**Distribution Tariffs**

**For the**

**Gas Year 2015/16**

**21st August 2015**

Gas Networks Ireland

## 1. Introduction

Gas Networks Ireland (GNI) welcomes the opportunity to present its paper to the CER on the Distribution Tariffs for 2015/16. This paper outlines the allowable revenue calculation for 2015/16 by applying the Revenue Control Formula.

The calculation of the 2015/16 Distribution tariffs involves four steps:

1. Updating the CER Allowed Revenue for 15/16 to reflect the incremental opex and capex allowances allowed by the CER.
2. Deriving the allowed revenue through application of the Revenue Control Formula;
3. Forecasting system demand for 2015/16;
4. Calculating unit capacity and commodity tariffs using the existing tariff structure based on the allowed revenue set against projected peak day and annual volume figures.

## 2. Executive Summary

Applying the Revenue Control Formula and incorporating up-to-date demand forecasts results in a real tariff increase of circa 2.4% (nominal increase of circa 3.3%) on a weighted average basis (based on 80/20 capacity/commodity split) when compared to 2014/15 tariffs.

The price control determines the allowed revenues for a 5-year period. GNI has calculated the 2015/16 revenue in line with the price control decision of November 2012, and the CER's subsequent updates. When compared with the CER's 2015/16 allowed revenue, as per the 2014/15 tariff decision, there has been an increase of €0.16m in nominal monies. This is the net effect of the incremental 2015/16 Opex allowance.

The 2015/16 allowed revenue has also been adjusted to reflect forecast Pass-through costs such as Local Authority Rates, Safety Advertising and an adjustment for revenue under-recovery during 2013/14. A correction for the 2012/13 over-recovery is also included as this over-recovery is being corrected over three tariff periods as opposed to the standard single tariff period.

The following sections outline the application of the Revenue Control Formula and discuss the tariff calculation in more detail.

## 3. Allowable Revenue Calculation for 2015/16

The allowable revenues for the ***Price Control 3 period*** are derived in accordance with the Revenue Control Formula. This is in line with the Price Control decision, "Decision on October 2012 to September 2017 Distribution Revenue for Bord Gáis Networks - Decision Paper (CER/12/194)".

In calculating the allowable revenue for *2015/16*, GNI have applied the Revenue Control Formula. The allowed revenues are adjusted annually to take account of certain uncontrollable costs, i.e. pass-through costs, inflation and any revenue over/under-recoveries.

Details of each calculation and adjustment to the original Allowed Revenue are discussed below.

### *a) Allowable Revenue derived from the Revenue Control Formula*

The allowable revenue for 2015/16 is calculated by applying the Revenue Control Formula as outlined above. Calculation of the correction factor, $K_{t-1}$ for the close out of 2013/14 is as outlined in the Price Control decision for the period 2012/13 – 2016/17.

In applying the Revenue Control Formula the following values were assumed or updated:

Inflation

- In setting the 2015/16 tariffs, 0.95% inflation was assumed for the time period from April 15 to March 16[1].

Euribor[2]

- 2013/14 Euribor of 0.56% which represents an average 12-month rate to May 6th 2014.
- 2014/15 Euribor of 0.35% which represents an average 12-month rate to May 22nd 2015.

Please see Appendix 3 for an explanation of the interest rate multiplier/euribor rates.

GNI have received CER approval to include costs for the Apprenticeship Scheme and a Customer Capture program. As these costs were not approved in the original Price Control 3 decision. GNI have followed the CER guidance per sec. 8.5 of CER/12/194 and made subsequent applications, as part of the 15/16 tariff setting process.

The net effect of this adjustment results in the 15/16 allowed revenue increasing by €0.15m (from €188.1m to €188.25m) in 10/11 monies. In 15/16 monies the increase is €0.16m (€195.22 to €195.39m)

Pass through costs include: Rates, Safety Advertising and Initiatives, CER Levy, scope of work previously carried out by Gaslink (ISO), Gas Shrinkage and Revenue Protection. These costs are influenced by factors that are largely outside GNI's control.

The revenue derived from applying the Revenue Control Formula is as follows:

| €m 15/16 monies | | | | | | |
|---|---|---|---|---|---|---|
| 2015/16 Allowed Revenue from Aug'14 | Re-calculated 2015/16 Allowed Revenue - 15/16 Tariff | 2015/16 Revised Pass Through Costs | 2012/13 Correction Factor | 2013/14 Correction Factor | Revenue Requirement 2015/16 | % Variation |
| 195.22 | 195.39 | 1.97 | 1.07 | -2.05 | 196.39 | 0.60% |

The differences between the revised allowed revenues determined as part of the 2014/15 Tariff Decision and the allowed revenues derived from applying the Revenue Control Formula are due to a combination of factors:

1) Projected changes in forecast pass-through costs for 2015/16 (€1.97m);

2) K-Factor adjustment for 2013/14 (which includes 2nd year of 2012/13 correction) of -€0.98m

   a. Impact of the close out for 2013/14 (€1.07m);
   b. Impact of the close out for 2012/13 - Year 2 (-€2.05m);

Each of these factors is described in more detail below.

[1] The inflation for 2015/16 is estimated to be 0.95% based on figures from the Irish Central Bank Quarterly Bulletin - April 2015.

[2] This is used to uplift revenue under-recoveries for the 2013/14 tariff year. Revenue over-recoveries up to 103% and under-recoveries attract an interest rate of Euribor + 2%. Any over-recovery over 103% of allowable revenue attracts an interest rate of Euribor + 4% for Year $_{t-1}$.

1) Revised Forecast for 2015/16

The original submitted Pass-through Costs used to determine the proposed allowed revenues for Price Control 3 have been revised to reflect the following parameters:

- Higher Local Authority rates than forecast;
- Higher Safety Advertising costs;
- Lower than forecast Shrinkage gas costs due to lower forecast wholesale gas prices;

The impact of each of these factors on the total revenue requirement for 2015/16 is summarised in the table below:

| 15/16 Forecasts | | €m | *Saving/Charge* |
|---|---|---|---|
| Pass-through Costs | | | |
| | Rates | 0.35 | *Charge* |
| | Safety | 1.79 | *Charge* |
| | CER Levy | 0.41 | *Charge* |
| | Gas Shrinkage | -0.57 | *Saving* |
| Pass-through Costs Difference - *Excess* | | 1.97 | |
| Total 14/15 Variance (14/15 monies) | | **1.97** | *Charge* |

For the Price Control a cost sharing incentive is in place for rates and safety.

In relation to rates, if the actual costs differ from the proposed allowance then 50% of the difference will be borne by, or to the benefit of GNI and 50% by the customers.

When forecasting safety costs 100% of the difference between the allowance and the forecast will be passed through to the customer. When closing out safety costs for 2015/16, the forecast is measured against actual output and 50% of the difference between the forecast safety costs and actual safety costs will be passed through.

2) Correction Factor 2013/14 ($K_{t-1}$)

This correction factor adjusts for the difference between 2013/14 actual revenues and pass-through costs versus 2013/14 projected revenues and pass-through costs forecasted in August 2013 when 2013/14 Tariffs were set.

The close out of 2013/14 has resulted in an under-recovery of **€1.07m**. This is made up of an under-recovery of revenue for 2013/14 of €1.98m less the lower outturn pass-through costs, particularly the Rates costs.

3) Correction Factor 2012/13 ($K_{t-2}$)

This correction factor adjusts for the difference between 2012/13 actual revenues and pass-through costs versus 2012/13 projected revenues and pass-through costs forecasted in August 2012 when 2012/13 Tariffs were set.

The close out of 2012/13 had resulted in an over-recovery of **€5.63m**. One third of this over-recovery was returned through the 2014/15 tariff, with another third to be returned in the 2015/16 Tariff. The 2015/16 calculation takes into account the NPV value of the over-recovery - returning a value of €2.05m.

| 13/14 Actual: Out-turn ($K_{t-1}$) | | €m | *Saving/Charge* |
|---|---|---|---|
| **Revenue Under Recovery** | | 1.98 | |
| **Passthrough Costs** | | | |
| | Rates | -0.68 | *Saving* |
| | Safety | -0.25 | *Saving* |
| | CER Levy | 0.20 | *Charge* |
| | Gaslink | -0.05 | *Saving* |
| | Gas Shrinkage | 0.10 | *Charge* |
| | Revenue Protection | -0.29 | *Saving* |
| **Pass-through Costs Difference** | | **-0.97** | *Saving* |
| Total 13/14 Adjustment (13/14 Monies) | | 1.02 | |
| Interest Rate Multiplier | | 1.05 | |
| Total 13/14 Savings (15/16 monies) inclusive of multiplier | | **1.07** | |
| **12/13 Correction - Year 2:** | | | |
| **12/13 Revenue Over Recovery** | | -2.05 | |
| *Total Adjustment* | | -0.98 | |

Please see Appendix 2 for the correction formulae calculations.

***Revenue Summary***

When the impact of the additional Opex costs were taken into account, the 2015/16 Allowed Revenue increased by €0.16m from €195.22m to €195.39m. The revenue correction factors were then calculated and included, and as a result of these the total revenue requirement for the gas year 2015/16 increased by approximately €1.0m to €196.39m (in 15/16 monies). This increase is mainly due to an increase in forecast pass-through costs for 2015/16.

A summary of the calculation of this figure can be seen in the table below, which highlights:

- The increase of €0.16m as a result of the additional Opex costs requested for 2015/16.
- The subsequent application of the correction factors increases the allowed revenue to €196.39m.
- Overall, the 15/16 Tariff revenue has increased by 0.60%.

| Revenue Requirements (15/16 monies) | €m | €m |
|---|---|---|
| **Allowed Revenue - CER Decision Tariff 14/15.** | | 195.22 |
| **Incremental Opex Costs** | 0.16 | |
| **Recalculated Allowed Revenue** | | 195.39 |
| **Total Revenue Correction Factor** | 1.00 | |
| **Final 2015/16 Revenue** | | 196.39 |

## 4. Revised Demand

The revised forecast demand figures are based on the latest up-to-date demand information for gas year 2015/16. The table below shows the variance between the original PC3 Decision forecast volumes for 2015/16 and the final forecast volumes for both the 2014/15 Tariff & 2015/16 Tariff Setting Processes. The current demand projections have increased for commodity and decreased for capacity from the PC3 projections.

| Total Demand | Original PC3 Decision: 15/16 Forecast Demand | 14/15 Tariff Setting: 14/15 Forecast Demands | 15/16 Tariff Setting: 15/16 Forecast Demands | % Change Tariff Setting Demands. |
|---|---|---|---|---|
| Commodity GWh | 14,585 | 14,781 | 15,344 | 3.9% |
| Capacity GWH/pk Day | 117.18 | 116.58 | 113.58 | -2.6% |

The final forecast is based on the approved annual AQ and SPC capacity setting procedures between CER and GNI for the existing DM and NDM customers and a projected demand for new NDM customer connections.

Capacity and commodity forecasts for new DM connections are based on the values provided in the connection agreement on which the connection is designed.

Non-daily Metered demand for the existing customers is based on the sum of individual capacities and commodities set in accordance with the approved procedures between CER and GNI for the customers connected to the system as at ***May 1, 2015***. Capacity demand was then adjusted upwards to reflect the additional new DM and LDM connections to the network while commodity demand was adjusted downwards to reflect the projected increase in residential and IC energy efficiency and the lower connection numbers.

## 5. Tariff Calculation

The following 2015/16 capacity and commodity tariffs were derived based on the allowed revenue and projected peak day and annual volume figures, using the tariff structure outlined in the Price Control 3 Decision Paper.

### 2015/16 Proposed Distribution Tariff

| Volume Range (MWh) | | Capacity Charge (c/pk day kWh) | | |
|---|---|---|---|---|
| > | < or = | *A* | *B* | *Total* |
| 0 | 73 | 153.6833 | | 153.6833 |
| 73 | 14,653 | 136.0469 | 3.9551 | A - B *Ln(PDV[MWh]) |
| 14,653 | 57,500 | 339.8943 | 48.7750 | A - B *Ln(PDV[MWh]) |
| 57,500 | | 41.9149 | | 41.9149 |
| | | | | |
| **Volume Range (MWh)** | | **Commodity Charge (c/kWh)** | | |
| > | < or = | *A* | *B* | *Total* |
| 0 | 73 | 0.3412 | | 0.3412 |
| 73 | 14,653 | 0.2725 | 0.0265 | A - B *Ln(PDV[MWh]) |
| 14,653 | 57,500 | 0.3176 | 0.0419 | A - B *Ln(PDV[MWh]) |
| 57,500 | | 0.0621 | | 0.0621 |

The table below shows the first category tariff changes from 2014/15 to 2015/16 in both real and nominal terms. The percentage changes are the same for the other three tariff categories.

| | 2014/15 Tariff | | 2015/16 Tariff | Nominal | Real |
|---|---|---|---|---|---|
| | 14/15 charge in 14/15 monies (Nominal) | 14/15 charge in 15/16 monies | 15/16 charge in 15/16 monies (Nominal) | 14/15 charge in 14/15 monies vs 15/16 tariff | 14/15 charge in 15/16 monies vs 15/16 tariff |
| Capacity charge | 147.1558 | 148.5538 | 153.6833 | 4.4% | 3.5% |
| | | | | | |
| Commodity charge | 0.3451 | 0.3484 | 0.3412 | -1.1% | -2.1% |
| | | | | % change in Weighted Tariff | |
| | | | | 3.3% | 2.4% |

*This method results in an overall nominal increase of 3.3% in average unit charges including inflation (+4.4% for capacity and -1.1% for commodity) or an increase of 2.4% in real terms (3.5% for capacity and -2.1% for commodity) on the 2014/15 distribution tariff.*

## 6. Worked Example

Distribution unit rates are designed to decrease with customer size for most users. Small customers (with annual consumption <=73MWh) and very large customers (with annual consumption >=57,500MWh) pay a flat charge per unit of capacity and throughput. For all other customers (with annual consumption between 73MWh and 57,500 MWh), unit charges are generally designed to decrease with customer size (and hence their peak day requirements). The use of a logarithmic function in the tariff formula ensures that unit rates decrease with customer capacity requirements in a non-linear fashion. Coefficients A and B in the tariff formulae are constants that are adjusted annually to ensure the recovery of allowed revenue. Hence, the percent increase/decrease in the coefficients represents the percent increase/decrease in unit rates, all other things being equal (i.e. the capacity remains the same).

The example below illustrates how the tariff charges are calculated for a customer with an annual consumption of 5,000MWh and capacity of 27.397MWh

*Capacity Charge*

Capacity Unit Charge = 136.0469 – 3.9551* *Ln* (27.397) = 122.9530 c/kWh-pk day
*(This represents a 4.4% <u>increase</u> over 2014/15 rates)*

Annual Capacity Charge = 122.8766 * 27,397 / 100 = €33,685

*Commodity Charge*

Commodity Unit Charge = 0.2725 – 0.0265 * *Ln* (27.397) = 0.18477 c/kWh
*(This represents a 1.1% <u>decrease</u> over 2014/15 rates)*

Annual Commodity Charge = 0.18477 * 5,000,000 / 100 = €9,239

*Total Distribution Charge*

Capacity Charge + Commodity Charge = €33,664 + €9,239 = €42,924.

*Compared to the 14/15 tariff in 15/16 monies (a charge of €41,999) - This represents an <u>increase</u> of approximately 2.2% including inflation for this customer.*

The above example illustrates the calculation of the 2015/16 distribution tariffs and comparison to the last year’s charges for a particular customer assuming constant consumption levels in terms of throughput and peak day volume.

## APPENDIX 1: Revenue Control Formula Calculation

$$R_{t+1} = \left\{ \left[ \prod_{j=2007/8}^{t+1} \left( 1 + \frac{HICPD_j}{100} \right) \right] * \left[ B_{t+1} + \sum_{g=1}^{N} P_{g,t+1} * (CF_{g,t+1} - C_{g,t+1}) \right] \right\} + PF_{t+1} + K_{t-1}$$

| **Description** | | **Formula Ref** | **Value** |
|---|---|---|---|
| Inflation *(Cumulative Effect)* | | *HICPDj* | 3.79% |
| Allowed Revenues *(Base Assumption)* | *2010/11 monies* | $B_{t+1}$ | 188.26 |
| Connection differences cost | *2010/11 monies* | $P_{g,Ct+1} * (CF_{t+1} - C_{t+1})$ | |
| Pass-through Costs *(Forecasts - Base Assumption)* | *Year t+1 monies* | $PF_{t+1}$ | 1.97 |
| Correction factor $K_{t-1}$ | *Year t+1 monies* | $K_{t-1}$ | -0.98 |
| **Allowed Revenue in t+1** | *Year t+1 monies* | $\mathbf{R_{t+1}}$ | **196.39** |

*Total Revenue Requirement = GNI Calculated Allowed Revenue + Revenue Control Formula Adjustment = €195.39 + €1.97m - €0.98m = €196.39m*

# APPENDIX 2: Correction Factor Calculations ($K_{t-1}$)

$$K_{t-1} = \left[ \begin{array}{l} R_{t-1} * \left\{ \left( \dfrac{1+\dfrac{HICPA_{t-1}}{100}}{1+\dfrac{HICPF_{t-1}}{100}} \right) - \left( \dfrac{1+\dfrac{HICPR_{t-1}}{100}}{1+\dfrac{HICPF_{t-1}}{100}} \right) \right\} + \\ \left\{ \left[ \prod_{j=2003/4}^{t-1} \left( 1+\dfrac{HICPA_j}{100} \right) \right] * \sum_{g=1}^{N} P_{g,Ct} \left( CA_{g,t-1} - CR_{g,t-1} \right) \right\} - \\ PA_{t-1} - \left( AR_{t-1} - FR_{t-1} \right) \end{array} \right] * \left( 1+\frac{I_t}{100} \right) * \left( 1+\frac{I_{t-1}}{100} \right)$$

| CORRECTION FACTORS | | | |
|---|---|---|---|
| | Period t | 2014/15 | |
| | Period t-1 | 2013/14 | |
| **CALCULATION OF $K_{t-1}$** | | | |
| **Description** | | **Formula Ref** | **Value** |
| Allowed Revenue period t-1 | *Year t-1 Monies* | $R_{t-1}$ | 204.20 |
| Actual Inflation t-1 | | $HICPA_{t-1}$ | 3.12% |
| Forecast Inflation t-1 | | $HICPF_{t-1}$ | 4.05% |
| **Calculation - Revenue * Inflation** | **$R_{t-1}$* {(1+ $HICPA_{t-1}$) /(1+ $HICPF_{t-1}$)-(1+ $HICPR_{t-1}$)/(1+ $HICPF_{t-1}$)}** | | **202.38** |
| Cummulative Inflation | | *HICPAj* | 3.12% |
| Actual Customer Connections v Forecast | *2010/11 monies* | $Pc_t$ * ($CA_{t-1}$ - $CR_{t-1}$) | |
| **Calculation - Customer Connections** | **(1+$HICPA_j$) * $Pc_t$ * ($CA_{t-1}$ - $CR_{t-1}$)** | | **0.00** |
| Expected pass-through costs less Actual | *Year t-1 Monies* | $PA_{t-1}$ | 0.97 |
| Actual Revenue Recovered in period t-1 | *Year t-1 Monies* | $AR_{t-1}$ | 200.40 |
| **Calculation - Actual Revenue** | **- $PA_{t-1}$ - ($AR_{t-1}$-$FR_{t-1}$)** | | **-201.37** |
| Actual Revenue Recovered v's Allowed | | | 98% |
| Interest Rate period t | | $I_t$ | 2.35% |
| Interest Rate period t-1 | | $I_{t-1}$ | 2.56% |
| **Correction Factor period t-1** | | **$K_{t-1}$** | **1.07** |
| **Correction Factor period t-2** | | | **-2.05** |
| **Total Correction Factor** | | | **-0.98** |

## Correction Factor for 2012/13's Revenue Recovery Profile.

| 3 Year Revenue Over-Recovery (2012/13) | |
|---|---|
| *Revenue to be recovered in Year 1 (2014/15)* | -1.88 |
| *Revenue Recovery over Subsequent 2 Years* | -4.10 |
| *Total Revenue to be recovered over 3 years* | -5.63 |
| *Revenue to be recovered in 2015/16* | -2.05 |
| *Revenue to be recovered in 2016/17 (NPV)* | -2.38 |

## APPENDIX 3: Interest Rate Multiplier/Euribor Rates

The interest rate multiplier is used to uplift revenue over/ under - recoveries for the tariff year 2013/14. In 2013/14 Distribution had a revenue under-recovery. Revenue under -recoveries attract an interest rate of Euribor + 2%. The Euribor Rate applied is based on information downloaded from the Euribor website: http://www.euribor.org/html/content/euribor_data.html.

### Table 3 - Interest Rate Multiplier/Euribor Rates

| | | |
|---|---|---|
| Euribor 13/14 | 0.56% | |
| Euribor 14/15 | 0.35% | |
| Euribor +2% 13/14 | 2.56% | ($I_{t-1}$) |
| Euribor +2% 14/15 | 2.35% | ($I_t$) |
| The interest rate factor to be calculated as: ***$(1+I_{t-1}/100)*(1+I_t/100)$*** | 1.050 | |