



Capacity and Commodity Invoices

Network Mapping

Network Short Code	OWNER	NETWORK ID	LDZ	Network Type	Invoice Type Classification
GT2	Scotia Gas Networks	SCT - Scotland	SC	Distribution Network	Distribution Transportation (TPN)*
			LC		
			LO		
			LS		
			LT		
			LW		
GT3	Northern Gas Networks	NOE - North of England	NE	Distribution Network	Distribution Transportation (TPN)*
			NO		
GT4	Scotia Gas Networks	SOE - South of England	SE	Distribution Network	Distribution Transportation (TPN)*
			SO		
GT5	Wale and West Utilities	WTW - Wales and the West	SW	Distribution Network	Distribution Transportation (TPN)*
			WS		
			WN		
TGT	Cadent	EOE - East of England	EA	Distribution Network	Distribution Transportation (TPN)*
			EM		
TGT		LDN - London	NT		
TGT		NWT - North West Thames	NW		
TGT		WMD - West Midlands	WM		
NTS*	National Grid	TNO - Transmission	NA	Transmission	Transmission Transportation (TPN)* Energy (ENG)*

* Network Sales of TGT Distribution Network gives independent organisation for Transmission / Energy NTS Charges

Reversal and Rebill

- Process facilitates Reverse & Rebill for Network Sales to enable collection of revenue for the relevant Network.
- Request to Bill (RTB) billing is an interface mechanism in UK- Link where pre-calculated financial values are used to create invoices.
- Issue reversal for all NTS Charges issued under Cadent TGT.
- Issue rebill for all NTS charges under NTS for National Grid.
- Currently still generate all charges for transmission under Cadent Distribution Network using short code 'TGT'.
- Financial value Nett off to zero under reversal and rebill.
- To assist in validation of invoice text captured in I57 record within the .INV File confirms original invoice issue number to link back all charges.

NTS Cadent Reversal and Rebill Charge Mapping

The following invoice types are affected by this process:

- Commodity (NTS Exit Commodity and Shorthaul Charges)
- Capacity (Special metering transmission admin charges)
- Amendments (NTS Exit Commodity Reconciliation and Gas Reconciliation Energy)
- Meter Assets (special metering Class 1 bundled service sites. Meter/corrector/data-logger charges)

NTS Charge Types - Commodity

Example – NTS Exit Commodity Charge

Installation Type	Current Charge Type		CT Description	DC LDZ	Special metering Sites	CSEP
Directly Connected	NCO	NTS	NTS Exit Commodity Charge	Current		
Directly Connected	ZCO	ZCO	LDZ COMMODITY CHARGE	Current		
Unique Sites	877	NTS	Unique-NTS Exit Commodity		Current	
Unique Sites	878	ZCO	UNIQUE - LDZ COMMODITY		Current	
CSEPS	892	NTS	CSEPS-NTS Exit COMM Charge			Current
CSEPS	893	ZCO	CSEPS - LDZCOMMODITY CHARGE			Current

* Yellow indicates - NTS Subject to reversal and rebill

Commodity Charge Types

Example : NTS Exit Commodity Charge

Recipient Flag: Shipper only = SSC, Network only = NWO, Shipper & Network = BOTH	Charge Type	Charge Type Description	Invoice Type	Eng/TPN Classification	LDZ/NTS/TMS Classification	VAT Code
BOTH	877	UNIQUE-NTS EXIT Commodity Issued (Combined Charges)	COM	TPN	NTS	8
BOTH	878*	UNIQUE - LDZ COMMODITY Distribution Charges	COM	TPN	LDZ	8
BOTH	892	CSEPS- NTS EXIT COMM CHARGE Issued (Combined Charges)	COM	TPN	NTS	8
BOTH	893*	CSEPS - LDZ COMMODTY CHARGE Distribution Charges	COM	TPN	LDZ	8
BOTH	NCO	NTS EXIT COMMODITY CHARGE Issued (Combined Charges)	COM	TPN	NTS	8
BOTH	ZCO*	LDZ COMMODITY CHARGE Distribution Charges	COM	TPN	LDZ	8

* Not affected as Distribution Charges

NTS Cadent Charge Mapping

Description	Original Invoice Type	Reversal & Rebill Charge Type	Charge Types	Charge Type Description
Commodity Reversal and Rebill Charges	COM	INR	877	UNIQUE-NTS EXIT Commodity
			880	UNIQUE NTS COMMODITY SHORTHHAUL
			892*	CSEPS- NTS EXIT COMM CHARGE
			NCO*	NTS EXIT COMMODITY CHARGE
Capacity Reversal and Rebill Charges	CAZ	INR	884	ADMINISTRATION CHARGE - NTS
Meter Asset Charges Reversal and Rebill Charges	MAS	MAS	N18	METER ASSET CHARGE - NTS
			N20	CORRECTOR ASSET CHARGE - NTS
Datalogger Asset (PO3) Reversal and Rebill Charges	ADP	ADP	P03	DATALOGGER ASSET CHARGE
Datalogger Asset (PO4) Reversal and Rebill Charges	ADP	ADP	P04	DATALOGGER ASSET ADJUSTMENT CHARGE

* NTS Exit Commodity Charge in following example

NTS Cadent Change Mapping Cont..

Description	Original Invoice Type	Reversal & Rebill Charge Type	Charge Types	Charge Type Description
Amendment Reversal and Rebill Charges	AMS	INR	GRE	GAS VARIABLE RECONCILIATION
			NRE	NTS EXIT COMM RECONCILIATION
			RBG	RBD GAS RECONCILIATION ENERGY
			RBN	RBD NTS EXIT COMMODITY RECONCILIATION CHARGE
			RCG	RBD CSEP GAS RNCLTN ENERGY
			RCN	RBD CSEP NTS EXIT COMMODITY RECONCILIATION CHARGES
			AUN	UNIQUE - NTS EXIT COMM RECONCILIATION
			ACN	CSEP - NTS EXIT COMM RECONCILIATION
			UGR	UNIDENTIFIED GAS RECONCILIATION ENERGY
			705	NTS OPTIONAL COMMODITY REC
			915	CSEP AGG REC NTS TRANS CHGADJ
			917	USER AGG REC NTS TRANS CHGADJ
			922	USER AGG REC CLEARING VALUE
			926	CSEP AGG REC CLEARING VALUE
			S15	CSEP AGG REC NTS TRANS CHG ANN SHR ADJ
			S17	USER AGG REC NTS TRANS CHG ANN SHR ADJ
			S22	USER AGG REC CLEARING VALUE ANN SHR
			S26	CSEP AGG REC CLEARING VALUE ANN SHR
			88A	UNIQUE NTS COMMODITY SHORTHHAULADJ
			84A	ADMINISTRATION CHARGE NTS ADJ

NTS Cadent Reversal and Rebill Worked Example

Example – Direct connected site. NCO – NTS Exit Commodity Charge

Original Core Primary Charges (COM) issued on behalf of Cadent under Network Operator Code TGT.

Client Owner	Invoice Classification	ZCO Charge (£)	NCO Charge (£)	892 Charge (£)	Total (£) (Inc VAT)	Invoice Number
TGT	TPN	885.49	3158.84	58.85	4103.18	7777777

Payment made to Cadent Gas Limited

Issued on M+4

Invoice Number 7777777 Payment Due date M+12

.INV File – COM (NCO) Charges – No I57 record

"A00",00000000,"INV",20180312,103117,019232

"I56",“AAA”,7777777,"COM",2018,2,3431.06,686.21,4117.27,20180323,0.00,686.21,20180312,"GB243 133345", "20-00-00", "53930661", "NG GAS DISTRIBUTION LTD OPS", "GB240658217", "99999999", "99-

99-99", "TGT", "Cadent Gas Limited", "0", "Ashbrook Court, Central Boulevard", "Coventry", "CV7

8PE", "AAA01.PN000009.COM" "I59",7777777,77777770001,"ZCO",737.91,20.0000,"VA",147.58,885.49,"008"

I59",7777777,77777770003,"NCO",2632.37,20.0000,"VA",526.47,3158.84,"008"

"I59",7777777,77777770005,"893",11.74,20.0000,"VA",2.35,14.09,"008"

"I59",7777777,77777770007,"892",49.04,20.0000,"VA",9.81,58.85,"008"

"I05", "THE INVOICE DUE DATE WILL BE THE 12TH DAY AFTER RECEIPT OF THE INVOICE OR OTHERWISE IN ACCORDANCE WITH NETWORK CODE.", ""

"I05", "PAYMENT OF ANY AMOUNT SHALL BE MADE IN POUNDS STERLING TO THE BANK ACCOUNT DETAILED.", "IF YOU ARE ESTABLISHED IN THE EU AND NO UK VAT CHARGED ON THIS INVOICE, YOU NEED TO ACCOUNT FOR REVERSE CHARGE VAT UNDER EITHER EU DIR 2006 112 ART 38, 44, 195, 196, OR UK DOMESTIC REVERSE CHARGE"

"I05", "VAT ' ALL VAT CREDIT AMOUNTS SHOULD BE TOTALLED TOGETHER AND DEDUCTED FROM THE VAT SUMMARY TOTAL (TOTAL VAT DEBITS) ONLY THE NET AMOUNT OF VAT SHOULD THEN BE INCLUDED IN YOUR VAT RETURN.", ""

"I58",00000000,7777777,,

"I60",10192320001,"ZCO",885.49,, ""

"I60",10192320003,"NCO",3158.84,, ""

"I60",10192320005,"893",14.09,, ""

I60",10192320007,"892",58.85,, "" "Z99",13

NTS Cadent Reversal and Rebill Worked Example

Reversal of Cadent NCO – NTS Exit Commodity Charge on behalf of Cadent Distribution Network (TGT)

Client Owner	Invoice Classification	NCO Charge (£)	Charge Type	comment	rtb comment	Invoice type	Reversal Invoice Number
TGT	TPN	-3158.84	NCO	Reversal COM invoice Feb 2018 DN Sales invoice number	Reversal COM invoice Feb 2018 DN Sales invoice number 7777777 charge type NCO	INR	8888888
TGT	TPN	-58.85	892	Reversal COM invoice Feb 2018 DN Sales invoice number	Reversal COM invoice Feb 2018 DN Sales invoice number 7777777 charge type NCO	INR	8888888

Payment made to Cadent Gas Limited

Issued on M+4

Invoice Number 8888888

Payment Due date M+12

.INV File with I57 (Reversal)

"A00",00000000,"INV",20180312,143048,019517 "I56","AAA",88888888,"INR",2018,2,-2681.41,-536.28,-
3217.69,20180323,0.00,-
536.28,20180312,"GB243133345","20-00-00","53930661","NG GAS DISTRIBUTION LTD OPS","GB240658217","999999999","99-
99-99","TGT","Cadent Gas Limited","0","Ashbrook Court,
Central Boulevard","Coventry","CV7 8PE","" "I59",88888888,88888880001,"892",-49.04,20.0000,"VA",-
9.81,-58.85,"008"
"I57",88888880001,"892",,"",-58.85,"Reversal COM invoice Feb 2018 DN Sales invoice number 7777777 charge type 892"
"I59",88888888,88888880003,"NCO",-2632.37,20.0000,"VA",-526.47,-3158.84,"008"
"I57",88888880003,"NCO",,"",-3158.84,"Reversal COM invoice Feb 2018 DN Sales invoice number 7777777 charge type
NCO"
"I05","THE INVOICE DUE DATE WILL BE THE 12TH DAY AFTER RECEIPT OF THE INVOICE OR OTHERWISE IN
ACCORDANCE WITH NETWORK CODE.","
"I05","PAYMENT OF ANY AMOUNT SHALL BE MADE IN POUNDS STERLING TO THE BANK ACCOUNT DETAILED.",
"IF YOU ARE ESTABLISHED IN THE EU AND NO UK VAT CHARGED ON THIS INVOICE, YOU NEED TO ACCOUNT FOR REVERSE
CHARGE VAT UNDER EITHER EU DIR 2006 112 ART 38, 44, 195, 196, OR UK DOMESTIC REVERSE CHARGE" "I05","VAT"
ALL VAT CREDIT AMOUNTS SHOULD BE TOTALLED TOGETHER AND DEDUCTED FROM THE VAT SUMMARY TOTAL
(TOTAL VAT DEBITS) ONLY THE NET AMOUNT OF VAT SHOULD THEN BE INCLUDED IN YOUR VAT RETURN.","
"I58",00000000,88888888,,
"I60",10195170001,"892",-58.85,,
"I60",10195170003,"NCO",-3158.84,, "Z99",12

NTS Cadent Reversal and Rebill Worked Example

Rebill National Grid Transmission (NTS)

Client Owner	Invoice Classification	NCO Charge (£)	Charge Type	comment	rtb comment	Invoice type	Reversal Invoice Number
NTS	TPN	3,158.84	NCO	Rebill COM invoice Feb 2018 DN Sales invoice number	Rebill COM invoice Feb 2018 DN Sales invoice number 7777777 charge type NCO	INR	9999999
NTS	TPN	58.85	NCO	Rebill COM invoice Feb 2018 DN Sales invoice number	Rebill COM invoice Feb 2018 DN Sales invoice number 7777777 charge type NCO	INR	9999999

Payment made to National Grid Gas Plc

Issued on M+4

Invoice Number 9999999

Payment Due date M+12

.INV File with I57 (Rebill)

"A00",00000000,"INV",20180312,143048,019516

"I56", "AAA", 9999999, "INR", 2018, 2, 2681.41, 536.28, 3217.69, 20180323, 0.00, 536.28, 20180312, "GB54 7863011", "20-77-62", "50959294", "Nat Grid Gas Shipper Billing", "GB240658217", "99999999", "99-99-99", "NTS", "National Grid Gas Plc", "1-3", "Strand", "London", "WC2N 5EH", ""

"I59", 9999999, 99999990001, "892", 49.04, 20.0000, "VA", 9.81, 58.85, "008"

"I57", 99999990001, "892", "58.85", "Rebill COM invoice Feb 2018 DN Sales invoice number1019232 charge type 892"

"I59", 9999999, 99999990003, "NCO", 2632.37, 20.0000, "VA", 526.47, 3158.84, "008"

I57", 99999990003, "NCO", "3158.84", "Rebill COM invoice Feb 2018 DN Sales invoice number1019232 charge type NCO"

"I05", "THE INVOICE DUE DATE WILL BE THE 12TH DAY AFTER RECEIPT OF THE INVOICE OR OTHERWISE IN ACCORDANCE WITH NETWORK CODE.", ""

"I05", "PAYMENT OF ANY AMOUNT SHALL BE MADE IN POUNDS STERLING TO THE BANK ACCOUNT DETAILED.", "IF YOU ARE ESTABLISHED IN THE EU AND NO UK VAT CHARGED ON THIS INVOICE, YOU NEED TO ACCOUNT FOR REVERSE CHARGE VAT UNDER EITHER EU DIR 2006 112 ART 38, 44, 195, 196, OR UK DOMESTIC REVERSE CHARGE"

"I05", "VAT 'ALL VAT CREDIT AMOUNTS SHOULD BE TOTALLED TOGETHER AND DEDUCTED FROM THE VAT SUMMARY TOTAL (TOTAL VAT DEBITS) ONLY THE NET AMOUNT OF VAT SHOULD THEN BE INCLUDED IN YOUR VAT RETURN.", ""

"I58", 00000000, 9999999, ,

"I60", 10195160001, "892", 58.85, ""

"I60", 10195160003, "NCO", 3158.84, "" "Z99", 12

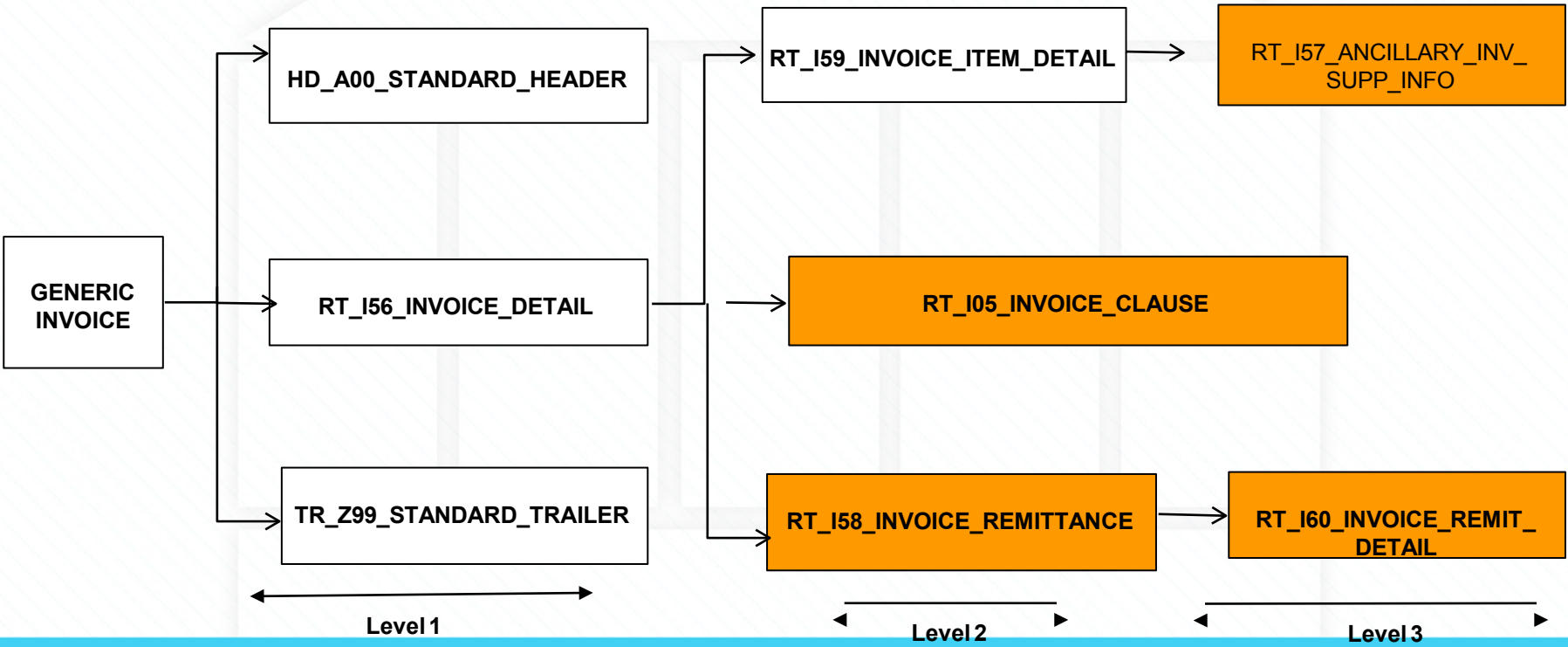
Summary of Reversal and Rebill Charges

Summary of financial charges and recipients of Reversal and Rebill

Invoice Number	NCO	ZCO	892	Total	Cadent	NGD
7777777	3158.84	885.49	58.85	4103.18	TGT	
8888888	-3158.84	NA	-58.85	-3217.69	TGT	
9999999	3158.84	NA	58.85	3,217.69		NTS
Total	3158.84	885.49	58.85	4103.18		

.INV Hierarchy

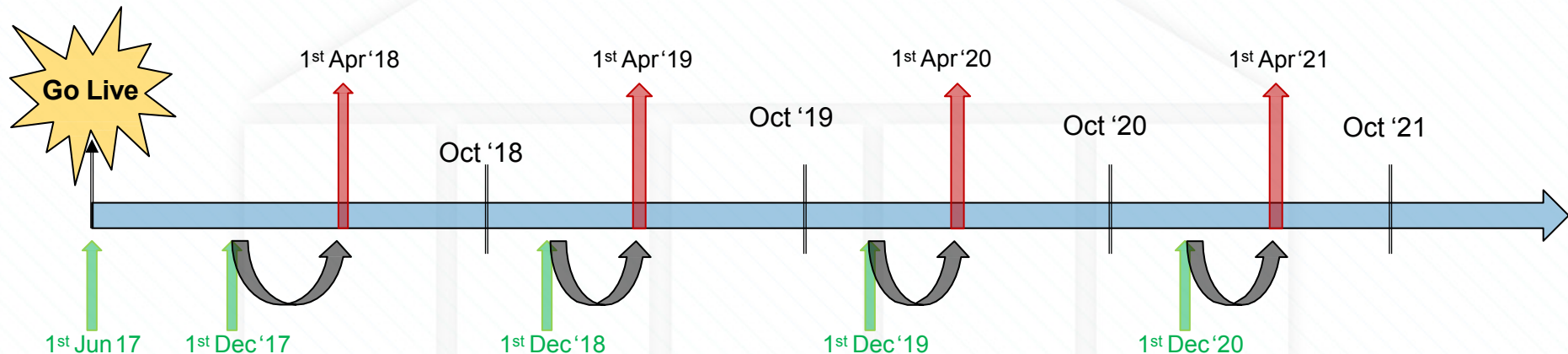
Title of File Hierarchy - Generic Invoice (.INV)
Direction of File - Transporter Agency to System User



Formula Year AQ

- From implementation date there were two AQs and SOQs for Class 3 & 4 Supply Meter Points;
 - Rolling AQ for allocation processes
 - Fixed AQ and SOQ (Formula Year AQ) for transportation charges
- The Formula Year AQ and SOQ (FYAQ) will be the value set on 1st December each year and will be effective for transportation charges from 1st April the following year.
- •From implementation Date (PNID);
 - The AQ & SOQ used for transportation charges was the value set 1 month before go live and was used up to the 31st March 2018.
 - The FYAQ set for PNID was effective for transportation charges for 10 months (01/06/17 to 31/03/18)
 - A snapshot of the AQ & SOQ was taken on the 1st December 2017 and applied for transportation charges effective from 1st April 2018.

Formula year AQ/SOQ – timeline view



→ Formula year Snapshot date (Dec)

→ Formula year Snapshot values effective date (Apr)

Changes to formula year AQ/SOQ:

1. AQ correction
2. Class change
3. Green field sites will have the formula year AQ/SOQ set from the first confirmation details

Formula year rate and charges – Capacity and Commodity

- **Formula year for implementation**
- Snapshot date was 1st May 2017 and values taken from and used from Go live date of 1st June 2017. Provided FYAQ and SOQ for NDM sites. Start point for rolling AQ.
- **CSEP rate change – all linked MPRN with project**
- Follow increase or decrease in project Max AQ/Max SOQ
- Formula year MPRN billable SOQ rate is not changed
- **Capacity charges**
- Class three and four all NDM – set for year. Formula year AQ and SOQ used for rate and billable SOQ to derive charges
- Class one and two – use the nominated AQ and SOQ for rate and nominated SOQ to derive charges
- **Commodity**
- Class three and four all NDM – use deeming against rolling AQ with formula year AQ for rate
- Class one and two – use close out energy derived from reads or estimate with rate from nominated AQ and SOQ

NTS Cadent Reversal and Rebill Overview

- For invoices that contain combined Transmission and Distribution charges, there will be a reversal raised on behalf of the distribution company for any linked NTS charge items, and a rebill raised on behalf of Transmission. All charges are issued under invoice file .INV. Amendments to charges resulting from the Network sales contained within these invoices will be issued in one of two ways:
 1. Using their original invoice type
 2. Using invoice type .INR

(INT is the code for an Interestinvoice. INR is the code for any generic invoice which can be mapped to any charge type)

- All commodity charges will continue to be issued under the invoice type .COM on the scheduled date.
- The commodity invoice contains both Distribution and Transmission transportation charges.
- On the same day that you receive your commodity invoice and supporting information, you will receive two ancillary invoices under invoice type .INR.
- Primary invoices will continue 'as is' with combined distribution and transmission charges issued on behalf of TGT.
- The reversal invoices for Transmission charges issued on behalf of National Grid Gas Distribution Limited will be under organisation code **TGT**
- The rebill invoices for Transmission charges issued as rebill on behalf of National Grid Gas (Transmission) will be under organisation code **NTS**
- For the commodity invoice, dependent on your portfolio, the reversal and rebill will apply to all NTS charges issued as detailed within your .COM invoice file and supporting information file.

NTS Cadent Reversal and Rebill Overview

The following invoice types will be affected by these arrangements (not all invoice types apply to all Shippers):

- Commodity (LDZ/NTS Exit/CSEPS/Unique Sites)
- Capacity
- Amendments (previously known as Reconciliation Invoicing) (Transportation/Energy)
- Meter Assets (relating to special metering sites meter/corrector/data-loggercharges)

Description	Original Invoice Type	Reversal & Rebill Charge Type
Capacity Reversal and Rebill Charges	CAZ	INR
Commodity Reversal and Rebill Charges	COM	INR
Amendment Reversal and Rebill Charges	AMS	INR
Meter Asset Charges Reversal and Rebill Charges	MAS	MAS
Datalogger Asset (P03) charges via RTB Template	ADP	ADP

Calculation of an NDM Commodity Charges – Class 4

This Calculation is based on deemed energy. To calculate the deemed energy the Energy factors are used.

- The Energy Factor for Gas Flow Day 31st July 2017 is 9.58262549913255
- The Energy Factor for Gas Flow Day 31st August 2017 is 9.84712881065109
- The rolling AQ for the period 01.08.2017 to 31.08.2017 is 2151.

The calculation is as follows : -

- Energy Factor Last day of Current Month **Minus** Energy Factor Last day of Previous Month **Multiplied**
By AQ ROLL Divided by 10

$$(9.84712881065109 - 9.58262549913255) * 2151 / 10 = 58.89466231$$

Rates as per Transportation Charges Booklets

- NCO Rate : - 0.0339
- ZCO Rate : - 0.0287
- NCO Charge – $58.89466231 * 0.0339 / 100 = 0.02$
- ZCO Charge – $58.89466231 * 0.0287 / 100 = 0.02$

Energy factors are available on the daily LPA file.

The LDZ Entry Commodity Charges (LSEC)

The LDZ Entry Commodity charges (LSEC) are included on the Commodity invoice and will appear in the COM supporting data but the charges are issued one month in arrears. Therefore the April 2018 LSEC charges would be issued on the May 2018 Commodity invoice on the 12/06/2018.

LDZ Capacity and Commodity Validations

Daily validations include;

- Daily Validations to ensure UKLink & Gemini Class 1 and 2 energies are in line
- AQ Validations to ensure UK Link and Gemini are in line.
- Gemini Measurement Load Errors
- CMS queries
- Ratchets (October – May inclusive)

Invoice validations are subject to thorough tolerance checks and include;

- SOQ comparisons
- Energy comparisons
- Trend analysis (month on month and year on year)
- Monetary value checks and comparisons
- Rate checks following price changes

Ratchets

- If a DM SOQ breach occurs (i.e. daily consumption exceeds the SOQ) on any gas flow day between October and end of May, a Pre Ratchet Notification file (.PRN) will be issued on the following calendar day to advise you of this breach. Shippers have until D+5 to investigate the consumption for the day on which the breach occurred (any queries should be managed with the Daily Meter Service Provider). After D+5, if there has not been any change to the consumption on the gas day, a Ratchet notification file (.RAT) will be issued, indicating that the DM SOQ breach on the day has been closed out and as such Ratchet charges will be calculated and issued on the next invoice.
- If the site is not at its Provisional Maximum SOQ (PMSOQ), the DM SOQ will increase accordingly, in line with the SOQ breach, until the PMSOQ is reached. Future Capacity charges will use the higher DM SOQ for invoice calculation on the following, and subsequent months.
- Further details regarding the Ratchet process can be found in UNC section B4.7.
- Ratchet charges apply for both Class 1 and Class 2 sites. Ratchet charges are issued on the LDZ Capacity at M+2.

Class 2 Sites

- Shipper provides daily reads, which will be used for Allocation and energy balancing processes.
- LDZ Capacity and Commodity charges are calculated and invoiced by MPRN.
- Class 2 sites energy values are aggregated and stored in Gemini by the Aggregate Gemini Meter ID.
- To compare the energy on the Commodity invoice to the energy held in Gemini you would need to sum all the energy for the sites under the Gemini aggregate at Meter point level to compare to the Gemini aggregate energy value.

Core Invoices – CAZ, CCA, ZCA, ECN, CFI Standard Charges (How it is calculated)

These are calculated using Supply Offtake Quantity x number of days in that billing period, x Rate as follows : -

(The below calculation is based on an SOQ of 313 with example rates taken from the published Transportation Charges Booklets for a 31 day month)

- ZCA Charge = 313 (SOQ) * 0.1987 (Rate) * 31 (No. of days) / 100 = **£19.28**
- CCA Charge = 313 (SOQ) * 0.1061 (Rate) * 31 (No. of days) / 100 = **£10.29**
- ECN Charge = 313 (SOQ) * 0.0076 (Rate) * 31 (No. of days) / 100 = **£0.74**

CFI Charge

This charge is a fixed charge per day and only applies to supply meter points with an AQ between 73,200 and 732,000 kWh. Sometimes referred to as a Large Supply Point (LSP)

Core Invoices – COM – ZCO Charge for class 4 sites (How it is calculated)

Class 4 sites are calculated based on deemed energy. Energy factors* are used to calculate this as follows:

$$\text{Billing Quantity} = \frac{\text{Energy Factor Last day of Current Month} - \text{Energy Factor Last day of Previous Month}}{\text{x AQ ROLL}} \times 10$$

Therefore as an example

- If the Energy Factor for Gas Flow Day 30th June 2017 is 9.15088593297741
- And The Energy Factor for Gas Flow Day 31st July 2017 is 9.38953643703708
- The rolling AQ for the period 01.07.2017 to 31.07.2017 is 39589.

$$\frac{(9.38953643703708 - 9.15088593297741) * 39589}{10} = 944.79348052 \text{ kwh}$$

- You would then multiply this by the rates published in the appropriate Transportation Charges Booklet
- *Energy factors are detailed in the daily LPA files you receive via the IX.