

# 0356/0356A:

## Demand Data for the NTS Exit (Flat) Capacity Charging Methodology

What stage is this document in the process?

- 01 Proposal
- 02 Workgroup Report
- 03 Draft Modification Report
- 04 Final Modification Report

0356 - Defines the demand flow data, used within the NTS Charging Transportation Model for calculating NTS Exit (Flat) Capacity charges from 1<sup>st</sup> October 2012, as the forecast undiversified 1-in-20 peak day demand.

0356A – Defines the demand flow data, used within the NTS Charging Transportation Model for calculating NTS Exit (Flat) Capacity charges from 1<sup>st</sup> October 2012, as the booked capacity for all Exit Points, other than for storage and interconnectors which would be modelled at zero.



Responses invited by 06 January 2012.



High Impact:



Medium Impact:

All participants holding NTS Exit (Flat) Capacity affected



Low Impact:

UNC Panel, the Authority, Workgroups and Joint Office

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## About this document:

This document is a Draft Modification Report, which was issued for consultation responses, at the request of the Panel on 17 November 2011.

The close-out date for responses is 06 January 2012.

The Panel will consider the responses and agree whether or not this modification should be made.



### 3 Any questions?

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# 1 Summary

## Is this a Self-Governance Modification

This is not a self-governance modification.

### Why Change?

A supply and demand match is required within the NTS charging Transportation Model, which is used for NTS capacity charge setting purposes. The data used for NTS Exit (Flat) Capacity charge setting purposes from 1<sup>st</sup> October 2012 in accordance with the NTS charging methodology, is as follows:

- The modelled demand flow is the obligated (baseline plus incremental) level of NTS Exit (Flat) Capacity, other than at bi-directional sites with physical entry capability (Storage, IUK, and BBL) where the modelled demand flow is zero.
- The modelled supply flow is derived from the supply/demand data set out in the most recently published National Grid Ten Year Statement for each year for which prices are being set.

Increases in the obligated level of NTS Exit (Flat) Capacity and reductions in the level of NTS available supplies have resulted in an unworkable charging methodology as the aggregate obligated NTS Exit (Flat) Capacity level (at non bi-directional sites) is greater than the available NTS Supplies.

### Solution

#### 0356

It is proposed that for the setting of prices the inputs to the NTS Transportation Model will be as follows;

- For bi-directional sites the modelled demand will be the undiversified NTS forecast 1-in-20 peak day demand<sup>1</sup>.
- For bi-directional sites with physical entry capability (storage, IUK, and BBL) the forecast demand is zero.
- For bi-directional sites with no physical entry capability (Moffat) the forecast will be the undiversified NTS forecast 1-in-20 peak day demand.
- For NTS/LDZ offtakes, the modelled demand will be the undiversified NTS forecast 1-in-20 peak day demand for the relevant LDZ, and this demand will be prorated between the relevant NTS/LDZ offtakes based on the booked NTS Exit (Flat) Capacity.
- For other directly connected (DC) NTS offtakes (Power Generation & Industrials) the modelled demand will be the undiversified NTS forecast 1-in-20 peak day demand.

For inputs into the NTS Transportation Model, the undiversified NTS forecast 1-in-20 peak day demand for the DNs, Moffat, and other directly connected (DC) offtakes will be capped at the obligated (baseline + incremental) capacity level.

For the purposes of calculating indicative prices the modelled demand flow will be as outlined above but with no capping of the forecast to the obligated level. This is due to



### What Supply Data is used for NTS Capacity Charge setting purposes?

The nodal supply data for the Transport Model is derived from the supply data set out in the most recent Ten Year Statement for each year for which prices are being set. The aggregate storage and Interconnector flows will be adjusted such that a supply and demand balance is achieved. This initial supply and demand match is achieved by reducing supplies in a merit order to match the forecast demand.

**"Forecast" & "Estimate"**  
UNC TPD Section O4.1.2b(i) refers to 'estimates' of "1-in-20 peak day demand". UNC TPD Section O, 4.1.3 states that the estimates under paragraph 4.1.2b(ii) "will be given in respect of each NTS Exit Point on an individual basis..." For the purposes of this modification "forecast" and "estimate" are interchangeable terms. The aggregate level is by definition "diversified" but the exit point level becomes "undiversified". Therefore "undiversified" NTS forecast 1-in-20 peak day demand appropriate when applied to individual exit points.

<sup>1</sup> National Grid's "Gas Demand Forecasting Methodology", Chapter 2.9

that fact that at the time of setting indicative prices the obligated level may not be relevant as it may change as a result of subsequent exit capacity applications.

It is further proposed that estimates of 1-in-20 peak day demand data will be produced and published on an individual NTS Exit Point basis, in accordance with UNC TPD Section O, for years "0 to 4".

This will ensure that a supply and demand match can be achieved for charge setting purposes. It is anticipated that National Grid's undiversified NTS forecast 1-in-20 peak day demand, consistent with this modification, will be published in the National Grid Ten Year Statement going forward.

## 0356A

It is proposed that:

- For bi-directional sites with physical entry capability (storage, IUK, and BBL) the modelled demand is zero.
- For all other NTS Exit Points (including DN Offtakes, bi-directional sites with no physical entry capacity and other directly connected offtakes) the modelled demand will be the booked NTS Exit (Flat) Capacity.
  - For setting indicative prices for Gas Years Y+N the booked capacity will be the enduring booked capacity plus any annual capacity booked for Y+N.
  - For setting firm prices for Gas Year Y+1 the booked capacity will be the enduring booked capacity plus annual capacity booked for Gas Year Y+1.

This would ensure that a supply and demand match could be achieved for charge setting purposes and maintain the incentive on Shippers to manage their NTS Exit (Flat) Capacity bookings.

For clarity for exit points with no booked capacity, including new exit points who had not had the opportunity to book capacity the modelled demand will be zero. Daily exit capacity bookings will not be taken into account.

It is also proposed that the following paragraphs are modified with a view to increasing their clarity from a legal perspective;

UNC Section Y – Charging Methodologies, Part A, Appendix C, Chapter 2, 2.5.1 The Transport Model – "Model Input Data" & "Model Inputs".

This will not change the underlying obligations but only the way in which they are expressed, as set out in the Formal Legal Text that has been provided as part of this modification.

## Impacts and Costs

The modifications require a change to NTS internal manual processes only and hence there are no systems impacts and no costs have been identified for Users.

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## Implementation

Implementation is required in time for prices to be set by 1<sup>st</sup> May 2012 such that they become applicable from 1<sup>st</sup> October 2012. It is therefore proposed that;

- Subject to an Authority decision published by 30<sup>th</sup> April 2012 then the modification can be implemented on 1<sup>st</sup> May 2012.
- Subject to an Authority decision published after 30<sup>th</sup> April 2012, and before 31<sup>st</sup> July, then it is proposed that the modification is implemented on 1<sup>st</sup> August 2012.
- Subject to an Authority decision published after 31<sup>st</sup> July 2012 then it is proposed that this proposal is implemented as soon as reasonably practical.

National Grid is also required to produce indicative prices ahead of the annual NTS Exit (Flat) Capacity application windows and the next relevant window, in regard to indicative price setting, will be July 2012. National Grid NTS believes that ideally, indicative charges should be based on an approved NTS Charging Methodology, and should at least be based on a proposed Charging Methodology.

## The Case for Change

The modifications would result in a workable Charging Methodology for the derivation of NTS Exit (Flat) Capacity Prices. Being able to calculate revised charges would facilitate achievement of the relevant objectives.

## Recommendations

All parties are invited to consider whether they wish to submit views regarding this modification.

## 2 Why Change?



### GCM05

A supply and demand match is required within the NTS charging Transportation Model, which is used for NTS capacity charge setting purposes. The data used for NTS Exit (Flat) Capacity charge setting purposes from 1<sup>st</sup> October 2012 in accordance with the prevailing NTS charging methodology, is as follows;

- The modelled demand flow is the obligated (baseline plus incremental) level of NTS Exit (Flat) Capacity, other than at bi-directional sites with physical entry capability (storage, IUK, and BBL) where the modelled demand flow is zero. This equates to a level of 7800 GWh/day for 2012/13.
- The modelled supply flow is derived from the supply/demand data set out in the most recent Ten Year Statement for each year for which prices are being set.

Through the Gas TCMF, issues associated with the NTS Exit (Flat) Capacity price setting methodology, to be used from 1st October 2012, were raised:

### Demand vs. Supplies

The first issue identified was that using baseline plus incremental capacity, for the demand flow data, could create a demand level so high that the modelled supplies would not be able to achieve the required supply/demand balance, resulting in an unworkable methodology. This has proved to be the case as a consequence of the updated 2010 Ten Year Statement supply data. The modelled demand flow - the obligated (baseline plus incremental) level of NTS Exit (Flat) Capacity, other than at bi-directional sites with physical entry capability (storage, IUK, and BBL) where the modelled demand flow is zero, equates to a level of 7800 GWh/day for 2012/13. The Ten Year Statement available supplies for 2012/13, taking into account IUK capability, are 7718 GWh/day.

### Price Variability

The second issue identified by National Grid was the variability of NTS Exit Capacity prices at the southern Scottish and Northern DN NTS Exit Points, and the Moffat NTS Exit Point.

This variability occurs when the modelled supplies at St. Fergus are insufficient to meet the higher Scottish and Northern DN, and Moffat modelled demand flows. This is a consequence of reduced St Fergus supplies and baselines plus incremental NTS Exit (Flat) Capacity being used to model demand flows. As a result, a greater proportion of supply flows are required from the south of the network to meet the demand further north, leading to higher NTS Exit (Flat) Capacity prices. This is caused in part by a decline in flows through St. Fergus and so this swing from being a "supply" area to a "demand" area is not necessarily a reason for change.

GCM16 was raised, developed and implemented to address the issue of volatile exit capacity charges that were swinging (in some extreme points) by more than 1000% year on year. To address this issue National Grid proposed moving from supply forecasts to a capacity based approach as this would remove the volatility of exit

The enduring NTS Exit (Flat) Capacity charge setting arrangements were introduced via NTS Gas Charging Methodology proposal GCM05.

For more information see;

[http://www.nationalgrid.com/uk/Gas/Charges/consultations/archive\\_consultation\\_papers/](http://www.nationalgrid.com/uk/Gas/Charges/consultations/archive_consultation_papers/)

capacity charges as a result of changes in National Grid’s forecast demand. Some parties are concerned that moving towards forecast demand for exit capacity charge derivation (as proposed by National Grid in Modification 0356) will result in more volatile charges for all exit points. Basing charges on capacity bookings may be expected to be less volatile than demand forecasts as they are unlikely to change significantly once the enduring exit reform has bedded in. However, some believe that using bookings could be more volatile given the existence of daily capacity products.

### **Baseline may no longer be reflective of “connected load”**

In developing the enduring NTS Exit (Flat) Capacity charge setting arrangements, the intention was to better reflect the “connected load”, recognising that the concepts of Firm and Interruptible capacity were no longer applicable. The resultant move towards the use of the baseline plus incremental capacity as the demand flow level may now no longer be reflective of the “connected load” as bookings are above expected peak day flows resulting in a significant increase in the obligated level.

In respect of the DNs, some offtakes are not booked up to the baseline level but other offtake bookings have triggered incremental capacity, with the aggregate baseline plus incremental level being in excess of the forecast 1-in-20 peak day demand.

For Moffat, the aggregate booking level has triggered a significant amount of incremental capacity despite the capability of the downstream infrastructure being far less than the amount of capacity booked.

Offtake Data (GWh/day) for 2012/13		
Offtake	Obligated Capacity	Forecast Demand
Moffat	529	273
DN	5466	4344

Some Shippers had raised concerns with the differential treatment of offtakes being proposed in 0356, and questioned whether this was due discrimination. Concerns were expressed as to whether the proposed methodology would weaken the incentive on Shippers and GDNs to manage their exit capacity bookings, which was a key issue in exit reform and the implementation of UNC Modification 0195AV. National Grid NTS believe this has been addressed through the amendments made to 0356.

Other Shippers were concerned that 0356A does not propose a consistent approach, with bookings not being used at all exit points. This contrasts with 0356 where forecast demand is proposed throughout, albeit with zero demand assumed for all bidirectional exit points. 0356A could therefore be regarded as unduly discriminatory.

### **Consistency with Modification 0195AV**

When implementing Modification 0195AV – Enduring Exit Reform – the Authority was keen to ensure that an incentive was placed on Users to manage their exit capacity bookings and provide clear signals to National Grid as to what their capacity requirements were<sup>2</sup>. It was believed that incentivising Users to manage their exit

<sup>2</sup> See Authority Decision available at: [www.gasgovernance.co.uk/0195](http://www.gasgovernance.co.uk/0195)

capacity bookings would facilitate the efficient operation and development of the NTS as Users were best placed to signal their capacity requirements to National Grid who would then invest based on these signals. This is further strengthened by the fact that the GDNs have a Licence Condition to have sufficient capacity to meet peak demand, which they discharge through their NTS Exit Capacity bookings. Given that National Grid is fully exposed to any under investment through the exit capacity buy back mechanism, EDF supports National Grid investing based on these capacity booking. EDF therefore believes it is appropriate that Users continue to be incentivised on their exit capacity bookings by ensuring that charges are derived based on these bookings, which will also be consistent with the decision on Modification 0195AV. However, others support additional information being taken into account in the National Grid planning process. In addition some consider the use of bookings to support charge calculations might deter long-term bookings and incentivise short-term bookings, such that 0356A may be less consistent with 0195AV.

## Legal Text Issues

When the NTS charging methodology was incorporated into the UNC as part of the governance review it was transferred into the UNC unchanged. The charging methodology that currently sits within the UNC is currently written as a charging methodology and not as a legal document. This is not consistent with the majority of the UNC document and is not appropriate for a document that forms a multi-party legal contract. It would therefore appear appropriate to correct this anomaly by rewriting the section impacted by these modifications.



## 3 Solution



**0356**

### Gas TCMF Discussions and Options

Following discussions at the Gas Transmission Charging Methodologies Forum (TCMF) between May and September 2010, discussion paper GCD09 was issued to seek views on the merits of a number of alternative options for modelling supply and demand flows within National Grid's Transportation Model.

It is the modelled supply and demand flows, along with the network pipe distances, that drive the calculation of the long run marginal costs (LRMCs) and hence the price differences across the NTS.

For the avoidance of doubt, the options identified in GCD09 did not relate to the capacity data used in the Tariff section of the Transportation Model, which uses Baseline (TO) NTS Exit (Flat) Capacity data at all NTS Exit Points in order to ensure that prices are adjusted so that the implied revenue level (price multiplied by the baseline (TO) NTS Exit (Flat) Capacity quantity) equals National Grids target TO exit revenue. This ensures that if baseline (TO) NTS Exit (Flat) Capacity is fully booked, the resulting capacity revenue would equal National Grid's target TO exit revenue. If baseline (TO) NTS Exit (Flat) Capacity is not fully booked, revenue associated with unsold baseline capacity will be collected from a TO Exit Commodity Charge.

In respect of demand flows, the options identified in GCD09 were;

- Baseline plus Incremental NTS Exit (Flat) Capacity
- Annual NTS Exit (Flat) Capacity Bookings
- Forecast
- Maximum Supply Point Offtake Rate (MSPOR)
- Capability of the downstream facility
- Zero (currently used for physically bi-directional sites with physical entry capability: storage, IUK, and BBL)

It was anticipated that a combination of these options could be applied such that each different offtake type might be modelled by a separate data source.

In respect of beach/UKCS supply flows, the options identified were;

- Ten Year Statement forecast supplies (no change from current method)
- Baseline supply data
- Average of Ten Year Statement forecast data
- Ten Year Statement Forecast Supplies (Data from Ten Year Statement before the first Y+4 Enduring Annual NTS Exit (Flat) Capacity applications for the relevant Gas Year)

### "1-in-20 peak day demand"

2.6.4 For the purposes of the Code, in relation to the Total System, any part of a System, and in respect of any Gas Year: "1-in-20 peak day demand" is the peak day demand that, in a long series of winters, with connected load being held at the levels appropriate to the winter in question, would be exceeded in one out of 20 winters, each winter being counted only once.

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Respondents to NTS charging discussion paper GCD09 were asked for views on these options, for the purposes of developing charging methodology proposals.

Feasibility of Demand Flow Options	
Baseline plus Incremental NTS Exit (Flat) Capacity	This is the prevailing methodology applicable from 1 <sup>st</sup> October 2012 and is no longer workable if used for all NTS Exit Points.
Annual NTS Exit (Flat) Capacity Bookings	Daily bookings and some annual bookings would not be available at the time of setting charges. This option may result in Users, relying on the daily and off-peak products, not appropriately contributing to TO costs.
Forecast	This option represents the most realistic expectation of maximum flow.
Maximum Supply Point Offtake Rate (MSPOR)	This option is not anticipated to result in a workable methodology due to the high aggregate level of MSPOR.
Capability of the downstream facility	No definitive value for capability, other than the obligated (baseline plus incremental) capacity level was identified for offtakes other than interconnectors.
Zero (currently used for bi-directional sites with physical entry capability: storage, BBL, and IUK)	This option represents the prevailing peak forecast for storage offtakes, BBL and IUK.

Respondents to GCD09 suggested that there may be some benefit in waiting for the 2011 NTS Exit (Flat) Capacity reduction window before raising a charging methodology proposal; however, the level of obligated (baseline plus incremental) capacity would not be reduced as a result of capacity reductions.

Respondents to GCD09 suggested that there may be some benefit in waiting for the impact of the application of NTS exit capacity substitution following the 2011 NTS Exit (Flat) Capacity application window before raising a charging methodology proposal. The level of obligated (baseline plus incremental) NTS Exit (Flat) Capacity would only reduce as a result of unsold NTS Exit (Flat) Capacity being substituted for incremental NTS Exit (Flat) Capacity with a high exchange rate. This seems unlikely to have a significant impact on the level of obligated NTS Exit (Flat) Capacity given the level of unsold capacity and the potential for incremental NTS Exit (Flat) Capacity. It should be noted that if NTS exit capacity substitution occurred with a one to one ratio then there would be no change in the obligated NTS Exit (Flat) Capacity level as a result of incremental capacity being met through substitution.

Based on responses to the GCD09 discussion paper and from analysis of the options, National Grid has concluded that modelling the demand flows as forecast demand would be the most appropriate solution.

Feasibility of Supply Flow Options	
Ten Year Statement forecast supplies (no change from current method)	This is the prevailing methodology applicable from 1 <sup>st</sup> October 2012 and would remain viable should demands be modelled at the forecast level. This option represents the most realistic expectation of maximum flow.
Baseline supply data	This option may allow for a supply demand balance should demand flows continue to be modelled as the obligated (baseline plus incremental) capacity. This option does not represent a realistic expectation of maximum flow.
Average of Ten Year Statement forecast data	This option may have the potential to reduce price volatility but further analysis has been requested.
Ten Year Statement Forecast Supplies (Data from Ten Year Statement before the first Y+4 Enduring Annual NTS Exit (Flat) Capacity applications for the relevant gas year)	This option may have the potential to reduce price volatility but further analysis has been requested. Using the data from the time of the relevant investment decisions relating to NTS Exit (Flat) Capacity may be more cost reflective.

Based on responses to the GCD09 discussion paper and from analysis of the options, National Grid has concluded that making changes to the modelled supply flows would not be appropriate at this time. National Grid will carry out further analysis, as requested, and will consider the consistency of the data used for both NTS Entry and Exit capacity charge setting purposes before bringing forward further proposals.

## 0356 Solution

It is proposed that for the setting of prices the inputs to the NTS Transportation Model will be as follows:

- For bi-directional sites the modelled demand will be the undiversified NTS forecast 1-in-20 peak day demand.
- For bi-directional sites with physical entry capability (storage, IUK, and BBL) the forecast demand is zero.
- For bi-directional sites with no physical entry capability (Moffat) the forecast will be the undiversified NTS forecast 1-in-20 peak day demand.
- For NTS/LDZ offtakes, the modelled demand will be the undiversified NTS forecast 1-in-20 peak day demand for the relevant LDZ, and this demand will be prorated

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between the relevant NTS/LDZ offtakes based on the booked NTS Exit (Flat) Capacity.

- For other directly connected (DC) NTS offtakes (Power Generation & Industrials) the modelled demand will be the undiversified NTS forecast 1-in-20 peak day demand.

For inputs into the NTS Transportation Model, the undiversified NTS forecast 1-in-20 peak day demand for the DNs, Moffat, and other directly connected (DC) offtakes will be capped at the obligated (baseline + incremental) capacity level.

For the purposes of calculating indicative prices the modelled demand flow will be as outlined above but with no capping of the forecast to the obligated level. This is due to that fact that at the time of setting indicative prices the obligated level may not be relevant as it may change as a result of subsequent exit capacity applications.

It is further proposed that estimates of 1-in-20 peak day demand data will be produced and published on an individual NTS Exit Point basis, in accordance with UNC TPD Section O, for years "0 to 4".

This will ensure that a supply and demand match can be achieved for charge setting purposes. It is anticipated that National Grid's undiversified NTS forecast 1-in-20 peak day demand, consistent with this modification, will be published in the National Grid Ten Year Statement going forward.

It is also proposed that the following paragraphs are modified with a view to increasing their clarity from a legal perspective;

UNC Section Y – Charging Methodologies, Part A, Appendix C, Chapter 2, 2.5.1 The Transport Model – "Model Input Data" & "Model Inputs".

This will not change the underlying obligations but only the way in which they are expressed, as set out in the Suggested Legal Text that has been provided as part of this modification.

## **0356A Solution**

It is proposed that;

- For bi-directional sites with physical entry capability (storage, IUK, and BBL) the modelled demand is zero.
- For all other NTS Exit Points (including DN Offtakes, bi-directional sites with no physical entry capacity and other directly connected offtakes) the modelled demand will be the booked NTS Exit (Flat) Capacity.
  - For setting indicative prices for Gas Years Y+N the booked capacity will be the enduring booked capacity plus any annual capacity booked for Y+N.

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- For setting firm prices for Gas Year Y+1 the booked capacity will be the enduring booked capacity plus any annual capacity booked for Gas Year Y+1.

This would ensure that a supply and demand match could be achieved for charge setting purposes and maintain the incentive on Shippers to manage their NTS Exit (Flat) Capacity bookings.

For clarity for exit points with no booked capacity, including new exit points who had not had the opportunity to book capacity the modelled demand will be zero. Daily exit capacity bookings will not be taken into account.

It is also proposed that the following paragraphs are modified with a view to increasing their clarity from a legal perspective;

UNC Section Y – Charging Methodologies, Part A, Appendix C, Chapter 2, 2.5.1 The Transport Model – “Model Input Data” & “Model Inputs”.

This will not change the underlying obligations but only the way in which they are expressed, as set out in the Formal Legal Text that has been provided as part of this modification.

## 4 Relevant Objectives

Implementation will better facilitate the achievement of **Relevant Objectives a, b and c.**

The Workgroup's view of the benefits against the Code Relevant Methodology Objectives

Description of Relevant Objective	Identified impact
a) save in so far as paragraphs (aa) or (d) apply, that compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business;	See below
aa) that, in so far as prices in respect of transportation arrangements are established by auction, either: (i) no reserve price is applied, or (ii) that reserve price is set at a level - (I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and (II) best calculated to promote competition between gas suppliers and between gas shippers;	None
b) that, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business;	See below
c) that, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and	See below
d) that the charging methodology reflects any alternative arrangements put in place in accordance with a determination made by the Secretary of State under paragraph 2A(a) of Standard Special Condition A27 (Disposal of Assets).	None

With the assumptions currently specified in the UNC, there may not be a balance between supply and demand in the NTS charging Transportation Model, which is used for NTS capacity charge setting purposes. As a result, the model will fail to calculate charges, which would consequently be undefined.

### Reflecting the costs incurred by the licensee in its transportation business

Implementation of either modification would enable the Transportation Model to run and calculate exit charges. A working charging methodology would be expected to better reflect costs incurred than charges that, as a result of charges not being defined by the model, remain at their present level regardless of changes in circumstances.

0356 might be expected to better reflect investment costs than 0356A. This is because NTS planning takes into account information beyond capacity bookings, and reflects



### Charging Methodology Relevant Objectives

*"relevant objectives" means, in respect of the UNC charging methodologies, only; in relation to the charging methodology regulated by Standard Special Condition A5 the "relevant methodology objectives" listed in paragraph 5 of that condition,*

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National Grid's forecasts. To the extent that the forecast used for the Transportation Model and network planning are consistent, 0356 would be expected to reflect investment costs better than a model based solely on booked capacity.

## **Taking account of developments in the transportation business**

The prevailing methodology for setting NTS Exit (Flat) Capacity charges from 1<sup>st</sup> October 2012 uses baseline plus incremental capacity (obligated capacity), for the demand flow data. It was highlighted that this could create a demand level so high that the modelled supplies would not be able to achieve the required supply/demand balance, resulting in an unworkable NTS charging methodology. This has proved to be the case as a consequence of the level of obligated capacity triggered and the updated 2010 Ten Year Statement supply data. Updating the charging methodology to reflect this changed position would therefore be consistent with taking account of developments in the transportation business.

## **Facilitating effective competition between gas shippers and between gas suppliers**

Basing the NTS charging methodology on data that will be published in the Ten Year Statement from 2011 or on capacity bookings should ensure a transparent charging methodology such that Users can replicate the charge setting process and forecast future charge levels more accurately. Promoting transparency of the charging methodology is consistent with the facilitation of competition between gas shippers. National Grid NTS will produce a version of the charge setting Transportation Model, which allows the application of the proposed methodology in terms of the calculation of offtake demands to be replicated. Some Workgroup Members believed that, notwithstanding the publication of the model, 0356A would provide increased transparency since it would be based on data rather than on National Grid's assumptions, which are not codified.

Ensuring that the charging methodology is cost reflective should ensure that shippers face the costs resulting from their connection decisions and hence cross subsidies are avoided. Avoiding cross subsidies is consistent with the facilitation of competition between gas shippers.

Basing charges on booked capacity would be expected to provide more stability than using forecast data since bookings are not susceptible to assumptions and it is unlikely that exit capacity bookings will fluctuate significantly once the enduring exit regime has been implemented. This is consistent with the principle behind the development and implementation of GCM16 which sought to move away from forecast data for certain supply points which could be variable, and so create instability and unpredictable exit charges. Increasing the stability and predictability of charges would reduce risk for Shippers and facilitate the development of effective competition.

Some Workgroup attendees felt that the approach proposed by 0356A was discriminatory in that capacity bookings are not used at all exit points. Introducing such discrimination risks creating cross-subsidies and inappropriate cost allocations, which would be detrimental to the securing of effective competition. However, others felt that the assumptions proposed at bi-directional sites were effectively the same,

with both being at zero for the foreseeable future, such that there would be no distinction between the two modifications.

Some Workgroup attendees also felt that basing prices on longer-term bookings could inappropriately impact the incentives to book short or long-term capacity, with shorter term being preferred. 0356A could allow Users to influence their own charges through their booking behaviour, since higher bookings before 1 May each year would tend to give higher prices (other things being equal). This could be seen as adversely impacting competition to the extent that some parties are more able to do this than others. Other Workgroup attendees observed that the drivers behind booking strategies were unlikely to be significantly changed by the different approach to charge setting, and hence any impact would be marginal at best.

## **Standard Relevant Objectives**

In addition to changes to the charging methodology, Modification 0356 proposes a change to Section O of the UNC – to facilitate publication of data at individual exit points out to Y+4 rather than Y+2 as at present.

Implementation of the proposed change would provide additional information to the market. Publishing information promotes effective competition, and hence the relevant objective of securing effective competition would be expected to be facilitated by implementation of 0356.

## **Licence Compliance**

The Workgroup considers that these modifications do not conflict with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Transporter's Licence as the modifications are consistent with setting NTS Exit (Flat) Capacity charges from 1<sup>st</sup> October 2012 and from the 1<sup>st</sup> October in each subsequent year.



## 5 Impacts and Costs

### Consideration of Wider Industry Impacts

In other debates, it has been suggested that it is preferable to avoid using forecasts. This avoids an element of discretion and also helps to ensure that there are no incentives for parties to seek to distort forecasts through the information provided to the forecaster.

### Costs

#### Indicative industry costs

No industry implementation costs have been identified, with only a minor change to NTS manual processes involved.

### Impacts

#### Impact on Transporters' Systems and Process

Transporters' System/Process	Potential impact
UK Link	<ul style="list-style-type: none"><li>• None</li></ul>
Operational Processes	<ul style="list-style-type: none"><li>• Internal changes to manual price setting processes.</li></ul>
User Pays implications	<ul style="list-style-type: none"><li>• None</li></ul>

#### Impact on Users

Area of Users' business	Potential impact
Administrative and operational	<ul style="list-style-type: none"><li>• None</li></ul>
Development, capital and operating costs	<ul style="list-style-type: none"><li>• None</li></ul>
Contractual risks	<ul style="list-style-type: none"><li>• Implementation would impact on the setting of NTS Exit (Flat) Capacity charges, which Users will attract as a result of previous applications for NTS.</li></ul>
Legislative, regulatory and contractual obligations and relationships	<ul style="list-style-type: none"><li>• None</li></ul>

#### Impact on Transporters

Impact on Transporters	
Area of Transporters' business	Potential impact
System operation	<ul style="list-style-type: none"> <li>• None</li> </ul>
Development, capital and operating costs	<ul style="list-style-type: none"> <li>• None</li> </ul>
Recovery of costs	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Price regulation	<ul style="list-style-type: none"> <li>• Would allow NTS exit charges to be defined.</li> </ul>
Contractual risks	<ul style="list-style-type: none"> <li>• None</li> </ul>
Legislative, regulatory and contractual obligations and relationships	<ul style="list-style-type: none"> <li>• Implementation would facilitate a cost reflective NTS pricing Methodology in regard to NTS Exit (Flat) Capacity Prices as required by the NTS Licence.</li> </ul>
Standards of service	<ul style="list-style-type: none"> <li>• Would allow NTS to provide timely notice of indicative and actual NTS Exit (Flat) Capacity Prices.</li> </ul>

Impact on Code Administration	
Area of Code Administration	Potential impact
Modification Rules	<ul style="list-style-type: none"> <li>• None</li> </ul>
UNC Committees	<ul style="list-style-type: none"> <li>• None</li> </ul>
General administration	<ul style="list-style-type: none"> <li>• None</li> </ul>

Impact on Code	
Code section	Potential impact
UNC TPD Section Y	For NTS Exit (Flat) Capacity charge setting from 1 <sup>st</sup> October 2012, the definition of nodal demand flow data, used within the NTS charging Transportation Model, would be redefined.

Impact on Code	
<b>0356 only</b> UNC TPD Section O, 4.1.2b(ii)	In respect of the requirement to produce estimates of 1-in-20 peak day demand data on an individual exit point basis, the definition would be redefined to include years "0 to 4".

Impact on UNC Related Documents and Other Referenced Documents	
Related Document	Potential impact
Network Entry Agreement (TPD I1.3)	None
Network Exit Agreement (Including Connected System Exit Points) (TPD J1.5.4)	None
Storage Connection Agreement (TPD R1.3.1)	None
UK Link Manual (TPD U1.4)	None
Network Code Operations Reporting Manual (TPD V12)	None
Network Code Validation Rules (TPD V12)	None
ECQ Methodology (TPD V12)	None
Measurement Error Notification Guidelines (TPD V12)	None
Energy Balancing Credit Rules (TPD X2.1)	None
Uniform Network Code Standards of Service (Various)	None

Impact on Core Industry Documents and other documents	
Document	Potential impact
Safety Case or other document under Gas Safety (Management) Regulations	None
Gas Transporter Licence	Implementation would facilitate a cost reflective NTS pricing Methodology in regard to NTS Exit (Flat) Capacity Prices.

Other Impacts	
Item impacted	Potential impact

Security of Supply	None
Operation of the Total System	None
Industry fragmentation	None
Terminal operators, consumers, connected system operators, suppliers, producers and other non code parties	None

## 6 Implementation

### Actual Charges

Implementation is required primarily such that prices can be set and notified by 1<sup>st</sup> May 2012 such that they become applicable from 1<sup>st</sup> October 2012.

### Indicative Charges

National Grid is required to produce indicative prices ahead of the annual NTS Exit (Flat) Capacity application windows and the next window will be July 2012. Indicative charges form part of the Enduring NTS Exit (Flat) Capacity User commitment process as Users are committed to holding and paying for four years of capacity, or holding and paying for capacity for a sufficient duration such that charges that will be paid are greater than or equal to the User commitment value. The User commitment quantity is defined as an amount equal to four years of charges based on the indicative charges applicable at the time of user commitment.

National Grid has published indicative NTS Exit (Flat) Capacity charges two months ahead of each of the 2009, 2010 & 2011 applications windows, and intends to do so before the 2012 application window. If an approved workable methodology is not available, National Grid will consider either delaying the publication of indicative charges or publishing indicative charges based on the proposed methodology, based on a view that this might be the best estimate of charges given available information. National Grid will seek industry views on the appropriate method of setting indicative charges, should an approved methodology not be available, by 1<sup>st</sup> May 2012.

It is therefore proposed that:

- If Ofgem reaches a decision prior to 30<sup>th</sup> April 2012 then the modification is implemented on 1<sup>st</sup> May 2012.
- If Ofgem reach a decision between 1<sup>st</sup> May 2012 and 31<sup>st</sup> July 2012 then it is proposed that the modification is implemented on 1<sup>st</sup> August 2012.
- If Ofgem reaches a decision after 1<sup>st</sup> August 2012 then it is proposed that the modification is implemented as soon as reasonably practical after this event.

## 7 The Case for Change

In addition to the analysis provided in this Report, the Workgroup considered a range of supporting material provided by National Grid NTS. This is available at [www.gasgovernance.co.uk/0356](http://www.gasgovernance.co.uk/0356).



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### GCD09

National Grid has consulted on the options for the source of demand flow data within the NTS Charging Transportation Model via Gas Charging Discussion paper GCD09.

Information can be found at;

<http://www.nationalgrid.com/uk/Gas/Charges/consultations/CurrentPapers/>

## 8 Legal Text

### Suggested Legal Text for 0356

Amend paragraph 4.1.2(b)(ii) of TPD Section O to read:

- (ii) \_\_\_\_\_ for each of years 0 to 4, of 1-in-20 peak day demand in accordance with paragraph 4.1.3;

Amend paragraph 2.5.1 of Appendix C to TPD Section Y Part A to read:

#### 2.5.1 The Transport Model

##### Model Input Data

- (a) \_\_\_\_\_ The ~~transport model~~Transport Model calculates the marginal costs of investment in the ~~transmission system that would be required in the National Transmission System~~ as a consequence of an increase in demand for gas or supply of gas at each connection point ~~System Point~~ or node on the ~~transmission system, National Transmission System~~. Such calculation is based ~~upon~~ analysis of peak conditions on the ~~transmission system~~. The ~~measure of National Transmission System and the costs of investment costs~~ which are expressed in terms of £/GWhkm, a ~~concept used to calculate marginal costs, hence~~. Where there is an increase in demand for gas or supply of gas at a System Point the marginal changes in flow distances based on increases at entry and exit points are ~~(measured in GWhkm) for a small energy injection to the system (measured in GWh) shall be estimated initially in terms of by reference to the increases or decreases in units of kilometres of the transmission system for a small energy injection to the system~~National Transmission System.

- (b) \_\_\_\_\_ The ~~transport model~~Transport Model requires a set of inputs representative of ~~which are consistent with the cost of providing capacity~~costs incurred by National Grid NTS in making NTS Exit (Flat) Capacity available on the ~~transmission system~~National Transmission System:

- (i) \_\_\_\_\_ Nodal supply and demand data (GWh)

~~Distribution Network (DN) and Direct Connection (DC) baseline plus obligated incremental exit capacity levels by offtake other than bi-directional sites where the demand will be zero~~

- (A) \_\_\_\_\_ Demand data shall be derived in relation to each NTS Exit Point as the lesser of:

- (1) \_\_\_\_\_ the National Grid NTS forecast undiversified 1-in-20 peak day demand at the relevant NTS Exit Point, provided that:

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(aa) for any NTS Connected Offtake System which is a Storage Facility or a pipeline interconnector and which has physical entry capability, demand at the relevant NTS Connected System Exit Point shall be deemed to be zero;

(bb) for NTS/LDZ Offtakes, the National Grid NTS forecast undiversified 1-in-20 peak day demand in the relevant LDZ shall be prorated between the relevant NTS/LDZ Offtakes on the basis of the amount of NTS Exit (Flat) Capacity registered at each of the relevant NTS/LDZ Offtakes;

For the purposes of this paragraph, "National Grid NTS forecast undiversified 1-in-20 peak day demand" means the 1-in-20 peak day demand for the National Transmission System that is derived from the summation of the forecast peak demands and load duration curves for each NTS Supply Point, NTS CSEP and NTS/LDZ Offtake; and

(2) the aggregate of the Baseline NTS Exit (Flat) Capacity and incremental NTS Exit (Flat) Capacity in respect of the relevant NTS Exit Point,

provided that paragraph (2) above shall be ignored for the purposes of setting or determining any indicative NTS Exit (Flat) Capacity Charges;

(2) Aggregate System Entry Point (ASEP) supplies

(ii) Transmission pipelines between each node (measured in km) and calculated by reference to:

(1) Existing pipelines

(2) New pipelines expected to be operational at or before the beginningstart of the gas yearGas Year under analysis

(iii) Identification of a reference node

## **Model Inputs**

(c) The nodal supply data for the Transport Model willshall be derived from the supply/demand data set out in the most recent Ten Year Statement for each yearGas Year for which prices are being setdetermined. The aggregate storage and Interconnector supply flows willshall be adjusted suchto ensure that a supply and demand balance is achieved. This initial the values for supply and

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demand ~~match is achieved~~ are equal. This adjustment shall be carried out by reducing supplies in a ~~merit~~ the following order to ~~match~~ the point at which supplies equal the forecast demand. ~~Supplies are reduced, until a match is achieved, using the following sequence; :~~

- (i) ~~short range storage facilities (LNG),~~ Storage Facilities;
- (ii) ~~mid range storage facilities,~~ Storage Facilities;
- (iii) ~~LNG Importation Facilities;~~ ;
- (iv) ~~long range storage facilities, Interconnectors, and Beach Terminals.~~ Storage Facilities;
- (v) ~~pipeline interconnectors; and~~
- (vi) ~~beach terminals.~~

The supply figures for Individual System Entry Points at Storage Facilities and Interconnector entry points therefore/or pipeline interconnectors may be set at a level that is less than or equal to the expected entry point capability.

~~Nodal demand data for the transport model will be the baseline plus obligated incremental exit flat capacity for DN offtakes and direct connections other than for bi-directional sites where the demand will be zero.~~

(d) Nodal demand data for the Transport Model shall be derived from a range of different data sources as more particularly described in paragraph 2.5.1(b)(i).

(e) National Transmission System network data for the charging year will be based on data taken from National Grid's Grid NTS's most recent Ten Year Statement.

## **Draft Legal Text for 0356A**

*Amend paragraph 2.5.1 of Appendix C to TPD Section Y Part A to read:*

### **2.5.1 The Transport Model**

#### **Model Input Data**

(a) ~~The transport model~~ Transport Model calculates the marginal costs of investment in the ~~transmission system~~ National Transmission System that would be required as a consequence of an increase in demand or supply at each connection point or node on the ~~transmission system~~ National Transmission System, based on analysis of peak conditions on the ~~transmission system~~ National Transmission System. The measure of the investment costs is in terms of £/GWhkm, a concept used to calculate marginal costs, hence marginal changes in flow distances based on increases at ~~entry~~ System Entry Points and ~~exit points~~ System Exit Points are estimated initially in terms of increases or decreases in units of kilometres of the ~~transmission system~~ National Transmission System for a small energy injection to the ~~system~~ National Transmission System.

(b) ~~The transport model~~ Transport Model requires a set of inputs ~~representative of the cost of providing capacity on the transmission system~~ as follows:

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(i) Nodal forecast supply and demand data (GWh)

(A) Distribution Network (DN) and Direct Connection (DC) ~~baseline plus obligated incremental exit capacity levels by~~ offtake ~~other than bi-directional sites where the~~ demands, which shall be determined as follows:

(1) for any NTS Connected Offtake System which has physical entry capability, demand ~~will be zero~~ at the relevant NTS Connected System Exit Point shall be deemed to be zero; and

(2) for all other NTS Exit Points, demand at the relevant NTS Exit Point shall be deemed to be equal to the aggregate amount of NTS Exit (Flat) Capacity that Users are registered as holding in relation to the relevant NTS Exit Point, provided that:

(a) for the purposes of setting or determining any indicative NTS Exit (Flat) Capacity Charges for any future Gas Year, the NTS Exit (Flat) Capacity used in paragraph (2) shall be the enduring NTS Exit (Flat) Capacity that Users are registered as holding in relation to the relevant NTS Exit Point plus any annual NTS Exit (Flat) Capacity that Users are registered as holding for the Gas Year in question; and

(b) for the purposes of setting firm NTS Exit (Flat) Capacity Charges for Gas Year Y+1 the amount of NTS Exit (Flat) Capacity used in paragraph (2) shall be the enduring NTS Exit (Flat) Capacity plus annual NTS Exit (Flat) Capacity that Users are registered as holding in relation to the relevant NTS Exit Point for Gas Year Y+1;

(B) Aggregate System Entry Point (ASEP) supplies representative of peak conditions on the National Transmission System

(ii) Transmission pipelines between each node (km)

(A) Existing pipelines

(B) New pipelines expected to be operational at the beginning of the gas year under analysis

(iii) Identification of a reference node

## **Model Inputs**

(c) The nodal supply data for the Transport Model ~~will~~shall be derived from the supply/demand data set out in the most recent Ten Year Statement for each

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~~year~~Gas Year for which prices are being set/determined. The aggregate storage and Interconnector supply flows will/shall be adjusted such/to ensure that a supply and demand balance is achieved. This initial/the values for supply and demand match is/achieved/are equal. This adjustment shall be carried out by reducing supplies in a merit the following order to match/the point at which supplies equal the forecast/modelled demand. Supplies are reduced, until a match is achieved, using the following sequence; :

- (i) ~~\_\_\_\_\_ short range storage facilities (LNG),~~ Storage Facilities;
- (ii) ~~\_\_\_\_\_ mid range storage facilities,~~ Storage Facilities;
- (iii) ~~\_\_\_\_\_ LNG Importation Facilities;~~
- (iv) ~~\_\_\_\_\_ long range storage facilities, Interconnectors, and Beach Terminals.~~  
Storage Facilities;
- (v) ~~\_\_\_\_\_ pipeline interconnectors; and~~
- (vi) ~~\_\_\_\_\_ beach terminals.~~

The supply figures for Individual System Entry Points at Storage Facilities and Interconnector entry points therefore/or pipeline interconnectors may be set at a level that is less than or equal to the expected entry point capability.

~~Nodal demand data for the transport model will be the baseline plus obligated incremental exit flat capacity for DN offtakes and direct connections other than for bi-directional sites where the demand will be zero.~~

- (d) ~~Nodal demand data for the Transport Model shall be derived from a range of different data sources as more particularly described in paragraph 2.5.1(b)(i).~~
- (e) ~~National Transmission System network data for the charging year will be based on data taken from National Grid's/NTS's most recent Ten Year Statement.~~

## 9 Recommendation



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### Consultation Ends

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On 06 January 2012

All parties are invited to consider whether they wish to submit views regarding this modification.

The close-out date for responses is 06 January 2012, which should be sent to [enquiries@gasgovernance.co.uk](mailto:enquiries@gasgovernance.co.uk).

A response template which you may wish to use is at [www.gasgovernance.co.uk/0356](http://www.gasgovernance.co.uk/0356).

## 10 Further Information



Please note that separate sets of tables have been provided in support of each modification.

### For 0356

The following tables show an estimate of the actual and indicative NTS Exit (Flat) Capacity Prices which would be generated by 1<sup>st</sup> May 2012 based on this modification proposal, compared with the indicative prices calculated in accordance with the prevailing Charging Methodology;

NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	0356 Proposed	Prevailing (May 2010)	0356 Proposed	Prevailing (May 2011)	0356 Proposed
AM_PAPER	DC	0.0153	0.0183	0.0163	0.0192	0.0164	0.0216
AVONMOUTH_LNG	DC	0.0090	0.0171	0.0140	0.0169	0.0140	0.0161
Bacton Interconnector	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BACTON_BAIRD	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BAGLAN_BAY_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BARKING_PG	DC	0.0101	0.0124	0.0109	0.0130	0.0107	0.0127
BARROW_BAINS	DC	0.0059	0.0089	0.0064	0.0093	0.0061	0.0113
BARROW_BS	DC	0.0059	0.0089	0.0064	0.0093	0.0061	0.0113
BARROW_GATEWAY	DC	0.0059	0.0089	0.0064	0.0093	0.0061	0.0113
BARTON_STACEY_(MRS)	DC	0.0205	0.0227	0.0217	0.0238	0.0219	0.0240
BILLINGHAM_ICI	DC	0.0032	0.0009	0.0058	0.0009	0.0054	0.0001
BP_GRANGEMOUTH	DC	0.0082	0.0001	0.0110	0.0001	0.0109	0.0001
BP_SALTEND_HP	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BRIDGEWATER_PAPER	DC	0.0201	0.0251	0.0212	0.0263	0.0181	0.0267
BRIGG_PG	DC	0.0029	0.0059	0.0033	0.0061	0.0027	0.0056
BRIMSDOWN_PG	DC	0.0106	0.0129	0.0114	0.0135	0.0112	0.0133
BRINE_FIELD_PS	DC	0.0026	0.0002	0.0051	0.0002	0.0047	0.0001
BRUNNER_MOND	DC	0.0171	0.0215	0.0180	0.0226	0.0147	0.0246
CARRINGTON_PS	DC	0.0176	0.0210	0.0191	0.0220	0.0159	0.0246
CAYTHORPE_(MRS)	DC	0.0001	0.0015	0.0001	0.0016	0.0001	0.0008
CENTRAX	DC	0.0216	0.0262	0.0236	0.0264	0.0240	0.0261
CHESHIRE_(MRS)	DC	0.0164	0.0215	0.0173	0.0225	0.0140	0.0239
COCKENZIE	DC	#N/A	#N/A	#N/A	#N/A	0.0081	0.0001
CONNAHS_QUAY_PS	DC	0.0205	0.0255	0.0216	0.0267	0.0185	0.0271
CORBY_PS	DC	0.0079	0.0109	0.0085	0.0114	0.0083	0.0111
CORYTON_PG	DC	0.0104	0.0121	0.0111	0.0127	0.0110	0.0124

### Indicative Charges

Indicative charges represent National Grid's best estimate of potential future charges based on information available at the time that charges are set; however, these charges are subject to change as updated data becomes available.

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NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	0356 Proposed	Prevailing (May 2010)	0356 Proposed	Prevailing (May 2011)	0356 Proposed
CORYTON_PG_2	DC	0.0104	0.0121	0.0111	0.0127	0.0110	0.0124
COTTAM_PG	DC	0.0019	0.0049	0.0023	0.0051	0.0017	0.0045
DAMHEAD_CREEK	DC	0.0097	0.0102	0.0104	0.0106	0.0102	0.0103
DEESIDE_PS	DC	0.0202	0.0255	0.0212	0.0268	0.0185	0.0271
DIDCOT_PS	DC	0.0168	0.0190	0.0178	0.0199	0.0178	0.0199
DRAKELOW_PS	DC	0.0129	0.0159	0.0138	0.0167	0.0138	0.0166
DYNEVOR_ARMS_LNG	DC	0.0001	0.0015	0.0001	0.0005	0.0001	0.0001
EASINGTON&ROUGH_TERMINAL	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
ENRON_(BILLINGHAM)	DC	0.0032	0.0009	0.0058	0.0009	0.0054	0.0001
GARTON_(MRS)	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
GLENMAVIS_LNG	DC	0.0107	0.0001	0.0137	0.0001	0.0137	0.0001
GOOLE_GLASS	DC	0.0006	0.0036	0.0009	0.0038	0.0003	0.0031
GRAIN_GAS	DC	0.0097	0.0102	0.0104	0.0106	0.0102	0.0103
GREAT_YARMOUTH	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
HATFIELD_MOOR_(MRS)	DC	0.0011	0.0043	0.0014	0.0046	0.0008	0.0040
HATFIELD_POWER_STATION	DC	#N/A	#N/A	#N/A	#N/A	0.0001	0.0028
HAYS_CHEMICALS	DC	0.0170	0.0221	0.0180	0.0232	0.0147	0.0234
HOLEHOUSE_FARM_(MRS)	DC	0.0172	0.0222	0.0182	0.0233	0.0149	0.0235
HORNSEA_(MRS)	DC	0.0001	0.0003	0.0001	0.0003	0.0001	0.0001
ICI_RUNCORN	DC	0.0202	0.0252	0.0213	0.0265	0.0182	0.0268
IMMINGHAM_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
KEADBY_BS	DC	0.0018	0.0048	0.0021	0.0050	0.0015	0.0043
KEADBY_PS	DC	0.0018	0.0048	0.0021	0.0050	0.0015	0.0043
KEMIRAINCE_CHP	DC	0.0199	0.0249	0.0209	0.0261	0.0178	0.0264
KINGS_LYNN_PS	DC	0.0029	0.0052	0.0033	0.0054	0.0028	0.0049
LANGAGE_PG	DC	0.0246	0.0291	0.0267	0.0295	0.0272	0.0293
LITTLE_BARFORD_PS	DC	0.0094	0.0117	0.0101	0.0122	0.0099	0.0120
LONGANNET	DC	0.0075	0.0001	0.0103	0.0001	0.0101	0.0001
MARCHWOOD	DC	0.0216	0.0245	0.0236	0.0256	0.0239	0.0260
MEDWAY_PS	DC	0.0098	0.0103	0.0105	0.0107	0.0103	0.0104
MILFORD_HAVEN_REFINERY	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
MOFFAT	DC	0.0154	0.0021	0.0186	0.0022	0.0188	0.0039
PARTINGTON_LNG	DC	0.0176	0.0209	0.0191	0.0219	0.0158	0.0245
PEMBROKE_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PETERBOROUGH_PS	DC	0.0060	0.0082	0.0065	0.0086	0.0061	0.0082
PETERHEAD_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PHILLIPS_SEAL_SANDS	DC	0.0026	0.0002	0.0051	0.0002	0.0047	0.0001
ROCKSAVAGE_PG	DC	0.0202	0.0252	0.0213	0.0265	0.0182	0.0268
ROSECOTE_PS	DC	0.0059	0.0089	0.0064	0.0093	0.0061	0.0113
RYE_HOUSE_PS	DC	0.0111	0.0133	0.0118	0.0140	0.0117	0.0138
SALTEND	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	0356 Proposed	Prevailing (May 2010)	0356 Proposed	Prevailing (May 2011)	0356 Proposed
SAPPAPERMILLCHP	DC	0.0142	0.0171	0.0151	0.0180	0.0151	0.0179
SEABANK_POWER_phase_II	DC	0.0091	0.0171	0.0141	0.0169	0.0140	0.0162
SEABANK_POWER_phase1	DC	0.0108	0.0154	0.0122	0.0150	0.0121	0.0142
SELLAFIELD_PS	DC	0.0099	0.0129	0.0106	0.0135	0.0105	0.0157
SEVERNSIDE_ICI	DC	0.0091	0.0170	0.0140	0.0168	0.0139	0.0160
SHOTTON_PAPER	DC	0.0204	0.0254	0.0215	0.0266	0.0184	0.0270
SPALDING_PG	DC	0.0033	0.0063	0.0037	0.0066	0.0032	0.0061
SPALDING_PG_2	DC	0.0033	0.0063	0.0037	0.0066	0.0032	0.0061
ST_FERGUS_BS	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
STALLINGBOROUGH	DC	0.0001	0.0007	0.0001	0.0007	0.0001	0.0001
STAYTHORPE	DC	0.0049	0.0078	0.0053	0.0082	0.0049	0.0077
STUBLACH	DC	0.0164	0.0215	0.0173	0.0225	0.0140	0.0239
SUTTON_BRIDGE_PS	DC	0.0043	0.0066	0.0047	0.0069	0.0043	0.0063
TEESSIDE_BASF	DC	0.0026	0.0002	0.0051	0.0002	0.0047	0.0001
TEESSIDE_HYDROGEN	DC	0.0026	0.0002	0.0052	0.0002	0.0047	0.0001
THEDDLETHORPE&SALTF_TERMINAL	DC	#N/A	#N/A	#N/A	#N/A	0.0001	0.0001
THORNTON_CURTIS_(KILLINGHOLME)	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
TILBURY_PS	DC	#N/A	#N/A	#N/A	#N/A	0.0114	0.0120
WEST_BURTON_PS	DC	0.0019	0.0048	0.0022	0.0052	0.0016	0.0046
WILLINGTON_PS	DC	#N/A	#N/A	#N/A	#N/A	0.0153	0.0182
WYRE_PS	DC	0.0131	0.0160	0.0139	0.0168	0.0139	0.0192
ZENECA	DC	0.0032	0.0009	0.0058	0.0009	0.0054	0.0001
BURNERVIE	DN	#N/A	0.0001	#N/A	0.0001	0.0001	0.0001
BACTON_OT	EA	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BRISLEY	EA	0.0003	0.0026	0.0005	0.0027	0.0001	0.0020
EYE	EA	0.0056	0.0079	0.0061	0.0082	0.0057	0.0078
GREAT_WILBRAHAM	EA	0.0056	0.0079	0.0061	0.0082	0.0057	0.0078
MATCHING_GREEN	EA	0.0097	0.0120	0.0104	0.0125	0.0102	0.0123
ROUDHAM_HEATH	EA	0.0019	0.0042	0.0022	0.0044	0.0017	0.0037
ROYSTON	EA	0.0075	0.0097	0.0080	0.0102	0.0077	0.0098
WEST_WINCH	EA	0.0027	0.0049	0.0030	0.0051	0.0025	0.0045
WHITWELL	EA	0.0094	0.0116	0.0101	0.0122	0.0098	0.0119
YELVERTON	EA	0.0001	0.0021	0.0001	0.0021	0.0001	0.0014
ALREWAS_EM	EM	0.0134	0.0164	0.0143	0.0172	0.0143	0.0171
BLABY	EM	0.0099	0.0129	0.0106	0.0135	0.0104	0.0133
BLYBOROUGH	EM	0.0019	0.0049	0.0023	0.0051	0.0017	0.0045
CALDECOTT	EM	0.0076	0.0105	0.0081	0.0110	0.0079	0.0107
DROINTON_OT	EM	0.0145	0.0175	0.0155	0.0183	0.0155	0.0183
GOSBERTON	EM	0.0030	0.0060	0.0034	0.0062	0.0029	0.0057
KIRKSTEAD	EM	0.0010	0.0039	0.0012	0.0041	0.0006	0.0034
MARKET_HARBOROUGH	EM	0.0087	0.0117	0.0093	0.0122	0.0091	0.0119

NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	0356 Proposed	Prevailing (May 2010)	0356 Proposed	Prevailing (May 2011)	0356 Proposed
SILK_WILLOUGHBY	EM	0.0022	0.0052	0.0025	0.0054	0.0020	0.0048
SUTTON_BRIDGE	EM	0.0044	0.0067	0.0049	0.0070	0.0044	0.0065
THORNTON_CURTIS_LDZ	EM	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
TUR_LANGLTON	EM	0.0089	0.0118	0.0095	0.0124	0.0093	0.0121
WALESBY	EM	0.0001	0.0015	0.0001	0.0015	0.0001	0.0008
ASSELBY	NE	0.0001	0.0031	0.0003	0.0032	0.0001	0.0025
BALDESBY	NE	0.0052	0.0045	0.0057	0.0047	0.0053	0.0041
BURLEY_BANK	NE	0.0045	0.0066	0.0049	0.0069	0.0045	0.0063
GANSTEAD	NE	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PANNAL	NE	0.0040	0.0070	0.0044	0.0073	0.0040	0.0068
PAULL	NE	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PICKERING	NE	0.0001	0.0042	0.0015	0.0044	0.0009	0.0037
RAWCLIFFE	NE	0.0003	0.0033	0.0005	0.0034	0.0001	0.0027
TOWTON	NE	0.0023	0.0053	0.0026	0.0055	0.0021	0.0049
BISHOP_AUCKLAND	NO	0.0050	0.0026	0.0076	0.0027	0.0073	0.0020
BISHOP_AUCKLAND_TEST_FACILITY	NO	0.0050	0.0026	0.0076	0.0027	0.0073	0.0020
COLDSTREAM	NO	0.0118	0.0001	0.0149	0.0001	0.0149	0.0001
CORBRIDGE	NO	0.0094	0.0032	0.0124	0.0033	0.0123	0.0051
COWPEN_BEWLEY	NO	0.0030	0.0007	0.0056	0.0006	0.0052	0.0001
ELTON	NO	0.0034	0.0018	0.0061	0.0018	0.0057	0.0011
GUYZANCE	NO	0.0120	0.0007	0.0150	0.0007	0.0150	0.0023
HUMBLETON	NO	0.0113	0.0001	0.0143	0.0001	0.0143	0.0001
KELD	NO	0.0120	0.0098	0.0129	0.0103	0.0128	0.0123
LITTLE_BURDON	NO	0.0039	0.0022	0.0065	0.0023	0.0061	0.0015
MELKINTHORPE	NO	0.0127	0.0091	0.0136	0.0095	0.0135	0.0115
SALTWICK_PC	NO	0.0152	0.0019	0.0184	0.0020	0.0186	0.0037
SALTWICK_VC	NO	0.0152	0.0019	0.0184	0.0020	0.0186	0.0037
THRINTOFT	NO	0.0055	0.0039	0.0077	0.0040	0.0074	0.0034
TOW_LAW	NO	0.0069	0.0046	0.0097	0.0048	0.0095	0.0041
WETHERAL	NO	0.0135	0.0066	0.0162	0.0069	0.0163	0.0088
HORNDON	NT	0.0101	0.0124	0.0109	0.0130	0.0107	0.0127
LUXBOROUGH_LANE	NT	0.0104	0.0126	0.0111	0.0132	0.0109	0.0130
PETERS_GREEN	NT	0.0098	0.0121	0.0105	0.0126	0.0103	0.0124
PETERS_GREEN_SOUTH_MIMMS	NT	0.0098	0.0121	0.0105	0.0126	0.0103	0.0124
WINKFIELD_NT	NT	0.0185	0.0207	0.0196	0.0217	0.0197	0.0218
AUDLEY_NW	NW	0.0180	0.0210	0.0190	0.0220	0.0158	0.0222
BLACKROD	NW	0.0152	0.0182	0.0162	0.0190	0.0162	0.0191
ECCLESTON	NW	0.0200	0.0242	0.0210	0.0254	0.0179	0.0257
HOLMES_CHAPEL	NW	0.0193	0.0222	0.0203	0.0233	0.0171	0.0235
LUPTON	NW	0.0094	0.0124	0.0101	0.0130	0.0099	0.0152
MALPAS	NW	0.0199	0.0229	0.0210	0.0240	0.0178	0.0242



NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	0356 Proposed	Prevailing (May 2010)	0356 Proposed	Prevailing (May 2011)	0356 Proposed
MICKLE_TRAFFORD	NW	0.0193	0.0243	0.0203	0.0255	0.0172	0.0258
PARTINGTON	NW	0.0176	0.0210	0.0191	0.0220	0.0159	0.0246
SAMLESBURY	NW	0.0138	0.0167	0.0147	0.0175	0.0147	0.0175
WARBURTON	NW	0.0178	0.0207	0.0189	0.0217	0.0156	0.0243
WESTON_POINT	NW	0.0202	0.0252	0.0213	0.0265	0.0182	0.0268
ABERDEEN	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
ARMADALE	SC	0.0099	0.0001	0.0128	0.0001	0.0128	0.0001
BALGRAY	SC	0.0016	0.0001	0.0042	0.0001	0.0037	0.0001
BATHGATE	SC	0.0095	0.0001	0.0124	0.0001	0.0123	0.0001
BROXBURN	SC	0.0110	0.0001	0.0140	0.0001	0.0140	0.0001
CARESTON	SC	0.0001	0.0001	0.0020	0.0001	0.0015	0.0001
DRUM	SC	0.0067	0.0001	0.0095	0.0001	0.0093	0.0001
GLENMAVIS	SC	0.0107	0.0001	0.0137	0.0001	0.0137	0.0001
HUME	SC	0.0128	0.0001	0.0159	0.0001	0.0159	0.0011
KINKNOCKIE	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
LANGHOLM	SC	0.0134	0.0042	0.0165	0.0043	0.0166	0.0061
LAUDERHILL	SC	0.0144	0.0007	0.0176	0.0007	0.0177	0.0024
LOCKERBIE	SC	0.0144	0.0033	0.0176	0.0034	0.0177	0.0051
MOSSIDE	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
NETHER_HOWCLEUGH	SC	0.0147	0.0014	0.0178	0.0014	0.0180	0.0031
PITCAIRNGREEN	SC	0.0039	0.0001	0.0066	0.0001	0.0062	0.0001
SOUTRA	SC	0.0145	0.0013	0.0177	0.0013	0.0178	0.0030
ST_FERGUS_OT	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
STRANRAER	SC	0.0154	0.0021	0.0186	0.0022	0.0188	0.0039
FARNINGHAM	SE	0.0120	0.0125	0.0128	0.0131	0.0127	0.0129
FARNINGHAM_B	SE	0.0120	0.0125	0.0128	0.0131	0.0127	0.0129
SHORNE	SE	0.0110	0.0115	0.0118	0.0121	0.0116	0.0118
TATSFIELD	SE	0.0137	0.0142	0.0146	0.0149	0.0146	0.0147
WINKFIELD_SE	SE	0.0185	0.0207	0.0196	0.0217	0.0197	0.0218
BRAISHFIELD_A	SO	0.0220	0.0242	0.0233	0.0254	0.0236	0.0257
BRAISHFIELD_B	SO	0.0220	0.0242	0.0233	0.0254	0.0236	0.0257
HARDWICK	SO	0.0133	0.0155	0.0141	0.0162	0.0140	0.0161
IPSDEN	SO	0.0165	0.0187	0.0175	0.0196	0.0175	0.0196
IPSDEN_2	SO	0.0165	0.0187	0.0175	0.0196	0.0175	0.0196
MAPPOWDER	SO	0.0170	0.0216	0.0188	0.0216	0.0189	0.0211
WINKFIELD_SO	SO	0.0185	0.0207	0.0196	0.0217	0.0197	0.0218
AYLESBEARE	SW	0.0192	0.0238	0.0210	0.0239	0.0213	0.0235
CHOAKFORD	SW	0.0246	0.0291	0.0267	0.0295	0.0272	0.0293
CIRENCESTER	SW	0.0086	0.0132	0.0099	0.0127	0.0097	0.0118
COFFINSWELL	SW	0.0218	0.0264	0.0238	0.0266	0.0242	0.0263
EASTON_GREY	SW	0.0091	0.0137	0.0105	0.0133	0.0102	0.0124

NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	0356 Proposed	Prevailing (May 2010)	0356 Proposed	Prevailing (May 2011)	0356 Proposed
EVESHAM	SW	0.0056	0.0102	0.0068	0.0096	0.0064	0.0085
FIDDINGTON	SW	0.0044	0.0089	0.0054	0.0083	0.0050	0.0072
ILCHESTER	SW	0.0149	0.0195	0.0166	0.0194	0.0166	0.0188
KENN_SOUTH	SW	0.0203	0.0249	0.0222	0.0250	0.0225	0.0246
LITTLETON_DREW	SW	0.0099	0.0145	0.0113	0.0141	0.0111	0.0133
PUCKLECHURCH	SW	0.0108	0.0154	0.0122	0.0150	0.0120	0.0142
ROSS_SW	SW	0.0016	0.0062	0.0025	0.0054	0.0020	0.0041
SEABANK_LDZ	SW	0.0092	0.0173	0.0142	0.0170	0.0141	0.0163
ALREWAS_WM	WM	0.0134	0.0164	0.0143	0.0172	0.0143	0.0171
ASPLEY	WM	0.0164	0.0194	0.0174	0.0203	0.0176	0.0204
AUDLEY_WM	WM	0.0180	0.0210	0.0190	0.0220	0.0158	0.0222
AUSTREY	WM	0.0122	0.0157	0.0135	0.0165	0.0136	0.0157
LEAMINGTON_SPA	WM	0.0082	0.0128	0.0095	0.0123	0.0092	0.0114
LOWER_QUINTON	WM	0.0067	0.0113	0.0079	0.0108	0.0076	0.0098
MILWICH	WM	0.0152	0.0181	0.0161	0.0190	0.0162	0.0190
ROSS_WM	WM	0.0016	0.0062	0.0025	0.0054	0.0020	0.0041
RUGBY	WM	0.0093	0.0138	0.0106	0.0134	0.0104	0.0126
SHUSTOKE	WM	0.0134	0.0169	0.0148	0.0177	0.0149	0.0170
STRATFORD_UPON_AVON	WM	0.0068	0.0114	0.0081	0.0109	0.0077	0.0099
MAELOR	WN	0.0207	0.0237	0.0218	0.0248	0.0187	0.0251
DOWLAIS	WS	0.0001	0.0021	0.0001	0.0011	0.0001	0.0001
DYFFRYN_CLYDACH	WS	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
GILWERN	WS	0.0001	0.0032	0.0001	0.0023	0.0001	0.0009

**0356 END.**

**For 0356A**

**The following tables shows indicative NTS Exit (Flat) Capacity Prices based on this modification proposal compared with the indicative prices calculated in accordance with the prevailing Charging Methodology;**

NTS Exit (Flat) Capacity Prices (p/kWh/day)							
Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	New Indicative	Prevailing Indicative (May 2010)	New Indicative	Prevailing Indicative (May 2011)	New Indicative
AM_PAPER	DC	0.0153	0.0206	0.0163	0.0207	0.0164	0.0216
AVONMOUTH_LNG	DC	0.0090	0.0162	0.0140	0.0160	0.0140	0.0167
Bacton Interconnector	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BACTON_BAIRD	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BAGLAN_BAY_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BARKING_PG	DC	0.0101	0.0103	0.0109	0.0098	0.0107	0.0102
BARROW_BAINS	DC	0.0059	0.0112	0.0064	0.0108	0.0061	0.0112
BARROW_BS	DC	0.0059	0.0112	0.0064	0.0108	0.0061	0.0112
BARROW_GATEWAY	DC	0.0059	0.0112	0.0064	0.0108	0.0061	0.0112
BARTON_STACEY_(MRS)	DC	0.0205	0.0228	0.0217	0.0229	0.0219	0.0239
BILLINGHAM_ICI	DC	0.0032	0.0009	0.0058	0.0001	0.0054	0.0001
BP_GRANGEMOUTH	DC	0.0082	0.0001	0.0110	0.0030	0.0109	0.0001
BP_SALTEND_HP	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BRIDGEWATER_PAPER	DC	0.0201	0.0252	0.0212	0.0255	0.0181	0.0266
BRIGG_PG	DC	0.0029	0.0059	0.0033	0.0053	0.0027	0.0055
BRIMSDOWN_PG	DC	0.0106	0.0130	0.0114	0.0127	0.0112	0.0132
BRINE_FIELD_PS	DC	0.0026	0.0003	0.0051	0.0001	0.0047	0.0001
BRUNNER_MOND	DC	0.0171	0.0233	0.0180	0.0224	0.0147	0.0234
CARRINGTON_PS	DC	0.0176	0.0233	0.0191	0.0235	0.0159	0.0245
CAYTHORPE_(MRS)	DC	0.0001	0.0016	0.0001	0.0001	0.0001	0.0001
CENTRAX	DC	0.0216	0.0253	0.0236	0.0256	0.0240	0.0267
CHESHIRE_(MRS)	DC	0.0164	0.0227	0.0173	0.0217	0.0140	0.0227
COCKENZIE	DC	#N/A	#N/A	#N/A	#N/A	0.0081	0.0001
CONNAHS_QUAY_PS	DC	0.0205	0.0248	0.0216	0.0251	0.0185	0.0262
CORBY_PS	DC	0.0079	0.0110	0.0085	0.0106	0.0083	0.0110
CORYTON_PG	DC	0.0104	0.0100	0.0111	0.0095	0.0110	0.0099
CORYTON_PG_2	DC	0.0104	0.0100	0.0111	0.0095	0.0110	0.0099
COTTAM_PG	DC	0.0019	0.0050	0.0023	0.0043	0.0017	0.0044
DAMHEAD_CREEK	DC	0.0097	0.0080	0.0104	0.0075	0.0102	0.0078
DEESIDE_PS	DC	0.0202	0.0248	0.0212	0.0251	0.0185	0.0262
DIDCOT_PS	DC	0.0168	0.0190	0.0178	0.0190	0.0178	0.0199
DRAKELOW_PS	DC	0.0129	0.0160	0.0138	0.0158	0.0138	0.0165

**NTS Exit (Flat) Capacity Prices**  
(p/kWh/day)

Exit Point	DC/DN	2012/13		2013/14		2014/15	
		Prevailing Indicative (May 2010)	New Indicative	Prevailing Indicative (May 2010)	New Indicative	Prevailing Indicative (May 2011)	New Indicative
DYNEVOR_ARMS_LNG	DC	0.0001	0.0006	0.0001	0.0001	0.0001	0.0001
EASINGTON&ROUGH_TERMINAL	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
ENRON_(BILLINGHAM)	DC	0.0032	0.0009	0.0058	0.0001	0.0054	0.0001
GARTON_(MRS)	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
GLENMAVIS_LNG	DC	0.0107	0.0001	0.0137	0.0057	0.0137	0.0013
GOOLE_GLASS	DC	0.0006	0.0037	0.0009	0.0029	0.0003	0.0027
GRAIN_GAS	DC	0.0097	0.0080	0.0104	0.0075	0.0102	0.0078
GREAT_YARMOUTH	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
HATFIELD_MOOR_(MRS)	DC	0.0011	0.0043	0.0014	0.0034	0.0008	0.0035
HATFIELD_POWER_STATION	DC	#N/A	#N/A	#N/A	#N/A	0.0001	0.0027
HAYS_CHEMICALS	DC	0.0170	0.0221	0.0180	0.0221	0.0147	0.0231
HOLEHOUSE_FARM_(MRS)	DC	0.0172	0.0223	0.0182	0.0225	0.0149	0.0234
HORNSEA_(MRS)	DC	0.0001	0.0004	0.0001	0.0001	0.0001	0.0001
ICI_RUNCORN	DC	0.0202	0.0253	0.0213	0.0256	0.0182	0.0267
IMMINGHAM_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
KEADBY_BS	DC	0.0018	0.0048	0.0021	0.0041	0.0015	0.0043
KEADBY_PS	DC	0.0018	0.0048	0.0021	0.0041	0.0015	0.0043
KEMIRAINCE_CHP	DC	0.0199	0.0249	0.0209	0.0252	0.0178	0.0263
KINGS_LYNN_PS	DC	0.0029	0.0053	0.0033	0.0046	0.0028	0.0048
LANGAGE_PG	DC	0.0246	0.0282	0.0267	0.0286	0.0272	0.0299
LITTLE_BARFORD_PS	DC	0.0094	0.0118	0.0101	0.0114	0.0099	0.0119
LONGANNET	DC	0.0075	0.0001	0.0103	0.0023	0.0101	0.0001
MARCHWOOD	DC	0.0216	0.0245	0.0236	0.0248	0.0239	0.0259
MEDWAY_PS	DC	0.0098	0.0081	0.0105	0.0076	0.0103	0.0079
MILFORD_HAVEN_REFINERY	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
MOFFAT	DC	0.0154	0.0044	0.0186	0.0106	0.0188	0.0064
PARTINGTON_LNG	DC	0.0176	0.0232	0.0191	0.0234	0.0158	0.0244
PEMBROKE_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PETERBOROUGH_PS	DC	0.0060	0.0083	0.0065	0.0078	0.0061	0.0081
PETERHEAD_PG	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PHILLIPS_SEAL_SANDS	DC	0.0026	0.0003	0.0051	0.0001	0.0047	0.0001
ROCKSAVAGE_PG	DC	0.0202	0.0253	0.0213	0.0256	0.0182	0.0267
ROOSECOTE_PS	DC	0.0059	0.0112	0.0064	0.0108	0.0061	0.0112
RYE_HOUSE_PS	DC	0.0111	0.0134	0.0118	0.0131	0.0117	0.0137
SALTEND	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
SAPPAPERMILLCHP	DC	0.0142	0.0172	0.0151	0.0171	0.0151	0.0179
SEABANK_POWER_phase_II	DC	0.0091	0.0162	0.0141	0.0161	0.0140	0.0168
SEABANK_POWER_phase1	DC	0.0108	0.0144	0.0122	0.0142	0.0121	0.0148
SELLAFIELD_PS	DC	0.0099	0.0152	0.0106	0.0150	0.0105	0.0157

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SEVERNSIDE_ICI	DC	0.0091	0.0161	0.0140	0.0159	0.0139	0.0166
SHOTTON_PAPER	DC	0.0204	0.0249	0.0215	0.0252	0.0184	0.0263
SPALDING_PG	DC	0.0033	0.0064	0.0037	0.0057	0.0032	0.0060
SPALDING_PG_2	DC	0.0033	0.0064	0.0037	0.0057	0.0032	0.0060
ST_FERGUS_BS	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
STALLINGBOROUGH	DC	0.0001	0.0008	0.0001	0.0001	0.0001	0.0001
STAYTHORPE	DC	0.0049	0.0079	0.0053	0.0073	0.0049	0.0077
STUBLACH	DC	0.0164	0.0227	0.0173	0.0217	0.0140	0.0227
SUTTON_BRIDGE_PS	DC	0.0043	0.0066	0.0047	0.0060	0.0043	0.0063
TEESSIDE_BASF	DC	0.0026	0.0003	0.0051	0.0001	0.0047	0.0001
TEESSIDE_HYDROGEN	DC	0.0026	0.0003	0.0052	0.0001	0.0047	0.0001
THEDDLETHORPE&SALTF_TERMINAL	DC	#N/A	#N/A	#N/A	#N/A	0.0001	0.0001
THORNTON_CURTIS_(KILLINGHOLME)	DC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
TILBURY_PS	DC	#N/A	#N/A	#N/A	#N/A	0.0114	0.0095
WEST_BURTON_PS	DC	0.0019	0.0049	0.0022	0.0042	0.0016	0.0044
WILLINGTON_PS	DC	#N/A	#N/A	#N/A	#N/A	0.0153	0.0181
WYRE_PS	DC	0.0131	0.0183	0.0139	0.0183	0.0139	0.0191
ZENECA	DC	0.0032	0.0009	0.0058	0.0001	0.0054	0.0001
BURNERVIE	DN	#N/A	0.0001	#N/A	0.0001	0.0001	0.0001
BACTON_OT	EA	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
BRISLEY	EA	0.0003	0.0027	0.0005	0.0018	0.0001	0.0019
EYE	EA	0.0056	0.0080	0.0061	0.0074	0.0057	0.0077
GREAT_WILBRAHAM	EA	0.0056	0.0080	0.0061	0.0074	0.0057	0.0077
MATCHING_GREEN	EA	0.0097	0.0120	0.0104	0.0117	0.0102	0.0122
ROUDHAM_HEATH	EA	0.0019	0.0043	0.0022	0.0035	0.0017	0.0037
ROYSTON	EA	0.0075	0.0098	0.0080	0.0093	0.0077	0.0097
WEST_WINCH	EA	0.0027	0.0050	0.0030	0.0043	0.0025	0.0045
WHITWELL	EA	0.0094	0.0117	0.0101	0.0114	0.0098	0.0118
YELVERTON	EA	0.0001	0.0021	0.0001	0.0013	0.0001	0.0013
ALREWAS_EM	EM	0.0134	0.0165	0.0143	0.0163	0.0143	0.0170
BLABY	EM	0.0099	0.0130	0.0106	0.0127	0.0104	0.0132
BLYBOROUGH	EM	0.0019	0.0050	0.0023	0.0043	0.0017	0.0044
CALDECOTT	EM	0.0076	0.0106	0.0081	0.0102	0.0079	0.0106
DROINTON_OT	EM	0.0145	0.0176	0.0155	0.0175	0.0155	0.0182
GOSBERTON	EM	0.0030	0.0060	0.0034	0.0054	0.0029	0.0056
KIRKSTEAD	EM	0.0010	0.0040	0.0012	0.0032	0.0006	0.0034
MARKET_HARBOROUGH	EM	0.0087	0.0118	0.0093	0.0114	0.0091	0.0119
SILK_WILLOUGHBY	EM	0.0022	0.0052	0.0025	0.0045	0.0020	0.0047
SUTTON_BRIDGE	EM	0.0044	0.0068	0.0049	0.0062	0.0044	0.0064

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THORNTON_CURTIS_LDZ	EM	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
TUR_LANGTON	EM	0.0089	0.0119	0.0095	0.0115	0.0093	0.0120
WALESBY	EM	0.0001	0.0016	0.0001	0.0007	0.0001	0.0007
ASSELBY	NE	0.0001	0.0032	0.0003	0.0024	0.0001	0.0025
BALDERSBY	NE	0.0052	0.0046	0.0057	0.0039	0.0053	0.0041
BURLEY_BANK	NE	0.0045	0.0067	0.0049	0.0060	0.0045	0.0063
GANSTEAD	NE	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PANNAL	NE	0.0040	0.0071	0.0044	0.0065	0.0040	0.0067
PAULL	NE	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PICKERING	NE	0.0001	0.0043	0.0015	0.0013	0.0009	0.0014
RAWCLIFFE	NE	0.0003	0.0034	0.0005	0.0026	0.0001	0.0027
TOWTON	NE	0.0023	0.0054	0.0026	0.0047	0.0021	0.0049
BISHOP_AUCKLAND	NO	0.0050	0.0027	0.0076	0.0019	0.0073	0.0019
BISHOP_AUCKLAND_TEST_FACILITY	NO	0.0050	0.0027	0.0076	0.0019	0.0073	0.0019
COLDSTREAM	NO	0.0118	0.0009	0.0149	0.0069	0.0149	0.0025
CORBRIDGE	NO	0.0094	0.0055	0.0124	0.0066	0.0123	0.0069
COWPEN_BEWLEY	NO	0.0030	0.0007	0.0056	0.0001	0.0052	0.0001
ELTON	NO	0.0034	0.0019	0.0061	0.0010	0.0057	0.0010
GUYZANCE	NO	0.0120	0.0030	0.0150	0.0091	0.0150	0.0048
HUMBLETON	NO	0.0113	0.0004	0.0143	0.0063	0.0143	0.0020
KELD	NO	0.0120	0.0121	0.0129	0.0142	0.0128	0.0149
LITTLE_BURDON	NO	0.0039	0.0023	0.0065	0.0014	0.0061	0.0015
MELKINTHORPE	NO	0.0127	0.0114	0.0136	0.0135	0.0135	0.0141
SALTWICK_PC	NO	0.0152	0.0042	0.0184	0.0104	0.0186	0.0062
SALTWICK_VC	NO	0.0152	0.0042	0.0184	0.0104	0.0186	0.0062
THRINTOFT	NO	0.0055	0.0040	0.0077	0.0032	0.0074	0.0033
TOW_LAW	NO	0.0069	0.0046	0.0097	0.0039	0.0095	0.0041
WETHERAL	NO	0.0135	0.0089	0.0162	0.0108	0.0163	0.0113
HORNDON	NT	0.0101	0.0103	0.0109	0.0098	0.0107	0.0102
LUXBOROUGH_LANE	NT	0.0104	0.0127	0.0111	0.0124	0.0109	0.0129
PETERS_GREEN	NT	0.0098	0.0122	0.0105	0.0118	0.0103	0.0123
PETERS_GREEN_SOUTH_MIMMS	NT	0.0098	0.0122	0.0105	0.0118	0.0103	0.0123
WINKFIELD_NT	NT	0.0185	0.0208	0.0196	0.0208	0.0197	0.0217
AUDLEY_NW	NW	0.0180	0.0211	0.0190	0.0212	0.0158	0.0221
BLACKROD	NW	0.0152	0.0182	0.0162	0.0182	0.0162	0.0190
ECCLESTON	NW	0.0200	0.0243	0.0210	0.0246	0.0179	0.0256
HOLMES_CHAPEL	NW	0.0193	0.0223	0.0203	0.0225	0.0171	0.0234
LUPTON	NW	0.0094	0.0147	0.0101	0.0145	0.0099	0.0151
MALPAS	NW	0.0199	0.0230	0.0210	0.0232	0.0178	0.0242

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MICKLE_TRAFFORD	NW	0.0193	0.0244	0.0203	0.0246	0.0172	0.0257
PARTINGTON	NW	0.0176	0.0233	0.0191	0.0235	0.0159	0.0245
SAMLESBURY	NW	0.0138	0.0168	0.0147	0.0167	0.0147	0.0174
WARBURTON	NW	0.0178	0.0230	0.0189	0.0232	0.0156	0.0242
WESTON_POINT	NW	0.0202	0.0253	0.0213	0.0256	0.0182	0.0267
ABERDEEN	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
ARMADALE	SC	0.0099	0.0001	0.0128	0.0048	0.0128	0.0004
BALGRAY	SC	0.0016	0.0001	0.0042	0.0001	0.0037	0.0001
BATHGATE	SC	0.0095	0.0001	0.0124	0.0044	0.0123	0.0001
BROXBURN	SC	0.0110	0.0001	0.0140	0.0060	0.0140	0.0017
CARESTON	SC	0.0001	0.0001	0.0020	0.0001	0.0015	0.0001
DRUM	SC	0.0067	0.0001	0.0095	0.0015	0.0093	0.0001
GLENMAVIS	SC	0.0107	0.0001	0.0137	0.0057	0.0137	0.0013
HUME	SC	0.0128	0.0018	0.0159	0.0079	0.0159	0.0036
KINKNOCKIE	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
LANGHOLM	SC	0.0134	0.0065	0.0165	0.0107	0.0166	0.0087
LAUDERHILL	SC	0.0144	0.0030	0.0176	0.0091	0.0177	0.0049
LOCKERBIE	SC	0.0144	0.0056	0.0176	0.0118	0.0177	0.0077
MOSSIDE	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
NETHER_HOWCLEUGH	SC	0.0147	0.0037	0.0178	0.0098	0.0180	0.0056
PITCAIRNGREEN	SC	0.0039	0.0001	0.0066	0.0001	0.0062	0.0001
SOUTRA	SC	0.0145	0.0036	0.0177	0.0097	0.0178	0.0055
ST_FERGUS_OT	SC	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
STRANRAER	SC	0.0154	0.0044	0.0186	0.0106	0.0188	0.0064
FARNINGHAM	SE	0.0120	0.0104	0.0128	0.0099	0.0127	0.0104
FARNINGHAM_B	SE	0.0120	0.0104	0.0128	0.0099	0.0127	0.0104
SHORNE	SE	0.0110	0.0094	0.0118	0.0089	0.0116	0.0093
TATSFIELD	SE	0.0137	0.0121	0.0146	0.0117	0.0146	0.0122
WINKFIELD_SE	SE	0.0185	0.0208	0.0196	0.0208	0.0197	0.0217
BRAISHFIELD_A	SO	0.0220	0.0243	0.0233	0.0245	0.0236	0.0256
BRAISHFIELD_B	SO	0.0220	0.0243	0.0233	0.0245	0.0236	0.0256
HARDWICK	SO	0.0133	0.0156	0.0141	0.0154	0.0140	0.0161
IPSDEN	SO	0.0165	0.0187	0.0175	0.0187	0.0175	0.0195
IPSDEN_2	SO	0.0165	0.0187	0.0175	0.0187	0.0175	0.0195
MAPPOWDER	SO	0.0170	0.0207	0.0188	0.0207	0.0189	0.0216
WINKFIELD_SO	SO	0.0185	0.0208	0.0196	0.0208	0.0197	0.0217
AYLESBEARE	SW	0.0192	0.0228	0.0210	0.0230	0.0213	0.0240
CHOAKFORD	SW	0.0246	0.0282	0.0267	0.0286	0.0272	0.0299
CIRENCESTER	SW	0.0086	0.0122	0.0099	0.0119	0.0097	0.0124

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COFFINSWELL	SW	0.0218	0.0255	0.0238	0.0258	0.0242	0.0269
EASTON_GREY	SW	0.0091	0.0128	0.0105	0.0125	0.0102	0.0130
EVESHAM	SW	0.0056	0.0093	0.0068	0.0088	0.0064	0.0091
FIDDINGTON	SW	0.0044	0.0080	0.0054	0.0074	0.0050	0.0077
ILCHESTER	SW	0.0149	0.0186	0.0166	0.0186	0.0166	0.0194
KENN_SOUTH	SW	0.0203	0.0239	0.0222	0.0242	0.0225	0.0252
LITTLETON_DREW	SW	0.0099	0.0136	0.0113	0.0133	0.0111	0.0139
PUCKLECHURCH	SW	0.0108	0.0144	0.0122	0.0142	0.0120	0.0148
ROSS_SW	SW	0.0016	0.0052	0.0025	0.0045	0.0020	0.0047
SEABANK_LDZ	SW	0.0092	0.0163	0.0142	0.0162	0.0141	0.0169
ALREWAS_WM	WM	0.0134	0.0165	0.0143	0.0163	0.0143	0.0170
ASPLEY	WM	0.0164	0.0194	0.0174	0.0195	0.0176	0.0203
AUDLEY_WM	WM	0.0180	0.0211	0.0190	0.0212	0.0158	0.0221
AUSTREY	WM	0.0122	0.0158	0.0135	0.0156	0.0136	0.0163
LEAMINGTON_SPA	WM	0.0082	0.0118	0.0095	0.0115	0.0092	0.0120
LOWER_QUINTON	WM	0.0067	0.0104	0.0079	0.0099	0.0076	0.0103
MILWICH	WM	0.0152	0.0182	0.0161	0.0181	0.0162	0.0189
ROSS_WM	WM	0.0016	0.0052	0.0025	0.0045	0.0020	0.0047
RUGBY	WM	0.0093	0.0129	0.0106	0.0126	0.0104	0.0131
SHUSTOKE	WM	0.0134	0.0170	0.0148	0.0169	0.0149	0.0176
STRATFORD_UPON_AVON	WM	0.0068	0.0105	0.0081	0.0100	0.0077	0.0105
MAELOR	WN	0.0207	0.0238	0.0218	0.0240	0.0187	0.0250
DOWLAIS	WS	0.0001	0.0011	0.0001	0.0002	0.0001	0.0002
DYFFRYN_CLYDACH	WS	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
GILWERN	WS	0.0001	0.0023	0.0001	0.0014	0.0001	0.0015

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