

# GUIDE TO GAS SUPPLY HUB CSV FILE TRANSACTIONS

MARCH 2014



## Important Notice

AEMO has prepared this Guide to Gas Supply Hub CSV File Transactions (Guide) to provide guidance on the use of GSH CSV file transactions under the National Gas or Electricity Rules (Rules), as at the date of publication.

### No Reliance or warranty

This Guide does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about the National Gas or Electricity Law, the Rules or any other applicable laws, procedures or policies. While AEMO has made every effort to ensure the quality of the information in this Guide, neither AEMO, nor any of its employees, agents and consultants make any representation or warranty as to the accuracy, reliability, completeness, currency or suitability for particular purposes of that information.

### Limitation of liability

To the maximum extent permitted by law, AEMO and its advisers, consultants and other contributors to this Guide (or their respective associated companies, businesses, partners, directors, officers or employees) are not liable (whether by reason of negligence or otherwise) for any errors, omissions, defects or misrepresentations in this document, or for any loss or damage suffered by persons who use or rely on the information in it.

### Copyright

Copyright Australian Energy Market Operator Limited. The material in this publication may be used in accordance with the [copyright permissions](#) on AEMO's website.

### Trademark Notices

No trademark notices.

### Distribution

Available to the public.

### Prepared by

Information Management & Technology – Delivery Services (IMTDS)

Last update: Monday, 17 March 2014 1:11 PM

### Notes

### Documents made obsolete

The release of this document changes only the version of Guide to Gas Supply Hub CSV File Transactions.

## Further Information

For further information, please visit AEMO's website [www.aemo.com.au](http://www.aemo.com.au) or contact:

AEMO Information and Support Hub      Phone: 1300 AEMO 00 (1300 236 600) and follow the prompts.  
Email: [supporthub@aemo.com.au](mailto:supporthub@aemo.com.au)

# Contents

<b>1 Introduction .....</b>	<b>1</b>
1.1    Purpose .....	1
1.2    Audience.....	1
1.3    How to use this guide .....	1
1.4    What's in this guide .....	1
<b>2 Overview .....</b>	<b>2</b>
2.1    What the GSH CSV interface is for .....	2
2.2    How do you use the GSH CSV interface.....	2
2.3    Who can use the GSH CSV interface .....	2
2.4    What are the alternatives to the GSH CSV interface .....	2
2.5    System requirements.....	3
<b>3 CSV Data Format.....</b>	<b>4</b>
3.1    File format.....	4
3.2    Comment records .....	4
3.2.1    First C record in a file .....	4
3.2.2    Last C record in a file .....	4
3.3    File naming convention.....	5
3.4    File processing validations .....	5
<b>4 Transactions and Acknowledgements .....</b>	<b>7</b>
4.1    Delivered quantity .....	7
4.1.1    Transaction definition .....	7
4.1.2    Informational records .....	7
4.1.3    Examples.....	8
4.1.4    Transaction validations .....	8
4.1.5    Delivered Quantity Transaction types .....	9
4.2    Transaction acknowledgement.....	10
4.2.1    Transaction definition .....	10
4.2.2    Informational records .....	10
4.2.3    Examples.....	11
<b>5 References.....</b>	<b>12</b>
5.1    AEMO's website .....	12

## Abbreviations and Symbols

These abbreviations, symbols, and special terms assist the reader's understanding of the terms used in this document. For definitions of these terms, the reader should always refer to the applicable market Rules.

Abbreviation	Abbreviation explanation
<b>AEMO</b>	Australian Energy Market Operator
<b>CSV</b>	Comma-separated file. Stores tabular data (numbers and text) in plain-text form. Plain text means the file is a sequence of characters, with no data that has to be interpreted instead, as binary numbers.
<b>EMMS</b>	[wholesale] Electricity Market Management System; software, hardware, network and related processes to implement the National Electricity Market (NEM).
<b>FTP</b>	File transfer protocol
<b>GJ</b>	Gigajoules: 1000 megajoules, $10^9$ joules, a joule is a unit of energy.
<b>GSH</b>	Gas Supply Hub
<b>M</b>	Mandatory, in the context of this document, indicates that the field's value must be provided.
<b>NEM</b>	National Electricity Market
<b>NGR</b>	National Gas Rules; also often just called the Rules.
<b>NR</b>	Not required, in the context of this document, indicates that the value is ignored by the parsing application even if it is provided.
<b>O</b>	Optional, in the context of this document, indicates that a field's value is not required, but is processed if provided.

## Special terms

Term	Definition
<b>Delivered quantity</b>	The actual quantity of gas delivered at Wallumbilla.
<b>Energy Market Systems Web Portal</b>	Single web portal interface for access to AEMO's web applications. Pre-production: <a href="http://preprod.nemnet.net.au">http://preprod.nemnet.net.au</a> Production: <a href="http://prod.nemnet.net.au">http://prod.nemnet.net.au</a>
<b>MarketNet</b>	AEMO's private data network connection.
<b>Participant code</b>	Registered participant code
<b>Rules</b>	National Gas Rules

# 1 Introduction

## 1.1 Purpose

---

This document provides:

- The general requirements for the CSV based transactions in the Gas Supply Hub (GSH).
- The file format specifications of each CSV based transaction involved in AEMO GSH systems.
- The business validations applied to each CSV based transactions supported by AEMO GSH systems.

## 1.2 Audience

---

This document is relevant to:

- Implementers and maintainers of interfaces to AEMO's GSH systems.
- Parties with responsibility for using interfaces to AEMO's GSH systems.

## 1.3 How to use this guide

---

This guide describes the CSV data exchange between AEMO and GSH participants. Use this guide to help you understand the technical specifications of GSH CSV transactions.

---

[Text in this format](#) indicates a direct hyperlink with details of the resource listed in “References” on page 12.

---

## 1.4 What's in this guide

---

- Chapter 2 “Overview” provides a brief overview of the GSH CSV interface.
- Chapter 3 “Interfaces” provides a list of external participant interfaces for the GSH.
- Chapter 4 “Transactions and Acknowledgements” contains the general requirements and validations of each CSV transaction.
- Chapter 5 “References” is a list of related information and documents mentioned throughout this guide.

## 2 Overview

### 2.1 What the GSH CSV interface is for

---

The GSH CSV interface provides a file gateway allowing GSH participants to submit market data to AEMO using FTP. The EMMS file server acts as the file gateway. This is the same interface used by NEM participants to submit NEM data to AEMO.

The available GSH CSV transaction is:

- Delivered quantity submission and confirmation

### 2.2 How do you use the GSH CSV interface

---

GSH participants must connect to the EMMS file server through AEMO's private network, MarketNet (for further information, see [Guide to Information Systems](#)). Once connected, participants transfer files using FTP into the "Export" subdirectory within their own private directory:

```
..\<PARTICIPANTFOLDER>\Export\GSH\<TRANSACTIONNAME>
```

AEMO systems continually poll each GSH subdirectory for any new files and process them accordingly. Files are locked and not processed until the FTP transfer is completed. It is not necessary to transfer files with a .TMP extension initially and then rename to .CSV extension on completion of transfer. AEMO produces a transaction acknowledgement file and deposits it into the participants "Import" subdirectory:

```
..\<PARTICIPANTFOLDER>\Import\Acknowledgements.
```

Transaction acknowledgement files inform the participant of a successful or failed file transfer.

---

AEMO recommends the use of SSL ([https](https://)) for better security.

### 2.3 Who can use the GSH CSV interface

---

All GSH participants can use the CSV interface.

### 2.4 What are the alternatives to the GSH CSV interface

---

AEMO provides a web portal for direct data entry as an alternative to the CSV interface. The table below lists the GSH CSV transactions with equivalent web portal submission functionality:

Transaction	Direct data entry using the web portal	CSV file upload using the web portal	Guide to User Interface
Delivered quantity submission and confirmation	Yes	Yes	Not currently available

## 2.5 System requirements

---

Use of the CSV interface requires:

- A network connection to AEMO's private network MarketNet, (for further information, see [Guide to Information Systems](#)).
- Access credentials to the EMMS file server (see the welcome email sent to your organisation's security contact or your participant administrator).

# 3 CSV Data Format

## 3.1 File format

The GSH CSV transactions follow the AEMO CSV data format standard. For further details about the CSV format, see [Guide to AEMO CSV Data Format Standard](#).

## 3.2 Comment records

### 3.2.1 First C record in a file

The first C record in a file is in the format of:

C,<system>,<report id>,<from>,<to>,<publish date>,<publish time>

Field	M/O/NR	Description	Data type	Example
C	M	C	Text	C
system	M	GSH	Text	GSH
report id	M	REQUEST or RESPONSE REQUEST: submitting data to AEMO. RESPONSE: acknowledgement from AEMO.	Text	REQUEST
from	M	The unique identifier of the submitter: AEMO or the participant code.	Text	AA1
to	M	The unique identifier of the receiver: AEMO or the participant code.	Text	AEMO
publish date	M	The date the file is received.	Date (YYYY/MM/D) D)	2014/06/01
publish time	M	The time the file is received.	Time (hh:mm:ss)	10:30:30

Example of the first C record in a data file from participant AA1 to AEMO:

C ,GSH ,REQUEST ,AA1 ,AEMO ,2014/06/01 ,10:30:30

Example of the first C record in a transaction acknowledgement file from AEMO to participant AA1:

C ,GSH ,RESPONSE ,AEMO ,AA1 ,2014/06/01 ,10:30:33

### 3.2.2 Last C record in a file

The last C record in a file is in the format:

C,END OF REPORT,<count of records>

Field	M/O/NR	Description	Data type	Example
C	M	C	Text	C
END OF REPORT	M	END OF REPORT	Text	END OF REPORT
count of records	M	Number of rows in the file	Number	5

Example of the last C record in a file:

C,END OF REPORT,6
-------------------

### 3.3 File naming convention

---

The general format of the filename is:

GSH_[FROM]_[TRANSACTIONDESCRIPTOR]_[TIMESTAMP]_[FILEID]
---

The format of each component in the filename is:

Name part	Description	Format
GSH	The market identifier	Text
[FROM]	The identifier of the file submitter: the participant code or AEMO.	Text
[TRANSACTIONDESCRIPTOR]	The descriptor of the transaction defined in each transaction definition.	Text
[TIMESTAMP]	The timestamp of the file.	Datetime (YYYYMMDDhhmmss)
[FILEID]	The unique identifier of the file. For a transaction acknowledgement file, the file ID is the file ID of the corresponding submitted file.	Text (greater than or equal to 1 character long and less than or equal to 30 characters long).

Example of a filename for the delivered quantity transaction:

Transaction	Example filename
Delivered quantity file from participant AA1 to AEMO.	GSH_AA1_DQ_20140106103030_001.csv
Transaction acknowledgement file for a successful submission from AEMO.	GSH_AEMO_ACK_20140106103033_001.csv
Transaction acknowledgement file for a failed submission from AEMO	GSH_AEMO_CPT_20140106103033_002.csv

### 3.4 File processing validations

---

Validation	Error code	Error message
The filename provided must comply with the file naming convention.	001	Invalid filename – Filename provided does not comply with the file naming convention.
The FileID cannot be duplicated.	002	Duplicate file ID detected.

Validation	Error code	Error message
The filename cannot be duplicated.	003	Duplicate filename detected.
The market identifier must be GSH.	004	Invalid market identifier – Market identifier must be 'GSH'.
The transaction descriptor must be one of the defined transaction descriptors.	005	Invalid transaction descriptor.
The participant code provided must be a registered GSH participant.	006	Invalid participant code – Participant code provided is not registered in the GSH.
The file must be in CSV format.	007	The supplied file is not in CSV format.
The row number specified in the file must match the number of data rows in the file.	008	Row number specified in the file does not match the number of data rows in the file.
Mandatory fields are missing.	009	Missing mandatory fields (...). (...) represents a list of mandatory fields that are missing.

# 4 Transactions and Acknowledgements

## 4.1 Delivered quantity

This transaction allows participants to submit and confirm delivered quantity data. Participants can submit and confirm multiple transactions in one file at any one time.

### 4.1.1 Transaction definition

Transaction	Transaction descriptor	From	To	Comments
Delivered quantity	DQ	GSH Participant	AEMO	The delivered quantity file can contain both Submit and Confirm records in one file.

### 4.1.2 Informational records

Field	M/O/NR	Description	Data type	Example
I	M	I	Text	I
GSH	M	The record type descriptor. This must be specified as 'GSH'. The entire record is ignored if this value is not set to 'GSH'.	Text	GSH
BUYER_PARTICIPANT_CODE	M	The participant code of the buyer receiving the gas.	Text	OGN1
SELLER_PARTICIPANT_CODE	M	The participant code of the seller delivering the gas.	Text	AGL1
GAS_DATE	M	The gas date of the delivered quantity.	Date (DD/MM/YYYY)	01/06/2014
TRANSACTION_ID	M	The unique identifier of a transaction for the specified gas date. This includes all transactions of type "Delivery". For the definition of transaction types, see § 4.1.5.	Number	50
PRODUCT_LOCATION	M	The location of the transacted gas for the specified Transaction ID.	Text	RBP
TRANSACTION_QUANTITY	M	The quantity (in GJ) of the specified Transaction ID.	Number	1000
SETTLEMENTS_OFF_MARKET	M	An indication whether the delivered variance is settled outside the market.	Y = Yes N = No	N
DELIVERED_QUANTITY	M/O	The actual delivered quantity of gas (in GJ). If Settlements Off-market is No, this field is mandatory.	Number (whole number only)	2000
REASON_FOR_VARIATION	M/O	Reason for the delivered variance If Settlements Off-market is No, this field is mandatory.	D = Delivery R = Receipt NF = No Fault	D
ACTION	M	An indication if this record is for delivered quantity submission or confirmation.	S = Submit or resubmit C = Confirm	S

#### 4.1.3 Examples

Example 1 – delivered quantity file from participant AA1 to AEMO

```
C,GSH,REQUEST,AA1,AEMO,2014/06/01,10:30:30
I,GSH,BUYER_PARTICIPANT_CODE,SELLER_PARTICIPANT_CODE,GAS_DATE,TRANSACTION_ID,PRODUCT_LOCATION,TRANSACTION_QUANTITY,SETTLEMENTS_OFF_MARKET,DELIVERED_QUANTITY,REASON_FOR_VARIATION,ACTION
D,GSH,AA1,BB1,01/06/2014,49,RBP,1500,Y,,,C
D,GSH,AA1,CC1,01/06/2014,50,RBP,1000,N,2000,D,S
D,GSH,AA1,CC1,01/06/2014,51,RBP,2000,Y,1000,,S
C,END OF REPORT,6
```

Example 2 – delivered quantity file from participant BB1 to AEMO

```
C,GSH,REQUEST,BB1,AEMO,2014/06/01,10:30:30
I,GSH,BUYER_PARTICIPANT_CODE,SELLER_PARTICIPANT_CODE,GAS_DATE,TRANSACTION_ID,PRODUCT_LOCATION,TRANSACTION_QUANTITY,SETTLEMENTS_OFF_MARKET,DELIVERED_QUANTITY,REASON_FOR_VARIATION,ACTION
D,GSH,AA1,BB1,01/06/2014,50,RBP,1000,N,2000,D,C
D,GSH,BB1,AA1,01/06/2014,52,RBP,2000,N,1000,D,C
C,END OF REPORT,5
```

#### 4.1.4 Transaction validations

Field	Validation	Error code	Error message
GAS_DATE	The specified gas date must be less than today's date.	101	Gas Date [GAS_DATE] is outside the submission window.
GAS_DATE	The specified gas date is already included in a revision settlement run.	102	Gas Date [GAS_DATE] has already been processed in a Revision settlement.
TRANSACTION_ID	The specified transaction ID must exist for the specified gas date.	103	No matching Transaction ID [TRANSACTION_ID] found for gas date [GAS_DATE].
TRANSACTION_ID	If action is CONFIRM, the delivered quantity data for the specified transaction ID on the specified gas date must have been submitted.	105	Cannot confirm Transaction ID [TRANSACTION_ID] for gas date [GAS_DATE]. No delivered quantity data has been submitted for Transaction ID [TRANSACTION_ID] on gas date [GAS_DATE].
SETTLEMENTS_OFF_MARKET, DELIVERED_QUANTITY, REASON_FOR_VARIATION	A delivered quantity record cannot be resubmitted if one or more of the fields have not been modified (i.e. action is SUBMIT and the current status of the delivered quantity data is Submitted). The only action permitted in this scenario is CONFIRM.	106	Cannot resubmit Transaction ID [TRANSACTION_ID] for gas date [GAS_DATE]. No delivered quantity data has been changed.
BUYER_PARTICIPANT_CODE	The specified buyer must match the buyer for the specified transaction ID on the specified gas date. This is applicable to SUBMIT and CONFIRM actions.	107	Invalid Buyer [BUYER_PARTICIPANT_CODE] for Transaction ID [TRANSACTION_ID] on gas date [GAS_DATE].
SELLER_PARTICIPANT_CODE	The specified seller must match the seller for the specified transaction ID on the specified gas date. This is applicable to SUBMIT and CONFIRM actions.	108	Invalid Seller [SELLER_PARTICIPANT_CODE] for Transaction ID [TRANSACTION_ID] on gas date [GAS_DATE].

Field	Validation	Error code	Error message
TRANSACTION_QUANTITY	The specified transaction quantity must match the quantity for the specified transaction ID on the specified gas date. This is applicable to SUBMIT and CONFIRM actions.	109	Transaction Quantity [TRANSACTION_QUANTITY] does not match the quantity for Transaction ID [TRANSACTION_ID] on gas date [GAS_DATE].
PRODUCT_LOCATION	The specified product location must match the production location for the specified transaction ID on the specified gas date. This is applicable to SUBMIT and CONFIRM actions.	110	Product Location [PRODUCT_LOCATION] does not match the product location for Transaction ID [TRANSACTION_ID] on gas date [GAS_DATE].
DELIVERED_QUANTITY	The specified delivered quantity must be a whole number.	112	Delivered Quantity must be a whole number.
DELIVERED_QUANTITY	The specified delivered quantity must be greater than or equal to 0.	113	Delivered Quantity must be a positive number.
REASON_FOR_VARIATION	The value for reason for variation must be D, R or NF.	114	Invalid value for 'Reason for Variation'. It must be D, R or NF.
DELIVERED_QUANTITY	If settlements off-market is No, Delivered Quantity must not be NULL.	115	'Delivered Quantity' is a mandatory field when 'Settlements Off-market' is No.
REASON_FOR_VARIATION	If settlements off-market is No, reason for variation must not be NULL.	116	'Reason for Variation' is a mandatory field when 'Settlements Off-market' is No.
SETTLEMENTS_OFF_MARKET	If action is CONFIRM, the value for settlements off-market must be the same as the submitted value.	117	Cannot confirm Transaction ID [TRANSACTION_ID] for gas date [GAS_DATE]. The value for 'Settlements Off-market' is different from the submitted value.
DELIVERED_QUANTITY	If action is CONFIRM, the value for delivered quantity must be the same as the submitted value.	118	Cannot confirm Transaction ID [TRANSACTION_ID] for gas date [GAS_DATE]. The value for 'Delivered Quantity' is different from the submitted value.
REASON_FOR_VARIATION	If action is CONFIRM, the value for reason for variation must be the same as the submitted value.	119	Cannot confirm Transaction ID [TRANSACTION_ID] for gas date [GAS_DATE]. The value for 'Reason for Variation' is different from the submitted value.
ACTION	The value for action must be S or C.	120	Invalid value for 'Action'. It must be S or C.

Where:

Label	Description
[BUYER_PARTICIPANT_CODE]	The Buyer Participant Code specified in the record
[GAS_DATE]	The Gas Date specified in the record
[PRODUCT_LOCATION]	The Product Location specified in the record
[SELLER_PARTICIPANT_CODE]	The Seller Participant Code specified in the record
[TRANSACTION_ID]	The Transaction ID specified in the record
[TRANSACTION_QUANTITY]	The Transaction Quantity specified in the record

#### 4.1.5 Delivered Quantity Transaction types

The table below provides the definition of each Delivered Quantity transaction type:

Transaction type	Definition
Exchange	The Exchange transaction record sourced from the exchange trading system (ETS). The record is relevant for financial settlement purposes only.
Delivery	The transaction record represents a participant's obligation to deliver or receipt gas. A variation to the gas delivery obligation is settled through the delivery variance payment and charge mechanism. Delivery transactions are: <ul style="list-style-type: none"> <li>Generated on import from the ETS where the transaction is in a product that is not netted for delivery.</li> <li>Generated by the Delivery Netting Module if the transaction is associated with a delivery netting product.</li> </ul>

## 4.2 Transaction acknowledgement

---

A transaction acknowledgement describes validation details of the data submitted. There are two types of transaction acknowledgement:

1. ACK for successful submission.
2. CPT for failed submission.

The File ID component of the filename is filled in with the file identifier of the transaction submitted (INITIATINGMESSAGEID). This facilitates better traceability between the submitted transaction and the corresponding acknowledgement.

### 4.2.1 Transaction definition

Transaction	Transaction descriptor	From	To	Comments
Acknowledgement	ACK, CPT	AEMO	GSH Participant	

### 4.2.2 Informational records

Field	M/O/NR	Description	Data type	Example
I	M	I	Text	I
RESPONSE	M	RESPONSE	Text	RESPONSE
INITIATINGMESSAGEID	M	The file identifier supplied by the participant for the transaction.	Text	001
RECEIPTID	M	The transaction acknowledgement identifier given for the transaction initiated.	Text	AEMO-ACK-001, AEMO-CPT-001
RECEIPTDATETIME	M	The date and time the transaction acknowledgement is created.	Datetime (dd/mm/yyyy hh:mm:ss)	01/06/2014 10:30:33
STATUS	M	The status of the transaction submission – 'ACKNOWLEDGED' or 'FAILURE'	Text	ACKNOWLEDGED
ERRORCODE	O	Error code of the failed validations.	Text	111
ERRORMESSAGE	O	Error message of the failed validations.	Text	Delivered Quantity must be a whole number.

#### 4.2.3 Examples

Example 1 – transaction acknowledgement file from AEMO to participant AA1 for a successful submission

```
C,GSH,RESPONSE,AEMO,AA1,2014/06/01,10:30:33
I,RESPONSE,INITIATINGMESSAGEID,RECEIPTID,RECEIPTDATETIME,STATUS,ERRORCODE
,ERRORMESSAGE
D,RESPONSE,001,AEMO-ACK-001,01/06/2014 10:30:33,ACKNOWLEDGED,,
C,END OF RESPONSE,4
```

Example 2 – transaction acknowledgement file from AEMO to participant AA1 for a failed submission

```
C,GSH,RESPONSE,AEMO,AA1,2014/06/01,10:30:33
I,RESPONSE,INITIATINGMESSAGEID,RECEIPTID,RECEIPTDATETIME,STATUS,ERRORCODE
,ERRORMESSAGE
D,RESPONSE,002,AEMO-CPT-002,01/06/2014 10:30:33,FAILURE,111,Gas Date 10/06/2014 is
outside the submission window.
C,END OF RESPONSE,4
```

## 5 References

The resources listed in this section contain additional related information that may assist you.

- AEMO Information and Support Hub: phone: 1300 AEMO 00 (1300 236 600), and follow the prompts; email: [supporthub@aemo.com.au](mailto:supporthub@aemo.com.au).
- National Gas Rules (NGR) and National Electricity Rules (NER): see the Australian Energy Market Commission (AEMC) website <http://www.aemc.gov.au>.

### 5.1 AEMO's website

---

You can find the following documents on AEMO's website:

- *Guide to Information Systems*, <http://www.aemo.com.au/About-the-Industry/~/media/Files/Other/registration/Guide%20to%20Information%20Systems.ashx> (Home>About the Industry>Information Systems>Using Energy Market Information Systems). Viewed 13 June 2013.
- *Guide to AEMO CSV Data Format Standard*, [http://www.aemo.com.au/About-the-Industry/Information-Systems/~/media/Files/Other/energy%20market%20information%20systems/Guide\\_to\\_AEMOs\\_CSV\\_Data\\_Format\\_Standard\\_v3.00.ashx](http://www.aemo.com.au/About-the-Industry/Information-Systems/~/media/Files/Other/energy%20market%20information%20systems/Guide_to_AEMOs_CSV_Data_Format_Standard_v3.00.ashx) (Home>About the Industry>Information Systems>Using Energy Market Information Systems). Viewed 29 May 2013.

---

It is important to ensure that you are reading the current version of any document.

---