PARTICIPANT INPUT INTERFACE ENERGY - MNSP-FCAS BID FILE SUBMISSION

DETAILS THE INTERFACE TO SUBMIT AND MAINTAIN FILE-BASED ENERGY BIDS, FREQUENCY CONTROL ANCILLARY SERVICES (FCAS) BIDS, AND MNSP BIDS IN THE NEM

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AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

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v3.3 clarify section 5 Bid Validation for semi-scheduled generators.

v3.04 Update for Generator Ramp Rate Rule Change that changed the calculation of the minimum Offer/Bid Rate for Aggregated Units (rule 3.8.3(A)(e)).

V3.05 Updated to new template.

Documents made obsolete
The release of this document changes only the version of Participant Input Interface Energy - MNSP-FCAS Bid File Submission.

Further Information
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CONTENTS

1.1 Tables

1.2 Figures

GLOSSARY

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.

1.3 Abbreviations and Symbols

Abbreviation	Abbreviation explanation
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
EMMS	Electricity Market Management System; software, hardware, network and related processes to implement the National Electricity Market (NEM)
FCAS	Frequency Control Ancillary Services
FTP	File transfer protocol
EMMS	Wholesale Electricity Market Management System; software, hardware, network and related processes to implement the National Electricity Market (NEM)
MLF	intra-regional marginal loss factor
MMSDM	Electricity market management systems data model
MR	Mandatory Restrictions
MSATS	[retail electricity] Market Settlement and Transfer Solution
MTPASA	Medium Term Projected Assessment of System Adequacy; 2 years of data
NEM	National Electricity Market
NER	National Electricity Rules; often called the Rules

1.4 Special terms

Term	Definition
Pre-production	AEMO's test system available to participants
Production	AEMO's live system
Rules	National Electricity Rules (NER)
Participant ID	Registered participant identifier

1 INTRODUCTION

1.1 Purpose

This document details the interface to submit and maintain file-based energy bids, Frequency Control Ancillary Services (FCAS) bids, and MNSP bids in the NEM.

1.2 Audience

The primary audience is:

- Implementers of applications or systems handling file-based energy bids, Frequency Control Ancillary Services (FCAS) bids and MNSP bids.
- AEMO participants who submit and maintain file-based energy bids, Frequency Control Ancillary Services (FCAS) bids, and MNSP bids.

The secondary audience is AEMO's information and support hub staff requiring information to assist participants.

1.3 How to use this guide

The meanings of the items in a bid are generally treated as understood by the reader.

Details of the **MNSP Convexity Validation Rule** are included in Appendix A.

Text in this format indicates a direct link to a resource on AEMO's website or resource details in References.

1.4 What's in this guide

This document includes:

- Background context to bidding
- Format of the bid file.
- Details of bid validation.
- Validation restrictions.
- Acknowledgement file format and layout.
- Mapping of bid data to the MMS Data Model (MMSDM) tables.
- MMSDM table relationships for submitted data.

2 CONTEXT

2.1 Energy, FCAS and MNSP bidding

This context description outlines the business data flows immediately affecting the submission of Energy Bids, Frequency Control Ancillary Services (FCAS) Bids and MNSP Bids.

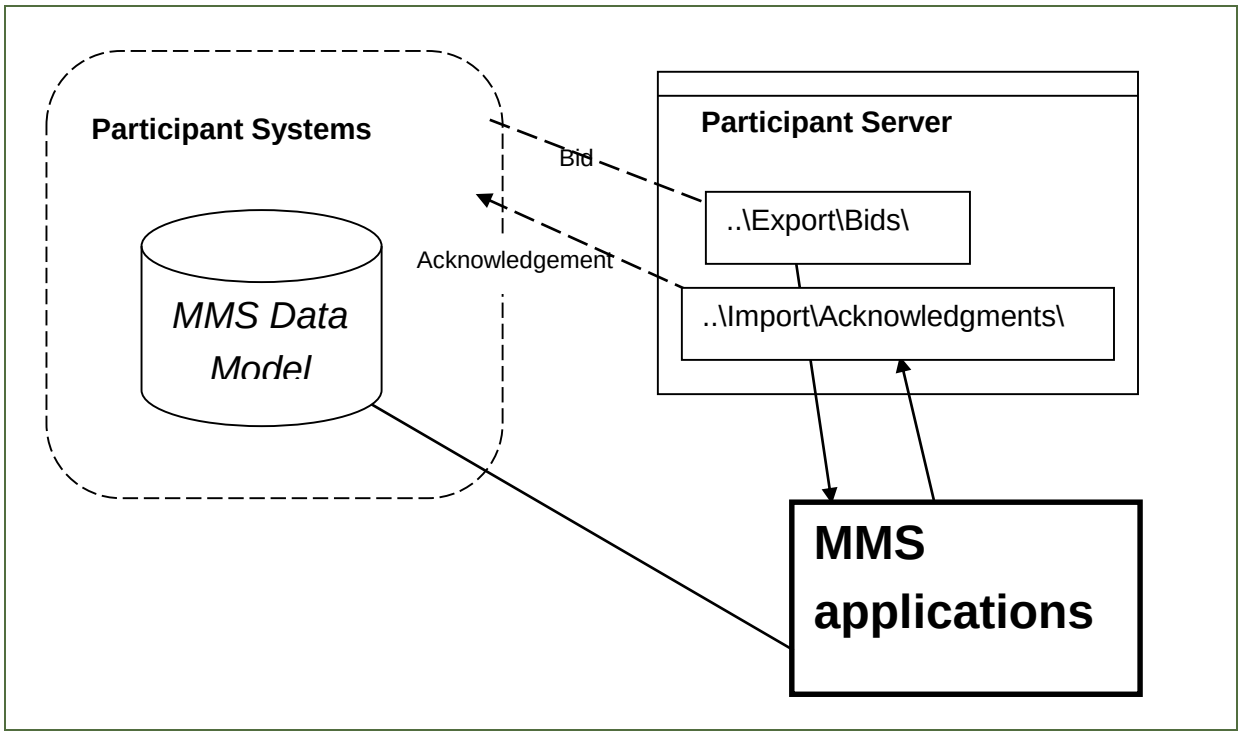
You can enter and submit bids using:

- The Electricity Market Management Systems (EMMS) web portal for Energy and FCAS bids only.
- The FTP interface to protected folders for automated inter-system communication for all bid types

2.2 How do you bid?

2.2.1 Using the FTP interface

Figure 1 Bidding Context (for Energy, FCAS and MNSP)



In each of the production and pre-production EMMS environments, AEMO hosts a server (commonly called the participant server) with a set of folders for each participant (see Using Energy Market Information Systems. Other participants cannot access a participant's folder set (unless specifically arranged and approved). Two of the folders in each participant's folder set are **\Import** and **\Export**, where the names are from the participant's perspective.

Each participant places bid files into their own export folder, being [ParticipantID]\Export\Bids\ folder. The bids can be for many types. This document describes energy bids, ancillary services bids and MNSP bids. Other bid types not described here include AS Reoffers (NCAS and SRAS). All bid files must comply with the file naming convention and format appropriate to the type.

Bidders use their own software for submitting energy, FCAS and MNSP bids via FTP. The EMMS application searches the \Export\Bids\ folder of all participants looking for bid files to process. For energy bids, ancillary services bids and MNSP bids, valid file names conform to either of the patterns *OFFER*.txt or *OFFER*.zip. To ensure file transfer is complete before AEMO processes the file, transfer the file with a .tmp extension and rename it with the appropriate extension after successful transfer. AEMO processes each file only once.

Validation of the file includes format checking, value comparisons internally and with previously accepted bids, plus consistency with controls in the NEM database.

The EMMS application acknowledges all bid files by writing a file to the [ParticipantID]\Import\Acknowledgments\ directory and removes the original file. Part of the file's name indicates acceptance or rejection of the bid.

Any detection of invalid data causes rejection of the whole bid file and the sending of a file acknowledging the rejection to the participant. The file acknowledging an error ends with CPT.csv (for corrupt) and includes error messages indicating all detected errors.

When the whole bid file is valid, the acceptance file ends in ACK.csv.

The EMMS application extracts the data from valid files for processing into the NEM database, and subsequent communication to participants (via updates to a participant database complying with the MMS Data Model).

2.2.2 Using the EMMS web portal

To see the options regarding Energy and FCAS bidding, in the EMMS web portal, hover over the Offers & Submission menu, and then Energy & FCAS Offers.

MNSP bids are supported from the FTP interface only.

Figure 2 EMMS web portal interface

2.3 Who can use the FTP interface for bidding?

Access to the participant server requires credentials (see FTP interface requirements below). Partly to prevent the wide-spread sharing of the key credentials usually means an application handles the FTP interface, such as the **AEMO-supplied Participant Data Replication Batcher** (see Data Interchange webpage). Access to local folders can then be granted as appropriate.

2.4 FTP interface requirements

Credentials are the file server user name and password maintained by the participant's IT security contacts with AEMO. The credentials allow full access to the participant folders and public folders on the participant server.

2.5 Writes to database

The bid tables use an insert-only model to support a full audit trail of all transactions.

2.6 Implementation instructions

All Participants are encouraged to use the AEMO pre-production environment to test procedures and to train their users, before attempting any changes or operations on production systems.

3 BID FILE

This section details the interface provided to NEM participants to submit and maintain frequency control ancillary services (FCAS) bids, energy bids and MNSP bids using FTP to submit files. The files must be submitted to AEMO over the secure MarketNet connection to the participant server. The interface defines the elements related to a bid submission by a NEM participant at any time for any current or future day trading day.

The interface detailed in this section does not support the submission of network control ancillary services (NCAS) re-offers or system restart ancillary services (SRAS) re-offers.

Bid files are text files in a report layout. The sequence of elements is fixed, as are the headings. The end of each line can be either the two-character Windows standard of CRLF or the one character *nix standard of CR. Participants create the bids, either using a text editor or a system to create the files.

The following sections in this document address the format of the file, specifically the layout of the bid data.

Please note the terminology of offers and bids are used interchangeably in this section.

3.1 File name

The file name identifies the participant, the date and time of submission, and a version. The characteristic identifying the file as a bid file is that the name contains the string OFFER somewhere in the name (that is, matches the windows search string *OFFER*.txt or *OFFER*.zip).

An acceptable filename must be no greater than 40 characters in total length.

For example, considering the file name PARTICIPANT_OFFER_20000918_001.txt and the extended version PARTICIPANT_OFFERFCAS_20000918_001.txt, the components of the name are as follows.

Table 1 File name components

PARTICIPANT	The assigned identifier for the participant submitting the bid file
OFFER	The fixed part of the file name identifying this as a bid, and may have additional characters before or after this fixed part
20000918	A date reference for participants to relate to the settlement or offer date/time of the bid contained in the file. The date can be in the form YYYYMMDD or YYYYMMDDhhmmss (being the 4 digit year, 2 digit month, 2 digit day, 2 digit hour in 24-hour count, 2 digit minute and 2 digit second). There is no validation of file contents with this date
001	The version of the bid (expanded to exactly 3 digits), and is validated with data within the file

3.1.1 .ZIP file format

The .ZIP file name is exactly the same as the bid file contained within, except the extension changes to .zip (for example, PARTICIPANT_OFFER_20010908_001.txt becomes PARTICIPANT_OFFER_20010908_001.zip).

The EMMS application processes the first file in the .ZIP archive only, ignoring any others. This means the intention is for the .ZIP archive to contain one file only.

3.2 Layout

The bid file starts with a heading followed by compulsory items needed to clearly identify the source, date, time and version of the submission.

The bid file allows for multiple bids. Each bid is for a particular service type and trading date. Each combination of service type and trading date can only occur once in a bid file. This means a file can contain bids for several days for a unit or service, and a file can contain a mixture of units and services for a given day. A bid file can contain a mix of units bidding for mandatory restrictions capacity and those without bids for mandatory restrictions capacity. For more details on mandatory restrictions, see Operating Procedure: Mandatory Restriction Offers.

The bid file ends with a marker heading clearly identifying the completion of all bids.

The bid processor ignores all lines beginning with a hyphen (-) and blank lines. These lines are only useful to improve readability for humans.

3.2.1 START OF BID FILE

The following items are compulsory in the bid file.

Table 2 Start of bid file components

First line	A blank line or a line beginning with a hyphen (-)
START OF BID FILE	The heading marking the start of the file
To	Must be NEMMCO
From	The assigned identifier for the participant submitting the bid file
Issued On	Date and time in the format of DD/MM/YYYY hh:mm
Version No	The number of 1 to 3 digits - matching the version in the file name
Authorised by	The name of the authorising person

Figure 3 Start of bid file example

```
------------------------------------------------------------------------------------------
START OF BID FILE
------------------------------------------------------------------------------------------
To:             NEMMCO

From:           PARTICIPANTID

Issued On:      18/09/2000 00:13

Version No:     1

Authorised by: AUTH_USER
```

The participant identifier is in three places, being in the file contents, the file name and the file path. All three of these must agree for the file to be acceptable.

3.2.2 START OF BID

The bid starts with a heading followed by the compulsory items of service type and trading date. Each combination of service type and trading date can only occur once in a bid file.

The bid part of the bid file allows for multiple units. The format of the block of data for each unit depends on the service type of the bid. Presently the interface supports different layouts for energy, MNSP and FCAS. Each of the FCAS types has the same layout as the other FCAS types (see Table 3).

Table 3 Service types with corresponding layout

Service Type	Bid Layout
ENERGY	ENERGY
MNSP	MNSP
RAISE6SEC	FCAS
RAISE60SEC	FCAS
RAISE5MIN	FCAS
RAISEREG	FCAS
LOWER6SEC	FCAS
LOWER60SEC	FCAS
LOWER5MIN	FCAS
LOWERREG	FCAS

Table 4 identifies the parts of the DISPATCHABLE UNIT section of the bid file required or optional for each bid layout.

Table 4 Bid service types and layouts.

	Daily Energy Constraint	MR Offer Scaling	Fast Start Profile	Unit Limits	Price Bands	Band Availability	Reason
ENERGY	Reqd	Opt	Reqd	Reqd	Reqd	Reqd	Reqd
MNSP		Opt		Reqd	Reqd	Reqd	Reqd
FCAS				Reqd	Reqd	Reqd	Reqd

The bid ends with a marker heading clearly identifying the completion of this bid. Following the end of a bid can only be another bid or the end of the bid file marker (see Figure 4).

Figure 4 Dispatchable unit bid file section requirements for each layout.

```
------------------------------------------------------------------------------------------
START OF BID
------------------------------------------------------------------------------------------

Service Type: ENERGY

Trading Date: 18/09/2000
```

3.2.3 START OF DISPATCHABLE UNIT

The unit part starts with a heading followed by the compulsory item to identify the dispatchable unit (for energy and FCAS bids) or the MNSP link (for MNSP bids) to which this section applies.

The unit part of the bid contains blocks of data for unit limits, price bands and band availability. The unit ends with a reason followed by a marker heading clearly identifying the completion of this unit. Following the end of a unit can only be another unit or the end of the bid marker (see Figure 5).

Figure 5 Start of dispatchable unit example

```
------------------------------------------------------------------------------------
START OF DISPATCHABLE UNIT
------------------------------------------------------------------------------------

Dispatchable Unit Id:      UNIT1
```

3.2.4 Daily Energy Constraint

The daily energy constraint is only relevant to the service type ENERGY.

The Daily Energy Constraint must be included (even if the entry is left blank) after the dispatchable unit identifier. This value represents the amount of energy available from this unit in the trading day (so cannot be negative) and is expressed in units MWh/day. A blank value is equivalent to zero.

3.2.5 MR Offer

The mandatory restrictions (MR) offer (comprising the MR Offer Price Scaling Factor line and MR Capacity for each trading interval) is only relevant to service types ENERGY and MNSP. For the service type ENERGY, the unit must be a generator. Loads cannot bid for mandatory restrictions capacity.

Submitting mandatory restriction offers is optional. Even if the total mandatory restriction capacity offered is insufficient to meet the mandatory restriction schedule, neither the Rules nor the Operating Procedure: Mandatory Restriction Offers gives AEMO the power to direct a participant to make an MR offer or to make further MR offers.

If the MR Offer Price Scaling Factor line is present, the value following the colon (:) must be blank or a number not less than zero, with up to four (4) decimal places. The value cannot change after the MR Offer Cut-off time. If the value is not blank, then all periods in UNIT LIMITS must have a non-negative value for MR Capacity. If the value following the colon is blank, so must all MR Capacity entries in UNIT LIMITS be blank.

The initial MR offer for an MR event declared in the relevant region for a particular trading day must be made before the defined MR Offer Cut-off time for that MR event, otherwise that MR offer is rejected. An MR offer for a trading day only applies for that day.

MR Capacity rebids for an MR event are subject to the following validation rules:

- The initial for the MR event is valid.
- You can rebid a change to your MR Offer Price Scaling Factor before the MR Offer Cut-Off time; afterwards, the factor must be the same as the last valid bid.

- Before the creation of the initial MR Offer Acceptance Schedule for an MR event, you can rebid the MR Capacity to any level subject to the MR Capacity validation rules (see UNIT LIMITS).
- After the creation of the initial MR Offer Acceptance Schedule for an MR event, you can rebid the MR Capacity only to a level greater than or equal to the initially accepted MR Capacity for the unit in each trading interval for that MR event (and still subject to the MR Capacity validation rules).

3.2.6 FAST START PROFILE

The daily energy constraint is only relevant to the Service Type ENERGY.

The fast start profile block starts and ends with a marker heading. Each item is compulsory. See Table 5 for the lines in the fast start profile block are (with units, where appropriate) and Figure 6 below for a file example.

Table 5 Fast start profile components

START OF FAST START PROFILE	marker for start of fast start profile block
Fast Start Min Load	MW
FS Time at Zero (T1)	minutes
FS Time to Min Load (T2)	minutes
FS Time at Min Load (T3)	minutes
FS Time to Zero (T4)	minutes
END OF FAST START PROFILE	Marker for end of fast start profile block

Figure 6 Daily energy constraint and fast start profile block, including the optional MR scaling line example

```
Daily Energy Constraint: 200

MR Offer Price Scaling Factor: 1.2345
------------------------------------------------------------------------------------------
START OF FAST START PROFILE
------------------------------------------------------------------------------------------

Fast Start Min Load:
FS Time at Zero (T1):
FS Time to Min Load (T2):
FS Time at Min Load (T3):
FS Time to Zero (T4):

------------------------------------------------------------------------------------------
END OF FAST START PROFILE
------------------------------------------------------------------------------------------
```

3.2.7 UNIT LIMITS for all bid layouts

The column headings in the UNIT LIMITS block of data depend on the service type of the bid. The unit limit headings for ENERGY, MNSP and the FCAS types are different.

The column headings must be separated by at least one space. The value for each field begins at the first character of a heading and ends just before the first character of next heading (or the end of line). Using the heading as a size limit allows for empty fields. This means the values can run into one another and still be recognised by the EMMS application

although human readability is compromised. Values in each column do not have to align with the start or end of the column. The EMMS application separates the columns based on the first character of each heading, reads the value in the column, trims leading and trailing spaces, then converts the value to a number (integer or float, as appropriate). If the column has no value, it is treated as null.

Where there are trading periods, all 48 must exist and be consecutive.

3.2.8 UNIT LIMITS for energy bid layout

The UNITS LIMITS section for energy applies to the service type ENERGY.

The unit limits starts and ends with a marker heading and contains the 48 periods of data in columns. See Table 6 for headings for the columns for unit limits in energy bids are (with units, where relevant) and Figure 7 for a file example.

Table 6 Headings for the columns for unit limits in energy bids

Trading Interval	Must be consecutive from 01 to 48
Max Availability Loading	MW
ROC-UP	MW/min
ROC-DOWN	MW/min
Fixed	MW optional; if exists, not greater than Max Availability Loading
PASA Availability	MW required; not less than Max Availability Loading
MR Capacity	MW integer not less than zero if MR scaling factor exists, otherwise must be blank If the MR Capacity is not blank, then all of the following apply: Scaling factor must exist (see the MR Offer Price Scaling Factor line). MR Capacity is not greater than Max Availability Loading. MR Capacity is not greater than 30 times ROC-DOWN. If the MR Capacity is an integer greater than zero, then: Fixed must be zero or blank
END OF UNIT LIMITS	Marker for the end of file

Figure 7 Truncated (and unrealistic) example of the unit limits

```
------------------------------------------------------------------------------------------
START OF UNIT LIMITS
------------------------------------------------------------------------------------------

Trading   Max Availability  ROC-UP  ROC-DOWN  Fixed PASA Availability MR Capacity
Interval  Loading
--------  ----------------  ------  --------  ----- ----------------- -----------
01        20                3       3               400                        20
02        80                6       6               400                        80
03        190               3       3               400                       100
04        280               3       3               400                       100
05        370               3       3               420                       100
06        420               3       3               420                       100
…
…
43        0                 3       3               400                         0
44        0                 3       3               400                         0
45      100                 3       3           100 400                         0
46      100                 3       3           100 400                         0
47        0                 3       3               400                         0
48        0                 3       3               400                         0
```

```
------------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------------
```

3.2.9 UNIT LIMITS for MNSP

The unit limits for MNSP start and end with a marker heading and contains the 48 periods of data in columns. All values are integers. See Table 7 for headings for the columns for unit limits in MNSP bids are (with units, where relevant) and Figure 8 for a file example.

Table 7 Headings for the columns for unit limits in in MNSP bids

Trading Interval	must be consecutive from 01 to 48
Max Availability Loading	MW
Roc-Up	MW/min
Fixed	MW optional; if exists, not greater than Max Availability Loading
PASA Availability	MW required; not less than Max Availability Loading
MR Capacity	MW integer not less than zero if MR scaling factor exists, otherwise must be blank If the MR Capacity is not blank, then all of the following apply: Scaling factor must exist (see the MR Offer Price Scaling Factor line). MR Capacity is not greater than Max Availability Loading. MR Capacity is not greater than 30 times ROC-UP. Fixed must be zero or blank
End Of Unit Limits	Marker for the end of file

Figure 8 Truncated (and unrealistic) example of unit limits for an MNSP link

```
------------------------------------------------------------------------------------
START OF UNIT LIMITS
------------------------------------------------------------------------------------

Trading   Max Availability  ROC-UP  Fixed  PASA Availability MR Capacity
Interval  Loading
--------  ----------------  ------  -----  ----------------- -----------
01        20                3              100                         20
02        80                6              100                         80
03        190               3              200                        100
04        280               3              400                        100
05        370               3              400                        100
06        420               3       100    420                          0
…
…
43        0                 3              400                          0
44        0                 3              400                          0
45        0                 3              400                          0
46        0                 3              400                          0
47        0                 3              400                          0
48        0                 3              400                          0

------------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------------
```

3.2.10 UNIT LIMITS for Frequency Control Ancillary Services

The unit limits block for FCAS starts and ends with a marker heading and contains the 48 periods of data in columns. All values are integers. See Table 8 for headings for the columns for unit limits in FCAS bids are (with units, where relevant) and Figure 9 for a file example.

Table 8 Headings for the columns for unit limits in FCAS bids

Trading Interval	Must be consecutive from 01 to 48
Max Availability Loading	MW
Enablement Min	MW
Low Break Pt	MW
Enablement Max	MW
High Break Pt	MW
END OF UNIT LIMITS	Marker for the end of file

Figure 9 Truncated example of the unit limits for ancillary services

```
------------------------------------------------------------------------------------------
START OF UNIT LIMITS
------------------------------------------------------------------------------------------

Trading   Max Availability  Enablement  Low        Enablement  High
Interval  Loading           Min         Break Pt   Max         Break Pt
--------  ----------------  ----------  --------   ----------  --------
01        20                40           180          380          270
02        80                20           160          360          300
03        190               40           180          380          270
04        280               40           180          380          270
05        370               40           180          380          270
06        420               40           180          380          270
…
…
43        0                 40           180          380          270
44        0                 40           180          380          270
45        0                 40           180          380          270
46        0                 40           180          380          270
47        0                 40           180          380          270
48        0                 40           180          380          270

------------------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------------------
```

3.2.11 PRICE BANDS

The PRICE BANDS block starts with a marker heading and contains the 10 price bands across the page in columns with a single entry each. Since each band requires an entry, the parsing of the ten columns uses a simple space-delimited technique, so reading the prices independently of the column headings.

Figure 10 PRICE BANDS block example

```
------------------------------------------------------------------------------------
START OF PRICE BANDS
------------------------------------------------------------------------------------
```

```
Price Band          PB1        PB2        PB3        PB4        PB5        PB6        PB7        PB8
PB9       PB10
Price($/MWh)   -230.20      -1.23      14.28      18.29      25.22      79.69      82.13     122.46
662.19     4218.22

-------------------------------------------------------------------------------
END OF PRICE BANDS
```

3.2.12 BAND AVAILABILITY

The BAND AVAILABILITY block starts and ends with a marker heading and contains the 48 periods of data in columns. The headings for the columns for band availability are the Trading Interval and the 10 price bands: PB1 to PB10. Since each band requires an entry, the parsing of the ten columns uses a simple space-delimited technique, so reading the prices independently of the column headings.

Figure 11 Truncated example of the band availability for energy

```
-------------------------------------------------------------------------------
START OF BAND AVAILABILITY
-------------------------------------------------------------------------------

Trading
Interval            PB1        PB2        PB3        PB4        PB5        PB6        PB7        PB8
PB9       PB10
01                  180        120         50         50         90          0         30          0
10         10
02                  180        120         50         70         60          0         30          0
10         10
03                  180        120         70         70         30          0         30          0
10         10
04                  180        120         70         70         30          0         30          0
10         10
…
…
44                  180        120         70         70         30          0         30          0
10         10
45                  180        120         70         70         30          0         30          0
10        10
46                  180        120         70         50         60          0         30          0
10         10
47                  180        120         50         50         90          0         30          0
10         10
48                  180        120         50         50         90          0         30          0
10         10

-------------------------------------------------------------------------------
END OF BAND AVAILABILITY
-------------------------------------------------------------------------------
```

3.2.13 END OF DISPATCHABLE UNIT

The END OF DISPATCHABLE UNIT block has the reason and the marker for the end. The reason item is compulsory even if it is left blank. The reason must be less than 500 characters. The reason can extend over several lines, as long as it is within the 500-character limit.

The only possible item to follow an end of unit block is the start of another unit or an end of bid marker.

Figure 12 END OF DISPATCHABLE UNIT block example

```
Reason: Urgent spanner work
```

```
------------------------------------------------------------------------------------------------------------
-------------
END OF DISPATCHABLE UNIT
------------------------------------------------------------------------------------------------------------
-------------
```

3.2.14 END OF BID

The END OF BID marker can only be followed by the start of another bid or the end of the bid file marker. The END OF BID marker is a line with:

- END OF BID

Figure 13 End of bid marker example

```
--------------------------------------------------------------------------------
END OF BID
--------------------------------------------------------------------------------
```

3.2.15 END OF BID FILE

The END OF BID FILE marker cannot be followed by anything. The end of bid file marker is a line with:

- END OF BID FILE

Figure 14 END OF BID FILE marker example

```
--------------------------------------------------------------------------------
END OF BID FILE
--------------------------------------------------------------------------------
```

3.3 File Submission and Processing

Bid files must be submitted to the Export\Bids directory from each participant's area on the AEMO participant file server. A bid file can be submitted as a normal text file or a zipped file.

A file can be submitted only once (identity by file name); a re-submission of a file with the same name returns corrupt. For a file containing an MNSP bid, the EMMS application records the name in the FileName column of MNSP_FileTrk table. For a file containing an energy bid, the EMMS application records the name in the FileName column of OfferFileTrk table. For a file containing an FCAS bid, the EMMS application records the name in the FileName column of BidOfferFileTrk table.

The EMMS application ignores files of length zero, allowing for file transfer into the directory to complete before attempting to process the file.

3.3.1 Zipped bid files

Zipped bid files conform to the following rules:

- The zipped file name follows the same naming rules as specified for the text file except the file extension must be .zip instead of .txt. For example: PARTICIPANT_OFFER_20000918_001.zip.
- Only the first file in the zip archive is processed.

3.3.2 Processing order for multiple files

If more than one file is present in a participant's \Export\Bids\ directory, the EMMS application processes files in ascending order determined by the modified date on the files.

3.4 Energy and FCAS bid example

The bid file example in Figure 15 is valid, even though it has no mention of Mandatory Restriction (MR) items. It is not compulsory for participants to bid for MR capacity.

Figure 15 Energy and FCAS bid example

```
------------------------------------------------------------------------------------------
START OF BID FILE
------------------------------------------------------------------------------------------
To:             NEMMCO

From:           PARTICIPANT

Issued On:      18/09/2000 00:13

Version No:     1

Authorised by: AUTH_USER

------------------------------------------------------------------------------------------
START OF BID
------------------------------------------------------------------------------------------

Service Type: ENERGY

Trading Date: 18/09/2000

------------------------------------------------------------------------------------------
START OF DISPATCHABLE UNIT
------------------------------------------------------------------------------------------

Dispatchable Unit Id:      UNIT1

Daily Energy Constraint:

------------------------------------------------------------------------------------------
START OF FAST START PROFILE
------------------------------------------------------------------------------------------

Fast Start Min Load:
FS Time at Zero (T1):
FS Time to Min Load (T2):
FS Time at Min Load (T3):
FS Time to Zero (T4):

------------------------------------------------------------------------------------------
END OF FAST START PROFILE
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF UNIT LIMITS
------------------------------------------------------------------------------------------

Trading   Max Availability  ROC-UP  ROC-DOWN  Fixed  Pasa Availability
Interval  Loading
--------  ----------------  ------  --------  -----  -----------------
01        20                3       3                420
02        80                6       6                420
03        190               3       3                420
04        280               3       3                420
05        370               3       3                420
```

```
06          420                 3         3                 420
07          420                 3         3                 420
08          420                 3         3                 420
09          420                 3         3                 420
10          420                 3         3                 420
11          420                 3         3                 420
12          420                 3         3                 420
13          420                 3         3                 420
14          420                 3         3                 420
15          420                 3         3                 420
16          420                 3         3                 420
17          420                 3         3                 420
18          420                 3         3                 420
19          420                 3         3                 420
20          420                 3         3                 420
21          420                 3         3                 420
22          420                 3         3                 420
23          420                 3         3                 420
24          420                 3         3                 420
25          420                 3         3                 420
26          420                 3         3                 420
27          420                 3         3                 420
28          420                 3         3                 420
29          420                 3         3                 420
30          420                 3         3                 420
31          420                 3         3                 420
32          360                 3         3                 420
33          280                 3         3                 420
34          280                 3         3                 420
35          190                 3         3                 420
36          100                 3         3                 420
37          50                  3         3                 420
38          0                   3         3                 420
39          0                   3         3                 420
40          0                   3         3                 420
41          0                   3         3                 420
42          0                   3         3                 420
43          0                   3         3                 420
44          0                   3         3                 420
45          0                   3         3                 420
46          0                   3         3                 420
47          0                   3         3                 420
48          0                   3         3                 420

------------------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF PRICE BANDS
------------------------------------------------------------------------------------------

Price Band          PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9       PB10
Price($/MWh)  -230.20      -1.23      14.28      18.29      25.22      79.69      82.13     122.46
662.19    4218.22

------------------------------------------------------------------------------------------
END OF PRICE BANDS
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF BAND AVAILABILITY
------------------------------------------------------------------------------------------

Trading
Interval            PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9       PB10
01                  180         120          50          50          90           0          30           0
10          10
```

```
02                  180     120      50      70      60       0      30       0
10        10
03                  180     120      70      70      30       0      30       0
10        10
04                  180     120      70      70      30       0      30       0
10        10
05                  180     120      70      70      30       0      30       0
10        10
06                  180     120     120      90       0       0      30       0
10        10
07                  180     120     120      90       0       0      30       0
10        10
08                  180     120     120      90       0       0      30       0
10        10
09                  180     120     120      90       0       0      30       0
10        10
10                  180     120     120      90       0       0      30       0
10        10
11                  180     120     120      90       0       0      30       0
10        10
12                  180     120     120      90       0       0      30       0
10        10
13                  180     120     120      90       0       0      30       0
10        10
14                  180     120     120      90       0       0      30       0
10        10
15                  180     120     120      90       0       0      30       0
10        10
16                  180     120     120      90       0       0      30       0
10        10
17                  180     120     120      90       0       0      30       0
10        10
18                  180     120     120      90       0       0      30       0
10        10
19                  180     120     120      90       0       0      30       0
10        10
20                  180     120     120      90       0       0      30       0
10        10
21                  180     120     120      90       0       0      30       0
10        10
22                  180     120     120      90       0       0      30       0
10        10
23                  180     120     120      90       0       0      30       0
10        10
24                  180     120     120      90       0       0      30       0
10        10
25                  180     120     120      90       0       0      30       0
10        10
26                  180     120     120      90       0       0      30       0
10        10
27                  180     120     120      90       0       0      30       0
10        10
28                  180     120     120      90       0       0      30       0
10        10
29                  180     120     120      90       0       0      30       0
10        10
30                  180     120     120      90       0       0      30       0
10        10
31                  180     120     120      90       0       0      30       0
10        10
32                  180     120     120      90       0       0      30       0
10        10
33                  180     120     120      90       0       0      30       0
10        10
34                  180     120     120      90       0       0      30       0
10        10
35                  180     120     120      90       0       0      30       0
10        10
36                  180     120     120      90       0       0      30       0
10        10
```

```
37                180       120       120       90        0         0         30        0
10        10
38                180       120       120       90        0         0         30        0
10        10
39                180       120       120       90        0         0         30        0
10        10
40                180       120       120       90        0         0         30        0
10        10
41                180       120       120       90        0         0         30        0
10        10
42                180       120       120       90        0         0         30        0
10        10
43                180       120        70       70        30        0         30        0
10        10
44                180       120        70       70        30        0         30        0
10        10
45                180       120        70       70        30        0         30        0
10        10
46                180       120        70       50        60        0         30        0
10        10
47                180       120        50       50        90        0         30        0
10        10
48                180       120        50       50        90        0         30        0
10        10

------------------------------------------------------------------------------------------
END OF BAND AVAILABILITY
------------------------------------------------------------------------------------------

Reason: Urgent spanner work

------------------------------------------------------------------------------------------
END OF DISPATCHABLE UNIT
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF DISPATCHABLE UNIT
------------------------------------------------------------------------------------------

Dispatchable Unit Id:      UNIT2

Daily Energy Constraint:

------------------------------------------------------------------------------------------
START OF FAST START PROFILE
------------------------------------------------------------------------------------------

Fast Start Min Load:
FS Time at Zero (T1):
FS Time to Min Load (T2):
FS Time at Min Load (T3):
FS Time to Zero (T4):

------------------------------------------------------------------------------------------
END OF FAST START PROFILE
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF UNIT LIMITS
------------------------------------------------------------------------------------------

Trading   Max Availability  ROC-UP  ROC-DOWN  Fixed  Pasa Availability
Interval  Loading
--------  ----------------  ------  --------  -----  -----------------
01        20                3       3                420
02        80                6       6                420
03        190               3       3                420
04        280               3       3                420
05        370               3       3                420
06        420               3       3                420
```

```
07          420                 3         3                 420
08          420                 3         3                 420
09          420                 3         3                 420
10          420                 3         3                 420
11          420                 3         3                 420
12          420                 3         3                 420
13          420                 3         3                 420
14          420                 3         3                 420
15          420                 3         3                 420
16          420                 3         3                 420
17          420                 3         3                 420
18          420                 3         3                 420
19          420                 3         3                 420
20          420                 3         3                 420
21          420                 3         3                 420
22          420                 3         3                 420
23          420                 3         3                 420
24          420                 3         3                 420
25          420                 3         3                 420
26          420                 3         3                 420
27          420                 3         3                 420
28          420                 3         3                 420
29          420                 3         3                 420
30          420                 3         3                 420
31          420                 3         3                 420
32          360                 3         3                 420
33          280                 3         3                 420
34          280                 3         3                 420
35          190                 3         3                 420
36          100                 3         3                 420
37          50                  3         3                 420
38          0                   3         3                 420
39          0                   3         3                 420
40          0                   3         3                 420
41          0                   3         3                 420
42          0                   3         3                 420
43          0                   3         3                 420
44          0                   3         3                 420
45          0                   3         3                 420
46          0                   3         3                 420
47          0                   3         3                 420
48          0                   3         3                 420

------------------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF PRICE BANDS
------------------------------------------------------------------------------------------

Price Band          PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9       PB10
Price($/MWh)  -230.20      -1.23      14.28      18.29      25.22      79.69      82.13     122.46
662.19    4218.22

------------------------------------------------------------------------------------------
END OF PRICE BANDS
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF BAND AVAILABILITY
------------------------------------------------------------------------------------------

Trading
Interval            PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9       PB10
01                  180         120          50          50          90           0          30           0
10          10
```

```
02                  180         120          50          70          60           0          30           0
10          10
03                  180         120          70          70          30           0          30           0
10          10
04                  180         120          70          70          30           0          30           0
10          10
05                  180         120          70          70          30           0          30           0
10          10
06                  180         120         120          90           0           0          30           0
10          10
07                  180         120         120          90           0           0          30           0
10          10
08                  180         120         120          90           0           0          30           0
10          10
09                  180         120         120          90           0           0          30           0
10          10
10                  180         120         120          90           0           0          30           0
10          10
11                  180         120         120          90           0           0          30           0
10          10
12                  180         120         120          90           0           0          30           0
10          10
13                  180         120         120          90           0           0          30           0
10          10
14                  180         120         120          90           0           0          30           0
10          10
15                  180         120         120          90           0           0          30           0
10          10
16                  180         120         120          90           0           0          30           0
10          10
17                  180         120         120          90           0           0          30           0
10          10
18                  180         120         120          90           0           0          30           0
10          10
19                  180         120         120          90           0           0          30           0
10          10
20                  180         120         120          90           0           0          30           0
10          10
21                  180         120         120          90           0           0          30           0
10          10
22                  180         120         120          90           0           0          30           0
10          10
23                  180         120         120          90           0           0          30           0
10          10
24                  180         120         120          90           0           0          30           0
10          10
25                  180         120         120          90           0           0          30           0
10          10
26                  180         120         120          90           0           0          30           0
10          10
27                  180         120         120          90           0           0          30           0
10          10
28                  180         120         120          90           0           0          30           0
10          10
29                  180         120         120          90           0           0          30           0
10          10
30                  180         120         120          90           0           0          30           0
10          10
31                  180         120         120          90           0           0          30           0
10          10
32                  180         120         120          90           0           0          30           0
10          10
33                  180         120         120          90           0           0          30           0
10          10
34                  180         120         120          90           0           0          30           0
10          10
35                  180         120         120          90           0           0          30           0
10          10
36                  180         120         120          90           0           0          30           0
10          10
```

```
37                180       120       120       90        0         0         30        0
10        10
38                180       120       120       90        0         0         30        0
10        10
39                180       120       120       90        0         0         30        0
10        10
40                180       120       120       90        0         0         30        0
10        10
41                180       120       120       90        0         0         30        0
10        10
42                180       120       120       90        0         0         30        0
10        10
43                180       120        70       70        30        0         30        0
10        10
44                180       120        70       70        30        0         30        0
10        10
45                180       120        70       70        30        0         30        0
10        10
46                180       120        70       50        60        0         30        0
10        10
47                180       120        50       50        90        0         30        0
10        10
48                180       120        50       50        90        0         30        0
10        10

-------------------------------------------------------------------------------------------
END OF BAND AVAILABILITY
-------------------------------------------------------------------------------------------

Reason: Urgent spanner work

-------------------------------------------------------------------------------------------
END OF DISPATCHABLE UNIT
-------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------
END OF BID
-------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------
START OF BID
-------------------------------------------------------------------------------------------

Service Type: RAISE6SEC

Trading Date: 19/09/2000

-------------------------------------------------------------------------------------------
START OF DISPATCHABLE UNIT
-------------------------------------------------------------------------------------------

Dispatchable Unit Id:      UNIT1

-------------------------------------------------------------------------------------------
START OF UNIT LIMITS
-------------------------------------------------------------------------------------------

Trading   Max Availability  Enablement  Low       Enablement  High
Interval  Loading           Min         Break Pt  Max         Break Pt
--------  ----------------  ----------  --------  ----------  --------
01        20                40           180         380          270
02        80                20           160         360          300
03        190               40           180         380          270
04        280               40           180         380          270
05        370               40           180         380          270
06        420               40           180         380          270
07        420               40           180         380          270
08        420               40           180         380          270
09        420               40           180         380          270
10        420               40           180         380          270
```

```
11          420                 40              180             380             270
12          420                 40              180             380             270
13          420                 40              180             380             270
14          420                 40              180             380             270
15          420                 40              180             380             270
16          420                 40              180             380             270
17          420                 40              180             380             270
18          420                 40              180             380             270
19          420                 40              180             380             270
20          420                 40              180             380             270
21          420                 40              180             380             270
22          420                 40              180             380             270
23          420                 40              180             380             270
24          420                 40              180             380             270
25          420                 40              180             380             270
26          420                 40              180             380             270
27          420                 40              180             380             270
28          420                 40              180             380             270
29          420                 40              180             380             270
30          420                 40              180             380             270
31          420                 40              180             380             270
32          360                 40              180             380             270
33          280                 40              180             380             270
34          280                 40              180             380             270
35          190                 40              180             380             270
36          100                 40              180             380             270
37          50                  40              180             380             270
38          0                   40              180             380             270
39          0                   40              180             380             270
40          0                   40              180             380             270
41          0                   40              180             380             270
42          0                   40              180             380             270
43          0                   40              180             380             270
44          0                   40              180             380             270
45          0                   40              180             380             270
46          0                   40              180             380             270
47          0                   40              180             380             270
48          0                   40              180             380             270

-------------------------------------------------------------------------------------------
END OF UNIT LIMITS
-------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------
START OF PRICE BANDS
-------------------------------------------------------------------------------------------

Price Band          PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9         PB10
Price($/MWh)  -230.20       -1.23       14.28       18.29       25.22       79.69       82.13      122.46
662.19     4218.22

-------------------------------------------------------------------------------------------
END OF PRICE BANDS
-------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------
START OF BAND AVAILABILITY
-------------------------------------------------------------------------------------------

Trading
Interval            PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9         PB10
01                  180         120          50          50          90           0          30           0
10           10
02                  180         120          50          70          60           0          30           0
10           10
03                  180         120          70          70          30           0          30           0
10           10
```

```
04                180       120        70        70        30         0        30         0
10        10
05                180       120        70        70        30         0        30         0
10        10
06                180       120       120        90         0         0        30         0
10        10
07                180       120       120        90         0         0        30         0
10        10
08                180       120       120        90         0         0        30         0
10        10
09                180       120       120        90         0         0        30         0
10        10
10                180       120       120        90         0         0        30         0
10        10
11                180       120       120        90         0         0        30         0
10        10
12                180       120       120        90         0         0        30         0
10        10
13                180       120       120        90         0         0        30         0
10        10
14                180       120       120        90         0         0        30         0
10        10
15                180       120       120        90         0         0        30         0
10        10
16                180       120       120        90         0         0        30         0
10        10
17                180       120       120        90         0         0        30         0
10        10
18                180       120       120        90         0         0        30         0
10        10
19                180       120       120        90         0         0        30         0
10        10
20                180       120       120        90         0         0        30         0
10        10
21                180       120       120        90         0         0        30         0
10        10
22                180       120       120        90         0         0        30         0
10        10
23                180       120       120        90         0         0        30         0
10        10
24                180       120       120        90         0         0        30         0
10        10
25                180       120       120        90         0         0        30         0
10        10
26                180       120       120        90         0         0        30         0
10        10
27                180       120       120        90         0         0        30         0
10        10
28                180       120       120        90         0         0        30         0
10        10
29                180       120       120        90         0         0        30         0
10        10
30                180       120       120        90         0         0        30         0
10        10
31                180       120       120        90         0         0        30         0
10        10
32                180       120       120        90         0         0        30         0
10        10
33                180       120       120        90         0         0        30         0
10        10
34                180       120       120        90         0         0        30         0
10        10
35                180       120       120        90         0         0        30         0
10        10
36                180       120       120        90         0         0        30         0
10        10
37                180       120       120        90         0         0        30         0
10        10
38                180       120       120        90         0         0        30         0
10        10
```

```
39                180       120       120       90        0         0         30        0
10        10
40                180       120       120       90        0         0         30        0
10        10
41                180       120       120       90        0         0         30        0
10        10
42                180       120       120       90        0         0         30        0
10        10
43                180       120        70       70        30        0         30        0
10        10
44                180       120        70       70        30        0         30        0
10        10
45                180       120        70       70        30        0         30        0
10        10
46                180       120        70       50        60        0         30        0
10        10
47                180       120        50       50        90        0         30        0
10        10
48                180       120        50       50        90        0         30        0
10        10

-------------------------------------------------------------------------------------------
END OF BAND AVAILABILITY
-------------------------------------------------------------------------------------------

Reason: Urgent spanner work

-------------------------------------------------------------------------------------------
END OF DISPATCHABLE UNIT
-------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------
START OF DISPATCHABLE UNIT
-------------------------------------------------------------------------------------------

Dispatchable Unit Id:      UNIT2

-------------------------------------------------------------------------------------------
START OF UNIT LIMITS
-------------------------------------------------------------------------------------------

Trading   Max Availability  Enablement  Low       Enablement  High
Interval  Loading           Min         Break Pt  Max         Break Pt
--------  ----------------  ----------  --------  ----------  --------
01        20                40           180         380          270
02        80                20           160         360          300
03        190               40           180         380          270
04        280               40           180         380          270
05        370               40           180         380          270
06        420               40           180         380          270
07        420               40           180         380          270
08        420               40           180         380          270
09        420               40           180         380          270
10        420               40           180         380          270
11        420               40           180         380          270
12        420               40           180         380          270
13        420               40           180         380          270
14        420               40           180         380          270
15        420               40           180         380          270
16        420               40           180         380          270
17        420               40           180         380          270
18        420               40           180         380          270
19        420               40           180         380          270
20        420               40           180         380          270
21        420               40           180         380          270
22        420               40           180         380          270
23        420               40           180         380          270
24        420               40           180         380          270
25        420               40           180         380          270
26        420               40           180         380          270
```

```
27          420                 40              180             380             270
28          420                 40              180             380             270
29          420                 40              180             380             270
30          420                 40              180             380             270
31          420                 40              180             380             270
32          360                 40              180             380             270
33          280                 40              180             380             270
34          280                 40              180             380             270
35          190                 40              180             380             270
36          100                 40              180             380             270
37          50                  40              180             380             270
38          0                   40              180             380             270
39          0                   40              180             380             270
40          0                   40              180             380             270
41          0                   40              180             380             270
42          0                   40              180             380             270
43          0                   40              180             380             270
44          0                   40              180             380             270
45          0                   40              180             380             270
46          0                   40              180             380             270
47          0                   40              180             380             270
48          0                   40              180             380             270

------------------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
START OF PRICE BANDS
------------------------------------------------------------------------------------------

Price Band          PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9         PB10
Price($/MWh)   -230.20       -1.23       14.28       18.29       25.22       79.69       82.13      122.46
662.19     4218.22

------------------------------------------------------------------------------------------
END OF PRICE BANDS
------------------------------------------------------------------------------------------
------------------------------------------------------------------------------------------
START OF BAND AVAILABILITY
------------------------------------------------------------------------------------------

Trading
Interval            PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9         PB10
01                  180         120          50          50          90           0          30           0
10          10
02                  180         120          50          70          60           0          30           0
10          10
03                  180         120          70          70          30           0          30           0
10          10
04                  180         120          70          70          30           0          30           0
10          10
05                  180         120          70          70          30           0          30           0
10          10
06                  180         120         120          90           0           0          30           0
10          10
07                  180         120         120          90           0           0          30           0
10          10
08                  180         120         120          90           0           0          30           0
10          10
09                  180         120         120          90           0           0          30           0
10          10
10                  180         120         120          90           0           0          30           0
10          10
11                  180         120         120          90           0           0          30           0
10          10
12                  180         120         120          90           0           0          30           0
10          10
```

```
13                180       120       120       90        0         0         30        0
10        10
14                180       120       120       90        0         0         30        0
10        10
15                180       120       120       90        0         0         30        0
10        10
16                180       120       120       90        0         0         30        0
10        10
17                180       120       120       90        0         0         30        0
10        10
18                180       120       120       90        0         0         30        0
10        10
19                180       120       120       90        0         0         30        0
10        10
20                180       120       120       90        0         0         30        0
10        10
21                180       120       120       90        0         0         30        0
10        10
22                180       120       120       90        0         0         30        0
10        10
23                180       120       120       90        0         0         30        0
10        10
24                180       120       120       90        0         0         30        0
10        10
25                180       120       120       90        0         0         30        0
10        10
26                180       120       120       90        0         0         30        0
10        10
27                180       120       120       90        0         0         30        0
10        10
28                180       120       120       90        0         0         30        0
10        10
29                180       120       120       90        0         0         30        0
10        10
30                180       120       120       90        0         0         30        0
10        10
31                180       120       120       90        0         0         30        0
10        10
32                180       120       120       90        0         0         30        0
10        10
33                180       120       120       90        0         0         30        0
10        10
34                180       120       120       90        0         0         30        0
10        10
35                180       120       120       90        0         0         30        0
10        10
36                180       120       120       90        0         0         30        0
10        10
37                180       120       120       90        0         0         30        0
10        10
38                180       120       120       90        0         0         30        0
10        10
39                180       120       120       90        0         0         30        0
10        10
40                180       120       120       90        0         0         30        0
10        10
41                180       120       120       90        0         0         30        0
10        10
42                180       120       120       90        0         0         30        0
10        10
43                180       120        70       70        30        0         30        0
10        10
44                180       120        70       70        30        0         30        0
10        10
45                180       120        70       70        30        0         30        0
10        10
46                180       120        70       50        60        0         30        0
10        10
47                180       120        50       50        90        0         30        0
10        10
```

```
48                180        120         50         50         90          0         30          0
10         10

------------------------------------------------------------------------------------------
END OF BAND AVAILABILITY
------------------------------------------------------------------------------------------

Reason: Urgent spanner work

------------------------------------------------------------------------------------------
END OF DISPATCHABLE UNIT
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
END OF BID
------------------------------------------------------------------------------------------

------------------------------------------------------------------------------------------
END OF BID FILE
------------------------------------------------------------------------------------------
```

3.5 MNSP bid example

Figure 16 MNSP bid example

```
------------------------------------------------------------------------
START OF BID FILE
------------------------------------------------------------------------
To:             NEMMCO

From:           DIRLINKP

Issued on:      13/02/2001 15:55

Version No:     003

Authorised by: RGILLETT

------------------------------------------------------------------------
START OF BID
------------------------------------------------------------------------

Service Type: MNSP

Trading Date: 20/09/2001

------------------------------------------------------------------------
START OF DISPATCHABLE UNIT
------------------------------------------------------------------------

Dispatchable Unit Id:     DLNKQLD

------------------------------------------------------------------------
START OF UNIT LIMITS
------------------------------------------------------------------------

Trading   Max Availability  ROC-UP  ROC-DOWN  Fixed
Interval Loading
--------  ----------------  ------  --------  -----
Trading   Max Availability  ROC-UP  Fixed  PASA Availability MR Capacity
Interval  Loading
--------  ----------------  ------  -----  ----------------- ------------
01        20                3              100                         20
02        80                6              100                         80
03        190               3              200                        100
04        280               3              400                        100
05        370               3              400                        100
06        420               3       100    420                          0
```

Bid file: MNSP bid example

```
07          420                 3         100     420                         0
08          420                 3         100     420                         0
09          420                 3         100     420                         0
10          350                 3          80     400                         0
11          200                 3          40     400                         0
12          100                 3                 400                         0
12          0                   3                 400                         0
14          0                   3                 400                         0
16          0                   3                 400                         0
17          0                   3                 400                         0
18          0                   3                 400                         0
19          0                   3                 400                         0
20          0                   3                 400                         0
21          0                   3                 400                         0
22          0                   3                 400                         0
23          0                   3                 400                         0
24          0                   3                 400                         0
25          0                   3                 400                         0
26          0                   3                 400                         0
27          0                   3                 400                         0
28          0                   3                 400                         0
29          0                   3                 400                         0
30          0                   3                 400                         0
31          0                   3                 400                         0
32          0                   3                 400                         0
33          0                   3                 400                         0
34          0                   3                 400                         0
35          0                   3                 400                         0
36          0                   3                 400                         0
37          0                   3                 400                         0
38          0                   3                 400                         0
39          0                   3                 400                         0
40          0                   3                 400                         0
41          0                   3                 400                         0
42          0                   3                 400                         0
43          0                   3                 400                         0
43          0                   3                 400                         0
43          0                   3                 400                         0
44          0                   3                 400                         0
45          0                   3                 400                         0
46          0                   3                 400                         0
47          0                   3                 400                         0
48          0                   3                 400                         0

------------------------------------------------------------------------------
END OF UNIT LIMITS
------------------------------------------------------------------------------

------------------------------------------------------------------------------
START OF PRICE BANDS
------------------------------------------------------------------------------

Price Band          PB1         PB2         PB3         PB4         PB5         PB6         PB7
PB8         PB9         PB10
Price($/MWh)    -100.00     111.11      112.22      113.00      124.00      125.00      141.00
151.11      531.00     3200.00

------------------------------------------------------------------------------
END OF PRICE BANDS
------------------------------------------------------------------------------

------------------------------------------------------------------------------
START OF BAND AVAILABILITY
------------------------------------------------------------------------------

Trading
Interval            PB1         PB2         PB3         PB4         PB5         PB6         PB7         PB8
PB9       PB10
01                0022        0002        0023        0024        0025        0026        0027        0028
0019        0004
```

```
02              0020    0020    0020    0020    0020    0020    0020    0020
0020    0020
03              0025    0025    0025    0025    0025    0025    0025    0025
0025    0025
04              0000    0020    0000    0020    0020    0020    0027    0000
0000    0093
05              0000    0010    0000    0020    0020    0020    0000    0000
0000    0130
06              0000    0010    0020    0020    0020    0020    0000    0000
0000    0110
07              0000    0010    0020    0000    0000    0020    0000    0030
0000    0120
08              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
09              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
10              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
11              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
12              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
13              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
14              0000    0010    0010    0000    0000    0020    0000    0000
0000    0160
15              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
16              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
17              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
18              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
19              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
20              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
21              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
22              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
23              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
24              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
25              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
26              0000    0010    0020    0000    0000    0000    0010    0000
0000    0160
27              0000    0010    0030    0000    0000    0000    0000    0000
0000    0160
28              0000    0010    0020    0000    0000    0010    0010    0000
0000    0150
29              0000    0010    0020    0025    0025    0025    0025    0000
0000    0070
30              0000    0010    0020    0020    0020    0020    0020    0000
0000    0090
31              0000    0010    0027    0020    0020    0020    0030    0000
0000    0073
32              0000    0010    0027    0020    0020    0020    0030    0000
0000    0073
33              0000    0010    0000    0020    0027    0027    0020    0000
0000    0096
34              0000    0010    0000    0020    0027    0027    0020    0000
0000    0096
35              0000    0020    0000    0020    0020    0027    0020    0000
0000    0093
36              0000    0020    0000    0020    0020    0027    0020    0000
0000    0093
```

Bid file: MNSP bid example

```
37              0011      0012      0013      0014      0015      0016      0017      0018
0019      0065
38              0000      0000      0020      0030      0000      0000      0000      0000
0000      0150
39              0011      0012      0013      0014      0015      0016      0017      0018
0019      0065
40              0012      0000      0020      0030      0000      0000      0000      0000
0000      0138
41              0011      0012      0013      0014      0015      0016      0017      0018
0019      0065
42              0000      0000      0020      0030      0000      0000      0000      0000
0000      0150
43              0011      0012      0013      0014      0015      0016      0017      0018
0019      0065
44              0000      0000      0020      0030      0000      0000      0000      0000
0000      0150
45              0011      0012      0013      0014      0015      0016      0017      0018
0019      0065
46              0022      0002      0023      0024      0025      0026      0027      0028
0019      0004
47              0020      0020      0020      0020      0020      0020      0020      0020
0020      0020
48              0025      0025      0025      0025      0025      0025      0025      0025
0025      0025

------------------------------------------------------------------------------
END OF BAND AVAILABILITY
------------------------------------------------------------------------------

Reason: Market conditions

------------------------------------------------------------------------------
END OF DISPATCHABLE UNIT
------------------------------------------------------------------------------

------------------------------------------------------------------------------
END OF BID
------------------------------------------------------------------------------

------------------------------------------------------------------------------
END OF BID FILE
```

4 ACKNOWLEDGEMENT

4.1 Description

The acknowledgement file is a standard .CSV file with the headings on the I records and relevant data on the D records (see AEMO CSV Data Format Standard). The acknowledgement does not include the submission data.

The acknowledgement file's name indicates whether the input file was corrupt or accepted. For example: for the acknowledgement file PARTICIPANT_OFFERDE_20000918_001_ACK.csv, the PARTICIPANT_OFFERDE_20000918_001 is from the original bid file name and the ACK is for accepted. If the acknowledgement file has errors, CPT replaces ACK, indicating the original file is corrupted.

For a file containing multiple bids, the EMMS application suppresses the errors for subsequent units after a bid has errors.

4.2 Location

The EMMS application puts the acknowledgement file into [ParticipantID]\Import\Acknowledgments\ folder.

The acknowledgement file always goes to the participant's directory corresponding to the submission directory, regardless of the participant in the file name and the participant identified within the file. This ensures only the submitting participant sees the acknowledgement even if another participant is identified in the file's name and contents.

4.3 Frequency

The EMMS application produces one acknowledgement file for every bid file processed.

4.4 Contents

The acknowledgement file is formatted into comma-separated variables, usually referred to as CSV format. The acknowledgement file contains two types of records, being informational records (I type) and data records (D type). For more details about the CSV format, see AEMO CSV Data Format Standard.

4.4.1 Accepted acknowledgement

The <report type> is BIDFILE_ACK.

The <report sub-type> can be FILE_STATUS and ERROR.

The FILE_STATUS report sub-type is currently report version 1, see Table 9 for file column headings and Figure 17 for a file example.

Table 9 Column headers for accepted acknowledgement

FILENAME	Input file name as submitted with suffix (.txt or .zip)
OFFERDATETIME	System date and time the EMMS application processed the bid file

STATUS	Load status (VALID or CORRUPT) as determined by the EMMS application

Figure 17 Information record for the FILE_STATUS report sub-type example

```
I,BIDFILE_ACK,FILE_STATUS,1,FILENAME,OFFERDATETIME,STATUS
```

4.4.2 Corrupted acknowledgement

The ERROR report sub-type is currently report version 1, see Table 10 for file column headings and Figure 18 for a file example.

Table 10 Corrupted acknowledgement file headings

ERROR_TYPE	Provides scope of the error message, being global for the file, limited to the unit or even to a particular period
ERROR_MESSAGE	Descriptive text and relevant values
LINE_NO	Line number of the bid file where the error occurs
FILE_SECTION	Name identifying the part of the bid file where the error occurs
SERVICE_TYPE	Service Type in START OF BID
TRADING_DATE	Effective Trading Date in START OF BID
UNIT_ID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT
TRADING_INTERVAL	Half-hour period number of the trading day (Trading Interval in START OF UNIT LIMITS)

Figure 18 Information record for the ERROR report sub-type example

```
I,BIDFILE_ACK,ERROR,1,ERROR_TYPE,ERROR_MESSAGE,LINE_NO,FILE_SECTION,SERVICE_TYPE,TRADING_DATE,U
NIT_ID,TRADING_INTERVAL
```

4.5 D - Data Records

A list of possible data records is in Acknowledgement data records on page 38.

4.6 Examples of acknowledgement files

4.6.1 Positive example

Figure 19 Positive acknowledgement example

```
I,BIDFILE_ACK,FILE_STATUS,1,FILENAME,OFFERDATETIME,STATUS
D,BIDFILE_ACK,FILE_STATUS,1,PARTICIPANT_OFFER_20000918102308_001.txt,"2000/09/28
13:34:00",VALID
```

4.6.2 Negative example

The negative example in Figure 19 has 5 types of errors. The first error indicates an overall success or failure on the file and always exists in the acknowledgement. The next error indicates problems with the bid loading process at the AEMO end. The last three errors indicate problems with bids, units or periods.

Figure 20 Negative acknowledgement example

```
I,BIDFILE_ACK,FILE_STATUS,1,FILENAME,OFFERDATETIME,STATUS
D,BIDFILE_ACK,FILE_STATUS,1,PARTICIPANT_OFFER_20000918102308_001.txt,"2000/09/28
13:42:41",CORRUPT
I,BIDFILE_ACK,ERROR,1,ERROR_TYPE,ERROR_MESSAGE,LINE_NO,FILE_SECTION,SERVICE_TYPE,TRADING_DATE,U
NIT_ID,TRADING_INTERVAL
D,BIDFILE_ACK,ERROR,1,GLOBAL_ERROR,"ORA-00001: unique constraint (NEMMCO.OFFERFILETRK_PK)
violated",,DATA_WRITE,,,,
D,BIDFILE_ACK,ERROR,1,GLOBAL_ERROR,"Participant PART1 cannot submit a bid for Participant
PART2",5,BIDFILE_HEADER,,,,
D,BIDFILE_ACK,ERROR,1,BID_ERROR,"ENEGY is not a recognised service
type",112,BID_HEADER,ENEGY,,,
D,BIDFILE_ACK,ERROR,1,UNIT_ERROR,"Unit UNIT1 not a valid dispatchable
unit",123,UNIT_HEADER,ENERGY,"2000/09/28 00:00:00",UNIT1,
D,BIDFILE_ACK,ERROR,1,PERIOD_ERROR,"Sum of band availability 386 must match or exceed maximum
capacity of 420",789,BAND_AVAILABILITY,RAISE6SEC,"2000/09/19 00:00:00",UNIT2,36
```

4.7 Acknowledgement data records

Figure 21 Acknowledgement file messages

```
LogError('Length of file name must not exceed 40 characters', 'FILENAME',
erGlobal, nil, nil, nil);

LogError('Band Price ' + IntToStr(BandCount) +
  ' value ' + FormatFloat('0.00', ABidUnit.GetItemByName('PriceBand' +
IntToStr(BandCount))) + ' differs from last offer value ' +
  FormatFloat('0.00', BidPriceQuery.Field('PriceBand' +
IntToStr(BandCount))), 'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('An initial bid must exist for a unit prior to rebidding', 'PRICE
BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Bid for ' + FormatDateTime('dd/mm/yyyy',
ABidService.SettlementDate) +
         ' cannot be processed after ' + FormatDateTime('dd/mm/yyyy
hh:nn', PeriodEnd), 'BID_HEADER', erBid, ABidService, nil, nil);

LogError('Internal error.  Unknown validation rule: ' + ServiceTypeStr +
'.  Assuming "AS" for further validation purposes.',
         'BID_HEADER', erBid, ABidService, nil, nil);

LogError('Failed loading bid type details.  ' + E.Message, 'BID_HEADER',
erBid, ABidService, nil, nil);

LogError('Unit ' + ABidUnit.DUID + ' is not registered to bid for type ' +
ABidService.BidType,
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Unit ' + AStaticUnit.DUID + ' is not registered as a recgonised
dispatchable type',
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Failed loading bid DUID details.  ' + E.Message, 'UNIT_HEADER',
erUnit, ABidService, ABidUnit, nil);

LogError('Failed retrieving VOLL and MPF values.  ' + E.Message,
'BID_HEADER',
         erBid, ABidService, nil, nil);

LogError('Invalid external version number or invalid file name format',
         'BIDFILE_FILENAME', erGlobal, nil, nil, nil);

LogError('Invalid external offer date or invalid file name format',
         'BIDFILE_FILENAME', erGlobal, nil, nil, nil);

LogError(Format(ERRORMSG_PARTICIPANT_MISMATCH, [FDirParticipantID,
FFileParticipantID]),
```

```
         'BIDFILE_FILENAME', erGlobal, nil, nil, nil);

LogError('START OF BID FILE section identifier not found where expected.
File load aborted.',
         'START OF BID FILE', erGlobal, nil, nil, nil);

LogError('Bid file ' + ExtractFileName(FFileName) + ' has already been
submitted',
         'FILENAME', erGlobal, nil, nil, nil);

LogError('END OF BID FILE setion identifier not found where expected',
'END OF BID FILE',
         erGlobal, nil, nil, nil);

LogError('START OF BID section identifier not found where expected',
'START OF BID',
         erGlobal, nil, nil, nil);

LogError('Invalid field identifier for Service Type',
         'BID_HEADER', erBid, nil, nil, nil);

LogError('Invalid field identifier for Trading Date',
         'BID_HEADER', erBid, nil, nil, nil);

LogError('Failed converting Trading Date field value.  ' + E.Message,
         'BID_HEADER', erBid, nil, nil, nil);

LogError('MNSP bids cannot contain bid type ' + BidType,
         'BID_HEADER', erBid, ABidService, nil, nil);

LogError('Service type ' + BidType + ' for trading date ' +
FormatDateTime('dd/mm/yyyy', TradingDate) +
         ' already exists in this file',
         'BID_HEADER', erBid, ABidService, nil, nil);

LogError('END OF BID section identifier not found where expected',
         'END OF BID', erBid, ABidService, nil, nil);

LogError('START OF DISPATCHABLE UNIT or END OF BID section identifier not
found where expected',
         'END OF BID', erBid, ABidService, nil, nil);

LogError('Failed committing bid data to database.  ' + E.Message,
         'DATA_WRITE', erGlobal, nil, nil, nil);

LogError('Internal error loading bid file.  ' + E.Message, 'FILE_LOAD',
erGlobal, nil, nil, nil);

LogError('Incorrect or missing field identifer in bid file header.
Expected ' + HEADER_DATA[Index] + ' but found ' + SeparateLine(FFileLine,
FIELD_DELIMITER)[0],
         'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError(Format('Participant %s cannot submit a file for %s';,
[FDirParticipantID, FBidFile.ParticipantID]),
                'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError('Issued On value does not match external offer date/time.',
'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError('Issued On value ' + SeparateLine(FFileLine, FIELD_DELIMITER)[1]
+ ' invalid.',
         'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError('Version No. must be less than 1000.',
         'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError('Version No. must be greater than 0.',
         'BIDFILE_HEADER', erGlobal, nil, nil, nil);
```

```
LogError('Version No. does not match external version number.',
         'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError('Version No. ' + SeparateLine(FFileLine, FIELD_DELIMITER)[1] + '
invalid.',
         'BIDFILE_HEADER', erGlobal, nil, nil, nil);

LogError('Invalid field identifier for Dispatchable Unit ID',
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('A bid for this unit has is already present in the file for this
service type and trading date',
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Dispatchable Unit ' + UnitID + ' invalid or not active.',
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError(FFileParticipantID + ' cannot submit bid for ' +
AStaticUnit.Station.Participant.ParticipantID + ' unit ' + UnitID,
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Invalid field identifier for Daily Energy Constraint',
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Daily energy constraint figure cannot be negative.',
         'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Rebid reason not submitted',
         'BID_REASON', erUnit, ABidService, ABidUnit, nil)

LogError('Reason required for inflexibility.',
         'BID_REASON', erUnit, ABidService, ABidUnit, nil);

LogError('END OF DISPATCHABLE UNIT section identifier not found where
expected',
         'END OF DISPATCHABLE UNIT', erUnit, ABidService, ABidUnit, nil);

LogError('START OF FAST START PROFILE section identifier not found where
expected',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Incorrect fast start information for dispatchable unit.
Expected "' +
         UNIT_FASTSTART_ID[Index] + '" but found "' +
SeparateLine(FFileLine, FIELD_DELIMITER)[0] +'"',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Fast start details must be non-blank for fast start units',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Value for fast start min. load parameter is not an integer',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Value for T' + IntToStr(Index) + ' parameter is not an integer',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Fast start details must be blank or zero for slow start units',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Fast start min. load must not be negative',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil)

LogError('Value for T' + IntToStr(Index) + ' parameter must not be
negative',
        'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError(UNIT_FASTSTART_ID[1] + ' + ' + UNIT_FASTSTART_ID[2] + ' Must not
exceed 30',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);
```

```
LogError(UNIT_FASTSTART_ID[1] + ' + ' + UNIT_FASTSTART_ID[2] + ' + ' +
         UNIT_FASTSTART_ID[3] + ' + ' + UNIT_FASTSTART_ID[4] + ' Must be
less than 60',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('Fast Minimum Load cannot exceed registered maximum capacity of
unit.',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('END OF FAST START PROFILE section identifier not found where
expected',
         'FAST START PROFILE', erUnit, ABidService, ABidUnit, nil);

LogError('START OF UNIT LIMITS section identifier not found where
expected',
         'UNIT LIMITS', erUnit, ABidService, ABidUnit, nil);

LogError('Could not find column header ' +
ENERGY_UNITLIMITS_COLHEADERS[Index],
         'UNIT LIMITS', erUnit, ABidService, ABidUnit, nil);

LogError('Failed converting trading interval field value.  ' + E.Message,
         'UNIT LIMITS', erUnit, ABidService, ABidUnit, nil);

LogError('Trading interval must exceed zero',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('The first trading interval in the section must be period 1',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Trading intervals must appear in consecutive order',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Internal error. Cannot find bid unit object for this trading
interval',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Trading interval cannot exceed ' +
IntToStr(PERIODSPERDAY[ctPredispatch]),
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Invalid integer value for Max. Availability',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Invalid integer value for ROC-Up or ROC-Down',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Maximum availability of ' + IntToStr(ABidUnitPeriod.MaxAvail) +
         ' exceeds maximum capacity of ' +
FloatToStr(AStaticUnit.MaxCapacity),
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('ROC-Up and ROC-Down cannot be negative',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Max Availability Loading cannot be negative',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Inflexibility values cannot be negative.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Inflexibility values cannot exceed maximum capacity for the
dispatchable unit',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Error reading line.  ' + E.Message,
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, nil);

LogError('The last trading interval in the section must be period 48',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);
```

```
LogError('END OF UNIT LIMITS section identifier not found where expected',
         'UNIT LIMITS', erUnit, ABidService, ABidUnit, nil);

LogError('Invalid integer value for Enablement Min.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Invalid integer value for Low Break Pt.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Invalid integer value for Enablement Max.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Invalid integer value for High Break Pt.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Enablement Min. must be less than or equal to Enablement Max.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Low Break Pt. must be greater than or equal to Enablement Min.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('High Break Pt. must be less than or equal to Enablement Max.',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Enablement Min. of ' + IntToStr(ABidUnitPeriod.EnablementMin) +
         ' must exceed or match Min. Enablement Level of ' +
FloatToStr(ABidUnit.MinEnablementLevel),
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Enablement Max. of ' + IntToStr(ABidUnitPeriod.EnablementMax) +
         ' exceeds Max. Enablement Level of ' +
FloatToStr(ABidUnit.MaxEnablementLevel),
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Low break point & Min. Enablement figures exceed the Maximum
Lower Angle',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('High break point & Max. Enablement figures exceed the Maximum
Upper Angle',
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod)

LogError('START OF PRICE BANDS section identifier not found where
expected',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Maximum number of price band columns allowed is exceeded or some
columns are blank.',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Invalid data in price band ' + IntToStr(PriceBandCount),
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Price band value in band ' + IntToStr(PriceBandCount) + ' is
lesser or equal to the previous amount',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Price band value in band ' + IntToStr(PriceBandCount) + ' is
less than zero',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Price band value in band ' + IntToStr(PriceBandCount) + ' is not
to the nearest whole cent.',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Loss Adjusted Price band value must not exceed Maximum price (' +
FormatFloat('0.00', ABidService.MaxEnergyPrice),
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);
```

Acknowledgement: Acknowledgement data records

```
LogError('Loss Adjusted Price band value must equal or exceed minimum price (`
+ FormatFloat('0.00', ABidService.MinEnergyPrice),
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Price band value must be less than or equal to VOLL (' +
FormatFloat('0.00', ABidService.VOLL) +')',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Price band value must be greater than or equal to Market Price
Floor (' + FormatFloat('0.00', ABidService.MarketPriceFloor) + ')',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Price band value must be greater than ' + FormatFloat('0.00',
NEGATIVEPRICELIMIT),
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Rate of Change Up or Down beyond respective registered bounds of ' +
         IntToStr(AStaticUnit.MaxRateOfChangeUp) + ' and ' +
         IntToStr(AStaticUnit.MaxRateOfChangeDown),
         'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Band prices cannot be changed for a rebid.',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('General error reading price band values.  ' + E.Message,
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('Maximum number of price band data values allowed is exceeded or
some columns are blank.',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('END OF PRICE BANDS section identifier not found where expected',
         'PRICE BANDS', erUnit, ABidService, ABidUnit, nil);

LogError('START OF BAND AVAILABILITY section identifier not found where
expected',
         'BAND AVAILABILITY', erUnit, ABidService, ABidUnit, nil);

LogError('Maximum number of price band data values allowed is exceeded or
some columns are blank.',
         'BAND AVAILABILITY', erUnit, ABidService, ABidUnit, nil);

LogError('Invalid integer value in line',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('Trading interval must exceed zero',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('The first trading interval in the section must be period 1',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('Trading intervals must appear in consecutive order',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('Invalid trading interval identifier ' + IntToStr(PeriodID),
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('Trading interval cannot exceed ' +
IntToStr(PERIODSPERDAY[ctPredispatch]),
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('Band availability figures cannot be negative.',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);
```

```
LogError('Band ' + IntToStr(BandAvailCount) + ' availability exceeds the
maximum capacity of the unit ' + FloatToStr(ABidUnit.MaxCapacity) +
         ' for this service.', 'BAND AVAILABILITY', erPeriod, ABidService,
ABidUnit, ABidUnitPeriod);

LogError('Incorrect number of band availability figures submitted or some
columns are blank.',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('Invalid data in price band ' + IntToStr (BandAvailCount - 1),
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('The sum of the band availability values must be equal to or
greater than the Maximum Capacity for the dispatchable unit.',
         'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit,
ABidUnitPeriod);

LogError('END OF BAND AVAILABILITY section identifier not found where
expected',
         'BAND AVAILABILITY', erUnit, ABidService, ABidUnit, nil);
LogError('Daily energy constraint figure must be either null or cardinal below 999999.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Failed to find MR Offer Scaling Factor when an Accepted MR Offer exists.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('MR_Factor value is not a valid 4 decimal place floating point number. ' +
SeparateLine(FFileLine, FIELD_DELIMITER)[1] + ' invalid.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('MR Offers are only applicable for ENERGY and MNSP Service Types.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('MR Offer Scaling Factor cannot be greater than 4 decimal places.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('MR Offer Scaling Factor cannot be less than 0.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('MR Offer Scaling Factor found for non-generation unit',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil)

LogError('Initial MR Offer is past the MR Offer Cut-off time.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('MR Factor cannot be changed past the MR Offer Cut-off time.',
  'UNIT_HEADER', erUnit, ABidService, ABidUnit, nil);

LogError('Failed to find expected MR Capacity',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod)

LogError('Found offered MR Capacity with no MR Scaling Factor',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Invalid integer value for MR Capacity',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('Maximum availability of ' + IntToStr(ABidUnitPeriod.MaxAvail) + 'cannot exceed ' +
FloatToStr(999999),
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity found for non-generation unit',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be withdrawn or reduced after initial MR Acceptance',
  'BAND AVAILABILITY', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);
```

Acknowledgement: Acknowledgement data records

```
LogError('MR Capacity must be offered for all periods when a MR Factor is submitted',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be less than 0',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be greater than MaxAvail',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be greater than 999999',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be greater than 30 x ROC-DOWN',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be Offered for Fixed Load periods',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);

LogError('MR Capacity cannot be greater than 30 x ROC-UP',
  'UNIT LIMITS', erPeriod, ABidService, ABidUnit, ABidUnitPeriod);
```

5 BID VALIDATION

5.1 Validation of bid file and general bid checks

A bid file can have one or more bids. The bid file cannot have more than one bid for a unit or link for the same bid type and trading day.

If no bid has been input for a day, the latest bid applies (that is, for previous day or earlier).

Each bid is subject to validation according to general checks plus checks specific to the type of bid. A rebid is subject to additional requirements to the general checks.

The terms in Table 11 apply to the specific items in the bid file.

Table 11 Bid file validation description

BandPrice1	The value under BP1 in PRICE BANDS, and similarly up to BandPrice10; collectively called band prices
Band Availability	Any entry under BP1 to BP10 for all 48 periods in BAND AVAILABILITY
Maximum Availability	Under the Max Availability Loading heading in START OF UNIT LIMITS
Reason	The text after Reason, just before END OF DISPATCHABLE UNIT
Market Price Floor ($MPF)	Defined in the Rules, section 3.9.6
Market Price Cap (MPC)	Defined in the Rules (section 3.9.4). In the MMS Data Model, MPC is stored in VoLL column in Market_Price_Thresholds table
Maximum Capacity	Different for each bid type, so Maximum Capacity is described in the validation for each particular bid type
Fixed	A fixed loading occurs when Fixed in START OF UNIT LIMITS for any trading interval is not blank

5.1.1 General validation

Table 12 explains the general validation on each bid.

Table 12 General validation description

Participant Identification	The participant ID: Matches the participant name in the path of the folder where it is submitted [participantID]\Export\Bids\ Must agree with the participant ID in the bid file contents (From in START OF BID FILE)
Participant Registration	For each energy and FCAS bid, the submitting participant must be the same as the owning participant. The EMMS application checks the registration of the unit for the relevant market For each MNSP bid, the registration for the participant and the interconnector must be valid
Version Numbers	The external version number in the file name and internal version no in START OF BID FILE must match. Reject If they are not numeric or they differ numerically
Bid Effective Date	The Trading Date in START OF BID must be for the current or future date (i.e. you cannot bid for yesterday)

Band Prices	Must not be blank Must be in whole cents, i.e. maximum of 2 decimal places Must be strictly monotonically increasing, i.e. BandPrice1 < BandPrice2 < BandPrice3 etc.
Band Availability	Must not be blank Must be ≥ 0
Maximum Availability	Must not be blank Must be ≥ 0
File Names	Must be less than or equal to 40 characters
Trading Intervals	Must start at 1 and appear in a consecutive order Must be present, including at the end of the day, so ending at 48
Reason	Can be blank, except when a fixed loading exists in a bid or the bid is a rebid Must be less than 65 characters (the target database field is 64 characters)

For semi-scheduled generators Unconstrained Intermittent Generation Forecast (UIGF) is used instead of the Maximum Availability. For more information see the Guide to Intermittent Generation.

5.1.2 Rebid validation

A bid submitted after the bid cut-off time (currently 12:30 PM on the day before trading day of the bid) is called a rebid. Table 13 explains the validation of rebids.

Table 13 Rebid validation description

Band Prices	Must be the same as those for the latest validly acknowledged bid, i.e., the value under PB1 to PB10 in PRICE BANDS is the same as in the last accepted bid
Reason	The reason cannot be blank

5.2 Energy bid validation

This validation is in addition to the validation for all bids (as described in Validation of bid file and general bid checks on page 46).

In Table 14, the terms have the specified meanings and interpretation (in addition to the general terms).

Table 14 Energy bid validation description

Maximum Capacity of the Unit	The registered maximum capacity as recorded by AEMO (see MaxCapacity column in DUDetail table with the highest VersionNo for the latest EffectiveDate on or prior to the bid effective date)
Maximum Availability	Under the Max Availability Loading heading in START OF UNIT LIMITS Must be ≤ Maximum Capacity
Band Availability	Any entry under BP1 to BP10 for all 48 periods in BAND AVAILABILITY The sum for each period ≥ Maximum Capacity Each is ≤ Maximum Capacity
Fast Start Min Load (FSML)	In START OF FAST START PROFILE
T1 To T4	In START OF FAST START PROFILE
Unit Ramp Up Rate	For each period is ROC-UP in START OF UNIT LIMITS Must be non-blank for each period (ROC-UP) For each period (ROC-UP) ≥ 0 For each period (ROC-UP) must be less than the registered maximum rate of change upwards of the unit
Registered Maximum Rate Of Change Upwards Of The Unit	Recorded by AEMO in the MaxRateOfChangeUp column in DUDetail table with the highest VersionNo for the latest EffectiveDate on or prior to the bid effective date
Unit Ramp Down Rate	For each period is ROC-DOWN in START OF UNIT LIMITS Must be non-blank (ROC-DOWN) ≥ 0 (ROC-DOWN) Must be less than the registered maximum rate of change downwards of the unit (ROC-DOWN)
Transmission Loss Factor (TLF)	For the connection point where the unit attaches to the network (for the database tables relationship, see MMS Data Model Report
Band Prices	Must be ≥ Market Price Floor times Transmission Loss Factor or equivalently (given the monotonic increase rule for band prices), BandPrice1 ≥ $MPF * TLF Must be ≤ Market Price Cap times Transmission Loss Factor or equivalently (given the monotonic increase rule for band prices), BandPrice10 ≤ MPC * TLF
Slow Start Units	As registered, i.e. StartType column in DUDetail table is SLOW (case-insensitive): FSML must be blank All T1 to T4 times must be blank or 0 (zero)

Fast Start Units	As registered, i.e. StartType column in DUDetail table is FAST (case-insensitive): FSML must be non-blank Either all T1 to T4 times must be greater than zero or all must be 0 (zero). When all T1 to T4 times are zero, the unit effectively becomes a slow start unit for dispatch purposes 0 < FSML ≤ Maximum Capacity of the unit T1 + T2 ≤ 30 T1 + T2 + T3 + T4 < 60 (i.e ≤ 59)
Unit Fixed Loading	Fixed in START OF UNIT LIMITS is optional. If it is not blank, Unit Fixed Loading ≥ 0 Unit Fixed Loading ≤ Maximum Capacity of the unit Reason (Reason just before END OF DISPATCHABLE UNIT) must be non-blank
Version Numbers	Must be greater than previously accepted for the bid effective date (i.e. for Trading Date in START OF BID matching one or more OfferDate in BidDayOffer table with a BidType of ENERGY) In START OF BID FILE must be greater than any VersionNo for these records
Trading Intervals	Must start at 1 and appear in a consecutive order Must be present, including at the end of the day, so ending at 48
Reason	Can be blank, except when a fixed loading exists in a bid or the bid is a rebid Must be less than 65 characters (the target database field is 64 characters)

5.2.1 Calculation of the minimum offer/bid rate for aggregated units

The following formulas apply with the result expressed as MW/min.

Scheduled Network Services and Scheduled Loads not aggregated under clause 3.8.3 (NER 3.8.3A(b)(1)(i))

$$RampRate_{\min} = Least(3, MaxRampRate_{DUID})$$

(DUID or LinkID as applies)

Scheduled Network Services and Scheduled Loads aggregated under clause 3.8.3 (NER 3.8.3A(b)(1)(ii))

$$RampRate_{\min} = Least(3xUnitCount, MaxRampRate_{DUID})$$

(DUID or LinkID as applies)

Scheduled Generators and Semi-Scheduled Generators not Aggregated under clause 3.8.3 (NER 3.8.3A(b)(1)(iii), Definition chapter 10

$$RampRate_{\min} = Least(Greatest(RoundDown(MaxCapacity_{DUID} x0.03),1),3, MaxRampRate_{DUID})$$

Scheduled Generators and Semi-Scheduled Generators Aggregated under clause 3.8.3 (NER 3.8.3A(b)(1)(iv), Definition chapter 10)

$$RampRate_{\min} = Least(\sum_{Unit=1}^{UnitCount} Greatest(RoundDown(Least(MaxSize_{Unit/Cluster} x0.03,3)),1), MaxRampRate_{DUID})$$

5.3 FCAS bid validation

This validation is in addition to the validation for all bids, as described in Validation of bid file and general bid checks on page 46.

In Table 15 the terms have the specified meanings and interpretation (in addition to the general terms).

Table 15 FCAS bid validation rules

Maximum Capacity	The registered maximum capacity for the Service as recorded by AEMO (see MaxCapacity column in BidDUIDDetails table for given DUID and BidType with the highest VersionNo for the latest EffectiveDate on or prior to bid effective date)
Band Prices	Must be ≥ $zero. Must be ≤ Market Price Cap or equivalently (given the monotonic increase rule for band prices), BandPrice10 ≤ MPC
Enablement Min	In START OF UNIT LIMITS: ≤ Enablement Max ≥ MinEnablementLevel column in BidDUIDDetails table for given DUID
Low Break Pt	In START OF UNIT LIMITS: ≥ Enablement Min
Enablement Max	In START OF UNIT LIMITS: <= MaxEnablementLevel column in BidDUIDDetails table for given DUID
High Break Pt	In START OF UNIT LIMITS: ≤ Enablement Max
Max Availability Loading	$\tan^{-1}\left(\frac{\text{Max Availability Loading}}{(\text{Low Break Pt} - \text{Enablement Min})}\right) \leq (MaxLowerAngle)$ $where\ MaxLowerAngle$ $=$ MaxLowerAngle in $BidDUIDDetails$ table for given DUID (evaluating left − hand side as 90 degrees when Low Break Pt = Enablement Min) $\tan^{-1}\left(\frac{\text{Max Availability Loading}}{(\text{Enablement Max} - \text{High Break Pt})}\right) \leq (MaxUpperAngle)$ $where\ MaxUpperAngle$ $=$ MaxUpperAngle in $BidDUIDDetails$ table for given DUID (evaluating left − hand side as 90 degrees when High Break Pt = Enablement Max) <= Maximum Capacity
Maximum Availability	Must be ≤ Maximum Capacity
Band Availability	The sum for each period ≥ Maximum Capacity Each is ≤ Maximum Capacity

5.4 MNSP bid validation

This validation is in addition to the validation for all bids, as described in Validation of bid file and general bid checks on page 46.

In Table 16 the terms have the specified meanings and interpretation (in addition to the general terms).

Table 16 MNSP bid validation rules

Maximum Capacity	The registered maximum capacity as recorded by AEMO (see MaxCapacity column in the MNSP_Interconnector table with the highest VersionNo for the latest EffectiveDate on or prior to bid effective date)
Transmission Loss Factor (TLF)	For the interconnector (TLF column in MNSP_Interconnector table)
Band Prices	Must be ≥ Market Price Floor times Transmission Loss Factor or equivalently (given the monotonic increase rule for band prices), BandPrice1 ≥ $MPF * TLF
Link Ramp Up Rate	Must be non-blank for each period (ROC-UP in START OF UNIT LIMITS) For each period (ROC-UP) ≥ 0 For each period (ROC-UP) must be less than the registered maximum rate of change upwards of the unit
Link Fixed Loading	Fixed in START OF UNIT LIMITS is optional. If it is not blank: Must be ≥ 0 Must be ≤ Maximum Capacity of the link Reason must be non-blank
Maximum Availability	Must be ≤ Maximum Capacity
Band Availability	For the first bands of each link flow direction with a non-zero effective band availability, the associated band price in the reverse direction must be higher than the negative of the associated band price in the forward direction (after accounting for MNSP flow losses in the first loss segment). For more details, see MNSP dispatch offer convexity validation rule below The sum for each period ≥ Maximum Capacity Each is ≤ Maximum Capacity

5.4.1 MNSP dispatch offer convexity validation rule

The MNSP Offer Convexity validation is specifically required under NER Clause 3.8.6A (e). This validation is called the MNSP dispatch offer convexity validation rule or the MNSP negative band price validation rule. This price validation ensures a convex offer curve for the bi-directional MNSP interconnector. The rule avoids dispatch of circulating MNSP link flows between the two link flow directions.

MNSP bids for the two directions of an interconnector at the same time are closely related, since the negative flow in one direction is the positive flow in the other and negative prices are acceptable. The bid for the opposite direction can be either an earlier bid in the same file (that is, processed and valid but not yet committed to the database) or in a previously loaded bid in the database. Because the latest MNSP bid for a link is effective until superseded, the bid for the opposite direction always exists (even if days old).

The flexibility for the MNSP trading activity means the MNSP trader can:

- Validly offer negative band prices in both flow directions prior to the 1230 hrs cut-off time for a trading day, as long as at least one of the submitted flow direction dispatch offers has zero Band Capacity in all of its negatively-priced bands.
- After the 1230 hrs cut-off time or during the trading day itself, change the direction of dispatched flow by effectively switching between the dispatch of negatively-priced bands in each flow direction through sequential rebidding, as follows:
  - For the currently-dispatched flow direction for all trading intervals, move band capacity into sufficiently-high positively-priced bands in order to still satisfy the convexity rule against the existing valid MNSP dispatch offer in the other flow direction. The highest-priced band from which to remove band capacity depends upon the lowest negatively-priced band into which the MNSP trader wishes to shift band capacity for the other flow direction - the MNSP dispatch offer convexity rule cannot be violated at any time.

    Alternatively, the MNSP trader may rebid Energy Availability for the currently-dispatched flow direction to zero MW for all trading intervals.
  - For the other flow direction, move the desired amount of band capacity into the target negatively-priced bands.

The checking below is needed only if both directions have a non-zero maximum energy available in the same period (that is, if the Maximum Availability for either the forward and reverse direction is zero, then this validation check passes without any more calculation).

If the maximum energy available is non-zero in both directions for the same period (as above), the band prices for the lowest-priced non-zero band availability in each direction must be such that the loss-adjusted band price in the reverse flow direction is greater than the negative of the band price in the forward direction. The following mathematical expression is the precise calculation:

$$factor\ x\ BandPrice(Reverse\ Flow\ Offer)\ >\ -BandPrice(Forward\ Flow\ Offer)$$

where factor adjusts for losses, being

$$factor\ = \frac{1\ +\ FromRegionLossShare\ *\ MLF}{(1\ +\ FromRegionLossShare\ *\ MLF\ -\ MLF)}$$

and

$$MLF\ =\ LossConstant - 1\ +\ (LossFlowCoefficient\ *\ \frac{(MWBreakPoint_0\ +\ MWBreakPoint_1)}{2}$$

5.4.2 Notes

The following notes are relevant:

- MLF is the intra-regional marginal loss factor.
- The calculation above is a simplification of the general formula, with the simplification based on the assumption that the LossDemandConstant is zero (see MNSP Convexity Validation Rule on page 68) for the general formula and derivation of the rule).

- MWBreakPoint1 is the smallest value of the **MWBreakPoint** column greater than zero in the **LossModel** table for the interconnector (being the upper breakpoint of the first loss segment in the MNSP forward direction).
- MWBreakPoint0 is the next smaller value of the **MWBreakPoint** column in the **LossModel** table for the interconnector (being the lower breakpoint of the first loss segment in the MNSP forward direction). The MWBreakPoint0 is planned to be zero, but might not be.
- **LossFlowCoefficient** is in the **InterconnectorConstraint** table for the interconnector.
- **LossConstant** is in the **InterconnectorConstraint** table for the interconnector.
- **FromRegionLossShare** is in the **InterconnectorConstraint** table for the interconnector.
- Factor is independent of the bid, since all its components relate to the interconnector.
- Factor is a number close to 1 (which is useful to know when doing validation checks manually).
- **BandPrice** (Forward Flow Offer) is the corresponding PB1 to PB10 in the START OF PRICE BANDS section of the current link bid to the lowest-numbered (that is, lowest-priced) non-zero band availability under the PB1 to PB10 headings for the period in the START OF BAND AVAILABILITY section in the same link bid.
- **BandPrice** (Reverse Flow Offer) is in a valid earlier bid (committed to database or not) for the same interconnector in the other direction. If an earlier uncommitted bid exists covering the same period, BandPrice (Reverse Flow Offer) is the corresponding PB1 To PB10 in the START OF PRICE BANDS section of the uncommitted link bid to the lowest-numbered non-zero band availability under the PB1 to PB10 headings for the period in the START OF BAND AVAILABILITY section in the same link bid. If the bid for the other direction is in the database, BandPrice (Reverse Flow Offer) is the corresponding PriceBand1 to PriceBand10 column in **MNSP_DayOffer** table to the lowest-numbered non-zero band availability in BandAvail1 to **BandAvail10** in **MNSP_PerOffer** table.
- The calculation above is necessary only when the maximum available link capacity is not zero for both the forward and reverse direction. The maximum available link capacity is Max Availability Loading in START OF UNIT LIMITS section of the bid file or **MaxAvail** column in the **MNSP_PerOffer** table.

6 BID DATA IN THE MMS DATA MODEL

6.1 Energy bid - update tables in NEM

The EMMS application loads energy bids to the NEM database for further use. An energy bid file is a bid file containing at least one bid with energy service type (Service Type in START OF BID being ENERGY).

6.1.1 Every energy bid

For each file containing an energy bid (whether the file is valid or not and whether or not the file contains other bid types as well). Table 17 describes the EMMS application adds an entry to the **BidOfferFileTrk** table as follows:

Table 17 BidOfferFileTrk table entry

BidOfferFileTrk column	Source (bid file, unless stated otherwise)
ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the Participant Identifier
OfferDate	System date, being the actual date and time AEMO processed the bid file
FileName	File name as submitted (with suffix of .txt or .zip), excluding path
Status	Load status [SUCCESSFUL/CORRUPT] as determined by loader application
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record
AuthorisedBy	Authorised by in START OF BID FILE, being the authorising officer
AuthorisedDate	System time of the start of the run processing this file, being the date and time of creation of this record

6.1.2 Accepted energy bid

For every successful energy bid, the EMMS application updates the bid tables (**BidPerOffer** and **BidDayOffer**).

For each successful energy bid in the file, the EMMS application adds a new record to the **BidDayOffer** table, as described in Table 18.

Table 18 BidDayOffer table entry

BidDayOffer **column**	**Source (bid file, unless stated otherwise)**
DUID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT, being the identifier for a unit
BidType	ENERGY, being the Service Type in START OF BID
SettlementDate	Trading Date in START OF BID, being the Market Date from which bid is active
OfferDate	System date, being the actual date and time AEMO processed the bid file – the most recent offer takes precedence
VersionNo	Version No in START OF BID FILE (for reference; not part of key)

ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the Participant Identifier
DailyEnergyConstraint	Daily Energy Constraint in START OF DISPATCHABLE UNIT
RebidExplanation	Reason just before END OF DISPATCHABLE UNIT, being the explanation for all rebids and inflexibilities
PriceBand1	PB1 in PRICE BANDS being the price for Availability Band 1
PriceBand2	PB2 in PRICE BANDS being the price for Availability Band 2
PriceBand3	PB3 in PRICE BANDS being the price for Availability Band 3
PriceBand4	PB4 in PRICE BANDS being the price for Availability Band 4
PriceBand5	PB5 in PRICE BANDS being the price for Availability Band 5
PriceBand6	PB6 in PRICE BANDS being the price for Availability Band 6
PriceBand7	PB7 in PRICE BANDS being the price for Availability Band 7
PriceBand8	PB8 in PRICE BANDS being the price for Availability Band 8
PriceBand9	PB9 in PRICE BANDS being the price for Availability Band 9
PriceBand10	PB10 in PRICE BANDS being the price for Availability Band 10
MinimumLoad	Fast Start Min Load in START OF FAST START PROFILE
T1	FS Time at Zero (T1) in START OF FAST START PROFILE
T2	FS Time to Min Load (T2) in START OF FAST START PROFILE
T3	FS Time at Min Load (T3) in START OF FAST START PROFILE
T4	FS Time to zero (T4) in START OF FAST START PROFILE
NormalStatus	Empty, since unused
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record
MR_Factor	MR Offer Price Scaling Factor in START OF DISPATCHABLE UNIT
EntryType	Bid type, either Rebid or Daily (depends on date and time of submission)

For each energy bid in the file, the EMMS application adds a new record for each of the 48 periods to the **BidPerOffer** table, as described in Table 19.

Table 19 BidPerOffer table entry

BidPerOffer column	Source (bid file, unless stated otherwise)
DUID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT, being the identifier for the unit
BidType	Service Type in START OF BID, being the literal ENERGY (determines this bid as an energy bid)
SettlementDate	Trading Date in START OF BID, being the Market Date from which bid is active
OfferDate	System date, being the actual date and time AEMO processed the bid file – the most recent offer takes precedence
PeriodID	Trading Interval in START OF UNIT LIMITS, being the Trading Interval number

VersionNo	Version No in START OF BID FILE, being the version of the bid file (although version is irrelevant to precedence for energy bids)
MaxAvail	Max Availability Loading in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum planned availability MW
FixedLoad	If Fixed in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID is blank or zero, FixedLoad is zero. Otherwise (0 < Fixed ≤ Max Availability for Trading Interval), FixedLoad is the Fixed for the Trading Interval matching this record's PeriodID. FixedLoad is the inflexibility flag and availability
RocUp	ROC UP in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum rate of increase in MW/min for this unit
RocDown	ROC DOWN in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum rate of decrease in MW/min for this unit
EnablementMin	Empty for energy bids
EnablementMax	Empty for energy bids
LowBreakPoint	Empty for energy bids
HighBreakPoint	Empty for energy bids
BandAvail1	In START OF BAND AVAILABILITY, the number under PB1 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail2	In START OF BAND AVAILABILITY, the number under PB2 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail3	In START OF BAND AVAILABILITY, the number under PB3 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail4	In START OF BAND AVAILABILITY, the number under PB4 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail5	In START OF BAND AVAILABILITY, the number under PB5 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail6	In START OF BAND AVAILABILITY, the number under PB6 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail7	In START OF BAND AVAILABILITY, the number under PB7 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail8	In START OF BAND AVAILABILITY, the number under PB8 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail9	In START OF BAND AVAILABILITY, the number under PB9 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail10	In START OF BAND AVAILABILITY, the number under PB10 for the Trading Interval matching this record's PeriodID, being the band availability for current period
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record
PASAAvailability	PASA Availability in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the physical plant capability including any capability potentially available within 24 hours
MR_Capacity	MR Capacity in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the MR Capacity bid for the current period

6.1.3 Usage of energy bid data

Table 20 describes the target location for each source field in an energy bid. The list is in sequence from beginning of a bid file containing a single energy bid.

Table 20 Target location for each source field in an energy bid

Energy bid source field	Target(s) and Notes
Name of file	FileName in BidOfferFileTrk
START OF BID FILE	Required heading
To	Unused (must be the literal NEMMCO)
From	ParticipantID in BidOfferFileTrk
Issued On	Ignored
Version No	VersionNo in BidDayOffer, VersionNo in BidPerOffer
Authorised by	AuthorisedBy in BidOfferFileTrk
START OF BID	Required heading
Service Type	literal ENERGY determines this as an energy bid
Trading Date	SettlementDate in BidDayOffer, SettlementDate in BidPerOffer
START OF DISPATCHABLE UNIT	Required heading
Dispatchable Unit Id	DUID in BidDayOffer, DUID in BidPerOffer
Daily Energy Constraint	DailyEnergyConstraint in BidDayOffer
START OF FAST START PROFILE	Required heading
Fast Start Min Load	MinimumLoad in BidDayOffer
FS Time at Zero (T1)	T1 in BidDayOffer
FS Time to Min Load (T2)	T2 in BidDayOffer
FS Time at Min Load (T3)	T3 in BidDayOffer
FS Time to zero (T4)	T4 in BidDayOffer
END OF FAST START PROFILE	Required heading
START OF UNIT LIMITS	Required heading
Trading Interval	PeriodID in BidPerOffer
Max Availability Loading	MaxAvail in BidPerOffer
ROC-UP	RocUp in BidPerOffer
ROC-DOWN	RocDown in BidPerOffer
Fixed	FixedLoad in BidPerOffer
Pasa Availability	PasaAvailability in BidPerOffer
END OF UNIT LIMITS	Required heading
START OF PRICE BANDS	Required heading
Price Band	(Required heading; must be PB1 to PB10)
Price($/MWh) under PB1	PriceBand1 in BidDayOffer
Price($/MWh) under PB2	PriceBand2 in BidDayOffer

Price($/MWh) under PB3	PriceBand3 in BidDayOffer
Price($/MWh) under PB4	PriceBand4 in BidDayOffer
Price($/MWh) under PB5	PriceBand5 in BidDayOffer
Price($/MWh) under PB6	PriceBand6 in BidDayOffer
Price($/MWh) under PB7	PriceBand7 in BidDayOffer
Price($/MWh) under PB8	PriceBand8 in BidDayOffer
Price($/MWh) under PB9	PriceBand9 in BidDayOffer
Price($/MWh) under PB10	PriceBand10 in BidDayOffer
END OF PRICE BANDS	Required heading
START OF BAND AVAILABILITY	Required heading
Trading Interval	(Required heading; must be PB1 to PB10)
01 to 48: PB1 column	BandAvail1 in BidPerOffer
01 to 48: PB2 column	BandAvail2 in BidPerOffer
01 to 48: PB3 column	BandAvail3 in BidPerOffer
01 to 48: PB4 column	BandAvail4 in BidPerOffer
01 to 48: PB5 column	BandAvail5 in BidPerOffer
01 to 48: PB6 column	BandAvail6 in BidPerOffer
01 to 48: PB7 column	BandAvail7 in BidPerOffer
01 to 48: PB8 column	BandAvail8 in BidPerOffer
01 to 48: PB9 column	BandAvail9 in BidPerOffer
01 to 48: PB10 column	BandAvail10 in BidPerOffer
END OF BAND AVAILABILITY	Required heading
Reason	RebidExplanation in BidDayOffer
END OF DISPATCHABLE UNIT	Required heading
END OF BID	Required heading
END OF BID FILE	Required heading

6.1.4 TLF for a DUID

To see the relationships between tables in the MMS Data Model, see the MMS Data Model Report.

For example, to find the relevant TLF for the **Dispatchable Unit Id** in START OF DISPATCHABLE UNIT, use the Dispatchable Unit Id as the DUID column in **DUDetail** together with relevant values for EffectiveDate and VersionNo, link to the **TransmissionLossFactor** table via the ConnectionPointID column with the relevant EffectiveDate and VersionNo, and use the value in the TransmissionLossFactor column. The **DUDetailSummary** table is a derivation from other tables, so using a query based on the

Dispatchable Unit Id as the DUID column in the **DUDetailSummary** table, plus a relevant **StartDate** gets the same result.

6.2 FCAS bid - update tables in NEM

The EMMS application loads FCAS bids to the NEM database for further use. An FCAS bid file is a bid file containing at least one bid with FCAS service type (that is, with Service Type in START OF BID being one of RAISE6SEC, RAISE60SEC, RAISE5MIN, RAISEREG, LOWER6SEC, LOWER60SEC, LOWER5MIN and LOWERREG).

6.2.1 Every FCAS bid

For every FCAS bid file (whether successful or not and whether or not the file contains other bid types as well), the EMMS application adds an entry to the **BidOfferFileTrk** table as described in Table 21.

Table 21 BidOfferFileTrk table entry

BidOfferFileTrk column	Source (bid file, unless stated otherwise)
ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the participant identifier
OfferDate	System date, being the actual date and time AEMO processed the bid file
FileName	File name as submitted with suffix (.txt or .zip)
Status	Load status [SUCCESSFUL/CORRUPT] as determined by the EMMS application
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record

6.2.2 Accepted FCAS bid

For every successful FCAS bid, the EMMS application updates the two bid tables, **BidPerOffer** and **BidDayOffer**.

For each successful FCAS bid in the file, the EMMS application adds a new record to **BidDayOffer** as described in Table 22.

Table 22 BidDayOffer record entries

BidDayOffer column	Source (bid file, unless stated otherwise)
DUID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT, being the identifier for a unit
BidType	Service Type in START OF BID, being one of the literals RAISE6SEC, RAISE60SEC, RAISE5MIN, RAISEREG, LOWER6SEC, LOWER60SEC, LOWER5MIN and LOWERREG (determines this bid as an FCAS bid)
SettlementDate	Trading Date in START OF BID, being the NEM market date from which bid is active
OfferDate	System date, being the actual date and time AEMO processed the bid file; the most recent offer takes precedence
VersionNo	Version No in START OF BID FILE, being the version of the bid file (although version is irrelevant to precedence for FCAS bids)

ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the participant identifier
DailyEnergyConstraint	Empty for FCAS bids
RebidExplanation	Reason just before END OF DISPATCHABLE UNIT, being the explanation for all rebids and inflexibilities
PriceBand1	PB1 in PRICE BANDS being the price for Availability Band 1
PriceBand2	PB2 in PRICE BANDS being the price for Availability Band 2
PriceBand3	PB3 in PRICE BANDS being the price for Availability Band 3
PriceBand4	PB4 in PRICE BANDS being the price for Availability Band 4
PriceBand5	PB5 in PRICE BANDS being the price for Availability Band 5
PriceBand6	PB6 in PRICE BANDS being the price for Availability Band 6
PriceBand7	PB7 in PRICE BANDS being the price for Availability Band 7
PriceBand8	PB8 in PRICE BANDS being the price for Availability Band 8
PriceBand9	PB9 in PRICE BANDS being the price for Availability Band 9
PriceBand10	PB10 in PRICE BANDS being the price for Availability Band 10
MinimumLoad	Empty for FCAS bids
T1	Empty for FCAS bids
T2	Empty for FCAS bids
T3	Empty for FCAS bids
T4	Empty for FCAS bids
NormalStatus	Empty, since unused
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record
MR_Factor	
EntryType	Bid type, either Rebid or Daily (depends on date and time of submission)

For each FCAS bid in the file, the EMMS application adds a new record for each of the 48 periods to **BidPerOffer** as described in Table 23.

Table 23 BidPerOffer record entries

BidPerOffer column	Source (bid file, unless stated otherwise)
DUID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT, being the identifier for the unit
BidType	Service Type in START OF BID, being one of the literals RAISE6SEC, RAISE60SEC, RAISE5MIN, RAISEREG, LOWER6SEC, LOWER60SEC, LOWER5MIN and LOWERREG (determines this bid as an FCAS bid)
SettlementDate	Trading Date in START OF BID, being the NEM market date from which bid is active
OfferDate	System date, being the actual date and time AEMO processed the bid file; the most recent offer takes precedence
PeriodID	Trading Interval in START OF UNIT LIMITS, being the Trading Interval number

Bid data in the MMS Data Model: FCAS bid - update tables in NEM

VersionNo	Version No in START OF BID FILE, being the version of the bid file (although version is irrelevant to precedence for FCAS bids)
MaxAvail	Max Availability Loading in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum planned availability MW
FixedLoad	Empty for FCAS bids
RocUp	Empty for FCAS bids
RocDown	Empty for FCAS bids
EnablementMin	Enablement Min in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the minimum energy output (MW) at which this ancillary service becomes available
EnablementMax	Enablement Max in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum energy output (MW) at which this ancillary service can be supplied
LowBreakPoint	Low Break Pt in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the minimum energy output (MW) at which the unit can provide the full availability (MaxAvail) for this ancillary service
HighBreakPoint	High Break Pt in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum energy output (MW) at which the unit can provide the full availability (MaxAvail) for this ancillary service
BandAvail1	In START OF BAND AVAILABILITY, the number under PB1 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail2	In START OF BAND AVAILABILITY, the number under PB2 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail3	In START OF BAND AVAILABILITY, the number under PB3 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail4	In START OF BAND AVAILABILITY, the number under PB4 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail5	In START OF BAND AVAILABILITY, the number under PB5 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail6	In START OF BAND AVAILABILITY, the number under PB6 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail7	In START OF BAND AVAILABILITY, the number under PB7 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail8	In START OF BAND AVAILABILITY, the number under PB8 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail9	In START OF BAND AVAILABILITY, the number under PB9 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail10	In START OF BAND AVAILABILITY, the number under PB10 for the Trading Interval matching this record's PeriodID, being the band availability for current period
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record
PASAAvailability	Empty for FCAS bids
MR_Capacity	

6.2.3 Usage of FCAS bid data

The target location for each source field in a FCAS bid follows. The list in Table 24 is in sequence from beginning of a bid file containing a single FCAS bid.

Table 24 Usage of FCAS bid data

FCAS bid source field	Target(s) and Notes
Name of file	FileName in BidOfferFileTrk
START OF BID FILE	Required heading
To	Unused (must be the literal NEMMCO)
From	ParticipantID in BidOfferFileTrk
Issued On	Ignored
Version No	VersionNo in BidDayOffer, VersionNo in BidPerOffer
Authorised by	??
START OF BID	Required heading
Service Type	BidType in BidDayOffer, BidType in BidPerOffer, being one of the literals RAISE6SEC, RAISE60SEC, RAISE5MIN, RAISEREG, LOWER6SEC, LOWER60SEC, LOWER5MIN and LOWERREG (determines this bid as an FCAS bid)
Trading Date	SettlementDate in BidDayOffer, SettlementDate in BidPerOffer
START OF DISPATCHABLE UNIT	Required heading
Dispatchable Unit Id	DUID in BidDayOffer, DUID in BidPerOffer
START OF UNIT LIMITS	Required heading
Trading Interval	PeriodID in BidPerOffer
Max Availability Loading	MaxAvail in BidPerOffer
Enablement Min	EnablementMin in BidPerOffer
Low Break Pt	LowBreakPoint in BidPerOffer
Enablement Max	EnablementMax in BidPerOffer
High Break Pt	HighBreakPoint in BidPerOffer
END OF UNIT LIMITS	Required heading
START OF PRICE BANDS	Required heading
Price Band	(Required heading; must be PB1 to PB10)
Price($/MWh) under PB1	PriceBand1 in BidDayOffer
Price($/MWh) under PB2	PriceBand2 in BidDayOffer
Price($/MWh) under PB3	PriceBand3 in BidDayOffer
Price($/MWh) under PB4	PriceBand4 in BidDayOffer
Price($/MWh) under PB5	PriceBand5 in BidDayOffer
Price($/MWh) under PB6	PriceBand6 in BidDayOffer
Price($/MWh) under PB7	PriceBand7 in BidDayOffer
Price($/MWh) under PB8	PriceBand8 in BidDayOffer

Price($/MWh) under PB9	PriceBand9 in BidDayOffer
Price($/MWh) under PB10	PriceBand10 in BidDayOffer
END OF PRICE BANDS	Required heading
START OF BAND AVAILABILITY	Required heading
Trading Interval	(Required heading; must be PB1 to PB10)
01 to 48: PB1 column	BandAvail1 in BidPerOffer
01 to 48: PB2 column	BandAvail2 in BidPerOffer
01 to 48: PB3 column	BandAvail3 in BidPerOffer
01 to 48: PB4 column	BandAvail4 in BidPerOffer
01 to 48: PB5 column	BandAvail5 in BidPerOffer
01 to 48: PB6 column	BandAvail6 in BidPerOffer
01 to 48: PB7 column	BandAvail7 in BidPerOffer
01 to 48: PB8 column	BandAvail8 in BidPerOffer
01 to 48: PB9 column	BandAvail9 in BidPerOffer
01 to 48: PB10 column	BandAvail10 in BidPerOffer
END OF BAND AVAILABILITY	Required heading
Reason	RebidExplanation in BidDayOffer
END OF DISPATCHABLE UNIT	Required heading
END OF BID	Required heading
END OF BID FILE	Required heading

6.3 MNSP bid - Update tables in NEM

The EMMS application loads MNSP bids to the NEM database for further use. A MNSP bid file is a bid file containing at least one bid with MNSP service type (that is, with a Service Type in START OF BID being MNSP).

6.3.1 Every MNSP bid

For each file containing an MNSP bid (whether the file is valid or not and whether or not the file contains other bid types as well), the EMMS application adds an entry to the **MNSP_FileTrk** table as described in Table 25.

Table 25 MNSP_FileTrk table entry

MNSP_FileTrk **column**	Source (bid file, unless stated otherwise)
SettlementDate	Trading Date in START OF BID, being the NEM market date from which bid is active
OfferDate	System date, being the actual date (without time) AEMO processed the bid file
ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the participant identifier

FileName	File name submitted for bids, rebids, re-offers or meter files, as appropriate to table
Status	Load status [SUCCESSFUL/CORRUPT] as determined by the EMMS application
AckFileName	Acknowledgement file name
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record

6.3.2 Accepted MNSP bid

For every successful MNSP bid, the EMMS application updates the three MNSP bid tables (**MNSP_OfferTrk**, **MNSP_PerOffer** and **MNSP_DayOffer**).

For each error-free file containing at least one MNSP bid, the EMMS application adds a new record to **MNSP_OfferTrk** as described in Table 26.

Table 26 MNSP_OfferTrk record

MNSP_OfferTrk **column**	**Source (bid file, unless stated otherwise)**
SettlementDate	Trading Date in START OF BID, being the NEM market date from which bid is active
OfferDate	System date, being the actual date (without time) AEMO processed the bid file
VersionNo	Version No in START OF BID FILE, being the version of data for other key data; a higher version for same key data takes precedence
ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the participant identifier
FileName	The name of submitted file including the suffix (.txt or .zip) and excluding the path
AuthorisedDate	Issued On in START OF BID FILE, being the date and time of authorisation
AuthorisedBy	Authorised by in START OF BID FILE, being the authorising officer
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record

For each MNSP bid in the file, the EMMS application adds a new record to **MNSP_DayOffer** as described in Table 27.

Table 27 MNSP_DayOffer record

MNSP_DayOffer **column**	**Source (bid file, unless stated otherwise)**
SettlementDate	Trading Date in START OF BID, being the NEM market date from which bid is active
OfferDate	System date, being the actual date (without time) AEMO processed the bid file
VersionNo	Version No in START OF BID FILE, being the version of data for other key data – a higher version for same key data takes precedence
ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the participant identifier

LinkID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT, being the identifier for one of the two MNSP interconnector links. Each link pertains to the direction from and to
EntryType	Bid type, either Rebid or Daily (depends on trading date and time of submission)
RebidExplanation	Reason just before END OF DISPATCHABLE UNIT, being the explanation for all rebids and inflexibilities
PriceBand1	PB1 in PRICE BANDS being the price for Availability Band 1
PriceBand2	PB2 in PRICE BANDS being the price for Availability Band 2
PriceBand3	PB3 in PRICE BANDS being the price for Availability Band 3
PriceBand4	PB4 in PRICE BANDS being the price for Availability Band 4
PriceBand5	PB5 in PRICE BANDS being the price for Availability Band 5
PriceBand6	PB6 in PRICE BANDS being the price for Availability Band 6
PriceBand7	PB7 in PRICE BANDS being the price for Availability Band 7
PriceBand8	PB8 in PRICE BANDS being the price for Availability Band 8
PriceBand9	PB9 in PRICE BANDS being the price for Availability Band 9
PriceBand10	PB10 in PRICE BANDS being the price for Availability Band 10
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record

For each MNSP bid in the file, the EMMS application adds a new record for each of the 48 periods to **MNSP_PerOffer** as described in Table 28.

Table 28 MNSP_PerOffer record

MNSP_PerOffer **column**	**Source (bid file, unless stated otherwise)**
SettlementDate	Trading Date in START OF BID, being the NEM market date from which bid is active
OfferDate	System date, being the actual date (without time) AEMO processed the bid file
VersionNo	Version No in START OF BID FILE, being the version of data for other key data – a higher version for same key data takes precedence
ParticipantID	From in START OF BID FILE (same as first part of file name and the path of the source file), being the Participant Identifier
LinkID	Dispatchable Unit Id in START OF DISPATCHABLE UNIT, being the identifier for one of the two MNSP interconnector links. Each link pertains to the direction from and to
PeriodID	Trading Interval in START OF UNIT LIMITS, being the Trading Interval number
MaxAvail	Max Availability Loading in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum planned availability MW
BandAvail1	In START OF BAND AVAILABILITY, the number under PB1 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail2	In START OF BAND AVAILABILITY, the number under PB2 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail3	In START OF BAND AVAILABILITY, the number under PB3 for the Trading Interval matching this record's PeriodID, being the band availability for current period

BandAvail4	In START OF BAND AVAILABILITY, the number under PB4 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail5	In START OF BAND AVAILABILITY, the number under PB5 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail6	In START OF BAND AVAILABILITY, the number under PB6 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail7	In START OF BAND AVAILABILITY, the number under PB7 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail8	In START OF BAND AVAILABILITY, the number under PB8 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail9	In START OF BAND AVAILABILITY, the number under PB9 for the Trading Interval matching this record's PeriodID, being the band availability for current period
BandAvail10	In START OF BAND AVAILABILITY, the number under PB10 for the Trading Interval matching this record's PeriodID, being the band availability for current period
LastChanged	System time of the start of the run processing this file, being the date and time of creation of this record
FixedLoad	If Fixed in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID is blank or zero, FixedLoad is zero. Otherwise (0 < Fixed <= Max Availability for Trading Interval), FixedLoad is the Fixed for the Trading Interval matching this record's PeriodID. FixedLoad is the inflexibility flag and availability
RampUpRate	ROC UP in START OF UNIT LIMITS for the Trading Interval matching this record's PeriodID, being the maximum rate of change in MW/min for this link (that is, this direction on the interconnector)

6.3.3 MNSP bid data usage

The target location for each source field in an MNSP bid follows. The list in Table 29 is in sequence from beginning of a bid file containing a single MNSP bid.

Table 29 MNSP bid data usage

MNSP bid source field	Target(s) and Notes
Name of file	FileName in MNSP_FileTrk, FileName in MNSP_OfferTrk
START OF BID FILE	Required heading
To	Unused (must be the literal NEMMCO)
From	ParticipantID in MNSP_FileTrk, ParticipantID in MNSP_OfferTrk, ParticipantID in MNSP_DayOffer, ParticipantID in MNSP_PerOffer
Issued On	AuthorisedDate in MNSP_OfferTrk
Version No	VersionNo in MNSP_OfferTrk, VersionNo in MNSP_DayOffer, VersionNo in MNSP_PerOffer
Authorised by	AuthorisedBy in MNSP_OfferTrk
START OF BID	Required heading
Service Type	(determines validation rules) For an MNSP bid, Service Type is MNSP
Trading Date	SettlementDate in MNSP_FileTrk, SettlementDate in MNSP_OfferTrk, SettlementDate in MNSP_DayOffer, SettlementDate in MNSP_PerOffer

START OF DISPATCHABLE UNIT	Required heading
Dispatchable Unit Id	LinkID in MNSP_DayOffer, LinkID in MNSP_PerOffer
START OF UNIT LIMITS	Required heading
Trading Interval	PeriodID in MNSP_PerOffer
Max Availability Loading	MaxAvail in MNSP_PerOffer
ROC-UP	RampUpRate in MNSP_PerOffer
Fixed	FixedLoad in MNSP_PerOffer
START OF PRICE BANDS	Required heading
Price Band	(Required heading; must be PB1 to PB10)
Price($/MWh) under PB1	PriceBand1 in MNSP_DayOffer
Price($/MWh) under PB2	PriceBand2 in MNSP_DayOffer
Price($/MWh) under PB3	PriceBand3 in MNSP_DayOffer.
Price($/MWh) under PB4	PriceBand4 in MNSP_DayOffer
Price($/MWh) under PB5	PriceBand5 in MNSP_DayOffer
Price($/MWh) under PB6	PriceBand6 in MNSP_DayOffer
Price($/MWh) under PB7	PriceBand7 in MNSP_DayOffer
Price($/MWh) under PB8	PriceBand8 in MNSP_DayOffer
Price($/MWh) under PB9	PriceBand9 in MNSP_DayOffer
Price($/MWh) under PB10	PriceBand10 in MNSP_DayOffer
END OF PRICE BANDS	Required heading
START OF BAND AVAILABILITY	Required heading
Trading Interval	Required heading; must be PB1 to PB10
01 to 48: PB1 column	BandAvail1 in MNSP_PerOffer
01 to 48: PB2 column	BandAvail2 in MNSP_PerOffer
01 to 48: PB3 column	BandAvail3 in MNSP_PerOffer
01 to 48: PB4 column	BandAvail4 in MNSP_PerOffer
01 to 48: PB5 column	BandAvail5 in MNSP_PerOffer
01 to 48: PB6 column	BandAvail6 in MNSP_PerOffer
01 to 48: PB7 column	BandAvail7 in MNSP_PerOffer
01 to 48: PB8 column	BandAvail8 in MNSP_PerOffer
01 to 48: PB9 column	BandAvail9 in MNSP_PerOffer
01 to 48: PB10 column	BandAvail10 in MNSP_PerOffer
END OF BAND AVAILABILITY	Required heading
Reason	RebidExplanation in MNSP_DayOffer
END OF DISPATCHABLE UNIT	Required heading
END OF BID	Required heading
END OF BID FILE	Required heading

7 REFERENCES

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

7.1 Rules, law & government bodies

- **AEMO's Information and Support Hub**: phone: 1300 AEMO 00 (1300 236 600), and follow the prompts; email: 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.

7.2 AEMO's website

You can find the following documents on AEMO's website in About the Industry>Information Systems.

AEMO's CSV Data Format Standard	Describes the CSV data format standard used within flat files provided to participants from AEMO's systems. Its primary function is to provide sufficient information to allow participants to understand the CSV data format used for exchanging data with AEMO
Data Interchange webpage	Software and guides to assist moving files between remote and local folders, including the MMS Data Model: http://www.aemo.com.au/About-the-Industry/Information-Systems/Data-Interchange
Electricity Market Management Systems Access Policy and Procedure	Information about security access to AEMO's participant systems
Guide to Intermittent Generation	Instructions about using the Intermittent Generation web application in the energy market systems web portal
MMS Data Model & Report	The Electricity Data Model is the definition of the interface to participants of data published by AEMO from the NEM system
Operating Procedure: Mandatory Restriction Offers	Provides guidelines to market participants wishing to participate in the Mandatory Restriction (MR) Offer process as well as to AEMO staff involved in the mandatory restriction (MR) management process: http://www.aemo.com.au/electricityops/3713.html
Participant Rights Administration User Interface Guide	Information about managing a web portal account (accounts are created in MSATS)
Using Energy Market Information Systems	IT related documents such as participant IP addresses, AEMO's CSV Data Format Standard, and guides: http://www.aemo.com.au/About-the-Industry/Information-Systems/Using-Energy-Market-Information-Systems

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

7.3 Feedback

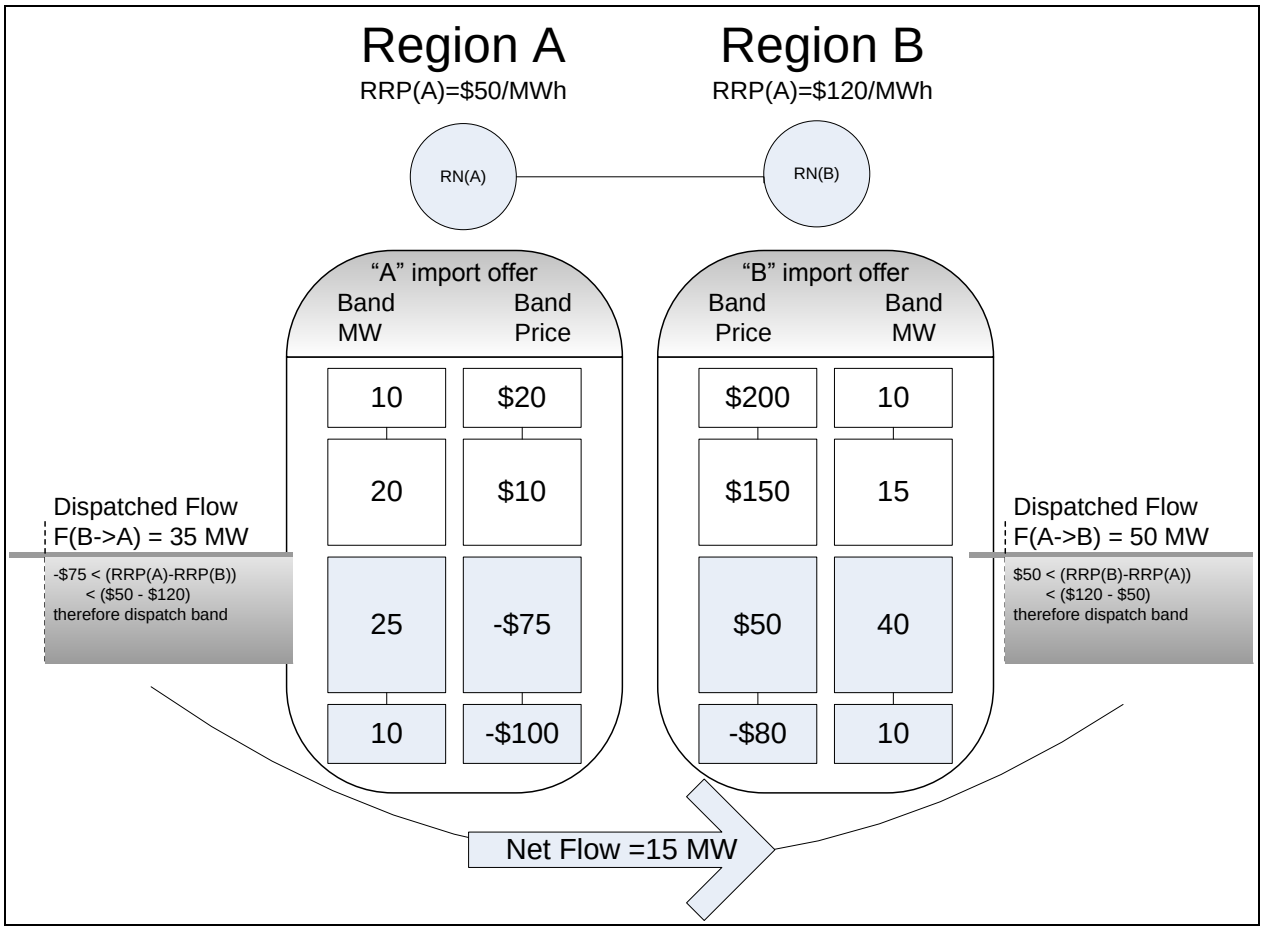
To suggest corrections or improvements to this document, please call AEMO's Information and Support Hub.

APPENDIX A. MNSP CONVEXITY VALIDATION RULE

7.4 Illustration of Dispatch Offer Convexity Issue

MSNP dispatch offer convexity must be maintained in order to avoid MNSP flow dispatch in both directions, as illustrated in Figure 22 below.

Figure 22 MNSP dispatch offer convexity issue



Ignoring MNSP flow losses, the minimum allowable band 1 price to avoid dispatch of the B import offer:

= negative (A import offer band 1 price)

= - (-$100) = $100/MWh

7.5 Details of MNSP Convexity Validation Rule

The first band price in an MNSP dispatch offer submitted for a particular flow direction and trading day must be greater than the negative of the first band price in the valid MNSP dispatch offer for the opposite flow direction for that same trading day, after accounting for

MNSP flow losses. MNSP flow losses are included in the validation rule by determining a scaling factor 'k' on the basis of the MNSP loss model.

$(1/k)\ x\ BandPrice1(Reverse\ Flow\ Offer)\ >\ -BandPrice1(Forward\ Flow\ Offer)$

Where:

- BandPrice1(Reverse Flow Offer) is the first band price of the MNSP dispatch offer for the reverse flow direction.
- BandPrice1(Forward Flow Offer) is the first band price of the MNSP dispatch offer for the forward flow direction.
- k is the validation scaling factor, determined from the MNSP loss model, being

$$k\ = \frac{1-[(1-RLS)\ x\ MLF]}{1+[(RLS)\ x\ MLF]}$$

RLS

= RegionLossShare (**FromRegionLossShare** column in **InterconnectorConstraint** table in MMS Data Model).

- $MLF\ = \left[\frac{(LF(f-)+\ LF(f+))}{2}\right] - 1$
- $LF(f)\ =\ (LossConstant\ +\ LossDemandConstant) +\ (LossFlowCoefficient\ x\ f)$
- f- = Lower breakpoint of first loss segment in MNSP Forward Flow Direction
- f+ = Upper breakpoint of first loss segment in MNSP Forward Flow Direction

The LossConstant and LossFlowCoefficient parameters are taken from the **InterconnectorConstraint** table (LossConstant and **LossFlowCoefficient** columns) in the MMS Data Model. For regulated interconnectors, the LossDemandConstant parameter is variable and calculated when initiating the linear program solver. However, for MNSPs, the LossDemandConstant parameter must be set to zero so the MNSP Dispatch Offer convexity rule can be validly applied.

7.6 Example Interconnector

From the a sample losses model:

- RLS = 0
- f- = 0
- f+ = 5
- LossConstant = 0.9959
- LossDemandConstant = 0
- LossFlowCoefficient = 0.00082818

Hence the MNSP dispatch offer convexity validation rule applicable is:

- $0.99797456\ \text{x BandPrice1(LINKB)}\ >\ -BandPrice1(LINKA)$

Alternatively expressed as:

- $1.00202955\ \text{x BandPrice1(LINKA)}\ >\ -BandPrice1(LINKB)$