Pricing Discussion Paper PDDN01

Interruptible Charging Methodology Options for UNC Mod 0090

Issued on behalf of all Distribution Networks

1. BACKGROUND

In May 2006 Ofgem issued a consultation document "Initial thoughts on the reform of interruption arrangements on gas distribution networks". In that document Ofgem set out the following perceived weaknesses of the present interruption system.

- DNs lack control over the amount and location of interruption services
- DNs have more interruption than is required, increasing costs for firm customers
- System does not provide long-term investment signals for DNs preventing efficient trade-offs between investment and interruption
- Lack of flexibility in the interruption contracts available to shippers.

Ofgem also set out the principles for reform, suggesting the new arrangements should:

- Allow DNs to determine the amount and location of interruption services
- Provide efficient investment signals
- Reduce the scope for undue discrimination
- Promote competition in the provision of interruptible services.

Modification Proposal 0900 was raised on 5 July 2006 and set out changes to the Uniform Network Code to implement revised DN Interruption arrangements. The proposal is basically that all supply points will be firm from 1 October 2010 unless they have had an offer of interruption accepted by the DN. The DNs will publish their interruption requirements for supply year 2010/11 onwards on a zonal basis starting in June 2007. From that date shippers will be able to offer to the DNs a volume of interruptible capacity for a maximum number of days within each year, to take effect from October 2010.

A Development Work Group (DWG) has been set up to develop the details of the proposal with the aim of reporting to the Modification Panel on 19 October 2006. In its Terms of Reference the DWG recognised that the implementation of the new DN interruption arrangements would involve change in a number of areas other than the UNC, including the Transportation Charging Methodology.

At the DWG meeting on 14 September 2006, a presentation was made on behalf of all the DNs highlighting the charging issues arising from the proposal and presenting three high level options for the purchase of interruption rights. This paper is based upon the issues raised in the presentation.

The paper is being issued now with the aim of obtaining the views of a wide selection of shippers, consumers and other interested parties on the issues raised and particularly on the main options. These views will inform the more detailed proposals which will subsequently be developed.

2. OBJECTIVES OF DN INTERRUPTION REFORM PROPOSALS

At present interruptible transportation is available to shippers in respect of any consumer site with an annual consumption over 5861 MWh per annum irrespective of the level of benefit, if any, that it provides to the DN. A standard interruptible contract, allowing interruption for up to 45 days in a year, is available to most sites. The arrangements are therefore inflexible in respect of both shipper/consumer and DN requirements. In addition, since the DN has little choice over whether a site is interruptible or not the benefit obtained by the shipper, in the form of lower transportation charges, does not necessarily reflect the benefits that an individual site will provide to the DN by being interruptible. The DN is therefore unable to optimise its position regarding interruption and investment alternatives.

The objectives of the reform proposals are therefore:

- to give the DNs greater control over the number and volume of interruptible sites and enable them to make appropriate economic decisions between the purchase of interruption rights and investment in network capacity
- To provide shippers/consumers with greater choice in the interruptible contracts available to them
- To enable shippers to place a value on the interruption they provide
- to achieve a fairer distribution of the transportation charges by making operationally unnecessary interruptible sites firm

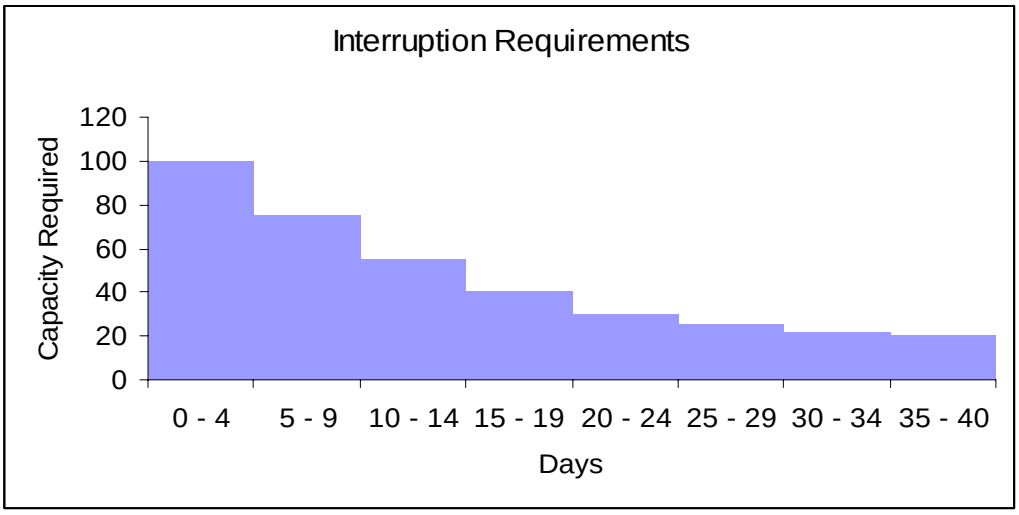
3. DETERMINATION OF DN INTERRUPTION REQUIREMENTS

The requirement for DN interruption will vary by location. It is expected therefore that rights will be purchased at a zonal level reflecting these varying requirements. Network analysis is being undertaken at present in the DNs to help inform the determination of the size and number of zones within each DN and the volume and duration of interruption required.

It is possible that there may also be more general DN interruption requirements within a DN or LDZ area, relating to high-level network constraints within the DN or LDZ. If this is the case, then these requirements will relate to a wider zone/LDZ/DN which would overlap the constraints at the narrower zones.

It is expected that the interruption requirements within a particular zone may be defined as shown in Figure 1 below, i.e. with the volume of interruption required varying with the maximum duration, in terms of days of interruption per year.

Figure 1: Possible definition of interruption requirements for a zone



At present virtually all interruption contracts are for a maximum duration of 45 days in a year. This potentially provides a poor match to the typical actual requirements. There is likely to be benefit therefore in DNs offering to purchase rights for volumes for a variety of different maximum durations to match better their requirements. This is likely to be beneficial for consumers as well in providing greater choice to them of their maximum duration of interruption. It may also increase the number of consumers who are willing to be interrupted, in that some consumers may be prepared to be interrupted for, say, 5 days maximum in a year but not for a greater number of days.

The range of durations for each zone which will be offered or accepted will be determined by operational requirements.

4. CRITERIA FOR CHOOSING BETWEEN METHODS OF PURCHASE

A set of criteria have been developed to help select between the possible methods of purchase:

- The key objective is that the new arrangements should enable DNs to determine an efficient level of interruptible contracts and enable the DNs to make an efficient trade-off between interruption and investment in the network;
- Ideally, the contractual and pricing arrangements should provide greater flexibility to shippers/end consumers in terms of the interruptible options offered by DNs;
- Given that there will be considerable differences between geographical areas in the number of consumers who may be willing and able to meet the DNs' interruption requirements, and hence in the level of competition for services, pricing arrangements may need to offer some protection from extreme outcomes in zones where there is limited competition.
- The method should ideally provide stable prices from one purchase of rights to the next;
- The cost and complexity of the purchase method should be proportionate to the benefits arising from the purchase of interruption rights

5. PRICING OPTIONS

Based on the operational requirements identified by network analysis each DN will publish its interruption requirements on a zonal basis and will ask shippers to tender to provide interruption services. There are three main options for the terms on which this tendering will be done. These are

- Administered Prices
- Open Tender
- Hybrid - Open Tender with upper limit or pre-set choices

These are dealt with in turn below.

A) Administered Prices:

The DN would determine a fixed unit price for interruption rights within each zone for each maximum number of days.

The unit price would potentially vary depending on the different maximum durations of interruption offered.

The DN would then invite the shippers to tender for the quantity of interruption that they would be prepared to offer within each zone and at each maximum duration.

Having received the tenders, the DNs would then select the sites to be interrupted. If there were not enough interruption being offered, the DN would need to invest in the network to be able to meet its 1 in 20 obligation.

If more volume of interruption was offered than was required then a selection of the volumes offered would be made based upon price and operational requirements.

Benefits of this approach include that it involves least uncertainty for shippers/consumers. The provision of administered prices could offer a high level of price stability from one sale to the next, although this would depend upon the methodology of determining the prices. Administered prices could avoid very high prices being paid in some zones, for example where there is limited competition in a zone with a single NSL; however if the prices were to reflect annuitised investment costs they might vary considerably between zones. Since the prices offered in all zones would be known to all shippers, there should not be any issues with disclosure of the interruptible benefits between shippers when sites transfer from one to another.

The key drawback of this approach is that the DN would be setting the price for the rights prior to knowing the demand for rights at that price. This would be likely to lead to an inefficient outcome

compared to an approach with more price discovery, since the DN might offer too low a price resulting in an insufficient response and hence the requirement for more expensive system reinforcement; or the DN might offer too high a price, resulting in too high a response and paying more for interruption rights than might otherwise be required. From a shipper/consumer perspective, administered charges provide limited choice since they can only accept or reject the offered price.

B) Open Tender

Under this approach, the DN would invite offers of interruption rights and associated prices for each zone from shippers/consumers. A number of pre-set choices for maximum durations of interruption would be offered based on the operational requirements. Depending on the detailed tender design, shippers may be able to make multiple tenders indicating the differing levels of interruption rights they would be prepared to make available at different prices within each zone. Having received the bids, the DN would then identify the most cost effective bids and then compare this to the alternative cost of reinforcement. The DN would then accept or reject the bids as appropriate and/or invest in network reinforcement.

The benefit of this approach is that it allows shippers/consumers to express their desired payment for interruption rights. It enables the DN to select the most economic combination of interruption rights and investment options and so make an efficient trade-off between these options. A further benefit of the tender approach is that it should allow the DN to match closely its requirements against the bids offered,

A possible drawback of this approach is that, by requiring shippers/consumers to consider their potentially multiple tender bids in the absence of guidance from the DNs, it may be seen as more complex and costly for the shippers/consumers. This apparent complexity could deter some consumers from submitting bids (through their shipper) and so lead to less real choice, and a less economic overall outcome, than otherwise. Further, without guidance on the potentially acceptable range of bid prices, users may waste time refining bids which are well outside the acceptable range.

C) Hybrid: Open Tender with upper limit or pre-set choices

Under this approach, the DN would ask for tenders but a maximum tender price would be set for each maximum duration of interruption for each zone. The choice of tender price within this limit could either be left fully open or a pre-set number of price choices could be offered so as to simplify the price determination process for shippers/consumers. Depending on the detailed tender design, shippers may be able to make multiple tenders indicating the differing levels of interruption rights they would be prepared to make available at different prices within each zone.

The benefits of this hybrid approach are that it would be expected to achieve the majority of the benefits of the fully open tender approach and simplify the bidding requirements for shippers/consumes, so reducing their costs and helping to rationalise their decision–making processes. A further potential benefit is that by setting a pre-determined maximum price it would avoid the potential extreme price outcomes that might occur in some zones with little competition.

A drawback of a hybrid approach is that the set price limits would be critical in determining the bids received and that the bids might possibly be expected to cluster around the top end of the price range offered. Such an approach is also more complex and costly to operate than a simple administered price approach.

Appendix 1 shows a summary of the advantages and disadvantages of the three options.

6. OPTION AND EXERCISE SCHEME

In line with Mod proposal 0090, paragraph 1.9, payments by the DNs to the shippers in exchange for the interruption capacity will be based on an option and exercise scheme where the option fee will be an upfront payment and the exercise fee will be a payment for each day that interruption is incurred. This will allow the interruption sellers greater flexibility in balancing their costs associated with interruption with the payment they receive.

The option and exercise scheme can be combined with any of the pricing options discussed above. However, the range of choice under the scheme remains to be decided. The simplest solution would be to have a set structure, say in steps of 10%, starting at 100% option and 0% exercise and going all the way to 0% option and 100% exercise. Alternatively shippers could be left to choose the proportions they preferred, subject to this degree of flexibility being practical to implement for billing purposes

7. TRANSPORTATION CHARGING METHODOLOGY

All the options outlined in section 5 represent a change to the transportation charging methodology. At present interruptible loads do not pay the LDZ capacity charge. The move to administered or tendered payments for interruptible rights will be a clear change to the charging methodology. Therefore once definitive proposals have been determined, the change to the transportation charging methodology will be formally consulted on.

. All the DNs expect to have the same basic methodology for determining payments although the actual level of payments will vary between DNs.

8. QUESTIONS FOR DISCUSSION

The views of respondents are sought on any of the issues highlighted in this paper and on any other issues impinging on the decision regarding the pricing arrangements for DN interruption rights. This will help to inform the forthcoming proposals for a definitive price structure.

Views are sought in particular on the issues shown below:

1. Which of the three main approaches outlined in Section 5 is favoured?
2. Given that shippers/consumers will need to determine their own value for interruptible rights to some extent under all the approaches, are the shipper's/consumer's costs for the tendered price approaches significantly greater than for the administered price approach?
3. The varying level of operational requirements and competition for interruptible rights in some zones could lead to greatly differing levels of price achieved for interruption rights in different zones, Is this seen as a potential drawback or as an appropriate outcome?
4. What are respondents preferences for the structure of the option and exercise scheme outlined in Section 6?
5. If interruption rights are offered for multiple years ahead, say for years 4 to 8 from the time of the purchase, this may lead to infrequent purchases and so put extra emphasis on achieving the best outcome possible at each purchase time. To what extent does the frequency of purchases of interruption rights impact on the decision about the method chosen to purchase them? If rights are purchased for 5 years, or longer, does this justify the possible extra complexity in the tender-based purchasing methods outlined, and potentially extra decision-making costs for respondents, since the decisions reached on who has interruptible rights and at what price have a more significant impact?

APPENDIX 1
Advantages and Disadvantages of the three options

Administered Prices		Open Tender		Open Tender with Upper Limit	
Positives	Negatives	Positives	Negatives	Positives	Negatives
• Simple to operate • Network determines the cost of interruption. May avoid rent seeking in NSLs scenario • Provides more stability and certainty in the market • Simplifies information sharing process	• Does not allow uses to indicate their value of interruption rights • Provides very limited price signal • May lead to arbitrary selection where more rights are offered than required • May lead to less economic outcome than the other approaches	• Allows users to indicate their desired value for rights • Easy to select criteria for DN • Should lead to matching of interruption rights offered and required Should enable economic trade-off with investment option	• More complex and costly for the shippers • Prices achieved in zones will be sensitive to the level of competition for rights • In some zones with limited or no competition, could lead to very high prices for rights • Shippers would have little guidance on acceptable prices and so may bid way outside range of acceptable prices, with wasted costs	• Provides restricted market enabling discovery of prices similar to full tender • Provides range of options to simply bidding for shippers • The upper limit of the price range will restrict the level of prices obtainable in zones with limited competition • Helps to rationalise decision making process for the shippers and so reduce their costs • Could be used as a transitional method	• Guides or range of price options offered may bias market • More costly and complex than administered charges