



# **Connections Policy Document**

**Revision 2.0**

**February 2011**

## CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2. OBJECTIVES OF THE CONNECTIONS POLICY</b> .....	<b>1</b>
<b>3. GUIDING PRICIPLES OF CONNECTION CHARGES</b> .....	<b>2</b>
<b>4. CATEGORISATION OF CUSTOMER TYPES</b> .....	<b>3</b>
<b>5. I&amp;C CONNECTIONS</b> .....	<b>4</b>
5.1    LARGE I&C CUSTOMERS.....	4
5.2    MEDIUM AND SMALL I&C CUSTOMERS.....	5
5.2.1 <i>Cost of Connection Less Customer Contribution &gt;€250,000</i> .....	7
5.2.2 <i>Cost of Connection Less Customer Contribution &lt;=€250,000</i> .....	7
5.3    INSTITUTIONAL I&C CUSTOMERS.....	8
<b>6. DOMESTIC CONNECTIONS</b> .....	<b>8</b>
6.1    DOMESTIC CONNECTIONS: ONE-OFF HOUSING .....	9
6.2    DOMESTIC CONNECTIONS: NEW HOUSING.....	9
6.3    DOMESTIC CONNECTIONS: NON-GAS ESTATES .....	10
6.4    DOMESTIC CONNECTIONS: LOCAL AUTHORITY PREMISES.....	12
<b>7. MIXED CONNECTIONS</b> .....	<b>12</b>
7.1    MIXED DEVELOPMENTS .....	12
7.2    MIXED NON-GAS ESTATES .....	14
<b>8. CONNECTION OF NEW TOWNS</b> .....	<b>16</b>
<b>9. TREATMENT OF COSTS OF SPARE PIPELINE CAPACITY</b> .....	<b>17</b>
<b>10. CUSTOMER REQUESTED NON-LEAST COST CONNECTION DESIGN</b> .....	<b>18</b>
<b>11. DESIGN CHARGES</b> .....	<b>18</b>
<b>12. OPPORTUNISTIC NETWORK DEVELOPMENT</b> .....	<b>18</b>
<b>13. TRANSITION TO THE NEW CONNECTION POLICY</b> .....	<b>19</b>
<b>14. TREATMENT OF ECONOMIC BYPASS</b> .....	<b>19</b>
<b>ANNEX 1    CONNECTION CHARGES AND DESIGN FEES</b> .....	<b>21</b>
<b>ANNEX 2.    QUOTATION DETAILS</b> .....	<b>22</b>
<b>ANNEX 3.    INSTITUTIONAL I&amp;C CUSTOMERS</b> .....	<b>23</b>
<b>ANNEX 4.    I&amp;C SUMMARY TABLE</b> .....	<b>24</b>
<b>ANNEX 5.    CONNECTION CHARGES SUMMARY TABLE</b> .....	<b>25</b>
<b>ANNEX 6A.  NEW TOWN APPRAISAL TEMPLATE - INPUTS</b> .....	<b>26</b>
<b>ANNEX 6B.  NEW TOWN APPRAISAL TEMPLATE – RESULTS SUMMARY</b> .....	<b>27</b>
<b>ANNEX 7.    STANDARD ASSUMPTIONS ON DOMESTIC CONSUMPTION</b> .....	<b>28</b>
<b>ANNEX 8.    ALLOCATION OF REINFORCEMENT COSTS.</b> .....	<b>29</b>
<b>ANNEX 9.    STANDARD CONTRIBUTION PAYMENT OPTIONS FOR MEDIUM AND SMALL I&amp;C                 CUSTOMERS REQUIRING LARGE NETWORK CONNECTION AGREEMENT (LNCA)</b> 31	

## EXECUTIVE SUMMARY

On 4<sup>th</sup> July 2008 Gaslink Independent System Operator (“Gaslink”) took over responsibility from Bord Gáis Networks (“BGN”) for the operation, development and maintenance of Ireland’s natural gas transmission and distribution networks.

The Connections Policy, previously developed, owned and managed by BGN, has now been transferred over to Gaslink and all new connections to the transmission and distribution gas network are now the responsibility of Gaslink. These connections are managed in conjunction with the Commission for Energy Regulation (CER) to allow prospective end-users to connect to the transmission and distribution gas network. For certain categories of connections, BGN acts either as sole agent for Gaslink (NDM connections) or on behalf of Gaslink (DM and LDM connections which are not considered Large Connections). For Large Connections (connections to large Industrial and Commercial (I&C) customers with a peak hour demand greater than 50MW (thermal input) and connection pressure of 16 barg or above) Gaslink processes these connection requests directly and negotiates connection agreements directly with the customer.

This policy is a single connections policy dealing with connections to the transmission and distribution gas networks. The policy sets out the detailed criteria for the evaluation of extensions to the gas network, including extensions to towns not currently served by natural gas.

This version 2.0 of the Connections Policy is intended to reflect Gaslink as the independent system operator for the transmission and distribution gas networks and owner of the Connections Policy. It outlines the responsibilities of both Gaslink and BGN with respect to the various categories of customers and explains how the Connections Policy is implemented between the two organisations.

The Policy also details how connection charges are calculated and how the costs are recovered by the various categories of customers. In this version of the Connections Policy there is an amendment to the definition of Large I&C customers which also impacts on the definition of Medium and Small I&C customers;

- Large I&C customers are now defined as those with a peak hourly demand greater than 50MW thermal input and a connection pressure of 16 barg or above.<sup>1</sup>
- Medium and Small I&C customers will be defined as commercial enterprises who are not Large I&C customers and whose primary use of gas is non domestic. Medium and Small I&C customers are defined as customers whose peak hourly demand is equal or less than 50MW thermal input or their connection pressure is lower than 16barg.<sup>2</sup>

Below gives a basic outline of how the charges are set for the categories of customers as follows:

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<sup>1</sup> In the previous version of the connection policy Large I&C customers were defined as those with an annual consumption greater than 260GWh and connection pressure of 16 barg or above

<sup>2</sup> In the previous connection policies Medium and Small I&C customers were defined as those with an annual consumption less than 260GWh or a connection pressure less than 16 barg.

- For Large Industrial and Commercial customers; (defined as those with a peak hourly demand greater than 50MW thermal input and a connection pressure of 16 barg or above) connection charges applied will cover the full capital costs attributable to meeting customer requirements, including any upstream (deep) reinforcement required.
- For Medium and Small Industrial and Commercial customers (peak hourly demand is equal or less than 50MW thermal input or their connection pressure is lower than 16 barg), connection charges will comprise of an upfront charge of 30% of the cost of the connection, plus a supplemental charge based on an economic test evaluated over seven years where appropriate.
- For Institutional Industrial and Commercial customers (those who could be expected to be connected to the network for longer than a normal commercial enterprise) the economic test will be evaluated over 20 years if the cost of connection less the customer contribution paid is less than or equal to €250K. However, if the cost of connection less the customer contribution paid is greater than €250K, the economic test will be evaluated over 7 years. Similarly, these customers will pay 30% of the cost of the connection, plus a supplemental charge where appropriate.
- For domestic customers, the standard domestic connection charge is that shown in Annex 1 of this policy. This charge is subject to change and Annex 1 of this policy will be updated as new charges are approved by the CER.
- For new housing, developers will pay the same standard domestic connection charge for each connection as shown in Annex 1, and in addition there will be a supplemental charge based on an economic test calculated over 20 years.
- For the connection of non-gas estates, the standard domestic charge will be supplemented by an additional charge to cover the cost of mains extension to the estate, the charge being paid by all customers connecting in the first 10 years. The connection of the estate will require a minimum number of customers to sign-up.
- This policy also sets out rules for mixed developments and mixed non-gas estates, i.e. where there is a mixture of industrial/commercial and domestic end users.
- For connections of new towns, the economic test will include both Transmission and Distribution tariffs revenues and the economic test will be evaluated over 25 years for both Industrial and Commercial customers and new housing to reflect the lower risk and broader growth opportunities of a diversified new town load base. Under this policy it will be possible to appraise a new town either on its own or as part of a regional group of towns.

In developing the network, Gaslink will agree prudent criteria with the CER for the construction of pipelines with spare capacity where there is an expectation of future load growth. Pipelines may also be constructed ahead of sign-up by customers where there is a strong expectation of such sign-up and where early construction would reduce overall long term costs.

Under this policy customers will be charged full connection costs for specific connection designs which are more expensive than Gaslink's view of the least cost connection and for the administrative costs of initial connection design work (to be offset against connection costs).

The intent of this policy is to make connection charges easy for customers to understand and estimate, and to ensure that there is a clear and transparent policy in place in relation to all new connections to the network. The policy should also encourage the connection of new loads to the network where such connection is economically efficient in the long term.

A connection charges summary table with respect to Industrial, Commercial and Domestic customers is contained in Annex 5.

## **1. INTRODUCTION**

This Gaslink Connections Policy covers the connection of all loads to the transmission and distribution gas network. This policy document therefore considers the proposed commercial terms which are relevant for the connection of loads to any part of the Bord Gáis network. Technical design of connections are not considered in this document – unless otherwise requested by the customer, Gaslink will procure the construction of connections on a least cost basis, taking into account the specific characteristics of each load.

This document outlines the following at a high level:

- ⇒ Objectives of the Connections Policy;
- ⇒ Guiding principles of connection charges
  - Categorisation of customer types.
- ⇒ the approach to a number of non-customer-category-specific elements of the connection policy:
  - the costs of spare pipeline capacity;
  - customer requested non-least cost connection design;
  - design charges; and
  - opportunistic network development.

This document sets out policies relating to the connection of new loads to the transmission and distribution network and the related commercial arrangements between Gaslink and the customer (or between BGN and the customer where applicable) including Shippers, End Users and developers. This document is not intended to deal with the ongoing relationship with customers once they have been connected to the network.

## **2. OBJECTIVES OF THE CONNECTIONS POLICY**

Gaslink believes that any connection policy should facilitate a number of high level objectives. These include:

- ⇒ Being clear, transparent, and eliminating any potential customer confusion over the applicable charges;
- ⇒ Being cost effective to implement;
- ⇒ Applying similarly to both transmission and distribution connections for the same customer type;
- ⇒ Encouraging the connection of new customer load where it is efficient. This should apply both within the existing gas supply area, in new areas, and across customer categories. The objective of connecting efficient new customer loads should, in the medium and long term, increase throughput and reduce unit tariffs for all gas customers;
- ⇒ Minimising any adverse impact of changes to the connections policy on network tariffs in the short and medium term; and
- ⇒ Ensuring that connection charges provide an appropriate signal of the costs of connections to shippers and consumers;
- ⇒ Retaining economic criteria for the selection of expansion projects with which to proceed in order to avoid uneconomic development;
- ⇒ Treating connections consistently through time, in order that similar customers connecting at different times do not face arbitrarily different charges;

### 3. GUIDING PRICIPLES OF CONNECTION CHARGES

This section sets out the key principles that govern Gaslink’s connection charging methodology. These principles include:

- ⇒ Connection charges should encourage the connection of new loads to the network in an efficient manner:
  - Connections are designed based on a least cost solution and any excess costs should be reflected in connection charges payable;
  - Economic tests ensure general tariff payers are not unduly burdened by uneconomic connections;
- ⇒ Connection charges are designed to ensure that future transportation tariffs paid by the customer recover residual connection costs in the medium term:
  - Recovery of connection costs is a split between upfront charges, supplemental charges (based on an economic test) and tariffs;
- ⇒ Customers with similar capacity requirements should face similar connection charges subject to considerations of economic efficiency:
  - Domestic customers should be evaluated consistently across categories and should face similar connection charges;
  - Large customers, that could have a significant impact on the network, should pay full connection costs upfront to incentivise location near the network;
- ⇒ Connection charges should reflect the differential life of customers:
  - Commercial customers typically do not have the same longevity as domestic customers and therefore should be evaluated over a shorter time horizon;
  - Certain types of I&C customers have a longer lifetime than a typical I&C customer and therefore should be evaluated over a longer time horizon (e.g. schools, prisons, hospitals, etc.);
- ⇒ Connection charges should aim to treat similar categories of customers equitably through time regardless of when they connect to the network (some standard cut-off criteria may be set for practical reasons);
- ⇒ Investment appraisal methodology should take into account appropriate recovery of costs related to upstream assets utilised by new connections;
- ⇒ Connection charges should be designed to facilitate easy-to-understand quotations for the customer without excessive administration for Gaslink.

#### 4. CATEGORISATION OF CUSTOMER TYPES

For the purposes of this Connections Policy, two distinct customer categories are considered:

- ⇒ **Industrial and Commercial (I&C) customers:** these are defined as those customers whose primary use of gas is for non-domestic purposes. Three types of Industrial and Commercial customers are considered:
- **Large I&C customers:** defined as those with a peak hourly demand greater than 50MW and a connection pressure of 16 barg or above<sup>3</sup> (Large Connections)  
It should be noted that the 50MW figure applies to thermal input and that it is a measure of customer's maximum hourly requirements;
  - **Medium and small I&C customers:** these are defined as I&C customers who are not Large I&C customers, but whose primary use of gas is non-domestic;
  - **Institutional I&C customers:** these are defined as customers who are not domestic but who, as a result of their load characteristics, are likely to remain connected to the network for a longer period of time than a typical commercial enterprise. Examples of such customers might include schools, hospitals and prisons; and
- ⇒ **Domestic customers:** these are defined as those customers whose primary use of gas is domestic.

Business Parks will be treated as either Medium & Small I&C customers or Large I&C customers depending on their specific load characteristics. To facilitate the commencement of works for the provision of gas infrastructure to Business Parks before the relevant connection agreements are signed, Gaslink will accept a bond covering the value of preliminary works to be undertaken in relation to the connection. Preliminary works covered will include wayleave acquisition, environmental studies, planning and design but not construction or material procurement. The form of such a bond will be in line with Gaslink's published financial security policy.<sup>4</sup>

For the purposes of determining the network tariffs payable for newly connecting loads, the following principle (based on the licence definitions of the transmission and distribution businesses) will be applied:

- ⇒ Customers will be liable for **transmission tariffs only** if their load is connected at 16 barg or above; and
- ⇒ Customers will be liable for both **transmission and distribution tariffs** if they are connected below 16 barg.

The following sections outline in further detail the treatment of each of the categories listed above.

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<sup>3</sup> The 16 barg relates to the off-take pressure downstream of the AGI.

<sup>4</sup> Gaslink Approved Financial Security Policy No. FS01 (CER/05/041)

## 5. I&C CONNECTIONS

### 5.1 Large I&C Customers

Large I&C Customers are defined as those with a peak hourly demand greater than 50MW thermal input and a connection pressure of 16 barg or above.

Connecting Large I&C Customers to the network typically involves significant costs. Where these customers decide to locate in terms of proximity to the network can result in substantial connection and reinforcement costs. If these costs are not fully recovered through connection charges, it can lead to an adverse impact on the level of overall tariffs. Therefore, to protect general tariff payers from the decisions of large users and to provide an incentive for large users to locate near the network, it is proposed that these customers will be required to make payments equal to the full pipeline and Above Ground Installation (AGI) capital costs attributable to meeting the load and pressure requirements of the facility in question. Such costs will include the present value of any attributable upstream (deep) reinforcement costs.<sup>5</sup>

A refund mechanism will operate where other new loads benefit subsequently from the deep reinforcements built to meet the load requirements of the new facility. The refund mechanism could become increasingly burdensome to administer as the use of reinforcements becomes less clear and more remote. Therefore, the mechanism will contain a remoteness limit beyond which there is no refund, and a time limit for refunds of 5 years. The refund mechanism will be included as part of the Large Network Connection Agreement for Large I&C Customers.

In relation to Large I & C Customers, Gaslink will require the connecting party to enter into a Large Network Connection Agreement. This agreement will capture all of the commercial issues surrounding the connection including, among others, terms relating to the construction, payment (including phasing), and financial security. For such Large Connections on the network, there will normally be an AGI lease entered into between the customer and Bord Gáis Networks. The terms of this lease will give Bord Gáis Networks a lease of the lands for the purpose of the construction of an Above-Ground-Installation in connection with the supply and conveyance of natural gas.

The phasing of payments under the Large Network Connection Agreement will be as follows:

- ⇒ 10% of the total will become payable on conclusion of the agreement;
- ⇒ 30% of the total will become payable upon receipt by Bord Gáis Networks of the materials for the construction of the connection;
- ⇒ 40% of the total will become payable upon mechanical completion of the connection; and
- ⇒ The remainder will become payable upon receipt by Bord Gáis Networks of the final invoices from its suppliers in relation to the connection.

For Large I&C Customers, Gaslink will enter into a Large Network Connection Agreement with any party which fulfils the necessary financial criteria including Shippers, End Users, developers etc. It is envisaged that a standard template for this agreement, approved by the Commission following consultation, will be available from Gaslink's website in due course.

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<sup>5</sup> For further clarification of the allocation of reinforcement costs, refer to Annex 8.

Gaslink will apply its published financial security policy to parties seeking connections.

Gaslink is directly responsible for processing requests from Large I&C Customers for connection to the network (Large Connections) including handling the requests, issuing estimates and negotiating and signing the relevant Large Network Connection Agreement. BGN will act as service provider in the preparation of estimates and in technical discussions with the customers, and will carry out all construction activities in relation to all Large Connections.

## 5.2 Medium and Small I&C customers

These customers are defined as commercial enterprises who are not Large I&C Customers (i.e. their peak hourly demand is equal or less than 50MW thermal input or their connection pressure is lower than 16 barg.), but whose primary use of gas is non-domestic. Gaslink has arranged for BGN to process all new connections requests from customers in this category on behalf of Gaslink.

For Medium and Small I&C Customers, the customer contribution in relation to a connection includes two components:

- ⇒ A standard contribution; and
- ⇒ A supplemental “economic test” contribution.

All Medium and Small I&C Customers will be required to make a *standard contribution* of 30%<sup>6</sup> of the estimated full pipeline and ancillary equipment (including AGI) capital costs attributable to meeting the load and pressure requirements of the facility in question including the present value of any attributable upstream (deep) reinforcement costs<sup>7</sup>. For loads with an annual consumption of greater than 57.5GWh (lower threshold for Large Daily Metered customers) and for loads less than or equal to 57.5GWh requiring investment in transmission assets to facilitate the connection, the standard contribution will be based on both transmission and distribution costs.<sup>8</sup> For loads with annual consumption of less than or equal to 57.5GWh and not requiring investment in transmission assets, the standard contribution will be based on distribution costs only. (See the flow diagram on the next page)

In addition, Gaslink assesses whether a *supplemental “economic test” contribution* is required.

The supplemental “economic test” contribution will consider the present value of the full connection cost estimate (as defined above plus operating costs, but less the standard 30% contribution) against the present value of the tariff revenue attributable to the facility. The present value in both cases will be evaluated over a 7-year time horizon and using Bord Gáis Networks’ regulated rate of return as the discount rate. The 7-year appraisal horizon is considered appropriate to reflect an average life of a typical I&C connection and is consistent with the methodology used in the existing connection policy. Extending the appraisal horizon will defer the time when customers start to contribute to the network (i.e. existing customers will

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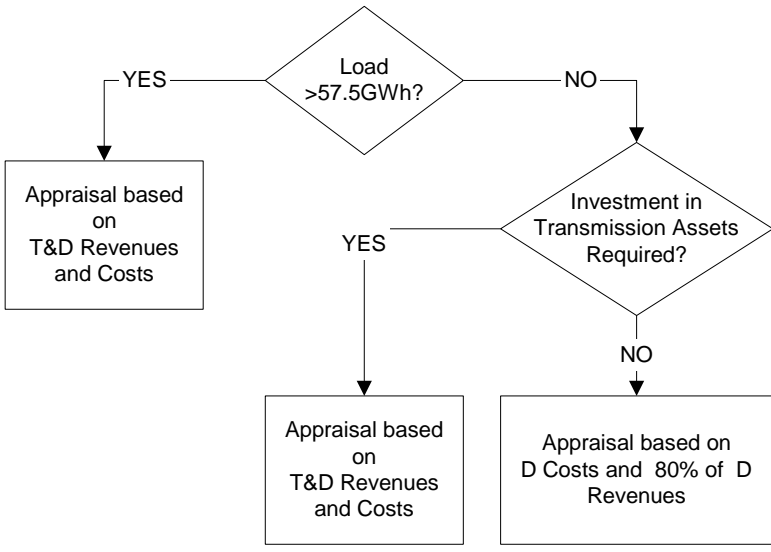
<sup>6</sup> For standard contribution payment options for the transmission connection element for Medium & Small I&C customers requiring a Large Network Connection Agreement (LNCA), i.e. customers where the total cost of the connection less the contribution paid is greater than €250k, see Annex 9.

<sup>7</sup> For further clarification of the allocation of reinforcement costs, refer to Annex 8.

<sup>8</sup> For the avoidance of doubt, this is not intended as an alternative definition of distribution and transmission connection. Rather, it is intended to ensure that *de minimis* transmission costs and revenues are not considered unnecessarily

have to wait longer to receive any shared benefits in the form of lower tariffs from the added load). The purpose of the supplemental “economic test” is to provide for the shortfall in the remaining capital costs of the connection that will not be recovered through attributable tariff payments by the customer over the 7 year period.

For loads with an annual consumption of greater than 57.5GWh and for loads less than or equal to 57.5GWh requiring investment in transmission assets to facilitate the connection, the economic test will consider transmission and distribution costs against transmission (entry and exit) and distribution tariff revenues. For loads less than or equal to 57.5GWh not requiring investment in transmission assets, only distribution costs and 80% of distribution tariff revenues will be considered. The diagram below illustrates the methodology for the economic test.



The purpose of including all relevant transmission costs in the economic test is to ensure that the existing customers are not burdened by the costs directly attributable to new connections.

The use of the 80% factor in relation to distribution revenues ensures that new loads served using mainly existing distribution spine main assets provide some remuneration to these assets. This is consistent with the investment appraisal principles for network extensions connected to an existing distribution spine main in the old connection policy.

Where the present value of projected revenues is greater than or equal to the present value of the cost estimate then no supplemental contribution will be required. However, where the present value of revenues is lower than that of costs, the connectee will be required to make a supplemental contribution to the extent required to bring the Net Present Value<sup>9</sup> of the appraisal to zero.

The actual connection costs, over and above the standard contribution and any supplemental economic test contribution, will be recovered through general tariff payments.

<sup>9</sup> NPV – Net Present Value = sum of the present value of costs plus the sum pf the present value of revenues..

### 5.2.1 Cost of Connection Less Customer Contribution >€250,000

Where the total cost of the connection less the customer contribution paid is more than €250K, a Large Network Connection Agreement will be required. As for Large I&C loads, this Agreement will capture all of the commercial issues surrounding the connection including, among others, terms relating to the construction, payment, and financial security. For such Large Connections on the network, there may also be an AGI Lease entered into between the customer and Bord Gáis Networks.

Customers requiring a Large Network Connection Agreement will be required to commit to capacity purchases for a sufficient term to ensure recovery of the connection costs over and above the standard and supplemental economic test contribution. The volume and duration of capacity bookings required will be defined by Gaslink on the basis of the load profile requirements identified by the customer in their formal connection application. The requirement to commit to these capacity purchases will form part of the connection agreement.

The Large Network Connection Agreement will, in turn, refer to Gaslink's published financial security policy. Financial security will be required to cover the construction period and the period over which the commitment to purchase capacity is made.

Since the initial term for which a customer will be required to commit to capacity purchases is set based on BGN's published tariff (as approved by the Commission) at the time of the connection appraisal, the outstanding liability under the connection agreement will be affected by subsequent changes in the tariff. Therefore, for the purposes of determining any outstanding liability under the connection agreement, an annual reconciliation of the tariff revenue anticipated at the time of connection appraisal to the actual tariff revenue will be performed.

If the anticipated tariff revenue fails to materialise in any one year of the capacity booking as a result of an exit capacity transfer, the revenue shortfall will be made up by a drawdown of the financial security provided under the connection agreement.

Gaslink will enter into a Large Network Connection Agreement with any party; including Shippers, End Users, developers etc which fulfils the necessary financial criteria as per the Gaslink Financial Security Policy (FS01). It is envisaged that a standard template for this agreement, approved by the Commission following consultation, will be available from the Gaslink website.

### 5.2.2 Cost of Connection Less Customer Contribution <=€250,000

For all other Medium and Small I&C customer connections, where the total cost of connection less the customer contribution paid is less than or equal to €250K, there will be an I&C Network Connection Agreement. This agreement will detail all of the relevant commercial terms relating to the connection and these will include terms relating to the construction and payment. Financial security related to connection costs will not be required for these connections. Again, it is envisaged that a standard template for this agreement, approved by the Commission, will be available from the Gaslink's website in due course.

For Large Daily Metered and Daily Metered customers, a *de minimus* level of capacity will be set in the Capacity Register for the term required to pay back the outstanding connection costs.

The *de minimus* level of capacity will be based on the projected load profile provided by the customer and used in the connection appraisal. For Non-Daily Metered customers, connection appraisal will be based on the load requirements identified by the customer in their formal connection application and no *de minimus* level of capacity will be set in the Capacity Register (see Annex 3). For the avoidance of doubt, no annual reconciliation to account for changes in the level of general tariffs will be performed for customers where the total cost of connection less the customer contribution paid is less than or equal to €250K.

Payments related to all Medium and Small I&C customer connections will fall due prior to the commencement of connection works.

### **5.3 Institutional I&C customers**

Institutional I&C customers are defined as those who are not domestic but who, as a result of their characteristics, are likely to remain connected to the network for a longer period of time than a typical commercial enterprise. Examples include schools, hospitals and prisons. A comprehensive list of institutional customers is included in Annex 3.

For Institutional I&C customers where the total cost of connection less the customer contribution paid is less than or equal to €250K, the calculation of the standard contribution is identical to that for Medium & Small I&C loads (i.e. a combination of a 30% payment and, potentially, a supplemental contribution based on the economic test). For these customers, the supplemental contribution is calculated as for Medium & Small I&C loads, save that the NPV<sup>10</sup> will be calculated over a 20-year period. Based on a lower risk profile of Institutional I&C customers, no capacity booking and no financial security will be required.

For Institutional I&C connections where the cost of connection less customer contribution is greater than €250K and, hence, a Large Network Connection Agreement is required, connection appraisal will be identical to that for Medium and Small I&C loads, i.e. using a 7-year appraisal horizon, and there will be a requirement to provide a financial security and commit to capacity purchases.

## **6. DOMESTIC CONNECTIONS**

Domestic connections consist of four separate connection classes which we consider within this policy:

- ⇒ One-off housing;
- ⇒ New housing;
- ⇒ Non-gas estates; and
- ⇒ Local authority premises.

For all classes of domestic connection, part of the connection charge will consist of a *standard domestic connection charge*. The standard domestic connection charge is a charge that will be

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<sup>10</sup> NPV – Net Present Value = sum of the present value of costs plus the sum of the present value of revenues.

set by Bord Gáis Networks and approved by the Commission. The current standard connection charge is shown in Annex 1.

A number of agreements will be developed for approval by the Commission setting out standard terms in relation to domestic connections and new developments. The agreement may detail terms relevant to the construction of the connection along with any other relevant commercial terms. The agreement will be concluded with the party requesting the connection, be that a Shipper, Supplier, developer, customer, etc. Again, it is envisaged that standard agreements will be available from the Gaslink website in due course.

Below is more detail of the approach in relation to each of these domestic customer classes.

### **6.1 Domestic connections: one-off housing**

One-off housing connections are those within the existing gas area (i.e. an existing house where no extension of main is required) and where no new housing development is taking place.

All loads with an expected annual consumption of up to 73,250 kWh will be liable for the standard domestic connection charge as shown in Annex 1 for the first 15 metres of service pipe. Customers requiring a service connection (with no gas mains extension) of greater than 15 metres will be required to pay an incremental fixed charge per metre as shown in Annex 1 in addition to the standard connection charge. The length criteria and the fixed incremental charge per metre will be reviewed and reset periodically and hence the charges presented in Annex 1 are subject to change.

For loads with an expected annual consumption above 73,250 kWh, the connection charge will be the greater of:

- ⇒ The standard domestic connection charge; and
- ⇒ The extent to which the present value of the full connection capital and operating costs outweighs the present value of the distribution tariff revenue attributable to the load both over a twenty year time horizon, and using Bord Gáis Networks' regulated rate of return as the discount rate.

In all cases, payment would be required prior to the commencement of work on the connection.

### **6.2 Domestic connections: new housing**

Connections to new housing developments are commissioned by housing developers, normally via an infrastructure agreement that commits the developer to ensure that houses in the development are connected to natural gas.

For new housing connections, the developer contribution in relation to a connection will include two components:

- ⇒ the standard domestic connection charge in relation to each connection; and
- ⇒ A supplemental “economic test” contribution.

The *supplemental “economic test” contribution* will consider the present value of the full connection costs (the full pipeline capital and operating costs directly attributable to the housing

development, less the total of standard contributions) against the present value of 80% of the distribution tariff revenue<sup>11</sup> attributable to the facility, both over a twenty year time horizon and using Bord Gáis Networks’ regulated rate of return as the discount rate. For the purposes of the revenue component of the economic test, standard assumptions on the annual consumption of different types of domestic property will be used. These assumptions will be reviewed periodically and agreed with the CER. Current assumptions for the annual consumption levels of different types of domestic property are set out in Annex 7.

Where the present value of revenues is greater than or equal to the present value of costs then no supplemental contribution will be required. However, where the Net Present Value is negative, the developer will be required to make a supplemental contribution to the extent required to bring the Net Present Value to zero.

Payment will be required in advance of work commencing on the connection.

Table 1 below provides a worked example of the calculation of charges for a housing development with 10 meter connections.

**TABLE 1**

Present value of 80% of Distribution Tariff Revenues	10,987	[1]
Present Value of Standard Contribution	2,200	[2] = 220 * 10
Present Value of Costs (Capex + Opex)	-14,687	[3]
Net Present Value	-1,500	[4]
Supplemental "Economic Test" Contribution	1,500	[5] = -[4], if [4]<0, otherwise 0
<b>Summary of Contribution Payable</b>		
Standard Contribution	2,200	[6] = [2]
Supplemental "Economic Test" Contribution	1,500	[7] = [5]
<b>Total Contribution Payable</b>	<b>€ 3,700</b>	[8] = [6]+[7]

**6.3 Domestic connections: non-gas estates**

Non-gas estates are areas of existing housing estates outside the current gas area (i.e. they are not served by an existing mains pipeline) requesting connection to the gas network. The connection of non-gas estates requires investment in both new mains pipelines and, over time, new service pipes, meters, etc. (as the penetration of gas into the estate increases).

Enquiries in relation to the connection of non-gas estates will be considered from both residents’ associations and from individuals within the estate. However, the design of the local estate network, used for the purposes of deriving a connections quote, will be that which represents least cost optimal grid design for the estate and any appropriate contiguous areas as a whole rather than for individual connections.

<sup>11</sup> The use of the 80% factor in the economic test ensures that 20% of the revenue from new extensions of the distribution network is allocated to the remuneration of existing spine main assets.

The connection charges for the initial gas connection offers and for any premises connecting within 10 years of the initial offers will consist of two elements:

- ⇒ The standard domestic connection charge in force at the time; and
- ⇒ A supplemental charge which will apply to any user in the estate.

For connections after the 10<sup>th</sup> year of the initial connections, the supplemental connection charge may be reduced.

The purpose of the supplemental charge is to recover the cost of mains extension from all members of the estate connecting to the network on an equitable basis, while the standard domestic connection charge (as shown Annex 1) is intended to contribute to the cost of meter and service pipe required for each connection.

The supplemental charge applicable in years 1-10 would be calculated in two stages.

Firstly, the difference between the *present value* of the full capital and operating costs required to expand the mains network to the non-gas estate and the present value of the distribution tariff revenue attributable to the estate once the supplemental charge has ceased to apply (i.e. in years 11-20 as revenues for years 1-10 are used to pay for the meter and service costs) will be calculated, both over a twenty year time horizon and using Bord Gáis Networks' regulated rate of return as the discount rate.

The tariff revenue attributable to the estate will depend on the following standard assumed penetration assumptions:

- ⇒ **Initial connection take up:** greater than or equal to 20% of residences; and
- ⇒ **Annual connection take up for years 1-10:** 5% of residences per annum.

Again, standard assumptions on annual consumption would be used. These assumptions will be agreed with the CER. Our initial proposals for these assumptions are set out in Annex 7.

Secondly, this difference between the present value of costs and revenues will be divided by the expected total number of connected premises at the end of the initial 10 year period (based on the assumption of a final connection take up of 70%). A fixed supplemental charge will then be calculated such that it would, given the initial take up and growth assumptions generate revenue equal to this present value difference.

Table 2 below provides a worked example of the calculation of charges for a non-gas estate with 80 houses.

**TABLE 2:**

Present value of <b>mains</b> investment cost	€ 75,000	[1]
Initial take up (>= 20% of total number of residences)	16	[2]
Estimated final take up (70% of total number of residences)	56	[3]
Present value of expected distribution tariff revenue after initial 10 year period (i.e. in years 11-20)	€ 28,000	[4]
Excess of cost over expected revenue	€ 47,000	[5] = [1] - [4]
Present value of supplemental charge per residence	€ 839	[6] = [5] / [3]
Fixed supplemental charge per residence	€1,026	[7] = [6] * PV factor <sup>12</sup>
Standard domestic connection charge (covers meter and service)	€ 220	[8]
Cost for individual connection (excl. VAT) during years 1-10	€ 1,246	[9] = [7] + [8]

The figures above do not include inflation.

While enquiries will be dealt with from individuals, work to connect the non-gas estate will only commence when the initial take-up requirement has been reached (i.e. 20 % of residences on the estate must formally commit – including payment of requisite contribution in advance – to connect to the network). The required minimum number (20%) of contributions must be lodged with Gaslink within 4 months of quotation/offer to the residents in order for the project to proceed. If the minimum is not achieved after 4 months all contributions will be returned. The details of the process to be followed will be made available through the Gaslink website and provided to residents in writing upon request.

#### **6.4 Domestic connections: Local authority premises**

New local authority developments, or local authority developments where conversion to gas of 100% of customers is taking place as part of a single conversion project requiring mains extension, will be treated as new housing developments for the purposes of this connection policy.

Local authority developments requiring mains extension where fewer than 100% of customers will convert to gas, or where the conversion will not take place as part of a single conversion project, will be treated as non-gas estates for the purposes of this connection policy.

Local authority conversion projects where no mains extension is required will be treated as one-off domestic connections for the purposes of determining applicable connection charges.

## **7. MIXED CONNECTIONS**

### **7.1 Mixed developments**

There are some new developments which will contain a mixture of I&C and domestic sites.

In the case of such developments, the developer will face charges calculated as follows:

<sup>12</sup> The PV factor is the factor used to derive a supplemental charge which, if fixed over years 1-10, results in a present value supplemental charge equal to that required.

- ⇒ A standard contribution; and
- ⇒ A supplemental “economic test” contribution.

The *standard contribution* will be the sum of charges relating to the number of domestic connections and the proportion of the site peak load which will be from I&C customers, calculated as follows:

- ⇒ The charge relating to each domestic connection will be the standard domestic connection charge as shown in Annex 1; and
- ⇒ The charge relating to I&C load will comprise two elements:
  - For capital cost which cannot be directly attributed to any customer (e.g. feeder main), the percentage of the total projected development peak load which will be from I&C sites multiplied by the standard Medium & Small I&C contribution of 30% of the full pipeline and ancillary capital equipment (including AGI) capital costs attributable to meeting the requirements of the development in question including the present value of any attributable upstream (deep) reinforcement costs; and
  - For capital cost which can be directly attributed to particular customers (e.g. service pipes, meters, etc.), 30% of the relevant pipeline and ancillary equipment capital costs.

The *supplemental “economic test” contribution* for the Medium & Small I&C loads will consider the present value of the full connection costs attributable to these customers against the present value of 80% of the distribution tariff revenue attributable to the facilities for 7 years, using Bord Gáis Networks’ regulated rate of return as the discount rate. The full connection costs attributable to Medium & Small I&C customers will be calculated as:

- ⇒ the directly attributable capital costs and the relevant proportion (based on contribution to peak load) of other capital costs which cannot be directly attributed (e.g. feeder main); plus
- ⇒ Attributable operating costs; minus
- ⇒ The standard Medium & Small I&C contributions as calculated above.

The *supplemental “economic test” contribution* for the domestic loads will consider the present value of the full connection costs attributable to these customers against the present value of 80% of the distribution tariff revenue attributable to the facilities for 20 years, using Bord Gáis Networks’ regulated rate of return as the discount rate. The full connection costs for domestic customers will be calculated as:

- ⇒ the full capital pipeline and ancillary capital equipment capital and operating costs of the development; minus
- ⇒ the full connection costs attributable to Medium & Small I&C customers; minus
- ⇒ the standard domestic contributions as calculated above.

Across both tests, where the *present value* of revenues is greater than or equal to the present value of costs then no supplemental contribution will be required. However, where the *NPV* is negative, the developer will be required to make a supplemental contribution to the extent required to bring the *NPV* to zero.

Where there are a number of developers on a site, the shared costs (i.e. those relating to more than one developer) will be attributed on the basis of peak load.

Table 3 below provides an example of the calculation of connection contributions for a mixed development.

**TABLE 3:**

Mixed Development	Domestic	I&C 1	I&C 2	Total	Ref.
No. Customers	283	1	1		[1]
Capacity (MWh/pk-day)	36	2	27	65	[2]
<u>Capex</u>					
Feeder Main (allocated based on capacity)	181,128	8,233	137,501	326,862	[3] = Total Main Cost x % Capacity
Specifically Attributable	155,582	4,786	13,631	173,999	[4]
Total Capex	336,710	13,019	151,132	500,860	[5] = [3] + [4]
Standard Contribution	€220	30%	30%		[6]
Present Value of Standard Contribution	62,260	3,906	45,340	111,505	[7] = [1] * [6] for Domestic, [7] = [5] * [6] for I&C
Present Value of 80% of Distribution Revenues	472,020	9,478	150,168	631,666	[8]
Present Value of Costs (Net Capex + Opex)	-425,064	-13,864	-154,231	-593,158	[9]
Net Present Value	109,216	-480	41,277	150,013	[10]
Supplemental "Economic Test" Contribution	0	480	0	480	[11] = -[10], if ([10])<0, otherwise 0
<b>Summary of Contribution Due</b>					
Standard Contribution	62,260	3,906	45,340	111,505	[12] = [7]
Supplemental "Economic Test" Contribution	0	480	0	480	[12] = [11]
<b>Total Contribution Due</b>	<b>€62,260</b>	<b>€4,386</b>	<b>€45,340</b>	<b>€111,986</b>	

## 7.2 Mixed non-gas estates

For a mixed non gas estate, confirmed Medium & Small I&C loads will face charges calculated as follows:

- ⇒ A standard contribution; and
- ⇒ A supplemental “economic test” contribution.

The *standard* contribution will include two components:

- ⇒ For capital cost which cannot be directly attributed to the customer (e.g. feeder main), the percentage of the total projected development peak load from confirmed I&C sites multiplied by the standard Medium & Small I&C contribution of 30% of the full pipeline and ancillary equipment (including AGI) capital costs attributable to meeting the requirements of the estate in question including the present value of any attributable upstream (deep) reinforcement costs; and
- ⇒ For capital cost which can be directly attributed to the customer (e.g. service pipes, meters etc.), 30% of the relevant pipeline and ancillary equipment capital costs.

The *supplemental “economic test” contribution* for the Medium & Small I&C loads will consider the *present value* of the full connection costs attributable to these customers against the present value of the distribution tariff revenue attributable to the facilities for 7 years, using Bord

Gáis Networks' regulated rate of return as the discount rate. The full connection costs attributable to Medium & Small I&C customers will be calculated as:

- ⇒ the directly attributable capital costs and the relevant proportion (based on contribution to peak load) of other capital costs which cannot be directly attributed (e.g. feeder main); plus
- ⇒ Attributable operating costs; minus
- ⇒ the standard Medium & Small I&C contributions as calculated above.

As with domestic non-gas estates, for domestic customers it is proposed that the connection charges will consist of two elements:

- ⇒ The *standard domestic connection charge*; and
- ⇒ A *supplemental charge* which will apply to any user in the estate connecting within 10 years of the initial non-gas estate connection offers.

The supplemental charge will then be calculated as for a domestic non-gas estate, save that for appraisal purposes the capital costs required to extend mains network to the non-gas estate will exclude the portion attributable to Medium & Small I&C customers.

Any Medium & Small I&C loads which were not confirmed at the time of the initial connections but which subsequently connect during the 10-year period will be charged a supplemental connection charge (in addition to the standard I&C charge of 30% based on their specific meter and service costs). The supplemental connection charge will be calculated as follows:

- ⇒  $\text{Domestic Supplemental Charge} \times \text{I\&C Specific Capacity} / \text{Average Domestic Capacity}$

Table 4 below provides an example of the calculation of connection contributions for a mixed non-gas estate.

**TABLE 4:**

<b>Mixed Development</b>	<b>Domestic</b>	<b>I&amp;C 1 (Confirmed)</b>	<b>I&amp;C 2 (Confirmed)</b>	<b>I&amp;C 3 (Not Confirmed)</b>	<b>Ref.</b>
No. Customers	80	1	1	1	[1]
Take-up %	70%	100%	100%	0%	[2]
Total No. Customers	56	1	1	0	[3] = [1] * [2]
Capacity (kWh/pk day)	7,527	1,320	1,650	0	[4]
Capacity (%)	72%	13%	16%	0%	[5]
<b>Capex</b>					
Feeder Main	100,381	17,608	22,011	0	[6] = Total Main Cost x [5]
Specifically Attributable		4,786	4,786	0	[7]
<b>Total Capex</b>	<b>100,381</b>	<b>22,394</b>	<b>26,797</b>	<b>0</b>	[8] = [6] + [7]
Standard Contribution	€220	30%	30%		[9]
Present Value of Revenues	61,731	9,625	12,031	0	[10]
Present Value of Opex	-8,743	-845	-845	0	[11]
Present Value of Capex <sup>1</sup>	-100,381	-15,676	-18,758	0	[12]
Net Present Value	-47,392	-6,896	-7,571	0	[13] = [10] + [11] + [12]
Supplemental Contribution per customer	1,094	6,896	7,571		[13] = for IC: if (([12])<0, -([12]), otherwise 0; for Domestic:-([12]) / [3] * PV Factor
<b>Contribution Due per customer</b>					
Standard Contribution	220	6,718	8,039	0	[14] = 9 for Domestic, [8] * [9] for IC
Supplemental Contribution	1,094	6,896	7,571	0	[15] = [13]
<b>Total Contribution Due</b>	<b>€1,314</b>	<b>€13,614</b>	<b>€15,610</b>	<b>€0</b>	[16] = [14] + [15]

<sup>1</sup> For I&Cs, Capex is net of standard contribution

## 8. CONNECTION OF NEW TOWNS

The economic viability of new town connections will be determined by the economic test. In carrying out economic test appraisals of new town connections, or regional groups of such towns, the investment appraisals will compare:

- ⇒ the present value of full pipeline and ancillary capital equipment (including AGI) and operating costs (both transmission and distribution) attributable to meeting the projected load. Capital costs include local authority charges associated with road openings. The present value of any attributable upstream (deep) reinforcement costs will also be included; and
- ⇒ the present value of, in all cases, 100% of distribution and transmission (entry and exit) tariff revenue attributable to the projected load.

In relation to evaluating potential new town load, only new housing and I&C loads will be considered. All existing housing will be treated as non-gas estates in accordance with Section 6.3.

To reflect the relatively lower risk of the diversified load base represented by a new town and the broader opportunities for growth of load, the present value appraisal for both domestic and I&C customers will be carried out over a 25-year period, and using Bord Gáis Networks' regulated rate of return as the discount rate. The details of a new town appraisal are shown in Annex 6A.

As an option, it will be possible to appraise a new town either on its own or as part of a regional group of towns. In order for the connection of a new town or a regional group of new towns to proceed, the *present value* of the revenues has to exceed the present value of the costs as determined above.

As a group of towns can be appraised as a single project, it will be possible for some towns that would not otherwise be economically viable on their own, to become viable when considered as part of a regional group. Whether or not a town is included in the group will depend on a number of factors including: relative proximity to the network, size and load growth potential, connection costs involved and a town's ability to share the same operating costs with adjacent towns. For example, a town which does not have a sufficient load could be included into the group if it is located en-route to a town which does have a significant load potential. However, in all cases the relative contribution of a town to the group of towns is the ultimate determining factor, i.e. a town with a higher present value of revenues less present value of costs will be given priority. The total group must work within the terms of the connection policy, i.e. the present value of total revenues less total costs must be positive.

Whether new towns are appraised individually or as part of a group, their connection would be expected to lead to a short-term increase in tariffs. This is due to the fact that connection of new towns is typically associated with a high upfront investment and low initial load which can take a number of years to build up. However, as the load in newly connected towns builds up, it will push general tariffs down in the longer term, hence benefiting all network users.

Towns which are likely to meet the economic criteria are those which are relatively close to the network, or which have large loads, or where there is a supplemental contribution available.

## **9. TREATMENT OF COSTS OF SPARE PIPELINE CAPACITY**

In certain cases, it will be appropriate from the point of view of the efficient and economic development of the pipeline network to design extensions in anticipation of future load not yet connecting to the network (i.e. to design pipelines with additional capacity than that strictly required by the currently connecting parties). This avoids more costly stand-alone reinforcement at a future date.

For transmission pipelines, the approval of such projects will be dealt with on a case by case basis with the Commission. For distribution pipelines, the proposed operational criteria, which will provide a framework for determining when such network development is appropriate, are as follows:

- ⇒ the network being extended to new development in areas of future growth;
- ⇒ the network being extended to a new development along route(s) identified as having strategic network reinforcement significance; and
- ⇒ infrastructure being rolled out to Phase 1 of multi-phase developments.

These criteria would be reviewed periodically to ensure that they continue to reflect the developing network.

Customers connecting to the pipeline during the first phase will not bear the incremental costs of the additional capacity in their connection charges. In such a situation, connection charges will be determined with reference to the costs which would have been incurred had the pipeline and associated infrastructure been sized to deal with the specified requirements of the customer connection application for the load connecting immediately. For future developments, the incremental costs of the additional capacity will be included as part of connection appraisal costs.

## **10. CUSTOMER REQUESTED NON-LEAST COST CONNECTION DESIGN**

When determining the design and cost of a connection, the capital and operating cost of the pipeline and associated infrastructure referred to above is intended to refer to the least cost design solution for the connection of the load(s) in question.

In the event that a customer requests a connection to be constructed which is not, in Gaslink's view, the least cost approach to connection (given the load type, characteristics and network location), irrespective of the customer type, the connection charge will comprise:

- ⇒ The connection charge as per the least cost approach for the particular customer type; and
- ⇒ 100% of the incremental connection cost over and above the cost of the least cost solution.

For example, a Medium and Small I&C requesting a non-least cost connection will pay 100% for the incremental cost as well as the 30% plus supplemental charge required for the least cost solution.

## **11. DESIGN CHARGES**

For connections, a design charge may be applicable to cover the effort required to carry out the initial desktop work required as an input to the initial offer letter. See Annex 1

These charges are set out in Annex 1 and are payable when the enquiry form is submitted. The charges will be offset against connection contributions where the customer proceeds with the connection. The levels will be reviewed and reset periodically, with the agreement of the CER.

## **12. OPPORTUNISTIC NETWORK DEVELOPMENT**

In some situations, it will make sense from an efficiency viewpoint for Gaslink to procure the undertaking of the work in advance of formal connection enquiries from customers. This may be the case, for example, where a Local Authority or developer is undertaking works in the relevant area and, by working at the same time, Bord Gáis Networks, operating on behalf of Gaslink, can reduce the cost of trenching or reinstatement.

Such opportunities require Gaslink to be able to confirm relatively quickly to the relevant party that connection works can take place in parallel with the other scheduled works. For

transmission pipelines, projects will be dealt with on a case by case basis with the Commission. For distribution pipelines, the proposed criteria, which would determine when such development will be considered appropriate, are as follows:

- ⇒ contact with or request from a Local Authority or information from a Developer/Builder or Local Authority development zoning map (or other planning information);
- ⇒ Consistency of project with requirements identified from Distribution Network Capacity Report or strategic network analysis;
- ⇒ the road infrastructure being constructed ahead of residential, commercial or industrial development;
- ⇒ the network being extended to a congested town centre location.
- ⇒ Project capital costs are estimated not to exceed €100k; and
- ⇒ Estimated network extension length does not exceed 2km;

These criteria would be reviewed periodically to ensure that they continue to reflect the developing network. All other distribution projects outside the criteria specified above will be brought to the Commission for approval on a case by case basis.

For future development-related loads connecting to the network, the costs associated with the relevant opportunistic development projects will be included as part of connection appraisal costs relevant to that part of the network.

### **13. TRANSITION TO THE NEW CONNECTION POLICY**

From the date the Commission directs this policy to come into force, all new connection enquiries will be dealt with under the new policy.

For connection enquiries already in progress at the implementation date (i.e. where there has been formal acceptance of a valid quote but the final completion of the physical connection has not taken place), transition arrangements will apply. These transition arrangements are intended to reduce the extent of any adverse impact of the change for any customer that has made a connection application and would face significantly different terms under the old and new policies.

### **14. TREATMENT OF ECONOMIC BYPASS**

In the event that an existing distribution customer requests a connection to the network, Gaslink will treat such a request as a service which exceeds the least cost solution i.e. where the existing connection meets the customer requirements for capacity and no new additional load is being added to the network.

In such instances, the connection charge will consist of three elements. The customer will be required to pay 100% of each of the following:-

1. The full connection cost of meeting the load and pressure requirements of the facility from the transmission network. Such costs will include the full pipeline and Above Ground Installation (AGI) capital costs plus the present value of any attributable upstream (deep) reinforcement costs.

2. The residual cost of the stranded distribution asset.
3. The cost of disconnecting the customer from the distribution network.

These charges will become payable upon execution of the relevant connection agreement.

## ANNEX 1 CONNECTION CHARGES AND DESIGN FEES

### Connection Charges:

	Ex VAT
Standard Domestic Connection Charge: (for the first 15 meters of service pipe)	€212.90
Incremental fixed charge per meter over 15 meters	€43.50

Above details are taken from the current Siteworks Charges as approved by the CER in January 2011 and implemented effective from January 2011:

### DESIGN FEES:

	Ex VAT	VAT Incl
Loads with EAC <sup>13</sup> ≤4,500,000 kWh: No Charge	No Charge	
Loads with EAC > 4,500,000 and ≤22,000,000 kWh: @21%)	€724.93	€877.17(VAT
Loads with EAC > 22,000,000 kWh: @21%)	€3,624.66	€4,385.83(VAT

Above details are taken from the current Siteworks Charges as approved by the CER in January 2011 and implemented effective from January 2011:

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<sup>13</sup> Estimated Annual Consumption

## ANNEX 2. QUOTATION DETAILS

In any connection quote issued, it is proposed that the quote is broken down into the following elements.

For Large I&C customers, and for Medium & Small I&C customers where a Large Network Connection Agreement is required:

- ⇒ Construction
- ⇒ Materials (broken down into main parts, e.g. pipeline, AGI etc.)
- ⇒ Engineering & management
- ⇒ Control & instrumentation
- ⇒ Wayleaves & site acquisition
- ⇒ Site investigations & surveys
- ⇒ Legal costs
- ⇒ Finance charges

For all other connection quotes:

- ⇒ Direct labour
- ⇒ Materials (e.g. mains pipes, service pipes, meters)
- ⇒ Contractor costs (e.g. X metres of pipe installation = €x, Meter installation = €y)
- ⇒ Local authority
  - Road opening licence fee
  - Reinstatement
  - Long term damage

Allowance will also be made for contingency – this will be indicated specifically in individual quotations.

### **ANNEX 3. INSTITUTIONAL I&C CUSTOMERS**

- ⇒ Schools
- ⇒ Third Level Colleges
- ⇒ Hospitals
- ⇒ Prisons
- ⇒ Garda Stations
- ⇒ Stadiums
- ⇒ Airports (airport specific infrastructure only)
- ⇒ Railway Stations
- ⇒ Museums/Heritage Sites
- ⇒ Fire/Ambulance Stations
- ⇒ Army Barracks
- ⇒ Government Buildings
- ⇒ Any other customer classified in this category by Gaslink and approved by the CER

#### ANNEX 4. I&C SUMMARY TABLE

<b>Customer Type</b>	<b>Net Connection Cost Threshold (1)</b>	<b>Connection Type</b>	<b>Connection Agreement</b>	<b>Appraisal (yrs)</b>	<b>Contribution</b>	<b>Capacity Commitment (2)</b>	<b>Financial Security</b>
<b><u>Large I&amp;C</u></b> Peak Hourly Demand > 50MW AND Connection Pressure ? 16 barg	> or ? €250,000	LDM	Large Network Connection Agreement	N/A	100%	0%	Yes
<b><u>Medium and Small I&amp;C</u></b> Peak Hourly Demand ? 50MW OR Connection Pressure < 16 barg	? €250,000	LDM, DM, NDM	Large Network Connection Agreement	7 yrs	30%	70%	Yes
	< €250,000	LDM	I&C Network Connection Agreement	7 yrs	30%	70% (De minimus level)	No
		DM	I&C Network Connection Agreement	7 yrs	30%	70% (De minimus level)	No
		NDM	I&C Network Connection Agreement	7 yrs	30%	0%	No
<b><u>Institutional I&amp;C</u></b> Peak Hourly Demand ? 50MW OR Connection Pressure < 16 barg	? €250,000	LDM, DM, NDM	Large Network Connection Agreement	7 yrs	30%	70%	Yes
	< €250,000	LDM, DM, NDM	I&C Network Connection Agreement	20 yrs	30%	No	No

Notes:

(1) Net Connection Costs is the total cost of the connection less the customer contribution paid

(2) Capacity commitment covered by financial security and de minimus capacity level set in the Capacity Register are based on the projected load profiles provided by the customer, this load profile is also used in the connection appraisal

## ANNEX 5. CONNECTION CHARGES SUMMARY TABLE

CONNECTION TYPE	CONNECTION CHARGE	APPLICABLE TARIFF ONCE CONNECTED
<b>INDUSTRIAL &amp; COMMERCIAL (I&amp;C)</b> <b>Large I&amp;Cs</b> >16barg, MHQ>50MW	>>Phased Payment = 100% of all capex costs (incl. reinforcement)	Transmission
<b>Medium and Small I&amp;Cs</b> (<16barg,OR MHQ<=50MW) - AQ > 57.5GWh - AQ <= 57.5GWh, Transmission costs involved - AQ <= 57.5GWh, No Transmission costs involved	>> Standard Contribution (30% of all capex costs, incl reinf); PLUS >>Supplemental "Economic Test" Contribution (appraised over 7 yrs): -based on Transmission and Distribution costs and revenues - based on Transmission and Distribution costs and revenues  - based on Distribution costs and 80% of Distribution revenues	Transmission & Distribution
<b>Institutional I&amp;Cs</b> (<16barg, AQ<=260GWh) - AQ > 57.5GWh - AQ <= 57.5GWh, Transmission costs involved - AQ <= 57.5GWh, No Transmission costs involved	>> Standard I&C Contribution (30% of all costs, incl reinf); PLUS >> Supplemental "Economic Test" Contribution (appraised over 7 or 20 yrs depending on exposure ): -based on Transmission and Distribution costs and revenues - based on Transmission and Distribution costs and revenues  - based on Distribution costs and 80% of Distribution revenues	Transmission & Distribution
<b>DOMESTIC</b> <b>One-off Housing</b> <=73.2MWh	>> Standard Domestic Charge + VAT for the first 15m of service pipe; PLUS >> Incremental Fixed Charge per meter beyond 15m	Transmission & Distribution
>73.2MWh	Greater of: >> Standard Domestic Charge + VAT; and >> Supplemental "Economic Test" Contribution	Transmission & Distribution
<b>New Housing</b>	>> Standard Domestic Charge + VAT; PLUS >> Supplemental "Economic Test" Contribution: - appraised over 20 yrs, 80% of Distribution revenues	Transmission & Distribution
<b>Non-Gas Estates</b>	>> Standard Domestic Charge + VAT; PLUS >> Supplemental Charge	Transmission & Distribution
<b>MIXED DEVELOPMENTS</b>	>> Domestic: - No. Domestic Connections x Standard Domestic Charge; PLUS - Supplemental "Economic Test" Contribution (appraisal over 20 yrs, 80% of distribution revenues) >> I&C: - Standard I&C Contribution of 30% (mains allocated based on capacity %); PLUS - Supplemental "Economic Test" Contribution (appraisal over 7 yrs, 80% of Distribution revenues)	Transmission & Distribution
<b>MIXED NON-GAS ESTATES</b>	>> Domestic: - Standard Domestic Charge; PLUS - Supplemental Charge >> I&C: - Standard I&C Contribution of 30% (mains allocated based on capacity %); PLUS - Supplemental "Economic Test" Contribution	Transmission & Distribution
<b>NEW TOWNS</b>	>> Domestic (appraised over 25 years) - Standard Domestic Charge + VAT per connection >> I&C (appraised over 25 years) - Standard I&C Contribution of 30% (meter and service costs)	Transmission & Distribution

## ANNEX 6A. NEW TOWN APPRAISAL TEMPLATE - INPUTS

		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8 - 25
<b>1. DEMAND</b>										
<b>New Housing</b>										
No. Connections per yr up to Yr 10		200								
Volume		15,260 kWh per house								
Load Factor		36%								
<b>I&amp;C (Surveyed Load in kWh)</b>										
<u>Large</u>										
Capacity										
Large 1		350,000								
Large 2		35,000								
Large 3		20,000								
Commodity										
Large 1		75,000,000								
Large 2		7,500,000								
Large 3		4,000,000								
Take-up %		80% of the total load surveyed (approximately) - in this example 2 out of 3								
Large 1		0%	0%	100%	100%	100%	100%	100%	100%	100%
Large 2		0%	0%	0%	0%	0%	0%	0%	0%	0%
Large 3		0%	100%	100%	100%	100%	100%	100%	100%	100%
<u>Medium</u>										
No. customers		15								
Total Capacity		55,000								
Total Commodity		8,000,000								
Take-up %			0%	10%	20%	30%	40%	50%	50%	50%
<u>Small</u>										
No. customers		350,000								
Total Capacity		115,000								
Total Commodity		15,000,000								
Take-up %			0.00%	12.50%	17.50%	20.00%	21.25%	22.50%	23.75%	25.00%
<b>2. CONNECTION COSTS (CAPEX in €)</b>										
<b>Distribution</b>										
Feeder & Distribution Main		6,000,000								
<b>Service and Meter</b>										
New Housing		€1,086 per connection								
I&C										
Large		€90,000 for the loads assumed to be connected								
Medium		€150,000 for the total load surveyed (i.e. only the portion related to the take-up % will be included in the appraisal)								
Small		€1,000,000 for the total load surveyed (i.e. only the portion related to the take-up % will be included in the appraisal)								
<b>Transmission</b>										
AGI, etc.		€750,000								
<b>3. CONNECTION CHARGES</b>										
New Housing		€220 per connection								
I&C		30% of service and meter costs								
<b>4. OPERATING COSTS (OPEX)</b>										
Distribution		€140,000 (incl. first response, callout crew and 3rd party damage)								
Transmission		€11,000								
<b>5. TARIFF</b>										
<b>Distribution</b>										
		Capacity Charge = A - B*Ln(PDV in MWh)								
<u>Volume Range</u>		A	B							
0-73 MWh		133.333								
>73-14,653 MWh		118.032	3.432							
>14,653-57,000 MWh		294.8852	42.3256							
>57,500 MWh		36.3645	-							
		Commodity Charge = A - B*Ln(PDV in MWh)								
<u>Volume Range</u>										
0-73 MWh		0.2537								
>73-14,653 MWh		0.2025	0.0197							
>14,653-57,000 MWh		0.2361	0.0311							
>57,500 MWh		0.0461	-							
<b>Transmission</b>										
<u>Entry</u>										
Capacity		336.727								
Commodity		0.139								
<u>Exit</u>										
Capacity		481.879								
Commodity		0.220								

## ANNEX 6B. NEW TOWN APPRAISAL TEMPLATE – RESULTS SUMMARY

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11 ...	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25
<b>Demand (MWh)</b>																		
<u>Capacity</u>																		
New Housing	0	23	46	70	93	116	139	163	186	209	232	232	232	232	232	232	232	232
Large I&C	0	20	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370	370
Medium I&C	0	6	11	17	22	28	28	28	28	28	28	28	28	28	28	28	28	28
Small I&C	0	14	20	23	24	26	27	29	29	29	29	29	29	29	29	29	29	29
	<b>0</b>	<b>63</b>	<b>448</b>	<b>479</b>	<b>509</b>	<b>540</b>	<b>564</b>	<b>589</b>	<b>612</b>	<b>635</b>	<b>659</b>	<b>659</b>	<b>659</b>	<b>659</b>	<b>659</b>	<b>659</b>	<b>659</b>	<b>659</b>
<u>Commodity</u>																		
New Housing	0	3,052	6,104	9,156	12,208	15,260	18,312	21,364	24,416	27,468	30,520	30,520	30,520	30,520	30,520	30,520	30,520	30,520
Large I&C	0	4,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000	79,000
Medium I&C	0	800	1,600	2,400	3,200	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Small I&C	0	1,875	2,625	3,000	3,188	3,375	3,563	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750
	<b>0</b>	<b>9,727</b>	<b>89,329</b>	<b>93,556</b>	<b>97,596</b>	<b>101,635</b>	<b>104,875</b>	<b>108,114</b>	<b>111,166</b>	<b>114,218</b>	<b>117,270</b>	<b>117,270</b>	<b>117,270</b>	<b>117,270</b>	<b>117,270</b>	<b>117,270</b>	<b>117,270</b>	<b>117,270</b>
<i>real prices, €000</i>																		
<b>Revenue</b>																		
<u>Distribution</u>																		
Capacity	0	38	425	440	456	472	480	489	497	506	514	514	514	514	514	514	514	514
Commodity	0	11	113	117	120	124	125	126	128	129	131	131	131	131	131	131	131	131
<u>Transmission</u>																		
Capacity	0	52	366	392	417	442	462	482	501	520	539	539	539	539	539	539	539	539
Commodity	0	3	32	34	35	36	38	39	40	41	42	42	42	42	42	42	42	42
<b>Capex</b>																		
Distribution	-6,000	-362	-367	-257	-245	-245	-230	-230	-217	-217	-217	0	0	0	0	0	0	0
Transmission	-750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Connection Charges</b>																		
New Housing	0	44	44	44	44	44	44	44	44	44	44	0	0	0	0	0	0	0
I&C	0	43	45	12	8	8	4	4	0	0	0	0	0	0	0	0	0	0
<b>Opex</b>																		
Distribution	0	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140	-140
Transmission	0	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
<b>Net Cash Flow</b>	<b>-6,750</b>	<b>-321</b>	<b>507</b>	<b>631</b>	<b>685</b>	<b>730</b>	<b>772</b>	<b>803</b>	<b>842</b>	<b>872</b>	<b>902</b>	<b>1,075</b>	<b>1,075</b>	<b>1,075</b>	<b>1,075</b>	<b>1,075</b>	<b>1,075</b>	<b>1,075</b>
<b>Net Present Value @ ROR (€)</b>	<b>€3,790</b>																	

**Note:**

The figures presented are for illustrative purposes only

## ANNEX 7. STANDARD ASSUMPTIONS ON DOMESTIC CONSUMPTION

Our proposed assumptions in relation to the annual consumption of different domestic properties are set out in the table below.

Type of Housing	Kwh
<b><i>New Housing</i></b>	
Standard House	12,000
Apartments	7,250
Large House (4+ bed Detached(	17,500
<b><i>Existing Housing</i></b>	
Standard House (used principally for non-gas estates)	16,900

Reference: FAR Procedures - Forecasting, Allocation and Reconciliations

Appendix 1

[http://www.gaslink.ie/files/market\\_arrange/20090402022903\\_FARProceduresV2010409CERApprov.pdf](http://www.gaslink.ie/files/market_arrange/20090402022903_FARProceduresV2010409CERApprov.pdf)

## **ANNEX 8. ALLOCATION OF REINFORCEMENT COSTS.**

It is imperative from a policy perspective that there is a clear identification of the attributable upstream reinforcement costs to the customer. Reinforcements can be identified through consulting the Gaslink Development Plan. This is a plan of works to be carried out in future periods which identifies reinforcements, network extensions and other planned connections. The Development Plan examines expected load growth and reinforcement requirements and the timings thereof are outlined in the Plan.

### **Example**

Consider a customer who intends to locate a factory in a town which is connected to the network. The size of the proposed load is such that the pressure and/or the available capacity criteria would be breached in the network, thus triggering the reinforcement requirement. The present value of the cost of the reinforcement is €20m. The shallow connection cost is €3m.

### **Scenario 1:**

In this scenario the reinforcement is identified in the Gaslink Development Plan, to occur in 2012. The present value of the reinforcement is €20m. The connection would advance the planned reinforcement by 4 years to 2008. The attributable upstream reinforcement cost in this case is the cost of accelerating the reinforcement by 4 years.

A large I&C customer will pay upfront for the full cost of the connection (€3m) plus the present value of the cost of accelerating the timing of this reinforcement by 4 years.

A Medium/Small I&C or Institutional I&C customer will pay 30% upfront for the direct cost of the connection (circa €1m) plus 30% of the present value of accelerating the timing of the reinforcement by 4 years. They will also pay a supplemental “economic test” contribution if required. The outstanding costs, both shallow and deep, will be recouped through the Regulated Asset Base (RAB) via capacity payments.

In both cases the cost of the reinforcement is absorbed earlier into the RAB than what was originally envisaged in the Gaslink Development Plan. The cost of the acceleration is the difference in the financing costs of advancing the reinforcement by 4 years. The rest of the Network users should be kept cost neutral with respect to the acceleration, i.e. not be exposed to any additional costs as a result of bringing the reinforcement forward. They will be exposed to the early onset of the depreciation costs which will be treated as normal depreciation of an asset via the RAB.

### **Scenario 2:**

In this scenario the reinforcement is not highlighted in the Gaslink Development Plan. In this case the attributable upstream reinforcement cost is the total cost of the reinforcement.

A large I&C customer will pay the full connection cost (€3m) upfront for the direct cost of the connection plus the full cost of the upstream reinforcement (€20m).

A Medium/Small I&C or Institutional I&C customer will pay 30% (circa €1m) upfront for the direct cost of the connection plus 30% (circa €6m) of the present value of the upstream

reinforcement plus any supplemental contribution if required. The other 70% (circa €16m) of the costs, both shallow and deep, would be recouped from capacity payments.

### **Application of Policy**

This policy applies to all connections whose load exceeds the LDM (57.5 GWh) threshold. Below this threshold, all reinforcement costs are addressed as part of the overall planning process and the costs will be allocated to either the Transmission and/or Distribution RAB as appropriate.

## **ANNEX 9. STANDARD CONTRIBUTION PAYMENT OPTIONS FOR MEDIUM AND SMALL I&C CUSTOMERS WHO REQUIRE A LARGE NETWORK CONNECTION AGREEMENT (LNCA) FOR TRANSMISSION ELEMENTS OF THEIR CONNECTION.**

Medium and Small Industrial Commercial customers requiring connection to the transmission pipeline entering into a Large Network Connection Agreement (LNCA) are required to make a standard contribution of 30% of the connection cost estimate plus a supplemental “economic test” contribution (if necessary). The outstanding connection costs, over and above the contribution paid are recovered through general tariff payments, i.e. actual costs less contribution is capitalised to the Regulated Asset Base (RAB). The customer is also required to book capacity and provide financial security for a sufficient period to ensure recovery of all the outstanding costs.

Medium and Small Industrial Commercial customers entering into an LNCA may elect to pay the standard contribution of the **transmission** element of their connection through 3 different options. The options available are as follows<sup>14</sup>:

1. **Initial Price.** The customer pays 30% of the centreline estimate of the full pipeline and ancillary equipment (including AGI) capital costs attributable to meeting the load and pressure requirements of the facility, plus 25% contingency. The outstanding actual costs are recouped through general tariff payments.
2. **Actual Price.** Initially the customer pays a standard contribution of 30% of the centreline estimated cost of connection plus 10% contingency. Once the actual costs are known on completion of the connection, the customer’s initial standard contribution shall be reconciled against the actual costs. Therefore in effect the customer pays 30% of the actual costs. The outstanding actual costs are recouped through general tariff payments.
3. **Fixed Price.** The customer pays a standard contribution based on 30% of the control budget<sup>15</sup> once it is established plus a contingency of 10%. The outstanding actual costs are recouped through general tariff payments. The LNCA will contain an obligation on the customer to pay the standard contribution once the control budget is established.

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<sup>14</sup> All options will have to pay a supplemental “economic test” contribution if required.

<sup>15</sup> The control budget is established post execution of the Large Network Connection Agreement.