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22nd December 2006

Your Reference 0088

Ref: UNC Modification Reference Number 0088 'Extension of DM service to enable Consumer Demand Side Management'

Dear Julian,

Thank you for your invitation seeking representations with respect to the above UNC Modification Proposal. National Grid UK Distribution (UKD) has the following comments:

The Proposal

UKD offers qualified support for its implementation. We have participated fully in the Development Workgroup and have attended all of the meetings held. We would like to highlight that the discussions held within the Development Workgroup and those convened 'off-line' with Total Gas & Power Ltd (the Proposer) and xoserve were most useful in understanding and clarifying the nature of the proposal.

We note that the Proposer believes that the current Non-Daily Metered (NDM) regime does not facilitate the use of Automated Meter Reading (AMR) equipment (a component of smart metering) for the purposes of demand side management. We record the Proposer's view that one of the advantages of AMR is that it enables industrial and commercial customers to actively manage their gas consumption in response to market signals, particularly in times of system stress (e.g. high gas prices).

The Proposer identifies that the current market structure, in particular system limitations, inhibits the development of consumer driven demand management and hence reduces the potential benefits of smart metering. Reconciliation of an NDM Supply Point is based on the End User Category (EUC) for a period (and is therefore not sufficiently detailed to recognise reduced or no usage on a single day). For system purposes, the allocation process assigns an estimated demand to any NDM Supply Point, irrespective of that Supply Points actual daily demand, even if the User submits a read for the Supply Meter on the day that allocation is performed.

The Proposer therefore raised Uniform Network Code (UNC) Modification Proposal 0088 seeking to establish a new category of DM Supply Points within the UNC whereby Users may elect to provide daily reads to Transporters using their own AMR equipment. This is termed 'DM AMR'.

We are sympathetic in principle to the Proposer's aspirations to facilitate consumer choice in respect of energy usage. Existing UNC provisions provide that Shippers may 'elect' that a Larger Supply Point becomes DM. However, in these circumstances, only Transporters may provide this and at an approximate cost of £600 for Daily Read Equipment (datalogger) installation and £800 p/a ongoing charges. Total has indicated that the 'monopoly' nature of this service and the associated cost is not attractive to them. We concur that, currently Users are not able to avoid this charge.

We believe that while consumers can benefit from the flexibility offered by AMR data now, the big gain for Users is to enable their consumers to reduce consumption and hence avoid being exposed to high gas prices.

We look forward to seeing evidence as to the extent to which consumers would take advantage of the flexibility provided by the new regime. While the 'demand side response' features of the Proposal provide an opportunity for a consumer to avoid the financial impacts of days where a high gas price applies, we remain to be convinced as to whether consumers have the motivation to reduce load or 'turn off' on such days. Consumers would need to be informed of gas prices each day (and within day?) and have a suitable supply contract in place.

In Appendix 2 we have estimated the number of users under the regime advocated by Modification Proposal 0088 that would be required to justify the investment required on our systems.

We are aware that the DTI has produced a document 'Energy Billing and Metering – Changing customer behaviour, an Energy Review Consultation' issued on 14th November 2006. We note that under Section 9.7 of the document the question is asked 'What would the costs and benefits of changing the existing thresholds for half-hourly and daily-read meters in the business sector, or of promoting other smarter alternatives to existing arrangements'. This gives rise to a risk that any 'limited scope' contractual change and associated investment in this area could be incompatible with possible longer term industry developments.

Relevant Objectives

We concur with the Development Workgroup's assessment of the extent to which the Proposal facilitates the relevant objectives contained within Standard Special Condition A11 of the Transporter's Licence. Further comments are provided in Appendix 1.

We note that the Development Work Group agreed that there could be merit in Ofgem undertaking an Impact Assessment which looks at the full range of costs and benefits, beyond the confines of the UNC, associated with implementation of this Proposal. We would advocate this measure as a desirable aid to determining whether or not the Proposal should be implemented

Cost/benefit analysis

We have undertaken analysis (Appendix 2) to assess the comparative industry costs for the current elective DM regime and the DM AMR regime advocated by Modification Proposal 0088. The aim of this is to evaluate at what point (in terms of the volume of sites) utilising the DM AMR provisions would be more economic to the industry than taking advantage of the existing elective DM provisions.

The comparison is not straightforward as the DM AMR regime requires an initial system development cost and a one-off AMR installation cost whereas the existing elective DM regime has a one off installation charge and an annual charge (levied by the Transporter to the User). We have therefore undertaken a comparison as at the end of the tenth year following the installation of the datalogger and factored in the Net Present Value (at 6%) of future income. It is worthy of note that the analysis does not take into account any AMR Meter Reading costs the User would incur under the DM AMR regime.

The analysis concludes that at the current estimated system development cost of £500,000, a total of 82 or more sites would be required to take up the DM AMR provisions in order that this option becomes more economic than the costs associated with utilisation of the existing elective DM provisions. To date, neither the Proposer nor the remainder of the User community have provided indicative levels of take up of the DM AMR provisions in the event of implementation.

Demand Side response

We have also undertaken analysis (Appendix 3) to evaluate the level of demand side response within the lower end (in terms of registered peak daily capacity) of the existing DM market on our networks. We reviewed 100 Supply Points (interruptible sites were excluded as turn down may be due to an interruption day) at the lower end of the market in the belief that this range of Supply Points would be most similar to those parties who could elect to use the Modification 0088 process.

Our analysis reviewed the volumes consumed at the 100 Supply Points on days within the period 1 October 2005 to 31 March 2006 and specifically three days representing the peak System Average Price (SAP) occurrences within this period. Within this period the average SAP was 2.07p/kWh and the three dates used were:

- Tues 22 Nov 2005 – 4.26p/kWh
- Tues 29 Nov 2005 – 4.07p/kWh
- Tues 14 Mar 2006 – 6.14p/kWh

Our findings revealed that (expressed as a percentage of the total 'occurrences' – 100 Supply Points x 3 days = 300) the sample Supply Points turned down in 16.6% of occurrences in comparison to average daily consumption within the period. To remove any natural fluctuations it may be more indicative to review the number of occurrences where turn down was between 51% and 100% in comparison to average daily consumption within the period. In this case Supply Points turned down in 5.6% of occurrences. Conversely, turn up in excess of 51% was apparent in 17.3% of occurrences.

We acknowledge that this data can only be indicative as turn down may not be attributable directly to SAP but it provides some measure of the consumer's actual ability to 'turn down' in light of the industrial processes that utilise the gas.

A full breakdown of the proportional turn down figures is detailed within Appendix 3.



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National Gas Emergency Service - 0800 111 999* (24hrs)

*calls will be recorded and may be monitored

Please contact Chris Warner on 01926 653541 (chris.warner@uk.ngrid.com) should you require any further information with respect to the above.

Yours sincerely

Phil Lawton
Regulation Manager - UK Distribution
National Grid

Appendix 1

The following supporting information has been formulated with the assistance of xoserve. Similar information may appear in representations received from other Large Transporters.

Extent to which implementation of the proposed modification would better facilitate the relevant objectives

A11(a) the efficient and economic operation of the pipe-line system;

UKD understands that the purpose to the Modification Proposal is to facilitate demand side response by consumers. While this may assist in managing the pipeline system in times of supply constraint there is little evidence historically that consumers are able to make this response. As part of the NDM Demand Forecasting exercise consumers are contacted to discuss this area. Information from this activity suggests that many consumers are in a situation where they either have to continue consuming or switch altogether to an alternative fuel rather than reduce demand. There appears to be little evidence that there would be sufficient impact to affect the residual balancer role.

A11(c), the efficient discharge of the licensee's obligations under this licence;

Transporters are required to develop their systems in order to ensure that all firm customers are supplied except in a situation where demand is greater than that expected in 1 year in 20.

Current methodology for forecasting 1 in 20 peak requirements uses historical weather information for the previous 78 years and pseudo demands based on current demand model weather demand relationships. As statistical modelling uses extreme value distributions there will be no material impact on the 1 in 20 value in the foreseeable future. This is particularly where temperatures continue to be above seasonal normal providing years that do not contribute to the peak derivation.

In addition the demand models rely on being able to determine with some accuracy a weather demand relationship. Current methodology does not try to determine interruptible markets directly, relying instead on differences between firm and total market. If this Modification Proposal increases the number of consumers that are breaking the behavioural link between weather and consumption then the accuracy of total market modelling may be reduced. Potentially this could lead to either increases or decreases in the peak requirements and will certainly lead to Transporters' requirements to derive alternative modelling facilities with associated cost to do so.

A11(d) the securing of effective competition: (i) between relevant shippers; (ii) between relevant suppliers; and/or (iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers;

UKD agrees that consumers may benefit from the flexibility in contracts that could be offered.

However, we have concerns over the resulting impacts on the derivation of profiles supporting the demand allocation mechanism for all NDM Supply Points. Increasing the number of Daily Read Supply Points would further reduce NDM sample sizes and would not yield any additional reads which relate to the remaining NDM load. It would be inappropriate, for example, to assume that consumption patterns for the DM(AMR) sites would reflect that of the NDM sites. Hence it is likely that profile degradation could occur.

The greatest differentiator between profiles is geographical. If significant numbers elect for DM(AMR) status there may also be a loss of ability to profile by LDZ, further reducing accuracy.

The impact of reduced accuracy for the attribution process would be misallocation between Smaller Supply Point (SSP) and Larger Supply Point (LSP) markets driving increased reconciliation and increased volume through the Reconciliation by Difference (RbD) process. This places higher risk on SSP Users due to delay in completing reconciliation with no commensurate increase in likelihood of LSP Users dealing with reconciliation filter failures in a timely manner. In fact the current levels of reconciliation are seeing an increase in numbers of filter failures which would likely be compounded by any further increase in volume through the system.

A11(f) so far as is consistent with sub-paragraphs (a) to (e), the promotion of efficiency in the implementation and administration of...the uniform network code.

Although system costs have been identified at a high level these have a low confidence and exclude costs associated with supporting systems such as Conquest. Given the associated costs that would be incurred by both Transporters and Users through file format impacts the benefits from such a change are not clear.

There are also a significant number of areas that have potential to impact the UK-Link system significantly for which there are no clear business rules.

The implications of implementing the Modification Proposal on security of supply, operation of the Total System and industry fragmentation

The implications for Transporters and each Transporter of implementing the Modification Proposal, including

a) implications for operation of the System:

While there is an opportunity for a greater volume of data to be provided to Transporters, Modification Proposal 0088 does not oblige Users to provide Meter Readings every day. In addition, on days where Readings are not submitted, the residual balance that is allocated across the NDM market has a potential to vary significantly. This may have impacts on the Transmission daily forecast accuracy which would affect Transmission's performance in this area. There would also be a residual impact on all NDM Users as there may be larger differences between the 'on the day' volumes that Users have been asked to input against and those values they receive balancing charges against.

b) development and capital cost and operating cost implications:

There would be significant costs incurred in modifying and scaling UK Link Systems as it would be necessary to create a new category of Supply Point, create Supply Point Administration (SPA) nominations, default allocations, develop a new interface & amended file formats and establish a specific Annual Quantity (AQ) process for these Supply Points.

The 'must read' process would need to be amended to capture Meter Readings from DM (AMR) sites. There is also the possibility that as any NDM Supply Point above 73,200KWh could be nominated to become DM (AMR), there may be increased volumes of such Supply Points being monitored and followed through the 'must read' process.

The assessment of costs identified within the Modification Report also excludes specific User costs. It is important to note that all Users will be impacted by file format changes whether they choose to take advantage of DM (AMR) or not.

The consequence of implementing the Modification Proposal on the level of contractual risk of each Transporter under the Code as modified by the Modification Proposal

UKD is concerned that if sufficient Supply Points become DM (AMR) then Transporters would be unable to provide accurate NDM profiles at the level currently required which may necessitate a UNC modification to amend the EUC bands. It should be possible to provide a single aggregated profile that could be used for a number of EUC bands; however this would need to be based on DM Supply Points or Supply Points not in the EUC bands being profiled. This would be a significant change to the current processes.

We believe that, without specific User obligations to provide a regular Meter Reading, Transporters would face increased contractual risk with respect to the likelihood of being required to undertake 'must reads'.

As the proposal contains a revised AQ calculation methodology, unlike either the DM or NDM regimes, there would be both systems and process impacts. AQ updates are currently time consuming and there is currently no information on the extent of the likely impacts associated with adding this methodology into the AQ review process, or whether sufficient data would be provided on which to base revised AQ values.

The high level indication of the areas of the UK Link System likely to be affected, together with the development implications and other implications for the UK Link Systems and related computer systems of each Transporter and Users

Implementation of this Modification Proposal would require changes to all components of the UK-Link system and relevant internal xoserve processes. We do not currently expect impacts on the Gemini system. Changes are necessary to allow DM (AMR) to be set up and provide data and to remove such Supply Points from Transporter liability charges for standard DM Supply Points.

It is unclear from the business rules as to the extent to which xoserve would be expected to receive and store data related to the AMR equipment and/or the AMR service provider. Existing processes would need to be assessed to determine the appropriate method of receipt (e.g. RGMA processes) and provision (all SPA processes and provision of data to incoming Users around Supply Point transfer of ownership). Other methods of xoserve providing data to relevant parties would also need to be assessed for impact.

Once an additional level of detail is identified this may provide impacts of a greater complexity than currently envisaged and affect other processes which have not been previously considered.

xoserve processes would need to be set up to manage monthly reporting. There would also need to be an offline process to exclude relevant Supply Points from the ratchet process during their first year of operation.

As previously described, User impacts are not restricted to those using the service as file format changes would be necessary to SPA files for all Users.

The implications of implementing the Modification Proposal for Users, including administrative and operational costs and level of contractual risk

Concerns remain regarding the prospect of inappropriate selection of Meter Reading information after the gas flow day unless there are stricter requirements for submission of timely read information. While this is to some extent mitigated by monthly reporting, this would only be effective if the Modification Proposal included a regime where sanctions could be imposed for inappropriate behaviour. Otherwise the reporting requirements would not effect change. There is a compelling case that Users are only allowed to replace an estimated read with an actual read and that no modification of 'actual' reads is permitted.

There is an increased risk on the SSP market from delayed Individual Meter Point Reconciliation. Experience has shown that the User Suppressed Reconciliation Value (USRV) incentives placed on timely filter failure management are not effective. Increased numbers of reconciliations failing the charge filter would exacerbate this issue.

As the NDM profiles drive the capacity charges for NDM Supply Points, any degradation or inability to model each EUC would lead to changes in load factors. Capacity charges are driven by the Supply Offtake Quantity (SOQ), which is directly related to load factors. There are likely to be impacts on each Supply Point SOQ which would directly affect User capacity charging. It is not possible to identify how large the impact would be.

UKD does not believe that the business rules provided are sufficiently robust and detailed. Without this, a detailed system assessment, full costs and a development timeline cannot be determined. Our view is that the Modification Proposal would require further discussion within the industry to determine the detail necessary to facilitate change.

Appendix 2

Number of Sites		82	
NPV Discount Rate		6.00%	
Mod 0088	System Development Cost		£500,000.00
	AMR Cost per site		£200.00
	Total AMR Cost for Number of Sites		£16,400.00
	Total Cost for Number of Sites		£516,400.00
Elective DM Regime	Installation		£600.00
	Total Installation Charge for Number of Sites		£49,200.00
	Annual Charge		£785.91
	Total Annual Charge for Number of Sites		£64,444.62
	<i>Investment for NPV Purposes</i>	01/04/2008	-£516,400.00
	Annual Charge at end of Year 1	01/04/2009	£113,644.62
	Annual Charge at end of Year 2	01/04/2010	£64,444.62
	Annual Charge at end of Year 3	01/04/2011	£64,444.62
	Annual Charge at end of Year 4	01/04/2012	£64,444.62
	Annual Charge at end of Year 5	01/04/2013	£64,444.62
	Annual Charge at end of Year 6	01/04/2014	£64,444.62
	Annual Charge at end of Year 7	01/04/2015	£64,444.62
	Annual Charge at end of Year 8	01/04/2016	£64,444.62
	Annual Charge at end of Year 9	01/04/2017	£64,444.62
Annual Charge at end of Year 10	01/04/2018	£64,444.62	
NPV End Year 10 (6%)		£4,266.61	

The "Number of Sites" cell indicates the minimum number of Supply Meter Points required to take up the Mod 88 regime such that the development and one off costs of Mod 88 become less than the aggregate costs that a User would incur under the existing elective DM regime. As an element of the costs under the elective DM incurred on an annual basis the comparison has been made as at the tenth year following the earliest possible implementation of Mod 88.

A positive "NPV end of year 10" figure indicates the amount by which 10 years of costs under the elective DM regime exceed the initial investment required for Mod 88. A negative "NPV end of year 10" figure indicates the amount by which 10 years of costs under the elective DM regime are less than the initial investment required for Mod 0088

The calculation shows that for every £100k of development cost, a further 16 Supply Meter Points are required to take up the Mod 88 facility to make the industry costs more economic than the aggregate costs chargeable under the existing elective DM regime.

Mod 0088 implementation cost	Min SMPs required
£100,000	17
£200,000	33
£300,000	49
£400,000	66
£500,000	82
£600,000	98
£700,000	114

Appendix 3

'Turn Down' Sample Analysis Winter 2005/2006 (100 Firm Supply Points)

FIRM (100 Supply Points)		22-Nov-05		29-Nov-05		14-Mar-06		Totals	
Turn Up (+) or Down (-) Percentage from Average Volume		Number	% of occurences on the day (100)	Number	% of occurences on the day (100)	Number	% of occurences on the day (100)	Number	% of occurences overall (300)
Upper	Lower								
>+100%	+100%	4	4.0%	6	6.0%	2	2.0%	12	4.0%
+99%	+81%	3	3.0%	2	2.0%	2	2.0%	7	2.3%
+80%	+51%	10	10.0%	12	12.0%	11	11.0%	33	11.0%
+50%	0	63	63.0%	67	67.0%	68	68.0%	198	66.0%
-1%	-50%	15	15.0%	9	9.0%	9	9.0%	33	11.0%
-51%	-80%	2	2.0%	1	1.0%	1	1.0%	4	1.3%
-81%	-100%	3	3.0%	3	3.0%	7	7.0%	13	4.3%
Totals		100	100.0%	100	100.0%	100	100.0%	300	100.0%