

Stage 04: Final Modification Report

# 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.

#### Panel recommended:



- that proposed Modification 0356 should be made;
- that proposed Modification 0356A should be made; and
- that proposed Modification 0356 better facilitates the Relevant Objectives than proposed Modification 0356A.



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 Final Modification Report, presented to the Panel on 19 January 2012.

The Authority will consider the Panel's Recommendation and decide whether or not this change should be made.

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# 1 Summary

#### **Are these Self-Governance Modifications?**

These are not self-governance modifications.

# 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(ii) 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. 1-in-20 peak day demand at the aggregate level is by definition "diversified" but at the exit point level becomes "undiversified". Therefore, "undiversified" NTS forecast 1-in-20 peak day demand is appropriate when applied to individual exit points.

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<sup>&</sup>lt;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  $1^{st}$  May 2012 such that they become applicable from  $1^{st}$  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 31st 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.

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# 2 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 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 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



#### GCM05

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/c onsultations/archive\_co nsultation\_papers/

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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 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.

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<sup>&</sup>lt;sup>2</sup> See Authority Decision available at: <a href="https://www.gasgovernance.co.uk/0195">www.gasgovernance.co.uk/0195</a>

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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.

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#### 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)

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



# "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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| 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.

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| 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 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.

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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.
  - 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 mange 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.

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# 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

| De  | scription of Relevant Objective  | Identified<br>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   | None                 |
|     | (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;  |                      |
| 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.

# a) 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.

Although BG Energy considers that Modification 0356 still overestimates peak day demand and therefore exit costs, it considers 0356 a major improvement on the 'as is' position and also preferable to Modification 0356A, and best meets the cost reflectivity criterion.

EDF noted that although it should be recognised that the transportation model develops charges based on the costs of delivering (or consuming) an incremental volume of energy at each node, the costs that NGG is seeking to recover through its charges are not just incremental investment costs, but also historical costs of providing and maintaining the network. Indeed NGG's recent business plan submission to Ofgem as part of the RIIO process has demonstrated that the costs of replacing and maintaining an ageing asset base will also be a significant cost driver going forward. It was therefore important to consider not just what is driving incremental costs to NGG's business, but also what is driving the ongoing costs. EDF further noted that it was capacity bookings that deliver incremental capacity in the longer term and were aware, through a CER consultation, that a capacity constraint has been identified on the Moffat interconnector which could take effect from 2013/14, depending on how demand develops in Ireland. According to the consultation the preferred option for Bord Gais is for investment on the network in Scotland to resolve this constraint. This would lend further weight to using capacity bookings as these would be required to signal the additional capacity and investment. It would also be useful to identify whether this is reflected in NGG's demand forecasts for this exit point.

To this extent EDF believe that 0356A is more cost reflective as it is capacity bookings that determine NGG's code requirements to meet capacity requirements in the medium term.

# b) 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.

EDF were concerned with NGG's ability to accurately forecast peak demand going forward due to changing arrangements in the electricity market impacting on the operation of the gas system. In particular EDF noted that although demand forecasts are relatively straight forward, and similar to capacity bookings this is based on the current market arrangements. Going ahead EMR, capacity mechanisms and an increasing penetration of intermittent generation could have a significant impact on how CCGTs operate. It is therefore unclear how well NGG will be able to forecast peak gas demand for these stations as this will be driven by electricity demand, the operation of the capacity mechanism and the volume of generation from intermittent

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sources. EDF therefore believed that using capacity bookings would provide an enduring basis for system requirements that will avoid the need to produce potentially erroneous forecasts. It should also be noted that NGG has moved away from forecasts for entry supplies due to their volatility and the impact that this had on capacity charges. EDF were therefore concerned that returning to forecasts for demand may reintroduce this volatility. This in turn could have a detrimental impact on competition amongst Shippers.

# c) 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.

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Energia considered that Modification 0356A introduced the potential risk of 'gaming' (strategic capacity booking) into the market by portfolio shippers. This risk is considered to pertain to both the strategic booking of exit points and the use of short/long term bookings by shippers across their portfolio. The use of forecast demand data as outlined in Modification 0356 ensures such a risk does not arise.

However SSE and AEP do not consider the approach under 0356A to be discriminatory as demand at bidirectional points is set to zero. In addition, SSE and AEP do not anticipate any skewing of preference for booking long term capacity from 0356A such that short term bookings are more likely.

# **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.

AEP commented on Data Transparency, understanding that Modification 0356 proposes to include a change to section O of the UNC to facilitate the publication of additional data at individual exit points up to Y+4 rather than Y+2. If this modification is approved then this is to be welcomed. However AEP understand there are limitations with this in that the data may only be published at or around the same time as the Ten Year Statement (TYS). The modification suggests that this data should be used as input data for the charging model however National Grid updates its demand forecasts following the TBE consultation which takes place early in the year; so that the most up to date demand data would not be used for setting charges actual or indicative if Modification 0356 is implemented.

#### **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.

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# 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                                     | • None  |
| Operational Processes                       | • Internal changes to manual price setting processes. |
| User Pays implications                      | • None  |

| Impact on Users   |   |
|---|---|
| Area of Users' business   | Potential impact  |
| Administrative and operational  | • None  |
| Development, capital and operating costs                              | • None  |
| Contractual risks   | Implementation would impact on the<br>setting of NTS Exit (Flat) Capacity<br>charges, which Users will attract as a<br>result of previous applications for NTS. |
| Legislative, regulatory and contractual obligations and relationships | • None  |

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

| Impact on Code Administration |                  |
|-------------------------------|------------------|
| Area of Code Administration   | Potential impact |
| Modification Rules            | • None           |
| UNC Committees                | • None           |
| General administration        | • None           |

| 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. |
| <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".              |



# Where can I find details of the UNC Standards of Service?

In the Revised FMR for Transco's Network Code Modification

O565 Transco
Proposal for
Revision of
Network Code
Standards of
Service at the
following location:

http://www.gasgovern ance.co.uk/sites/defau lt/files/0565.zip

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| Impact on UNC Related Documents and Other Referenced Documents                  |                  |
|---|------------------|
| Related Document  | Potential impact |
| Network Entry Agreement (TPD I1.3)  | None             |
| Network Exit Agreement (Including<br>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<br>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<br>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             |

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# **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.

Tynagh Energy and Vayu Limited expressed a desire that the modification should be implemented in Q1 2012 to allow calculation of prices for the 2012 application window and the 2012/2013 gas year. SSE would also like to see implementation as soon as possible, with a decision before May 2012 so that indicative charges for the July application window can be based on a workable charging methodology. Wales & West Utilities, BG Energy and AEP are of similar view.

EDF preferred to have at least a 12 month lead time from notice to implementation to ensure that they can build any changes into their business plans.

National Grid NTS highlight that implementation of either modification is required in time for actual prices to be set by 1st May 2012 such that they become applicable from 1st October 2012. National Grid is also required to produce indicative prices, for gas years Y+2 onwards, ahead of the annual NTS Exit (Flat) Capacity application windows and the next relevant application 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.

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# 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 <a href="https://www.gasgovernance.co.uk/0356">www.gasgovernance.co.uk/0356</a>

In addition to those referred to above, the following have been put forward as advantages or disadvantages in representations:

# **0356 Advantages**

- The use of forecast data will result in more cost reflective and equitable pricing regime and is much more likely to avoid the over or under-statement of peak day flows associated with the use of capacity bookings. Furthermore by consistently using forecast data for all types of exit point, option 0356 avoids the apparent discriminatory aspects of option 0356A which selectively uses booking data for certain exit points and zero flow assumptions for others, without any rigorous underlying rationale. (Bord Gais)
- This methodology, as it is not based on long term bookings, will not influence whether a shipper opts for long or short-term bookings. (Endesa Ireland)

# **0356 Disadvantages**

 0356 - lack of transparency of the input data for the forecast undiversified peak day demand (AEP)

#### **0356A** Advantages

0356A uses data publicly available as input data (AEP)

#### **0356A** Disadvantages

- An inherent inconsistency associated with modification 0356A whereby the
  use of capacity booking data within the charging methodology will lead to
  unrealistically high peak day flow assumptions at certain exit points (such as
  Moffat), whilst other exit points where short term bookings predominate will
  have unrealistically low peak day flow assumptions (Bord Gais)
- Shippers may be able to influence their charges depending on when they
  book capacity (and the type of capacity booked); Endesa Ireland considers
  this to be inappropriate and inconsistent with the cost-reflectivity objective.
- Considered to be inappropriate, discriminatory, detrimental to competition and efficiency through the introduction of cross-subsidies and is potentially open to gaming by portfolio shippers (strategic booking behaviour) (Energia)
- 0356A will lead to higher ongoing costs compared to 0356. (Vayu)



#### 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.co m/uk/Gas/Charges/consult ations/CurrentPapers/

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# 8 Legal Text

In response to a request from Ofgem, National Grid NTS has provided the following legal texts for **0356** and **0356A**:

#### 0356 Legal Text

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

"(ii) for each of years 0 to <u>24</u>, 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 <u>Transmission System</u> as a consequence of an increase in demand <u>for gas</u> or supply of gas at each connection point-System Point or node on the transmission system, National Transmission System. Such calculation is based onupon analysis of peak conditions on the transmission system. The measure of National Transmission System and the costs of investment costs is 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 systemNational 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

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- (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:
    - (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;

- (B) Aggregate System Entry Point (ASEP) supplies
- <u>(ii)</u> Transmission pipelines between each node (<u>measured in km</u>) and <u>calculated by reference to:</u>
  - (1) Existing pipelines
  - (2) New pipelines expected to be operational aton or before the beginningstart of the gas year Gas Year under analysis

(iii) Identification of a reference node.

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#### **Model Inputs**

- 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 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 <u>Individual System Entry Points</u> at Storage <u>Facilities</u> and <u>Interconnector entry points therefore/or pipeline interconnectors</u> may be set at a level <u>that is</u> 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 bidirectional 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."

#### **End**

# 0356A Legal Text

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**

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

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investment costs is in terms of  $\pounds/GWhkm$ , 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 systemNational Transmission System.

- <u>(b)</u> The transport model requires a set of inputs representative of the cost of providing capacity on the transmission system as follows:
  - (i) Nodal supply and demand data (GWh)
  - (A) Distribution Network (DN) and Direct Connection (DC) baseline plus obligated incremental exit capacity levels by offtake other than bidirectional 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 I | ntry Po | int <del>(ASEI</del> | <del>')</del> supplies |
|-----|------------|----------|---------|----------------------|------------------------|
|     |            |          |         |                      |                        |
|     |            |          |         |                      |                        |

(ii) Transmission pipelines between each node (km)

(A) Existing pipelines

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- (B) New pipelines expected to be operational at the beginning of the gas year under analysis
- (iii) Identification of a reference node

### **Model Inputs**

- 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 initialthe 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 <u>for Individual System Entry Points</u> at Storage <u>Facilities</u> and <u>Interconnector entry points therefore/or pipeline interconnectors</u> may be set at a level <u>that is</u> 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 bidirectional 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."

#### **End**

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# 9 Consultation Responses

Representations were received from the following parties:

| Respondent                                    |                   |                  |                      |
|---|-------------------|------------------|----------------------|
|   | Support Implem    | entation or not? |                      |
| Company/Organisation Name                     | 0356              | 0356A            | Stated<br>Preference |
| Association of Electricity Producers          | Not in Support    | Support          | 0356A                |
| Bord Gais Energy                              | Qualified Support | Not in Support   | 0356                 |
| EDF Energy                                    | Not in Support    | Support          | 0356A                |
| Endesa Ireland                                | Support           | Not in Support   | 0356                 |
| Energia                                       | Support           | Not in Support   | 0356                 |
| ESB Energy International                      | Support           | Not in Support   | 0356                 |
| Gaslink                                       | Support           | Not in Support   | 0356                 |
| National Grid NTS                             | Support           | Support          | 0356                 |
| NIE Energy                                    | Support           | Not in Support   | 0356                 |
| Northern Gas Networks                         | Support           | Support          | 0356                 |
| Phoenix Supply Ltd                            | Comments          | Comments         | 0356                 |
| RWE Npower plc & RWE<br>Supply & Trading GmbH | Not in Support    | Support          | 0356A                |
| Scotia Gas Networks                           | Support           | Support          | 0356A                |
| SSE   | Support           | Support          | 0356A                |
| Tynagh Energy Limited                         | Support           | Not in Support   | 0356                 |
| Vayu Limited                                  | Support           | Not in Support   | 0356                 |
| Wales & West Utilities                        | Support           | Support          | No<br>preference     |

#### 0356

Of the seventeen representations received, twelve supported implementation, one offered qualified support, one provided comments, and three were not in support.

#### 0356A

Of the seventeen representations received eight supported implementation, one provided comments and eight were not in support.

#### **Stated Preference**

Of the seventeen representations received eleven expressed a preference for **0356** and five expressed a preference for **0356A**. One expressed no preference.

# **Summary Comments**

The Association of Electricity Producers (AEP) drew attention to the absence of input data publication for Modification 0356, which has meant that there has been no scrutiny of National Grid's forecast data or the opportunity to discuss the variations in forecast data from baselines or bookings. This has limited comparison and analysis of the two proposals. Furthermore the provision of indicative prices only in .pdf format

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has limited analysis of these charges.

Bord Gais Energy (BG Energy) considered that there was an inherent inconsistency associated with Modification 0356A whereby the use of capacity booking data within the charging methodology will lead to unrealistically high peak day flow assumptions at certain exit points (such as Moffat), whilst other exit points where short term bookings predominate will have unrealistically low peak day flow assumptions. BG Energy pointed out that, currently, approximately 60% of Ireland's electricity is powered by gas generation and 90% of the island's gas demand flows through the Moffat exit point. Therefore both the electricity and natural gas sectors are extremely reliant on UK supplies and as such shippers tend to err on the side of caution and book more rather than less capacity. BG Energy considered that any exit pricing methodology based upon capacity bookings fails to appreciate Moffat's unique position as fundamental to the securing of gas supplies for the island of Ireland and will lead to an overinflated exit charge due to unrealistic demand signals received. Furthermore, BG Energy considered the imposition of Modification 0365A an inequitable proposition for customers in Republic of Ireland and Northern Ireland, and were of the view that Modification 0365A appears similar to the existing methodology for exit charge setting from 2012/13 onwards based upon capacity booking levels.

Whilst Modification 0356 is preferable to Modification 0356A and is compliant with the essential criteria of transparency, non discrimination, reliability and consistency, it was BG Energy's view that 0356 does not fully meet the cost reflectivity criterion as it still over estimates peak day demand. Such consideration is absent from the Modification Report. BG Energy considered that permitting applicants to revise their current bookings on an annual basis during the July booking window would undoubtedly lead to better and more accurate capacity requirement signals hence a more realistic tariff. A workable alternative would be a proposal whereby TSOs are permitted to provide a more flexible and fluid demand forecast on an annual *ex ante* basis during the July booking window. In the case of the island of Ireland, the most verifiable and accurate data that could be used for the Moffat Exit Point is that of forecast peak demand as published annually in the Joint Gas Capacity Statement between the two Regulatory Authorities on the island.

EDF commented that although 0356 addresses the issues within the current transportation model so that a demand and supply match can be met, EDF were concerned regarding the sustainability of a forecasting methodology for determining prices. In particular EDF noted the variability in exit charges caused by variations in NGG's forecasts, as a result of which NGG moved from a forecast to a capacity based approach under GCM14. EDF pointed out that the issues with forecasting will be more complex in the face of a changing generation background as CCGT demand is impacted more and more by the impact of intermittent generation as well as government policies such as the capacity mechanism. Whilst recognising that 0356 addresses an existing issue, EDF believed it will introduce additional issues that will need to be addressed and resolved in the future which is neither economic nor efficient.

EDF also noted that there had been views expressed by some parties that the treatment of bi- directional points as entry for modelling purposes under 0356A is arbitrary. EDF note that this replicates the current arrangements. EDF also understand that this is consistent with 0356, which uses demand forecasts, and currently National Grid forecasts entry points as supply and not demand. For the purpose of the model this treatment is required to ensure that demand can be met by supplies, and also on

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the assumption that at times of peak demand bi-directional points will be acting as supply in response to higher prices, due to the positive correlation between demand and price.

Further although 0356A (and 0356) model bi-directional points as supply, this is only used to derive the charges that the exit points face, and a bi-directional site that has booked firm exit capacity will still have to pay the charges that the model derives. Further EDF understands that this treatment should have a minimal impact on the charges that are derived as it is the overall network that impacts on charges for individual exit points. Therefore a bi-directional point in the South East would still face high exit charges even if it was modelled as a supply point, due to the high level of demand in the South East, compared to the relatively low levels of supply. Further as the treatment of these points is the same under 0356 and 0356A EDF do not believe that there will be any material variation in prices.

Endesa Ireland commented that the alternative proposal in 0356A using capacity bookings taken at a certain point in time, will reflect Users' tendencies to over-book or utilise short-term capacity, which are unpredictable and do not necessarily reflect reality. It is not desirable that a behavioural change to booking patterns on the part of Users would have an impact on exit capacity prices, although they would not impact upon costs associated with the exit point, as it would make it difficult for Users to plan ahead. From Users' points of view, reliability and stability is of great importance.

National Grid NTS believes there are limitations in Modification 0356A's ability to calculate more cost reflective charges; limitations which are not present in Modification 0356.

Phoenix Supply Ltd (Phoenix) had serious concerns regarding the impact that the indicative rise in exit capacity prices from October 2012 will have on customers in Northern Ireland, pointing out that Northern Ireland is a growing natural gas market and that the indicative charges are unhelpful in seeking to grow the local market. In their view the significant increase clearly suggests that there are flaws in the current pricing methodology and welcomed the modification proposals to address the issue.

Whilst acknowledging the importance of providing National Grid with investment signals and agreeing that capacity bookings can be used for this purpose, in this scenario it was clear to Phoenix that this has not been effective with the obligated capacity at Moffat for 2012/13 currently at 529 GWh/day in comparison to the forecast demand of 273 GWh/day. They evinced further concern that any methodology which relies on shippers managing their bookings effectively means that all shippers can be penalised for those who do not manage their bookings effectively, and noted that despite the high indicative prices, effective capacity management has not occurred to date.

Also noting that demand forecasts can be unpredictable, Phoenix argued that whilst they can vary from actual demand, they could not foresee the actual variance being as high as that between the forecasts and capacity booked. They were of the view that demand forecasts are more reflective of what will actually be required whereas the capacity booking methodology requires most, if not all shippers to manage their bookings effectively, which to date has not taken place.

RWE Npower plc & RWE Supply & Trading GmbH commented that, to remain useful to the industry, the NTS Transportation Model needs to be based upon a transparent and stable methodology. RWE have seen evidence of significant volatility in some exit capacity prices and while this may be legitimate the increased predictability of charges under 0356A allows shippers and suppliers to better manage the risk.

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SSE believed that bookings that are backed by User commitment are more robust and reliable indicators of system requirements than opaque forecasts. Basing the charging methodology on levels of booked demand will allow the methodology to function and is an improvement on the current situation. Booked data is based on User commitment and is therefore transparent and facilitates competition.

SSE pointed out that the industry has made numerous requests to be given access to the cost data for each exit point in Excel format to allow modelling. However, this has not been provided and has made subsequent modelling unnecessarily time consuming. It has not been possible to ascertain if increased costs are relative due to the proposed changes or due to general increases in allowed revenue.

Tynagh Energy Limited suggested that the Joint Gas Capacity Statements (as issued by the Commission for Energy Regulation and the Utility Regulator) be used for calculating the forecast at Moffat.

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# 10 Panel Discussions

The Panel Chair summarised that, to produce charges, the NTS charging model requires a supply demand balance. With the present assumptions (as set out in Section Y of the TPD), this will not always be achieved. Modification 0356 seeks to address this by using National Grid's forecasts to set the demand level, while 0356A proposes using booked capacity as the assumed level of demand.

Members recognised that the charging model should be capable of generating the information needed to set transportation charges and reserve prices. Consequently changing the assumptions such that charges would be defined would be expected to further the charging methodology relevant objectives — being able to calculate and update charges in light of changing data facilitates a charging methodology that; better reflects the cost incurred by National Grid NTS; secures effective competition by applying appropriate charges; and reflection of developments in the transportation business, both immediately to reflect that the charging methodology no longer works as intended, and potentially subsequent developments which will be reflected in charges that can be updated to reflect the impact of those developments.

Members also recognised that the publication of information under Modification 0356 would be expected to further the standard relevant objective of securing effective competition by providing additional information to the market.

One Member preferred to abstain since he noted that some responses had opposed implementation of each of the modifications and considered that the best outcome may be to develop a different solution, feeling unable to conclude that either would further the relevant objectives if implemented.

Members then voted as to whether or not to recommend implementation of each of Modifications 0356 and 0356A, based on whether, in isolation, implementation of each would be expected to better facilitate the achievement of the relevant objectives.

Nine votes were cast in favour of implementing Modification 0356, with one Member abstaining. Therefore the Panel determined to recommend implementation of 0356.

Nine votes were cast in favour of implementing Modification 0356A, with one Member abstaining. Therefore the Panel determined to recommend implementation of 0356A.

Members then considered which of the two modifications would best facilitate the achievement of the relevant objectives.

Some Members considered that using National Grid forecasts would mean using all the available information to inform the setting of charges and that not restricting the data used would be expected to lead to the most cost reflective charges. In addition these Members argued that since National Grid's investments are based on forecasts, using the same basis of information would also be expected to best reflect the costs incurred.

Other Members felt that markets produce the best information whereas forecasts can be changed and are, by definition, inaccurate. Relying on market driven information would remove subjectivity from the process, and would be expected to produce the most predictable, stable and cost reflective charges – including reflecting the costs of existing capacity.

Five Members voted in favour of Modification 0356 better facilitating the Relevant

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Objectives than Modification 0356A. Two Members voted in favour of Modification 0356A better facilitating the Relevant Objectives than Modification 0356.

Therefore the Panel determined that, in its opinion, implementation of Modification 0356 would be expected to better facilitate the achievement of the Relevant Objectives than implementation of Modification 0356A.

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# 11 Recommendations

#### **Panel Recommendation**

Having considered Modification Report 0356/0356A, the Panel recommends:

- that proposed Modification 0356 should be made;
- that proposed Modification 0356A should be made; and
- that proposed Modification 0356 better facilitates the Relevant Objectives than proposed Modification 0356A.

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# 12 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;

| Part   Part |   |     |                         |            |                            |            |                |            |
|---|---|-----|-------------------------|------------|----------------------------|------------|----------------|------------|
| Exit Point   AM_PAPER   | NTS Exit (Flat) Capacity Prices (p/kWh/day) |     |                         |            |                            |            |                |            |
| AM_PAPER  | (   |     | 201                     | 2/13       | 201                        | 3/14       | 201            | 4/15       |
| AM_PAPER  |   | _   | 0 ve                    | þ          | g ()                       | Þ          | 13<br>13       | þ          |
| AM_PAPER  |   | NO. | railii<br>catir<br>7 20 | 356<br>pos | /ailii<br>/ 20             | 356<br>pos | /ailli<br>/ 20 | 356<br>pos |
| AM_PAPER  |   | ă   | Pre<br>Indi<br>May      | 9 <u>P</u> | <sup>&gt;</sup> re√<br>May | P. O.      | ore)<br>May    | 9 0        |
| AVONMOUTH_LNG         DC         0.0090         0.0171         0.0140         0.0169         0.0140         0.0161           Bacton Interconnector         DC         0.0001         0.0002         0.0004         0.0002         0.0004         0.0002         0.0004         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         <  | Exit Point                                  |     |                         |            |                            |            |                |            |
| Bacton Interconnector         DC         0.0001  | AM_PAPER                                    | DC  | 0.0153                  | 0.0183     | 0.0163                     | 0.0192     | 0.0164         | 0.0216     |
| BACTON_BAIRD         DC         0.0001         0.0010         0.0010         0.0010         0.0010         0.0010         0.0011         0.00  | AVONMOUTH_LNG                               | DC  | 0.0090                  | 0.0171     | 0.0140                     | 0.0169     | 0.0140         | 0.0161     |
| BAGLAN_BAY_PG         DC         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0001         0.0010         0.0010         0.0107         0.0127           BARROW_BAINS         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         0.0322         0.0009         0.0058         0.0009         0.0054         0.0011           BP_GRANGEMOUTH         DC         0.0082         0.0001         0.0101         0.000  | Bacton Interconnector                       | 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  | BACTON_BAIRD                                | DC  | 0.0001                  | 0.0001     | 0.0001                     | 0.0001     | 0.0001         | 0.0001     |
| BARROW_BAINS         DC         0.0059         0.0089         0.0064         0.0093         0.0061         0.013           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 <th>BAGLAN_BAY_PG</th> <th>DC</th> <th>0.0001</th> <th>0.0001</th> <th>0.0001</th> <th>0.0001</th> <th>0.0001</th> <th>0.0001</th>  | BAGLAN_BAY_PG                               | DC  | 0.0001                  | 0.0001     | 0.0001                     | 0.0001     | 0.0001         | 0.0001     |
| BARROW_BS         DC         0.0059         0.0089         0.0064         0.0093         0.0061         0.013           BARROW_GATEWAY         DC         0.0059         0.0089         0.0064         0.0093         0.0061         0.013           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         0.0056         0.0014         0.0015  | BARKING_PG                                  | DC  | 0.0101                  | 0.0124     | 0.0109                     | 0.0130     | 0.0107         | 0.0127     |
| 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         0.0011         0.0001         0.0001         0.0001         0.0001           BP_SALTEND_HP         DC         0.0001         0.0002         0.0047         0.0001         0.0013         0.0014         0.0013         0.0014         0.0001         0.0014         0.0   | BARROW_BAINS                                | 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         0.0011         0.0001         0.0109         0.0001           BP_SALTEND_HP         DC         0.0001         0.0016         0.0027         0.0016         0.0017         0.0014         0.0012         0.0047         0.0014         0.0014         0.0014         0.0024         0.0014         0.   | BARROW_BS                                   | DC  | 0.0059                  | 0.0089     | 0.0064                     | 0.0093     | 0.0061         | 0.0113     |
| 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         0.0016         0.0026         0.0026         0.0021         0.0014         0.0135         0.0112         0.0133           BRINGDEWATER_PAPER         DC         0.0016         0.00129         0.0014         0.0135         0.0011         0.0027         0.0026           BRINGDEWATER_PAPER         DC         0.0016         0.0012         0.0014         0.0013         0.0014         0.0014 <th< th=""><th>BARROW_GATEWAY</th><th>DC</th><th>0.0059</th><th>0.0089</th><th>0.0064</th><th>0.0093</th><th>0.0061</th><th>0.0113</th></th<>   | BARROW_GATEWAY                              | DC  | 0.0059                  | 0.0089     | 0.0064                     | 0.0093     | 0.0061         | 0.0113     |
| BP_GRANGEMOUTH         DC         0.0082         0.0001         0.0110         0.0001         0.0109         0.0001           BP_SALTEND_HP         DC         0.0001         0.0006         0.0012         0.0114         0.0135         0.0112         0.0133         0.0112         0.0133         0.0011         0.0013         0.0014         0.0013         0.0014         0.0013         0.0014         0.0015         0.0014         0.0002         0.0047         0.0001         0.0014         0.0015         0.0016         0.0159         0.0246           CARRINGTON_PS         DC         0.0176         0.0210         0.0191         0.0220         0.0159         0.0246           CAYTHORPE_(MRS)         DC         0.0216<   | BARTON_STACEY_(MRS)                         | DC  | 0.0205                  | 0.0227     | 0.0217                     | 0.0238     | 0.0219         | 0.0240     |
| 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         0.0017         0.0015         0.0001         0.0016         0.0001         0.0008           CENTRAX         DC         0.0216         0.0262         0.0236         0.0264         0.0240         0.0239           COCKENZIE         DC         #N/A         #N/A         #N/A  | BILLINGHAM_ICI                              | DC  | 0.0032                  | 0.0009     | 0.0058                     | 0.0009     | 0.0054         | 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         0.0088           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   | BP_GRANGEMOUTH                              | DC  | 0.0082                  | 0.0001     | 0.0110                     | 0.0001     | 0.0109         | 0.0001     |
| 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         40.0164         0.0215         0.0173         0.0225         0.0140         0.0011           CORBY_PS         DC         0.0205         0.0255         0.0216   | BP_SALTEND_HP                               | DC  | 0.0001                  | 0.0001     | 0.0001                     | 0.0001     | 0.0001         | 0.0001     |
| 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         #N/A         0.0014         0.0011           CORBY_PS         DC         0.0205         0.0255         0.0216         0.0267         0.0185         0.0271           CORYTON_PG         DC         0.0104         0.0121  | BRIDGEWATER_PAPER                           | DC  | 0.0201                  | 0.0251     | 0.0212                     | 0.0263     | 0.0181         | 0.0267     |
| 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         #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         <   | BRIGG_PG                                    | DC  | 0.0029                  | 0.0059     | 0.0033                     | 0.0061     | 0.0027         | 0.0056     |
| 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           COTTAM_PG         DC         0.0019         0.0049         0.0023  | BRIMSDOWN_PG                                | DC  | 0.0106                  | 0.0129     | 0.0114                     | 0.0135     | 0.0112         | 0.0133     |
| 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           COTTAM_PG         DC         0.0019         0.0049         0.0023         0.0051         0.0017         0.0045           DAMHEAD_CREEK         DC         0.0097         0.0102         0.0104 <th< th=""><th>BRINE_FIELD_PS</th><th>DC</th><th>0.0026</th><th>0.0002</th><th>0.0051</th><th>0.0002</th><th>0.0047</th><th>0.0001</th></th<>   | BRINE_FIELD_PS                              | DC  | 0.0026                  | 0.0002     | 0.0051                     | 0.0002     | 0.0047         | 0.0001     |
| 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           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   | BRUNNER_MOND                                | DC  | 0.0171                  | 0.0215     | 0.0180                     | 0.0226     | 0.0147         | 0.0246     |
| 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           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  | CARRINGTON_PS                               | DC  | 0.0176                  | 0.0210     | 0.0191                     | 0.0220     | 0.0159         | 0.0246     |
| 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           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   | CAYTHORPE_(MRS)                             | DC  | 0.0001                  | 0.0015     | 0.0001                     | 0.0016     | 0.0001         | 0.0008     |
| 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           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   | CENTRAX                                     | DC  | 0.0216                  | 0.0262     | 0.0236                     | 0.0264     | 0.0240         | 0.0261     |
| 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           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  | CHESHIRE_(MRS)                              | DC  | 0.0164                  | 0.0215     | 0.0173                     | 0.0225     | 0.0140         | 0.0239     |
| 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           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   | COCKENZIE                                   | DC  | #N/A                    | #N/A       | #N/A                       | #N/A       | 0.0081         | 0.0001     |
| CORYTON_PG         DC         0.0104         0.0121         0.0111         0.0127         0.0110         0.0124           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   | CONNAHS_QUAY_PS                             | DC  | 0.0205                  | 0.0255     | 0.0216                     | 0.0267     | 0.0185         | 0.0271     |
| 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   | CORBY_PS                                    | DC  | 0.0079                  | 0.0109     | 0.0085                     | 0.0114     | 0.0083         | 0.0111     |
| 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   | CORYTON_PG                                  | 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   | CORYTON_PG_2                                | DC  | 0.0104                  | 0.0121     | 0.0111                     | 0.0127     | 0.0110         | 0.0124     |
|   |   | DC  | 0.0019                  |            |                            |            |                | 0.0045     |
|   | DAMHEAD_CREEK                               | DC  | 0.0097                  | 0.0102     | 0.0104                     | 0.0106     | 0.0102         | 0.0103     |
| <b>DEESIDE_PS</b>   <b>DC</b>   0.0202   0.0255   0.0212   0.0268   0.0185   0.0271   | DEESIDE_PS                                  |     | 0.0202                  | 0.0255     |                            | 0.0268     | 0.0185         | 0.0271     |
| DIDCOT_PS DC 0.0168 0.0190 0.0178 0.0199 0.0178 0.0199  | 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  | DRAKELOW_PS                                 | DC  | 0.0129                  | 0.0159     | 0.0138                     | 0.0167     | 0.0138         | 0.0166     |
|   |   | DC  |                         |            |                            |            |                | 0.0001     |

#### **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.



| (p/kWh/day)                     |       | 201                                    | 2/13             | 201                      | 3/14             | 201                      | 4/15             |
|---------------------------------|-------|--|------------------|--------------------------|------------------|--------------------------|------------------|
|                                 | DC/DN | Prevailing<br>Indicative<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2011) | 0356<br>Proposed |
| Exit Point                      |       |  |                  |                          |                  |                          |                  |
| EASINGTON&ROUGH_TERMINAL        | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| ENRON_(BILLINGHAM)              | DC    | 0.0032                                 | 0.0009           | 0.0058                   | 0.0009           | 0.0054                   | 0.000            |
| GARTON_(MRS)                    | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| GLENMAVIS_LNG                   | DC    | 0.0107                                 | 0.0001           | 0.0137                   | 0.0001           | 0.0137                   | 0.000            |
| GOOLE_GLASS                     | DC    | 0.0006                                 | 0.0036           | 0.0009                   | 0.0038           | 0.0003                   | 0.003            |
| GRAIN_GAS                       | DC    | 0.0097                                 | 0.0102           | 0.0104                   | 0.0106           | 0.0102                   | 0.010            |
| GREAT_YARMOUTH                  | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| HATFIELD_MOOR_(MRS)             | DC    | 0.0011                                 | 0.0043           | 0.0014                   | 0.0046           | 0.0008                   | 0.004            |
| HATFIELD_POWER_STATION          | DC    | #N/A                                   | #N/A             | #N/A                     | #N/A             | 0.0001                   | 0.002            |
| HAYS_CHEMICALS                  | DC    | 0.0170                                 | 0.0221           | 0.0180                   | 0.0232           | 0.0147                   | 0.023            |
| HOLEHOUSE_FARM_(MRS)            | DC    | 0.0172                                 | 0.0222           | 0.0182                   | 0.0233           | 0.0149                   | 0.023            |
| HORNSEA_(MRS)                   | DC    | 0.0001                                 | 0.0003           | 0.0001                   | 0.0003           | 0.0001                   | 0.000            |
| CI_RUNCORN                      | DC    | 0.0202                                 | 0.0252           | 0.0213                   | 0.0265           | 0.0182                   | 0.02             |
| MMINGHAM_PG                     | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| KEADBY_BS                       | DC    | 0.0018                                 | 0.0048           | 0.0021                   | 0.0050           | 0.0015                   | 0.004            |
| KEADBY PS                       | DC    | 0.0018                                 | 0.0048           | 0.0021                   | 0.0050           | 0.0015                   | 0.004            |
| KEMIRAINCE_CHP                  | DC    | 0.0199                                 | 0.0249           | 0.0209                   | 0.0261           | 0.0178                   | 0.026            |
| KINGS LYNN PS                   | DC    | 0.0029                                 | 0.0052           | 0.0033                   | 0.0054           | 0.0028                   | 0.004            |
| ANGAGE PG                       | DC    | 0.0246                                 | 0.0291           | 0.0267                   | 0.0295           | 0.0272                   | 0.02             |
| LITTLE BARFORD PS               | DC    | 0.0094                                 | 0.0117           | 0.0101                   | 0.0122           | 0.0099                   | 0.012            |
| LONGANNET                       | DC    | 0.0075                                 | 0.0001           | 0.0103                   | 0.0001           | 0.0101                   | 0.000            |
| MARCHWOOD                       | DC    | 0.0216                                 | 0.0245           | 0.0236                   | 0.0256           | 0.0239                   | 0.02             |
| MEDWAY PS                       | DC    | 0.0098                                 |                  |                          |                  |                          |                  |
|                                 |       |  | 0.0103           | 0.0105                   | 0.0107           | 0.0103                   | 0.010            |
| MILFORD_HAVEN_REFINERY          | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.00             |
| MOFFAT                          | DC    | 0.0154                                 | 0.0021           | 0.0186                   | 0.0022           | 0.0188                   | 0.00             |
| PARTINGTON_LNG                  | DC    | 0.0176                                 | 0.0209           | 0.0191                   | 0.0219           | 0.0158                   | 0.02             |
| PEMBROKE_PG                     | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.00             |
| PETERBOROUGH_PS                 | DC    | 0.0060                                 | 0.0082           | 0.0065                   | 0.0086           | 0.0061                   | 0.00             |
| PETERHEAD_PG                    | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.00             |
| PHILLIPS_SEAL_SANDS             | DC    | 0.0026                                 | 0.0002           | 0.0051                   | 0.0002           | 0.0047                   | 0.00             |
| ROCKSAVAGE_PG                   | DC    | 0.0202                                 | 0.0252           | 0.0213                   | 0.0265           | 0.0182                   | 0.02             |
| ROOSECOTE_PS                    | DC    | 0.0059                                 | 0.0089           | 0.0064                   | 0.0093           | 0.0061                   | 0.01             |
| RYE_HOUSE_PS                    | DC    | 0.0111                                 | 0.0133           | 0.0118                   | 0.0140           | 0.0117                   | 0.01             |
| SALTEND                         | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| SAPPIPAPERMILLCHP               | DC    | 0.0142                                 | 0.0171           | 0.0151                   | 0.0180           | 0.0151                   | 0.01             |
| SEABANK_POWER_phase_II          | DC    | 0.0091                                 | 0.0171           | 0.0141                   | 0.0169           | 0.0140                   | 0.01             |
| SEABANK_POWER_phase1            | DC    | 0.0108                                 | 0.0154           | 0.0122                   | 0.0150           | 0.0121                   | 0.014            |
| SELLAFIELD_PS                   | DC    | 0.0099                                 | 0.0129           | 0.0106                   | 0.0135           | 0.0105                   | 0.01             |
| SEVERNSIDE_ICI                  | DC    | 0.0091                                 | 0.0170           | 0.0140                   | 0.0168           | 0.0139                   | 0.010            |
| SHOTTON_PAPER                   | DC    | 0.0204                                 | 0.0254           | 0.0215                   | 0.0266           | 0.0184                   | 0.02             |
| SPALDING_PG                     | DC    | 0.0033                                 | 0.0063           | 0.0037                   | 0.0066           | 0.0032                   | 0.00             |
| SPALDING_PG_2                   | DC    | 0.0033                                 | 0.0063           | 0.0037                   | 0.0066           | 0.0032                   | 0.00             |
| ST_FERGUS_BS                    | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| STALLINGBOROUGH                 | DC    | 0.0001                                 | 0.0007           | 0.0001                   | 0.0007           | 0.0001                   | 0.000            |
| STAYTHORPE                      | DC    | 0.0049                                 | 0.0078           | 0.0053                   | 0.0082           | 0.0049                   | 0.00             |
| STUBLACH                        | DC    | 0.0164                                 | 0.0215           | 0.0173                   | 0.0225           | 0.0140                   | 0.02             |
| SUTTON BRIDGE PS                | DC    | 0.0043                                 | 0.0066           | 0.0047                   | 0.0069           | 0.0043                   | 0.006            |
| TEESSIDE BASF                   | DC    | 0.0026                                 | 0.0000           | 0.0047                   | 0.0003           | 0.0043                   | 0.000            |
| TEESSIDE_BASP TEESSIDE HYDROGEN | DC    | 0.0026                                 | 0.0002           | 0.0051                   | 0.0002           | 0.0047                   | 0.000            |
| OODIIIDIOOLII                   | L DC  | #N/A                                   | #N/A             | #N/A                     | #N/A             | 0.0047                   | 0.00             |



| (p/kWh/day)                    |       | 201                                    | 2/13             | 201                      | 3/14             | 201                      | 4/15             |
|--------------------------------|-------|--|------------------|--------------------------|------------------|--------------------------|------------------|
|                                | DC/DN | Prevailing<br>Indicative<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2011) | 0356<br>Proposed |
| Exit Point                     |       |  |                  |                          |                  |                          |                  |
| THORNTON_CURTIS_(KILLINGHOLME) | DC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| TILBURY_PS                     | DC    | #N/A                                   | #N/A             | #N/A                     | #N/A             | 0.0114                   | 0.012            |
| WEST_BURTON_PS                 | DC    | 0.0019                                 | 0.0048           | 0.0022                   | 0.0052           | 0.0016                   | 0.004            |
| WILLINGTON_PS                  | DC    | #N/A                                   | #N/A             | #N/A                     | #N/A             | 0.0153                   | 0.018            |
| WYRE_PS                        | DC    | 0.0131                                 | 0.0160           | 0.0139                   | 0.0168           | 0.0139                   | 0.019            |
| ZENECA                         | DC    | 0.0032                                 | 0.0009           | 0.0058                   | 0.0009           | 0.0054                   | 0.000            |
| BURNERVIE                      | DN    | #N/A                                   | 0.0001           | #N/A                     | 0.0001           | 0.0001                   | 0.000            |
| BACTON_OT                      | EA    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| BRISLEY                        | EA    | 0.0003                                 | 0.0026           | 0.0005                   | 0.0027           | 0.0001                   | 0.00             |
| EYE                            | EA    | 0.0056                                 | 0.0079           | 0.0061                   | 0.0082           | 0.0057                   | 0.00             |
| GREAT_WILBRAHAM                | EA    | 0.0056                                 | 0.0079           | 0.0061                   | 0.0082           | 0.0057                   | 0.00             |
| MATCHING_GREEN                 | EA    | 0.0097                                 | 0.0120           | 0.0104                   | 0.0125           | 0.0102                   | 0.01             |
| ROUDHAM_HEATH                  | EA    | 0.0019                                 | 0.0042           | 0.0022                   | 0.0044           | 0.0017                   | 0.00             |
| ROYSTON                        | EA    | 0.0075                                 | 0.0097           | 0.0080                   | 0.0102           | 0.0077                   | 0.00             |
| WEST_WINCH                     | EA    | 0.0027                                 | 0.0049           | 0.0030                   | 0.0051           | 0.0025                   | 0.00             |
| WHITWELL                       | EA    | 0.0094                                 | 0.0116           | 0.0101                   | 0.0122           | 0.0098                   | 0.01             |
| YELVERTON                      | EA    | 0.0001                                 | 0.0021           | 0.0001                   | 0.0021           | 0.0001                   | 0.00             |
| ALREWAS_EM                     | EM    | 0.0134                                 | 0.0164           | 0.0143                   | 0.0172           | 0.0143                   | 0.01             |
| BLABY                          | EM    | 0.0099                                 | 0.0129           | 0.0106                   | 0.0135           | 0.0104                   | 0.01             |
| BLYBOROUGH                     | EM    | 0.0019                                 | 0.0049           | 0.0023                   | 0.0051           | 0.0017                   | 0.00             |
| CALDECOTT                      | EM    | 0.0076                                 | 0.0105           | 0.0081                   | 0.0110           | 0.0079                   | 0.01             |
| DROINTON_OT                    | EM    | 0.0145                                 | 0.0175           | 0.0155                   | 0.0183           | 0.0155                   | 0.01             |
| GOSBERTON                      | EM    | 0.0030                                 | 0.0060           | 0.0034                   | 0.0062           | 0.0029                   | 0.00             |
| KIRKSTEAD                      | EM    | 0.0010                                 | 0.0039           | 0.0012                   | 0.0041           | 0.0006                   | 0.00             |
| MARKET_HARBOROUGH              | EM    | 0.0087                                 | 0.0117           | 0.0093                   | 0.0122           | 0.0091                   | 0.01             |
| SILK_WILLOUGHBY                | EM    | 0.0022                                 | 0.0052           | 0.0025                   | 0.0054           | 0.0020                   | 0.00             |
| SUTTON_BRIDGE                  | EM    | 0.0044                                 | 0.0067           | 0.0049                   | 0.0070           | 0.0044                   | 0.00             |
| THORNTON_CURTIS_LDZ            | EM    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.00             |
| TUR_LANGTON                    | EM    | 0.0089                                 | 0.0118           | 0.0095                   | 0.0124           | 0.0093                   | 0.01             |
| WALESBY                        | EM    | 0.0001                                 | 0.0015           | 0.0001                   | 0.0015           | 0.0001                   | 0.00             |
| ASSELBY                        | NE    | 0.0001                                 | 0.0031           | 0.0003                   | 0.0032           | 0.0001                   | 0.00             |
| BALDERSBY                      | NE    | 0.0052                                 | 0.0045           | 0.0057                   | 0.0047           | 0.0053                   | 0.00             |
| BURLEY_BANK                    | NE    | 0.0045                                 | 0.0066           | 0.0049                   | 0.0069           | 0.0045                   | 0.00             |
| GANSTEAD                       | NE    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.00             |
| PANNAL                         | NE    | 0.0040                                 | 0.0070           | 0.0044                   | 0.0073           | 0.0040                   | 0.00             |
| PAULL                          | NE    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.00             |
| PICKERING                      | NE    | 0.0001                                 | 0.0042           | 0.0015                   | 0.0044           | 0.0009                   | 0.00             |
| RAWCLIFFE                      | NE    | 0.0003                                 | 0.0033           | 0.0005                   | 0.0034           | 0.0001                   | 0.002            |
| TOWTON                         | NE    | 0.0023                                 | 0.0053           | 0.0026                   | 0.0055           | 0.0021                   | 0.004            |
| BISHOP_AUCKLAND                | NO    | 0.0050                                 | 0.0026           | 0.0076                   | 0.0027           | 0.0073                   | 0.002            |
| BISHOP_AUCKLAND_TEST_FACILITY  | NO    | 0.0050                                 | 0.0026           | 0.0076                   | 0.0027           | 0.0073                   | 0.002            |
| COLDSTREAM                     | NO    | 0.0118                                 | 0.0001           | 0.0149                   | 0.0001           | 0.0149                   | 0.000            |
| CORBRIDGE                      | NO    | 0.0094                                 | 0.0032           | 0.0124                   | 0.0033           | 0.0123                   | 0.00             |
| COWPEN_BEWLEY                  | NO    | 0.0030                                 | 0.0007           | 0.0056                   | 0.0006           | 0.0052                   | 0.000            |
| ELTON                          | NO    | 0.0034                                 | 0.0018           | 0.0061                   | 0.0018           | 0.0057                   | 0.00             |
| GUYZANCE                       | NO    | 0.0120                                 | 0.0007           | 0.0150                   | 0.0007           | 0.0150                   | 0.002            |
| HUMBLETON                      | NO    | 0.0113                                 | 0.0001           | 0.0143                   | 0.0001           | 0.0143                   | 0.000            |
| KELD                           | NO    | 0.0120                                 | 0.0098           | 0.0129                   | 0.0103           | 0.0128                   | 0.012            |
| LITTLE BURDON                  | NO    | 0.0039                                 | 0.0022           | 0.0065                   | 0.0023           | 0.0061                   | 0.00             |
| MELKINTHORPE                   | NO    | 0.0127                                 | 0.0091           | 0.0136                   | 0.0095           | 0.0135                   | 0.0              |



| (p/kWh/day)              |       | 201                                    | 2/13             | 201                      | 3/14             | 2014/15                  |                  |
|--------------------------|-------|--|------------------|--------------------------|------------------|--------------------------|------------------|
|                          | DC/DN | Prevailing<br>Indicative<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2011) | 0356<br>Proposed |
| Exit Point               |       |  |                  |                          |                  |                          |                  |
| 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                   | 0.004            |
| WETHERAL                 | NO    | 0.0135                                 | 0.0066           | 0.0162                   | 0.0069           | 0.0163                   | 0.008            |
| HORNDON                  | NT    | 0.0101                                 | 0.0124           | 0.0109                   | 0.0130           | 0.0107                   | 0.012            |
| LUXBOROUGH_LANE          | NT    | 0.0104                                 | 0.0126           | 0.0111                   | 0.0132           | 0.0109                   | 0.013            |
| PETERS_GREEN             | NT    | 0.0098                                 | 0.0121           | 0.0105                   | 0.0126           | 0.0103                   | 0.012            |
| PETERS_GREEN_SOUTH_MIMMS | NT    | 0.0098                                 | 0.0121           | 0.0105                   | 0.0126           | 0.0103                   | 0.012            |
| WINKFIELD_NT             | NT    | 0.0185                                 | 0.0207           | 0.0196                   | 0.0217           | 0.0197                   | 0.021            |
| AUDLEY_NW                | NW    | 0.0180                                 | 0.0210           | 0.0190                   | 0.0220           | 0.0158                   | 0.022            |
| BLACKROD                 | NW    | 0.0152                                 | 0.0182           | 0.0162                   | 0.0190           | 0.0162                   | 0.019            |
| ECCLESTON                | NW    | 0.0200                                 | 0.0242           | 0.0210                   | 0.0254           | 0.0179                   | 0.025            |
| HOLMES_CHAPEL            | NW    | 0.0193                                 | 0.0222           | 0.0203                   | 0.0233           | 0.0171                   | 0.023            |
| LUPTON                   | NW    | 0.0094                                 | 0.0124           | 0.0101                   | 0.0130           | 0.0099                   | 0.015            |
| MALPAS                   | NW    | 0.0199                                 | 0.0229           | 0.0210                   | 0.0240           | 0.0178                   | 0.024            |
| MICKLE_TRAFFORD          | NW    | 0.0193                                 | 0.0243           | 0.0203                   | 0.0255           | 0.0172                   | 0.025            |
| PARTINGTON               | NW    | 0.0176                                 | 0.0210           | 0.0191                   | 0.0220           | 0.0159                   | 0.024            |
| SAMLESBURY               | NW    | 0.0138                                 | 0.0167           | 0.0147                   | 0.0175           | 0.0147                   | 0.017            |
| WARBURTON                | NW    | 0.0178                                 | 0.0207           | 0.0189                   | 0.0217           | 0.0156                   | 0.024            |
| WESTON_POINT             | NW    | 0.0202                                 | 0.0252           | 0.0213                   | 0.0265           | 0.0182                   | 0.026            |
| ABERDEEN                 | SC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| ARMADALE                 | SC    | 0.0099                                 | 0.0001           | 0.0128                   | 0.0001           | 0.0128                   | 0.000            |
| BALGRAY                  | SC    | 0.0016                                 | 0.0001           | 0.0042                   | 0.0001           | 0.0037                   | 0.000            |
| BATHGATE                 | SC    | 0.0095                                 | 0.0001           | 0.0124                   | 0.0001           | 0.0123                   | 0.000            |
| BROXBURN                 | SC    | 0.0110                                 | 0.0001           | 0.0140                   | 0.0001           | 0.0140                   | 0.000            |
| CARESTON                 | SC    | 0.0001                                 | 0.0001           | 0.0020                   | 0.0001           | 0.0015                   | 0.000            |
| DRUM                     | SC    | 0.0067                                 | 0.0001           | 0.0095                   | 0.0001           | 0.0093                   | 0.000            |
| GLENMAVIS                | SC    | 0.0107                                 | 0.0001           | 0.0137                   | 0.0001           | 0.0137                   | 0.000            |
| HUME                     | SC    | 0.0128                                 | 0.0001           | 0.0159                   | 0.0001           | 0.0159                   | 0.001            |
| KINKNOCKIE               | SC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| LANGHOLM                 | SC    | 0.0134                                 | 0.0042           | 0.0165                   | 0.0043           | 0.0166                   | 0.006            |
| LAUDERHILL               | SC    | 0.0144                                 | 0.0007           | 0.0176                   | 0.0007           | 0.0177                   | 0.002            |
| LOCKERBIE                | SC    | 0.0144                                 | 0.0033           | 0.0176                   | 0.0034           | 0.0177                   | 0.005            |
| MOSSIDE                  | SC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| NETHER_HOWCLEUGH         | SC    | 0.0147                                 | 0.0014           | 0.0178                   | 0.0014           | 0.0180                   | 0.003            |
| PITCAIRNGREEN            | SC    | 0.0039                                 | 0.0001           | 0.0066                   | 0.0001           | 0.0062                   | 0.000            |
| SOUTRA                   | SC    | 0.0145                                 | 0.0013           | 0.0177                   | 0.0013           | 0.0178                   | 0.003            |
| ST_FERGUS_OT             | SC    | 0.0001                                 | 0.0001           | 0.0001                   | 0.0001           | 0.0001                   | 0.000            |
| STRANRAER                | SC    | 0.0154                                 | 0.0021           | 0.0186                   | 0.0022           | 0.0188                   | 0.003            |
| FARNINGHAM               | SE    | 0.0120                                 | 0.0125           | 0.0128                   | 0.0131           | 0.0127                   | 0.012            |
| FARNINGHAM_B             | SE    | 0.0120                                 | 0.0125           | 0.0128                   | 0.0131           | 0.0127                   | 0.012            |
| SHORNE                   | SE    | 0.0110                                 | 0.0115           | 0.0118                   | 0.0121           | 0.0116                   | 0.011            |
| TATSFIELD                | SE    | 0.0137                                 | 0.0142           | 0.0146                   | 0.0149           | 0.0146                   | 0.014            |
| WINKFIELD_SE             | SE    | 0.0185                                 | 0.0207           | 0.0196                   | 0.0217           | 0.0197                   | 0.021            |
| BRAISHFIELD_A            | SO    | 0.0220                                 | 0.0242           | 0.0233                   | 0.0254           | 0.0236                   | 0.025            |
| BRAISHFIELD_B            | SO    | 0.0220                                 | 0.0242           | 0.0233                   | 0.0254           | 0.0236                   | 0.025            |
| HARDWICK                 | SO    | 0.0133                                 | 0.0155           | 0.0141                   | 0.0162           | 0.0140                   | 0.016            |
| IPSDEN                   | SO    | 0.0165                                 | 0.0187           | 0.0175                   | 0.0196           | 0.0175                   | 0.019            |



| NTS Exit (Flat) Capacity Prices (p/kWh/day) |       | 004                                    |                  | 004                      |                  | 004                      | =                |
|---|-------|--|------------------|--------------------------|------------------|--------------------------|------------------|
|   |       | 2012                                   | 2/13             | 201                      | 3/14             | 201                      | 4/15             |
|   | DC/DN | Prevailing<br>Indicative<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2010) | 0356<br>Proposed | Prevailing<br>(May 2011) | 0356<br>Proposed |
| Exit Point                                  | 00    | 0.0470                                 | 0.0040           | 0.0400                   | 0.0040           | 0.0400                   | 0.0044           |
| 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           |
| 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) |       |  |                   |  |                   |  |                   |
|---|-------|--|-------------------|--|-------------------|--|-------------------|
|   |       | 2012                                   | 2/13              | 2013                                   | 3/14              | 2014                                   | /15               |
| Exit Point                                  | DC/DN | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2011) | New<br>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            |
| 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            |



|                        |       | 2012                                   | 2/13              | 2013                                   | 3/14              | 2014                                   | l/15   |
|------------------------|-------|--|-------------------|--|-------------------|--|--------|
|                        |       |  | -, 10             |  |                   |  | ,      |
|                        | DC/DN | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2011) | New    |
| Exit Point             | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| GARTON_(MRS)           |       | 0.0001                                 | 0.0001            | 0.0001                                 |                   | 0.0001                                 | 0.000  |
| 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                                 | 0.000  |
| HATFIELD_MOOR_(MRS)    | DC    | 0.0011                                 | 0.0043            | 0.0014                                 | 0.0034            | 0.0008                                 | 0.003  |
| HATFIELD_POWER_STATION | DC    | #N/A                                   | #N/A              | #N/A                                   | #N/A              | 0.0001                                 | 0.002  |
| HAYS_CHEMICALS         | DC    | 0.0170                                 | 0.0221            | 0.0180                                 | 0.0221            | 0.0147                                 | 0.023  |
| HOLEHOUSE_FARM_(MRS)   | DC    | 0.0172                                 | 0.0223            | 0.0182                                 | 0.0225            | 0.0149                                 | 0.023  |
| HORNSEA_(MRS)          | DC    | 0.0001                                 | 0.0004            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| ICI_RUNCORN            | DC    | 0.0202                                 | 0.0253            | 0.0213                                 | 0.0256            | 0.0182                                 | 0.026  |
| IMMINGHAM_PG           | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| KEADBY_BS              | DC    | 0.0018                                 | 0.0048            | 0.0021                                 | 0.0041            | 0.0015                                 | 0.004  |
| KEADBY_PS              | DC    | 0.0018                                 | 0.0048            | 0.0021                                 | 0.0041            | 0.0015                                 | 0.004  |
| KEMIRAINCE_CHP         | DC    | 0.0199                                 | 0.0249            | 0.0209                                 | 0.0252            | 0.0178                                 | 0.026  |
| KINGS_LYNN_PS          | DC    | 0.0029                                 | 0.0053            | 0.0033                                 | 0.0046            | 0.0028                                 | 0.004  |
| LANGAGE_PG             | DC    | 0.0246                                 | 0.0282            | 0.0267                                 | 0.0286            | 0.0272                                 | 0.029  |
| LITTLE_BARFORD_PS      | DC    | 0.0094                                 | 0.0118            | 0.0101                                 | 0.0114            | 0.0099                                 | 0.011  |
| LONGANNET              | DC    | 0.0075                                 | 0.0001            | 0.0103                                 | 0.0023            | 0.0101                                 | 0.000  |
| MARCHWOOD              | DC    | 0.0216                                 | 0.0245            | 0.0236                                 | 0.0248            | 0.0239                                 | 0.025  |
| MEDWAY_PS              | DC    | 0.0098                                 | 0.0081            | 0.0105                                 | 0.0076            | 0.0103                                 | 0.007  |
| MILFORD_HAVEN_REFINERY | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| MOFFAT                 | DC    | 0.0154                                 | 0.0044            | 0.0186                                 | 0.0106            | 0.0188                                 | 0.006  |
| PARTINGTON_LNG         | DC    | 0.0176                                 | 0.0232            | 0.0191                                 | 0.0234            | 0.0158                                 | 0.024  |
| PEMBROKE_PG            | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| PETERBOROUGH_PS        | DC    | 0.0060                                 | 0.0083            | 0.0065                                 | 0.0078            | 0.0061                                 | 0.008  |
| PETERHEAD PG           | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| PHILLIPS_SEAL_SANDS    | DC    | 0.0026                                 | 0.0003            | 0.0051                                 | 0.0001            | 0.0047                                 | 0.000  |
| ROCKSAVAGE_PG          | DC    | 0.0202                                 | 0.0253            | 0.0213                                 | 0.0256            | 0.0182                                 | 0.026  |
| ROOSECOTE PS           | DC    | 0.0059                                 | 0.0112            | 0.0064                                 | 0.0108            | 0.0061                                 | 0.011  |
| RYE HOUSE PS           | DC    | 0.0111                                 | 0.0134            | 0.0118                                 | 0.0131            | 0.0117                                 | 0.013  |
| SALTEND                | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| SAPPIPAPERMILLCHP      | DC    | 0.0142                                 | 0.0172            | 0.0151                                 | 0.0001            | 0.0151                                 | 0.017  |
| SEABANK POWER phase II | DC    | 0.0091                                 | 0.0172            | 0.0131                                 | 0.0161            | 0.0140                                 | 0.017  |
| SEABANK_POWER_phase1   | DC    | 0.0108                                 | 0.0102            | 0.0122                                 | 0.0142            | 0.0121                                 | 0.014  |
| SELLAFIELD PS          | DC    | 0.0099                                 | 0.0152            | 0.0122                                 | 0.0150            | 0.0105                                 | 0.015  |
| SEVERNSIDE ICI         | DC    | 0.0093                                 | 0.0132            | 0.0100                                 | 0.0150            | 0.0139                                 | 0.016  |
| SHOTTON PAPER          | DC    | 0.0091                                 | 0.0101            | 0.0140                                 | 0.0159            | 0.0139                                 | 0.016  |
| SPALDING PG            | DC    | 0.0204                                 | 0.0249            | 0.0213                                 | 0.0252            | 0.0184                                 | 0.020  |
| SPALDING_PG 2          | DC    | 0.0033                                 | 0.0064            | 0.0037                                 | 0.0057            | 0.0032                                 | 0.006  |
|                        |       |  |                   |  |                   |  |        |
| ST_FERGUS_BS           | DC    | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| STALLINGBOROUGH        | DC    | 0.0001                                 | 0.0008            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| STAYTHORPE             | DC    | 0.0049                                 | 0.0079            | 0.0053                                 | 0.0073            | 0.0049                                 | 0.007  |
| STUBLACH               | DC    | 0.0164                                 | 0.0227            | 0.0173                                 | 0.0217            | 0.0140                                 | 0.022  |
| SUTTON_BRIDGE_PS       | DC    | 0.0043                                 | 0.0066            | 0.0047                                 | 0.0060            | 0.0043                                 | 0.006  |
| TEESSIDE_BASF          | DC    | 0.0026                                 | 0.0003            | 0.0051                                 | 0.0001            | 0.0047                                 | 0.000  |



|                                |          | 2012                                   | 2/13              | 2013                                   | 3/14              | 2014                                   | /15   |
|--------------------------------|----------|--|-------------------|--|-------------------|--|-------|
|                                |          |  |                   |  |                   |  |       |
|                                | DC/DN    | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2011) | New   |
| Exit Point                     | DC       | 451/4                                  | 4451/4            | 451/4                                  | 451/5             | 0.0004                                 | 0.000 |
| THEDDLETHORPE&SALTF_TERMINAL   | DC       | #N/A                                   | #N/A              | #N/A                                   | #N/A              | 0.0001                                 | 0.000 |
| THORNTON_CURTIS_(KILLINGHOLME) | DC       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000 |
| TILBURY_PS                     | DC       | #N/A                                   | #N/A              | #N/A                                   | #N/A              | 0.0114                                 | 0.009 |
| WEST_BURTON_PS                 | DC       | 0.0019                                 | 0.0049            | 0.0022                                 | 0.0042            | 0.0016                                 | 0.004 |
| WILLINGTON_PS                  | DC       | #N/A                                   | #N/A              | #N/A                                   | #N/A              | 0.0153                                 | 0.018 |
| WYRE_PS                        | DC       | 0.0131                                 | 0.0183            | 0.0139                                 | 0.0183            | 0.0139                                 | 0.019 |
| ZENECA                         | DC       | 0.0032                                 | 0.0009            | 0.0058                                 | 0.0001            | 0.0054                                 | 0.000 |
| BURNERVIE                      | DN       | #N/A                                   | 0.0001            | #N/A                                   | 0.0001            | 0.0001                                 | 0.000 |
| BACTON_OT                      | EA       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000 |
| BRISLEY                        | EA       | 0.0003                                 | 0.0027            | 0.0005                                 | 0.0018            | 0.0001                                 | 0.001 |
| EYE                            | EA       | 0.0056                                 | 0.0080            | 0.0061                                 | 0.0074            | 0.0057                                 | 0.007 |
| GREAT_WILBRAHAM                | EA       | 0.0056                                 | 0.0080            | 0.0061                                 | 0.0074            | 0.0057                                 | 0.007 |
| MATCHING_GREEN                 | EA       | 0.0097                                 | 0.0120            | 0.0104                                 | 0.0117            | 0.0102                                 | 0.012 |
| ROUDHAM_HEATH                  | EA       | 0.0019                                 | 0.0043            | 0.0022                                 | 0.0035            | 0.0017                                 | 0.003 |
| ROYSTON                        | EA       | 0.0075                                 | 0.0098            | 0.0080                                 | 0.0093            | 0.0077                                 | 0.009 |
| WEST_WINCH                     | EA       | 0.0027                                 | 0.0050            | 0.0030                                 | 0.0043            | 0.0025                                 | 0.004 |
| WHITWELL                       | EA       | 0.0094                                 | 0.0117            | 0.0101                                 | 0.0114            | 0.0098                                 | 0.011 |
| YELVERTON                      | EA       | 0.0001                                 | 0.0021            | 0.0001                                 | 0.0013            | 0.0001                                 | 0.001 |
| ALREWAS_EM                     | EM       | 0.0134                                 | 0.0165            | 0.0143                                 | 0.0163            | 0.0143                                 | 0.017 |
| BLABY                          | EM       | 0.0099                                 | 0.0130            | 0.0106                                 | 0.0127            | 0.0104                                 | 0.013 |
| BLYBOROUGH                     | EM       | 0.0019                                 | 0.0050            | 0.0023                                 | 0.0043            | 0.0017                                 | 0.004 |
| CALDECOTT                      | EM       | 0.0076                                 | 0.0106            | 0.0081                                 | 0.0102            | 0.0079                                 | 0.010 |
| DROINTON_OT                    | EM       | 0.0145                                 | 0.0176            | 0.0155                                 | 0.0175            | 0.0155                                 | 0.018 |
| GOSBERTON                      | EM       | 0.0030                                 | 0.0060            | 0.0034                                 | 0.0054            | 0.0029                                 | 0.005 |
| KIRKSTEAD                      | EM       | 0.0010                                 | 0.0040            | 0.0012                                 | 0.0032            | 0.0006                                 | 0.003 |
| MARKET HARBOROUGH              | EM       | 0.0087                                 | 0.0118            | 0.0093                                 | 0.0114            | 0.0091                                 | 0.011 |
| SILK WILLOUGHBY                | EM       | 0.0022                                 | 0.0052            | 0.0025                                 | 0.0045            | 0.0020                                 | 0.004 |
| SUTTON BRIDGE                  | EM       | 0.0044                                 | 0.0068            | 0.0049                                 | 0.0062            | 0.0044                                 | 0.006 |
| THORNTON CURTIS LDZ            | EM       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000 |
| TUR LANGTON                    | EM       | 0.0089                                 | 0.0119            | 0.0095                                 | 0.0115            | 0.0093                                 | 0.012 |
| WALESBY                        | EM       | 0.0003                                 | 0.0016            | 0.0001                                 | 0.0007            | 0.0003                                 | 0.000 |
| ASSELBY                        | NE       | 0.0001                                 | 0.0010            | 0.0003                                 | 0.0024            | 0.0001                                 | 0.002 |
| BALDERSBY                      | NE       | 0.0051                                 | 0.0032            | 0.0003                                 | 0.0024            | 0.0053                                 | 0.002 |
|                                | NE       | 0.0032                                 | 0.0046            | 0.0037                                 | 0.0039            | 0.0055                                 | 0.002 |
| BURLEY_BANK<br>GANSTEAD        | NE       | 0.0043                                 | 0.0007            | 0.0049                                 | 0.0000            | 0.0043                                 | 0.000 |
|                                |          |  |                   |  |                   |  |       |
| PANNAL                         | NE       | 0.0040                                 | 0.0071            | 0.0044                                 | 0.0065            | 0.0040                                 | 0.006 |
| PAULL                          | NE<br>NE | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000 |
| PICKERING                      |          | 0.0001                                 | 0.0043            | 0.0015                                 | 0.0013            | 0.0009                                 | 0.001 |
| RAWCLIFFE                      | NE       | 0.0003                                 | 0.0034            | 0.0005                                 | 0.0026            | 0.0001                                 | 0.002 |
| TOWTON                         | NE       | 0.0023                                 | 0.0054            | 0.0026                                 | 0.0047            | 0.0021                                 | 0.004 |
| BISHOP_AUCKLAND                | NO       | 0.0050                                 | 0.0027            | 0.0076                                 | 0.0019            | 0.0073                                 | 0.001 |
| BISHOP_AUCKLAND_TEST_FACILITY  | NO       | 0.0050                                 | 0.0027            | 0.0076                                 | 0.0019            | 0.0073                                 | 0.001 |
| COLDSTREAM                     | NO       | 0.0118                                 | 0.0009            | 0.0149                                 | 0.0069            | 0.0149                                 | 0.002 |
|                                | NIO      | 0.0094                                 | 0.0055            | 0.0124                                 | 0.0066            | 0.0123                                 | 0.006 |
| CORBRIDGE                      | NO       | 0.0034                                 |                   |  |                   |  |       |
| CORBRIDGE<br>COWPEN_BEWLEY     | NO       | 0.0034                                 | 0.0007            | 0.0056                                 | 0.0001            | 0.0052                                 | 0.000 |



|  |          | 2012                                   | 2/13              | 2013                                   | 3/14              | 2014/15                                |        |
|--|----------|--|-------------------|--|-------------------|--|--------|
|  | DC/DN    | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2011) | New    |
| Exit Point                                     |          |  |                   |  |                   |  |        |
| 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                                 | 0.001  |
| MELKINTHORPE                                   | NO       | 0.0127                                 | 0.0114            | 0.0136                                 | 0.0135            | 0.0135                                 | 0.014  |
| SALTWICK_PC                                    | NO       | 0.0152                                 | 0.0042            | 0.0184                                 | 0.0104            | 0.0186                                 | 0.006  |
| SALTWICK_VC                                    | NO       | 0.0152                                 | 0.0042            | 0.0184                                 | 0.0104            | 0.0186                                 | 0.006  |
| THRINTOFT                                      | NO       | 0.0055                                 | 0.0040            | 0.0077                                 | 0.0032            | 0.0074                                 | 0.003  |
| TOW_LAW  | NO       | 0.0069                                 | 0.0046            | 0.0097                                 | 0.0039            | 0.0095                                 | 0.004  |
| WETHERAL                                       | NO       | 0.0135                                 | 0.0089            | 0.0162                                 | 0.0108            | 0.0163                                 | 0.011  |
| HORNDON  | NT       | 0.0101                                 | 0.0103            | 0.0109                                 | 0.0098            | 0.0107                                 | 0.010  |
| LUXBOROUGH_LANE                                | NT       | 0.0104                                 | 0.0127            | 0.0111                                 | 0.0124            | 0.0109                                 | 0.012  |
| PETERS_GREEN                                   | NT       | 0.0098                                 | 0.0122            | 0.0105                                 | 0.0118            | 0.0103                                 | 0.012  |
| PETERS_GREEN_SOUTH_MIMMS                       | NT       | 0.0098                                 | 0.0122            | 0.0105                                 | 0.0118            | 0.0103                                 | 0.012  |
| WINKFIELD_NT                                   | NT       | 0.0185                                 | 0.0208            | 0.0196                                 | 0.0208            | 0.0197                                 | 0.021  |
| AUDLEY_NW                                      | NW       | 0.0180                                 | 0.0211            | 0.0190                                 | 0.0212            | 0.0158                                 | 0.022  |
| BLACKROD                                       | NW       | 0.0152                                 | 0.0182            | 0.0162                                 | 0.0182            | 0.0162                                 | 0.019  |
| ECCLESTON                                      | NW       | 0.0200                                 | 0.0243            | 0.0210                                 | 0.0246            | 0.0179                                 | 0.025  |
| HOLMES_CHAPEL                                  | NW       | 0.0193                                 | 0.0223            | 0.0203                                 | 0.0225            | 0.0171                                 | 0.023  |
| LUPTON   | NW       | 0.0094                                 | 0.0147            | 0.0101                                 | 0.0145            | 0.0099                                 | 0.015  |
| MALPAS   | NW       | 0.0199                                 | 0.0230            | 0.0210                                 | 0.0232            | 0.0178                                 | 0.024  |
| MICKLE TRAFFORD                                | NW       | 0.0193                                 | 0.0244            | 0.0203                                 | 0.0246            | 0.0172                                 | 0.025  |
| PARTINGTON                                     | NW       | 0.0176                                 | 0.0233            | 0.0191                                 | 0.0235            | 0.0159                                 | 0.024  |
| SAMLESBURY                                     | NW       | 0.0138                                 | 0.0168            | 0.0147                                 | 0.0167            | 0.0147                                 | 0.017  |
| WARBURTON                                      | NW       | 0.0178                                 | 0.0230            | 0.0189                                 | 0.0232            | 0.0156                                 | 0.024  |
| WESTON POINT                                   | NW       | 0.0202                                 | 0.0253            | 0.0213                                 | 0.0256            | 0.0182                                 | 0.026  |
| ABERDEEN                                       | SC       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| ARMADALE                                       | SC       | 0.0099                                 | 0.0001            | 0.0128                                 | 0.0048            | 0.0128                                 | 0.000  |
| BALGRAY  | SC       | 0.0039                                 | 0.0001            | 0.0128                                 | 0.0048            | 0.0128                                 | 0.000  |
| BATHGATE                                       | SC       | 0.0016                                 | 0.0001            | 0.0042                                 | 0.0001            | 0.0037                                 | 0.000  |
| BROXBURN                                       | SC       | 0.0095                                 | 0.0001            | 0.0124                                 | 0.0044            | 0.0123                                 | 0.000  |
| CARESTON                                       | SC       | 0.0110                                 | 0.0001            | 0.0140                                 | 0.0060            | 0.0140                                 | 0.001  |
|  |          |  |                   |  |                   |  |        |
| DRUM<br>GLENMAVIS                              | SC<br>SC | 0.0067                                 | 0.0001            | 0.0095                                 | 0.0015            | 0.0093                                 | 0.000  |
|  |          | 0.0107                                 | 0.0001            | 0.0137                                 | 0.0057            | 0.0137                                 | 0.001  |
| HUME   | SC       | 0.0128                                 | 0.0018            | 0.0159                                 | 0.0079            | 0.0159                                 | 0.003  |
| KINKNOCKIE                                     | SC       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| LANGHOLM                                       | SC       | 0.0134                                 | 0.0065            | 0.0165                                 | 0.0107            | 0.0166                                 | 0.008  |
| LAUDERHILL                                     | SC       | 0.0144                                 | 0.0030            | 0.0176                                 | 0.0091            | 0.0177                                 | 0.004  |
| LOCKERBIE                                      | SC       | 0.0144                                 | 0.0056            | 0.0176                                 | 0.0118            | 0.0177                                 | 0.007  |
| MOSSIDE  | SC       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| NETHER_HOWCLEUGH                               | SC       | 0.0147                                 | 0.0037            | 0.0178                                 | 0.0098            | 0.0180                                 | 0.005  |
| PITCAIRNGREEN                                  | SC       | 0.0039                                 | 0.0001            | 0.0066                                 | 0.0001            | 0.0062                                 | 0.000  |
| SOUTRA   | SC       | 0.0145                                 | 0.0036            | 0.0177                                 | 0.0097            | 0.0178                                 | 0.005  |
| ST_FERGUS_OT                                   | SC       | 0.0001                                 | 0.0001            | 0.0001                                 | 0.0001            | 0.0001                                 | 0.000  |
| STRANRAER                                      | SC       | 0.0154                                 | 0.0044            | 0.0186                                 | 0.0106            | 0.0188                                 | 0.006  |
| FARNINGHAM                                     | SE       | 0.0120                                 | 0.0104            | 0.0128                                 | 0.0099            | 0.0127                                 | 0.010  |
| 7 11 (11 11 10 11 11 11 11 11 11 11 11 11 11 1 |          |  |                   |  |                   |  |        |



| NTS Exit (Flat) Capacity Prices |       |  |                   |  |                   |  |                   |
|---------------------------------|-------|--|-------------------|--|-------------------|--|-------------------|
| (p/kWh/day)                     |       |  |                   |  |                   |  |                   |
|                                 |       | 2012                                   | 2/13              | 2013                                   | 3/14              | 2014                                   | /15               |
|                                 | DC/DN | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2010) | New<br>Indicative | Prevailing<br>Indicative<br>(May 2011) | New<br>Indicative |
| Exit Point                      |       | E                                      |                   |  |                   | <b>L</b> - E                           | _                 |
| 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            |
| 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            |

# **0356A END.**