September 1998

TRANSCO PRICING CONSULTATION PAPER PC36

Daily Capacity Services at Entry

Summary

A number of shippers have requested through the Network Code modification panel process that Transco should offer a daily entry capacity service on the NTS. In view of the potential impact on revenues related to NTS capacity Transco considers it is appropriate to progress this through the pricing consultation process.

In this paper, a daily capacity charge multiplier of M equals eight has been proposed for a new daily capacity service. It is expected that together, with an overrun multiplier of M equals sixteen, proposed by Transco through the Network Code modification panel, the multipliers will maintain sufficient incentive to keep annual entry capacity booking above 95% of maximum forecast.

The volumes available for the daily capacity service will be monitored at each entry point and will be the difference between the maximum flow potential on a day and the booked annual capacity. Capacity will be offered by tender with a floor price of eight times 1/365th the annual NTS capacity charge for that entry point.

In addition a daily secondary capacity service is proposed. The service will consist of any unutilised booked annual capacity on a day after consideration of the daily allocation levels at each supply point. The service will be offered by tender with a floor price of 0p/kWh. If on a day the level of nominations increase so that gas flow exceeds the booked level, any secondary capacity service entitlements would be reduced initially.

It is proposed that both services should be effective from the earliest possible date.

1. Introduction

Under the present NTS capacity charging regime, entry capacity is sold only for twelve month periods. Shippers can sell on their capacity to other interested parties. However, such secondary market trades are rare because the amount of annual entry capacity booking available from Transco is unlimited. An improved definition of capacity availability is the subject of ongoing work by Transco. Dynergy have proposed through Network Code modification No 230 that all unutilised daily entry capacity should be offered for sale through an auction.

The twelve month duration for capacity sales, and it has been suggested by Shippers (and others) that the scarcity of secondary market trading for entry capacity, creates two difficulties.

1. Gas available above forecast rates for short periods may not come to market, due to the expense of obtaining capacity for such periods. Limiting the sale of NTS entry capacity to annual tranches may be perceived as a barrier to entry for short term gas supplies. Producers may occasionally be able to provide higher production rates for short periods if onshore demand indicates that this would be desirable. However, the cost of booking twelve months entry capacity may increase costs beyond the breakeven point such that the short term supplies on offer are not brought to market.

2. Gas may be locked in at a system entry point by Shippers who book but do not use their capacity. A further issue that follows from the operation of a twelve month booking regime with no maximum limit to the capacity sold is that gas may be physically available at an entry point but the Shippers holding capacity at that entry point choose to take gas from elsewhere for a short duration. In such cases the availability of gas to other shippers may only become attractive after consideration of the costs of purchasing a twelve month tranche of capacity from Transco.

2. Proposal

Transco propose that two types of daily capacity service should be created:

1. Daily capacity
2. Daily secondary capacity

The services will be offered on the following basis. On the day before the gas day (D-1) Transco will assess the extent of physical flow capability, booking levels and expected gas flow nominations at each system entry point.

If the physical flow capability for the day exceeds the aggregate annual capacity bookings at a system entry point, Transco will offer entry capacity for the day equivalent to the unutilised flow capability for that day by means of a tender. In general such capacity would confer the same rights as an annual capacity booking but only have a service duration of a single day. This is the daily capacity service.

If the aggregate expected nominations are less than the aggregate booked annual capacity at a system entry point, Transco will infer that the holders of the capacity do not wish to use their full entitlement on that day. Transco will offer the unutilised booked entry capacity (secondary system capacity) for that day to all shippers by means of a tender. If the level of nominations increases during the day so that gas flow exceeds the booked level, any secondary capacity service entitlements will be reduced. This is the daily secondary capacity service.

The tender for both types of capacity will take place during a specified window on D-1. The timing of such a window will be clarified through the Network Code mod panel. Shippers are expected to notify Transco of the amount of entry capacity they require, at an aggregate system entry point, in lot multiples and the price they are prepared to pay.

A lot size of 150,000 kWh (approx 5,000 therms) is proposed, consistent with the minimum transaction volume traded through the International Petroleum Exchange (IPE).

A floor price will be set for both types of capacity. It is proposed that initially the floor price for each new category of entry capacity is :

* for daily capacity; eight times daily equivalent of annual entry capacity charge,
* for daily secondary capacity: 0 p/kWh .

It is proposed that both services should be offered at the first available date. Transco recognises the desire of the industry for the introduction of such services and has entered discussions to ensure the consultation process, while allowing interested parties sufficient opportunity to express their views, can be kept as short as possible.

3. Daily Capacity Service - Floor price

Replacement of all annual capacity booking by a daily capacity regime may overcome the difficulties argued to exist with the present regime. However such a measure would effectively be a move to full commoditisation, whereby charges are levied after the day only on the basis of how much gas has flowed. Such a regime would lead to a reduction in cost reflectivity for gas transportation on the NTS and weaken signals of long term capacity requirements. There may also be a greater probability of Transco generating larger over/under recovery of revenues because of uncertainties in gas throughput.

A floor price progressively greater than one will increase the incentive for a proportion of annual capacity to be booked and thereby enable the existing charging framework to be maintained. In Transco's submission for Network Code Modification proposal No. 244, an overrun multiplier of sixteen was proposed. Transco consider that a floor price of eight times the daily capacity charge will maintain aggregate annual entry capacity booking levels over 95% of Peak forecast capacity. Daily capacity above booked levels could therefore be available for the 5% differential between the physical flow capability and booked capacity.

Transco will receive income from the primary holders of booked annual capacity. Further income gained from setting a floor price greater than zero for secondary capacity might be regarded as a double recovery of income for a single tranche of capacity. A floor price of zero p/kWh will avoid such an outcome. Shippers can bid up the price during the tender of daily secondary capacity if they perceive that a tranche of capacity has added value to them on a particular day, and any revenue received by Transco would be offset within the price control formula.

4. Annual Capacity Booking

The table below indicates the level of annual capacity booking during the 1997/98 winter and possible booking levels associated with various overrun 'M' factors. The hypothecated booking levels are forecast after consideration of a cost/benefit analysis for each entry point supply profile. The results for each entry point are driven by the differing supply profiles. For example the Easington supply profile includes Rough storage withdrawals. Use of Rough is predicted to be of a short duration, so the resulting high swing supply profile increases the attractiveness of exchanging some annual capacity bookings for daily capacity or even overrun charges. At present no such incentive exists with an effective overrun multiplier of M = 182 as defined in the Network Code.

Table 1 **Capacity Booking**

Terminal	Capacity booking 1997/98	Capacity booking with M=8	Capacity booking with M=16
Bacton	118 %	89 %	95 %

Barrow	101 %	92 %	100 %
Easington	101 %	57 %	61 %
St Fergus	92 %	100 %	100 %
Teesside	116 %	100 %	100 %
Theddlethorpe	101 %	98 %	100 %

The interaction between an overrun multiplier of sixteen and a daily capacity multiplier of eight is difficult to predict in terms of the impact upon annual capacity booking. A possible scenario is that entry points that offer a higher swing capability (Bacton, Easington) may be more likely to experience booking levels akin to an M = eight multiplier. Entry points with a flatter profile during winter (St. Fergus, Teesside, Barrow, Theddlethorpe) may experience booking levels closer to those associated with M = sixteen.

5. Revenue Recovery

Table 2 highlights the impact of changing M factors upon Transco's income from annual entry capacity booking. The table is based on entry charges effective from October 1998. The first column indicates the impact of recorded capacity booking levels from 1997/98 when applied to the 1998 entry charges. The remaining columns identify the percentage of revenue recovered at entry for M factors of eight and sixteen. In these columns a range of revenue recovery is identified. The lower bound is the revenue due if capacity booking at St. Fergus remains unchanged from last winter. The upper bound is the result of higher levels of capacity booking produced by the idealised models. The difference may be accounted for by the mild winter conditions experienced in 1997/98.

Table 2 **Revenue at Entry Points**

Capacity booking 1997/98	Capacity booking with M=8	Capacity booking with M=16
95 %	91 % - 97 %	92 % - 98 %

Whichever is the dominant factor, the overrun multiplier M=16 or daily capacity rate M=8, income from entry charges remains at a relatively high level relative to the present approach. The indicated under-recovery would be expected to be offset by additional income generated by the tender process, leaving Transco in a neutral position.

6. Comparison of Charges

The incentives for accepting overrun charges, booking daily capacity or increasing a holding of annual capacity are also influenced by the absolute costs of the charges at each entry point. Costs at each entry point will still be driven by the annual capacity charge, which is informed by the LRMC process. Table 3 below highlights the different charges at each entry point. The charges are based on a standard lot of 150,000 kWh.

Table 3 **Potential Costs of 150,000 kWh Entry Capacity**

Entry Point	Annual Capacity Charge	Daily Secondary Capacity	Daily Capacity Charge (M=8)	Overrun Charge (M=16)
Bacton	£ 494	>= £0	>= £ 11	£ 22
Barrow	£ 2,628	>= £0	>= £ 58	£115
Easington	£ 1,314	>= £0	>= £ 29	£ 58
St Fergus	£12,429	>= £0	>= £272	£545
Teesside	£ 2,738	>= £0	>= £ 60	£120
Theddlethorpe	£ 1,314	>= £0	>= £ 29	£ 58

The smaller differential between charges at more southerly entry points, particularly Bacton, may cause some shippers to give a higher weighting to consideration of their own management costs when choosing the optimum mix of capacity charges for their portfolio.

7. Impact on System Balancing

Predicting future patterns of use and the consequent benefits of daily capacity is difficult to do with any degree of certainty. To illustrate the potential benefits, Transco have looked at the events on 16th and 17th December 1997 and how these proposals may have changed actions. On both of these days the system marginal price (SMP) of gas bought on the flexibility mechanism was approximately 17 p/kWh (£5 per therm). The 16th December was also the highest demand day (3,980 GWh) of the year. The balancing cost for these two days was £17.8m. If one considers the patterns of gas delivery at just one entry point, an understanding of the potential for daily services can be gained. Table 4 below indicates the levels of allocated, booked and peak flow capacity at Theddlethorpe for the two days, 16th and 17th December 1997.

Table 4 **Example of Daily Service Availability**

Theddlethorpe		
	16th Dec	17th Dec
Allocated	346 GWh	355 GWh
Booked	371 GWh	371 GWh
Peak flow capability	393 GWh	393 GWh

Analysis of the table reveals a tranche of booked capacity that was unused on both days (booked minus allocated). This could have been offered as daily secondary capacity. There is also a further tranche that Transco believes is available but has not been booked by any shippers (peak flow minus booked). This tranche may have been offered as daily capacity. This suggests that the quantities of both types of capacity that Transco may have advised shippers was available on each day could have been 47 GWh on the 16th and 38 GWh on the 17th of

December.

The daily gas availability at Theddlethorpe, if it had been brought to market, would have been sufficient to reduce the SMP on 16th December to 1.35p per kWh (40p per therm). The SMP on 17th December may have been trimmed to 12.7p per kWh (372p per therm). The potential quantities available over the two days may have been enough to reduce the balancing costs by over £9m. That is a possible saving of 50% on the total balancing costs accrued on 16th and 17th December.

Theddlethorpe has been chosen for indicative purposes only, and similar analysis indicates that further tranches of daily capacity could have been made available at other entry points.

8. Timing of implementation

The PGT licence and Network Code require Transco to allow the following periods before introducing any new charge.

- 28 days consultation with Shippers on methodology changes.
- 28 days for Ofgas to consider Transco's final proposal following consultation.
- two months notice required in the Network Code prior to application of new charges.

Transco recognise that a number of industry participants have expressed a desire for daily capacity services to be introduced as soon as possible. Transco are in discussion with the industry through the Network Code mod panel, regarding the desirability of forgoing the two months notice period for Network Code changes. Further discussions have been held with Ofgas regarding a possible contraction of the 28 day period required for consideration of Transco's final proposals. Ofgas have indicated that in recognition of industry interest their final decision may be given before the end of the 28 day period. Alternatively if the Network Code requirement stands then the earliest possible implementation date would be 1st February 1999.

9. Conclusion

Improved availability of gas at system entry points, stimulated by the development of daily capacity services, should work to the advantage of shippers and the industry as a whole. In particular the increased availability of short term gas should help shippers to maintain a balanced portfolio and potentially reduce their imbalance charges. The increased availability should enable a system balance to be maintained with less need for the extreme marginal gas prices experienced in the past on the flexibility mechanism.

The proposed daily capacity charge multiple (M) of eight times the annual capacity daily charge should, together with the separate proposal for an overrun multiplier of 16, retain sufficient incentives to maintain annual entry capacity booking at 95% of the present level. This in turn will keep to a minimum the uncertainties in Transco's revenue flow that may otherwise pass through to volatility in over and under recovery.

Questions for Consultation

Transco would welcome respondents views on the following:

- **The desirability of offering daily entry capacity services for secondary and unbooked capacity.**
- **The appropriateness of using floor prices of zero pence per kWh for the daily secondary capacity service and M = eight for the daily capacity charge where M is multiplied by the equivalent daily rate for the appropriate annual capacity booking at each entry point.**
- **The desirability of bringing forward implementation of daily capacity services to the earliest possible date.**