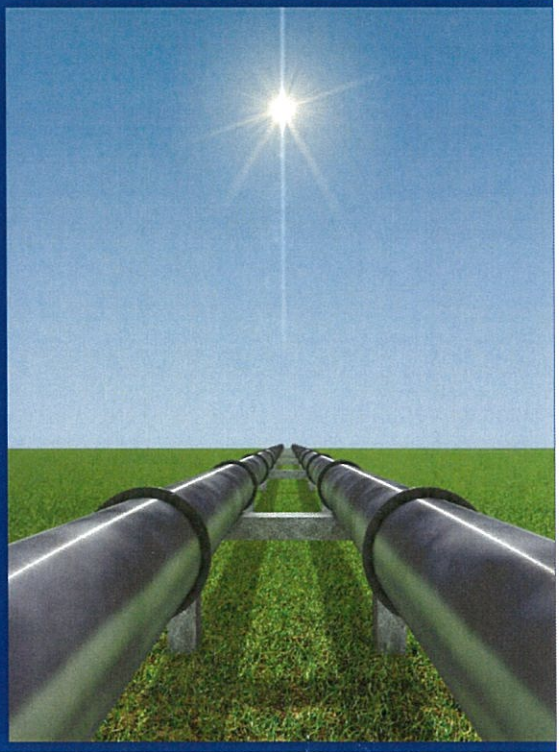
SPINDLETOP LAW SUBMISSION ON FIRST GAS' SINGLE CODE OPTIONS PAPER



Spindletop Law

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Contents

Background

Spindletop Law is a legal advisory network to the petroleum industry globally. It is owned and operated by the author of this submission, Sean Rush, and the thoughts, ideas and considerations are his. Spindletop Law has not been paid to develop this submission and is not advocating on behalf of any one client or group of clients.

Sean was a participant in the emerging gas 'spot' market in the United Kingdom from 1995, as legal adviser to Agip Gas Trading. Agip had a large upstream position in the gas rich Southern Gas Basin of the North Sea and was a part owner of several gas transmission systems, including the Hewett-Bacton pipeline and the Central Area Transmission service ("CATs"). Sean went on to specialise in upstream infrastructure access matters and worked with pipeline systems in North America. In 2010 he became a legal adviser to the British Secretary to State for Energy in regards to access to offshore infrastructure, advising on access arrangements into BP's 'Forties' pipeline system, and was nominated by the industry's trade association, Oil & Gas UK, to the "Infrastructure Access Group", a joint Government–industry steering committee. Upon returning to New Zealand Sean became Todd Energy's asset manager for the Maui pipeline and sat with representatives of Shell and OMV on its pipeline steering committee.

The success of the UK's spot market and positive effect it had on upstream and downstream investment cannot be understated. Whilst it is recognised that New Zealand's gas reserves are currently considerably less than that of the UK's in 1996, nevertheless, the competitive structures developed for gas trading and transmission are applicable generally and could provide real benefits to the New Zealand gas industry and consumers. This benefit brought about by more competitive markets is a central theme of this submission.

Introduction

This submission has been developed in response to First Gas' Gas Transmission Access: Single Code Options Paper ("SCOP2") issued in November 2016. Overall, SCOP2 is a reasonably high level proposal for capacity reservation and gas transmission services. We think there are important elements of economic regulation that perhaps might be of interest to First Gas and Gas Industries Company ("GIC") from experience gained in other jurisdictions and we welcome this opportunity to share some of that experience.

To provide some context, we introduce the subject with a summary of the regulatory background, a description of the two pipeline systems and key differences before reviewing a sample of available literature addressing gas transmission before applying that to SCOP2 and the New Zealand context.

The Gas Transmission System

Regulatory Context: The New Zealand Energy Strategy ('NZES') sets out the Government's vision of a sustainable, low emissions energy system. The gas sector is viewed as having a critical role to play in achieving the Government's objective of maintaining security of energy supply at competitive prices as the country makes the transition to a sustainable energy future.

The Government Policy Statement on Gas Governance (2008) sets out the objectives and outcomes the Government wants Gas Industry Co., as the approved industry body, to pursue. Of relevance to the central theme of this submission is the Government expectation that the Gas Industry Co. pursue the following outcomes:

- Efficient arrangements for the short-term trading of gas;
- Industry participants and new entrants are able to access transmission pipelines on reasonable terms and conditions.

These objectives are supported by other objectives set out in the Gas Act 1992 that include a requirement for barriers to competition in the gas industry to be minimised.

Transmission services are subject to 'revenue cap' regulation that is overseen by the Commerce Commission.

The two systems: New Zealand's key transmission systems (for ease of reference referred to herein as the VTC and Maui systems) were developed separately due to the time and the size of discoveries. The VTC system was developed on the back of the Kapuni gas field development in the 1960s. The Maui pipeline was developed to take gas to the Huntly power station and was originally designed to take gas to a new power station near Auckland that was never constructed. Instead gas was delivered to the Taranaki based petro-chemical industries developed under the Government's 'Think Big' policy.

The Maui system remains capacity unconstrained. It moves gas North using compressors at Mokau and is able to deliver gas into the VTC at three points:

(i) the Frankley Road welded point (in Taranaki) which is bi-directional;
(ii) its Northern extreme at Rotowaro; and
(iii) at Pokuru where it may enter into the VTC that services the Bay of Plenty.

Gas entering into the Maui system does so by daily nomination where the nominated input and output volumes are 'matched' with a nomination for offtake by the relevant shipper/gas buyer in a manner that is similar to the UK's entry – exit system. Long term capacity can be booked (the 'AQ') but this service has never been taken up due to the relatively unconstrained nature of the system.

The VTC is a smaller pipeline and essentially 'double loops' the lower pressured Maui pipeline from Frankly Road to Rotowaro. Gas typically flows North but is able to flow South where gas taken from the Maui pipeline at Rotowaro is injected into the VTC and delivered to southerly exit points on the VTC system.[1] Capacity is reserved using a 'point to point' system of capacity reservation. The VTC is the sole carrier of gas North of Rotowaro, South of Taranaki and East to Hawke's Bay. The map of available capacity provided in SCOP2 indicates the system is mostly unconstrained but suffers capacity constraints at its extremities North of Auckland and in parts of the system servicing Waikato, the Bay of Plenty, Wairarapa and Wellington. Because of the multiple points to which the VTC system delivers and the lack of available metering and other data collection points, our analysis proceeds on the assumption that a delivery off the VTC system will be to large users with a dedicated exit point or to 'exit zones' that aggregate multiple delivery points and gas is allocated to each using current methodology. Gas delivered off the Maui system, other than to the Frankley Road connection, is characterised as being to large industrial users where a dedicated 'exit point' incorporates robust metering.

Concept's *"Gas Supply Demand Report, 2016 Update"*[2] confirms that the demand composition on the Maui and VTC systems is very different and has resulted in different movements in demand over the period reviewed and will likely result in material differences in future demand growth for these different transmission regions. That said, now that the two systems are under common ownership, the opportunity to optimise the relative strengths of the two systems arises so that First Gas, the Transmission System Operator ("TSO"), may shift gas from one system to the other to most efficiently satisfy demand and address constraints. This 'whole of system' approach to delivering gas that allows and incentivises the TSO to use all available tools to provide transmission capacity is another central theme of this submission.

Gas Industry Co.'s *"The Gas Story"* notes that periods of capacity scarcity on the Transmission North Pipeline in 2009 raised market competition concerns. Demand has now eased due to the closure of two gas-fired power stations but issues were identified by NERA[3] such as the lack of a price signal for capacity, little clarity around the effectiveness of a capacity secondary market, and the effect of the DPP/CPP regulations on pipeline investment. *The Gas Story* notes that concerns were raised around the VTC systems' 'point to point' capacity definition as being complex and inefficient. A review of the special adviser's comments confirms that his recommendation was

[1] Comment from a senior industry participant.
[2] Paragraph 6.2.2. Available on the Gas Industries Co. website.
[3] NERA Consulting: Efficiency of Existing Vector gas pipeline governance arrangements; Problem definition, March 2012.

to reject 'point to point' as appropriate for New Zealand's system.[4]

Capacity – a Definition

SCOP 2 proposes three models for capacity reservation. It rightly seeks input on whether the VTC's 'point to point' model should apply or others such as an 'entry-exit' model or the 'postal' model. It is important from the outset to understand that if capacity is unconstrained then it does not practically matter what model is used because in an unconstrained system capacity can be readily sourced on short notice. In this way, the 'firmness' of the capacity right is identical whether secured in advance or on the day, from 'point to point' or at the 'entry-exit.' For this reason, there needs to be a recognition that most of the system operates in an unconstrained manner. Producers can freely inject gas, the TSO can move it around and it can be offtaken in most places without constraint. Accordingly, creating a whole of system solution to address a few constrained areas is somewhat a case of the 'tail wagging the dog.' Rather, simplicity should be maintained across the pipeline but with added focus on those areas of constraint.

To ensure clarity on exactly what is meant by each definition of 'capacity', we reproduce an illustration and paraphrase a summary provided by The Brattle Group[5] in their report to the EU entitled *"Convergence of Non-Discriminatory Tariff and Congestion Management Systems in the European Gas Sector (2002)* . Figure 1 shows a hypothetical pipeline system with two entry points (A and B) and two exit points (C and D).

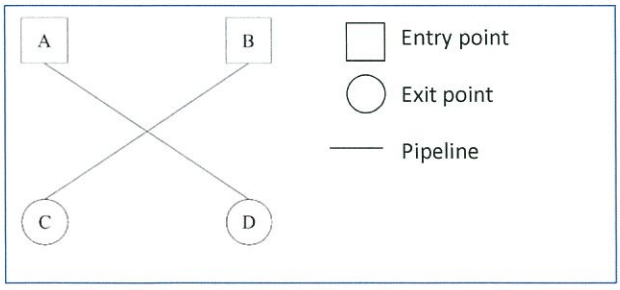

Figure 1: Hypothetical Network

1. Postal – A postal transportation contract gives shippers the right to enter gas at any entry point (A or B), and take it off at any exit point (C or D). Under this system, shippers can change entry or exit points without the need to sign new transportation contracts.

2. Entry-exit – An entry capacity contract ties shippers to specific entry points, but gives them access to customers who have booked exit capacity at any exit point. In the example, a shipper might be bound by contract to enter gas at point A, but once its gas enters the system it can be delivered to anyone who has signed a separate exit contract at either points C or D. The shipper would not have the right to enter gas at point B unless it signed a new contract. Similarly, the shipper would only have rights in relation to the exit point in which it or its offtaker has capacity.

3. Point-to-Point – A point-to-point transportation contract gives shippers the right to enter gas at a particular entry point and to take it off at a particular exit point. If a shipper held a contract for transportation from A to C, it would not be able to switch either entry or exit points unless it obtained a new transportation contract, sacrificing all the revenues initially paid for the path A to C. The shipper's transportation contract therefore ties it to the route A-C, without any ability to switch to other routes such as A-D, B-C or B-D.

It is important to recognise that the effect of 'point to point' capacity can be readily re-created or preserved under the 'entry-exit' model by shippers simply booking an identical quantity of capacity at the same entry and exit points for which a shipper currently has point to point capacity rights. In addition, the way tariff is applied is independent of the way capacity is reserved so that charges levied by distance between 'point to point' can be replicated between entry and exit points.

Analysis of Capacity Definitions

In Brattle's report, they introduce the discussion on capacity and capacity booking by making some very salient points:

- The choice between alternative definitions of capacity ("capacity types") is independent of choice of tariff type (e.g., a TSO could combine distance tariffs with an entry-exit/postal capacity definition).

[4] Larry E. Ruff, Special Advisor, Market Reform: *Comments on PEA advice to Gas Industry Co on Transmission Access and Capacity Pricing in New Zealand.*

[5] See paragraph 5.1 of Brattle's *"Convergence of Non-Discriminatory Tariff and Congestion Management Systems in the European Gas Sector (2002)* referred to herein as their 'Convergence report'.

- More flexible systems such as entry-exit foster efficient trade, market liquidity and gas-to-gas competition, as well as secondary trading of capacity.
- Flexibility is important for lowering entry barriers and fostering the development of competition. It is therefore of particularly high value in liberalising markets.
- Maximising the amount of firm capacity that can be made available is of particular importance when capacity is relatively scarce.

Brattle also note that the appropriate mechanism for allocating capacity depends on the extent of congestion. When there is no physical or contractual congestion then the mechanism adopted is unimportant and a 'first-come first-served' approach may be adopted for simplicity.

They note that 'point to point' capacity provides the least flexibility to shippers. It is *"always unnecessarily restrictive, because of the availability of alternate approaches that preserve all the advantages imputed to point to point while allowing greater flexibility to shippers."*

Point to point v. Entry-exit

This submission is in favour of moving away from the 'point to point' approach and favours an 'entry-exit' approach. Before addressing the two approaches in detail a word should be said about a 'postal approach.' A 'postal' approach is not without merit – an upstream producer may deliver to any inlet providing an opportunity to exercise portfolio flexibility. However, given the relatively unconstrained nature of most of the pipeline (and particularly the receipt points) there is little benefit to be gained and gas sale contracts can already provide supply from a 'portfolio' so the same outcome can be achieved using entry-exit because capacity can be sourced at most points relatively easily. A postal system may, however, eliminate the opportunity to receive pricing signals from areas of congestion in the targeted way that entry-exit facilitates and for these reasons we do not consider it merits further attention at this time.

'Point to point' developed in the United States, on and for, pipelines that did very little more than move gas from point A to point B. It made sense for the TSO's there to determine capacity rights and maximum throughput volumes by reference to the physical limitations of the pipeline. However, as systems became more complex with more points from which gas is injected and many more delivery points, slicing and dicing the capacity rights to meet the physical realities of where gas was entering and exiting, became more complicated and fell to what Larry Ruff (Special Advisor to the PEA) describes as an "extensive and costly trading infrastructure"[6] to define and trade multiple capacity and gas products.

The PEA's draft report noted that the previous GIC work identified the main concerns with the VTC's access arrangements as:

- inefficient pricing of capacity: capacity pricing does not reflect its scarcity value;
- inefficient availability and pricing of interruptible capacity;
- inefficient allocation of capacity (closely related to pricing):
- grandfathering of capacity, where shippers are entitled to reserve the same capacity as the previous year;
- the lack of secondary trading between users; and
- lack of transparency on how Vector determines the level of the pipeline's commercial capacity.

However, Ruff considers the real problem is the 'point to point' approach. He summarises his position as follows:

"We think the PEA misses the big, fundamental problem that is at the root of essentially all the items on its problem definition list and others: the use of point-to-point commercial capacity rights on a small, potentially congested pipeline serving variable loads at many different locations – what we call a 'Vector-like' system. We also think the strategy of retaining point-to-point commercial capacity and implementing – or waiting and hoping for – the various changes that constitute the straw man would accomplish little."

Ruff provides an illustration of what he calls the "configuration issue". Point-to-point capacity can be conceptualised as *"filling a pipeline with soda straws, each going from some point X to some other point Y with a defined capacity MDQXY. Once the TSO puts these straws in place the (commercial) capacity of each can be sold to shippers and freely*

[6] Larry E. Ruff, Special Advisor, Market Reform: *Comments on PEA advice to Gas Industry Co on Transmission Access and Capacity Pricing in New Zealand* paragraph 2.1.1.

traded in markets independent of the TSO so that the total capacity of each straw is efficiently allocated among shippers. But then the maximum daily amount of gas that can be injected or withdrawn at any point is fixed at the total capacity of all the straws that begin or end at that point. If gas market conditions change so that different maximum injections/withdrawals at some or all points would be more valuable, trading of MDQXY among shippers cannot reconfigure the straws; only the TSO can replumb the system to respond to changes in optimal total injections/withdrawal. A market that did not put fixed straws in place but instead used the entire capacity of the pipeline optimally every day would not have this problem."[7]

Ruff's advice was given to the PEA in relation to the congestion problem on the VTC referred to in *The Gas Story* and caused by the 'configuration issue' although it is doubtful his advice would be different in regards to 'point to point' if he was considering the adoption of that model across both systems. He also felt that entry-exit *"can work 'well enough'"* if the TSO actively manages capacity auctions.[8] Ruff went on to recommend a 'pooling' type system that is utilised in electricity markets and for gas in Victoria, Australia. It is clear from other articles published by Larry Ruff that this is his system of choice (in fact one stakeholder suggested that Ruff designed the Victorian system). In his system gas nominations on a day are pooled and shipper bids for that gas are collated and matched by the TSO. Constraints are managed by gas being dispatched to the highest bid.

Ruff is clearly a specialist in this area and it seems an oversight that this structure has not been considered in SCOP2. Our view on his recommendation is that:

- It is worth exploring further, but
- It is quite a dramatic shift from the current method and interposes the TSO into gas sale contracts in a manner not anticipated by the sellers and buyers;
- The mechanisms involved are outside the scope of a code change request and will likely need regulatory support;
- The implementation of such a scheme might have merit but should be pursued independently of SCOP2.

The PEA's final report considered the entry-exit- and 'postal' models but, given circumstances prevailing at the time (including we assume that the two systems were owned by different owners) was *"not convinced that a postal or entry-exit approach would be superior to the existing point-to-point approach on the Vector network."*[9] It is submitted that the new ownership structure provides far more compelling reasons to consider entry-exit and 'postal' as superior system wide models to facilitate a 'whole of system' approach to transmission.

Brattle's report also dismisses 'point to point' as a sensible option. Prior to Brattle's advice many EU countries (including major Member States such as Germany and Spain) worked with 'point to point' but they all voted to unanimously move to entry-exit in the light of the UK's very good experience. The point has been made that the European system is quite different and that is right to a point. In researching the EU's transmission network development it is clear that, it is a collection of smaller systems, some with legacy issues relating to ownership and size of supply and demand that are not dissimilar to New Zealand - a lot can be learned from studying any literature on EU gas transmission as they generally identify particular systems within Member States. We would focus on the UK's system prior to 2001 as a template because:

- It has been widely studied, reported on and is viewed as overwhelmingly successful.
- It operates under a similar type of price regulation.
- It operates under the same legal constructs embedded from English common law and similar statutory framework (e.g. similar Sale of Goods Act and Carriage of Goods Act). Consequently, the code could be readily adapted for use in New Zealand.
- Prior to 2001, like New Zealand
    - the market was isolated, gas was landed in one geographic area, injected into the transmission system for distribution to local distribution zones across most of England and Wales.

[7] Above n.5, footnote 2.

[8] *Comments on PEA advice to Gas Industry Co on Transmission Access and Capacity* page 13. Ruff suggested that it 'probably' isn't right for New Zealand although doesn't say why.

[9] Page 35, *Review of Transmission Access and Capacity Pricing: Advice from the Panel of Expert Advisers,* July 2012.

- A significant proportion of gas was subject to legacy bi-lateral gas sale contracts.
- The system was sufficiently adaptable to accept change – new gas sources and exports.
- The UK's gas spot market emerged as the delivery point of choice for most participants and was described by Kema as *"the most liquid in Europe"*[10] – something that would be beneficial here in New Zealand.
- That emergence was resisted by incumbents for a period but was subsequently embraced.
- Brattle report that UK's system is *"the most transparent tariff system that we know"*[11] – transparency being one of SCOP2's key objectives.
- It is expected that the UK system is underpinned by an IT package that could be readily adapted for use in New Zealand which is important for an expedited roll out of the new Code.

Leaving aside comparator markets, the fundamental economic imperatives that drive market outcomes and remove barriers to entry largely apply irrespective of system size or configuration.

Brattle go on to note:

Beyond some point it becomes inefficient to increase the certainty of delivery. As an extreme example, the probability of interruption in any pipeline system can be decreased by building a duplicate back-up network. However, the incremental cost would in general clearly outweigh the incremental benefit.

It is therefore a false dichotomy to distinguish "pure firm" from other types of service. Rather, there is spectrum of firmness. The TSO's firm service offering must by definition be close to the high end of this spectrum, but it cannot be appropriate to expend limitless resources attempting to approximate 100% certainty. Rather, the issue is to determine the appropriate level of physical certainty that should be associated with a TSO's firm service offering, based on a balancing of the associated costs and benefits. It should moreover be borne in mind that for many consumers financial guarantees of delivery may be an appropriate complement to physical firmness. For such customers, the concept of "financially firm service" may enable the TSO to provide firm transportation more efficiently.

The distinction between firm financial transmission rights and firm physical transmission rights is common in electricity. Firm financial rights guarantee that the TSO will provide the shipper with the financial benefits of physical transmission. For example, where a consumer elects to use gas instead of a substitute, such as coal, then the financial benefit of transmission is equal to the difference in the price of gas and the cost of the substitute. [12]

'Point to point' may provide a high degree of certainty of delivery by specifically reserving the capacity between the points of transmission, reducing (but not eliminating) the prospect of a constraint developing. It may, however, be an inappropriate definition of 'firmness'. For many system users it may provide high reliability but at excessive cost because of the requirement to pay for a whole of route firm capacity right when the 'firmness' only has value at specific points where other tools, such as fuel switching, might present a lower cost solution. Specifically, Brattle note:

- Other tools available to the TSO may permit comparable firmness at lower cost. Efficient network operation generally entails a whole portfolio of tools available to the TSO.
- The "one size fits all" approach is also unlikely to reflect the variety of customer needs.
- It ignores the potential role for financial mechanisms to help meet customer needs at lower cost.
- It presents a potential barrier to competition, risks discrimination against smaller shippers, especially in immature markets.[13]

Recalling the objectives set out in the Gas Act 1992 in regards to facilitating markets and removing barriers to market entry, it would appear that 'point to point' (in particular with legacy grandfathering rights) is inconsistent with these objectives, at least based on Brattle's analysis. On the other hand the flexibility offered by 'entry-exit' would provide the right environment to allow the short-term trading market to develop and go some way towards meeting the objective of developing efficient

[10] Kema Report *"Study on Entry-Exit Regimes in Gas, Part A: Implementation of Entry-Exit Systems,* (2013) page 11.

[11] Brattle's 'Convergence' report, paragraph 4.5.

[12] Paragraph 3.1 of their 'Convergence' report.

[13] Paragraph 3.2 of their 'Convergence' report.

arrangements for the short-term trading of gas. SCOP2 acknowledges that the "current code arrangements are not ideally suited to short term trading"[14] so it seems difficult to understand how maintaining the status quo (and imposing it system wide) could be consistent with the objectives set out in the Gas Act 1992.

Brattle make the following comments in regards to 'entry-exit' and the short-term spot market:

The use of entry-exit to define capacity rights provides significant benefits for efficient trade, market liquidity and gas-to-gas competition. These benefits are well-known, and can be illustrated by the success of Transco's entry-exit system in fostering trade at the NBP. By separating out entry and exit capacity, the system automatically creates a single homogeneous commodity that can be traded on equal terms by all system users, in the form of "gas at the NBP" or "entry-paid gas". By "making all gas equal", the system maximises the number of parties able to trade with each other, giving increased market depth. Because any two parties can trade irrespective of location, entry-exit capacity fosters anonymity.

Entry-exit fosters capacity trading on the secondary market, by creating a small number of homogenous commodities (one for each entry or exit point), rather than the hundreds or thousands that exist under point-to-point (one for each combination of entry and exit points).[15]

Kema observe that: "*Gas transports based on point to point legacy contracts would have no access to the virtual trading point, thus isolating gas flows from price signals at spot markets, similar to the use of capacity products with restrictions on free access to the virtual point.*"[16]

Further support for the entry-exit model as a facilitator of the short-term market is provided by Paul Hunt (Oxford Institute of Energy Studies) who observes:

"A capacity allocation mechanism based upon an Entry–Exit system where capacity at entry and exit points may be booked separately is considered to have a considerable advantage in the promotion of trade, liquidity and gas to gas competition, by limiting the disadvantage small shippers would have in a distance based tariff system. Entry–Exit regimes create the most flexibility for shippers, fostering efficient trade, market liquidity and secondary trading of capacity, …"[17]

It is submitted that the removal of gas from participation in the short-term trading market due to legacy structures will ultimately frustrate the full development of the short-term trading market in direct contrast to the objectives under the Gas Act 1992.

Below is an example to illustrate how the 'point to point' model is a fictional method of allocating capacity and how the short-term market might benefit from entry-exit.

EXAMPLE

Suppose a shipper injects Kupe gas to serve a customer located in Auckland. The contract involves a long distance for transportation, since the Kupe welded point and the customer are on opposite ends of the VTC. However, given the volumes of gas that flow into the VTC from the Maui pipeline and on into/through to Auckland, the physical flow will be very different—geographically it is likely that the gas injected from Kupe may be consumed in Hawkes Bay or Wellington. It is unlikely that all of it would be delivered to anywhere near Auckland. In effect, the gas injected at Kupe will be "automatically" swapped for gas injected into the VTC from a more proximate receipt point, such as Frankley Road. Physically speaking, gas off the Maui pipeline is as likely to go to the consumer in Auckland (and on occasions has been known to flow South from Rotowaro to Frankley Road), while the Kupe gas will end up going to a consumer elsewhere via an "automatic swap". This swap is automatic in the sense that it is accomplished simply by letting gas flow through the system in the natural/most efficient way, without any contracting (or any conscious attempt to effect the swap). This physical reality when reflected in the capacity reservation structure facilitates short term trades at notional balancing points because gas does not flow on any defined route and capacity need not be secured as if it did. Gas need only flow into and out of the system. Conversely, gas that must

[14] Paragraph 4.9 SCOP2.

[15] Paragraph 5.2 of their 'Convergence report.'

[16] Kema Report page 35.

[17] Paul Hunt, Oxford Institute of Energy Studies *"Entry-Exit Transmission Pricing with Notional Hubs – can it deliver a pan European Wholesale Market in Gas?"* February 2008.

travel along a notional path, as it must in the VTC, cannot deviate from its final destination to take advantage of short term market variations that present higher value opportunities.

As is clear from the example, the TSO does not flow gas from 'point to point' so shippers are paying for firm capacity rights that are not relied upon by the TSO to provide the firm service i.e. the costs are not reflective of the service. In fact under sole ownership the Maui system is effectively double looped by the VTC section. As such, the TSO is finally in a position to utilise both systems so that gas is moved in and around the North Island in the most operationally efficient manner possible – shippers shouldn't pay for a 'point to point' route North in the VTC system when it is cheaper to move the gas North on the Maui system (or vice versa). In fact, as SCOP2 hints at, the TSO may even store gas rather than move it and discharge its firm delivery obligations by alternative means. The revenue cap regulation model incentivises cost-effective operations so there is a case to simply let the TSO determine the most efficient way to operate the system and meet customer delivery requirements using all the tools it has available including pipeline capacity, compression, financial products, interruptible contracts and linepack.

Consequently, since 'point to point' is no longer needed to provide shippers with the firm capacity they seek, then it should be abandoned in favour of another system. An 'entry-exit' model can provide all the 'firmness' that 'point to point' provides but also allows the TSO or third parties to develop specific tools to solve congestion at the very few points on the system where congestion arises and let the rest of the system function without intervention – avoiding the 'tail wagging dog' scenario noted earlier.

Accordingly, this submission agrees with the international experts - Brattle, Hunt, Kema and Ruff and suggests a reconsideration of the ongoing use of 'point to point' and proposal to apply it system-wide because of the varied reasons they outline including:

- that inherent in its methodology is the creation of barriers for new entrants by restricting their ability to source gas from anywhere other than from shippers with a contractual path all the way from inlet to exit;
- it embeds a risk of discrimination between small and large players, at least until liquid trading hubs develop, in that a shipper with a large portfolio can perform internal swaps within the portfolio to approximate a more efficient transportation service.
- it unnecessarily constrains the short-term market development; and
- it provides the TSO with a rather blunt tool to manage congestion at the expense of more targeted responses.

With less flexibility that is inherent in 'point to point' there are less opportunities for new entrants to secure a foothold in the gas wholesale market or develop market or financial solutions to congestion. Not only does a new entrant need capacity (which might be scarce) to exit gas into a distribution zone to its customers but it also needs capacity along the hypothetical route that the gas travels as well as entry capacity from an entry point in Taranaki and a contract with a gas producer. At least with 'entry-exit' the new participant has the flexibility to buy from the spot market obviating the need for an upstream supply contract, or entry capacity or capacity along a hypothetical flow path. Similarly, producers might sell balancing or associated gas on the spot market without the need to acquire capacity along a flow path from its field to the spot market (currently located in the Maui system) or to an exit point. 'Ensure flexibility' is one of the objectives set out in SCOP2 but if a 'point to point' methodology of capacity reservation is applied system wide then less flexibility will be the result and , given the overwhelming advice from the international expert literature, it will be questionable whether such a structure will be consistent with the objectives set out in the Gas Act 1992.

Options for capacity reservation

SCOP2 seeks feedback on the preferred method of allocation 'capacity'. Leaving aside which definition should be used for now it is worthwhile considering each option in turn.

Option 1: 'Menu of capacity products' – this option provides a shipper with a 'contractual hierarchy to allocate capacity when it is scarce.'[18] If the intention is that this option only applies to congested parts of the pipeline then it makes economic sense. In an unconstrained pipeline (or

[18] Paragraph 4.12 SCOP2.

part of the pipeline), capacity does not get 'firmer' because the right to it has been secured in advance and, as such, it would be inefficient to hold an auction for unconstrained pipeline capacity. Auctions of priority capacity periodically and on the day by way of online capacity trading could deliver firm capacity in congested sections for those prepared to pay for it which in turn will send appropriate price signals.

That said, the capacity is described as 'receipt-delivery point (or zone)' which envisages a 'point to point' regime even though the receipt points (i.e. inlet to the system) and most capacity through to the areas of congestion are normally free from congestion. This gives rise to some of the issues already noted inherent with 'point to point':

(i) inflexibility – if capacity must also be tied to the hypothetical flow path then it complicates the ability of a shipper switch to deliver gas somewhere else – and the question arises as to how the unused capacity is thereafter utilised; and

(ii) the pricing signal for the area of actual congestion may be distorted by circumstances applying to the shipper in areas of no congestion.

Option 2: 'Daily nominated capacity' - this option is the same as option 1 but without the priority right being secured in advance. There is some merit in approaching capacity reservation on a daily basis because congestion often arises due to 'on the day' weather or circumstances affecting demand. The other economic reason is that price is reflective of the market as it stands in real time rather than as it might have looked when the priority right was secured.

However, the sense of holding daily auctions for areas of non-congestion would need to be tested, including the issues identified above with a 'point to point' auction.

Option 3: 'Flow to demand service' – SCOP2 correctly notes that if contracting for capacity under options 1 or 2 is adding no value *'and therefore simply imposing cost'* then flow to demand should be explored. Following the philosophy described above (where only congested areas need 'firm' capacity rights allocated by capacity auctions) then the flow to demand option is the logical default for those areas without congestion.

The simplicity is attractive and the overall philosophy of 'using all available transmission service to all shippers' appears similar in principle to the 'Total Network Service' described by Brattle as optimal. They state:

Efficient network use should involve all the tools available to the TSO to provide firm service…i.e., the synergies between different flows, as well as the TSO's access to storage, linepack, interruptible transportation contracts, and operational balancing agreements and other forms of inter-TSO co-operation.

However, Brattle's enthusiasm for this concept is clearly heightened by the prospect of utilising either a 'postal' or 'entry-exit' capacity reservation structure to get the benefit of a whole of system approach.

Whilst SCOP2 correctly notes that 'operationally this option is similar to how the non-Maui system currently works' it is certainly not how it works commercially and the retention of 'point to point' will constrain the real value of 'flow to demand' to those areas with no physical constraint by complicating the system, potentially, with commercial constraints of the kind identified by the Special Advisor to the PEA and which should be avoided.

Conclusions on capacity

As stated this submission is in favour of moving away from the 'point to point' approach towards an 'entry-exit' approach.

Flow to demand' has some characteristics of an upstream production installation where flow rates are simply optimised for the benefit of the field owners and post day allocations are made between the relevant offtakers. That said, even upstream owners make a daily nomination of gas and it would inconsistent with good oilfield practice for gas to be delivered into the system without a transparent framework that robustly tracked title for delivery into and out of the system. Title tracking is possibly needed in order for the rights and obligations under the Contract of Carriage Act 1979 to be activated. As such, although capacity auctions for entry capacity are not necessary, there will need to be a process for the nomination of actual volumes for delivery and how title to gas in the system is addressed. For example, in the UK title to gas injected into the transmission system transfers to the TSO when it takes possession in exchange for a right for the shipper to withdraw a matching

quantity of gas from a nominated outlet. There is a need to:

- define the TSO's rights and obligations as a bailee of gas when possessory title is taken by the TSO upon receipt into the system;
- address the issue of shippers taking delivery of more than their entitlement which could otherwise result in a claim for conversion; and
- how title transfers to a new owner under gas sale contracts,

irrespective of which option for capacity reservation is selected.

That said, if the principle that capacity reservation is only economically rational where congestion is or may become an issue, then we submit that capacity be allocated on a first come first serve basis across unconstrained areas coupled with a daily capacity reservation process, including auctioning, for areas subject to constraint.

This would have to be coupled with the upstream nomination process noted above matched with 'flow to demand' as a downstream solution for uncongested areas coupled with an inventory management service provided by the TSO to track title for gas entering and leaving the system.

Capacity should, however, be defined as entry-exit to secure the full benefits of flow to demand. Retaining 'point to point' would overlay a complicated and artificial construct on to an otherwise largely unconstrained system. Entry or exit capacity could still be booked in advance but in areas without constraint it would be expected that the value that paying for firm capacity in an unconstrained point would not merit the cost of booking it in advance – much in the way that AQ under the MPOC has never been utilised. Clearly if interest in capacity at one point becomes competitive then an appropriate signal to the TSO will be sent that congestion may be developing. Hoarding of capacity is of course prohibited but unused capacity would be made available via a secondary market that could be managed by the TSO or a third-party participant.

Storage

SCOP2 hints at providing a park and store service which we assume means utilising and charging for use of system tolerance. This should be encouraged both as a revenue stream to reduce transmission charges and as a way in which the TSO can address congestion. For example, gas input to the system will trigger a tariff that is currently based on distance but could also be based on time in the system. If input onto the system at an off-peak period then the charge could be nominal or even negative. If gas is input into or is otherwise left in the system during peak flows a storage fee will be incurred reflecting the value of storage. The charge would have to integrate with the current market based balancing rules that appear to be working but whereas cash outs under MBB are the 'stick', storage could be the carrot, that incentivises shippers to inject and withdraw at times reflecting the scarcity of capacity within the pipeline as evidenced by linepack data. Use of this service might encourage the TSO to investigate the development of further storage tools and investments.

In this way, the TSO might be able to move gas to the expected areas of congestion in advance of peak flows.

Pricing

SCOP2 discloses very little in the way of pricing methodology and yet, price signals are the primary tool by which congestion may be managed. Even though we recommend abandoning 'point to point' to define capacity, tariff based on distance is still a valid and (as Brattle point out) simple way to charge for the use of the system (in the sense that the shipper uses the system to 'swap' its gas to its destination). However, as described above there is also an opportunity for the TSO to provide virtual storage services which could be charged at a rate to incentivise gas injections at off-peak and withdrawals at peak.

Brattle note: *In the absence of congestion … there are no efficiency implications to the choice among alternative pipeline routes. Tariffs should have a retrospective focus, allocating the costs of existing investments in ways that correspond to intuitive notions of fairness. Allocation methods should consider the extent and nature of system use by customers. For example, in a long uni-directional pipe of uniform size and without congestion, distance-based charges are intuitively fair.*

Appropriate tariffs will in theory have two components: a scarcity charge, and an additional charge to ensure full recovery of fixed costs. The scarcity charge can be set based on a market-clearing mechanism such as an auction, or on marginal cost calculations. If the scarcity charge

already recovers fixed costs precisely, then no additional charge is required for cost recovery.

Otherwise additional charges must be applied to recover the balance of fixed costs (i.e., that part of fixed costs not recovered from scarcity charges) and thus ensure overall revenue recovery (the "NPV test"). The aggregate tariff can therefore be conceived of as the sum of two components:

Tariff = "Scarcity charge" + "Charge to recover balance of fixed costs".[19]

Care will need to be taken to ensure that any new tariff methodology does not result in a material increase in cost for existing shippers. In principle shippers should either be neutral to the new methodology or better off. As such, there might need to be a recognition that large end users taking gas off the Maui system have no stake in funding capital recovery for the wider VTC system and so some form of weighted pricing reflecting the capital cost of each system may be worth exploring to ensure an equitable result.

For unconstrained entry and exit points/zones a nominal or zero capacity charge could be justified reflecting the lack of scarcity. To address cost reflectivity, it is submitted that a distance based charge will take account of system wide operating costs including compressor fuel and pipeline route maintenance. The scarcity charge can be collected from auction revenues for capacity in those parts of the pipeline that are subject to congestion. However, storage fees (including MBB cash out charges) and other charges (such as the peaking charges) collected should also make up part of the revenue stream. As such, the tariff can be structured so that fees collected from storage, auctions and other charges are then subtracted from the allowable revenue cap. The balance can then be recovered by a combination of distance based tolls charged per GJ per kilometre moved and a uniform flat charge per GJ rate on each GJ injected. This is how the MPOC 'Tariff 1 and Tariff 2' operates. However, because the whole system is in reality being used and is available to shippers to swap gas from place to place then it seems logical that the capital recovery component is levied irrespective of distance between entry and exit. Similarly, the system depends on moving gas from Taranaki to the outer extremes of the system and so it seems equally logical that the cost of that be born by reference to the distance that the TSO must shift gas to replace the 'swapped' gas. This combination aligns with the 'capacity and commodity charge' principles referenced in the "Kema Report".[20]

So our proposal is to deduct storage, auction and other receipts from the regulatory revenue cap. Then levy tariff in a manner that is similar to the MPOC but to reverse what Tariff 1 and 2 are intended to recover so that capital cost recovery is levied across all GJ's that flow into the system and that distance tariffs are levied to recover operating costs. Other combinations might be considered to provide a more equitable outcome and perhaps the weighted charge suggestion would have to be considered.

Developing a 'toolbox'

SCOP2 does not touch on other tools the TSO might develop in order to meet delivery obligations. A detailed analysis of these tools is outside the scope of this submission but can be summarised as follows:

- Multiple flows i.e. gas is delivered from elsewhere in the system;
- Storage (e.g. on some North American pipelines propane bullets are used to top up gas at pipeline extremities);
- Linepack tolerances;
- Interruptible contracts and operational balancing agreements;
- Financial guarantees where the TSO offers an equivalent 'firm' service by agreeing to pay the shippers costs in sourcing alternative fuel (e.g. the delta between gas price and coal price).

Shippers may also choose alternative methods to manage their 'firm' delivery service, for example by installing duel fuel capabilities, purchasing storage or buying gas from producers with 'swing'.

Conclusions

The move of the two pipeline systems into single ownership provides an opportunity to optimise the system without the constraints divided ownership previously brought.

However, it is quite clear from all the international literature, the GIC's own work in this area and the report of the PEA's own special advisor, that a 'point to point' capacity definition will work against delivering the objectives set out in the Gas Act 1992

[19] Paragraph 3.1 of their 'Convergence' report.

[20] Paragraph 4.2 of the Kema Report, referenced earlier.

and even many that the GIC and TSO have set for themselves in this exercise. The New Zealand taxpayer will be left with a world class owner/operator but an antiquated capacity booking system that excludes new entrants, hampers market development and has been so widely dismissed by the international literature and experience (other than for extremely long lines in a growth phase) that it simply must be discontinued.

Our proposal to adopt an entry-exit mechanism is based on sound economic principles and a track record of success in markets with similar sized systems, similar legacy issues and notwithstanding the natural concern of incumbent participants at the prospect of change.

To allay concern, those incumbents should take comfort that an entry-exit model can preserve their current model of operations but, for those who want it, provides much more flexibility to shippers which in turn produces opportunities for new entrants and greater competition. The TSO's objective is to enable the use of gas – getting more participants in the market will do that which will in turn trigger additional activity in the upstream as new customers come to recognise the benefits gas brings.

So the key elements of a new Code for New Zealand are:

- Adoption of 'entry-exit' capacity but in a nominal sense other than in areas of congestion.
- In areas of congestion, or the prospect of congestion. Seeking a priority right in advance is worth considering as a tool to signal the prospect of congestion.
- Unused booked capacity would be paid for anyway but made available to the market – if a shipper books it on the day then they are expected use it or lose it.
- Gas input into the system from upstream producers would be subject to a nomination and acceptance regime that would both match the entry and exit capacities and provide an inventory that would track title.
- Balancing would be undertaken using the carrot of nominal storage fees to optimise linepack and the stick of MBB daily cash outs.
- Tariff would be calculated based on a mix of capacity and use charge reduced to account for revenues received from other services.

Wider supporting measures

Whilst outside the scope if this submission there are wider regulatory measures that might be considered to assist in the development of a liquid gas market. These are set out below in no particular order but can be tracked back to the UK experience of these tools being implemented successfully:

- The presence of long term gas contracts distorts the market because (i) price and volumes are largely hidden and (ii) pricing is reflective of market conditions when the sale contracts were executed but not necessarily as time goes on. There is undoubtedly a need for long term contracts to underpin new investment but otherwise such contracts should be allowed to expire and for renewals to be restricted to no more than 12 months.
- It is unclear whether joint gas sales are still in force in New Zealand but to the extent they are then they should also be reconsidered. Sales by independent members of an upstream joint venture were long ago abandoned in the UK which facilitated the spot market's development there.
- Grandfathered rights to capacity – it is widely understood that legacy rights to capacity at particular points remain in place where the incumbent has rights to acquire the same capacity in the following period. These are clearly hamper new market entrants and the redesign of the Code might be an opportunity to reduce their impact.

TEMPLATE FOR SUBMISSIONS

Question	Response
Objectives for the Gas Transmission Access Code	
Q1: Do you agree with the objectives proposed in this paper? Are there any other objectives or outcomes that we should be aiming for that are missing?	The ultimate objective in this and any other exercise should be to improve market liquidity. A liquid market procedures the efficiencies sought, transparency and allocation of gas to those prepared to pay. This in turn benefits the upstream exploration effort by triggering investment signals. Moving away from structures that preserve the position of incumbents and raise barriers.
Q2: Which objectives do you see as most important?	Ultimately, for strictly legal reasons, the objectives set out in the Gas Act 1992 are the most important of the objectives which, in regards to the wholesale market (in which the transmission system operates) they are• • Efficient arrangements for the short-term trading of gas. • Accurate, efficient and timely arrangements for the allocation and reconciliation of upstream gas quantities.
Q3: Do you agree that the objectives proposed in this paper are compatible with the regulatory objective presented in SCOP1?	Not necessarily. SCOP2 is silent on the efficient arrangements for the short-term trading of gas (which is becoming more important as gas moves to cover the peaks). In the UK the Transmission System Operator ("TSO") was integrated with the spot market's development and was critical to that platform's ongoing success. It seems odd that FG do not see themselves as having such a role despite the benefits short term trading can bring to users and the taxpayer.
Scope of the Gas Transmission Access Code	

Question	Response
Q4: Do you agree that the five other legal or subsidiary instruments presented above are all relevant to establishing the boundaries of the new code? Are there any other legal or subsidiary instruments that are missing?	Other relevant law might include: 1. The Carriage of Goods Act 1979 which provides certain rights and obligations in regards to shippers and carriers. 2. The Sale of Goods Act 1908 is important as it can affect how title passes and the consequent need for inventory management. 3. Common law principles of bailment and conversion also apply to carrier relationships although can be modified by contract. 4. The Commerce Act 1986 applies constraints on the exercise of market power and prohibits anti-competitive conduct (note this Act is being updated to reflect latest international practice that could impact on gas industry practices). 5. The Crown Minerals Act 1991 requires all producers to act in accordance with 'good industry practice' which might require gas evacuation and delivery procedures to be robustly defined.
Q5: Do you agree with the way that we have described what should sit inside the code, and what should fall outside? Are these particular elements of the arrangements that we have described as sitting outside the code that you consider should be covered by the code (or vice versa)?	Broadly speaking SOPs should reflect operational best practice and therefore should not be a contentious document but one that simply records the steps the TSO will logically take if certain events arise, given best available information and technology. Dispute might be best managed by reference to independent expert.
Q6: Are there any other elements to the scope of the code that we should consider?	See primary submission.

Overview of options for the access regime

Question	Response
Q7: Are there other code options that you believe should be considered in the process of developing a new code in addition to those described above?	• The 'code' options are not really 'options' but merely ways of booking capacity. Before doing that the type of capacity needs to be defined (entry-exit, point to point, postal). The Victoria, Australia system was recommended by the Special Advisor to the PEA, Larry Ruff. • Other aspects of a 'code' include pricing methodology; future investment and return; financial instruments.
Q8: Are there particular lessons from international experience that you consider First Gas should seek to learn from when designing and implementing the new access code?	Throughout the course of preparing submissions the economic literature that gives real granularity on the EU system, its constituent Member States' responses to gas liberalisation and, of course, the UK's experience, has been particularly impressive and compelling. Despite calls that the 'EU system' is not an adequate template because its 'big' or 'integrated' the economic theory underpinning the success in that area are applicable generally and, in particular are worthwhile studying due to the same type of economic regulation applicable; in the UK's case, same legal system, same system of Government, broadly same legislative framework and even elements of their system pre-2001 are similar to NZ.
Q9: How much focus do you think should be placed on ensuring that transmission access arrangements facilitate further development of the wholesale gas market? Are there particular features of a new access code (in addition to short term availability of capacity) that are important?	This should be of the highest priority. Entry-exit is capacity model is critical to the fulsome and timely development of the short term wholesale gas market.

Option 1: Menu of capacity products

Question	Response
Q10: Do you have a view on whether the priority right product should be designed as an option (subject to nominations) or a fixed property right?	In general it is inefficient to pursue auctions in an unconstrained system or for parts of an unconstrained system. The experience of Maui AQ demonstrates that. That said, for those discrete parts of the system where congestion arises then auctions should be available. A priority right is considered sufficient to send the TSO a pricing signal but otherwise capacity should be finally secured on the day although, again, this should only be necessary on uncongested parts of the line which is facilitated by an 'entry-exit' regime (on a 'point to point' basis then whole notional flow path is constrained when only the 'bit at the end' actually is).
Q11: Do you consider that there would be sufficient interest in priority rights to justify the effort in administering this product?	Our suggestion is to test the market and thereafter focus only on those areas from which an appropriate response was received.
Q12: Do you have any views on the broad features of the priority right product, such as the length on the contract, the frequency of booking rounds, etc?	Time between pricing the priority right and exercising the right should be minimised so as to ensure the pricing and product remain the same relative value as at the time of contract.
Q13: Do you have any views on the frequency and timing of nomination cycles, and the role of nominations?	
Q14: Do you have any preferences on the allocation methodology at receipt points and delivery points (OBAs, rules based approaches, or a combination of different approaches)?	There needs to be a robust method that tracks title in to the system and out of it. This is needed for upstream contracts and probably for royalty purposes too. The UK system has the TSO taking title to all gas input in exchange for the shipper obtaining a matching right to offtake. These rights are somehow managed by way of electronic inventory but provides certainty in regards to liability with title following possession.

Question	Response
Q15: Are there any aspects of the menu of capacity products option that you see as particularly valuable, or particularly concerning?	There needs to be more understanding of other tools available to the TSO to deliver 'firm' rights (financial, linepack etc). The menu is fairly short and deals with one aspect of capacity with little on pricing.
Option 2: Daily nominated capacity	
Q16: Do you have any views on how scarcity should be signalled if a daily nominated capacity option was developed?	Auction.
Q17: Are there any elements of the daily nominated capacity option that you consider should differ from capacity nominated as part of a menu of capacity products (option 1), such as the frequency and timing of nomination cycles, and the role of nominations?	
Q18: Are there any aspects of the daily nominated capacity option that you see as particularly valuable, or particularly concerning?	The daily nomination process should result in any capacity not used in being made available on a secondary market. There is a concern that incumbents might acquire this capacity so as to prevent competitors taking market share.
Option 3: Flow to demand service	
Q19: What information do you think it would be realistic for shippers to provide as forecasts for managing the transmission system under a flow to demand service option?	All shippers will make nominations for actual volumes for delivery by producers to the relevant receipt point. This information can continue top form the basis of an inventory management system and allocation process.
Q20: What information would you require from First Gas to provide you with confidence in security of supply both in the short and long term under this approach?	The TSO, like any other common courier, should be required to take an inventory of goods received, allocate it to the relevant shipper and ensure it is subsequently delivered in a commingled stream to the relevant exit point.

Question	Response
Q21: How dynamic do you think pricing should be under a flow to demand service approach?	In unconstrained parts of the system pricing should reflect a uniform capital recovery charge reflecting that the capacity in the unconstrained part of the system has the same value which would be relatively nominal as opposed to scarce capacity for which auctions apply.
Q22: Are there any aspects of the flow to demand service option that you see as particularly valuable, or particularly concerning?	'Flow to demand' as the method of choice in unconstrained parts of the system follows the logic that auctions should only be held in areas of constraint. That said getting gas into the system needs to follow upstream practices set out in gas contract and probably align with good oilfield practice in terms of managing production and being able to track inventory. So a combination of an MPOC nomination process with the VTC 'flow to demand' process downstream might provide the flexibility the system can deliver but with the rigour necessary to give due deference to sale contracts and upstream processes.
Link between access options and system characteristics	
Q23: Do you believe that the new code access arrangements should reflect the physical constraints on the transmission system? If so, which option does this support in your view?	See primary submission.
Q24: Do you have any views on how capacity on the system should be defined and priced (i.e. between points or between zones or between points and zones), and why?	See primary submission.
Q25: Of the options described in this paper, which do you prefer and why?	Entry-exit. See primary submission.
Code governance	
Q26: Do you have any preference on the legal form for the new code, and who should be counterparties to the new code?	Consider UK experience.

Question	Response
Q27: Are there particular code change processes or features that you consider important or valuable for the new code?	Consider UK experience.
Balancing, linepack management and allocation	
Q28: Do you agree with the comments on balancing and linepack management above? If not, why not?	The 'reframing' away from the 'stick' to a 'carrot' aligns with the same point made in the primary submission. Gas 'storage' fees could be targeted to incentivises the removal of gas in 'storage' rather than face a cash out.
Q29: Are there any particular arrangements for balancing and linepack management that are not discussed in this paper that you consider critical to include in the new code?	The total system analysis set out in the primary submission is relevant here. How can those two pipelines sending gas north be optimised.
Non-standard Agreements	
Q30: Do you agree with the comments on non-standard agreements above? If not, why not?	'Non-standard agreements shoud be approved by the regulator as agent for the remaining shippers unless some form of reverse DPP/CPP arrangement can apply which allows certain non-standard agreements to be entered into without an extensive approval process.
Q31: Are there any particular arrangements for non-standard agreements that are not discussed in this paper that you consider critical to include in the new code?	
Gas quality	
Q32: Do you agree with the comments on gas quality above? If not, why not?	
Q33: Are there any particular arrangements for gas quality that are not discussed in this paper that you consider critical to include in the new code?	
Next steps	

Question	Response
Q34: Do you have any comments or concerns on the process for developing the detail of the new code throughout 2017?	We have numerous templates for gas transmission systems that could be considered but would expect that the UK's Transportation Agreement from ~2001 would be a suitable template to start with.
Q35: Are there particular issues or aspects of the new code that you would particularly like to be more closely involved in, including by participating in workstreams to prepare code exposure drafts and working papers?	Happy to participate in code drafting and fleshing out some of the ideas mentioned in the associated primary submission.