

## Explanation of NTS SO and TO Commodity Charges

### Introduction

This document seeks to provide greater transparency to the processes and data used by National Grid Gas NTS (“National Grid”) to set the NTS System Operation (SO) and Transportation Owner (TO) Commodity Charges.

Charges are set before actual costs and allowed revenues have been finalised. In the case of the SO Commodity Charges actual allowed revenue (SO MAR) is not known until outturn costs for the formula year have been finalised. Therefore the SO and TO allowed revenue and its individual components have to be forecasted so as to allow charges to be set.

Forecasts are based on a number of different factors and assumptions including but not limited to, historical costs, historical auction revenues, the forward cost of gas, flows on the system, incentive schemes and regime changes. These can be subject to significant variances and volatility throughout the year, which are amplified by the fact that Indicative and Final notices and their related costs are forecasted 150 days and 2 months before actual charges are implemented and costs incurred.

National Grid has an obligation to use its best endeavours in setting its charges to ensure that in respect of any formula year the revenue, which it derives from (SOR<sub>t</sub> & TOR<sub>t</sub>) shall not exceed the maximum NTS system operation revenue.(SOMR<sub>t</sub> & TOMR<sub>t</sub>).

Therefore as costs fluctuate throughout the year, the charging obligations on National Grid ensure that charges must fluctuate as well.

By providing greater transparency of the individual cost components and how these contribute to charges, NTS users could potentially forecast any future fluctuations and price changes.

If you would like further information on how the costs and allowed revenues are derived, please refer to System Operator incentive consultations, TO Price Control documents and charging notices for further detail regarding these matters.

This document is one of a suite of documents that describe the charges levied by National Grid and the methodologies behind them. The other documents that are available are:

- Statement of the Gas Transportation Charging Methodology
- Statement of Gas Transmission Transportation Charges
- Incremental Entry Capacity Release Methodology Statement
- Metering Charging Statement
- Connection Charging Statement

These are available on our Charging website at:

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

## Structure of this document

This document is divided into three sections:

- Part A relates to the SO Commodity Charge;
- Part B relates to the TO Commodity Charge; and
- Part C provides details of the annual charge setting timetable and sources of further information.

### PART A: SO COMMODITY CHARGE

The SO Commodity Charge recovers the difference between the SO allowed revenue and revenues received from other SO charges.

To derive the SO Commodity Charge a number of high-level steps are required:

- Step 1:** Determine the SO Allowed Revenue
- Step 2:** Determine the actual revenue to be recovered from the SO Commodity Charge
- Step 3:** Determine the volumes that attract the SO Commodity Charge
- Step 4:** Calculate the SO Commodity Charge rate

#### Step 1: Determining the SO Allowed Revenue

The maximum NTS SO revenue in respect of formula year t ( $SOMR_t$ ) is defined in National Grid's Gas Transporter Licence in respect of the NTS ("the Licence"). It is calculated using the following formula:

$$SOMR_t = SOEIRC_t + SOExIRC_t + SOOIRC_t + SOIntIRC_t + SORA_t + BBIOCA_t + DELINC_t - SOK_t$$

Table 1 details the individual terms contained in the equation above, which have been used to determine the final prices that applied from 1 April 2008. Note that all the figures quoted within this note relate to the total formula year (1 April 2008 to 31 March 2009).

**Table 1**

Terms used for Final notification of April 2008 charges	Value (£m)
SO entry incentives, costs and revenues ( $SOEIRC_t$ )	42.8
SO exit incentives, costs and revenues ( $SOExIRC_t$ )	83.2
SO external incentives, costs and revenues ( $SOOIRC_t$ )	148.9
SO internal incentives, costs and revenues ( $SOIntIRC_t$ )	64.3
SO income adjusting event adjustment ( $SORA_t$ )	0.0
SO buyback overall incentive collar adjustment ( $BBIOCA_t$ )	0.0
SO accelerated incremental capacity delivery incentive ( $DELINC_t$ )	0.0
Revenue adjustment term for prior year ( $SOK_t$ ) *	(2.4)
<b>Maximum NTS SO allowed revenue (<math>SOMR_t</math>)</b>	<b>341.6</b>

\*  $SOK_t$  is deducted in the  $SOMR_t$  formula. Therefore any under recovery is shown as ( )

For further details of the SO allowed revenue, refer to Special Condition C8C “NTS System Operation activity revenue restriction” Paragraph 3a of the Licence.

**Typical variations in  $SOMR_t$**

The values in Table 1 are subject to uncertainty, particularly those that are subject to externalities such as gas costs. It is anticipated that separate reporting of the SO external incentive performance will allow shippers to better predict future price movements. However, shippers may wish to note:

- ❑ typically  $SOIntRC_t$  has seen little fluctuation throughout the year as this term relates to the internal costs applicable to the SO activity;
- ❑ the  $SOEIRC_t$  and  $SOExIRC_t$  terms are largely collected through capacity and neutrality charges and hence do not contribute significantly to the variability of the SO Commodity charge;
- ❑ the  $SOOIRC_t$  term has previously been subject to large fluctuations as it includes System Balancing Costs which are currently forecast to be around £129.1m but in previous years has been forecasted as high as £180m and as low as £80m; and
- ❑ the  $SOK_t$  term will not be subject to a significant variation when indicative October prices are published in May each year as it relates to any under/over recovery from the previous formula year, which will be largely finalised by that point in time.

**Step 2 Determining the target revenue for the SO Commodity Charge**

The maximum NTS SO allowed revenue is collected through a number of charges in addition to the standard SO Commodity Charge. The revenue from these other charges must first be forecasted so that the residual target revenue to be collected through the SO Commodity Charge can be calculated. It is calculated using the following formula:

$$SOR_t = SOROC_t + SORCAP_t + SOExRF_t + RCOM_t$$

**Associated SO charges**

Forecasted revenue resulting from associated SO charges levied by National Grid is deducted from the maximum NTS SO allowed revenue total.

**Table 2**

<b>Term</b>	<b>Value (£m)</b>
Balancing Neutrality Charge (RNC <sub>t</sub> )	17.8
Capacity Neutrality Components (revenues)	A
Adjustment for Neutrality (SOROC <sub>t</sub> )	17.8+A

Please refer to our Charging Methodology Statement for further information regarding any terms mentioned within this section of the document

**Adjustments for the sale of incremental capacity**

Revenue from the sale of incremental entry (SOEIRC<sub>t</sub>) and exit (SOExRF<sub>t</sub>) capacity is deducted as this is recovered through the relevant capacity charges. For entry the amount equates to any incremental revenue allocated through the Entry Capacity auctions held ahead of the gas day and this capacity may either be obligated or non-obligated. The revenue is effectively used to net off the incremental SO costs included in SOMR<sub>t</sub>. For exit the adjustment is equal to the forecasted revenue collected in the formula year in relation to Exit Charges for firm exit capacity above the baseline.

**Table 3**

<b>Term</b>	<b>Value (£m)</b>
Entry Capacity Investment Revenue (SORCAP <sub>t</sub> )	27.8
Exit Capacity Investment Revenue (SOExRF <sub>t</sub> )	8.9
<b>Adjustment for the sale of incremental capacity</b>	<b>36.7</b>

**Adjustments for other Charges**

A proportion of the SO costs are recovered through the St Fergus Compression Charge, Shorthaul Commodity Charge and Capacity Neutrality Buyback revenue. The St Fergus Compression Charge recovers the compression costs associated with the St. Fergus TOM sub-terminal directly from those shippers at that terminal due to local pressure tier arrangements. The optional Shorthaul Commodity Charge is offered as a replacement to the TO and SO Commodity Charges. In all cases, the forecast revenue recovered from these charges is deducted from SOMR<sub>t</sub>.

**Table 4**

<b>Term</b>	<b>Value (£m)</b>
St Fergus Compression Revenue	18.0
Shorthaul Revenue	10.0
Capacity Neutrality Buyback Costs recovered through Capacity Neutrality	12.0
Capacity Neutrality Components (revenues credited via capacity neutrality)*	-A*
<b>Adjustment for other Commodity Charges</b>	<b>40.0-A</b>

\*This cancels out the figure in Table 2 and therefore has no impact on the SO Commodity charge

The target revenue to be recovered through the SO Commodity Charge is as follows:

**Table 5**

Term	Value (£m)
Maximum Allowed NTS SO revenue (SOMR <sub>t</sub> )	341.6
...less associated SO charges	17.8
...less sales of incremental capacity	36.7
...less other charges	40.0
<b>Remainder of RCOM i.e. revenue to be collected through SO Commodity Charge</b>	<b>247.1</b>

This figure changes as National Grid's view of the above costs and revenue change. Table 6 details how the target revenue to be collected through the SO Commodity Charge has varied.

**Table 6**

Target SO Commodity Charge Revenue in 2008/09 (£m)			
Prices to apply from April		Prices to apply from October	
Indicative	Final	Indicative	Final
£232.4m	£247.1m	-	-

### Step 3 Determining the volumes that attract the SO Commodity Charge

The volumes that attract the SO Commodity Charge are those forecast entry and exit flows excluding storage flows, net of shorthaul volumes i.e. the volumes that shippers have nominated to attract the Shorthaul Commodity Charge. Shippers can nominate to go to Shorthaul at any time throughout the year.

Table 7 below shows the volumes used for the prices set for 2008/09.

**Table 7**

Volumes used for setting SO Commodity Charge in 2008/09 (GWh)			
Prices to apply from April		Prices to apply from October	
Indicative	Final	Indicative	Final
1,920,219	1,920,053	-	-

The flow data is updated as part of the demand forecasts published in mid-May. Therefore, shippers may observe different flow assumptions for the final notice of the October price change.

#### Step 4 Calculation of the SO Commodity Charge rate

The SO Commodity Charge is collected from non-storage entry and exit flows excluding shorthaul flows, therefore to calculate the charge rate to apply from April the following formula is used.

$$\frac{\text{Forecast revenue from SO Commodity Charge (£m)}}{\text{Forecast Flows (GWh)}} \times 100 = 0.0129 \text{ p/kWh}$$

#### Mid-year updates to the SO Commodity Charge

The commercial framework allows the SO Commodity Charge to be revised in October. Further updates are permitted in exceptional circumstances.

When making a mid-year price update, the actual revenue collected during the year to date is deducted from the revised forecast annual revenue, and the remaining flows for the year considered.

For example, to update prices in October the following formula is applied:

$$\frac{\text{Forecast revenue from SO Commodity Charge - Revenue Apr to Sep}}{\text{Forecast Flows between Oct and Mar (GWh)}} \times 100$$

#### Forecast revenue recovery through SO Commodity Charge

Table 8 shows the forecast monthly flows that will attract the SO Commodity Charge and the expected revenue from this charge. Data shown in red is based on actuals, other data is forecast.

**Table 8**

<b>Apr 08</b>	<b>May 08</b>	<b>Jun 08</b>	<b>Jul 08</b>	<b>Aug 08</b>	<b>Sep 08</b>
169,704 GWh	136,211 GWh	111,655 GWh	105,886 GWh	102,105 GWh	121,088 GWh
0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh
£21,891,809	£17,571,257	£14,403,448	£13,659,339	£13,171,598	£15,620,323

<b>Oct 08</b>	<b>Nov 08</b>	<b>Dec 08</b>	<b>Jan 09</b>	<b>Feb 09</b>	<b>Mar 09</b>
151,032 GWh	188,712 GWh	216,884 GWh	224,048 GWh	196,280 GWh	196,613 GWh
0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh	0.0129 p/kWh
£19,483,135	£24,343,870	£27,978,075	£28,902,250	£25,320,061	£25,363,077

Charges are always set to recover the exact amount of allowed revenue for the formula year. However, as costs and volumes are not fixed and are subject to variability, any forecast/actual difference between allowed revenue and actual revenue, flows through into the following formula year (with the appropriate interest adjustments made) through the NTS SO revenue adjustment term  $SOK_t$  which applies in that formula year.

## PART B: TO COMMODITY CHARGE

To derive the TO Commodity Charge a number of high-level steps are required:

- Step 1:** Determine the TO Allowed Revenue
- Step 2:** Determine the target revenue to be collected via the TO Commodity Charge
- Step 3:** Determine the volumes that attract the TO Commodity Charge
- Step 4:** Calculate the TO Commodity Charge rate

### Step 1 Determining the TO allowed revenue

The maximum NTS TO revenue in respect of formula year t ( $TOMR_t$ ) is defined the Licence. It is calculated using the following formula:

$$TOMR_t = TOZ_t - TOZA_t + TOF_t + TOG_t - TOK_t$$

Table 9 below details the terms used to determine the final prices to apply from 1 April 2008.

**Table 9**

Terms used for Final notification of April 2008 charges	Value (£m)
TO core allowance ( $TOZ_t$ )	524.9
TO revenue adjustment for Milford-Haven ( $TOZA_t$ )	10.8
TO pass-through costs ( $TOF_t$ )	35.1
TO incentive costs and revenue ( $TOG_t$ )	2.4
Revenue adjustment term for prior year ( $TOK_t$ )	1.6
<b>Maximum NTS TO revenue (<math>TOMR_t</math>)</b>	<b>550.0</b>

For further details of the TO allowed revenue, refer to Special Condition C8B “NTS transportation owner activity revenue restriction”, Paragraph 3a of the Licence.

### *Typical variations in $TOMR_t$*

Assuming no change to the Transportation Licence, shippers may wish to note:

- $TOZ_t$  is typically fixed from the January (final) notification of the April charges, once the inflation data is based on actuals rather than on any forecast;
- $TOF_t$  should be relatively stable during the price control period, as the majority of this term relates to pension costs allowances that are fixed for the period. This term can typically move by  $\pm 10\%$ ;
- $TOG_t$  is mainly driven by changes in the core allowance and may vary by  $\pm \text{£}1\text{m}$  throughout the year; and
- $TOK_t$  will be relatively fixed when indicative October prices are published in May each year.

## **Step 2 Determining the target revenue for the TO Commodity Charge**

The TO Commodity Charge collects the difference between auction revenue applicable to the formula year and TO entry allowed revenue.

### ***TO entry allowed revenue***

The TO entry allowed revenue is half of TO maximum allowed revenue having first deducted the revenue collected from the Pension Deficit Charge (levied on Distribution Networks):

$$\text{TO entry allowed revenue} = \frac{(\text{TO allowed revenue} - \text{DN pension revenue})}{2}$$

### ***Auction revenue***

The obligated entry capacity revenue collected in the relevant year must be determined by considering all applicable capacity auctions (ahead of the day). A combination of forecast and actual data is used depending on the auction type and when it is held.

For instance, revenue from the Quarterly System Entry Capacity (QSEC) auctions is based on actual data. The QSEC auction sells entry capacity for capacity year+2 to capacity year+16 inclusive. QSEC 2007 held last September sold capacity from 1 April 09 to 31 March 24. Therefore all QSEC auctions held previous to QSEC 2007 will have sold entry capacity for the 2008/9 formula year, hence why it is actual data. The Annual Monthly System Entry Capacity (AMSEC) auction sells capacity for capacity year+1 to capacity year+2. AMSEC 2007 and AMSEC 2008 will have therefore sold capacity for the 2008/9 formula year. For setting the TO Commodity Charge to apply from April, revenue from one AMSEC auction will be based on actual auction results and the other based on forecast data (as charges will be set before the actual AMSEC auction is held). Actuals for both the AMSEC auctions are available for the October price changes.

Where forecast auction revenues are required, this will typically be based on the actual revenues generated from the same auction held the previous year unless National Grid receives better information from shippers. Shippers should note this is not always reliable particularly at times of regime change when shippers may adopt different bidding strategies.

For the Rolling Monthly System Entry Capacity (RMSEC) and Day Ahead Daily System Entry Capacity (DADSEC) auction revenues the final total is forecasted for April price changes (historically negligible change is seen between forecast and actual), as at the point when charges are finalised further auction revenue will be collected.

Table 10 on the following page shows the auction revenue assumptions used to set the final April 2008 TO Commodity charge (equivalent numbers for 2007/08 are shown in grey for comparison). Actual auction revenues are shown in blue and forecasts in red.



**Table 10**

Auction	Formula Year	
	2007/8 £m	2008/9 £m
QSEC Auctions	109.6	116.0
AMSEC 2006	7.5	
AMSEC 2007	82.0	26.3
AMSEC 2008		82.0
RMSEC 2007	4.8	
RMSEC 2008		4.8
DADSEC	0.5	0.5
Trades & Transfers	13.5	13.5
<b>Total auction revenue</b>	<b>217.9</b>	<b>243.1</b>

The target TO Commodity Charge revenue is therefore as follows:

**Table 11**

Term	Value (£m)
Maximum NTS TO revenue (TOMR <sub>t</sub> )	550.0
...less DN Pension Charge revenue	26.5
TO entry allowed revenue (...half of the net value)	261.8
...less revenue collected from entry auctions	243.1
<b>Revenue to be collected through TO Commodity Charge</b>	<b>18.6</b>

Table 12 details how the target revenue to be collected through the TO Commodity Charge has varied during 2008/09.

**Table 12**

Target TO Commodity Charge Revenue in 2008/09 (£m)			
Prices to apply from April		Prices to apply from October	
Indicative	Final	Indicative	Final
18.6	18.6	-	-

### **Determining the volumes that attract the TO Commodity Charge**

The volumes that attract the TO Commodity Charge are those forecast non-storage entry flows net of shorthaul volumes i.e. the volumes that shippers have nominated to attract the Shorthaul Commodity Charge.

Table 13 on the following page shows the volumes used for the prices set for 2008/09.

**Table 13**

Annual Volumes used for setting TO Commodity Charge in 2008/09 (GWh)			
Prices to apply from April		Prices to apply from October	
Indicative	Final	Indicative	Final
965,599	965,599	-	-

The flow data is updated as part of the demand forecasts published in mid-May. Shippers will therefore observe different flow assumptions for indicative and final notices of the October price change to those made for the April prices.

### Calculating the TO Commodity Charge rate

The TO Commodity Charge is collected from non-storage entry flows excluding shorthaul flows, therefore to calculate the charge rate to apply from April the following formula is used.

$$\frac{\text{Forecast revenue from TO Commodity Charge (£m)}}{\text{Forecast entry flows (GWh)}} \times 100$$

$$\frac{\text{£18.6m}}{965,599\text{GWh}} \times 100 = 0.0019 \text{ p/kWh}$$

### Mid-year updates to the TO Commodity Charge

The commercial framework allows the TO Commodity Charge to be revised in October. Further updates are permitted in exceptional circumstances.

When making a mid-year price update, the actual revenue collected during the year to date is deducted from the revised annual revenue, and the remaining flows for the year considered.

For example, to update prices in October the following formula is applied:

$$\frac{\left( \begin{array}{l} \text{Forecast revenue from TO Commodity Charge} \\ - \text{Collected revenue between Apr and Sep} \end{array} \right)}{\text{Forecast flows between Oct and Mar (GWh)}} \times 100$$

### Forecast revenue recovery through TO Commodity Charge

Table 14 on the following page shows the forecast monthly flows that will attract the TO Commodity Charge and the expected revenue from this charge. Data shown in red is based on actuals, other data is forecast.

**Table 14**

<b>Apr 08</b>	<b>May 08</b>	<b>Jun 08</b>	<b>Jul 08</b>	<b>Aug 08</b>	<b>Sep 08</b>
85,351 GWh	68,491 GWh	56,129 GWh	53,220 GWh	51,320 GWh	60,872 GWh
0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh
£1,621,668	£1,301,334	£1,066,456	£1,011,181	£975,074	£1,156,575

<b>Oct 08</b>	<b>Nov 08</b>	<b>Dec 08</b>	<b>Jan 09</b>	<b>Feb 09</b>	<b>Mar 09</b>
75,900 GWh	94,857 GWh	109,030 GWh	112,638 GWh	98,953 GWh	98,836 GWh
0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh	0.0019 p/kWh
£1,442,104	£1,802,287	£2,071,578	£2,140,122	£1,880,109	£1,877,888

If actual revenue recovered is greater than the TO entry allowance revenue then the over recovery will be dealt with first by the application of the buy-back offsetting mechanism, with any residual revenue credited back to entry shippers through the TO Commodity charge rebate mechanism.

Any TO Entry over recovery not dealt with via the above mechanisms will flow through into the following formula year (with the appropriate interest adjustments made) through the NTS TO revenue adjustment term  $TOK_t$  which applies in that formula year.

## **PART C: CHARGING TIMETABLE & FURTHER INFORMATION**

### **Charging timetable**

Charge changes are published by the following dates throughout the year:

<b>Date (by)</b>	<b>Notification of...</b>
1 November	Indicative charges to apply from following 1 April
31 January	Final charges to apply from following 1 April
1 May	Indicative charges to apply from following 1 October
31 July	Final charges to apply from following 1 October

Notices of the updates will be posted on National Grid's industry website and on the Joint Office's website. The updates will also be notified via the Joint Office's email notification service.

### **Further information**

If you require further details about any of the information contained within this document or have any comments on how this document might be improved please contact our UK Transmission Charging and Revenue team, on 01926 654633.