Response to PC4 Consultation

Final Version
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Executive Summary

Gas Networks Ireland is grateful for the opportunity to respond to the PC4 Consultation Papers. Gas Networks Ireland notes that the PC4 Consultation Papers reflect the outcome of a series of constructive interactions between CER and Gas Networks Ireland in order to allow CER to assess and set an appropriate revenue requirement for Gas Networks Ireland’s Transmission and Distribution businesses for the PC4 period.

Gas Networks Ireland has previously identified the challenges it faces and its objectives for PC4. Gas Networks Ireland believes that a failure to meet its objectives over the price control period would be to the ultimate detriment of customers.

It is evident from the PC4 Consultation Papers that CER has acknowledged the key challenges facing Gas Networks Ireland and the extent to which these have shaped Gas Networks Ireland’s objectives for the PC4 period. The PC4 Consultation Papers indicate that the CER accepts the basic premises underpinning the Gas Networks Ireland submission. Nevertheless the CER has substantially reduced Gas Networks Ireland’s allowances compared to its submission, as set out in the table below.

<table>
<thead>
<tr>
<th></th>
<th>GNI submission</th>
<th>CER proposal</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditure</td>
<td>€799m</td>
<td>€566m</td>
<td>29%</td>
</tr>
<tr>
<td>Operating Expenditure</td>
<td>€898m</td>
<td>€810m</td>
<td>10%</td>
</tr>
<tr>
<td>WACC</td>
<td>4.96%</td>
<td>4.63%</td>
<td>33 bps</td>
</tr>
</tbody>
</table>

Table: GNI PC4 submission and CER proposals

The allowances proposed by CER are, of themselves, extremely challenging and leave little scope for Gas Networks Ireland to cope with circumstances that may arise over the price control period. In this context, it is essential that appropriate uncertainty mechanisms are provided for.

The nature of the allowances throws into even sharper relief certain other measures provided for in the PC4 Consultation Papers which impact negatively on Gas Networks Ireland’s revenue, and which Gas Networks Ireland urges CER to revisit. These include asymmetric or inappropriate incentives, an unduly severe efficiency target and an unprecedented retrospective disallowance from the regulated asset base (“RAB”). The cumulative effect of these measures should not be overlooked and will inevitably impact on the achievement of Gas Networks Ireland’s objectives over the period. This, in turn, will impact customers not only in the short term (e.g. where shortfalls in allowances are reflected in lower service levels) but also in the long run (e.g. where expenditure is deferred into later price control periods or opportunities to increase utilisation of the network are foregone).

The level of allowance fails to fully recognise the critical importance of innovation funding and support for the development of renewable gas. Innovation and growth in utilisation of the gas network is critical not only for the future competitiveness of the gas industry, but also to Ireland’s least cost transition to a low carbon economy.

Gas Networks Ireland is concerned that, taken as a package, CER’s incentive framework does not provide appropriate and balanced economic incentives. In particular, elements of the incentive package are asymmetric, in that they are likely to result in penalties, require significant outperformance for Gas Networks Ireland to breakeven, and provide only limited upside scope for outperformance.
The CER has proposed onerous catch-up and on-going efficiency targets, which are inconsistent with evidence presented during the process which shows Gas Networks Ireland is currently operating efficiently. Further evidence presented indicates that cost pressures facing the sector are likely to be greater than potential dynamic efficiency gains.

The CER has proposed to remove ITO costs from Gas Networks Ireland’s RAB. This is unacceptable to Gas Networks Ireland and constitutes an unprecedented disallowance from the RAB of costs previously approved by the CER based on an unsubstantiated view that some value has been realised from the asset in the sale of Bord Gáis Energy.
1 Introduction

1.1 Overview
Gas Networks Ireland welcomes the opportunity to respond to the Commission for Energy Regulation (CER) PC4 consultation papers on Gas Networks Ireland's Transmission and Distribution Revenues (the “PC4 Consultation Papers”). Gas Networks Ireland acknowledges and is grateful for the constructive engagement with CER as part of the PC4 process. Gas Networks Ireland believes this is critical to ensuring that the revenue requirement set by CER for the PC4 period is appropriate and sufficient to allow Gas Networks Ireland to carry out its roles as owner and operator of each of the Transmission and Distribution Networks.

Notwithstanding the constructive engagement to date, Gas Networks Ireland is concerned that there remain some key issues in the PC4 Consultation Papers which, if not addressed, may prevent Gas Networks Ireland from achieving some of its core objectives over the price control period, to the ultimate detriment of customers.

This response document is intended as a composite response to all of the PC4 Consultation Papers. Where an issue relates to either one of the Transmission business or Distribution business only this is highlighted.

1.2 PC4 Objectives
In its price control submission to the CER, Gas Networks Ireland set out its key challenges going into PC4. These are:

- ensuring that gas fulfils its critical role in supporting energy policy;
- managing an ageing asset base; and
- ensuring competitive gas transportation tariffs for customers now and into the future.

Gas Networks Ireland, and the gas network more generally, will play a critical role in the achievement of Ireland’s low carbon future. The gas network already supports the ever increasing penetration of renewables on the electricity network by providing access to flexible and responsive gas plant. A shift from carbon intensive fuels such as coal and peat to gas, in both space heating and power generation, can significantly reduce Ireland’s CO2 emissions. Coupled with the roll out of CNG in transport and the development of indigenous, renewable gas plant, the gas network is poised to facilitate a swift and least cost pathway to a low carbon economy. However each of these elements will require changes to the manner in which the gas network is run and will require continued innovation in the utilisation of the gas network.

While the primary components of Gas Networks Ireland’s network (steel pipes in transmission and polyethylene pipes in distribution) have long design lives, ancillary components and subcomponents of pipelines, above ground installations (“AGIs”) and district regulator installations (“DRIs”) have considerably shorter design lives. Many of these components are approaching their end of design life while other components have experienced accelerated degradation owing to factors such as environmental factors or onerous usage profiles. These assets must be actively managed to secure the continued safe operation of the network.

Finally tariff competitiveness of gas continues to be a critical challenge for Gas Networks Ireland over this and subsequent price controls. Increased utilisation of the network, while continuing to manage costs and drive for efficiency, is the critical means of maintaining tariff competitiveness for customers.
To meet these challenges, Gas Networks Ireland set out four strategic objectives. These objectives are as follows:

- **Operate to the highest safety standard**: Gas Networks Ireland is committed to maintaining, and further developing, the systems, processes and resources necessary to ensure a continuous high level of safety performance and a culture of safety improvement in its organisation. In addition to a number of safety initiatives identified for the PC4 period, Gas Networks Ireland must invest in appropriate asset maintenance, replacement and refurbishment such that risks from its activities remain As Low as Reasonably Practicable (ALARP).

- **Ensure reliability and security of supply**: Reliable and secure gas supplies are a key strategic requirement for Ireland. In PC4 Gas Networks Ireland must increase maintenance and capital investment to ensure that a reliable and secure supply of gas is available to all customers.

- **Ensure competitive tariffs and support the least cost transformation to a low carbon economy**: To ensure competitive tariffs Gas Networks Ireland must maximise network utilisation by promoting new connections, and achieve efficiencies in its activities. Gas must play its role in Ireland’s efficient transition to a low carbon economy. To do this, Gas Networks Ireland must be innovative in exploring areas such as CNG, renewable gas, carbon capture and storage and power-to-gas projects.

- **Respond to changing customer service demands**: In PC4, the number of customer interactions will increase substantially given the forecast new connections and increased planned works at customer homes and businesses. Even with this increased engagement level, Gas Networks Ireland must continue to meet its customer charter and customer satisfaction targets.

It is evident from the PC4 Consultation Papers that CER has acknowledged the key challenges facing Gas Networks Ireland and the extent to which these have shaped Gas Networks Ireland’s objectives for the PC4 period. The PC4 Consultation Papers indicate that the CER accepts the basic premises underpinning the Gas Networks Ireland submission. Nevertheless the CER has substantially reduced Gas Networks Ireland’s allowances compared to the Gas Networks Ireland forecast. The allowances proposed by CER are, of themselves, extremely challenging and leave little scope for Gas Networks Ireland to cope with circumstances that may arise over the price control period. In this context, it is essential that appropriate uncertainty mechanisms are provided for.

The nature of the allowances throws into even sharper relief certain other measures provided for in the PC4 Consultation Papers which impact negatively on Gas Networks Ireland’s revenue, and which Gas Networks Ireland urges CER to revisit. The cumulative effect of these other measures should not be overlooked and will inevitably impact on the achievement of Gas Networks Ireland’s objectives over the period. This, in turn, will impact customers not only in the short term (e.g. where shortfalls in allowances are reflected in lower service levels) but also in the long run (e.g. where expenditure is deferred into later price control periods or opportunities to increase utilisation of the network are foregone).

### 1.3 Submission overview

This document outlines Gas Networks Ireland response to the CER PC4 Consultation Papers and is structured as follows:

- **Section 2**: Overview of allowances summarises the core proposals on allowances and outlines why Gas Networks Ireland believes **an uncertainty mechanism is required for Opex in addition to Capex**. The section also outlines why **an additional €1.5m Capex is required for the Listowel project**;

- **Section 3**: Corrib Capex outlines the rationale for certain Capex programmes related to the Corrib entry point and **requests €1m in additional capital expenditure**;
Response to PC4 Consultation

- Section 4: Performance and Incentives sets out Gas Networks Ireland’s concerns in relation to elements of the proposed incentive regime and in particular that:
  - the UAG target be revised with a starting factor of 1.15% for PC4;
  - the connections incentive apply to connection units rather than meter fits; and
  - certain proposals on the Capex incentives be revised;

- Section 5: Support the role of the gas network requests that CER reconsider its proposal and provide additional funding for renewable gas and Innovation;

- Section 6: Efficiency Targets outlines why the efficiency targets proposed by CER are inappropriate having regard to issues with benchmarking data and the external cost pressures faced by Gas Networks Ireland. Gas Networks Ireland argues that:
  - the catch-up efficiency target should be removed; and
  - the ongoing efficiency target should be reduced to 0.5%; and

- Section 7: Clawback of ITO costs explains why Gas Networks Ireland considers the proposed disallowance of ITO costs unacceptable and why this should not be implemented.

Gas Networks Ireland would welcome the opportunity to discuss this submission further with CER.
2 Overview on Allowances

2.1 Capital Expenditure

Gas Networks Ireland identified a capital expenditure requirement of €799m\(^1\) for the PC4 period. The level of expenditure is a direct result of the ageing asset profile and the forecast growth in connections. The Gas Networks Ireland submission and the CER proposals are summarised in the table below.

<table>
<thead>
<tr>
<th>Allowance</th>
<th>GNI submission (€m)</th>
<th>CER proposals (€m)</th>
<th>Reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refurbishment</td>
<td>414</td>
<td>341</td>
<td>18%</td>
</tr>
<tr>
<td>Growth</td>
<td>316</td>
<td>163</td>
<td>48%</td>
</tr>
<tr>
<td>Non pipe</td>
<td>70</td>
<td>62</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>799</td>
<td>566</td>
<td>29%</td>
</tr>
</tbody>
</table>

Table 1: Capex submission and proposed allowances

To ensure the safety, security and reliability of its ageing network, Gas Networks Ireland identified a refurbishment programme of €414m across Transmission and Distribution. Planned refurbishments are based on a bottom up, risk-based programme developed using Gas Networks Ireland’s Asset Management System, which sees replacement of assets at the end of their design life but prior to them failing. The CER is proposing a substantial reduction in pipe related refurbishments, with the reductions particularly acute in Distribution. The proposed reductions are based on a combination of decreases in scope and unit costs.

Gas Networks Ireland accepts that the exact scope of some high volume works are not fully known for all programmes and there may be some uncertainty around unit costs for new programmes. However, as Gas Networks Ireland completes further surveys and risk assessments during the price control it is likely that a higher level of investment than that provided for will be required to adequately manage the risk that transpires. In addition, it is inevitable that, over the course of the price control, there will be changes in scope of works, certain anticipated risks may not materialise and new risks will present. Gas Networks Ireland will endeavour to reprioritise works and where possible manage these risks within the overall capital allowance cap. However with the scale of reductions to the refurbishment allowance proposed, it is likely that there will be insufficient funding available within the overall allowance cap to accommodate any significant level of unplanned interventions or scope increases through reprioritisation. Gas Networks Ireland welcomes the acknowledgement by CER that there is potential for further funding to be approved over the course of the price control where the scope of works increases.

The PC4 Consultation Papers also propose reductions in capex (and opex) allowed in respect of Gas Networks Ireland’s growth strategy. Through a continuation of its growth strategy commenced in PC3, Gas Networks Ireland intends to deliver over 100,000 additional domestic and commercial customers over the course of PC4. If Gas Networks Ireland is successful in growing the customer base at this rate, further funding within PC4 may be required to support the Capex associated with the increased connections. Gas Networks Ireland also intends expanding the role of natural gas into the transport sector and develop a renewable element to the gas supply in Ireland. Concerns in relation to these areas are set out below in Sections 4.2 and 5.

Finally, in relation to capex, Gas Networks Ireland made a submission to CER during the PC3 period to extend the network to Listowel, Co. Kerry\(^2\), based on an estimate of costs. Since that time, a connection agreement has been executed with an anchor load and construction is underway. The projected final cost of the project is now €17.4m (Distribution allowance), based on contracts which have been the subject of

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1 €529m for Distribution and €270m for Transmission

2 The original submission also provided for the extension of the network to the town of Foynes. Due to the absence of contracted load in Foynes, it is no longer planned to provide that networks extension within the remit of the project.
a public procurement process. Nonetheless, proposals detailed within the CER Consultation Papers indicate a proposed allowance of €15.9m for this project. Gas Networks Ireland is strongly of the view that the allowance for this project, being based on actual market tested prices, should be provided in full. In particular when considered in the context of the CER proposals for the treatment of overspends on allowances in the PC4 period, Gas Networks Ireland considers that this allowance imposes a level of risk and uncertainty which is entirely unnecessary.

### 2.2 Operating Costs

Gas Networks Ireland identified an operating expenditure requirement for the PC4 period of €898m\(^3\). This level of operating expenditure is driven by the scale and scope of works to be delivered in PC4. The Gas Networks Ireland submission and the CER proposals are summarised in the table below.

<table>
<thead>
<tr>
<th></th>
<th>GNI submission (€m)</th>
<th>CER proposals (€m)</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controllable Opex</td>
<td>687</td>
<td>615</td>
<td>10%</td>
</tr>
<tr>
<td>Innovation</td>
<td>25</td>
<td>18</td>
<td>30%</td>
</tr>
<tr>
<td>Pass-Through</td>
<td>186</td>
<td>177</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>898</td>
<td>810</td>
<td>10%</td>
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Table 2: PC4 Opex submission and proposed allowances

CER proposes reductions relative to the Gas Networks Ireland submission of c.9.8% across the distribution and transmission businesses. Notwithstanding Gas Networks Ireland has identified a requirement for increased operational expenditure over the PC4 period (for example in relation to increased inspection and maintenance of assets which are ageing or experiencing accelerated degradation), the CER’s proposals for operations expenditure remain heavily informed by PC3 costs and run rates and are also impacted by lower projected customer numbers. This results in a reduction and, Gas Networks Ireland submits, an underestimation, of the forecast expenditure for PC4 in some instances. Even in some cases where an uplift on normalised costs is provided, this is too limited. This being the case, Gas Networks Ireland is strongly of the view that, if additional operational outputs (e.g. a new maintenance programme) are required that cannot be achieved within overall allowances, CER should be willing to reassess the proposed allowances.

For example, Gas Networks Ireland highlights the particular case in relation to expenditure at the Midleton Compressor Station. The station has reached the end of its design life and over recent years has experienced failures of key components within the plant due to the age and wear and tear on the assets. Capex allowances have been allowed to fund the decommissioning of the plant at the end of the period. However, in the event of failure of key components, which is not unlikely given the age and condition of the plant, additional Opex expenditure may be required to ensure the continued operation of the site. The nature of the Opex allowance is such that this most likely could not be funded from existing allowances. In these circumstances, Gas Networks Ireland would need to be in a position to seek additional funding.

It is noted that the reduction in opex outlined above, and the manner in which Gas Networks Ireland will endeavour to work within this limit, is net of the extremely challenging efficiency targets, discussed in Section 6 below. For clarity, given the nature of the opex allowances, Gas Networks Ireland is concerned the additional efficiency measures imposed are unduly severe and should be adjusted as provided later in this document.

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\(^3\) €473m for Distribution and €424m for Transmission


2.3 WACC

As part of the PC4 process Gas Networks Ireland commissioned Frontier Economics to estimate the WACC for PC4. Frontier, basing their approach and analysis on the CER's longstanding methodology, estimated a point estimate of 4.96%. This estimate is in line with ESBN’s allowed WACC of 4.95%. In the PC4 Consultation Papers, the CER is proposing a lower WACC for PC4 of 4.63%. While Gas Networks Ireland welcomes CER’s approach of being mindful of regulatory precedent and regulatory stability, it nevertheless has a number of concerns about the CER’s proposals and asks the CER to consider the items below.

The CER’s proposed Cost of Debt is significantly below the long-term cost of debt: the approach previously adopted by the CER, and used by other regulators, estimates the cost of debt on the basis of a long term view of debt costs. In their analysis, Frontier used direct estimates of the long-term cost of debt (as proxied by the 10-year average of the iBoxx index) and current Irish inflation index. The Frontier cross-check suggests a long-term average cost of debt of c.2.9%, which is in line with their point estimate, and significantly higher than the 2.5% proposed by the CER.

The CER has failed to provide an aiming up allowance for Gas Networks Ireland, despite providing such an allowance for Irish Water and ESB Networks. In the ESBN PR4 determination the CER stated that “regulators typically include a further “aiming up” allowance which provides for the inherent risk of getting the WACC figure wrong and the acceptance that the risk of getting it wrong is generally asymmetrical i.e. customer welfare suffers more by setting the WACC too low rather by setting it too high”. ESBN and Irish Water received aiming up allowances of 20BPS and 10BPS respectively. The CER has provided no evidence to suggest that such risks are lower for Gas Networks Ireland than for ESBN or for Irish Water. Similarly, the CER has provided no evidence that it has adopted a change in methodology that would lessen the need for such an aiming up allowance.

The CER’s proposed Cost of Equity is below Gas Networks Ireland’s estimate. This is due to the lower asset beta estimated by FTI. This largely arises from the exclusion of SSE from the basket of comparators utilities used to benchmark Gas Networks Ireland’s asset beta. Gas Networks Ireland disagrees with FTI’s exclusion of SSE, and notes that their approach is out of line with the approach the CMA has taken in a number of UK regulatory appeals.

In addition to the points above, Gas Networks Ireland notes that the CER has not made any provision to take account of the risks that may arise from Brexit or other significant macro events. Gas Networks Ireland is mindful of the fact that its financing costs, and ability to access the market, are linked substantially to the outlook for the sovereign and sovereign risk. This was clearly demonstrated during the financial crisis when borrowing costs for Gas Networks Ireland rose substantially, and market access became challenging, as a result of movements in Irish sovereign debt.

Gas Networks Ireland is concerned that Brexit, or any similar significant Euro-area event could lead to significant increases in sovereign risk, with consequent impacts on Gas Networks Ireland’s financing position. If Brexit (or any other market shock) were to have very significant impacts, these would need to be addressed through a re-opening of the price control settlement.
3 Corrib Capex

For the PC4 period Gas Networks Ireland requested an allowance for the installation of gas quality monitoring equipment associated with the Corrib link line. The two initiatives are to install moisture (measuring high dew point) detection on the link line and gas quality (measuring Calorific Value ("CV") and Specific Gravity ("SG")) monitoring stations in strategic locations. These initiatives, which are outlined below, would help to ensure a high quality of gas supply to customers, improve billing accuracy and help to reduce Transmission UAG to the benefit of all gas customers. Gas quality is a concern to both Gas Networks Ireland and the CER.

3.1 Chilled Mirror Dew Point Detector
The Corrib Entry point currently provides the largest flow into the network. Gas flows from the Corrib Gas Field are of a higher dew point than gas entering the network from Kinsale or Moffat (Scotland). Complex processes at the Bellanaboy Terminal ensure that gas entering the network is compliant with the CER published gas specification. Gas Networks Ireland currently have no on-line detection system for off specification gas, resulting in a risk that the network can be contaminated with heavy hydrocarbon liquids, impacting negatively on the network operation and damage to downstream customers' equipment. Shell currently operate a monitoring system at their terminal in Bellanaboy, however there is currently no methodology by which Gas Networks Ireland can be informed in sufficient time to ensure that contamination of the gas within the Transmission network can be avoided. The estimated cost of this initiative is €500K.

3.2 Gas Quality (Calorific Value) Monitoring
Gas Networks Ireland measures the volume of gas leaving the network at all offtakes using volume meters. However customers are billed on the energy they receive. To determine this, the metered volume of gas is multiplied by the energy contained within it (CV) and this determines what the customer is billed. The gas from the Corrib link line differs from that delivered from Moffat in the quantity of energy per volume.

There are two different tiers of metering systems utilised on the network. For larger users the volume is multiplied by the CV as measured on site by specific local analysers. For smaller users (the majority) the volume consumed is multiplied by an estimated CV based on the region or zone of the network. Following the introduction of Corrib gas to the Network, and in particular to accommodate the variation of CV, Gas Networks Ireland increased the number of measurement zones to 15. For the majority of the network, Gas Networks Ireland can determine which gas (Corrib or Moffat) the customers are receiving from the measurement equipment located within that region and the zones are designed to accommodate this. However there are locations on the network where the gases mix and it is not possible to accurately determine the source of gas at these locations with the current level of measurement. Due to the difference of the gas CV at these locations, the risk of errors in metering is increased.

With the introduction of two additional SG and CV analysers at key locations, an accurate determination of the gas quality (CV) throughout the network can be made, improving the accuracy of the billing. The estimated cost of this initiative is €500K. As the flow rates from Corrib change the interface points between Corrib gas and Moffat gas will move. However, this initiative combined with current measurement capability, will provide a sufficient level of gas analysis to ensure accurate CV measurement.

During PC4 Gas Networks Ireland will require these two gas measurements devices to accommodate the new gas supply at Corrib and mitigate metering inaccuracies resulting from the introduction of gas with a different CV to the existing supply.

4 These locations are not on the Corrib link line, but the investment driver is Corrib gas flow.
4 Performance and Incentives

Incentives provide regulated companies with the opportunity to earn additional returns if they outperform in terms of efficiency, or deliver a higher quality or quantity of outputs. Conversely, incentive packages are also typically designed with penalties, if a regulated company underperforms in its operations, investments, or the outputs it delivers.

A good incentive package should balance rewards and penalties. It should provide tangible rewards when incremental improvements are made that will directly benefit consumers – either in the short or long-term. Equally, penalties need to apply in instances where a company is not meeting the minimum standards their customers expect.

Critical to any incentive mechanism is that the costs or measures incentivised are measurable and controllable by the regulated company. In this regard, Gas Networks Ireland welcomes CER’s proposal to establish baselines for customer performance incentives which will be calibrated over the next three years, and that the financial incentive will then apply to the last two years of PC4. Gas Networks Ireland considers it critical that these baselines are set at the right level so as to provide an incentive for incremental improvement over time, and Gas Networks Ireland is committed to working with CER on this.

Gas Networks Ireland acknowledges the CER's proposals on the pass-through of costs associated with Irish and Scottish rates (100% pass-through of Scottish rates, 100% pass-through of the Annual Rate of Valuation (Irish Rates) and 25/75 sharing on the Global Valuation element of Irish Rates). The proposals reflect Gas Networks Ireland’s reduced ability to control the costs of rates and achieves an appropriate balance of risk between Gas Networks Ireland and its customers.

While Gas Networks Ireland welcomes the introduction of a customer performance incentive and acknowledges the adjustment of the rates incentive overall Gas Networks Ireland is concerned that, taken as a package, CER’s incentive framework does not provide appropriate and balanced economic incentives. In particular, elements of the incentive package are asymmetric, in that they are likely to result in penalties, require significant outperformance for Gas Networks Ireland to breakeven, and provide only limited upside scope for outperformance. Briefly, the incentives where Gas Networks Ireland has concerns are:

- unaccounted for Gas;
- connection incentive; and
- capex incentives.

Each of these is discussed below.

4.1 Unaccounted for Gas

Put simply, Shrinkage Gas or Unaccounted for Gas (UAG) on the Distribution network represents total unaccounted or unallocated Distribution gas. Distribution UAG may be caused by gas losses including network leakage, gas escapes, theft of gas, gas quality variation, long term no access, data quality issues, metering errors or unregistered consumption. Of these, the most significant influence in UAG levels is meter error. A typical domestic meter has an accuracy range of +/- 3%, and the typical industrial size meters in the range of +/- 1%.

Distribution shrinkage volume risk is borne by Gas Networks Ireland. That is, if shrinkage volumes are greater than the allowed amount (as determined by the UAG factor), then Gas Networks Ireland will bear the cost of that additional shrinkage. Conversely, if shrinkage is lower than the allowed amount, Gas Networks Ireland will be rewarded by that amount.

There has been no discussion or engagement on the UAG proposals during the PC4 process to date. However the UAG incentive has cost Gas Networks Ireland €3.7m for the first four years of PC3. If the proposal in the PC4 Consultation Papers is not amended (and for the reasons set out below, cannot be
Gas Networks Ireland estimates that this will cost a further €6.3m over the PC4 period. This is a significant under recovery for Gas Networks Ireland.

Gas Networks Ireland believes the UAG target is too low for two key reasons.

- Firstly, the proposed UAG factors for PC4 are out of line with the UAG outturn in PC3. In particular, the UAG starting point that the CER has chosen for PC4 of 0.75% is out of line with the actuals of UAG for PC3. CER has provided no evidence or analysis to support its proposed targets, or to allow Gas Networks Ireland understand why CER believes achieving such a low target is feasible.
- Secondly, the proposed UAG targets are out of line with GB precedent. The starting target of 0.75% is less than half of the levels experienced in GB, and the rate of decline in the target is considerably greater than the rate of improvement required for GB companies.

<table>
<thead>
<tr>
<th>Factor</th>
<th>% of Throughput</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC3 outturn UAG</td>
<td>1.17%</td>
</tr>
<tr>
<td>Adjusted Estimated GB equivalent for UAG</td>
<td>1.31%</td>
</tr>
<tr>
<td>CER PC4 UAG Proposal for 2017/18</td>
<td>0.75%</td>
</tr>
</tbody>
</table>

Table 3: Comparable UAG factors

The incentive proposed is asymmetric in that Gas Networks Ireland faces a high risk of overspend on shrinkage. Conversely the likelihood of underspend is remote, if not zero, based on experience of operating the network and by reference to GB comparators.

Gas Networks Ireland proposes that the UAG factor should be set with regard to the PC3 outturn, with the GB comparator as a cross check. Allowing for an ongoing improvement this suggests a starting UAG factor of 1.15% for Gas Year 2017/18 rather than 0.75% proposed by CER.

4.1.1 PC3 Outturn

Gas Networks Ireland has progressed a number of initiatives to better understand, manage and reduce UAG during PC3. These include meter replacement programmes, systematic review of UAG zonal performance, review of calculations and models (including the forecasting, allocation and reconciliation (FAR) model), ongoing revenue protection activities and the commencement of a project to reduce the current number of long term no access sites and to stem the future build-up of such sites. Notwithstanding the application of extensive resources to monitor and reduce Distribution UAG in the control period, Distribution UAG exceeded the allowance provided in every year of PC3, as set out in the table below.

<table>
<thead>
<tr>
<th></th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
<th>2016/17</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC3 allowed UAG</td>
<td>1.00%</td>
<td>0.94%</td>
<td>0.88%</td>
<td>0.81%</td>
<td>0.75%</td>
<td>0.88%</td>
</tr>
<tr>
<td>PC3 outturn UAG</td>
<td>1.17%</td>
<td>1.00%</td>
<td>1.76%</td>
<td>0.86%</td>
<td>1.26%*</td>
<td>1.21%</td>
</tr>
</tbody>
</table>

Table 4: PC3 UAG allowance versus outturn

Source: GNI, CER
Note: * 12 months to April 2017

5 The actual numbers for GB are higher and are shown in Table 5. However, for comparison purposes Gas Networks Ireland has taken a conservative approach and has reduced the figure for GB shrinkage by 50% to account for likely differences in leakage rates due to higher levels of cast iron in the GB networks.
UAG levels are influenced by a combination of market processes, controllable measures and uncontrollable factors. CER has not presented, and Gas Networks Ireland does not accept there is, any reason to believe that the step change in UAG required to meet the proposed targets for the start of PC4 is achievable. The setting of such an unjustified target, with a resulting financial penalty, undermines the integrity of the UAG incentive.

4.1.2 GB Precedent
The GB equivalent of the Gas Networks Ireland’s shrinkage UAG factor consists of two elements Shrinkage\(^6\) and Unidentified gas\(^7\).

<table>
<thead>
<tr>
<th></th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
<th>2016/17</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB Shrinkage +</td>
<td>n/a</td>
<td>1.61%</td>
<td>1.41%</td>
<td>1.70%</td>
<td>n/a</td>
<td>1.59%</td>
</tr>
<tr>
<td>Unidentified Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: GB Precedent on UAG
It is clear that the CER’s proposed UAG factors for Gas Networks Ireland are substantially out of line with GB equivalents. Combining the GB shrinkage and unidentified gas elements of the UAG factor results in a total UAG factor in the range of 1.4% to 1.7%.

Further details on the GB approach to calculating UAG is given in Appendix 2

4.2 Connection incentive
The PC4 Consultation Papers propose a new incentive in relation to Distribution connections achieved during PC4. In principle, Gas Networks Ireland supports the introduction of such an incentive but is concerned about the incentive as currently proposed. In summary the concerns are:

- that the incentive is based upon meter fits and as such is targeted at the housing sector rather than the broader domestic sector which would include apartments; and
- that the floor has been incorrectly calculated.

Each of these is discussed in the following sections.

4.2.1 Design of the incentive
The Gas Networks Ireland’s growth strategy seeks to maximise utilisation of the network in the most cost effective manner possible. In the domestic sector this means targeting both housing and apartment developments to increase the utilisation of gas and displace other more expensive, and carbon intensive, fuels. However, the connection incentive as currently structured would only incentivise Gas Networks Ireland to focus on one sector (i.e. housing) and ignore apartments.

Usually each new connection is fitted with a meter resulting in a one to one relationship between new connections and meter fits. However, there has been a change to the building regulations to promote energy efficiency and in the case of apartment developments there may be a centralised boiler room with just one meter for a block of apartments. In this situation there is no longer a one to one relationship between new connections and meter fits. Instead, although the apartment block comprises a large number of individual customers and is a significant potential source of incremental demand, it is treated as a single connection for the purposes of the connections incentive. All things being equal, as the connection of an

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\(^{6}\) The shrinkage data used in the analysis is sourced from each GDNs RIIO-GD1 regulatory reporting packs from 2015/16 with the exception of shrinkage data for the four National Grid GDNs (i.e. East of England, London, North West and Midlands) where the 2014/15 data has been used, as the 2015/16 data reports are not available.

\(^{7}\) The unidentified gas data used in the analysis is sourced from the allocation of unidentified gas tables reported by Xoserve from 2013/14 – 2015-16
apartment block is relatively more expensive and complex than a house, Gas Networks Ireland would be incentivised to connect a house over an apartment block. Gas Networks Ireland thinks this to be inappropriate and incorrect.

In addition, all of the new connection numbers that Gas Networks Ireland has provided to the CER and its consultants in its PC4 submissions were based on connection units not meter fits and all of the capex and demand assumptions were based on connection units with an estimated number of new housing developments and apartments. For this reason, Gas Networks Ireland requests that the PC4 BAU target of 63,145 should represent the total number of housing/apartment units connected and not the number of meters fitted.

4.2.2 Calculation of cap and floor
Gas Networks Ireland is also concerned that the customer number floor is currently calculated incorrectly. The incentive cap is set at the number of new connections forecast by Gas Networks Ireland rounded to the nearest thousand (i.e. 90,000). The difference between Gas Networks Ireland’s new connections forecast and CER’s proposed BAU target for domestic connections is 26,855. Therefore, the floor should be set at the BAU target for domestic connections (i.e. 63,145) minus the difference between Gas Networks Ireland’s forecast and the target (i.e. 26,855), which is 36,290. However, the CER has proposed an incentive floor of 27,290 connections. Therefore, it appears that the cap and floor regime proposed is asymmetric given that 27,290 connections is significantly lower than 36,290 which is the level of the floor if it were symmetrical to the cap.

4.3 Capex Incentives
The CER has proposed retaining a rolling capex incentive mechanism in PC4. Gas Networks Ireland considers there are two main issues in relation to the capex incentive framework, which leads to asymmetric risks for Gas Networks Ireland. These issues are:

- proposed changes to regulatory treatment of overspends for delivered work; and
- provisions for the treatment of underspends.

These are discussed in further detail below.

4.3.1 Treatment of overspends for delivered work
The CER is proposing to modify the regulatory treatment of overspends on delivered work for the PC4 capex review. In relation to Unfinanced overspend category variances, the CER is proposing that Gas Networks Ireland will be required to finance the overspend for five years, rather than to the end of the price control period, as was the case for the PC3 capex review.

In past determinations, the CER has given clear regulatory guidance that it is the responsibility of Gas Networks Ireland to determine, in the light of changing circumstances, which projects progress, what new work not included in the price control submission is necessary and efficient and which projects are deferred, subject to the overall cap on capex. Any approaches by Gas Networks Ireland to seek regulatory approval/agreement to committed overspends during the period have generally been referred by the CER to the principle of this overarching responsibility which rests with Gas Networks Ireland.

Gas Networks Ireland at all times aims to make investment decisions that deliver the optimal solution for the safe, reliable and efficient transportation of natural gas through the gas network on behalf of all customers. The organisation must from time to time make decisions to overspend individual allowances in order to deliver on this objective. Gas Networks Ireland makes these decisions in good faith as they arise throughout the price control period, in the knowledge that it is its responsibility to do so. It is not until

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8 That is, 90,000 minus 63,145.
the capex review is undertaken by CER at the end of the price control period that a determination is given on whether the overspend incurred will be treated by the CER as Financed or Unfinanced.

In making an investment decision that could lead to an overspend against an individual allowance, Gas Networks Ireland needs to assess both the appropriateness of the investment and the potential revenue at risk due to the overspend. The proposed change to the incentive mechanism would on average double the quantum of revenue at risk, which will inevitably impact the decision making process.

Gas Networks Ireland estimates the penalties that would apply under the proposed incentive would be twice as high as in previous price controls. In this circumstance, Gas Networks Ireland:

- will be more reluctant to overspend an allowance, even where it is the right thing to do; and
- is likely to require interim decisions/rulings from CER in order to have greater certainty on the subsequent regulatory treatment.

In light of this, Gas Networks Ireland suggests that the proposed change to the incentive on regulatory treatment of overspends be reconsidered.

4.3.2 Treatment of capex underspends

The capex incentive framework includes provisions for the clawback of revenues associated with Capex underspends and a reward for savings achieved by Gas Networks Ireland. To encourage accurate forecasts an interest penalty is applied to the clawback of revenue associated with all Capex underspend. To balance this, and to encourage efficient Capex decisions, Gas Networks Ireland is allowed to keep the revenue associated with the financing and depreciation on capital expenditure which is deemed to have been efficiently deferred or savings achieved. Gas Networks Ireland argues that the application of the incentives in the revenue model should be revisited and that in particular that:

- the interest on the Clawback should be at Euribor plus 2% rather than WACC; and
- the revenue model underestimates the efficiency incentive.

Interest rate applied to Clawback

If the CER finds that an underspend relative to forecast is not due to efficiency savings or 'efficiently' deferring work, the revenue associated with the capital underspend is 'clawed back'. In that case, Gas Networks Ireland does not retain the revenue collected and that revenue is returned to customers.

Any revenue to be clawed back will have been collected during the price control period. It is clawed back in the following price control period, and so the CER requires that an adjustment must be made to account for interest Gas Networks Ireland might have earned on the revenue from the date it was earned to the start of the next price control. e.g. for revenues collected in 2014/15, two years of interest is applied.

To calculate the amount which Gas Networks Ireland would repay in the PC4 period in relation to revenue associated with the PC3 capex underspend, the CER adds together:

- the value of the capex revenue itself (depreciation and return); and
- an estimate of the notional interest that could have been earned on this revenue, which the CER calculates using Gas Networks Ireland’s WACC.

While Gas Networks Ireland accepts that the revenue should be clawed back and an interest rate applied, for reasons set out below, Gas Networks Ireland believes that it would be more appropriate to use Euribor plus 2% to calculate the interest. Gas Networks Ireland is of the view that it will incentivise Gas Networks Ireland more appropriately to make efficient capex decisions.

A clawback on return on deferred capital is akin to over-recovery of revenue by Gas Networks Ireland. When Gas Networks Ireland makes a correction for over-recovery in subsequent years it uses Euribor + 2% to calculate the correction. Gas Networks Ireland considers this approach should be mirrored in the clawback of return on deferred capital.
The use of WACC as an interest rate, assumes that Gas Networks Ireland might have been able to reinvest the amount of the underspend elsewhere in its business. In reality, Gas Networks Ireland will not be able to ‘reinvest’ underspend amounts, but will maintain this capital available for use over the period of the price control. In this context the use of the WACC rate might be seen as penal as it assumes access to a use for capital that is not there. Interest at a rate of Euribor +2% exceeds the amount that Gas Networks Ireland would earn by placing the amount of the underspend on deposit (thereby providing an incentive to get its forecasts right), but does not go beyond this.

Determining whether a decision not to spend is efficient deferral or simply “underspend” is inevitably subjective. As a result, from Gas Networks Ireland’s perspective, not spending might attract a benefit if it is determined to be efficient deferral, it equally might attract a penalty if determined to be underspend. Setting a larger incentive on underspent capex (by requiring interest to be paid at the WACC rather than Euribor +2%) will therefore encourage Gas Networks Ireland to spend even if the need for the investment is less clear.

This could well result, in aggregate, in perverse incentives for capex to be undertaken sooner than is needed. This might cost the consumer considerably more than the ‘benefit’ they would derive from using the higher interest rate to calculate the payment by Gas Networks Ireland.

**Underestimation of efficiency incentive**

In general terms the Capex incentive provides that where Gas Networks Ireland is able to achieve savings compared to its projected investment allowances, it is allowed to earn the rate of return plus a depreciation payment of the expenditure saved\(^9\). However, the methodology in the revenue model does not apply the incentive as described in the PC Consultation Papers, and weakens the incentive.

The revenue model underestimates the incentive as the model **first** calculates a clawback of revenue arising from all underspend, **with** an interest charge applied, and **then** adds back the revenue earned on the underspend **without** adjusting for the interest charge contained within the clawback.

This underestimation is best illustrated by way of a simple example of a clawback of €100 relating to a project for one year. This clawback would have WACC applied at 5.2% resulting in €105.20 being clawed back. If the project was deemed efficient, then €100 would be allowed to offset the clawback. The result of this is that the incentive is underestimated at €94.8, rather than €100.

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\(^9\) The length of period for the incentive depends on the nature of the saving.
5 Supporting the role of the gas network

The role of the natural gas network in the medium to long term needs to be supported with a greater emphasis on growth initiatives and innovation to increase network utilisation. Gas Networks Ireland recognises the support the CER is providing through the Opex allowances, connections incentive and the innovation fund for PC4. However Gas Networks Ireland believes that this falls short of the need to support CNG and Renewable gas and to support more demonstration and pilot projects for new and emerging technologies which will lead to greater network utilisation in the medium term and decarbonisation in the long term. In particular Gas Networks Ireland is concerned with the:

- lack of support for CNG beyond the causeway study;
- the failure to provide funding for renewable gas; and
- the low level of innovation funding for strategic projects under the PC4 innovation fund.

5.1 Compressed Natural Gas

Gas Networks Ireland has outlined the capex requirements for CNG infrastructure for the PC4 period requesting a capex allowance of €31.25m to enable it to build 25 CNG stations. Gas Networks Ireland highlighted that a capex investment in 25 CNG refuelling stations would provide benefits in terms of additional demand for gas which increases utilisation of the gas network. The increased demand has the potential to provide reduced network tariffs to gas customers over the long term as a result of increased utilisation of the natural gas network for transport. The number of stations and associated capex for each year of PC4 are outlined in the tables below.

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CNG refuelling facilities (#)</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Capex (€’000)</td>
<td>7,500</td>
<td>6,250</td>
<td>3,750</td>
<td>6,250</td>
<td>7,500</td>
<td>31,250</td>
</tr>
</tbody>
</table>

Table 6: Gas Networks Ireland proposals for CNG refuelling stations

On the 24th of November the CER published its ‘Compressed Natural Gas Funding Request Decision Paper’ which outlined €12.83m of regulatory support for the Causeway Study which enabled Gas Networks Ireland to accept EU funding of €6.5m for the Study. The Causeway Study involves the testing of the progressive and rapid deployment of CNG stations across Ireland and an analysis of their impact on the operation of the gas network. The project includes the deployment of thirteen CNG refuelling stations in Ireland, a Renewable Natural Gas injection facility and support for CNG vehicles, over a period of 5 years (2016 – 2020). Of the 13 CNG stations, 2 are being built under the PC3 Innovation Fund therefore the remaining 11 CNG stations will be built by 2019 with a combination of CEF Transport funding from the EU and CER support.

Gas Networks Ireland welcomes the CER decision to allow opex of €12.83m under the innovation category to complete the Causeway Study. This is a considerable commitment from the CER and is essential to the development of the CNG market in Ireland. However, there is no allowance for CNG capex for the additional 14 stations to be installed after the Causeway Study has been completed. Gas Networks Ireland is concerned that the momentum that will be built up by the Causeway Study will be lost if there is no new CNG infrastructure constructed after 2019. Gas Networks Ireland believes that the introduction of a mechanism to allow for further CNG infrastructure post the Causeway Study, i.e. from 2019 to 2022, would be an important signal to the fledgling CNG market. Gas Networks Ireland acknowledges that such infrastructure should only be supported by the general gas customer where there is a net benefit to the gas customer.
5.2 Renewable Gas
The development of a renewable gas industry in Ireland is critical to meeting current and future customer demand in addition to reducing the carbon footprint of the gas network and helping Ireland to meet its 2020 and 2030 climate change targets.

Gas Networks Ireland submitted a Capex request for €10.7m of capex allowances to build a number of renewable gas injection facilities. This capex request was based on Gas Networks Ireland’s experience with stakeholders that are involved in biogas production or interested in renewable gas. The Renewable Gas Forum of Ireland carried out a survey last year amongst customers with a large thermal heat requirement and the results of the survey showed that there is demand for renewable gas amongst gas customers in Ireland. However, the PC4 Consultation Papers have recommended no capex for renewable gas infrastructure to be provided during the PC4 period.

Many Industrial and Commercial customers have challenging corporate and social responsibility targets that they need to meet related to decarbonising their thermal heat requirements. Renewable gas offers a convenient solution to customers looking to decarbonise their thermal loads as the use of renewable gas through the existing gas network is based on a gas quality consistent with that of natural gas and there is no requirement to change or invest in new equipment. Companies are able to use their existing equipment and their existing gas connection. The availability of renewable gas will also generate new demand and ensure that customers flow additional gas through the network. The increased demand created will help to reduce network tariffs for all gas customers.

The figures that Gas Networks Ireland is using are conservative figures and with the introduction of a Renewable Heat Incentive (RHI) in Ireland, this number could be much greater.

<table>
<thead>
<tr>
<th>Year</th>
<th>Capex (€’m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017/18</td>
<td>1.7</td>
</tr>
<tr>
<td>2018/19</td>
<td>1.7</td>
</tr>
<tr>
<td>2019/20</td>
<td>1.7</td>
</tr>
<tr>
<td>2020/21</td>
<td>1.7</td>
</tr>
<tr>
<td>2021/22</td>
<td>1.7</td>
</tr>
<tr>
<td>Total</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Table 7: Gas Networks Ireland’s proposed renewable gas injection facilities and capex allowances for PC4

Gas Networks Ireland is currently working with the CER on a connections policy proposal for renewable gas injection to the gas network. The objective of the proposed connections policy for renewable gas is to facilitate renewable gas connections to the Irish gas network. It is envisaged that the policy will contain an economic test to enable the connection to benefit the gas customer. The lack of allowances for renewable gas injection facilities seems contrary to the objective of the connections policy.

Gas Networks Ireland believes an allowance aligned to the proposed renewable gas connection policy is essential in PC4. Gas Networks Ireland is very concerned about the message that an absence of renewable gas allowances sends to gas customers looking to convert to renewable gas and to the renewable gas producers considering injecting their gas into the network.

In its original submission Gas Networks Ireland sought Capex allowances for both CNG and renewable gas. CER has not proposed a Capex allowance for either in the PC4 Consultation Papers. However, as outlined above, the Causeway decision provides support for CNG through innovation funding (i.e. Opex). Gas Networks Ireland believes that investment in renewable gas facilities is justified as a Capex investment under a connections policy. However, support could equally be provided under an innovation allowance as with CNG.
5.3 Innovation
Gas Networks Ireland requested an innovation allowance of €25m for PC4. This translates to a little over 1% of the allowed revenue for PC4\textsuperscript{10}. This is well within the range of recent regulatory precedents both in Ireland and in the UK.

CER has proposed an innovation fund of €17.5m for PC4. While this is more than Gas Networks Ireland received during PC3, the majority of this allowance, i.e. €12.83m, relates to the funding for the Causeway Study discussed at 5.1 above, and cannot be used for other innovation priorities. Table 8 outlines the PC4 innovation funding proposed by the CER, compared to that sought by Gas Networks Ireland. As can be seen less than half of the funding sought for research or for strategic projects has been approved.

<table>
<thead>
<tr>
<th>Innovation Fund Categories</th>
<th>CER Proposals</th>
<th>Revised GNI Proposals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causeway Study</td>
<td>12.83</td>
<td>12.83</td>
</tr>
<tr>
<td>Research</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>17.5</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 8. Proposed innovation fund for PC4.

Although Gas Networks Ireland welcomes the allocation of €1 million for research, it believes this to be insufficient. Gas research plays a vital role in advancing development of current and new technologies. Moreover, in the context of the significant challenge faced by Ireland in meeting a least cost transition to a low carbon future, gas research provides a critical input into energy policy, allowing for informed decision making. In recognition of this, the ‘Energy Innovation Ireland’ strategy document produced by the Energy Research Strategy Group and published in 2016 by the Department of Communications, Climate Action and Environment,\textsuperscript{11} recommended that the CER should continue to support and oversee the research and innovation programmes of both Gas Networks Ireland and Irish Water.

In relation to strategic projects, Gas Networks Ireland believes that the application of technologies such as power-to-gas, low carbon heating solutions and carbon capture and storage to the Irish market should be explored. However the funding proposed is insufficient to carry out demonstration, pilot projects or feasibility studies and Gas Networks Ireland is concerned that the momentum achieved in PC3 will not be sustained into PC4. An overview of these technologies and their potential benefits is given below.

**Power-to-Gas**: Power-to-Gas is a process in which electricity is taken from the power grid and converted into hydrogen. The hydrogen can be utilised for many purposes including industrial applications and mobility or it can be injected into the natural gas network directly or after methanation with CO\textsubscript{2}. Power-to-Gas projects are operational in many counties and are seen as a highly effective way of integrating renewables and hence have potential applicability to Ireland.

\textsuperscript{10} Based on Gas Networks Ireland’s submission to the CER in December 2016.

Low Carbon Heating Solutions: The Government’s Energy White Paper states that increased decarbonisation of home heating will be vital to Ireland’s energy transition. The Government has identified the installation of heat pumps as part of an extensive package of building energy efficiency improvements that have a high upfront cost, but can lead to significant energy savings. Gas Networks Ireland would like to run a number of pilot projects to install gas fired heat pumps in new housing developments and other domestic dwellings. Gas Networks Ireland believes that allocating some of the PC4 innovation fund to such pilot projects would help provide efficient low carbon energy solutions for the domestic market while increasing gas utilisation.

Carbon capture and storage: Carbon capture and storage (CCS) is the process of capturing waste carbon dioxide (CO₂) from large sources, such as fossil fuel power plants, transporting it to a storage site and depositing it where it will not enter the atmosphere e.g. in an underground geological formation. CCS can therefore be used to mitigate against the contribution that fossil fuel emissions make to climate change. According to the ‘Energy Innovation Ireland’ strategy document, CCS has substantial potential to reduce emissions of CO₂ at a global level, and the technology features strongly in low carbon scenarios developed by the IEA and other bodies. Gas Networks Ireland believes that it is important to consider CCS as part of the solution for decarbonisation of Ireland’s energy system. A project to investigate in detail the technical steps needed to develop this concept would be beneficial.

Gas Networks Ireland believes that it is important to invest in innovation so that alternative sources of demand can be generated to mitigate against the decline of traditional sources of gas demand in the longer term. More importantly however, Gas Networks Ireland believes that innovation projects such as those outlined above are key to a least cost decarbonisation of Ireland’s energy system and the meeting of Ireland’s emissions targets. Gas Networks Ireland believes that investing in innovation now will be more cost effective for all Irish energy consumers in the long run. Moreover, it will ensure the sustainability of the gas network so that it can continue to contribute to Ireland’s economic growth by providing customers with competitive, convenient, cleaner energy. In this context Gas Networks Ireland would ask CER to reconsider the allowance provided for innovation funding.
6 Efficiency Targets

In the PC4 consultation on revenue for Gas Networks Ireland, CER has proposed the following efficiency factors:

- **Distribution**: An annual efficiency target of 1.75%. This is made up of a 0.75% compounding annual catch-up efficiency target and a 1% ongoing efficiency target; and
- **Transmission**: A 1% ongoing efficiency target.

Gas Networks Ireland is concerned that the CER’s proposals set inappropriate efficiency targets for Gas Networks Ireland as a result of:

- issues with the distribution benchmarking approach that understate Gas Networks Ireland’s relative efficiency, calling into question the basis for the catch up efficiency;
- outdated information on general economic productivity together with deviation from quoted precedent; and
- failure to account for external cost pressures, which make it very challenging for Gas Networks Ireland to achieve the efficiency targets.

The following sections explain on these concerns in relation to both catch-up efficiency and ongoing efficiency.

6.1 Catch-up efficiency

Based upon the distribution benchmarking undertaken by CEPA, the CER has proposed a 0.75% per annum compounding catch-up efficiency target (3.7% cumulative over five years). This 3.7% is in addition to a proposed 1% annual efficiency.

Gas Networks Ireland commissioned Frontier Economics to benchmark its Distribution business and Frontier’s analysis has consistently found Gas Networks Ireland to be efficient. Unfortunately, due to lack of supporting information from CEPA, Frontier have not been able to identify the cause of the difference in findings between the two benchmarking approaches.

Gas Networks Ireland maintains that setting an aggressive catch-up efficiency is not appropriate given the evidence that it is currently operating efficiently. CEPA’s benchmarking results, which contradict Gas Networks Ireland’s findings, are uncertain and lack transparency.

Gas Networks Ireland suggests that, in circumstances where there is considerable doubt over the relative efficiency of the operator, CER should adopt a cautious approach when setting efficiency targets, particularly where they are combined with dynamic efficiency targets. Gas Networks Ireland strongly urges the CER to remove the catch-up efficiency target.

Gas Networks Ireland’s concerns with the benchmarking process are outlined below.

6.1.1 Confidence Levels

Gas Networks Ireland notes that CEPA does not report the confidence intervals from its models, and therefore it is not possible to tell the range of possible efficiency or inefficiency it has found in respect of Gas Networks Ireland. Without visibility of the confidence intervals associated with the efficiency estimations, Gas Networks Ireland cannot accept that there is evidence, statistically, of inefficiency. It is inappropriate to set such a large catch-up efficiency target when the model’s confidence intervals may suggest efficiency.
6.1.2 Comparability of approaches and transparency
There are relatively few differences between CEPA's approach to efficiency benchmarking and that of Frontier. However, CEPA still find Gas Networks Ireland to be inefficient whereas Frontier find Gas Networks Ireland to be relatively efficient. Without access to CEPA's data, Frontier are unable to fully test what is driving these differences.

Gas Networks Ireland cannot be sure whether it is differences in the data or a data error which is causing results to differ. As such, Gas Networks Ireland maintains the view that the lack of transparency in the benchmarking process increases the uncertainty of the CER's benchmarking results. Transparency is an important aspect of regulatory processes. In this case it is particularly important given CEPA's PC3 benchmarking findings are used to set a challenging catch-up efficiency target.

6.2 Ongoing efficiency
Based on a total factor productivity analysis carried out by CEPA the CER has proposed an ongoing efficiency target for Gas Networks Ireland of 1% per annum. This appears to be based on:

- CER precedent adopted for Gas Networks Ireland at the PC3 review; and
- evidence from Ofgem and Ofwat on productivity gains in their sectors.

The 1% ongoing efficiency target set for Gas Networks Ireland in PC4 should be re-evaluated to account of updated data in relation to productivity levels and increasing cost pressures in Ireland which is likely to make the 1% target impossible to meet. In Gas Networks Ireland’s view the evidence suggests that the CER should not be targeting an ongoing efficiency target over and above the 0.5% per annum that Gas Networks Ireland had originally included in its PC4 Submission.

The following sections set out concerns with CEPA’s analysis and the resulting efficiency target. In particular:

- evidence is provided that the 1% dynamic efficiency target should not be applied due to declines in productivity growth;
- while the CEPA quoted UK regulatory precedent for a 1% target, it does not accurately follow the quoted precedent; and
- other concerns with arguments provided by CEPA in its analysis are outlined.

6.2.1 Evidence of recent declines in Irish productivity growth
There is no recent and reliable evidence that 1% dynamic efficiency is an appropriate target in the current Irish context. CEPA rely on Irish KLEMS data for the period 1998-2007 to determine average annual growth rates for economy wide and sectoral productivity. Given that the most recent KLEMS data available is 10 years old, Gas Networks Ireland consider that this is no longer an accurate indicator of the current Irish economy.

Figure 1 below shows total factor productivity growth in Ireland from 1987 to 2015. It is clear that productivity growth in the Irish economy was slowing steadily over the period and has plateaued somewhat since 2011. Most importantly the data shows that the economy is not as dynamic as it was prior to 2007, with productivity growth of below 1% from 2007 to 2015. Given the marked decline in productivity growth that occurs after 2007 (i.e. after the KLEMS dataset finishes) it is inaccurate to use data that is ten years out of date as an indicator of current productivity growth potential.
Response to PC4 Consultation

6.2.2 Deviation from quoted precedent

The CER quotes Ofgem precedent of minus 1% for ongoing efficiency gains. However, it fails to acknowledge that these are not the final dynamic efficiency targets set for the network companies in GB. Ofgem, in GD1, set an ongoing opex efficiency target of minus 1% and accounted for cost pressures with a factor of 0.4%. Ofgem combined these measures to provide “the expected growth in expenditure, relative to the RPI, over the price control period” of -0.6%.12

Gas Networks Ireland is of the view that the impacts on opex allowances from ongoing efficiency targets should not be set in isolation from the external cost pressures faced by a company. If CER is to compare the ongoing efficiency targets for Gas Networks Ireland with similar Ofgem targets, then the CER should also look at cost pressures as Ofgem does. The cost pressures facing Gas Networks Ireland, which are set out in more detail in the note from Frontier Economics, include:

- forecast real wage inflation: c.2.7% p.a.;
- material cost inflation: estimated at 6.3% in 2016 and forecast to have continued in 2017; and
- forecast real business service price inflation: 1.3%.

6.2.3 Additional concerns with CEPA’s analysis

Gas Networks Ireland also notes the following concerns with evidence provided in CEPA’s analysis of ongoing efficiency:

- **Sticky inputs prices reduce possible efficiencies.** CEPA argue that Gas Networks Ireland should be able to make ongoing efficiency gains even if input costs are sticky. However, sticky input prices would suggest that the scope for efficiency gains is reduced if Gas Networks Ireland cannot take advantage of input cost reductions immediately.

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12 Ofgem, 2012, RIIO-T1/GD1: Initial Proposals – Real price effects and ongoing efficiency appendix
CEPA argue that customers face higher costs due to fixed prices but fail to acknowledge the benefits customers receive. CEPA argue that consumers should not bear the cost of Gas Networks Ireland fixing its prices in terms of lower ongoing efficiency. However, CEPA fails to acknowledge that consumers may also benefit from Gas Networks Ireland fixing prices if doing so insulates Gas Networks Ireland from increasing price pressures – as CEPA has argued it does – which would keep prices lower for consumers.

CEPA’s implicit RPE appears implausibly low. CEPA argues its bottom-up estimates include changes in input prices during the price control. However, the only example it provides of this is insurance, where CEPA includes a step-up adjustment of €700k p.a. in distribution for insurance. This is equivalent to a circa 0.1% RPE.
7 Clawback of ITO costs

In the PC4 consultation the CER has requested comments on its proposal to remove ITO setup costs from the RAB due to the sale of Bord Gáis Energy (BGE). The CER is proposing to remove ITO setup costs from the RAB from the start of the 14/15 gas year.

This section outlines:

- the background to the ITO costs;
- why Gas Networks Ireland believes that the disallowance of ITO costs now would be wholly unfair and unreasonable from the perspective of regulatory process and precedent; and
- the nature of the costs.

7.1 Background to ITO

Directive 2009/73/EC contained unbundling provisions which required the separation of the supply and networks activities of vertically integrated gas utilities (VIUs) in order to facilitate non-discriminatory access to gas transmission networks. As Ervia, (then called Bord Gáis Éireann) was a VIU, four unbundling options were available to make the company compliant with the Directive.

It is important to note that the choice of options to achieve compliance with the Directive lay with the Member State through the transposition process and not with the shareholder. The then Minister for Communications, Energy and Natural Resources chose to implement the Independent Transmission Operator (ITO) model for Ervia in Ireland, and this choice was transposed into law by means of SI 630 of 2011 which came into effect in December 2011 and required that “As soon as practicable after the making of these Regulations, [Ervia] shall form the ITO which shall comply with this Chapter”.

Ervia implemented Project 3 to deliver the ITO model in the most efficient way possible given the specific requirements of the Directive. On 23 November 2012, the CER allowed €19.3 million of ITO setup costs to be split between the transmission and distribution RABs. It is notable that the overall cost to Gas Networks Ireland of implementing the ITO model was €34.5 million. Gas Networks Ireland incurred significant ITO setup costs (€15.2m) that the CER did not allow it to recover.

The ITO setup costs asset was to be depreciated over 15 years from its entry onto the RAB. When depreciation is taken into account, the forecast net book value of the assets at the time of the CER’s PC4 price control decision will be c. €11 million.

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13 The Minister for Communications, Energy and Natural Resources was also Ervia’s shareholder at the time.
15 “Decision on October 2012 to September 2017 distribution revenue for Bord Gáis Networks” (CER/12/194) as at 23 November 2012 and “Decision on October 2012 to September 2017 transmission revenue for Bord Gáis Networks” (CER 12/196) as at 23 November 2012.
16 As outlined in Gas Networks Ireland’s paper submitted to CER “Third Directive Setup Costs” as at 28 October 2011.
7.2 Approach to date
Gas Networks Ireland believes, from the perspective of regulatory process and precedent, any move on the part of the CER to disallow ITO costs, would be wholly unfair and unreasonable.

As outlined above, the CER previously assessed the necessity and efficiency of the ITO related costs. With full knowledge that a sale of BGE was intended, CER determined that ITO costs should be added to the RAB. (The decision to sell BGE had been taken in February 2012)

By letter dated 19 July 2013, which expressly noted that “plans for sale of BGE’s Energy Business are now well advanced” the CER required Ervia to continue to incur ITO setup costs, notwithstanding the CER was aware that the ongoing sale process would achieve compliance with the unbundling requirements of the Directive.17 That letter provided that CER would “certify BGE as an ITO, subject to the completion of all outstanding ITO work items identified within the specified timeline” (emphasis added). The outstanding ITO work detailed in this letter was the following:

- “full separation of IT and telephony systems;
- identifying separate auditors for BGE and BGE ITO;
- defining a rebranding process from July 2013 to December 2013, which is to be implemented in January to March 2014; and
- incorporating BGE ITO, appointment of a management and supervisory board and implementation of transfer plans, which are to be achieved in February and March 2014”.

There was no suggestion in this letter that costs associated with these work items would not be recoverable or that there was any change in the basis of the allowance provided in the PC3 Decision Papers. In circumstances where Ervia was required to continue to incur this expenditure in the knowledge that it was unlikely to be required, Gas Networks Ireland is strongly of the view that it is inappropriate that this expenditure now be written off. Where CER wished the ITO model to be in place as a back-up in case the sales process was not finalised or was significantly delayed (which was entirely within their discretion) it is unreasonable for the CER to do so, and to then require Gas Networks Ireland to face the cost burden of such a backup arrangement.

7.3 Nature of the costs and realisation of value
Gas Networks Ireland understand that the intent of the retrospective write off of ITO costs is not to ‘strand’ these assets per se. Gas Networks Ireland understands the CER believes that Ervia / Gas Networks Ireland has recovered the value of these costs already and so the intent would be to avoid a double recovery. However, for this to be the case, it would necessitate that the costs of separation were indeed recovered by the sale process.

17 BGE announced the commencement of the sale process on May 2013 and the deadline for initial bids was June 12th 2013.
Project 3 was a large compliance driven change project which restructured the Ervia business as it existed at the time. The activities undertaken as part of the ITO separation and the estimated costs, which were submitted at the time to CER are shown in the table below.

<table>
<thead>
<tr>
<th>Workstream</th>
<th>£m</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Delivery</td>
<td>1.2</td>
<td>Communications and stakeholder management</td>
</tr>
<tr>
<td>End state design</td>
<td>4.7</td>
<td>Designing the final state of the business and its transition to the ITO</td>
</tr>
<tr>
<td>Finance</td>
<td>1.4</td>
<td>Establishing the financial elements of the ITO model including good enterprise management</td>
</tr>
<tr>
<td>Governance and Legal</td>
<td>4.5</td>
<td>Development of the legal and contractual constructs to implement the ITO</td>
</tr>
<tr>
<td>IT</td>
<td>15.7</td>
<td>Separation of IT systems into ITO systems and VIU systems</td>
</tr>
<tr>
<td>PMO</td>
<td>7.0</td>
<td>Delivery and governance of the project</td>
</tr>
<tr>
<td>Total</td>
<td>34.5</td>
<td></td>
</tr>
</tbody>
</table>

Table 9: Project 3 Workstreams and estimated costs

As can be seen from the table above, the costs from the ITO process do not directly or significantly overlap with the actions required for a demerger to facilitate, or add value, to a sale process; The majority of the activities were ITO specific, not relevant to the demerger and would not have “contribute to the value of the separate entity”. As previously noted, not all of these costs were recovered by Gas Networks Ireland.

At best, it may be argued that some element of IT expenditure would have been recovered in the sale process, this is itself arguable on the facts of the separation. Where the business was ultimately divided into three separate businesses for the purposes of sale, many business separation issues, including negotiations with third party IT vendors, had to be reopened or started afresh.

Weighed against the regulatory precedent created by the re-opening of a previously agreed revenue settlement and the lack of evidence that value was realised in the sale process, Gas Networks Ireland strongly urges CER to reconsider this disallowance.
### Appendix 1: Submission and proposed allowances by business unit

<table>
<thead>
<tr>
<th></th>
<th>Distribution</th>
<th>Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GNI submission</td>
<td>CER proposals</td>
</tr>
<tr>
<td>Controllable Opex</td>
<td>378 (€’000)</td>
<td>340 (€’000)</td>
</tr>
<tr>
<td>Innovation</td>
<td>3 (€'000)</td>
<td>2 (€'000)</td>
</tr>
<tr>
<td>Pass-Through</td>
<td>93 (€’000)</td>
<td>85 (€’000)</td>
</tr>
<tr>
<td>Total</td>
<td>473 (€’000)</td>
<td>426 (€’000)</td>
</tr>
</tbody>
</table>

Table 10: Opex submission and proposed allowances by business unit

<table>
<thead>
<tr>
<th></th>
<th>Distribution</th>
<th>Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GNI submission</td>
<td>CER proposals</td>
</tr>
<tr>
<td>Refurbishment</td>
<td>230 (€m)</td>
<td>176 (€m)</td>
</tr>
<tr>
<td>Growth</td>
<td>267 (€m)</td>
<td>125 (€m)</td>
</tr>
<tr>
<td>Non pipe</td>
<td>32 (€m)</td>
<td>29 (€m)</td>
</tr>
<tr>
<td>Total</td>
<td>529 (€m)</td>
<td>331 (€m)</td>
</tr>
</tbody>
</table>

Table 11: Capex submission and proposed allowances by business unit
Appendix 2: Unaccounted for gas in Great Britain

The GB equivalent of the Gas Networks Ireland’s shrinkage UAG factor consists of the following two elements:

**Shrinkage:** In the UK shrinkage is covered by an explicit shrinkage factor which is incentivised in RIIO-GD1. The shrinkage data used in the analysis below is sourced from each GDNs RIIO-GD1 regulatory reporting packs.18

**Unidentified gas:** In the UK unidentified gas consists of unidentified gas due to factors including, shipperless/unregistered gas points, meter errors and a balancing factor. Unlike shrinkage, unidentified gas is not incentivised and is recovered by socialising it across all customers. The unidentified gas data used in the analysis is sourced from the allocation of unidentified gas tables reported by Xoserve from 2013/14 – 2015-16.19

The GB precedent in relation to shrinkage and unidentified gas is outlined in more detail below.

**Shrinkage**

Following the methodology outlined in the CER’s draft determination, shrinkage is divided by throughput to calculate the GB equivalent shrinkage element of the UAG factor. The results of this analysis are outlined in the figure below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>East of England</td>
<td>0.52%</td>
<td>0.47%</td>
<td>0.45%</td>
<td>0.44%</td>
<td>0.43%</td>
<td>0.42%</td>
<td>0.41%</td>
<td>0.41%</td>
</tr>
<tr>
<td>London</td>
<td>0.53%</td>
<td>0.46%</td>
<td>0.46%</td>
<td>0.45%</td>
<td>0.44%</td>
<td>0.43%</td>
<td>0.42%</td>
<td>0.40%</td>
</tr>
<tr>
<td>North West</td>
<td>0.55%</td>
<td>0.51%</td>
<td>0.51%</td>
<td>0.50%</td>
<td>0.49%</td>
<td>0.48%</td>
<td>0.47%</td>
<td>0.46%</td>
</tr>
<tr>
<td>West Midlands</td>
<td>0.70%</td>
<td>0.69%</td>
<td>0.64%</td>
<td>0.62%</td>
<td>0.61%</td>
<td>0.60%</td>
<td>0.59%</td>
<td>0.58%</td>
</tr>
<tr>
<td>Northern</td>
<td>0.58%</td>
<td>0.59%</td>
<td>0.54%</td>
<td>0.53%</td>
<td>0.52%</td>
<td>0.50%</td>
<td>0.49%</td>
<td>0.47%</td>
</tr>
<tr>
<td>Scotland</td>
<td>0.47%</td>
<td>0.43%</td>
<td>0.44%</td>
<td>0.41%</td>
<td>0.40%</td>
<td>0.39%</td>
<td>0.38%</td>
<td>0.37%</td>
</tr>
<tr>
<td>Southern</td>
<td>0.62%</td>
<td>0.65%</td>
<td>0.59%</td>
<td>0.56%</td>
<td>0.55%</td>
<td>0.53%</td>
<td>0.52%</td>
<td>0.50%</td>
</tr>
<tr>
<td>Wales &amp; West</td>
<td>0.61%</td>
<td>0.68%</td>
<td>0.58%</td>
<td>0.60%</td>
<td>0.59%</td>
<td>0.58%</td>
<td>0.57%</td>
<td>0.56%</td>
</tr>
<tr>
<td>Average</td>
<td>0.57%</td>
<td>0.56%</td>
<td>0.53%</td>
<td>0.51%</td>
<td>0.50%</td>
<td>0.49%</td>
<td>0.48%</td>
<td>0.47%</td>
</tr>
</tbody>
</table>

Table 12: RIIO-GD1 actual and forecast shrinkage divided by throughput

Source: GDN 2014/15 and 2015/16 annual regulatory reporting output for RIIO-GD1, GDN long term development plans

This analysis shows that the GB equivalent shrinkage element of the UAG factor was 0.51% in 2016/17, the first year of PC4. This figure only marginally decreases to 0.47% by 2020/21, the last year of PC4.

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18 Note that shrinkage data from the 2014/15 RIIO-GD1 regulatory reporting packs for the four National Grid GDNs (i.e. East of England, London, North West, Midlands) have been used, and the 2015/16 data reports for all other GDNs.

Unidentified gas
As noted above unidentified gas reported in the GB should also be taken into account when comparing Gas Networks Ireland’s UAG factor to GB precedent. The volume of unidentified gas in the GB was reported by Xoserve for the gas years 2013/14 to 2015/16. These volumes are divided by total throughput in the UK to calculate the unidentified gas element of the UAG factor for GB. The results of this are outlined in the figure below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Aggregate Quantity of Unidentified Gas (GWh)</th>
<th>Throughput (GWh)¹⁰</th>
<th>Unidentified Gas %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>6,033</td>
<td>561,892</td>
<td>1.08%</td>
</tr>
<tr>
<td>2014/15</td>
<td>4,506</td>
<td>556,080</td>
<td>0.85%</td>
</tr>
<tr>
<td>2015/16</td>
<td>6,417</td>
<td>532,013</td>
<td>1.18%</td>
</tr>
<tr>
<td>Average</td>
<td>5,652</td>
<td>544,583</td>
<td>1.04%</td>
</tr>
</tbody>
</table>

Table 13: GB unidentified gas


¹⁰ Throughput data available is in calendar years rather than gas years, therefore the data presented in this table is for calendar years 2013, 2014 and 2015