# Common Arrangements for Gas (CAG)

## Discussion paper on the options for the Gas Operational Regime

**21 May 2008**

## Contents

# Executive summary

This paper is the first consultation to be produced covering issues in the operations work stream of Common Arrangements for Gas (CAG). The goal of the work stream is to produce a set of common operational arrangements which facilitate the operation of the transmission system on an all-island basis. As a discussion document, this paper therefore presents a number of options for operating the island as one system and for the code arrangements which could be put in place to support this. The aim of this paper is to get feedback from industry on the merit and practicality of implementing the different proposed options so that views can be obtained on how best to progress with the operational work stream.

As a minimum for the CAG project the Utility Regulator and the Commission for Energy Regulation (CER) wish to put in place operational systems which ensure:

- optimal operational flows of gas
- a single balancing zone is created
- a single IT interface for shippers is implemented, such that only one set of nominations is required
- planning and investment decisions are taken on an all-island basis either by a single transmission system operator (TSO) or coordinated among TSOs

The options presented each deliver these minimum requirements and some of which deliver more in terms of operational harmonisation. The regulatory authorities are keen to establish the views of industry on the options presented, namely on the number of system operator functions to be undertaken on an all-island basis, and whether system operation and its governing codes should be harmonised down to the distribution/retail level.

In brief, the options for single system operation set out in this paper are:

- Coordination between multiple TSO/TOs who are responsible for the provision of system operator services in their areas and who coordinate their activities in order to provide certain system operator services on an all-island basis. This option closely parallels the current situation in Northern Ireland where the existing TSOs coordinate their activities in order to create a single balancing zone.
- Multiple TSO/TOs who contract with a Single Service Provider (SSP) for the provision of all-island system operator services.
- Dual TSOs who would be licensed to provide system operator functions on an all-island basis.
- A single TSO who would be licensed to provide system operator functions on an all-island basis.

The options presented for the harmonisation of the codes are to develop a single all-island code, dual codes or multiple codes. All the code options will require changes to harmonise/synchronise the nomination, allocation and balancing procedures in both jurisdictions.

Preliminary opinions of participants are sought in some other operational areas. These issues and the details of the operational regime will be developed further as the consultation progresses over the next six months.

# 1 Introduction

## *1.1 Purpose of this document*

An overview of the CAG project was presented to the industry in February 2008. In the interim the Utility Regulator and the Commission for Energy Regulation (CER) have begun work on a number of the work streams but have principally concentrated on operations and tariffs.

This paper is the first consultation to be produced covering issues in the operations work stream. It presents a number of options for operating the island as one system and for the code arrangements which could be put in place to support this. The document scopes four options for system operation and three options for codes but we accept that many permutations of options are possible. Further consultation and discussions with the industry will be required before any decisions on the CAG operational regime can be taken. The timetable for industry consultation is set out in the work plan (published on the websites of the CER and Utility Regulator) and reproduced in Table 1 below.

We are keen to engage with the industry now on the options for system operations and codes as each option has its own set of issues, benefits and degree of complexity which need to be fully discussed before the Regulators form any initial proposals. Therefore, we would welcome views on the issues listed and on any other issues we have not considered. Further consultations will follow as the work stream progresses.

## *1.2 Structure of this document*

This document discusses five key aspects of the gas operations regime.

- CAG vision and goals
- All-island system operation
- Number of system operators in an all-island context
- Number of network codes
- Scope of system operation and network codes

*Use of terms in the consultation paper*

Throughout the paper we use the terms transmission system operator (TSO), transmission owner (TO), TSO/TO, and a single services provider (SSP).

The TSO operates a transmission pipeline system. The paper presents options for common operational arrangements with a single TSO, dual TSOs, or multiple

TSO/TOs. The TO means the asset owner and a TSO/TO both operates and owns a transmission pipeline. Both TSO and TO activities are licensable.

The term single services provider means an entity that would perform system operation functions under contract to the TSOs. This entity would not need to be licensed.

## *1.3 Background to the CAG project*

As part of the European Union, Northern Ireland (NI) and the Republic of Ireland (RoI) are committed to the development of a Single European Gas Market. The European Commission has put in place an overarching legislative framework within which all member states are working to achieve the Single Gas Market which is designed to bring benefits to all European citizens and to contribute to Europe's competitiveness.

Within this framework, cross border trading is developing and the interconnectivity of gas networks is increasing. Countries that are physically close are developing closer trading ties. Because the island is far less interconnected than other mainland European jurisdictions creating common arrangements within the island will provide the basis for further development of the gas industry on the island of Ireland. This will benefit all consumers of gas and the economies north and south. Furthermore, in the future it may be possible to align gas arrangements in both jurisdictions with that of Great Britain and the implementation of CAG will make this more feasible.

During the last number of years, the Utility Regulator and CER have engaged in significant work in conjunction with the relevant NI and RoI Government Departments with regard to developing an all-island approach to energy. Work has also been carried out to take forward work streams aimed at progressing the Development Framework that will cover both the electricity and natural gas industries.[1]

To date, work has concentrated almost solely on the electricity side of the overall project and has delivered notable successes, e.g. the implementation of the wholesale Single Electricity Market (SEM) in November 2007.

Now that SEM has been implemented attention can be devoted to the gas related work streams as these are currently pressing. Physical interconnection between the NI and RoI gas systems is now in place following the building and coming on stream of the South North gas transmission pipeline in late 2006, however, differing arrangements are an obstacle to the actual flow of gas between the two jurisdictions. New arrangements are therefore needed to

[1] DETI (June 2004) Energy, a strategic framework for Northern Ireland. http://www.detini.gov.uk/cgi-bin/get_builder_page?page=2825&site=5&parent=149

facilitate cross-border gas flows. Initial indications suggest that this may be best achieved under common arrangements for gas, which would harmonise operations between the two jurisdictions. Therefore the Utility Regulator and CER, together with the relevant Government Departments, have scoped the work areas required under the CAG and their timescales, sequencing and priority. For example, work will be required to harmonise tariffs, the operational regime, and gas quality standards and to ensure security of supply for the island as a whole. The CAG work plan has been published on the CER and Utility Regulator websites so that all stakeholders may plan their contributions to the project.

## *1.4 Process and timetable for operations*

The operations work stream includes two formal consultations – the present discussion paper and a consultation on the initial proposals. We aim to publish a final decision by the end of January 2009 so that work on licensing, legislation and codes can begin shortly thereafter. These work streams require decisions about the design of the operations regime and the entity or entities that will perform the system operation functions.

Workshops will be held at each stage – key dates from the operations work plan are outlined below. While these are indicative dates they may change slightly as the work stream progresses. Should this occur the work plan will be updated accordingly.

**Table 1: Timetable for operations work stream**

| Key event | Proposed date |
|---|---|
| Publish consultation on discussion paper | 21 May 2008 |
| Industry workshop | 6 June 2008 |
| Consultation ends | 2 July 2008 |
| Presentation to Joint Steering Group and Ministers | Date to be confirmed |
| Publish consultation on initial proposals | 13 October2008 |
| Industry workshop | 27 October |
| Consultation ends | 24 November 2008 |
| Publish decision on high level design | 30 January 2009 |
| Present high level design to the industry | 30 January 2009 |

## *1.5 Responding to this consultation*

At appropriate points in the document we have set out questions about the options and issues described. We have done so to assist respondents in

structuring their response to this consultation but responses do not need to be confined to these questions.

The Utility Regulator and CER would welcome responses to the issues and questions in this document by **2 July 2008**.

Responses should be sent to:


Roisin McLaughlin
Gas Branch
Utility Regulator
Queens House
14 Queen St.
Belfast
BT1 6ER
roisin.mclaughlin@niaur.gov.uk

Jill Murray
Gas Division
CER
The Exchange
Belgard Square North
Tallaght
Dublin 24
jmurray@cer.ie


Respondents may ask for their responses, in whole or in part, not to be published, or that their identity should be withheld from public disclosure. Where either of these is the case, we will ask respondents to also supply us with the redacted version of the response that can be published.

Respondents should note that both the Utility Regulator and CER are bound by freedom of information legislation in their respective jurisdictions. Therefore it is possible that all responses may be discoverable under these rules, regardless of where they are submitted. It is therefore important that respondents note these developments and in particular, when marking responses as 'confidential' or asking the Regulators to treat responses as confidential, should specify why they consider the information in question to be confidential.

If you have any queries concerning the issues raised in this document, please contact Roisin McLaughlin on 028 9031 6350 ( roisin.mclaughlin@niaur.gov.uk).

# 2 CAG vision and goals

## *2.1 Vision*

The Memorandum of Understanding (MOU) between the Utility Regulator and CER, published in April 2008, sets out the overall vision of CAG.[2] The vision is to establish arrangements whereby all stakeholders can buy, sell, transport, operate, develop and plan the natural gas market in both jurisdictions effectively on an all-island basis. Putting in place a set of common regulatory arrangements supports an industry where variations in the price and conditions on which gas is bought and sold will be determined by market conditions and economics.

The vision of the common arrangements for gas regarding operations is to operate gas transmission systems on a single all-island basis. We have taken operations to mean a wide scope of work done by operators. We consider all areas covered by the network codes but excluding tariffing, connections and network planning which each have their own work stream although there will be areas of overlap.

As a minimum for the CAG project the Utility Regulator and CER wish to put in place operational systems which ensure:

- optimal operational flows of gas,
- a single balancing zone is created
- a single IT interface for shippers, such that only one set of nominations is required
- planning and investment decisions are taken on an all-island basis either by a single TSO or coordinated among TSOs

This will require a number of system operator functions to be undertaken on an all-island basis and section 3 describes the functions which an all-island system operator could undertake. The scope of functions to be harmonised is a key question for this work stream.

## *2.2 Goal of the work stream*

The safety, reliability and integrity of the gas systems on the island will be enshrined in whatever operational arrangements are put in place by the CAG project.

[2] http://ofreg.nics.gov.uk/pdf%20files/Gas%20%202008/Gas%20MOU.pdf

The goal of this work stream is to produce a set of common operational arrangements which facilitate the operation of the transmission system on an all-island basis. The options outlined in this paper will be judged against the following criteria:

(i) Efficient

The arrangements should allow for gas to be moved in an efficient manner, regardless of ownership of pipelines. This arrangement should ensure that the current set of transmission assets are operated to optimise fuel costs, balancing costs, additional investment and available capacity. This will also ensure that all power stations in SEM will face consistent gas transmission costs and that the risks facing retailers are manageable

(ii) Cost Effective

The arrangements should ensure that any regime is incentivised to deliver the optimal operation at the most efficient cost. This will require appropriate regulatory oversight and approval of costs.

(iii) Customer Friendly

The arrangements should deliver a single interface between suppliers and the operator(s). There should only be a requirement for one set of nominations, allocations etc. for each supplier/exit point. The number of network codes suppliers have to sign up to should also be minimised in order to lower transaction costs.

(iv) Transparent

The arrangements should result in a clear and transparent regime where there is clarity about the role of the operator and owner (if different parties). There should also be clearly defined roles and rules at operator/owner interface points.

(v) Consistent with EU legislation

The arrangements should be consistent with EU Directives and with the European Commission's proposals for the third legislative package for electricity and gas markets, such that the arrangements should deliver benefits to customers by ensuring that gas is bought and sold in competitive markets, at the wholesale and retail levels.

(vi) Compatible with present and future developments towards an EU Single Market in Gas

The arrangements should improve the interoperability of energy markets at European level.

Our initial view is that the options presented in this paper could all meet the goal but do so to various degrees as they involve inherent trade-offs. For example some options are more cost effective but may be less efficient or customer friendly. Therefore, we will need to prioritise the criteria listed above once we

have a better understanding from the industry about the trade-offs they believe are appropriate.

Our preliminary work on the costs and benefits of the project suggests that the project overall will have a Net Present Value (NPV) of £10 million over 10 years discounted at 3.5%, not including any benefits from increased competition and investment as these have not been fully calculated at this stage. It has been estimated that the benefits from the operations work stream alone may generate around 80% of benefits if single operation of the gas pipelines on a day to day basis is put in place along with a single balancing zone and a single IT interface. More efficient movement of gas throughout the two jurisdictions gives rise to savings in fuel and carbon and reduced balancing actions. Additionally the markets will be more attractive to shippers and suppliers and customers will benefit from more competition. The Regulators and the Government Departments wish to capture as many of these benefits as possible.

The cost benefit analysis (CBA) has focussed on operations and has not quantified the benefits or costs of CAG arrangements for shippers or suppliers. Shippers and suppliers should give consideration to identifying the costs and benefits of CAG to them and attempt an initial quantification of these where possible.

**Q1. Are there any other criteria against which to evaluate the options for common operation?**

**Q2. Do you have a view on whether any criteria should be prioritised over others?**

**Q3. What is your initial view of the costs/benefits of common operational arrangements for shippers/suppliers?**

## *2.3 Importance of independent system operation*

In order to realise the CAG vision a number of TSO related functions will need to be undertaken independently from any TOs with affiliated supply, production or storage interests. We wish to facilitate competition between competing supply companies, ensure that there is no discrimination between third parties seeking connection to the network, and that investment decisions are not distorted in favour of one supply interest over another or one jurisdiction over another.

We are mindful of European law as Directive 2003/55/EC requires legal and functional unbundling of network operation from production and supply. The unbundling proposals contained in the European Commission's third legislative

package for the European Energy Market go even further than this. The European Commission's initial position is that ownership separation is the most effective way to ensure proper separation between network operations and supply and production activities. The Commission believes that where the system operator is a legal entity within an integrated company the transmission system operator may treat its affiliated companies better than competing third parties. Secondly, non-discriminatory access to information cannot be guaranteed as there is no effective means of preventing transmission system operators releasing market sensitive information to the production or supply branch of the integrated company. Thirdly, that investment incentives within an integrated company are distorted because vertically integrated network operators have no incentive to develop the network in the overall interests of the market and hence to facilitate new entry at production or supply levels.

At present, one of the existing transmission owners in Northern Ireland, BGE (UK) has a supply affiliate, Firmus, as does one of the distribution owners. To comply with Directive 2003/55/EC certain changes were made to the management structures of Firmus Energy (supply) and the gas supply licence held by BGE (UK) was transferred to Firmus. In ROI BGE is a vertically integrated company with a supply arm which is presently being restructured in order to create an independent system operator in compliance with the Directive.

The degree of independence will be a key issue as the operations work stream progresses. In SEM independence was of particular concern to the Regulators from the perspective of facilitation of competition. As part of the introduction of the SEM in Northern Ireland, changes were made which not only resulted in the delivery of the minimum TSO separation requirements of Directive 2003/54/EC, but in a number of important areas went significantly further. For example, the majority of the SO activities (essentially all except transmission planning and development) were required to be carried out by an organisation that would subsequently be fully corporately divested from any party that undertook (or was affiliated with anyone who undertook) generation or supply activities on the island of Ireland.

The next section set out the options for system operation along with our initial assessment of how each meets the goals of the work stream.

# 3 All-island system operation functions

Central to single system operation is the question of which functions should be carried out on an all-island basis. The current range of functions which are performed by the TSOs and which could be integrated are set out below. All possible functions are listed, not just those which would achieve the minimum vision of the project.

- **Long term management of the transportation arrangements including product offerings**
- **Day to day operation of the transportation system** (e.g. moving gas around the system, dealing with nominations etc.)
- **Balancing the system**
- **Issuing a single bill to users**
- **Procurement of fuel** for balancing, compression and shrinkage
- **Emergencies** - both in terms of preventing emergencies and coordinating procedures in the event of an emergency
- **Planning and development** of the transmission system on a high level and ensuring that capacity is maximised
- **Measurement and end of day settlement and allocations**
- **Capacity trading**
- **Connections to the transmission system** –who approves the connection?
- **Maintenance of the transportation system** - This could be the responsibility of the TSO or the TSO could be charged with ensuring that the system is maintained but the actual maintenance is carried out by the asset owners.
- **Congestion management** - responsibility for this could be divided between the System Operator (short term) and the asset owner (long term) depending on who is responsible for planning and development.
- **Collection and disbursement of transportation charges** (those which recover the capital and operational costs of the network) and code charges which relate to incentivising shipper behaviour (i.e., imbalancing and capacity over-run charges). We understand that this is the role of the System Operators in the SEM and revenues are then transferred between SOs as appropriate. If parties are not happy with the risk of one operator collecting the monies we may need to create a PoT system as exists currently in NI whereby the money is collected by an independent trustee who then forwards it on to each relevant party. As this issue is dependent upon the arrangements for achieving a common transmission tariff methodology, we propose to address this question under that work-stream, recognising the interactions with the operational arrangement.

The minimum vision of the CAG project would require that balancing of the system, high level planning and development, and day to day operation of the transportation system (such that shippers only need to make one nomination) would all need to be carried out on an all-island basis.

In assessing which functions should be performed on an all-island basis, the present responsibilities of the asset owners - in particular their health and safety responsibilities need to be considered. It may not be possible or desirable to transfer these to a TSO. Any functions transferred from TOs will require a set of governance arrangements and an operating agreement between the entity carrying out the system operation functions and TOs.

**Q4. Which functions should be performed on an all-island basis?**

**Q5. What is your preliminary view of how transportation charges should be collected and distributed?**

# 4 Options for system operation

A single operational regime could be designed in a number of ways in order to meet the minimum requirements of the MOU and not all designs require a single TSO or a single code. In considering each option we must weigh the extent to which the option meets the goals of the project against the costs or difficulties in putting this option in place compared to the other options.

In the first instance we have set out the current operational regime in each jurisdiction in order to illustrate how system operation is performed. We will then describe three options for system operation - multiple system operators, dual system operators, and a single system operator - before assessing how each meets the goal of the work stream.

## *4.1 Current Operational Regime*

The transmission systems in the Republic of Ireland and Northern Ireland currently operate independently of each other with only some cooperation on cross border issues. Both systems share the use of assets at Moffat, which is used to import gas from the UK system. The pipeline splits at Twynholm, from which all gas going to Northern Ireland flows through the Scotland to Northern Ireland Pipeline (SNIP) and all gas going to Ireland flows through the Interconnectors (IC1 and IC2) via Brighouse Bay. Thus the gas is moved from on-shore Scotland in accordance with the requirements of the shippers in each market. The current regime does not optimise gas flow or load management on

the island and is inefficient to the detriment of shippers and ultimately customers in both markets.

The rules for transportation of gas are contained in the codes of operations. There are different system operators in NI and Ireland and so different codes have evolved. There are three TSO/TOs in NI each assigned a conveyance licence but PTL are responsible for operation of both the SNIP pipeline and the Ballylumford Torytown Pipeline (BTP). The BTP was recently acquired by Northern Ireland Energy Holdings (NIEH) and the company name is due to be changed to Belfast Gas Transmission Ltd. (BGTL) from Phoenix Natural Gas Ltd. We refer to BGTL from this point forward. BGE are the transporter in Ireland and are responsible for transporting gas through the interconnectors and from other entry points on behalf of Irish shippers. BGE owns and operates the on-shore Scottish system from Moffat and they currently operate the SNIP pipeline and the BTP under contract from PTL. BGE also transport gas in NI for BGE (NI).

### 4.1.1 Northern Ireland

The Northern Ireland Gas Transmission Network is currently made up of three TSO/TOs:

- Premier Transmission Limited (a wholly owned subsidiary of NIEH) who own the Scotland to Northern Ireland Pipeline (SNIP) which links Twynholm in Scotland with the Ballylumford power station in Co. Antrim.
- Belfast Gas Transmission Ltd. (a wholly owned subsidiary of NIEH) who own the Ballylumford Torytown Pipeline ('BTP') which runs from Ballylumford power station to the Belfast distribution network. BGTL and PTL will have the same management team but are legally separate companies. The pipeline will continue to have its own Network Code.
- BGE (Northern Ireland) who own the North West Pipeline (NWP) which links the Ballylumford Torytown Pipeline (BTP) at Carrickfergus to the Coolkeeragh power station in Co. Derry and the South North Pipeline (SNP) which runs from Gormanstown in Co Meath to connect with the North West pipeline at Ballyalbanagh in Co Antrim.

Northern Ireland has two distribution system operators (DSOs):

- Phoenix Distribution Limited who operate the distribution network in the Greater Belfast and Larne areas. Under the Utility Regulator approved Distribution transportation arrangements for Greater Belfast, Phoenix Distribution book and hold capacity on the Postalised Network on behalf of all NI Suppliers wishing to ship gas through its Distribution Network – this was requested by the Utility Regulator to encourage competition and prevent over-booking and hoarding of capacity.
- Firmus Energy Distribution Ltd who are licensed for the conveyance of gas within the towns along the route of North West and South North Pipelines

including Ballymena, Ballymoney, Coleraine, Londonderry, Limavady, Antrim, Armagh, Banbridge, Craigavon and Newry. Firmus Energy has exclusivity in these towns, the expiration of which depends on the type and date of connection – 8 years for premises with consumption less than 25,000 therms per annum and 5 years for premises greater than 25,000 therms per annum.

### 4.1.2 Ireland

In Ireland the operation of the transmission and distribution networks is much simpler as currently they are all owned and operated by BGE. This will no longer be the case as of the 1st July 2008 following the establishment of Gaslink as the Independent System Operator for Ireland. This is required in order to comply with the legal unbundling of the System Operator functions obligations as set out in Directive 2003/55/EC. From the 1st July, Gaslink will hold the operational licenses for both the transmission and distribution networks and BGE will hold the asset owner licenses for the transmission and distribution networks. A CER approved 'Operations Agreement' will be put in place between Gaslink and BGE outlining the interactional aspects and operational functions of the two entities.

It should be noted that unlike the electricity regime, gas networks are not a monopoly in Ireland and therefore anyone may apply to the CER for a consent to construct and operate a gas pipeline. Currently BGE UK is the only other entity owning a transmission pipeline in Ireland. This is the SN pipeline and it was envisaged at the time of consent that the primary purpose of this pipeline was to serve NI customers; this is reflected in the licence granted by the CER to BGE UK for the operation of that pipeline. The CER therefore considered when issuing that licence that the TSO functions of system planning and development would not apply to BGE (UK) as regards this pipeline.

There is the potential in Ireland for other owners and operators of transmission pipelines to emerge. Indeed it is possible that Shannon Development, for example, may build their LNG connection to the BGE transmission system. In this case the CER will need to consider what type of licence and operations regime should apply.

The Code of Operations in Ireland is a unified code (i.e. covers both transmission and distribution) and provides for the transportation of gas from entry point to the customers premises. The code came into effect on 1st April 2005 to support the operation of the entry / exit regime which came into effect that day. The code contains the normal transportation rules of capacity bookings nominations and allocations, balancing and shrinkage and emergency procedures but also has the distribution procedures including customer demand forecasting and reconciliation, change of shipper and meter reading procedures.

Emergency arrangements have been implemented to allow gas to flow into either jurisdiction in the event of an emergency however physical, commercial and

regulatory constraints impede the ability of gas to flow naturally around the system and between jurisdictions on a day-to-day basis.

## *4.2 Options for Single System Operation*

This section describes the options for single system operation and outlines what would be required to implement each option before assessing how each option meets the goal of the work stream. Ease of implementation is not presently a goal of the work stream but we need to understand what would be required to implement each option and particularly any costs associated with particular options.

The options are:

- Coordination between multiple TSO/TOs who are responsible for the provision of system operator services in their areas and who coordinate their activities in order to provide certain system operator services on an all-island basis. This option closely parallels the current situation in Northern Ireland where the existing TSOs coordinate their activities in order to create a single balancing zone.
- Multiple TSO/TOs who contract with a Single Service Provider (SSP) for the provision of all-island system operator services.
- Dual TSOs would be licensed to provide system operator functions on an all-island basis.
- A single TSO would be licensed to provide system operator functions on an all-island basis.

### 4.2.1 Coordination between multiple TSO/TOs

In Northern Ireland the existing asset owners coordinate their TSO activities in order to integrate nominations for shippers and facilitate a single balancing zone. In an all-island context therefore this option envisages the three existing transmission owners in Northern Ireland and Gaslink in the ROI putting in place appropriate mechanisms between them to coordinate their TSO functions on an all-island basis. This would allow for all-island system operation with minimal changes to the current arrangements as those who currently have responsibility for system operations would retain that responsibility.

A single customer interface could be created by placing a licence obligation to create one on conveyance licence holders but would be complex to achieve contractually compared to a single services provider or the single TSO approach. In practical terms the existing IT systems would either have to talk to each other or the TSOs would have to agree to each adopt one of the existing systems. If a supplier is exiting gas at points in two separate TSO zones (e.g., Belfast and Newry), it will have to continue to enter into contractual arrangements with both

TSOs and interact with both separate TSOs. We envisage that multiple bills would continue to be provided under this option.

In order for such a supplier to have a single interface and potentially a single bill, an independent agency or services provider as the single point of contact may be needed. The services provider would deal with nominations and scheduling issues and issue balancing directions to the shippers, and would effectively act as the TSO's agent. The SSP option is discussed below.

*Implementation*

A number of steps would be necessary to implement coordination between multiple TSO/TOs. Specifically:

- Code operational changes to harmonise/synchronise the nomination, allocation and balancing procedures in both jurisdictions. It should be noted that such changes would be required for all code options.
- A layer of sub-contracts between the multiple TSOs to deliver the all-island services discussed in section 3. The contract would facilitate the management of the system and enable cross-border flows and balancing in a manner which supports common arrangements. The Northern Ireland Network Operator's agreement (NINOA) could provide a template for this contractual interface although any CAG contract would be more comprehensive.
- Sophisticated communication channels/systems would be necessary to enable timely and accurate communications such that co-operation and cross-border flows could be established and facilitated. This would require the existing IT systems to either talk to each other or to migrate to one IT system along with contracts to coordinate the optimal flow of gas around the island.
- We would also need to ensure that single system operation is enshrined in legislation or licences (or both) such that one TSO cannot change the basic principle of single system operation resulting in fragmentation of the single system.
- This option makes it more complicated to trade capacity on an all-Island basis. It would require multiple TSOs to work closely together to ensure that consistent and regular information on unused capacity is provided to shippers. It would also require a mechanism for sharing line-pack amongst the multiple TSO to support the common balancing arrangements.

This option would require careful consideration of health and safety issues in particular how to ensure that responsibility for health and safety issues is clear and that all-island procedures are developed in line with relevant legislation north and south. We would also need to consider who would be the emergency co-ordinator in each jurisdiction and how that TSO would interact with the other TSOs in the event of an emergency. Health and safety issues need to be carefully considered under all the options and are considered further at 4.3.3.

**Q6. How complex would it be to create a single IT interface for nominations with multiple TSOs?**

**Q7. What level of IT investment might be needed to create such an interface?**

### 4.2.2 Multiple TSO/TOs with a single service provider

A variation on the coordination option outlined above is the 'single service provider' model. This envisages placing a licence obligation on the existing TSO/TOs to contract with the same company for system operator services. This single service provider would then provide system operation services under a contract between it and the TSOs. The contract would set out how the single service provider will operate the system. Therefore this model requires contracts between the TSOs and the service provider rather than between TSOs. The contractual relationships could be facilitated via bilateral contracts between the SSP and each TSO or one contract which everyone agrees to sign. The precedent for the later approach is the NINOA. It is worth noting that PTL has a service provider, BGE, for the operation of the SNIP pipeline.

The key difference between this approach and a single TSO approach is that the asset owners remain the licensed TSOs and continue to be legally responsible for performing all operation functions.

*Implementation*

Apart from the contractual relationships which would need to be established, the SSP model would require that the SSP adopt a single IT interface for shipper nominations. This could be achieved by the existing IT systems talking to each other or by the SSP adopting one of the existing IT systems. The single interface could be expanded to generate single bills for shippers and suppliers.

The SSP would also need to establish contracts for purchasing and selling balancing gas.

This model would require a decision on who the SSP should be – either the regulators could mandate who the SSP should be or the provider could be appointed via a tendering process. Similar issues arise in appointing the single TSO and are considered more fully in that section.

A second question posed by this model is how to regulate the SSP given that it would not be a licensed entity. The contract between the TSOs and the SSP will need to ensure that the TSOs can ensure that the SSP provides the services specified in the contract and have a means to address any performance issues

as the TSOs are ultimately liable for the SSP's activities. We will also wish to ensure that the costs of the SSP are competitive.

Another question is whether any new transporters coming into the market should be required to contract with the SSP for all-island system operation services. This will be important for the integrity of common arrangements going forward.

**Q8. Should new transporters coming into the market be required to contract with the SSP?**

**Q9. Would any other steps be required to implement this option?**

### 4.2.3 Single TSO

As the title suggests this involves licensing a single TSO for the island to provide those system operation functions which are to be provided on an all-island basis. The single TSO would be responsible for all-island system operation rather than multiple TSOs retaining that responsibility.

In practical terms this option is similar to the SSP. But the integrated nature of the single TSO gives rise to clear differences in how this option would be controlled and regulated compared to the SSP. The SSP would not be licensed because the multiple TSOs would retain responsibility for all-island system operation through their own licences. This means that the multiple TSOs would be responsible for controlling the SSP's activities via their contract with the SSP. By contrast, a single TSO would be licensed and would have responsibility for providing all-island system operation functions. Its activities would be regulated via its licence.

*Implementation*

The single TSO option would dispense with the mechanisms to coordinate the activities of TSOs required by the other options and would require fewer contracts to achieve as sub-contracts between TSOs would not be required. However, interface agreements between the single TSO and each TO would need to be agreed.

A single TSO would involve decisions not required with the other options due to its more integrated nature. The most challenging questions to be answered are highlighted below. (It should be noted that the options for selecting the single TSO are also the options for selecting the SSP.)

- How would a single TSO be selected?

The options would appear to be a regular competition whereby the job is tendered at regular intervals and awarded to the optimal tender or the regulators could mandate who the TSO should be.

A regular competition would introduce a degree of contestability into system operation which should encourage the system operator to provide its services in a more efficient manner than would have been the case had no competition existed. The benefits of contestability will be greater if competitions occur regularly. However, this maybe offset by the potential for errors as a new operator becomes familiar with the details of market operation. The need to change IT systems may also be an issue. The appropriate length of the single TSO contract would therefore require careful consideration if the benefits of this form of contestability are to be realised. Alternatively competition could be introduced by tendering, not for the single TSO role but, by the single TSO tendering for the services it provides. This would ensure that services were provided more efficiently than would otherwise have been the case and that shippers could maintain their relationships with the TSO, even if the party contracting with the TSO changes.

- How would a single TSO be licensed?

It is difficult to envisage having only one licence given the two jurisdictions. The other option is to have two licences for the single TSO, i.e. the regulators would agree to licence *the same entity* in each jurisdiction. Crucially the licences would require the licensees to jointly undertake certain functions on an all-island basis. This is considered further below under dual TSOs.

DETI will have to turn on the Energy Order condition on participation in the conveyance of gas for a TSO licence to be granted in Northern Ireland. The Utility Regulator will also need to design a TSO licence as there are currently none in NI. CER may choose to use any TSO licence granted to Gaslink as a template. But it is worth noting that this licence will probably need to change once the TSO(s) for the island are appointed.

- How should a single TSO be regulated?

If this option is chosen it will be important to give any TSO some certainty that there will be consistent regulation on an all-island basis and so issues such as price control and significant licence modifications could be considered by a body with similarities to the SEM committee. The SEM committee duties cover modifications to the Market Operator (MO) licences.

**Q10. Other than the options outlined, how else might a single TSO be appointed?**

**Q11. Would any other steps be required to implement this option?**

### 4.2.4 Dual TSOs

The dual TSO option would involve assigning a NI TSO to work alongside the RoI TSO as has been done in SEM (although SONI was already the single TSO for NI). Together the two TSOs would be responsible for providing certain system operator functions on an all-island basis. Each TSO would be licensed separately in its own jurisdiction but the licences would place an obligation on the dual TSOs to co-ordinate their activities on an all-island basis.

Due to the fact that the dual TSOs will be jointly responsible for the all-island system operation functions how they coordinate their activities will be crucial to the success of this option. Appropriate coordination mechanisms could be set out in a contractual arrangement between the two TSOs, a model for which could be NINOA or the System Operator Agreement concluded between the TSOs in SEM. Without these mechanisms there is a risk that the dual TSOs do not take full responsibility for the all-island functions, creating uncertainty for shippers.

An example from the SEM may serve to illustrate how this option could work in practice. In SEM there are two system operators, one licensed in each jurisdiction. The TSOs are obliged by their licences to conclude a System Operator Agreement, the purpose of which is to provide SONI with a means of ensuring that Eirgrid do those things SONI require for compliance (and vice versa) such that SONI is directly responsible for its licence compliance even where it relies on Eirgrid to do things to support such compliance. In the absence of the SOA, SONI/Eirgrid could argue that enforcement is unreasonable where they are in breach because the other TSO is preventing them from compliance.

*Implementation*

This option would give rise to all the implementation options listed above for the multiple TSO coordination option but fewer contracts for shippers and suppliers would be necessary as there are two TSOs rather than four. However, this option would require in addition:

- A decision on who the NI TSO should be (for the practicalities of this see the section on how the single TSO would be selected).
- The existing conveyance licences would have to be redrafted to outline which system operator functions are to be undertaken on an all-island basis and to require that the these functions are coordinated with the TSO in the other jurisdiction.
- Interface agreements between the Northern Ireland TSOs and the Northern Ireland asset owners would also need to be drafted. This would add another sub-layer of contracts.
- A decision on which of the TSOs will be responsible for the operation of the south-north pipeline will be needed.

This option may otherwise be complex to licence as it might require four licences – one for each TSO in each jurisdiction – depending on the role of the TSOs. But, if this option is pursued we would explore the potential for exemptions for the TSOs in each jurisdiction along the lines of the exemptions given to the SEM Market Operators.

Each TSO will be regulated by the relevant jurisdiction authority, although there may be common principles established between the two regulators to ensure common operation (i.e., joint approval to any licence or code modifications).

**Q12. Would any other steps be required to implement this option?**

## *4.3 Other Market Structure Issues*

Irrespective of which option is adopted there will be structural issues that will need to be decided. We have already considered the scope of functions to be assigned to the TSO(s). Other market structure issues are set out below.

### 4.3.1 What agreements will be needed?

Other than the licence, a single/dual TSO will require an interface agreement with each asset owner. This will need to clearly set out the roles, responsibilities and liabilities of the parties. There are precedents for this in SEM and in the electricity trading arrangements in GB. Connected system agreements and perhaps operations contracts will need to be modified or developed with dual or multiple system operator models.

### 4.3.2 What investment will be needed?

It would be inappropriate to allow any option that would require significant investment in a new control room/operations infrastructure as clearly the benefits identified in the CBA would be off-set by such an investment. Therefore we would anticipate that such costs will not be incurred irrespective of the option chosen. However, it was identified during the CBA that some investment (estimated at £440,000) would be required up-grading the infrastructure on-shore Scotland in order to enable gas to flow more optimally and produce efficiency benefits outlined in the CBA.

It is likely, also that there will be some costs incurred in moving to a single IT interface. Currently there are two IT systems used for accepting capacity bookings and nominations of shippers – BGE use the GTMS system and PTL the GTMBS system. The CBA revealed that significant savings could be made by the use of a common IT system. This would also provide advantages to shippers who wish to trade in the integrated market who currently would be required to

interface with two IT systems. There remains the question of which IT system to use and how it will it be chosen. The regulators are currently reviewing the potential to integrate the IT systems.

### 4.3.3 Emergency procedure issues

With the single TSO model clarity would be needed in regard to its role in relation to health and safety, particularly with respect to emergencies and the emergency co-ordinator – this may require legislation in NI. This issue will also need to be clear if the dual or multiple TSO options are adopted but this may simply be a reinforcement of existing roles.

### 4.3.4 Transition Arrangements

Consideration on how best to move to the new arrangements is also needed. For example, it may be appropriate for a single TSO to shadow the current operators for a short period before taking over full responsibility.

**Q13. What investment will be needed to support single system operation?**

**Q14. How should emergencies be managed under each option?**

## *4.4 Assessment of options*

We believe that all the options could be designed to establish single operation of gas pipelines on a day to day basis, a single balancing zone and a single IT interface but that in doing so each requires trade- offs to be made between efficiency, cost-effectiveness, customer friendliness and transparency.

Given an appropriate level of unbundling between network operations and supply and production interests each option could meet EU requirements.

### 4.4.1 Coordination between multiple TSO/TOs

This option would establish single system operation with the least changes compared to the current arrangements as those who currently have responsibility for system operation would retain that responsibility. In the short term therefore this option may be the most cost effective. However, it would require the most contracts to be put in place to facilitate single system operation. In the long run the costs of maintaining these contractual agreements and the regulatory oversight which would be required may outweigh its initial cost effectiveness.

This option makes it more difficult to establish a single IT interface for shipper nominations and furthermore envisages that customers would receive multiple bills (as they presently do in Northern Ireland). Therefore this option is not as customer friendly as other options.

By its very nature all-island co-ordination between those with existing TSO responsibilities will be more difficult to achieve which could in turn limit the efficiency and transparency of this option.

### 4.4.2 Multiple TSO/TOs with a single services provider

This option means that those who have responsibility for system operation at present retain that responsibility. As with the coordination option this may be attractive to those who presently have responsibility for system operation and means fewer changes to licences are needed to implement this option. However, appropriate contractual mechanisms will need to be put in place by the TSO/TOs to ensure that the SSP provides all-island system operation in a way which meets their licence obligations.

For shippers and suppliers this option would be more customer friendly than coordinating system operation functions as the SSP could also issue a single bill for transportation charges and code charges. However, the additional billing function means that the contract between the SSP and the TSO/TOs would be quite complex.

### 4.4.3 Dual TSOs

In designing this option to meet the goal fewer contracts between TSOs would be required but additional contracts would be required between the TSOs and asset owners. As a half-way house the additional effort this option would require may not make sense compared to multiple TSOs or the SSP model.

However, dual TSOs would be more customer friendly in that suppliers would have to sign up to fewer codes.

### 4.4.4 Single TSO

If we were to design a set of gas arrangements on the island from scratch it is likely that we would set up a single SO to operate the whole island as this is likely to be the most cost-effective and efficient way to transport gas around the island. It is also the most customer friendly as a single supplier interface and single billing could be provided by the single TSO without setting up an agency to perform these functions.

One possible additional benefit from a single TSO is that it could facilitate co-ordination and co-operation between gas system operation and electricity system

operation and would make it easier to implement a common energy operator for the all-Island.

However, this option would require significantly more legal work to design and implement new licences as well as a decision on who the single TSO should be. As with the dual TSO option an interface agreement would be needed between the single TSO and the TOs.

**Q15. What is your view of how each option meets the goal?**

**Q16. Are there any other costs which will need to be taken into account?**

# 5 Network Codes

## *5.1 Current Arrangements*

The network codes play a crucial role as the set of rules by which suppliers and operators interact and operators move gas around the network on a daily basis. The code requirements for CAG will be dependent on the market structure that is put in place and on the system operator decision. Of major significance will be the decision regarding the role of the TSO(s) in moving gas through the Transmission system only (as in NI) or all the way to the end user (as in ROI).

This section looks at the basic options with regard to the applicable code for CAG and how these might be implemented. Three high level options are presented here – multiple codes aligned, Dual Codes, or a Single Code of Operations. We begin by outlining the situation in each jurisdiction.

### 5.1.1 Northern Ireland

Each licence holder in NI currently has its own separate Network Code (with the exception of Firmus which has no need for a code currently). However, the codes are not independent as modifications have been made to the transmission codes to streamline the contents and harmonise network practices across the Northern Ireland system. These include harmonising the nomination and allocation processes, developing a single balancing point and applying the same technical requirements for parties using the network.

As well as acceding to the Phoenix Distribution Network Code suppliers wishing to offtake gas into the Phoenix Distribution Network to Greater Belfast, are

required to accede to both the Premier Transmission Limited Network Code, and the Phoenix Transmission Network Code.

### 5.1.2 Ireland

The Irish transmission and distribution systems are currently governed by a single, unified code providing for the transportation of gas from entry point to customers' supply point. Bord Gáis Networks is responsible for the development of the Code of Operations, which outlines the rights and obligations of network users and governs the manner in which gas is transported and distributed through and around the Irish network. The code largely addresses the same operational aspects as the codes in Northern Ireland, such as nominating, allocating, balancing, credit requirements, planning and emergencies, however, the detail of these aspects differ in each jurisdiction.

## *5.2 CAG Network Code Options*

This section considers how common arrangements could be facilitated with either multiple or dual codes or a single code.

### 5.2.1 Multiple Network Codes

This option would see all the current codes remaining in place resulting in three transmission codes, one distribution code and a combined transmission and distribution code. This would facilitate a piece-meal approach to establishing common arrangements. It would be possible for each code to contain common arrangements on some issues but leave other matters, where the benefits of integration may be less, to each relevant operator code (e.g., dispute resolution).

*Implementation*

- The codes would have to be aligned so that they operate together in a seamless fashion as they currently do in Northern Ireland. A significant issue will be how entry and exit points are dealt with in both codes. Seamlessness will require arrangements between the codes whereby a supplier only has to make one set of nominations at the entry and exit points on the island, i.e. the supplier will not have to nominate at each entry and exit point of each code.
- There would also be a significant amount of work in designing the procedures to give a single service to suppliers and suppliers would still be required to sign up to all the codes.
- There would be a risk that the codes could grow apart over time. Therefore arrangements will need to be in place to ensure that they are streamlined. Even if there is a joint regulatory approach experience from regulating multiple codes in NI suggests that it is very difficult to ensure consistency without the involvement of the regulator.

**Q17. How can we ensure that codes do not diverge over time?**

**Q18. Are there any other implementation issues to consider?**

### 5.2.2 Dual Network Codes

This option would involve two network codes – one in the north and one in the south.

*Implementation*

- It is possible that this option could avoid the issue of jurisdiction
- The current code structure in Northern Ireland would need to be streamlined into one code
- Need to ensure that the codes work together and can be properly regulated.

**Q19. Are there any clear advantages of this option over multiple codes?**

**Q20. Are there any other implementation issues to consider?**

### 5.2.3 Single Network Code (SNC)

A single all-island code would be developed to govern the movement of gas on the system on a daily basis. This code would replace the existing codes north and south.

*Implementation*

- The final SNC would have to be agreed with all parties and this will require adoption of each section of the code. This of course depends on the scope of the SNC – whether it is transmission code only or encompasses the whole network down to customer level and includes the alignment of retail customer procedures.
- A decision on the scope of the SNC would be required; the issues related to this are outlined in section 6 below.
- A single code could be achieved by all TSOs having a short form code (only one page) linked to a unified code – as in Great Britain (GB).
- A unified code would require a set of governance arrangements to co-ordinate decisions between the two regulators. The SEM Committee provides a model for this.

## *5.3 Other implementation issues*

*Can we have a single code?*

This would raise the question of what jurisdiction should apply in terms of governing law and dispute resolution. However we understand that the SEM Trading and Settlement Code is a single document referred to in licences in each jurisdiction and that it is subject to the law of one of the jurisdictions (i.e. Northern Ireland). Therefore these issues should be capable of resolution.

The alternative would be to have two codes – north and south – which are 99% identical except for jurisdictional necessity. This approach would require suppliers to sign up to two codes and regulators would have to agree a mechanism for joint approval of code modifications to ensure separate modifications don't result in the codes growing apart over time.

*What governance arrangements will a single code require?*

This will depend on the role of the TSOs. If there is a single TSO then this party could own the code and run the code process as the licensees currently do. We would be grateful for the views of the asset owners on what relationship if any they would like to have to the code. If the code is a shared document – as the GB Unified Network Code (UNC) is – then a new governance arrangements will be required. This could be modelled on the GB Joint Office of Gas Transporters. If a single code is agreed modifications will probably have to be approved jointly by the regulators – possibly requiring governance arrangements similar to the SEM committee.

*Can we have a single code with multiple TSO/TOs?*

With multiple TSO/TOs it would be complex to design a single code although not impossible. The obligations and contractual liabilities for each TSO would have to be set out in the single code and there may need to be contractual agreements between the TSOs governing their relationship and how they would work under one Code. It would still have the benefit of customers only having one code to sign and work with.

**Q21. Who should own the code?**

**Q22. Is a single code feasible with multiple TSO/TOs?**

**Q23. Are there any other implementation issues to consider?**

## *5.4 Assessment of code options*

Significant amendments to the existing codes conditions are likely to be needed to achieve the common arrangements, irrespective as to whether there are multiples codes or a single code approach.

### 5.4.1 Multiple codes

This option could be designed to meet the goals but is less streamlined without realising the full potential of a single code. Having multiple network codes would facilitate a piece-meal approach to establishing common arrangements. It would be possible for each code to contain common arrangements on some issues but leave other matters, where the benefits of integration may be less or more difficult to implement, to each operator's code.

### 5.4.2 Dual

It could be considered if it would provide a useful stepping stone to a Single Network Code (SNC) but it is difficult to imagine why one would spend the effort in achieving this option rather than going straight for the total SNC.

### 5.4.3 Single code

If we were to design a set of gas arrangements on the island from scratch it is likely that this would include a single code of operations as this would provide the optimal solution in terms of customer friendliness. Suppliers would only have to sign up to work with and monitor one code, making it easier to ensure that suppliers would only have one set of nominations, allocations etc. and therefore to trade on an all-island basis. This would encourage new entrants to supply the market, benefiting consumers through increasing retail competition. Also, it would be a clear demonstration that gas arrangements on the island are truly common.

This option would only require one set of modifications and one modification panel which would be more cost effective. This would also provide benefits to regulators in overseeing the panel.

**Q24. What is your view of how each code option meets the goal?**

**Q25. Are there any other issues we should consider in assessing which option best meet the goal?**

# 6 Scope of all-island system operation and code(s)

The ambition of CAG extends to the retail level. The CAG work-programme contains a retail strand which is presently being progressed by the Gas Market Opening Group (GMOG) and Gas Market Arrangements Retail Group (GMARG). If we are to achieve common arrangements at the retail level by 2010 significant resources would be needed. Alternatively the harmonisation of retail arrangements could proceed to its own timetable and be completed after 2010.

## *6.1 System operation at the distribution/retail levels*

The options presented in this paper cover harmonisation of system operation at the transmission level only. Therefore at the outset we need to consider whether the TSO and DSO functions should be combined into a single SO operating down to the distribution level on an all-island basis. In ROI Gaslink is to be both TSO and DSO but in Northern Ireland a clear split between networks operation at the transmission and distribution levels has been the norm. Moving away from this would be time consuming and might delay the project. One solution may be to design a regime which allows any all-island TSO to perform the DSO functions in ROI along with the TSO functions but only TSO functions in Northern Ireland. A further consideration is what arrangements may be needed to handle supply point administration. In GB Exoserve runs the supply point administration and is an agency owned by the major gas distribution network companies in GB and National Grid's gas transmission business.

**Q26. Should the single TSO cover distribution?**

**Q27. Can a single TSO operate distribution in one half of the island and only transmission in the other?**

**Q28. Do we need an Exoserve function in CAG?**

## *6.2 Scope of Single Network Code*

As discussed in the current arrangements above NI has three transmission codes and one distribution code while RoI has a unified combined distribution and transmission code.

This leaves the following three options for a SNC:

- Unified Network Code
- Single Transmission Code and Single Distribution Code

- Unified Network Code with carve out for certain distribution networks

### 6.2.1 Unified Network Code

This would be a complete transmission and distribution code for the whole island. It would require the amalgamation of all five codes on the island and agreement on a section by section basis. This has the advantage of customer friendliness and a single island interface for suppliers. This would make the island much more attractive for new suppliers and also suppliers in the north and the south considering opportunities across the border.

A key question for this work stream is whether it will be feasible to achieve a UNC covering both transmission and distribution by 2010. This would be a time consuming and difficult process because it requires the CAG to address the most fundamental retail issues simultaneously. Decisions on supply point administration, common change of supplier rules and procedures and compatible IT systems would need to be made. More importantly system changes would need to be implemented contemporaneously with system changes required for operations. Clearly this would be undesirable as potential for failure would be exacerbated. On the other hand whether it is desirable / possible to defer the implementation of retail changes until the operational functions are completed needs to be explored.

### 6.2.2 Single Transmission Code and Single Distribution Code

This would avoid some of the complications of the Total UNC option and would be straight forward for NI. However it would require the separation of the transmission and distribution codes in RoI and then amalgamating the ROI distribution terms with the Phoenix distribution code. Again whilst this could be done it would greatly increase the complexity of arrangements in RoI when regulatory precedent indicates that combined distribution and transmission codes are a more effective way to operate the network. OFGEM put a total UNC in place because this was perceived to be more efficient. The CER also decided in 2003 to move to a Unified Network Code having been persuaded of the advantages.

Possible advantages of separate distribution and transmission codes are the clarification it would give to what are transmission issues e.g. balancing and to distribution issues e.g. supply point issues. However it would be appropriate to understand suppliers' views on this issue.

### 6.2.3 Unified Network Code with carve outs for certain distribution networks

This option would result in a UNC for the island but allow separate distribution codes from the UNC in Northern Ireland. This would facilitate the separation of

the Phoenix distribution code from the UNC and conversely the retention of the distribution element in ROI. This would avoid the complexity and time of finalising common distribution/retail arrangements on an all-island basis. The UNC would have to be designed to treat the opt out distribution systems as an exit point from the UNC (as Belfast currently is from the NI transmission codes) and this may require some detailed analysis. However given the NI precedent it should be possible to design such a system without worsening the service suppliers to such distribution zones currently receive.

This option would have the benefit of moving forward in stages which may be desirable or it could become a permanent arrangement. This will be dependent on the progress of the retail work stream. This work stream will scope the timing/obstacles of a Total UNC approach before deciding whether to take forward all-island distribution and retail arrangements within the CAG timetable. .

In summary, if we believe separate transmission and distribution codes are the long term goal we should work towards transmission and distribution UNCs. If we wish to move towards a total UNC but believe that this will take us beyond 2010 and delay the benefits of CAG then we should work on the interim arrangements. If we believe that the total UNC is achievable by 2010 or the project should be delayed to achieve this in stage one then we should begin work on combining distribution and transmission codes immediately.

**Q29. What should the long term goal of CAG be in terms of code development?**

**Q.30 Should the UNC incorporate the distribution functions?**

**Q31. If the goal should be a combined Transmission and Distribution UNC, can this be achieved by 2010?**

# 7 Summary of options

| | Multiple codes | Dual codes | Single code |
|---|---|---|---|
| **Coordination among multiple TSO/TOs** | Combination requires the fewest licence and code changes to implement but is the least customer friendly as it retains multiple codes and makes a single IT interface more difficult to establish | This option is more customer friendly than multiple codes but it may make more sense to create a single code or retain multiple codes | Significantly more customer friendly than multiple TSO/TOs combined with multiple codes |
| **Single Services Provider** | Requires fewer licence changes to implement and is more customer friendly than coordination among multiple TSO/TOs | Requires more code changes to implement compared to the SSP with multiple codes but is only slightly more customer friendly. Therefore it may make more sense to create a single code or retain multiple codes | Requires the most code changes to implement but is the most customer friendly of the SSP combinations |
| **Dual TSOs** | Requires a decision on who the NI TSO should be. It is difficult to see why we would create a single TSO in Northern Ireland without also harmonizing the existing codes | Is slightly more customer friendly than dual TSOs with multiple codes. But it may not make sense to go only half way. | Requires the most code changes to implement but is difficult to see why we would not go further and create a single TSO |
| **Single TSO** | Multiple codes should not be necessary with a single TSO. In any case multiple codes reduce the customer friendliness of this combination | Dual codes should not be necessary with a single TSO | Requires significant work to implement but is the most customer friendly of all the options |