent in real RPI terms.
- Alternatively, we have also examined MG actual cost of debt which provides a nominal cost of 6.5 per cent, or 3.2 per cent in real RPI terms.⁴⁶

⁴² Our analysis of Bloomberg data shows that for US energy networks the average two-year asset beta is around 0.26, and the average five-year asset beta is around 0.34, as of March 2018.

⁴³ Ofgem (2012) RIIO-GD1 Final Proposals – Finance and uncertainty supporting document, p. 11. Link: https://www.ofgem.gov.uk/sites/default/files/docs/2012/12/3_riiogd1_fp_finance_and_uncertainty_0.pdf

⁴⁴ Ofwat has decided to set the cost of new debt allowance based on an average of A rated and BBB rates iBoxx index of Corporate (non-financial) bonds with 10Y+ remaining maturity. Ofwat (December 2017), Appendix 12: Aligning Risk and Return, p.72.

⁴⁵ UR (September 2016) Price control for NI’s Gas Distribution Networks, GD17, para 10.12, and Annex 14

⁴⁶ MG has one 5-year bank loan of £27m with a step-up floating rate structure, but overlaid with three floating to fixed interest rate swaps, which delivers a synthetic average fixed nominal interest rate of 4.2325 per cent. The actual cost of debt is equal to 4.2325 per cent plus a margin. The margin is set to be 1.85 per cent in 2018, and will increase to 2 per cent in 2020, and 2.35 per cent in 2020 and 2021. We calculate Manx Gas’ actual cost of debt over 2019 to 2021 to be 6.47 per cent. Using a long-term RPI forecast of 3.2 per cent based on latest HM Treasury forecast in August 2018, we calculated the real interest rate to be 3.16 per cent.

As our starting point for Manx Gas debt costs, we conclude on a real cost of debt of between 1.6 per cent, based on the 10 Y+ iBoxx index for BBB Corporate debt, and 3.2 per cent, based on its actual debt costs. These estimates are prior to any adjustment for Manx Gas size, and transaction costs, as discussed below.

3.2.5.1. Small company premium on debt

In contrast to the cost of equity, GB regulators have recognised additional debt financing costs associated with relatively small regulated companies. In its methodology decision, Ofwat acknowledges that small companies have higher embedded debt costs although considers that this is mainly explained by timing and tenor, factors within companies’ control.⁴⁷ At PR14, Ofwat allowed Portsmouth and Bournemouth Water a 0.15 per cent uplift to the WACC, or equivalent to 25 bps on the cost of debt.⁴⁸

At CMA BW 2010 and 2015, CMA allowed for a premium of 40 bps relative to the industry cost of debt,⁴⁹ and a premium relative to the iBoxx of 11 bps.⁵⁰

At UR GD17, the UR allowed for an “illiquidity premium” of 40 bps for PNG and FE.⁵¹

Based on UK regulatory determinations, we assume a small company premium on debt of 40 bps for Manx Gas based on the UR’s most recent decision. We do not include a small company debt premium for the upper bound of cost of debt estimate, since it is derived from Manx Gas’ actual debt cost, which thereby includes the company-specific premium.

3.2.5.2. Debt transaction costs

UK regulators also allow for the costs of issuing or arranging debt. In general, UK regulators determine a range of 10 to 20 bps.⁵² However, the Utility Regulator in Northern Ireland allowed for debt transaction costs of between 40 and 60 bps for PNG and FE respectively at GD17.⁵³ We adopt the highest value of 60 bps for Manx Gas, reflecting its comparable size to FE.

3.2.6. Gearing

Table 3.5 shows the recent regulatory determinations for notional gearing levels. The majority of regulatory decisions on gearing lie in the range of 55 to 65 per cent, with the exception of the CMA NIE (2014) value of 45 per cent.

⁴⁷ Ofwat (December 2017), Appendix 12: Aligning Risk and Return, p. 88

⁴⁸ Ofwat (2014) Final price control determination notice: policy chapter A7 – Annex 3: benefits assessment of an uplift on the cost of capital, p.4. Link: https://www.ofwat.gov.uk/wp-content/uploads/2015/10/det_pr20141212riskrewardbenefits.pdf

⁴⁹ CMA (2015) Bristol Water price determination, p.307, para 10.64

⁵⁰ CMA (2015) Bristol Water price determination, p.307, para 10.64

⁵¹ UR (September 2016) Price control for NI’s Gas Distribution Networks, GD17., p. 281.

⁵² For example, Ofgem (28 November 2014), RIIO-ED1: Final determinations for the slowtrack electricity distribution companies, Final decision, p 91. Ofwat (December 2014), Final price control determination notice: policy chapter A7 – risk and reward. Note: at RIIO-1, Ofgem did not include a transaction cost allowance as it considered transaction costs were covered by companies’ ability to outperform the benchmark index due to the regulatory “halo effect” which it estimated at 20 bps.

⁵³ UR (September 2016) Price control for NI’s Gas Distribution Networks, GD17., p. 281.

Table 3.5: Regulatory precedent shows gearing range of 45 to 65 per cent

	Gearing
Decisions	
CC Bristol (2010)	60
RIO GD1 (2012)	65
RIO T1 NGGT (2012)	62.5
RIO T1 NGET (2012)	60
RIO T1 SPT and SHET (2012)	55
CMA NIE (2014)	45
RIO ED1 (2014)	65
Ofwat PR14 (2014)	62.5
CMA Bristol (2015)	62.5
UR GD17 (2017)	55
Recent consultations	
Ofwat PR19 Guidance ¹	60

Source: NERA analysis of regulatory determinations.

Mainstream finance theory explains that the WACC is broadly unaffected by the level of gearing (referred to as the capital structure irrelevancy). The theory explains that increasing the level of gearing increases the share of relatively cheaper debt in the WACC, but this is offset by the increase in cost of equity due to higher equity risk caused by greater financial leverage, leaving the overall WACC broadly unchanged.

This conclusion is consistent with the position of the CMA. In the 2010 Bristol Water appeal, the CMA analysed the impact on WACC of gearing changes in a range between 50 and 80 per cent and concluded that the cost of capital is not sensitive to the level of gearing.⁵⁴

Placing greater emphasis on UR decision for the smaller NI GDNs, we conclude that UK regulatory decision support a gearing assumption of 50 per cent for Manx Gas, as per the 2015 Agreement.

3.2.7. Conclusion on Manx Gas expected ROCE

We estimate the expected ROCE for Manx Gas to be in the range of 6.1 to 8.4 per cent (nominal), drawing on UK regulatory determinations. In real terms (UK RPI deflated), the range is 2.9 to 5.1 per cent.

Relative to recent decisions, the lower bound value of 2.9 per cent (in real terms) is higher than Ofwat’s PR19 Guidance of 2.3 per cent.⁵⁵ The upper-bound value of 5.1 per cent (in

⁵⁴ CMA stated: “[...] while a level of gearing above the company’s actual gearing may lead to a lower WACC, the effect does not seem likely to be large [...] our analysis suggests that, after taking account of the tax effect, the WACC is not sensitive to the level of gearing”. CMA (February 2010), Bristol Water plc Notice of Reference: Determination of Adjustment Factor for the period 2010- 2015, Appendix N para 30 and 32.

⁵⁵ Ofwat (December 2017) Delivering Water 2020: Our methodology for the 2019 price review. Appendix 12, Aligning risk and return, p. 18

real terms) is higher than the range for the most recent regulatory decisions for UK energy networks of around 3.74 to 4.74 per cent (determined in 2013 and 2015).⁵⁶

Our higher estimates allow for the potentially higher risk relative to UK energy and water networks, as well as our allowance for Manx Gas actual debt costs in our upper bound estimates.

As set out, we determine the nominal WACC based on a *forecast for UK inflation* for two reasons: a) a forecast of UK inflation is likely to provide a more reasonable measure of loss of purchasing power for GBP sterling denominated investments than a Manx specific inflation measure. Investors require compensation for inflation based on the loss of purchasing power for the currency in which the investment is denominated, not for price inflation associated with the local basket of goods and services⁵⁷; and, ii) there are methodological concerns with historical Manx inflation measures, which make the use of historical RPI unreliable as a guide to future inflation.⁵⁸ We have used a UK RPI measure for consistency with our TMR estimate, which is measured relative to RPI.⁵⁹

⁵⁶ At the start of the RIIO-1 period, Ofgem determined an allowed Vanilla WACC in the range of 3.74 to 4.74 per cent (real RPI). Ofgem (2017) RIIO-2 Open Letter on the RIIO-2 framework, p. 3. Link: https://www.ofgem.gov.uk/system/files/docs/2017/07/open_letter_on_the_riio2_framework_12_july_final_version.pdf

⁵⁷ Manx Gas is compensated for local price inflation in the sense that it is allowed to recover its actual operating and capital investment costs under the Agreement.

⁵⁸ As noted by the UK’s Office for National Statistics (ONS), there are concerns with the accuracy of the RPI measure (related to the use of so-called “Carli” index formula), and it has been de-designated as a national statistic in UK. From our discussions with the Isle of Man Treasury, we understand that the problems with the UK RPI are accentuated in Isle of Man, and the government has recently published RPIJ (which addresses the concerns with the existing RPI measures) as well as CPI. Isle of Man (December 2018) Inflation report. Link: <https://www.gov.im/media/1360682/november-2018-inflation.pdf>

⁵⁹ We have retained RPI indexation in line with the most recent UK regulatory decisions available to date. However, we expect Ofwat and Ofgem to switch to CPI indexation at their forthcoming respective reviews because of concerns about the construct of UK RPI. For concerns with use of RPI, see for example: UKRN (2018) Estimating the cost of capital for implementation of price controls by UK regulators, p. 30. Link: <https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf>

Table 3.6: Updated Cost of Capital Based on Recent UK Regulatory Determinations

Parameter	Lower bound	Upper bound	Central case
Nominal debt interest rate	4.8%	6.5%	
Inflation	3.2%	3.2%	
Real debt interest rate	1.6%	3.2%	
Small company premium (SCP)	0.4%		
Transaction costs	0.6%	0.6%	
Cost of debt (real)	2.6%	3.8%	3.2%
Cost of debt (nominal)	5.8%	7.1%	6.4%
Real risk-free rate	-0.5%	1.3%	
Equity risk premium	5.3%	6.0%	
Real TMR (RFR + ERP)	5.5%	6.5%	
Equity beta	0.7	0.86	
Asset beta (implied)	0.35	0.43	
Cost of equity (real)	3.2%	6.4%	4.8%
Cost of equity (nominal)	6.4%	9.6%	8.0%
Gearing	50%	50%	
Cost of Capital (real)	2.9%	5.1%	4.0%
Cost of Capital (nominal)	6.1%	8.4%	7.2%

Source: NERA calculations

In its presentation to the Committee, Manx Gas claims that its ROCE of 9.99 per cent provides for a lower return than GB GDNs over RIIO-GD1 based on their return on regulated equity (RORE) of around 10 to 11 per cent.⁶⁰ We consider that Manx Gas is wrong to make this comparison for three reasons. First, the RORE is not comparable to a ROCE: RORE reflects the return on leveraged equity only rather than capital employed. Second, the RORE over GD1 reflects systematic outperformance by the sector far greater than envisaged by Ofgem in setting the price control. Third, the comparison confuses nominal and real figures.

A more accurate comparison is provided by the allowed cost of capital of around 4 per cent over RIIO-1, which should be compared to a real ROCE for Manx Gas of around 7 per cent (i.e. 9.99 per cent minus 3 per cent inflation).⁶¹ Therefore, even compared to Ofgem’s proposed allowance at GD1 the 2015 Agreement ROCE is high. As we have described above, Ofgem (along with other regulators) have determined lower cost of capital allowances in the period since the RIIO-GD1 determination in 2013, and the allowed cost of capital is expected to decline further at RIIO-2/PR19.⁶²

⁶⁰ “Manx Gas Presentation to the Gas Regulatory Review Committee”, 15th June 2018.

⁶¹ Ofgem (2012) RIIO-GD1 Final Proposals – Finance and uncertainty supporting document, p. 11. Ofgem determined a vanilla WACC of 4.2 per cent based on the then cost of debt allowance (iBoxx 10-year trailing average) of 2.92 per cent. The cost of debt allowance has declined over the GD1 period, providing for a lower allowed cost of capital.

⁶² For example, Ofgem has stated that the “evidence points towards a significantly lower cost of capital for regulated network companies than that set for the RIIO-1 price controls”. Ofgem (2017) Open Letter on the RIIO-2 framework, p. 8

4. Is Manx Gas' Charging Structure Reasonable?

In this section, we review the treatment of standing charges in the agreement, and the introduction of “banding” charges.

We show that the changes to the charging structure make some consumers worse-off by up to £100 per annum, and some consumers better off by up to £250 per annum, notably high value users. We show that the proportion of charges recovered through the standing charge element is higher than UK, but lower than comparable Isles.

4.1. Summary of Manx Gas standing charges

Manx Gas' prices comprise a fixed element called a “standing charge”, and a variable element referred to as the “tariff” which varies depending on the gas consumption. According to Manx Gas, the standing charges are set to recover the fixed costs of the gas supply business, including maintenance cost of the gas distribution networks, metering, storage and distribution, administration and the emergency service.⁶³

On 1st October 2015, Manx Gas replaced its fixed standing charge with a banded standing charge that varies according to the customer's gas consumption. Under Manx Gas' new standing charge scheme, customers are allocated to a standing charge band, based on the historical annual gas consumption for up to five previous years, which will be reviewed after a three-month period and then annually. Manx Gas states that the intention is to make the gas price structure more reflective of the costs of serving customers. Manx Gas shows that its original standing charges recovered only around 15 per cent of the budgeted fixed costs based on the 5-year average historic data until 2016, and the rest must be recovered from the variable gas tariffs.⁶⁴ Manx Gas proposed to increase the standing charges so that the standing charges can recover around 58 per cent of the budgeted fixed cost, while keeping the total revenue neutral.⁶⁵ Manx Gas also considers this will smooth the overall revenue recovers and therefore return on capital employed (ROCE) or profit, since it will be less dependent on the variable tariff and annual consumption, which varies according to the weather.⁶⁶

Figure 4.1 compares the standing charges and variable tariffs for customer with different gas usages, and Figure 4.2 shows the impact on the total gas charges levied on customers.

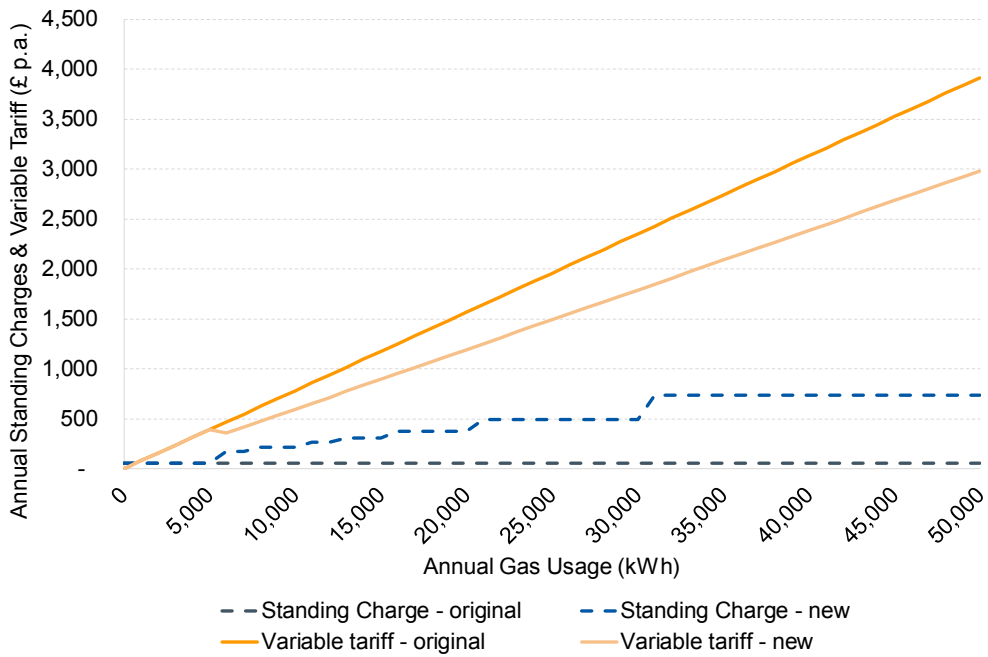
⁶³ Manx Gas New Banded Standing Charges for Central Heating Customers.

⁶⁴ International Energy Group (20 July 2015), Manx Gas Tariff Restructure, A presentation to Office of Fair Trading, p 2.

⁶⁵ International Energy Group (20 July 2015), Manx Gas Tariff Restructure, A presentation to Office of Fair Trading, p 3.

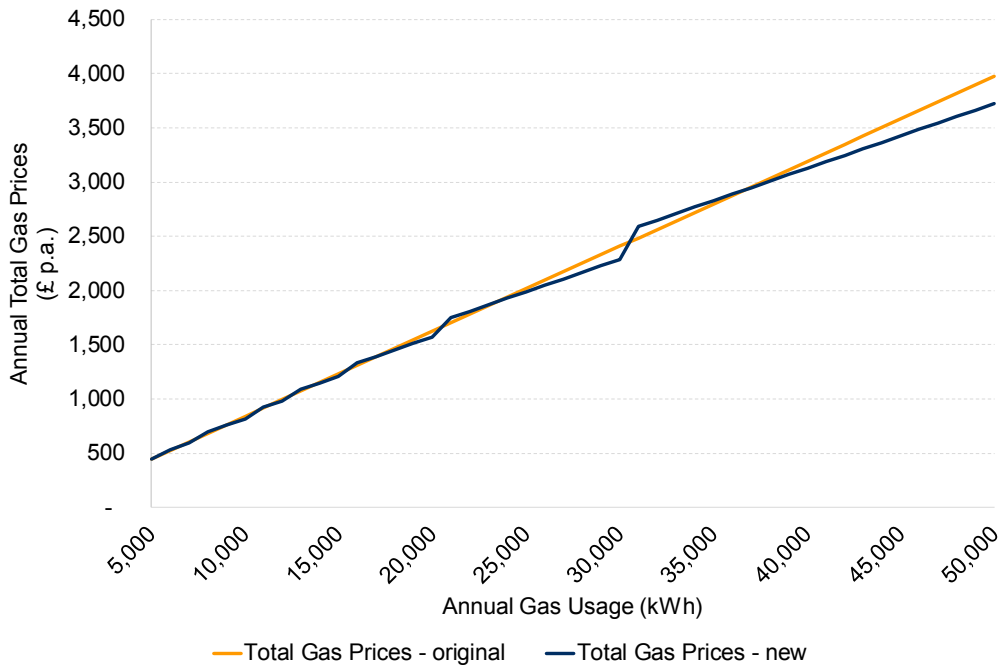
⁶⁶ Manx Gas New Banded Standing Charges for Central Heating Customers.

Figure 4.1: Manx Gas Has Increased Standing Charge with Offsetting Decrease in Variable Tariff



Source: NERA analysis of Manx Gas standing charges and tariffs

Figure 4.2: Comparison of Manx Gas Original and New Charges

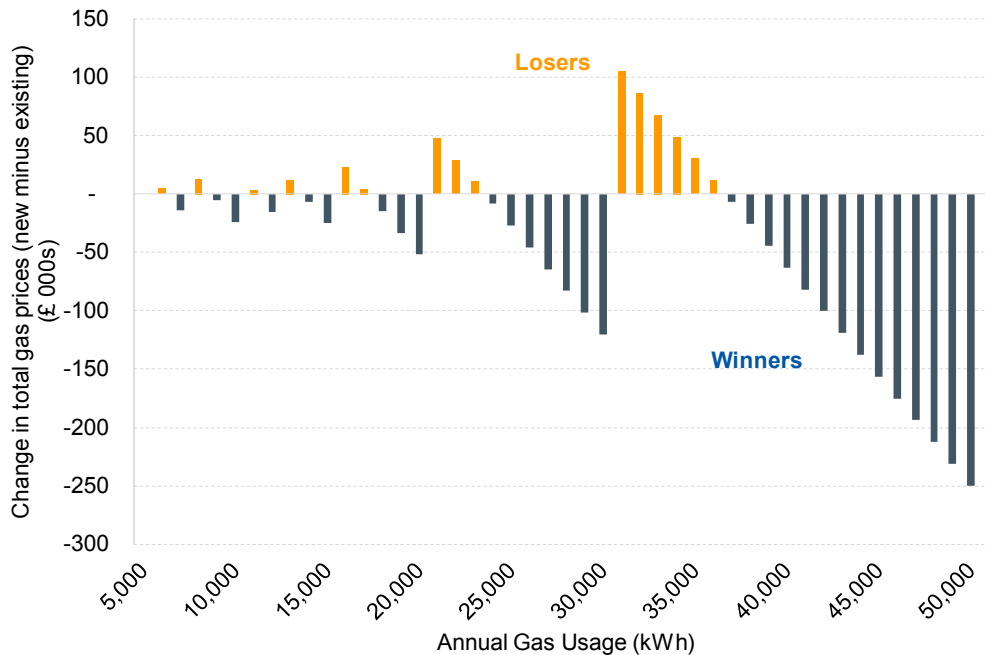


Source: NERA analysis of Manx Gas standing charges and tariffs

Whether customers pay more or less under the new tariff structures depends on the consumption bands. Figure 4.3 illustrates that domestic customers with annual gas usage below 25,000 kWh can either gain or lose up to £50 per year under the new scheme, whereas

relatively large users with annual consumption between 25,000 kWh and 50,000 kWh can gain up to £250 per annum or lose up to £100 per annum. However, these larger changes affect a very small number of customers. For example, there are only 276 customers with consumption between 30,000 and 50,000.⁶⁷

Figure 4.3: Customer Impact of Standing Charges and Tariff Restructuring



Source: NERA analysis of Manx Gas standing charges and tariffs

4.2. Potential Issues with Banding of Standing Charge

We understand that the standing charge is based on historical as opposed to actual volume, which can create bill variability for customers where demand varies from one year to the next. For example, a high use customer which then substantially reduces its consumption may continue to pay a standing charge related to the historically higher level of consumption. Manx Gas has set out arrangements on how to address such issues, allowing for customers to submit revised consumption levels.⁶⁸ However, the approach imposes administrative costs on customers and Manx Gas.

Also, the approach creates potential “cliff-edge” changes in charges for customers that move up from one band to another in any given year, although these should be relatively modest for most customers. As shown in Figure 4.3, the potential largest change for a customer with consumption moving between the bands above/below 20,000 kWh per annum is around £100. The potential change in the customer bills moving between bands above/below 30,000 kWh is around £200, but this affects very few customers.

⁶⁷ See Table 4.1.

⁶⁸ Manx Gas' charging statement states that it will review every customer's standing charge band after an initial three-month period, and then annually thereafter. Source: Manx Gas New Banded Standing Charges for Central Heating Customers

4.3. Review of Manx Gas stranding charge structure and levels

We consider the reasonableness of Manx Gas' methodology to setting the charging bands, by first considering its standing charges relative to the approach used by UK energy networks and suppliers, and relative to the fixed costs that Manx Gas purport to recover.

4.3.1. GB GDN network charges for domestic customers levied on a volumetric basis

Broadly, end user gas charges comprise charges that relate to the network, commodity and retail activities, of which the network and commodity charges are the largest components. For example, in GB, the wholesale charges are around 40 per cent of the costs, and network charges around 25 per cent, and a further 20 per cent relating to retail costs (see Appendix). For Manx Gas, percentage for the cost of gas supply is around 50 per cent; a break-down for network and retail costs is not available.⁶⁹

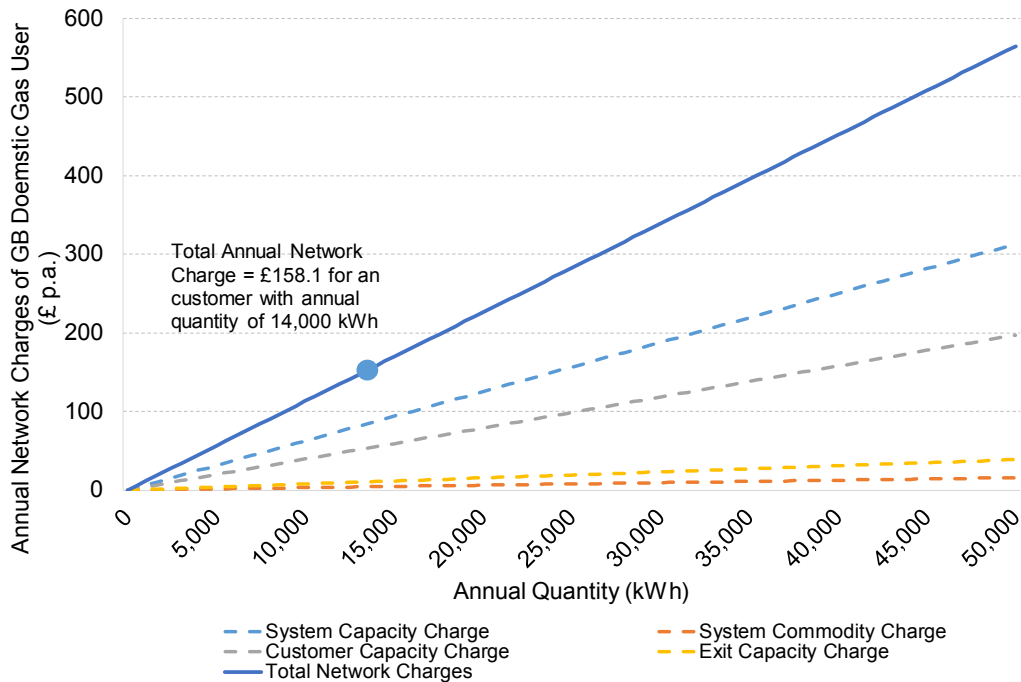
Typically, the wholesale or commodity charge should be levied on a volumetric basis, as there is a direct causal relationship between consumption and commodity costs. A key question is therefore how the network element of charges is recovered. To inform this, we have examined GB gas distribution networks (GDNs') charges.

We examine GB GDN charges, noting that network costs form only an element of Manx Gas' activities and customer charges, the other elements being commodity and retail costs.

In GB, the network charges are levied on shippers (or suppliers), who then recover such costs from end customers. For domestic customer classes (the relevant customer classes for Manx Gas customer base), the GB GDN network charge distinguishes between system charges and customer charges. The system charges, including capacity charge and commodity charge, reflect the network costs and contribution to peak daily flows for different consumption bands. The customer charge reflects the costs of service pipes and emergency work for different supply point sizes. While there are some regional differences in network charges, the charge structures of different GDNs are broadly consistent. We show below an example of the GDN network charges for domestic gas consumer in the London area with annual gas volume below 50,000 kWh.

As shown in Figure 4.4, the GB network charges are levied on a volumetric basis, and increase linearly with gas usage. For a domestic user with annual consumption of 14,000 kWh based in London, the annual gas network charge would be around £158.

⁶⁹ We estimate the proportion of wholesale cost using the cost of goods sold over revenues from Manx Gas' 2015-2017 financial accounts.

Figure 4.4: Network Charging Structure for GB Domestic Gas Users

Note: our analysis is derived from charging tables and an example in the 2018 Statement of LDZ Transportation Charges of Cadent, the gas distribution network in London. Our example assumes a domestic customer with an annual quantity of 14,000 kWh, and is allocated in category E1701B for small NDM supply points. This implies a load factor of 29.6% for such site in the NT1 Exit Zone. The peak daily load (SOQ) is calculated as $AQ \div (365 \times 29.6\%)$. The system capacity charge, customer capacity charge, and exit capacity charge are calculated as $SOQ \times 365 \text{ days per annum} \times \text{unit rates}$. The system commodity charge is calculated as $AQ \times \text{unit rates}$. The details of unit rates can be found in

Source: NERA calculations based on Cadent Statement of LDZ Transportation Charges, Effective from 1st April 2018, London Gas Distribution Network.

Based on GB GDN charging structure, we would expect the network charging element of Manx Gas charges to be levied largely on a volumetric basis. Similarly, the network element of charges in NI is recovered on a variable basis (see Appendix B).

4.3.2. Comparison of MG charging structure with other jurisdictions

We also compare Manx Gas' approach to the structure of charges in comparable Islands, namely Jersey and Guernsey, as well as GB and NI.

Guernsey and Jersey gas both implemented new standing charge bands for customers that came into effect on the 1st January 2016, which impose step changes in standing charge rates based on gas usage in kWh per year.⁷⁰ These changes were made to allow the businesses to recover a higher percentage of the cost of supplying gas, allowing this to be separated from the cost of the gas itself. The design of the standing charge element, which varies by consumption, is similar to Manx Gas. However, the consumptions bands used by Jersey Gas

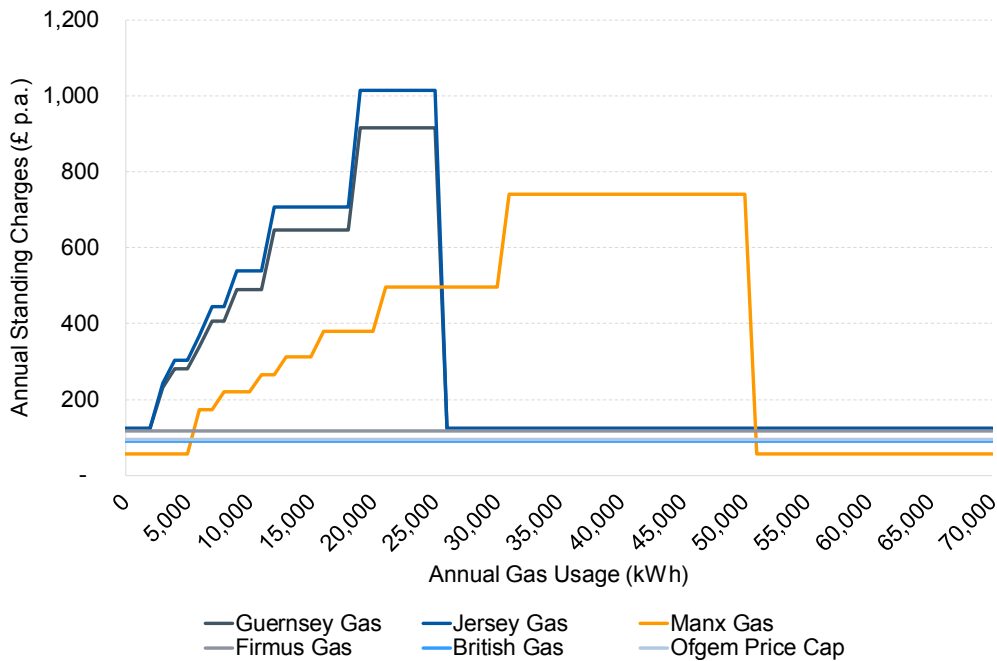
⁷⁰ The standing charge contributes towards the fixed cost of supplying gas and maintaining the gas supply infrastructure. This includes the maintenance of network, gas metering, gas storage and distribution, administration and the provision of emergency services.

and Guernsey Gas are lower compared to that adopted by Manx Gas, possibly explained by lower average domestic consumption levels relative to the Isle of Man.

Figure 4.5 compares the new banded standing charges structure adopted by the gas suppliers in Isle of Man, Guernsey, Jersey, as well as standing charges in Northern Ireland (Firmus Energy) and Great Britain (Ofgem price cap⁷¹, and British Gas). While Manx Gas, Jersey Gas and Guernsey Gas have adopted a step-up standing charges structure, suppliers in GB and NI have applied a flat standing charge that does not vary with volume.

⁷¹ See Appendix for discussion of Ofgem's determination of the retail price cap for GB gas consumers.

Figure 4.5: Comparison of Standing Charges of Manx Gas, Jersey Gas, and Guernsey Gas



Note: For Firmus Gas we take the annual minimum consumption charge for Greater Belfast home gas tariffs (credit meter online) to represent the standing charge.⁷² For British Gas, figures refer to home energy fixed direct debit contracts to January 2020.⁷³ Ofgem price caps refer to the 2018-2019 winter period rates.

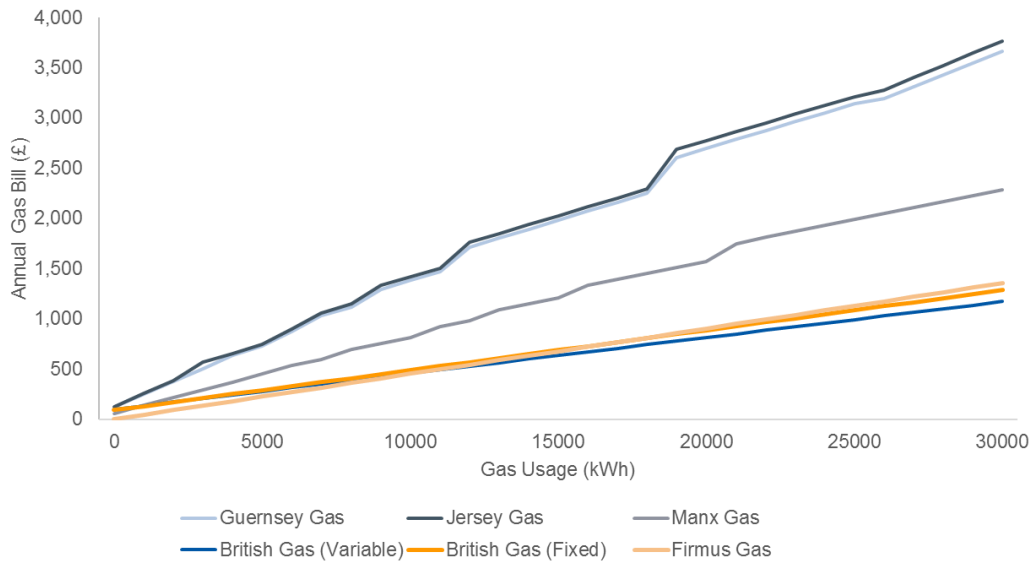
Source: NERA analysis of standing charges table of British Gas, Manx Gas, Jersey Gas, Guernsey Gas and Firmus Gas. Price cap data is from Ofgem

In Figure 4.6 below, we show the total annual bill by kWh of gas used for domestic consumers across sample of comparators. As seen in the chart, the tariffs for Manx Gas are higher than those for Firmus Energy (Northern Ireland) and British Gas, but lower than those for Guernsey and Jersey Gas.

⁷² Firmus Gas website (2018): <https://www.firmusenergy.co.uk/home/tariffs-offers/all-tariffs>

⁷³ British Gas website (2018): <https://www.britishgas.co.uk/energy/gas-and-electricity/tariffs-a-z.html>

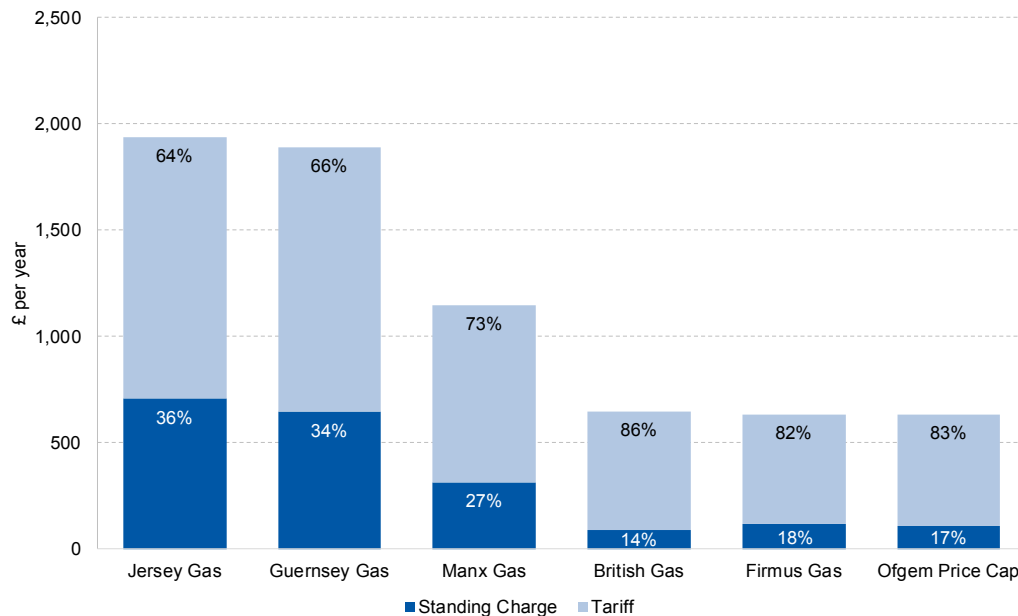
Figure 4.6: Annual Bill by Gas Usage Across Jurisdictions



Note: British Gas fixed charges represent direct debit rates for home energy and exclude 5% VAT; variable rates represent pay-as-you-go charges with effect from 1st October 2018.
Source: NERA analysis of company data.

We have also considered the proportion of the bill comprising standing and variable charges across jurisdictions. As shown in Figure 4.7, the relative proportions of standing charges to variable tariffs are similar across Guernsey, Jersey, GB and the Isle of Man.

Figure 4.7: Annual Gas Bill by Component Across Jurisdictions

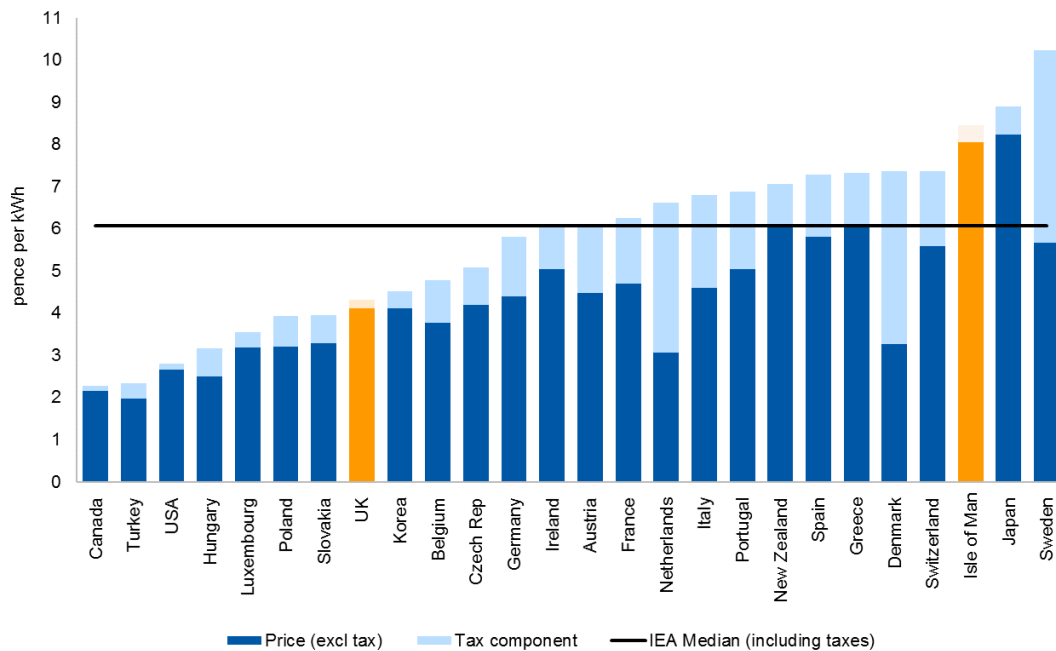


Note: Figures are based on the UK average annual domestic gas consumption (temperature-adjusted) of 14,000 kWh. Firmus gas figures refer to Greater Belfast home gas tariffs (credit meter – online). Ofgem price cap refers to the 2018-19 winter period rates.
Source: NERA analysis of company data & Ofgem data on average annual domestic gas bills by various consumption levels..

4.3.2.1. Comparison of Manx Gas Level of Charges with IEA Countries

As shown in Figure 4.8 below, the Isle of Man has relatively expensive gas compared to other IEA countries. Consumers in the Isle of Man pay almost forty per cent higher than the IEA average at 8.45 pence per kilowatt-hour (kWh). In comparison, the UK has much cheaper gas for domestic consumers, at 4.32 pence per kWh. The difference in charges may reasonable reflect the difference in the size of Manx Gas compared to GB, with GB GDNs and suppliers benefitting from economies of scale in provision of network and retail services.

Figure 4.8: Average Consumer Gas Prices across IEA Countries



Note: Isle of Man tax component calculated using 5% VAT. Figures assume annual consumption of 14,000 kWh. Source: Department for Business, Energy & Industrial Strategy, Eurostat and the International Energy Agency.

4.3.3. Comparing MG standing charges with the fixed cost of supply

Manx Gas has stated that it increased standing charges to more fully reflect the fixed costs of its operations. In this section, we compare MG’s standing charges with its fixed cost of supplying gas and maintain the gas supply infrastructure, based on its financial accounts and management accounts.

We estimate the total standing charges for each customer charging band based on MG’s tariff structures, assuming that the customers are uniformly distributed within each band and stay stable overtime, as shown in Table 4.1.

Table 4.1: Manx Gas' standing charges revenue under original and new arrangement

Gas usage (kWh)	Number of Customer	Average standing charges revenue (£/kWh)		Total standing charges revenue (£ 000s)	
		Original	New	Original	New
0 – 5000	5388	57	57	309.0	309.0
5001 - 7500	3925	57	174	225.1	682.3
7501 to 10000	3348	57	220	192.0	735.7
10001 to 12500	2466	57	266	141.4	655.1
12501 to 15000	1650	57	312	94.6	515.1
15001 to 20000	1802	57	379	103.4	682.5
20001 to 30000	1036	57	497	59.4	514.8
30001 to 50000	276	57	741	15.8	204.5
over 50000	116	57	57	6.7	6.7
Total	20,007			1,147.5	4,305.8

Source: NERA analysis of Manx Gas data

We estimate the fixed operating cost of MG's business using the net operating expenses in its financial accounts' profit and loss statements. The net operating expense comprise all the operating expenses and depreciation charges before interest and tax, but excludes commodity costs. We therefore define fixed costs as costs that are unavoidable over a short time-frame; a lower proportion of costs could be avoidable over very long time-frames.

The average net operating expenses between 2015 and 2017 is £7.1 million. As shown in Table 4.2, around 16 per cent of the estimated fixed cost would be recovered through standing charge under the original charging structure, whereas around 61 per cent of the fixed cost would be recovered through standing charges under the new charging structure.⁷⁴

Table 4.2: Estimated Fixed Costs of Manx Gas

2015-17 Average: fixed costs (£ 000s)	Standing charge revenue / Fixed costs	
	original agreement	New arrangement
7,086.6	16.2%	60.8%

Source: NERA analysis of Manx Gas 2015-2017 financial accounts and management accounts

⁷⁴ We cross-check our estimate by calculating MG's fixed cost using data from the management accounts. The management accounts contain detailed overhead costs that are fixed, including the wage cost, maintenance costs, and other general administrative costs. In addition, we add the annual depreciation charges to the overhead costs, and the sum can be used to approximate MG's annual fixed costs. The sum of overhead expenses and depreciation charges has an average of £7.8 million between 2015 and 2017. Our analysis shows that using this fixed cost measure, around 14.6 per cent of the fixed cost would be recovered through standing charge under the original arrangement, and around 55.0 per cent would be recovered through standing charges under the new arrangement.

4.4. Conclusions on Manx Gas' charging structure

In 2016, Manx Gas changed the structure of its standing charges from a single fixed charge to banded charges. The effect of these changes is to make customers worse-off up to around £100 per annum, and some customer classes (and notably those few customers with relatively high consumption) better-off by up to £250 per annum. There is no change to Manx Gas revenue recovery.

Setting the standing charge based on the previous known consumption may lead to too high (or too low) bills for customers that experience a change in the level of their consumption; Manx Gas allows for customers to inform it of revised consumption levels but this process may be administratively costly for the customer and Manx Gas. The banding approach also creates potential cliff-edge change in bills for customers moving from one band to the next, although such effects should be modest relative to the size of the bill and affect very few customers.

Manx Gas' banded standing charges is broadly in line with the arrangement observed in comparable isles, Jersey and Guernsey, but different to those observed in GB and NI (Firmus Energy) which impose a uniform flat standing charge.

We show that the proportion of charges recovered through the standing charge is 27 per cent for Manx, and around 14 to 18 per cent in UK and NI respectively, for a standard GB consumption level (of 14K kWh/per annum). This suggests that the overall proportion of costs recovered through standing charge for the typical gas consumer is high relative to NI, but lower relative to other Isles.

5. What is the Case for An Alternative Form of Regulation?

In this section, we describe the different forms of regulation that apply to GB and NI GDNs, as well as a review of regulation in the energy and other sectors in the comparable Isles of Jersey and Guernsey.

As we describe below, the principle forms of regulation are cost-of-service and incentive based regulation. Incentive based regulation can provide incentives to minimise costs but imposes higher regulatory costs. We hypothesise on the likely range of cost efficiency improvements for Manx Gas under incentive-based regulation and the additional regulatory costs. We conclude that the case for adopting an incentive based regulatory regime for Manx Gas is finely balanced.

5.1. Forms of Regulation

In this section, we provide an overview of the different forms of regulation: incentive based and cost of service (or “rate-of-return” regulation).

5.1.1. Incentive regulation promotes cost efficiency but higher regulatory costs

The common regulatory model adopted for UK networks (and worldwide) is referred to as *ex-ante* or incentive based regulation. Under this approach, allowed revenues are commonly set to recover the following cost elements (often referred to as the “building blocks”):

- a return on the regulated asset base (RAB) which is the sum of all undepreciated historical investment and updated each year for capitalised investment costs net of depreciation;
- a depreciation charge to provide for the return of historical investment;
- efficient operational costs;
- pass-through cost items for uncontrollable cost such as licence fees; and,
- incentive rewards or penalties for companies’ performance against quality of service standards, e.g. customer services standards, environmental performance etc. (For example, see Figure 5.2.)

In GB, allowed revenues are set at each periodic review in real terms and fixed *ex ante* for a period of between five years (in the water sector) and eight years (for energy networks). Once set, the revenues that companies are allowed to recover are indexed for inflation, and updated for changes in a pre-determined set of uncontrollable costs. The frameworks also provide for re-openers in respect of costs that could not be forecast at review but otherwise the regulated company bears cost risks during the review period of 5-8 years.

The approach provides powerful incentives for companies to minimise costs as companies retain the benefits of cost outperformance against allowed costs set at review, or alternatively bears the cost of underperformance. Allowed revenues are re-set in line with actual costs only at periodic review.

However, the approach for setting allowed revenues on an ex-ante basis requires a detailed investigation of companies' actual and forecast costs at period review. The process for setting the revenue control can be complex and involve high levels of costs for companies, e.g. developing business plans for submission to the regulator, and for regulators, to review the plans and determine efficient costs and associated revenues.

5.1.2. Cost of Service Regulation

Cost plus forms of regulation provide a simpler and administratively less costly approach to ensuring companies' charges track costs. Under such models, revenues are set in line with companies' actual costs *ex post*, as opposed to setting revenues on an *ex-ante* basis. Setting revenues based on observed costs reduces the burden on regulatory bodies (as they do not need to form a view efficient costs), although the approach has muted incentives to promote cost efficiency. Manx Gas is subject to a form of cost plus regulation. The model is widely adopted in US energy network regulation.

The recognition of fully incurred costs can lead to excessive levels of capital accumulation to enlarge allowed profits or "gold-plating" (referred to as the Averch-Johnson effect).⁷⁵ The incentives to gold-plate can be (partially) addressed by "used and useful" or prudence tests which provides powers to regulators to disallow costs which are manifestly inefficient.⁷⁶

5.2. GB RIIO Framework is a High-Powered Incentive Regime

RIIO-GD1 was the first price control in the gas distribution sector to reflect Ofgem's new RIIO (Revenue = Incentives + Innovation + Outputs) regulatory framework. The price control covers the eight-year period from 1 April 2013 to 31 March 2021 for networks in the GB.⁷⁷

The new RIIO regulatory framework (first implemented at GD1 and T1) represents an evolution relative to the "RPI-X" approach that Ofgem had previously used to set energy network price controls. The new framework was designed (in part) to address the challenges of moving towards a low carbon energy sector. We summarise the key differences aspects of the new framework relative to the previous regime as follows.⁷⁸

⁷⁵ [Averch, Harvey; Johnson, Leland L. \(1962\). Behavior of the Firm Under Regulatory Constraint, American Economic Review.52 \(5\): 1052–1069](#)

⁷⁶ "The "prudent investment standard" has a reasonable and common-sense application. Utilities are expected to act prudently, efficiently, and honestly when making investments and operating their systems, and they are presumed to have done so unless credible evidence of imprudence is produced in a regulatory proceeding. In the context of a prudence review, no disallowance is permissible under the prudent investment standard unless there clear evidence showing that the utility has acted in an imprudent manner that resulted in unjust and unreasonable costs," Source: Makhholm, Jeff (2015) Half a Century of Computing the Cost of Capital for Utilities at NERA, p. 6. Link: http://www.nera.com/content/dam/nera/publications/2015/PUB_Cost_of_Capital_1115.pdf

⁷⁷ The Islands of Scotland are also regulated under the same RIIO framework, since the region is served by GB energy networks. Scottish Hydro Electric Transmission and Scottish Hydro Electric Power Distribution serve the electricity transmission and distribution, and SGN operates the gas distribution networks in these isles, including remote areas through the Scottish Independent Undertakings (SIUs) at Stornoway, Wick, Thurso, Oban and Campbeltown. To reflect the higher cost to serve in the Scottish Isles relative to the rest of the GB, Ofgem allowed Scottish Hydro Electric Power Distribution special factors which generally related to the high cost of operating in these remote, sparsely populated, areas. Source: Ofgem (2014), "RIIO-ED1: Final determinations for the slow-track electricity distribution companies Business plan expenditure assessment", p. 45.

⁷⁸ For an overview of the implementation of the new framework, see recent Energy Regulatory Insight (ERI) on RIIO by NERA (James Grayburn and Richard Druce). Link:

- At its core, and like the RPI-X approach, RIIO price controls are still ex ante revenue controls, and thus provide strong incentives for networks to minimise costs. These incentives have been strengthened under RIIO with an extension of the duration of price control periods from five to eight years.
- Ofgem has also introduced new mechanisms to set allowed revenues and to update revenues over time, notably a “totex benchmarking” approach.
- The framework provides network companies with a wider range of targeted incentives that adjust revenues up/down if companies deliver more/less outputs for consumers, e.g. in relation to minimising gas losses.
- The new framework also involves some process changes. These include subjecting some companies to less scrutiny at price control reviews where Ofgem considers their business plans well-justified (a process known as “fast-tracking”), and greater consumer engagement in formulating companies’ plans. Ofgem introduced fast-tracking in the RIIO regime in order to incentivise GDNs to submit better business plans.

5.2.1. RIIO price control reviews run for almost three years

The new RIIO process involves a prolonged process relative to other sector and previous controls, in part to allow for the process of “fast-tracking”, i.e. approval of those companies’ plans that Ofgem considers meet a certain quality threshold. Figure 5.1 sets out the main phases of a price control under RIIO: strategy development; fast-tracking; initial proposals (for non-fast-tracked proposals); and, price control commencement. Overall, the process lasts around 2.5 to 3 years.⁷⁹

Figure 5.1: The Timetable for Setting Cost Allowances Runs Up to Three Years



Source: NERA illustration

http://www.nera.com/content/dam/nera/publications/newsletters/energy-regulation-insights/NL_ERI_Issue_42_0116.pdf

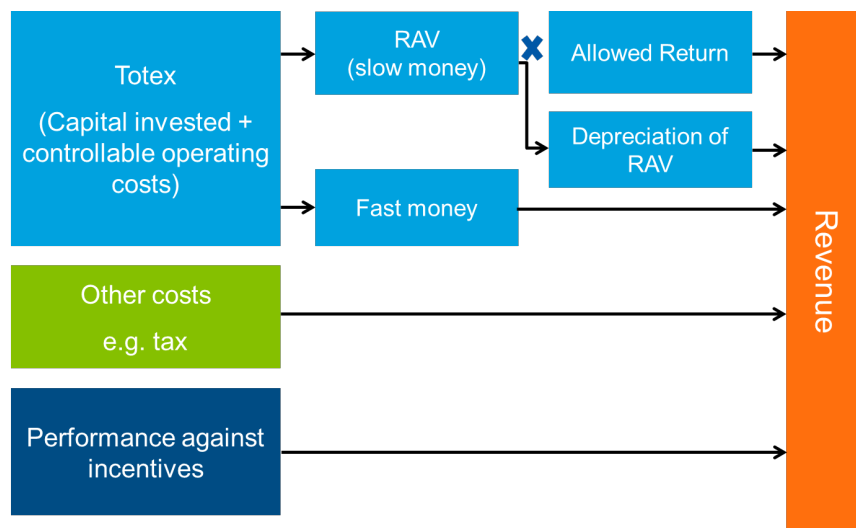
⁷⁹ Source: NERA analysis; for a more detailed timetable see Ofgem (March 2011) RIIO-GD1 Overview Paper – Decision, p. 62.

5.2.2. Overview of revenue setting/ building blocks

The RIIO-GD1 price control determines allowed revenues for the 8 year period from 1 April 2013 to 31 March 2021, which represents an extension in the length of the price control from 5 years assumed for GDPCR1 (2008-2013). The regulatory regime is based on a revenue cap formula which determines the total amount of revenue that each GDN is allowed to recover in each year of the price control, protecting GDNs from volume risk. Allowed revenues are determined by Ofgem ex-ante in real terms and indexed throughout the price control with outturn RPI inflation.

Allowed revenues for RIIO-GD1 are calculated based on a standard “building block” approach common in UK utility regulation. Figure 5.2 below sets out a simplified schematic of the key building blocks.

Figure 5.2: Ofgem’s Building Blocks Approach to Setting Allowed Revenues



Source: NERA illustration

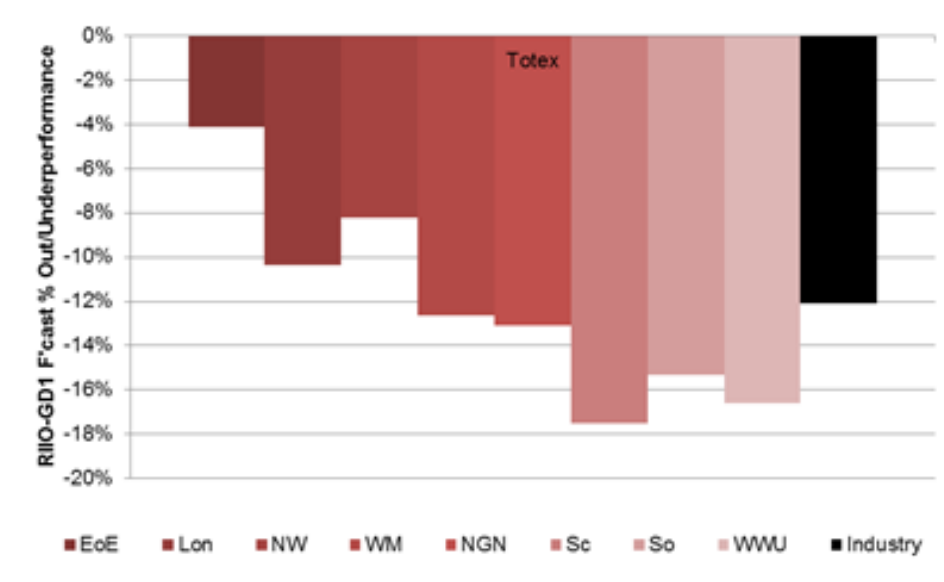
Figure 5.2 shows that total expenditure (totex) – which comprises controllable operating expenditure (opex), capital expenditure (capex), and replacement expenditure (repex) - is divided into fast and slow money, where the relative proportions are broadly based on expected opex-capex shares. The so-called fast money is expensed within year while the slow money element is capitalised within the regulated asset value (RAV). The GDNs earn a return on the RAV based on Ofgem’s estimate of the weighted average cost of capital (WACC). The RAV is also depreciated over time based on Ofgem’s estimates of the useful economic asset life. Some costs are treated outside the totex mechanism, e.g. pensions or pass-through items and are included directly in allowed revenues. Companies can also earn additional rewards/penalties based on their performance under Ofgem’s numerous incentive mechanisms.

5.2.3. Companies have strongly outperformed regulatory cost allowances

Cost outperformance has been higher under RIIO regimes compared to previous reviews – up to 12 per cent on average. As set out in Figure 5.3, the GDNs expect to outperform the price controls set in 2013 at their respective reviews. We consider the outperformance of allowed

revenues is explained by the weakness of the economic recovery and commodity prices relative to assumptions made at review, and the fact that framework assigns market risks to the energy networks, as well as efficiency improvements by GDNs.⁸⁰

Figure 5.3: GDNs expect to outperform on totex over RIIO-1, having benefitted from bearing market risk over 8-year control



NERA analysis of RIIO-GD1 2016/17 accounts

Under the RIIO-framework, networks also face reward and penalties according to their performance against defined output and customer service outputs. For GDNs, the main incentive mechanisms are:

- *Gas losses mechanisms:*⁸¹ Ofgem determines an expected level of gas losses or shrinkage at the time of the price control, and GDNs receive a reward (or incur a penalty) according to the actual shrinkage level, where the reward/penalty is based on the commodity price as well as the UK Government’s value of carbon emissions reductions.
- *Broad measure of customer satisfaction:* Ofgem has designed a customer-service incentive scheme “that is designed to drive gas distribution networks to provide customers with a good level of service”.⁸² There are three components to the broad measure of customer service: i) customer satisfaction survey; ii) complaints metric; and, iii) stakeholder engagement incentive. The penalty/reward sits in the range of +/- 1 per cent of allowed revenues.

⁸⁰ Ofgem draws similar conclusions. It states that: “We suspect that a proportion of GDN underspend is down to factors outside of their control, such as Real Price Effects (RPEs), mild weather, and slow economic recovery”. Source: Ofgem (2017) RIIO-GD1 Annual Report 2016-17. p. 17

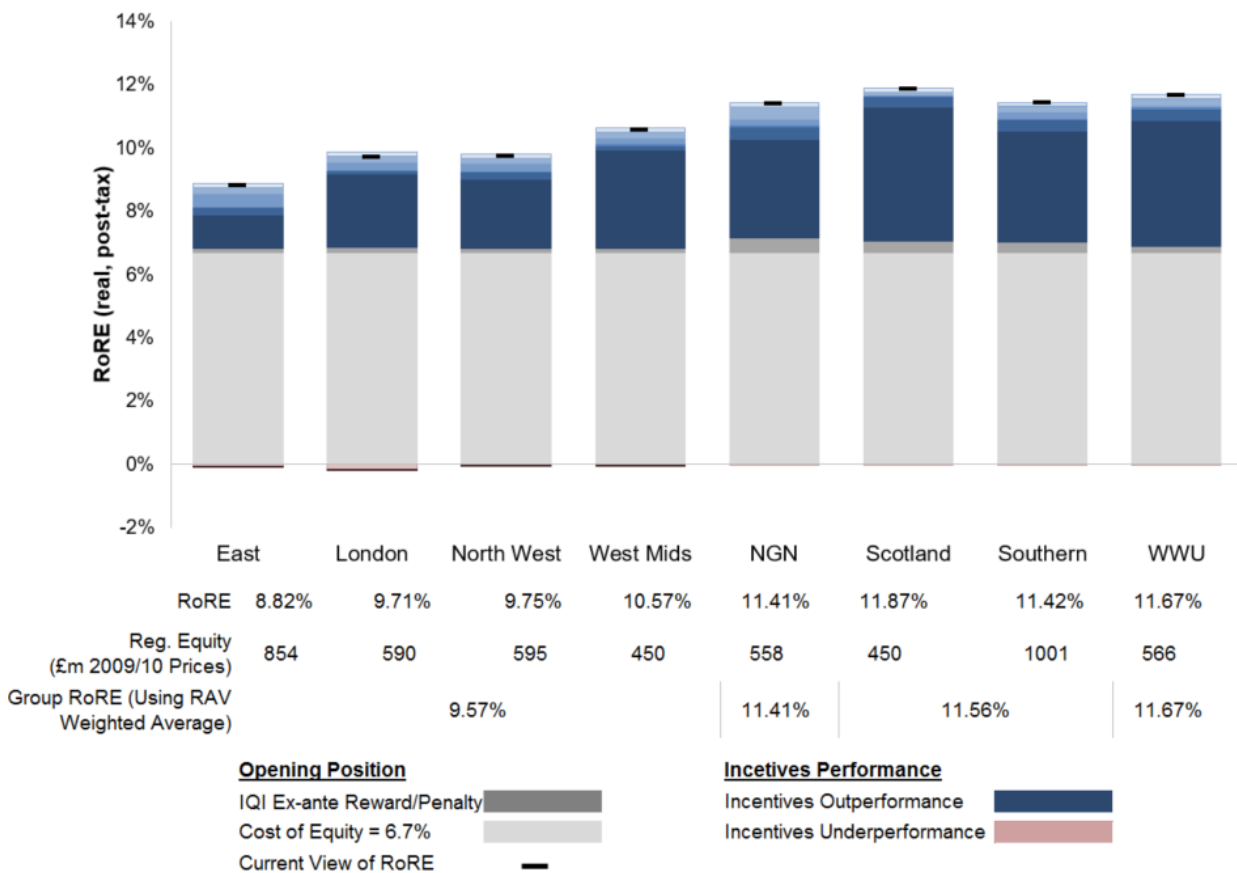
⁸¹ The majority of gas “shrinkage” is leakage from pipelines (95 per cent), with the remainder accounting for theft from the network (3 per cent) and GDNs’ own gas use (2 per cent). There are two separate mechanisms to incentive GDNs to minimise gas losses; these are the Environmental Emissions Incentive (EEI) and shrinkage mechanisms. See for example, Ofgem (December 2012): *RIIO-GD1 Final Proposals – Supporting Document – Outputs, incentives and innovation, Chapter 2*. Link: <https://www.ofgem.gov.uk/ofgem-publications/48155/2riiogd1fpoutputsincentivesdec12.pdf>

⁸² Ofgem (17 December 2012): *RIIO-GD1 Final Proposals – Outputs and Incentives*, para. 3.1

- *NTS Exit Capacity*: The incentive mechanism encourages GDNs to minimise the amount of NTS capacity they book, and/or to encourage them to book capacity at less constrained (ie. cheaper) offtake points.

Figure 5.4 shows the expected real return on regulated equity (RORE) for GDNs over RIIO1. The expected return comprises: the baseline cost of equity (set at 6.7 per cent real at RIIO-1); cost or totex outperformance; and, to a lesser extent incentive rewards. As illustrated in Figure 5.4, all GDNs expect to strongly outperform the baseline cost of equity, with returns in the range of ca. 9 to 12 per cent (real, RPI-deflated):

Figure 5.4
GDNs’ Expect to Earn Returns on Equity of Around 9 to 12 Per Cent (Real)



Note: Incentives performance refers to financial rewards and penalties relating to the following schemes – tax allowance retained within deadband, payments under guaranteed standards, discretionary rewards scheme, environmental emissions incentive, exit capacity incentives, shrinkage roller incentive, customer satisfaction, totex incentive mechanism, fines & redress payments.

Source: RIIO-GD1 2016-17 Annual Report, Figure 3.1.

5.2.4. Ofgem has set out substantive reforms to framework to limit networks’ prospects for earning RIIO-1 level returns

Ofgem is in the process of consulting on the framework for the next set of price controls (RIIO-2). In its framework document, Ofgem consults on a number of potential changes

aimed at ensuring fair returns to energy networks.⁸³ Ofgem considers that although costs can increase above the forecast allowance, it believes that companies generally face a greater likelihood that risks will run in their favour rather than against them.⁸⁴

Ofgem states that its experience of RIIO-1 and previous price controls is that irrespective of the apparent reasonableness of the price control, companies may still be able to outperform against the baseline assumptions and earn high returns. Ofgem has therefore identified a number of measures that could guard against higher returns. As described in section 3, it has proposed to set a substantively lower cost of capital than at RIIO-1. In addition, it has raised the prospect of setting output performance targets on a relative basis (such that a network receives a penalty/reward according to its performance against other networks).

Ofgem has also decided to revert to a five-year price control to minimise the risk of forecast error in setting allowed returns.⁸⁵ Ofgem notes that “the risk is too high” to set a longer price control give the high-level of returns at RIIO-1.⁸⁶ It has also ruled-out fast-tracking for GDNs and TOs.⁸⁷

A further insurance against the risk of repeatedly high returns, Ofgem has proposed a series of so-called “fail safe” mechanisms to ensure that, for example, a higher proportion of outperformance is passed back to customers (“RORE sharing factors”). It is also consulting on making adjustments to returns at the end of each review period such that on average all companies earn the cost of capital (“anchoring”).⁸⁸

Ofgem has yet to make a final determination on most aspects of the RIIO-2 framework, and its decisions will also be subject to any appeal to the CMA. However, based on its proposals to date, it appears that many of the innovative aspects of the RIIO framework (8-year control; fast-tracking) are likely to fall away, and that the regime will resemble more closely the standard RPI-X regimes in place in UK prior to the RIIO controls, and RPI-X regimes common-place elsewhere.

5.3. Incentive based RPI-X, NI

5.3.1. Description of the sector

The gas distribution network in Northern Ireland is currently divided into two distinct areas, the greater Belfast area, served by Phoenix Natural Gas Limited (PNGL) and the Ten Towns area, which encompasses the major towns outside Belfast along the transmission pipe, served by Firmus Energy (FE). Both gas distribution networks are licensed. PNGL was founded in 1996 by British Gas. PNGL legally separated its gas trading and supply division from its transmission and distribution business in 2007.

⁸³ Ofgem (March 2018) op. cit., p. 100

⁸⁴ Ofgem (March 2018) op. cit., para 7.110, p. 100

⁸⁵ Ofgem (July 2018) RIIO-2 Framework Decision, p. 17. Link: https://www.ofgem.gov.uk/system/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf

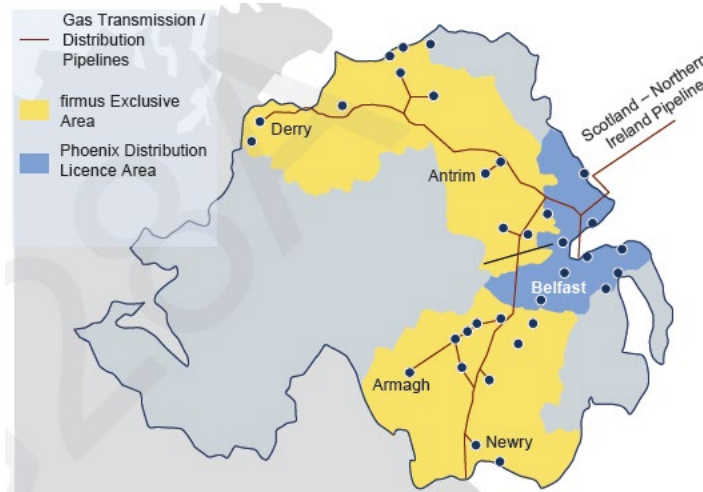
⁸⁶ Ofgem (July 2018) RIIO-2 Framework Decision, p. 18

⁸⁷ Ofgem (July 2018) RIIO-2 Framework Decision, Appendix 3

⁸⁸ Ofgem (July 2018), RIIO-2 Framework Decision, p. 66

FE is an integrated distribution and supply business comprising firmus Energy (Distribution) and firmus Energy (Supply). Firmus Supply and firmus Distribution are subject to separate licences. FE is not expected to become legally unbundled, since it does not have or is expected to have more than 100,000 customers.⁸⁹

Figure 5.5: FE Distribution's Licensed Area



Source: Firmus Energy

5.3.2. Key changes to the regulatory framework: PNGL

PNGL was established in 1996 to bring natural gas to the Belfast and Larne area in Northern Ireland. The original licence granted PNGL a 20 year period over which it would roll-out and recover the cost of its investment at an allowed rate of return of 8.5 per cent (real pre-tax). Revenue recovery was profiled to ensure smooth prices over the licence period, with the effect of deferring revenue (relative to a standard regulated asset value or RAV approach to setting revenues) to future years.⁹⁰

In 2006, the licence was renegotiated due to much lower connection rates than assumed in 1996. The key changes to the licence included: (i) extension of the recovery of the total regulated value (TRV) to 2046 to align cost recovery with economic asset lives; (ii) a revenue cap replacing a price cap (with the first control under the new licence covering the period 2007-11); and, (iii), a reduction in the allowed return to 7.5 per cent (real pre-tax) to the end of 2016 when it will be reviewed by the Utility Regulator (NIAUR).

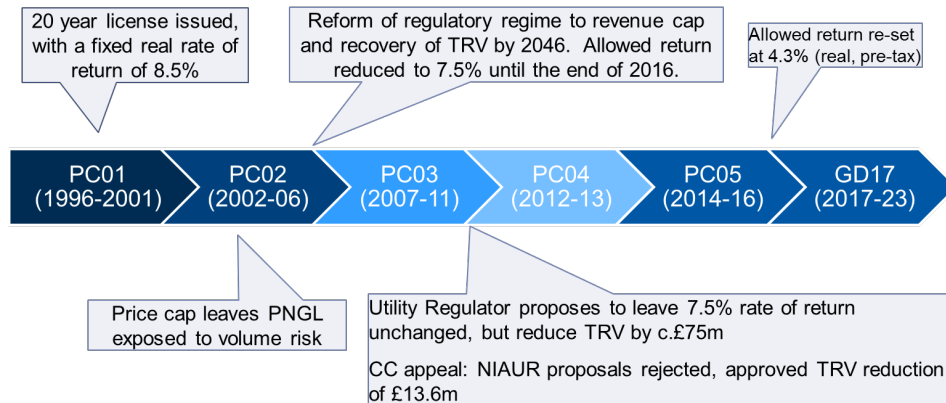
In 2012, the Utility Regulator published its price control determination for the period 2012-2013. As part of its decision, it proposed a reduction in the TRV of around 20 per cent or £75million which reflected historical outperformance by PNGL. PNGL asked NIAUR to refer its decision to the Competition Commission (CC) on the grounds that the reduction in TRV was inconsistent with the terms of the original licence and licence renegotiation. The appeal was upheld by the CC.

⁸⁹ 2012 Northern Ireland and Great Britain National Reports; available at CEER website p. 101 para 506.

⁹⁰ See CC Final decision on PNGL (November, 2012) para 2.19 to 2.24 for more detail.

Utility Regulator has since conducted two price control reviews which will set allowed revenues for the period 2014-2016, and for 2017-23. For the PC07 period (now referred to as GD17), it set an allowed return of 4.3 per cent (real, pre-tax).⁹¹

Figure 5.6: Key Changes to PNLG's Regulatory Framework



Source: NERA illustration

Unlike GB energy, there is more limited data on cost performance in NI. However, there is evidence that PNLG substantively outperformed its capital cost allowances in the earlier development periods, as explained above, by around 20 per cent.

5.3.2.1. Development obligations

PNLG and FE are also subject to incentive mechanisms. Of note, both PNLG and FE are subject to connection or development obligations to incentivise them to roll-out the network, as greenfield developments. We understand that there are plans to extend Manx Gas network, and therefore such mechanisms may have some relevance to regulation in the Isle of Man.

For example, under its licence, FE (Distribution) is subject to a cumulative connection target of 88,004 in 2027/28.⁹² FE is obligated by its licence to install and bring into operation enough pipelines to achieve 90 per cent of its annual aggregate target, and no less than 50 per cent of its annual target for each of the Ten Towns.⁹³

5.4. Jersey and Guernsey Gas and Electricity

The Isle of Man bears close similarities to the Channel Islands in terms of economic development and population.⁹⁴ As such, the regulatory regimes in Jersey and Guernsey serve

⁹¹ UR (2016) Price Control for NI GDNs, GD17 para 1.67, p.26

⁹² The targets for number of properties passed included in Annex 2 to Part 3 of firmus' licence do not include firmus' obligation in relation to the new licence areas. For each of these new licence areas, there is an Additional Development Plan (ADP), setting out the properties passed and connections targets (available at: http://www.firmusenergy.co.uk/about_us.aspx?dataid=507590).

⁹³ UR (2005): Bord Gais Eireann, Licence for the Conveyance of Gas to Northern Ireland, condition 3.2, p.111.

⁹⁴ The population of Jersey was estimated at 105,500 at the end of 2017. Source: <https://www.gov.je/Government/JerseyInFigures/Population/Pages/Population.aspx> The population of Guernsey is

as a noteworthy comparative study. We summarise below the existing frameworks in the gas and electricity sectors in these jurisdictions.

5.4.1. Jersey Electricity: informal regulation

Jersey Electricity (JE) is the sole supplier of electricity in Jersey. It procures the energy required to serve electricity demand on the island through a mix of imports, own generation and an energy-from-waste plant.⁹⁵ JE also owns and operates the distribution network that transports electricity from these generators and interconnectors to customers' premises in Jersey. In essence, therefore, JE is a vertically integrated monopolist, which owns and operates the entire electricity value chain on the island.

JE is listed on the London Stock Exchange. The State of Jersey (SoJ) owns 62% of the Ordinary Share capital, which is unlisted. The remaining listed equity is owned by various private and institutional investors.⁹⁶ JE is regulated by the Jersey Competition Regulatory Authority (JCRA): an independent body accountable to the Minister for Economic Development, with responsibility for promoting competition and consumer interests through economic regulation and competition law.⁹⁷

Unlike the telecommunication and postal sectors, the electricity sector in Jersey is not currently subject to any form of sector-specific economic regulation by the JCRA. The two pieces of legislation which govern the electricity market, namely the Electricity (Jersey) Law 1937 and the Competition (Jersey) Law 2005, do not provide for sector-specific tariff regulation. JE is therefore not subject to any explicit regulation of its revenues or the charges it sets for its services.

However, the SoJ can use its majority ownership to place limits on JE's ability to abuse any dominant position, and to protect the customer interest. Hence, while JE is a vertically integrated monopolist, and as such may have considerable market power allowing it to profitably raise its prices, the State majority shareholding is likely to provide an effective instrument for promoting the customer interest. For instance, in its 2012 Annual Report JE states that its Energy Business has a *“target return of between 6-7%, [...] as it is generally viewed in our industry as the minimum necessary to support continued infrastructure investment”*.⁹⁸

5.4.2. Guernsey Electricity: GEL is state-owned

In Guernsey, the electricity market is open to competition but dominated by a state-owned company, Guernsey Electric Ltd (GEL). The previously state-owned company was commercialised in 1998 into a separate legal entity but remains wholly owned by the State.⁹⁹

62,000 as at end of 2017. Source: <https://www.gov.gg/population> The population of Isle of Man is similar in size, at around 83,000. Source: IOM Government (2017) 2016 Isle of Man Census Report, p.8

⁹⁵ Jersey Electricity (2017), Annual Report and Accounts 2017.

⁹⁶ Jersey Electricity website; link: <https://www.jec.co.uk/about-us/investor-relations/>

⁹⁷ CICRA, “Memorandum of Understanding between the Jersey Competition Regulatory Authority and the Office of Utility Regulation”.

⁹⁸ Jersey Electricity's annual Report and Accounts 2012, page 5.

⁹⁹ Littlechild, S. (2006), Electricity Regulation in Guernsey, A Report Prepared for Guernsey Electricity Limited, p.9.

Since 2001 it has been regulated by the Guernsey Competition and Regulatory Authority (GCRA), under the provision of the 2001 electricity law and its license conditions.¹⁰⁰

Under this framework, the GCRA has the right to set the prices, premiums and discounts of companies when granting or renewing licenses.¹⁰¹ The regulator sets prices and service targets where appropriate, following a full cost submission from GEL, such that GEL obtains a reasonable rate of return.¹⁰²

In this system, regulatory costs are covered by license fees. GEL currently has a monopoly on the conveyance and supply of electricity in Guernsey and holds licenses for these activities as well as a license to generate electricity. GEL pays a license fee of £180,000 per annum to cover the costs of regulation for these three activities.¹⁰³

The electricity generation sector in Guernsey is open to competitive entry. The application fee for an electricity generation license is £10,000. In August 2017, CICRA granted an electricity generation license to International Energy Group Limited (IEG) to generate electricity. This was the first such license granted to a competitor to GEL in the electricity market in Guernsey.¹⁰⁴

In 2016, the States of Guernsey (SoG) voted to take back responsibility of Guernsey Electricity.¹⁰⁵ Thus, GEL will no longer be regulated by the independent GCRA in the future, but by the Committee for Economic Development.¹⁰⁶

5.4.3. Jersey Gas: informal regulation

Jersey Gas (JG) is the monopoly supplier of gas to the island, and a subsidiary of International Energy Group Ltd (IEG).

The government has no ownership in the company but enforces competitive prices in the market via the threat of future regulation.¹⁰⁷ The state maintains the lever of potential future regulation via the Jersey gas law (1989) conditions, which gives the government the right to determine tariffs for the next 12 months for private companies.¹⁰⁸ These tariffs must be set such that firms are able to recover capex, opex and an appropriate return on investment.¹⁰⁹

¹⁰⁰ States of Guernsey (2001), The Electricity (Guernsey) Law, 2001, Projet de Loi.

¹⁰¹ States of Guernsey (2001), The Electricity (Guernsey) Law, 2001, Projet de Loi, para.5.1 (f).

¹⁰² Littlechild, S. (2006), Electricity Regulation in Guernsey, A Report Prepared for Guernsey Electricity Limited, p.10.

¹⁰³ CICRA (2018), Licence Fee; available online at: <https://www.cicra.gg/business-resources/electricity/licence-fee/>

¹⁰⁴ CICRA (2018), Standby Charge for Embedded Electricity Generation, Document no: 18/30, 4 July 2018, p.2., para 1.1.

¹⁰⁵ See: BBC (2016), Guernsey States to take over utilities' regulation, 18 February 2018; available online at: <https://www.bbc.com/news/world-europe-guernsey-35605318>

¹⁰⁶ CICRA (2018), Standby Charge for Embedded Electricity Generation, Document no: 18/30, 4 July 2018, p.8., para 4.4.

¹⁰⁷ Oxera (2015), A Review of the Jersey Regulatory and Competition Framework, Prepared for the Government of Jersey, p.71.

¹⁰⁸ States of Jersey (2018), Jersey Gas Company (1989) Law, Revised Edition 2018, Power of States in connection with gas tariffs, para. 89.1. (a).

¹⁰⁹ Including depreciation, amortisation, interest, working capital.

States of Jersey (2018), *op. cit.*, para 89. 2-3.

The regulatory will periodically launch investigations into the level of prices and profitability of JG, usually following pressure or formal requests from the SoG. Following a high-level exercise conducted by the Channel Islands Competition and Regulatory Authorities (CICRA) in 2015,¹¹⁰ the regulator concluded that there are ‘*no reasonable grounds to suspect that [the fuel market in Jersey is] not acting in the best interests of consumers*’.¹¹¹ An independent report in 2016 commissioned by the Government of Jersey, also found that Jersey Gas’ historical profits were not excessive.¹¹² As such, the SoJ decided to continue to not regulate gas prices.

5.4.4. Guernsey Gas

The Gas sector in Guernsey is not subject to economic regulation. The Guernsey Gas company is the monopolist supplier on the island and is owned by IEG, as is the case in Jersey. In both Jersey and Guernsey, gas is transported to the island on container ships, before being pumped into a network to serve end customers on the island.

Guernsey Gas (GG) has complained in the past that electricity prices on the islands are anti-competitive, as they limit the ability of alternative fuel providers (e.g. GG) to compete effectively in the market. The complaints argued that some of the tariff levels established under GE’s price control settlement are effectively below costs.¹¹³

5.4.5. Manx Telecom

Manx Telecoms Ltd is the primary provider of broadband and telecommunications on the Isle of Man. Manx Telecom is authorised to run telecommunication systems subject to the licence granted by the Isle of Man Communications Commission (IOMCC) under the Telecommunications Act 1984 (of Tynwald).¹¹⁴ Manx Telecoms owns the broadband infrastructure on the Island. Other internet service providers (ISPs) compete in the market, and the pay a wholesale price for use of the networks by Manx Telecoms.¹¹⁵

Historically, the telephone system in the Isle of Man had been run as a monopoly by the British General Post Office, and later British Telecommunications. In 1985, the Manx Government announced that it would award a 20-year licence to operate the telephone system in a tender process. As part of this process, in 1986 British Telecom created a Manx-registered subsidiary company, Manx Telecom, to bid for the tender. Manx Telecom won the tender and commenced operations under the new identity from 1 January 1987.

On 17 November 2001, Manx Telecom became part of mmO2 following the demerger of BT Wireless’s operations from BT Group. It was acquired by Telefónica in 2006. In 2014, Manx

¹¹⁰ The JCRA and the Guernsey Competition and Regulatory Authority (GCRA) are administratively merged into the Channel Islands Competition and Regulatory Authority (CICRA).

¹¹¹ CICRA (2015), ‘Review of the Fuel Market in Jersey’, p. 3.

¹¹² Oxera (2016), “Is the Jersey Gas Market Working in the Best Interests of Consumers?”, Prepared for the Government of Jersey.

¹¹³ Yarrow, G. and C. Decker (2010), Review of Guernsey’s Utility Regulatory Regime, A report for Commerce and Employment, Regulatory Policy Institute, p.69.

¹¹⁴ Isle of Man (1984), Telecommunications Act 1984, AT 11 of 1984.

¹¹⁵ PwC (2009), Provision of Broadband & Private Circuits – Isle of Man: A Benchmark of Prices and Services, September 2009, p.18.

telecom was floated on the alternative investment market (AIM), a sub-market of the London Stock Exchange that allows smaller companies to float shares with a more flexible regulatory system than is applicable to the main market.

The IOMCC issues telecoms licences to all operators in the market, who pay a licence fee in return. The structure and level of the fee differ according to the type of licence held, but the underlying premise is that an initial fixed sum is followed by an annual payment representing a percentage of turnover.¹¹⁶ The licence stipulates that the licensee shall pay a fixed sum of £5000 on the first £1 million of turnover, and 0.5 per cent of any turnover above £1 million. The percentage of turnover may be modified by the Commission with the consent of the Treasury, to reflect current regulatory costs, at any time after the end of the fifth year after the grant of this Licence.¹¹⁷

The IOMCC currently undertakes market reviews in the telecoms sector every 6 years. The last completed round was in 2012; the second review is underway and due to be published before the end of 2018. As of this review, the IOMCC determined that Manx Telecoms has significant market power and as such implemented measures to reduce barriers to entry in the market for retail broadband, voice calls, fixed access and retail leased telephone lines.¹¹⁸ Consequently, the IOMCC implemented a variety of measures to force Manx Telecoms to open its infrastructure to competitors.

The IOMCC requires Manx Telecoms to publish annual separated accounts, with income statements for the regulated and unregulated parts of its business presented separately, and the IOMCC sets the weighted average cost of capital (WACC) for Manx Telecoms.¹¹⁹

5.5. Consideration of Optimal Form For Manx Gas

The consideration of the optimal form of regulation for Manx Gas depends on the likely improvements in cost efficiency versus regulatory costs. We consider these issues below, drawing on evidence from the case studies described above.

5.5.1. Cost performance

The evidence suggests that networks operating under incentive based regulation in the UK have made substantive improvements in cost efficiency over time. For example, real unit operating expenditure (RUOE) is estimated to have fallen by approximately 5.5 per cent per annum across distribution networks since privatisation.¹²⁰ However, these effects are not solely attributable to incentive-based regulation, which was introduced at the same time as ownership change, i.e. from state-owned enterprises to private ownership, and structural change, e.g. the separation into generation, transportation and supply in the case of UK energy. We cannot read directly across from UK regulation in terms of lessons for Manx Gas: Manx Gas is a private company that assumed merchant risk prior to the 2015 Agreement.

¹¹⁶ Isle of Man Communications Commission (2016), Licensed Activities: Guidelines for Calculating the Licence Fee, p.3.

¹¹⁷ IOMCC (2016), *op. cit.*, p.12.

¹¹⁸ IOMCC (2011), Consultation paper on telecommunications market reviews and notification of the proposed determinations, June 2011, p.16.

¹¹⁹ Manx Telecom plc. (2017), Separated Regulatory Accounts; for the Year Ended 31 December 2016, p.8.

¹²⁰ UK Parliament (2018), *op. cit.*, p.49.

It has no history of state-controlled which may explain, at least in part, the strong cost efficiency improvements in UK network regulation over the past decades.

Our review of the RIIO and NI incentive based regimes show that networks have outperformed regulatory allowances, e.g. with expenditure around 12 per cent lower for GB GDNs at the current price control; PNGL outperformed capex allowances by 20 per cent during the early development phase. However, the levels of outperformance are likely to be explained by forecast error by the regulator, and a result of GB GDNs bearing market risks such as input price risk, as well as efficiency improvements. Our review of these regimes highlight the risk around regulators' ability to set cost allowances that are not overly generous under ex ante regimes.

5.5.1.1. Assessment of Manx Gas capital expenditure

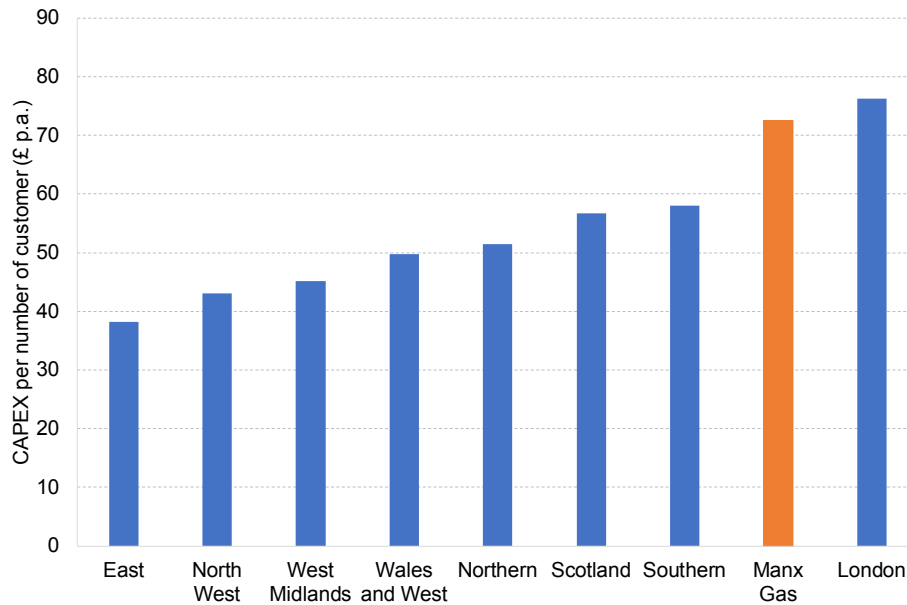
We have undertaken a high-level comparison of capital cost expenditure levels between GB gas distribution networks and Manx Gas, as required by the scope of work.¹²¹ We compare the capital expenditure (capex) to comparable companies, taking into account differences in the size of the businesses.

We estimate the annual capital expenditure of Manx Gas based on the net additions to property, plant and equipment in the 2015 to 2017 financial accounts. The average capex is around £1.85 million per annum.¹²² For the GB gas distribution networks, we calculate the comparable capital expenditure by summing the networks' capex and replacement expenditure (repex), since both costs are categorised as capex in Manx Gas' accounts. As shown in Figure 5.7 and Figure 5.8. Manx Gas' capex is broadly in line with GB gas distribution networks controlling for number of customers and network size. While Manx Gas' capex per customer is higher than most GB gas networks, its capex per km distribution mains ranks average among GB gas networks.

¹²¹ In relation to opex, as an integrated gas supplier, Manx Gas' operating costs in the financial accounts includes costs that are not incurred by distribution networks, e.g. costs of supply, making it difficult to compare to the gas distribution networks. Therefore, we have not compared opex levels.

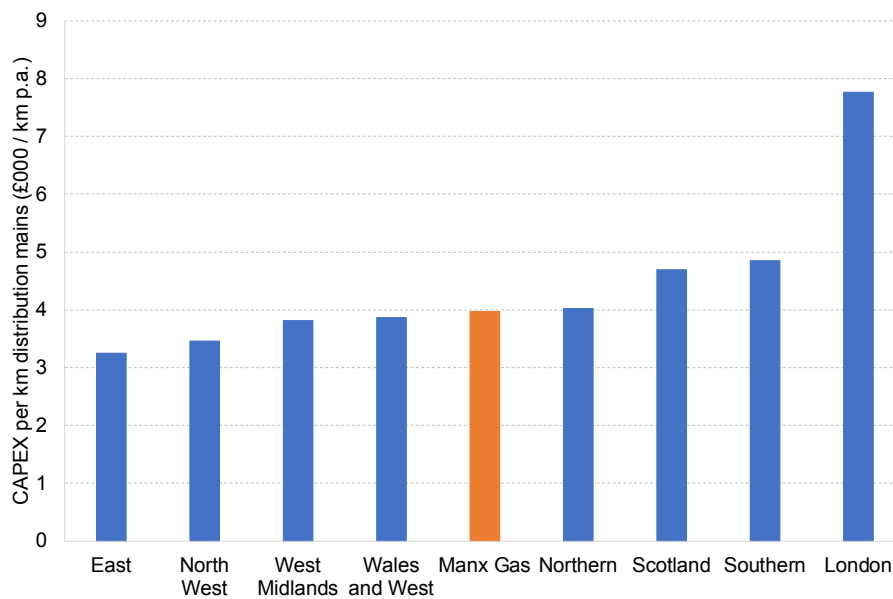
¹²² In order to compare Manx Gas' capital expenditure to companies with different sizes, we normalise capex with the number of customers and the mains length of the networks. We estimate Manx Gas' number of customers to be around 25,000 and the distribution network length to be 465 km, based on its asset management plan dated December 2013.

Figure 5.7: Manx Gas' capex per customer relative to GB gas distribution networks



Source: NERA calculation of data from Manx Gas financial accounts, and GB GDN regulatory reporting pack 2016/2017.

Figure 5.8: Manx Gas' Capex per kilometer mains relative to GB distribution networks



Source: NERA calculation of data from Manx Gas financial accounts, and GB GDN regulatory reporting pack 2016/2017.

We conclude that there is no prima facie evidence to suggest Manx Gas capital expenditure is high compared to GB GDNs: however, the simple unit cost analysis is limited, and would need to be supplemented by more detailed statistical cost analysis and engineering review to draw any firm conclusions.

5.5.2. Hypothesised improvements in Manx Gas cost performance

Below we analyse the impact on allowed revenues and customer bills under the incentive-based regulation. We assume that the allowed revenue consists of elements of commodity costs, operating costs, depreciation charges, and allowed return, as per standard building block approach. We use Manx Gas' 2017 financial data to construct the base case and consider the implied customer bill reduction given any changes in operating costs and capital expenditures.

By way of example, if the incentive-based regulation results in a 10 per cent reduction in operating expenditures, the allowed revenue and average customer bill would be 2.4 per cent lower or an equivalent of reduction of £0.61 million saving.¹²³ Further, if we assume a reduction in capex that eventually leads to a 5 per cent reduction in capital employed over time, and thereby depreciation and return elements of revenue, the allowed revenue would be reduced by an additional 1.3 per cent, or £0.32 million.

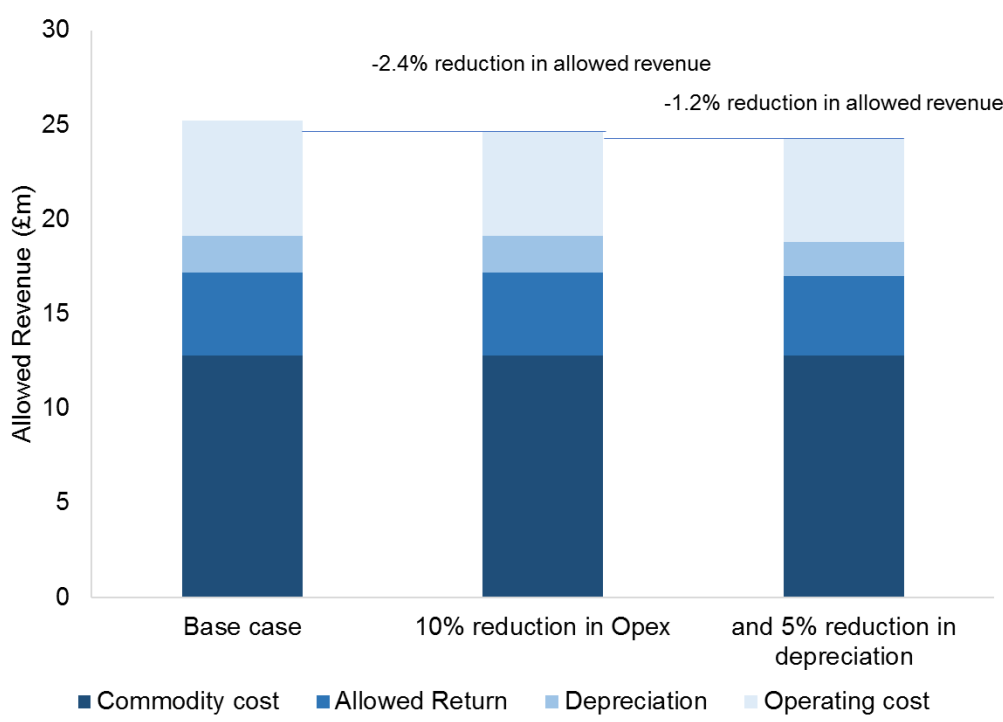
The realisation of a reduction of a 5 per cent in capital employed may take some years to achieve, e.g. around ten years, as the effect of lower capital expenditure does not feed through immediately into bills but only over time.¹²⁴

This example shows that there can be around 4 per cent, or £1 million reduction in total allowed revenue if incentive-based regulation leads to 10 per cent opex reduction and 5 per cent depreciation and asset base reduction, as illustrated in Figure 5.9.

¹²³ We assume the commodity costs remain unchanged, as a bought-in cost.

¹²⁴ For example, a 5 per cent reduction in depreciation and returns elements could be realised by year ten, if over a ten-year period capex spend amounted to 25 per cent of gross book value, and that incentive based regulation realised a 20 per cent reduction in the capital expenditure amounts.

Figure 5.9: Example of Reduction in Allowed Revenues From Improved Cost Performance



Source: NERA calculations based on data from Manx Gas financial accounts

5.6. Cost of regulation

An incentives based form of regulation is likely to be accompanied by an increase in regulatory costs, for both the regulator and the regulated entity which would need to be recovered from end-users in the form of higher charges.

Drawing on the case studies above, we have identified a number of source of cost estimate for formal incentive based regulation of Manx Gas:

- In 2011 the OFT and the Department of Economic Development commissioned a study to examine options for economic regulation of the gas industry. The report identified a system of relatively light touch regulation with the key measure being an acceptable range of return on capital employed for Manx Gas. However, the cost to Government of operating a regulatory regime of the kind recommended was estimated to be in the order of £250,000 per year and it was recognised that such a regime would also have cost implications for Manx Gas, which would ultimately feed through into higher consumer prices. The OFT has estimated that a system of formal regulation would add just over £10 per year to each customer’s bill.¹²⁵
- In Guernsey the total annual cost of electricity regulation was estimated at £180,000 for the regulator, or around 10 to 20 times the per capita cost in the UK based on a 2006

¹²⁵ The report is confidential and we have therefore not reviewed the cost estimates or the form or incentive based regulation proposed. Tynwald, Statement by the Minister for Economic Development. Source: <http://www.tynwald.org.im/business/OPHansardIndex1416/3591.pdf>

study.¹²⁶ As mentioned above in section 5.4.2, the costs of regulation are covered by the license fees paid by market participants. This covers consultancy fees, the funding of work commissioned by advisory panels, staff salaries and office rentals.¹²⁷ The Minister of Economic Development has recently resisted calls from other deputies in government to impose price caps on Jersey Gas, explaining that the associated higher costs of regulation would ultimately be borne by consumers.¹²⁸

- The total annual costs of the CICRA were £1.93 million in 2017, comprising of £1.25 million for the JCRA and £680,000 for the GCRA. The organisation has six permanent staff across Guernsey and Jersey and is led by a board of directors comprising of a chairman and four non-executive directors. Salary and staff costs represent approximately 60 per cent of total expenditures, whereas consultancy fees account for between 10-15 per cent of totals.^{129,130}

5.7. Conclusions: Case for Incentive Based Regulation Finely Balanced

Based on the above, we consider that the regulatory costs associated with incentive based regulation would be £0.5 million per annum based on 2011 OFT estimate, and assuming that the costs for Manx Gas would be equivalent to those incurred by the IOM Government. The cost estimate for the regulation of electricity in Guernsey also appears to broadly support this figure, as does those of CICRA, observing that the latter undertakes wider competition and regulatory duties.

On balance, therefore, the net benefits of incentive based regulation is finely balanced: a reduction in opex costs of 10 per cent is likely to offset the expected increase in regulatory costs. Any improvement in capital expenditure efficiency, feeding through eventually into lower depreciation and return elements of 5 per cent should more than cover the regulatory costs. However, the reduction in depreciation and return elements will only be realised over a period of time, say ten years. In the short-term, there may be no net reduction in bills; in the medium term the overall reduction in allowed revenues could be of the order of £0.5 million or £20 per customer per annum.

However, there is great uncertainty around the expected improvement in cost efficiency which we have set out; and some uncertainty over regulatory costs. The case studies for RIIO-1 also shows the potential costs to consumers of forecast error under an incentive based approach, in terms of too high regulatory allowances.

¹²⁶ Littlechild, S. (2006), Electricity Regulation in Guernsey, A Report Prepared for Guernsey Electricity Limited, p.5.

¹²⁷ Regulation of Trading Organisations, Report in a letter of 20 December 1999 from States Board of Industry to President, States of Guernsey, supported by President of States Advisory and Finance committee letter of 21 December.

¹²⁸ States of Jersey (2015), Gas Tariffs: Reduction, States Greffe, p.6.

¹²⁹ CICRA (2017), Annual Report, GCRA Income Statement p.16. and JCRA Income Statement p.33.

¹³⁰ For very small competition and regulatory authorities, the limited pool of staff that is likely to be available is unlikely to have the range of skills and expertise to undertake all the regulatory and/or competition tasks that arise. However, economies of scale through resource sharing between agencies can mitigate this problem. In the Channel Islands, the regulatory authorities of Jersey and Guernsey were administratively merged into a shared structure in 2010 – the CICRA. This merger was estimated to have saved approximately £100,000 per year, or 7 per cent of total operating costs, through the sharing of board, staff, IT and other facilities. Oxera (2015), A Review of the Jersey Regulatory and Competition Framework, Prepared for the Government of Jersey, p.21.

Appendix A. Cost of Debt Indexation

In this appendix, we describe UK regulators' use of a cost of debt indexation mechanism to set the allowed cost of debt. Several UK regulators, including Ofgem¹³¹, Ofwat¹³² and UR¹³³ have either already applied or are proposing to apply cost of debt indexation.

UK regulators' principal rationale for adopting cost of debt indexation is that it removes uncontrollable credit market risk from companies, i.e. as given by changes in government bond rates, whilst preserving incentives for companies to minimise debt costs given that the allowance is set based on an industry benchmark, and not on companies' actual debt costs.

Following the global financial crisis, government and corporate bond yields declined in response to central banks reducing interest rates and quantitative easing. In general, the prolonged low interest rate environment was not foreseen by UK regulators and led to companies outperforming on the cost of debt relative to regulators' ex ante allowances.¹³⁴ As a consequence of outperformance, as well as the lengthening of the price control under RIIO-1, regulators have sought ways to mitigate the risk of regulatory forecast error through the use of indexation mechanisms.

A.1. Ofgem Approach to Setting Cost of Debt for GDNs¹³⁵

As an example, the extension of the price control period to 8 years under the RIIO framework made it difficult to forecast debt costs ex-ante without the risk of introducing forecasting error. To address this issue at RIIO-1, Ofgem introduced a cost of debt indexation mechanism, where the allowed cost of debt is re-set every year in line with a long-run trailing average of GBP corporate bond indices. Specifically, for RIIO-GD1 the allowed cost of debt is calculated as the 10 year trailing of the average yield of the A and BBB iBoxx iGBP non-financials index with 10+ years maturity. The 10 year trailing average for the purpose of the annual update is calculated as of the last working day in October.

Given that the iBoxx index comprises of nominal bonds, Ofgem deflates the nominal iBoxx yield with 10 year breakeven inflation as published by the Bank of England to derive an allowance for the cost of debt in real terms. The breakeven inflation is calculated over the same period as the trailing average of the iBoxx index.

¹³¹ Ofgem (2012) RIIO-GD1 Final Proposals – Finance and uncertainty supporting document, p. 11. Link: https://www.ofgem.gov.uk/sites/default/files/docs/2012/12/3_riiogd1_fp_finance_and_uncertainty_0.pdf

¹³² Ofwat has decided to set the cost of new debt allowance based on an average of A rated and BBB rates iBoxx index of Corporate (non-financial) bonds with 10Y+ remaining maturity. Ofwat (December 2017), Appendix 12: Aligning Risk and Return, p.72.

¹³³ UR (September 2016) Price control for NI's Gas Distribution Networks, GD17, para 10.12, and Annex 14

¹³⁴ For example, the UK's National Audit Office (NAO) estimated savings to consumers of £840 million if Ofwat had adopted a cost of debt indexation approach over the period 2010-15 instead of an ex ante allowance, and NAO recommended the consideration of such an approach. Source: NAO (2015) The economic regulation of the water sector pp. 11 & 32. Link: <https://www.nao.org.uk/wp-content/uploads/2014/07/The-economic-regulation-of-the-water-sector.pdf>

¹³⁵ Ofgem (2012): RIIO-GD1 Final Proposals – Finance and uncertainty supporting document, 17 December 2012, paras. 3.45 - 3.52.

A.2. Key Design Issues

In designing a cost of debt indexation mechanism, there a number of key design issues including the following:

- Index source: Ofgem, Ofwat and UR draw on iBoxx Corporate Non-Financial debt indices, although other candidate indices are available, e.g. iBoxx Utilities, or Bank of America Merrill Lynch indices
- Credit rating: The credit rating of the chosen index must match the notionally efficient credit rating. Ofgem assumes a notionally efficient credit rating of an average of A and BBB; UR assumes a notionally efficient credit rating of BBB.
- Tenor: In theory, the maturity of the chosen index must track the efficient average debt tenor at issuance. For RIIO-1, Ofgem adopted the iBoxx Corporate Non-Financial index comprising bonds of 10Y+ maturity.
- Trailing average: At RIIO-1, Ofgem determines the allowance based on 10-year trailing average. For ED1, Ofgem has adopted a trailing average that will extend to 20 years.

Table A.1 sets out a list of potential iBoxx indices.

Table A.1: List of Candidate Indices and Tenors

Indices	Available ratings	Available tenors (years)
iBoxx GBP Utilities	Investment Grade	1-3, 3-5, 1-5, 5-7, 7-10, 5-10,10-15,10+,15+
iBoxx GBP Corporate Non-Financial	A, BBB	1-3, 3-5, 5-7, 7-10, 10-15, 10+, 15+
iBoxx GBP Corporate	A, BBB	As above
iBoxx GBP Non-Gilt	A, BBB	As above

Source: NERA analysis based on data from Bloomberg and Factset

Appendix B. Structure of Charges – NI Networks and Ofgem Retail Price Cap

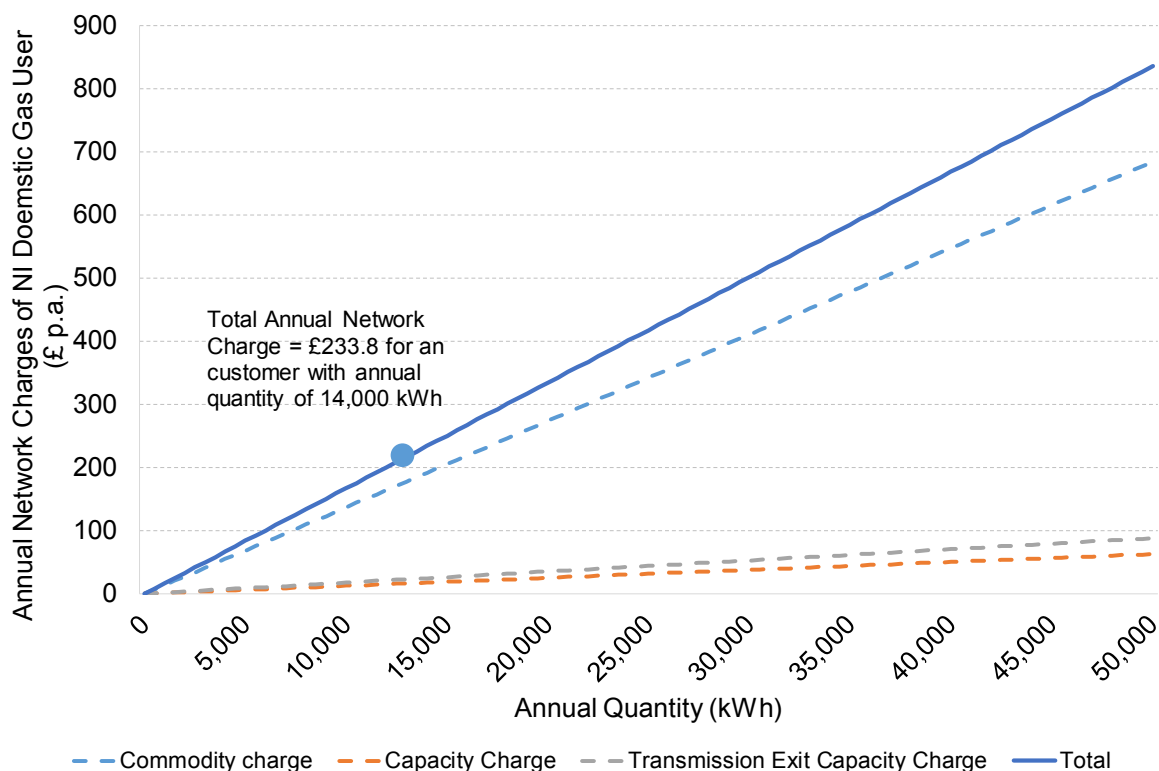
In this Appendix, we provide further detail of the structure of network charges in NI, as well as details of Ofgem’s determination of a retail price cap for GB gas consumers.

B.1. Structure of network charges in NI

As well as GB GDNs network charges, we have also considered the structure of *network charges* employed by Firmus energy that operates as an integrated supply businesses in the “Ten Towns” region in Northern Ireland. We have also set out the structure of charges for the end-user levied by Firmus Energy, i.e. the supply charges, in the main body of the report.

Firmus energy’s network charges consist of conveyance charges for the use of its network, and a transmission exit capacity charge for the use of its capacity in the transmission pipeline system. The conveyance charges are allocated to different customer classes depending on the gas volumes, which are recovered through capacity charge and commodity charge. Figure B.1 illustrates the network charges for domestic gas consumer in the “Ten Towns” region with annual gas volume below 50,000 kWh. The network charges are volumetric and increase with gas consumptions. For a domestic user with annual consumption of 14,000 kWh based in Ten Towns region in NI, the annual gas network charge would be around £233.8.

Figure B.1: Network Charging Structure for NI Domestic Gas Users



Source: NERA calculations based on firmus energy (Distribution) Limited Conveyance Charge Statement, 1 January 2018 to 31 December 2018, and Transmission Exit Capacity Charge for the 10 Towns Area, 1 October 2018 to 30 September 2019.

B.2. Ofgem Retail Price Cap

Following a series of reviews and growing political pressure in the UK, the competition and markets authority (CMA) investigated the energy market in 2016.¹³⁶ The energy market report concluded that a lack of switching in the market was leading to unnecessary over-paying on the part of consumers, of whom 70 per cent of customers were on standard variable tariffs (SVTs).¹³⁷ As a result, Ofgem decided to implement a price cap on domestic gas prices for default rates and SVTs as of January 2019.

In the first cap period (1 January to 31 March 2019), the cap level for gas is set at £636 per year for a typical customer – a dual fuel single rate customer paying by direct debit using a typical amount of energy (12,000 kWh).¹³⁸ The tariff cap sets both a maximum price on the standing charge and a maximum rate per unit of gas. The former is limited to £94 per annum and the latter is restricted to £542 per annum for a typical consumer (or 25.8 pence per day for the standing charge and 3.7 pence per kWh for the unit rate). For all customers, the price cap level will vary depending on consumption levels, payment method, location and meter type.¹³⁹ The price caps are updated bi-annually and will expire in 2020, at which point their renewal will be subject to parliamentary approval.

The breakdown of the components of the price cap are shown below in Figure B.2 by restriction period. The values of these cost components in 2017 were used by Ofgem as a benchmark to calibrate the level for the price cap.

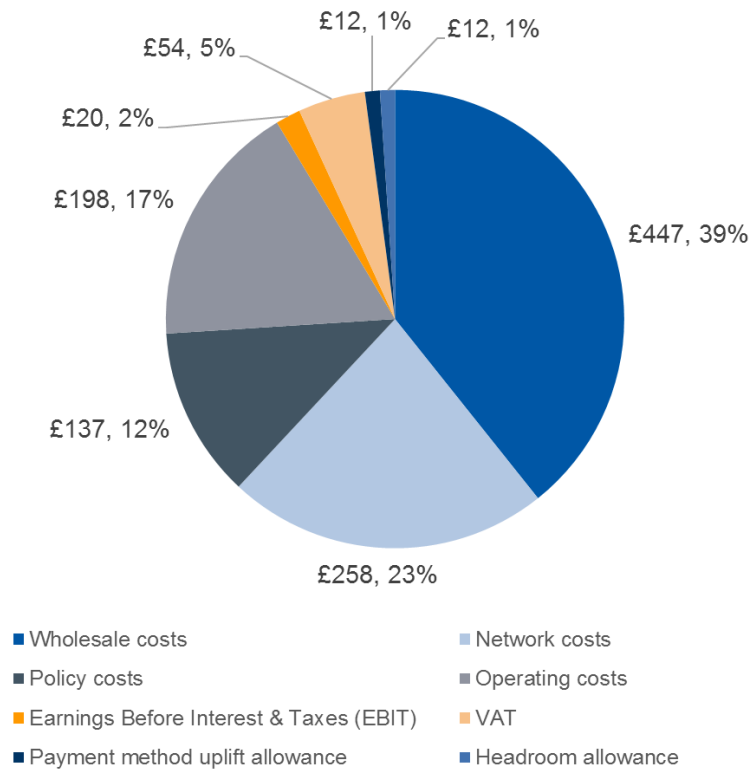
¹³⁶ House of Commons Library, The Domestic Gas and Electricity (Tariff Cap) Act 2018, Briefing Paper - Number CBP 8242, 17 August 2018, p.7.

¹³⁷ CMA, Energy market investigation – Summary of final report, 24 June 2016 (p. 22)

¹³⁸ Ofgem (2018), Decision – Default Tariff Cap – Overview Document, 6 November 2018, p.14.

¹³⁹ Ofgem (2018), *op. cit.*, p.13.

Figure B.2: Ofgem Benchmark Maximum Charges For UK Energy Suppliers by Component for a Dual Fuel Single Rate Customer Paying by Direct Debit



*Note: Figures assume typical annual consumption of 12,000 kWh for a dual-fuel, direct debit customer.
Source: Ofgem (2018), Decision – Default tariff cap – Overview document, 6 November 2018, p.18.*

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Manx Gas

Report to

Gas Regulatory Review Committee

Follow up Reply to NERA's

Amended Report

7 January 2018

Manx Gas – follow up reply to NERA’s amended report

On 20 December 2018 Manx Gas received a copy of NERA’s updated report to the Gas Regulatory Review Committee (**GRRC**). This report reaffirms our views on a future regulatory agreement, already contained in our submission to the GRRC on 10 December 2018, and our reply to the NERA report. The report is broken down into three sections:

- 1) Executive Summary;
- 2) Our proposal for a new regulatory agreement;
- 3) Manx Gas’s performance against the 2015 regulatory agreement;
- 4) Manx Gas’s comments on the significant mistakes in NERA’s amended report;
- 5) Conclusion and Next Steps.

In general, we have not repeated the detailed arguments in our 10 December response to the first draft of the NERA report and this reply should be read in conjunction with that original response.

1) Executive Summary

Manx Gas welcomes the GRRC’s review of the Gas Regulatory Agreement. We are keen to work with IOM Government to deliver further improvements to gas regulation to the benefit of all in our community.

The current Agreement has delivered substantial benefits for our customers, including:

- Since 2015 Manx Gas has delivered everything that was asked of it by the Government authorised and approved regulatory agreement:
- **Actual prices decreased by 6%** since 1 January 2015 despite Manx inflation since 1 January 2015 of 19.5%;
- Hence since 1 January 2015 real prices have **reduced by over 25%**;
- Manx Gas’s nominal return on capital capped at 9.99%;
- **£1.1m returned to customers** from the regulatory rebate;
- Targeted investments made to deliver higher standards for resilience and security of supply;
- Every year the OFT and Treasury have reviewed in detail and approved Manx Gas’s calculations of ROCE under the Agreement;
- **Customers have benefited from lower prices and the over recovery mechanism.**

Over the period of the regulatory agreement, **Manx Gas has received an average real annual return after inflation of 5% - lower than that of the Gas Distribution Networks in Great Britain.** The 2015 agreement has worked well for the Island.

Manx Gas has listened carefully to our customers and to Tynwald’s recent discussion concerning the Manx Utilities Authority (MUA) and its approval of a modified price cap for the MUA. Manx Gas recognises this sets an important policy precedent and advocates switching to such a price cap basis for the new Agreement. In addition to this we propose a ground breaking and improved regulatory agreement, which offers customers improved benefits and protections compared to publicly owned Utilities, including:

- Offering much lower heating tariffs than those offered by the publicly owned MUA.
- Clear customer service standards that have rewards and penalties linked to performance. This would be a step beyond that of any other Isle of Man utility company;
- Two levels of standing charges and tariffs so those customers who prefer a lower standing charge can choose to do so;
- A £10m investment programme to bring network delivered natural gas to circa 2,000 additional homes across the Isle of Man and will reduce the need for LPG storage at Princess Alexandra Pier.

The report by NERA contains a number of errors and misleading statements. Manx Gas is conscious that NERA is not familiar with the Isle of Man and had little time to produce its report. This response includes information to identify, explain and address those errors to help Government reach an informed position so that together we can reach a new Agreement that will deliver greater benefits for our customers. The main errors are as follows;

- Risk Free Rate (**RFR**) – NERA has not taken into account specific IOM factors when calculating the risk free rate.
- Inflation - NERA has used incorrect inflation parameters from other countries.
- Small Company Premium (**SCP**) - NERA has carried out its analysis as if Manx Gas was a large gas distribution network in Great Britain.
- Small Company Premium (**SCP**) - NERA has contradicted itself compared to positions it has previously taken on the same subjects.
- Equity beta - NERA has agreed that Manx Gas's range of activities are far wider than its comparator companies but then has made no allowance for them in its analysis and report.
- Equity Beta - NERA has completely ignored Isle of Man specific factors when calculating its WACC.
- NERA has cherry picked from the CMA's guidance on ROCE calculations.

2) **Our proposal for a new regulatory agreement**

In our submission dated 10 December 2018 we outlined our proposal for a new regulatory agreement. We believe our proposal is more beneficial to customers than the 2015 agreement and represents a step change in the regulation of utilities on the Isle of Man – the detail of this proposal is included again as appendix 1 to this report.

A Modified Price Cap

We note that Tynwald has approved a modified price cap model for the MUA, with future tariffs to vary in line with inflation as measured by the Manx Consumer Price Index (**CPI**), plus or minus any changes in gas commodity costs.

Manx Gas would advocate the same model, namely CPI increase plus or minus changes in gas commodity costs, in the new Regulatory Agreement. The agreement would work as follows;

- a) Current prices remain in force as of 1 January 2019 - subject to the true up mechanism at the end of the current agreement.

- b) As of 1 January 2020 and each year of the agreement, prices increase by CPI (timing and date to be agreed).
- c) As of 1 January 2020 and each year of the agreement, prices increase or decrease depending on the cost of natural gas during the previous year.

Manx Gas's proposed agreement is based on the recent regulatory agreement that Tynwald agreed for the Manx Utilities Authority (**MUA**). We are also proposing significant additional aspects, many of which are a first for regulated companies in the Isle of Man. Our proposed new regulatory agreement could be described as MUA+, as it gives customers the following which are not included in the MUA agreement and/or the regulatory agreements of other utility companies.

Our proposed agreement plans to deliver:

- Much lower heating tariffs than those offered by the publicly owned MUA.
- Consistency of price setting with the MUA.
- Performance standards and a guaranteed standards scheme – the first of its kind for utility companies in the Isle of Man.
- Tariff choice – two years ago Manx Gas increased standing charges and decreased unit tariffs in order to better reflect the true nature of the fixed and variable costs of our business and to help customers achieve a more level monthly cost and so avoid significant cost increases in winter. However, some customers do not like the increased standing charge during summer months. Manx Gas will therefore give customers a clear choice: either a low standing charge and a higher tariff OR a higher standing charge and a low tariff. This will give customers control.
- A £10m investment programme to bring network delivered natural gas to circa 2,000 additional homes.

This proposal will bring considerably greater benefits for customers than any other regulatory agreement currently in place in the Isle of Man. We believe this will be the first time a regulated utility has given firm customer commitments to achieve set standards of service and has proposed to pay penalties for non-compliance against those standards on the Isle of Man. Manx Gas believes this proposal is fair to all parties, it gives substantial additional benefits to customers and the wider community, and enables Manx Gas to invest for the future with confidence – our full proposal can be found in appendix 1 to this document.

3) Manx Gas's performance against the 2015 regulatory agreement

Since 2015 Manx Gas has delivered everything that was asked of it by the Government authorised and approved regulatory agreement:

- Actual prices **decreased by 6%** since 1 January 2015 despite Manx inflation since 1 January 2015 of 19.5%;
- Hence since 1 January 2015 real prices have **reduced by over 25%**;
- Manx Gas's return on capital capped at 9.99%;
- **£1.1m returned to customers** from the regulatory rebate;
- Targeted investments made to deliver higher standards for resilience and security of supply;
- Every year the OFT and Treasury have reviewed in detail and approved Manx Gas's calculations of ROCE under the Agreement;

- **Customers have benefited from lower prices and the over recovery mechanism.**

We would like to reiterate that customer prices have reduced by over 6% in nominal terms and by 25% in real terms. By way of comparison, over the same period the heating tariffs in the publicly owned MUA have remained broadly flat.

Comparison with GB Gas Distribution Networks

We note that the NERA report has made a comparison with Ofgem’s regulation of GB Gas distribution networks. On page (iii) of its updated report it states, “(A) far more accurate comparison is provided by the allowed cost of capital of around 4 per cent over RIIO-GD1 (real, RPI-deflated), which should be compared to a real target ROCE for Manx Gas of around 7 per cent (i.e. 9.99 per cent minus 3 per cent RPI)”.

On page 25 it reiterates this same point, “A far more accurate comparison is provided by the allowed cost of capital of around 4 per cent over RIIO-1, which should be compared to a real ROCE for Manx Gas of around 7 per cent (i.e. 9.99 per cent minus 3 per cent inflation)”.

We agree that the performance of Manx Gas and the 2015 regulatory agreement can be compared with GB networks (although the different size and risk profile should be noted), however we would insist that this is done in a manner that is accurate and consistent with the terms and conditions of the 2015 agreement. The comments by NERA are neither accurate nor consistent with the 2015 Agreement. The table below, which was included in our first report, gives an accurate and appropriate comparison using actual Isle of Man RPI rather than the incorrect and misleading information in the NERA report.

Table 1 – Manx Gas’ and GB GDNs’ ROCE (real WACC)

Year	Manx Gas	IOM RPI	GB GDNs	
	Allowed = Actual		Allowed	Actual
2015	7.8%	2.2%	4.0%	4.8% - 5.8%
2016	5.5%	4.5%	3.9%	4.7% - 5.7%
2017	2.6%	7.4%	3.8%	4.5% - 5.6%
2018	4.0%	6.0%		
Average	5.0%		3.9%	4.7% - 5.7%

Source: IOM Inflation stats, October 2018

Source: Ofgem, RIIO GD1 annual reports and Manx Gas’ accounts

As can be seen from this table Manx Gas’s average real rate of return is 5%, the difference between the allowed real returns for GB GDNs and Manx Gas is only 1.1%, and when taking into account actual returns is on average lower than those achieved by the GDNs.

Moreover, it should be highlighted that this is before taking account of the differences in the relative risk profiles and size of these businesses. As can be seen from the table below, the smallest GB GDN is 36 times larger than Manx Gas, with the largest GDN being 81 times larger than Manx Gas. It is

incorrect and misleading to make any comparisons without taking into account these very significant differences.

Table 2 GB GDNs and Manx Gas – size comparison

Name	Reg Asset Base (£m)	Multiple
Manx Gas	44	
West Midlands	1,602	36x
East of England	3,040	69x
North London	2,090	48x
North East England	1,992	45x
North West England	2,124	48x
Wales and South West England	2,012	46x
Scotland	1,606	37x
Southern England	3,554	81x

Furthermore, Manx Gas has no outperformance opportunities under the Agreement whereas GB networks have a number of opportunities to outperform. As can be seen from the above table, Manx Gas’s actual return is in line with the actual return of GB gas distribution networks. Additionally, UK regulated companies have a licence obligation to achieve an investment grade credit rating and, as we noted in our submission, Manx Gas could not achieve investment grade credit rating, meaning Manx Gas has a higher cost of finance than GB Gas Distribution Networks.

This information shows that the difference is not 3% as claimed by Nera. NERA has used incorrect data when making comparisons between the two regimes, has made no allowance for Manx Gas’s much smaller size, and Manx Gas’s much wider range of business activities, resulting in its erroneous conclusions. The following section explains this and other mistakes in NERA’s report.

4) Manx Gas’s comments on the significant mistakes in NERA’s report

NERA’s report includes several significant mistakes which together materially affect the findings:

- a) **The report does not mention that Manx Gas has fully complied with the 2015 Regulatory Agreement, which was organised and approved by the Isle of Man Government.** As required by the Agreement, Manx Gas has provided detailed evidence of compliance; OFT and the Treasury can object to the calculations or whether costs are properly incurred, however they have reviewed and agreed the approach each year. NERA incorrectly suggests that the Agreement wasn’t prescriptive in its approach to calculating capital employed and ROCE. (As an example, the Agreement clearly states that MAV “is the net book value of the assets which are deployed in the gas supply business”).

We would also note that NERA, in reviewing performance against the 2015 agreement, inappropriately uses current regulatory positions and not those prevailing when the parameters for the 2015 Agreement were set. **NERA has contradicted itself compared to**

positions it has previously taken, for example, NERA has taken a “benefit of hindsight approach” in spite of criticising Ofwat for taking this approach (see section 4.4);

b) **In an attempt to make its points, NERA has changed the questions it was answering.** In the Terms of Reference, the four questions asked of NERA were;

- i. Whether the current regulatory agreement offers a good deal for consumers?
- ii. Whether the profits made by Manx Gas are fair?
- iii. What alternatives to the current regulatory agreement there might be?
- iv. Comparisons to other similar jurisdictions?

However, in its first document NERA has amended the questions which read:

- i. Are ROCE calculations made by Manx Gas accurate?
- ii. Are profits made by Manx Gas ‘fair’ drawing on comparable UK network allowed returns?
- iii. Is Manx Gas’ charging structure reasonable?
- iv. Alternative forms of regulation?

But, in its final report to the GRRC NERA has further amended question 1, which now reads;

- i. How Does the Approach to the ROCE Calculations Align with Common Practice?

c) **NERA has “cherry picked” parameters in its WACC calculation and used incorrect comparators.** Had it used accurate and/or Isle of Man specific data the conclusions in its report would have been significantly different. Although the report contains a lot of detail there are four important areas of difference where NERA has chosen to ignore information specific to Manx Gas and the Isle of Man. These areas are highlighted in red in the table below with the problems described in more detail in the sections below.

Table 3 – Comparison of WACC parameters for the lower bound and upper bound; (central case in brackets)

Parameter	2015 Agreement	NERA report	Pöyry view
Real risk free rate (%)	2 - 2.5	-0.5 - 1.3	1.3 - 1.6 (1.45)
Debt premium (%)	2.9	2.1 - 1.9	1.5 – 1.9
SCP on debt and transaction costs (%)	0	1.0 - 0.6	1.0 - 0.6
Real cost of debt (%)	5.0 - 5.5 (5.3)	2.6 - 3.8 (3.2)	3.8 - 4.1 (4.0)
Equity risk premium (%)	5.3 - 6.1	5.3 - 6.0	5.0 - 5.5
Real total market return (%)	7.3 - 8.6	5.5 - 6.5	6.3 - 7.1
Equity beta	0.7 - 1.3	0.7 - 0.86	0.8 - 1.2
Debt beta	N/A	0	0
Asset beta	N/A	0.35 - 0.43	0.4 - 0.6
SCP on equity (%)	0.8 - 1.5	0	0.8 - 1.5
Real cost of equity (%)	6.6 - 12.3 (9.4)	3.2 - 6.4 (4.8)	6.1 - 9.6 (7.9)
'Notional' gearing (%)	50	50	50
Real cost of capital (%)	3.3 - 7.4 (4.99)	2.9 – 5.1 (4.0)	5.0 - 6.9 (5.9)
IOM RPI (%) (actual)	5.0	3.2	3.5 - 5.0 (4.25)
Nominal cost of capital (%)	8.3 - 12.4 (9.99)	6.1 – 8.4 (7.2)	8.5 - 11.9 (10.2)

- i. **Risk Free Rate (RFR) – NERA has not taken into account any specific IOM factors when calculating the risk free rate.** In its analysis NERA has calculated a RFR that ranges from a negative figure of -0.5% through to 1.3%. It has made these estimates based upon decisions made by regulators that regulate very large network companies in Great Britain rather than use IOM specific data. We have used the best available actual data as a proxy for the risk free rate, being the Isle of Man Treasury Bonds for the MUA, which give and implied risk free rate of 1.3% to 1.6% (see Poyry report).
- ii. **Inflation - NERA has used incorrect inflation parameters from other countries.** NERA has completely ignored the specifics of the current regulatory agreement, and tariff setting practice in the Isle of Man. In an attempt to try to prove its points NERA has used UK inflation and not Isle of Man inflation. Had it used the correct indicators the report would have read very differently. For example, using IOM RPI, and as stated in the regulatory agreement or, had NERA reviewed the tariff agreements for other utility service providers it would have noted that IOM inflation is used. See Poyry report and section 4.8 of our 10 December reply.
- iii. **Small Company Premium (SCP) - NERA has carried out its analysis as if Manx Gas was a large gas distribution network in Great Britain.** NERA's analysis makes comparisons with companies that range from being 3 times the size of Manx Gas to

over 200 times the size of Manx Gas without making the necessary adjustments for this size differential and without taking into account factors specific to the Isle of Man. For example, Manx Gas has a Modified Asset Value (**MAV**) of £44m, whilst the smallest company chosen by NERA is Portsmouth Water which has an asset base of £136m, and the largest used in its commentary were the Scottish Transmission Operators, which are hundreds of times larger than Manx Gas. See the Poyry report and sections 4.9 and 4.10 of our 10 December reply.

iv. **Small Company Premium (SCP) - NERA has contradicted itself compared to positions it has previously taken on the same subjects.** For example, NERA has argued strongly in favour of a small company premium for the cost of debt and cost of equity however in its analysis and report it now takes the opposite point of view with no justification for why NERA has changed its view. For example, in NERA's PR19 report for Portsmouth Water it highlights that it is the link between credit rating and debt costs. However, Manx Gas, due to its micro size and inability to achieve a credit rating, will always have a much higher cost of debt. Regarding the cost of equity, in its 2009 report on small water only companies (**WoCs**), NERA argues that the unlisted WoCs should be between 0.2% and 0.7% on a sliding scale depending on size. Manx Gas is much smaller than the smallest WoC and according to NERA's own logic should have an equity SCP that is higher than 0.7% (see section 4.10 of our 10 December reply).

v. **Equity beta - NERA has agreed that Manx Gas's range of activities are far wider than its comparator companies but then has made no allowance for them in its analysis and report.** For example, Manx Gas;

- is more than an order of magnitude smaller than GDNs and substantially smaller than NI companies and hence riskier;
- has risky retail activities, including gas purchase risk;
- would be unable to achieve an investment grade credit rating;
- has no outperformance opportunities;
- has a short-term regime with no regulatory certainty, particularly on its asset base. This is evidenced by NERA proposing a reduction in this asset base;
- It is exposed to inflation risk, which indeed has had a significant impact in 2017.

NERA has made no allowance for any of these in its analysis. Moreover, unlike Manx Gas, the companies regulated in the other price determinations it has referred to are not impacted by all of these factors, hence the equity beta for Manx Gas must be higher than the maximum suggested by NERA. Please see the Poyry report and section 4.11 of our 10 December submission for more detail.

vi. **Equity Beta - NERA has completely ignored Isle of Man specific factors when calculating its WACC.** In its final report NERA suggests a WACC range of 6.1% to 8.4%. However, the Manx Government itself (through the MUA) charges Manx Gas 6.65% for the cost of debt for the medium pressure network on the Island – it should be noted that this is solely the cost of debt, all operational risk and maintenance cost risk lies with Manx Gas. It is absurd for NERA to claim that Manx Gas could have a

companywide WACC that is lower than the cost of debt for the medium pressure network.

- d) **NERA has cherry picked from the CMA’s guidance on ROCE calculations.** NERA has stated in its report that it is using the approach of the Competition and Markets Authority in its ROCE calculations. This is incorrect, it has only used the parts that suit its narrative. Had it correctly used the CMA’s approach it would have commented that the CMA considers the Modern Equivalent Asset Value (**MEAV**) to be the most economically meaningful measure. The CMA also states, “a ROCE approach requires an economically meaningful value for the capital base which may not accord with the value ascribed in the financial records”.

In its 2006 analysis the Isle of Man Government and Oxera identified using the MEAV as the most appropriate measure for use in a ROCE calculation, however because this measure would have caused a significant increase in bills, it was decided not to use this measure.

We would also like to highlight that NERA has not made any attempt to understand the calculations that underpin the net book value of the assets on Manx Gas’s balance sheet. For example, what depreciation policies were used? Do these comply with the practices used by the “comparable regulatory determinations” mentioned in its report? Do the asset values on the balance sheet accurately reflect regulatory best practice?

Finally, and as pointed out in point a) above, NERA has completely ignored the specific factors contained in the current regulatory agreement. The table below shows the MAV according to the Agreement, the actual MAV used by Manx Gas which removes the FRS102 adjustment and the MEAV that the CMA considers appropriate. It can be seen that Manx Gas has used a figure for capital employed over £10m below that allowed by the Agreement. Had NERA used the CMA’s complete approach and/or the specific factors contained in the current regulatory agreement, its analysis its report would have read very differently. Please see section 4.7 of our 10 December reply for more detail. NERA is silent on each of these more accurate and correct pieces of analysis, preferring to present an unbalanced view of the MAV to the GRRC that is inconsistent with the letter of the Agreement.

Table 4 Modified Asset Value (2017)			
	Agreement	Actual	MEAV
NBV of fixed assets	38,773	28,101	65,211
Current assets	22,205	22,205	0
Less current liabilities	-6,356	-6,356	0
MAV	54,622	43,950	65,211

Note MEAV has been adjusted for asset life and replacement cost depreciation.

To conclude this section, it is clear that NERA has not taken account of regulatory best practice but has simply cherry-picked factors that enable it to produce an analysis critical of the current regulatory agreement.

It is telling that, in spite of the initial questions it was asked, NERA has not made any analysis or comment on the 2015 agreement or the performance of Manx Gas against that agreement. Instead of answering the questions set for it using all available data and information, NERA has produced a theoretical report based on the regulation of much larger utility companies that operate within a formal system of regulation in the UK. Furthermore, it has not included in its analysis any Manx Gas or Isle of Man specific factors in its analysis and, when these factors have not suited its pre-determined narrative, it has chosen to completely ignore them. It is also telling that NERA has contradicted its own views on the same subjects in the recent past.

As a result of all of the above mistakes Manx Gas believes this report is very unbalanced in its analysis, is not fit for purpose and could damage credibility if it is published in its current form. We would however welcome the opportunity to work with the GRRC and NERA to produce an analysis that is accurate, consistent and Isle of Man specific.

Conclusion and Next Steps

We would like to highlight that Manx Gas has fully complied with all the terms and conditions of the Government's 2015 Regulatory Agreement. We recognise that this agreement has now run its course and as such we have suggested a new regulatory agreement. We believe our proposed agreement represents a step change in utility regulation on the Isle of Man and will be the first all-encompassing regulatory agreement for a utility company in the Isle of Man – including regulation of both tariffs and customer service.

In the new agreement we are proposing service performance standards and a guaranteed standards scheme; an £10m investment programme to enable 2,000 customers to access the natural gas network; tariff choice for customers, especially around the standing charge; a social tariff for vulnerable customers. In addition, it will enable greater consistency of regulation and price comparison with the MUA, which can only be to the benefit of customers.

Manx Gas remains keen to have a close and constructive dialogue to enable Government and Manx Gas to reach a new Agreement that fairly serves the interests of our customers, the Isle of Man and our shareholders.

Can we suggest the following next steps:

- 1) Manx Gas meets with the GRRC to discuss our respective positions and agree the way forward;
- 2) The GRRC ask NERA to review and amend the relevant parts of its report and ensure IOM specific factors are taken into account;
- 3) The revised report including a suitably amended response from Manx Gas is published.

Appendix 1

Modified price cap

Manx Gas has closely followed Tynwald's recent discussions and decisions with respect to the MUA. We note that Tynwald has approved a modified price cap model for the MUA, with future tariffs to vary in line with inflation as measured by the Manx Consumer Price Index (CPI), plus or minus any changes in gas commodity costs.

Manx Gas would advocate the same model, namely CPI increase plus or minus changes in gas commodity costs, in the new Regulatory Agreement. The agreement would work as follows;

- (a) Current prices remain in force as of 1 January 2019 - subject to the true up mechanism at the end of the current agreement.
- (b) As of 1 January 2020 and each year of the agreement, prices increase by CPI (timing and date to be agreed).
- (c) As of 1 January 2020 and each year of the agreement, prices increase or decrease depending on the cost of natural gas during the previous year.

The benefits for customers of this option include:

- CPI is typically lower than the Retail Price Index (RPI).
- Imposes a discipline on Manx Gas to try to outperform CPI, but without putting customer service standards at risk (see section 2.b)
- This option is consistent with Tynwald policy for the other principal utilities provider (the MUA) and therefore a similar approach would be fair to all operating in this sector.
- As the Government is limiting price increases it gives it greater control over tariffs and customer bills.
- It gives consumers greater transparency and comparability over current and future prices
- It involves lower regulatory cost and is easier to implement than other alternatives.
- Manx Gas would have the secure, long term regulatory environment which would enable it to invest in its assets to deliver more for the today's and tomorrow's customers.

In addition, this will enable the Government to:

- Have consistency of policy and price setting across two main heating providers.
- Help customers to make more informed choices regarding their heating and energy suppliers as it will enable customers to more easily compare current and future prices.
- Compare relative prices between the two heating providers improving control.

The table below shows the current bills for a customer using 10,000Kwh. As can be seen from the table Manx Gas already delivers bills to customers that are around 45% lower than the MUA.

Table 2 – Comparison of Bills between Manx Gas and the MUA

Company	Standing charge	Unit Charge	Total Cost
Manx Gas	£236	£582	£818
MUA	£71	£1,400	£1,471

Source – MUA and Manx Gas tariffs

Additional benefits that Manx Gas would be prepared to include as part of Modified Price Cap regulatory agreement

To supplement the modified price cap agreement Manx Gas would also propose to implement a further set of changes that would make significant improvement to the regulatory environment of the gas sector, and would bring major benefits for customers on the Isle of Man.

The key points we are proposing are:

1. **Tariff bands:** some customers have voiced concern about the complexity of the tariff bands. Manx Gas is proposing to simplify this to 2 bands.
2. **Standing charges:** Two years ago Manx Gas increased standing charges and decreased unit tariffs in order to better reflect the true nature of the fixed and variable costs of our business and to help customers achieve a more level monthly cost and so avoid significant cost increases in winter. However, some customers do not like the increased standing charge during summer months. Manx Gas will therefore give customers a clear choice: either a low standing charge and a higher tariff OR a higher standing charge and a low tariff. This will give customers control.
3. **Performance measures:** the current Agreement is limited in terms of requiring Manx Gas to comply with performance measures. Manx Gas proposes to establish performance measures and standards in a range of areas including, customer service, safety and environmental protection which could be included in any future regulatory settlement. Manx Gas can provide this information to the Office of Fair Trading (OFT) for scrutiny and can publish this information annually so all in the community can clearly see how Manx Gas is performing.
4. **Incentives including penalties:** the current Agreement is limited in terms of the penalties Manx Gas would be required to incur in the event of significantly failing one or more of its performance measures and also incentives to encourage Manx Gas to out-perform the Agreement. Manx Gas proposes both penalties and rewards for significant under- or over-performance respectively are incorporated into any future regulatory agreement. This will ensure clear accountability for Manx Gas to improve its service to customers.

5. **Access to the natural gas network:** the provision of natural gas to most of the Island's communities has brought substantial benefits including safe, secure, affordable energy. As part of any new regulatory agreement, Manx Gas is committed to working with the Government to extend the natural gas network so that most of those homes and businesses still receiving Liquid Petroleum Gas (LPG) can also enjoy the benefits of natural gas. Ancala, Manx Gas's shareholder, is willing to invest an additional £10m of equity into the Isle of Man to fund the natural gas extension project, subject to reaching a satisfactory new regulatory agreement. In addition, Manx Gas is committed to extending its connections scheme that enables poorer customers to access the gas network and take advantage of our much lower bills.

6. **Duration:** Manx Gas invests for the long-term supply of gas in our community. Many investments require an investment period of 25 to 40 years. Therefore, to enable Manx Gas to make such decisions with a reasonable degree of confidence, the duration of the new Agreement is proposed to be 10 years. This will enable Manx Gas to make operational and investment decisions that are better aligned with the nature of its business, which in turn will lead to a better quality of service and lower bills for our customers.

Isle of Man Gas Network

Manx Utilities (MUA) has kindly prepared an overview of the Isle of Man Gas Network to publish as an appendix in this report. This has been reviewed by Isle of Man Treasury and Manx Gas.

The Upstream Gas Network



1. The Isle of Man is connected via a spur connection to the IC2 Gas Interconnector, which was constructed in 2002 and is owned and operated by Gas Networks Ireland (GNI), a wholly owned subsidiary of Ervia which was previously called Bord Gáis Éireann (BGÉ). The Interconnection Point between GNI's gas network and National Grid's GB network is at Moffat in Scotland, which is the Irish Entry and GB Exit Point on those respective systems. GNI's Interconnector (IC) system runs downstream of Moffat to Twynholm, where a separate pipeline, SNIP, owned and operated by Premier Transmission, connects to Northern Ireland. GNI's network then continues down to Brighthouse Bay where twin interconnectors, IC1 (built in 1993) and IC2 connect to the Irish Exit Points at Loughshinny and Gormanston respectively, just north of Dublin.
2. The spur pipeline that connects IC2 with the Isle of Man is owned by GNI for the exclusive use of Manx Utilities. It was commissioned following completion of the gas-fired power station at Pulrose in the summer of 2003.

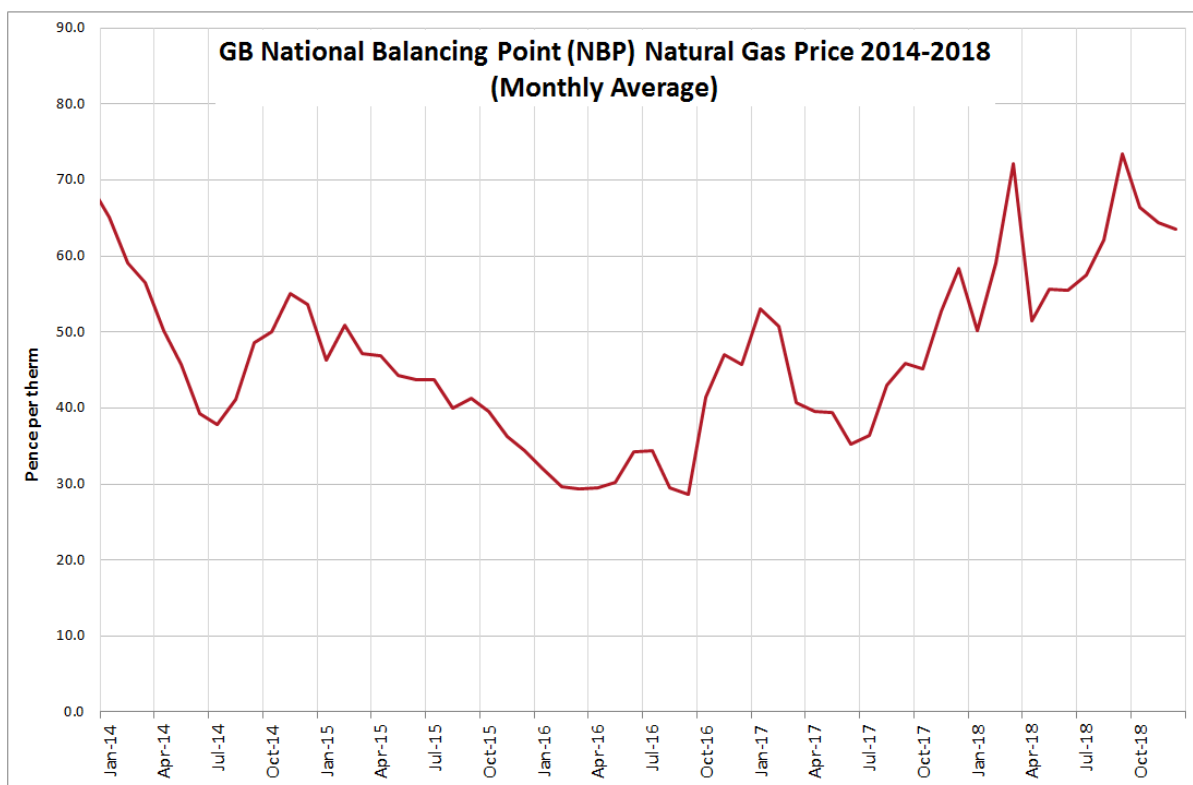
3. The commercial terms for use of IC2 and the repayment of the costs of the construction of the spur were set out in a bilateral agreement between GNI (BGÉ at the time) and Manx Utilities (MEA at the time) in February 2002. This original agreement was split in 2003 to separate out the IC2 and spur arrangements, transferring matters related to the Spur to a separate entity, GNI(IOM) Ltd (previously BGÉ(IOM) Ltd.), a wholly owned subsidiary company of GNI registered in Ireland. The standalone IC2 Agreement with GNI was subsequently revised in 2006 to take account of certain regulatory and operational changes following development of the unified 'Code of Operations', which governs access to capacity on IC2 for all shippers. MEA became a Licensed Shipper on IC2 in 2005.
4. The IC2 Agreement was substantially re-negotiated during 2008 and 2009 in order to bring the Isle of Man Subsea Offtake point (on IC2 at the Spur Tee) fully into the Code of Operations and to bring the charging arrangements between BGÉ and MEA for access to IC2 onto a wholly regulated basis. This means that Manx Utilities pays the CER-approved Regulated Tariff for access to capacity on IC2 instead of using the previous - and more expensive - bilateral charging methodology that had previously been agreed by the two parties.
5. Manx Utilities pays the IC2 operator, BGÉ(IOM) Ltd, for the construction costs of the spur pipeline until 30 September 2023 through capacity payments which are included in the Manx Utilities annual accounts as a liability calculated at their discounted present value. Manx Utilities also pays any annual costs incurred by BGÉ(IOM) for the operation and maintenance of the spur pipeline. The PGS Commodity Charge payable by Manx Gas (see paragraph 22 below) makes a contribution to these costs.

The Isle of Man Gas Transmission Network

6. The Spur pipeline comes ashore at the Glen Mooar Entry Point, just south of Kirk Michael in the west of the island, where an Above-Ground Installation (AGI) controls and reduces the pressure of the gas coming off the spur down to 70 bar for onward transmission on the Isle of Man Network. The Isle of Man Gas Transmission Network initially consisted of a single steel pipeline running between Glen Mooar and Pulrose, Douglas where two further AGIs step the pressure down for the power station and for injection into Manx Gas's low-pressure distribution system. Manx Gas operates medium pressure and low pressure distribution systems which are fed from Pulrose Power Station.
7. Manx Gas owns and operates all of the low-pressure distribution system that transports gas across the Douglas and Onchan area and connects into businesses and households. Manx Gas also owns and operates medium pressure networks in and around the Douglas and Onchan area.
8. MEA and Manx Gas agreed a Memorandum of Understanding (MOU) for the supply of natural gas in early 2003 and took first gas in the late summer of 2003, phasing the conversion of the Douglas and Onchan area from LPG/air to natural gas over the next several months.

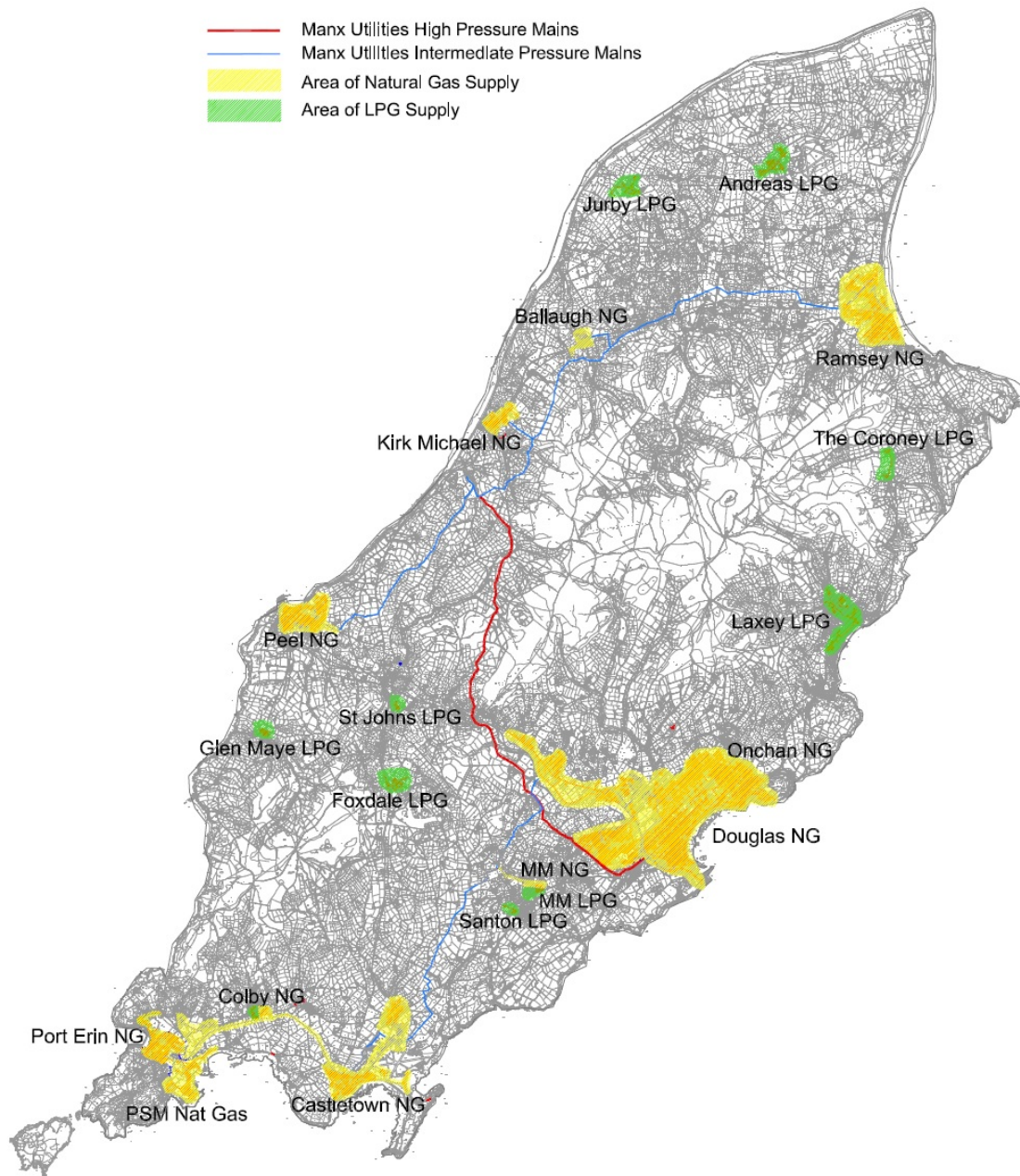
9. The MOU set out the initial commercial terms between MEA and Manx Gas, and effectively split charges into two distinct tariffs:
 - (i) Gas Supply (GSA): a charge for the supply of gas calculated on a cost pass-through basis for the volume of natural gas delivered to Manx Gas, reflecting the actual costs paid by MEA for that gas and with absolutely no margins, profits or mark-ups of any kind added;
 - (ii) Gas Transportation (GTA): a charge which represented a "contribution" by Manx Gas to the capital expenditure ('Capex') and operating expenditure ('Opex') payable by MEA to Bord Gáis Éireann under the original bilateral Pipeline Connection Agreement of February 2002.

10. Manx Utilities purchases natural gas at the GB trading hub, the National Balancing Point (NBP), both on its own account and on behalf of Manx Gas on an execution-only basis. Manx Gas is solely responsible for nominating the quantities of gas that it buys and for deciding when and at what price such trades will be executed on its behalf. Manx Utilities and Manx Gas make their own gas forward price purchasing decisions in order to limit exposure to NBP price volatility independently of each other. Historically, Manx Utilities have typically bought forward over longer time horizons than Manx Gas.



The Gas Network Extension

11. The original high pressure pipeline route between Glen Mooar and Douglas constructed in 2002/03 is shown on the map below in red, the intermediate pressure Gas Network Extension pipeline routes are shown in blue (all owned and operated by Manx Utilities), and the yellow shaded areas represent the extent of the low pressure distribution networks owned and operated by Manx Gas.



12. Manx Gas approached the Isle of Man Government (via the Department of Trade and Industry as it was) in July 2007 with concerns that the ageing LPG/air networks were unsustainable, and that Manx Gas could not commercially fund any of the options that would mitigate the risk to customers.
13. Manx Gas presented Government with its three main options at that time:

- (i) Firstly, to run the networks until the point at which it was no longer safe (projected at that time by Manx Gas to be one to three years for the south and two to five years for Ramsey and Peel) and then withdraw from the market entirely and stop supplying customers in those areas;
 - (ii) Secondly, to convert the existing town-gas areas to natural gas with Manx Gas funding and building transmission pipelines to Ramsey, the South and Peel. Under this proposal, Manx Gas were seeking a government grant for the conversion of customers from LPG/air to natural gas;
 - (iii) Thirdly, to convert the existing town-gas areas by building a compressed natural gas (CNG) plant somewhere off the MEA-owned high pressure transmission pipeline between Glen Mooar and Douglas, which would then act as a distribution centre for delivery of CNG by road tanker to the low pressure town-gas systems.
14. During subsequent discussions an alternative model emerged where MEA would design, build and own the network extension to Peel, the North and South by way of Treasury financing of the project, delivering natural gas to the 'town gate' for Manx Gas to then deliver to end customers through Manx Gas's own existing town-gas low pressure distribution systems. Manx Gas would pay MEA an annual charge for the use of the extension pipelines to cover the cost of the project, in addition to its existing charges. It was this model that was chosen by the Council of Ministers and agreed by all the parties.
15. As part of the project it was agreed by all parties that it would be constructed using a 315mm 'intermediate pressure' pipeline operating at 4 bar rather than a 180mm pipeline which had been calculated as sufficient to meet Manx Gas's projected needs at the time. This was agreed on the grounds that it (i) more than doubled the gas capacity of the pipeline, (ii) increased its expected useful life and, (iii) would represent only a small incremental increase in cost over the original pipeline size.
16. The adopted 315mm pipeline design supports projected Isle of Man gas demand for over 60 years compared to 20-30 years for the 180mm. The incremental cost of this upgrade came to be known as 'betterment', and it was agreed that the cost of this would be borne by Treasury rather than Manx Gas or MEA until such time as that incremental portion of the overall pipeline capacity was being utilised by end users.
17. New charging arrangements were negotiated and agreed by the Parties during complex discussions over a number of months and set out in two detailed charging documents in September 2011 and October of 2012 (following completion of the Extension Project).
18. Construction on the Network Extension commenced in 2011 and was completed on time and under budget in mid-2012, when Manx Gas commenced converting all of their town gas systems and some LPG systems (Kirk Michael and Ballaugh) onto natural gas from LPG/air.

19. Manx Utilities must supply any third party public gas supplier with natural gas on equal terms, but Manx Gas need not offer third party access to its own distribution network.

Isle of Man Gas Network Charging Arrangements

Gas Transmission Charges

20. There are four separate charges for use of the Network, three of which represent pass-through of charges incurred by Manx Utilities upstream of the Isle of Man system (from the Irish Gas System Operator, Gas Networks Ireland (GNI), the successor to BGÉ), and the GB Gas System Operator, National Grid. These are:
 - (i) The IOM Capacity Charge: a cost pass-through charge for the amount of capacity purchased by Manx Utilities in the GB and Irish Transportation Systems on behalf of Manx Gas (as nominated and reserved by Manx Gas in each Gas Year);
 - (ii) Shrinkage Charge: a cost pass-through of shrinkage and unaccounted-for-gas charges paid by Manx Utilities to the Irish Transporter, pro-rata to Manx Gas's gas offtake as a percentage of Manx Utilities' gas offtake;
 - (iii) the IOM Commodity Charge: a cost pass-through of GB and Irish transportation charges paid by Manx Utilities in respect of Manx Gas's gas offtake, and;
 - (iv) the PGS Commodity Charge: a pence per unit charge indexed to UK RPI each year which offsets some of Manx Utilities' finance and lease costs in respect of the construction of the original onshore high pressure pipeline and shore station at Glen Mooar and the Spur linking IC2 to the Isle of Man, and ongoing operation and maintenance costs in respect of these assets.
21. This last charge (iv) was initially set to balance the total 11.7 p/therm that Manx Gas were paying under the previous charging arrangements in 2012. It was set at an initial 7.9 p/th of offtake (with the other upstream pass-through charges payable by Manx Gas calculated to be 3.8 p/th at that time) and currently stands at 9.59 p/th for the current Gas Year (starting Oct 2018), following RPI indexation.

Network Extension Charges

22. Two separate arrangements were put in place for the funding of the project in its entirety:
 - (i) A normal Government Capital Project between Treasury and MEA, with the full capital value of the project repayable to Treasury over 40

years, following the normal formula of declining payments using Treasury's standard means for managing the Capital Fund;

- (ii) An agreement between Manx Gas and MEA, with Manx Gas paying MEA for the entire value of the project (less £1.5m 'betterment' as agreed, see para. 14) on a fixed equal payments basis at an agreed rate of interest.
23. Manx Gas sought a fixed interest rate for the life of the agreement in order to give it certainty on its payments over the 40-year term. Manx Gas also sought equal annual payments to avoid the recovery of large front-end-loaded payments from customers, which might have led to higher tariffs and had a negative impact on gas usage and growth in the short-term. The interest rate set by Treasury was 6.0%. Manx Gas pays a tariff of £1.2m per annum which effectively recovers the capital costs of the project and interest of 6% over the 40 year expected life of the asset.
24. The total final funded project cost, including project management, design, payments for wayleaves, gas pipeline materials, construction and testing, Above Ground Installations (AGIs), and conversion of customers to natural gas from LPG/air was **£20,055,249**.
25. Of this, **£12,113,141** was for the actual physical infrastructure in the ground (the pipelines themselves and AGIs and associated works) and the remaining **£7,942,108** for the conversion project (carried out by Manx Gas but funded by MEA).
26. Manx Gas has an agreement with Manx Utilities to pay back **£10,613,141**, being the cost of the pipelines less £1.5m 'betterment' (see above), at 6.0% over 40 years for the pipelines (equating to **£705,774** p.a. – the "**Offtake Charge**"). This would rise to £805,524 p.a. should the whole of the additional incremental capacity associated with 'betterment' be utilised in full at any point (by any user). At the moment Manx Gas use about half of the initial 'unimproved' capacity in the system (i.e. the amount of capacity that would have been available in the original 180mm pipeline design).
27. Manx Gas also has an agreement with Manx Utilities to pay back the **£7,942,108** associated with the conversion costs, also at 6.0% over 40 years (equating to **£528,150** p.a. – the "**DSO Charge**").
- Payments made by Manx Gas to Manx Utilities in respect of these charges are paid to Treasury on a pass-through basis. Manx Gas effectively pays a fixed interest rate.
28. Finally, as part of the Offtake Charge, Manx Gas also pays on a cost pass-through basis for any annual wayleaves that were not capitalised as part of the project, i.e. where landowners elected to take annual wayleaves payments rather than a single one-off payment.

Summary

29. Manx Gas's charges for the last financial year 2017-18 are summarised in the table below:

Manx Gas Charges	Amount £m	Comments
Gas Supply	5.57	Pass-through of natural gas purchase costs
IOM Capacity Charge	0.76	Pass-through of GB and Irish Capacity Costs
Shrinkage Charge	0.02	Pass-through of Irish Shrinkage Charges
IOM Commodity Charge	0.04	Pass-through of GB/Irish Transportation Charges
PGS Commodity Charge	1.03	Annual charge for use of the Isle of Man Gas Transmission Network, payable per therm of offtake and indexed to RPI
Offtake Charge (Standard)	0.71	Repayment of Gas Network Extension Capital Costs at 6% fixed over 40 years (pass-through to Treasury)
Offtake Charge (Additional)	0.01	Pass-through of non-capitalised wayleaves costs and any other non-capitalised costs associated with the Gas Network Extension
DSO Charge	0.53	Repayment of Gas Network Extension Conversion Costs at 6% fixed over 40 years (pass-through to Treasury)
TOTAL	8.66	

30. The net return made by Manx Utilities is the £1.03m on the PGS Commodity Charge, as all the other charges were pass-through costs.
31. This £1.03m is a contribution to Manx Utilities' annual gas network costs of £6.6m in respect of the Spur "Capex" finance costs payable to GNI(IOM), as well as contributing to Manx Utilities' other finance costs related to the construction of the Shore Station and high pressure transmission pipeline in 2002, and to any normal annual running costs incurred in the operation and maintenance of the Isle of Man Gas Network.
32. For the financial year 2017-18 Manx Gas's offtake from the Isle of Man Gas Network was 11.2m therms while Manx Utilities' offtake was 33.9m therms (a total of 45.1m therms for the Isle of Man as a whole).

Brief Timeline

1993	The IC1 subsea gas interconnector, passing through Manx Territorial Waters, commissioned and constructed by Bord Gáis Éireann (BGÉ). The one directional pipeline connects the GB National Transmission System with Ireland (at Loughshinny, north of Dublin).
2000	BGÉ directed by the Irish regulator, the Commission for Energy Regulation (CER), to build second gas interconnector (IC2) between GB and Ireland.
2001	Isle of Man Government grants permission to BGÉ to run second gas interconnector through territorial waters.
2002	Manx Electricity Authority (MEA) reaches bilateral agreement with BGÉ for the offtake of gas from IC2, and for BGÉ to build a spur pipeline connecting IC2 with the Isle of Man. Construction of IC2 is completed and the pipeline is commissioned in November of 2002.
2003	MEA and Manx Gas finalise a Memorandum of Understanding for Manx gas to offtake gas from the Isle of Man gas transmission system. Construction of the Isle of Man Spur and the CCGT at Pulrose are completed and both commissioned in July 2003. Original Agreement between MEA and BGÉ split into two separate agreements covering IC2 (with BGÉ) and the Spur (with BGÉ(IOM)). Manx Gas commence the conversion of Douglas/Onchan to natural gas in August, completing the project over the next several months.
2006	First revision of the bilateral agreement with BGÉ to reflect certain technical and operating changes in respect of the operation of IC2.
2007	Manx Gas first raises concerns with Isle of Man Government over the commercial viability of the town gas systems in Peel, Ramsey and Castletown/South running on LPG/air.
2008	Discussions between Government and Manx Gas and including MEA continue throughout 2008 and 2009 to find a solution on which all parties can agree.
2009	MEA renegotiates its bilateral agreement with BGÉ to incorporate the Isle of Man Offtake fully into the Code of Operations, which governs the arrangements for offtake of gas from IC1/IC2. This brings the charging and operational arrangements in respect of the Isle of Man Offtake under the 'regulated' direction of the CER in Ireland.
2010	Tynwald approves the Natural Gas Extension Capital Project. MEA begins design work for the Isle of Man Gas Network Extension, taking natural gas to customers in Ramsey, Peel and the South.

<p>2011</p>	<p>Construction on the Gas Network Extension commences.</p> <p>MEA and Manx Gas agree new commercial terms commencing from October 2011, to facilitate clear pass-through of upstream costs incurred by MEA on behalf of Manx Gas to Manx Gas.</p>
<p>2012</p>	<p>Construction of the Gas Network Extension is completed and it is commissioned between March and September as Manx Gas converts its customers from LPG/air to natural gas.</p> <p>Charging arrangements for the repayment of Network Extension construction and conversion costs to MEA by Manx Gas are set out in new commercial terms.</p>
<p>2014</p>	<p>Manx Electricity Authority's functions are transferred to Manx Utilities Authority.</p>
<p>2015</p>	<p>Bord Gáis Éireann (BGÉ) changes its name to Ervia, and the ownership and operation of IC2 (and its agreements with Manx Utilities) are transferred to its wholly owned subsidiary, Gas Networks Ireland (GNI). BGÉ(IOM) Ltd becomes a subsidiary of GNI and changes its name to GNI(IOM) Ltd.</p>