NGT’s Position: Contracting for Demand Response with End-Consumers

Eddie Blackburn

National Grid Transco

Telephone 01926 65 6022

E-mail: eddie.j.blackburn@ngtuk.com

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1. Introduction

At the Ofgem Initiated Demand Side Working Group (DSWG) on 12th October 2004, NGT agreed an action to circulate a paper clarifying its position in regard to not contracting directly with end-consumers for an energy balancing demand-response in Gas when it does contract directly with end consumers in Electricity.

This paper covers NGT's Position, Balancing Options and Balancing Role, and also includes alternative options to contracting directly with Transco that maybe available to gas end-consumers.

2. NGT's Position

The Gas Act[1] prevents Transco from entering into Transportation arrangements with any party other than a Licensed Shipper and hence any arrangements for how gas is off-taken from the pipeline system must be via a Shipper. The Electricity Act[2] prevents anyone other than a Licensed Supplier from supplying electricity to any premise but does not restrict NGC from entering into arrangements for how that Electricity is consumed.

Transco believes that the On-the-day Commodity Market (OCM), through which demand response can be offered, provides an appropriate, economic and efficient daily balancing tool to meets its residual balancing role. The responsibility for annual and longer term Supply & Demand balancing lies with Shippers. NGT in its licensed role as Gas System Operator (Transco) does not contract with end-consumers for demand response for longer term Supply & Demand balancing purposes either directly or via a Shipper.

Transco has not discounted demand side response as a potential source of shorter term balancing services such as Operating Margins.

3. NGT Balancing Options

3.1 *On-the-day Commodity Market (OCM)*

Shippers can offer end-consumer demand response via any of the OCM markets, which Transco uses in its role as Residual System balancer when operational balancing requirements occur. Using the Locational or Physical markets would be preferable to Transco as a commitment to a physical flow rate change is part of the transaction. A Shipper must have access to commercial interruption rights to allow it to offer this demand response. Access to commercial interruption is a key tool for a Shipper in meeting its portfolio balancing requirements.

[1] Gas Act 1986 as amended by the Gas Act 1995 & by the Utilities Act 2000

[2] Electricity Act 1989

NGT in its licensed role as Electricity System Operator (NGC) does contract with end-consumers for demand response for Reserve purposes directly and via Suppliers or Aggregators, but these services are analogous with establishing operating margins in gas rather than energy balancing services. Demand side providers can also offer an end-consumer's demand response by participating as a BM Unit in the balancing mechanism, which NGT uses in its role as System balancer within the balancing period.

3.2 *Nature of Demand Response Services in Electricity*

3.2.1 Standing Reserve

At certain times of the day National Grid needs extra power in the form of either increased generation or demand reduction to be able to deal with actual demand being greater than forecast demand and plant breakdowns. This requirement is met from synchronised and non-synchronised sources. National Grid procures part of this requirement by contracting for Standing Reserve, provided by a range of service providers including short notice generating units and demand reduction.

3.2.2 Fast Reserve

Fast Reserve is the rapid and reliable delivery of active power provided as an increased output from generation or a reduction in consumption from demand sources, following receipt of an electronic despatch instruction from National Grid. Active power delivery must start within 2 minutes of the despatch instruction at a delivery rate in excess of 25MW/minute, and the reserve energy should be sustainable for a minimum of 15 minutes.

3.2.3 Demand Turndown

National Grid initiated a 4-month Demand Turndown trial earlier in 2004. The service was identified as a potential Reserve service, via the reduction of load by large demand users, small back-up generator sets, aggregators of demands sites and suppliers. If the service is proven to be viable, secure and reliable, National Grid may develop an enduring demand turndown service as a potential source of contingency reserve for the delivery of active power.

3.3 *Comparison of Electricity Balancing Services with Gas Services*

Standing and Fast Reserve in electricity are more analogous to operating margins in gas as they are contracted for short notice system support. Transco has investigated demand side response, as an alternative to storage gas, for operating margins purposes but problems were experienced in finding supply points that could provide an approximately equivalent service in terms of availability, monitoring capability and response time. Transco has, however, not discounted demand side response as a potential source of Operating Margins.

4. NGT's Role

NGT sells transmission capacity to transmission system Users and, where it cannot make that capacity available, NGT is exposed to the resulting costs. NGT will therefore contract with end consumers for a demand response, via Shippers or Suppliers, for capacity management purposes where it is economic to do so. NGT can respond to capacity/system availability incentives by increased asset investment and can avoid costs associated with demand-side response for capacity/system management purposes, if it is economic and efficient to do so, by increased asset investment.

NGT does not sell energy to end consumers and therefore it would be inappropriate for it to be exposed to costs if the Shippers/Suppliers fail to make that energy available. Shippers/Suppliers have the primary balancing role and hence are fully exposed to identifiable imbalance costs where they fail to comply with this role. NGT cannot respond to energy incentives by increased asset investment and cannot avoid high costs associated with demand-side response for energy management purposes by increased asset investment. Shippers can avoid such exposure by either contracting for additional supplies or commercial interruption. NGT contracting for energy balancing interruption could duplicate the shipper role and hence might be inefficient and uneconomic.

4.1 *Impact of Top-up Removal*

Top up referred to the gas that was held or placed in store by Transco in order to meet any shortfall that it identified when its forecasts of gas supplies were compared with its forecasts of firm demand for the winter under '1 in 50' severe weather conditions. Transco undertook this assessment process by setting 'monitor' levels for different categories of storage site that defined the amount of gas that Transco considered would need to be held in store on each day throughout the winter in order to ensure that demand in (what remained of) a 1 in 50 winter could be met.

In addition to 'filling' any opening shortfalls (where there was available storage capacity), the top up arrangements required Transco to intervene in situations throughout winter where storage stocks would otherwise fall below the monitor levels by 'counter-nominating'. Transco's actions would attempt to prevent gas being withdrawn from storage so that the volume of gas still in store was above the monitor level.

NGT believes that contracting with gas end consumers for annual Supply & Demand management purposes would undermine the benefits of the removal of Top-up. One of the main problems identified with the Top-up regime was the reduction in incentives on Shippers to source gas to meet their customers' demand. NGT believes that focusing on the OCM for residual balancing purposes will generate the appropriate short, medium, and longer-term incentives on Shippers to balance their portfolios by sourcing gas and demand response where it is economic to do so.

4.2 *Impact on the Prevailing and Future Gas Exit Capacity Arrangements*

The key objective of the Exit Capacity Investment Incentive (ECII) arrangements, where Transco makes a payment for each day of interruption in excess of 15 days, is to create an investment signal for Transco. Under potential future Exit arrangements, where all Exit Capacity is deemed firm, if Transco does not make Exit capacity available it will buy back the capacity at a market rate. The key benefit of these arrangements is that the cost of buying back the capacity, i.e. contracting for a demand response, places a value on Exit Capacity. This valuation can then feed into Transco's investment decisions regarding the future construction of Exit Capacity.

This aspect of the prevailing ECII is appropriate if Transco is solely interrupting for Exit Capacity purposes, as Transco is able to directly respond to the incentive and avoid the costs associated with demand response where it is economic and efficient to do so.

If Transco were to contract for a demand response for energy management purposes as well as capacity management, it could not separate the valuation of energy and capacity and hence could undermine one of the key benefits of the Exit arrangements.

4.3 *Impact on liquidity of the Gas Market*

The introduction of the National Balancing Point (NBP) and the On-the-day Commodity Market (OCM), have been identified as key components of the success of the GB gas-balancing regime. The GB Gas market has been recognised as one of the most liquid gas market worldwide. Shippers have noted the success of the NBP and agreed, as part of the 2002 Energy Balancing Review, that any evolution of the regime should stimulate, as far as is practical, further development of competitive gas markets. It is NGT's view that contracting for energy services outside of the OCM would have a detrimental impact on the liquidity of the market. Relevant objective 9 (c) of Transco's GT licence obliges Transco to develop services that secure effective competition between relevant shippers and between relevant suppliers. This objective is likely to be undermined, with respect to the competition facilitated by the OCM, if Transco moves towards direct contracting, in direct competition with Shippers and Suppliers.

5. End-Consumer Concerns – Alternative Solutions

End-Consumers have expressed a desire to contract directly with Transco for demand-response for annual Supply & Demand management purposes. NGT understands, based on discussions with end-consumer representatives, that this is driven by a desire to realise the value of their demand response before entering into a Gas Supply Emergency caused by a GSMR Safety Monitor breach. End-consumers recognise that under a Gas Supply Emergency they will not receive a payment if their supply point is isolated.

5.1 *Active Participation in the Market*

If end consumers are prepared to actively participate in the Market then they could offer commercial interruption at a price level that is reflective of their costs. In this way the reason for interruption or the identity of the trading party, if offered via the OCM, should be immaterial. There is also no requirement on an end-consumer to limit their arrangements for each day of interruption to a single fixed daily price. Partial interruption arrangements might also allow valuation of a partial reduction in gas demand.

5.2 *"Last Resort" Participation in the Market*

End-consumers could contract for commercial interruption with their Shippers based on a potential GSMR Safety Monitor breach, if they are only prepared to offer commercial interruption as a last resort. A Shipper would then be in a position to action such interruption if it did not have sufficient non-storage deliverability available or offer the interruption as an OCM trade. As part of the removal of Top-up arrangements, Transco has undertaken to release weekly aggregate stock levels and supplementary information in the event that there was a risk of the Safety Monitor being breached within 48 hours. End-consumers could contract with their Shippers for commercial interruption rights that only become effective on the release of this information. If alternative timescales were deemed more appropriate, Transco could investigate the release of additional information that might be used by Shippers and end-consumers as the basis for contractual arrangements for access to commercial interruption.