Reconciliation User Guide

This document provides information on interfacing with the reconciliation manager and the reconciliation system under Part 15 of the Electricity Industry Participant Code (The Code), effective 1 November 2010.

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Contents

Introduction

Overview

The purpose of this document is to provide reconciliation participants with information on how to use the reconciliation system under Part 15 of the Code, effective 1 November 2010. It describes how to access the system, methods of file transfer, and file submission confirmations and error notifications.

It also directs reconciliation participants to their obligations and responsibilities under the New Zealand Electricity Participation Code (the Code) regarding the reconciliation process, and provides information on how to contact the reconciliation manager.

Your feedback on this document is appreciated.

The Reconciliation Manager

The reconciliation manager role is a service provider role to the Electricity Authority, which is performed by NZX Limited. Analysts within the NZX team carry out this function, supported by the NZX Energy IT team.

The reconciliation manager can be contacted using:

Phone	+64 498 0044
Email	rm@nzx.com
Address	Level 2,
	NZX Centre
	11 Cable Street
	PO Box 2959 (Wellington 6140)
	Wellington 6011, New Zealand

The reconciliation manager's door is open to help with any queries.

If any participants want to meet with the reconciliation manager team, please get in contact using the details above. The reconciliation manager role is based in Wellington and visitors are always welcome. The NZX Energy Team sometimes travels to other cities to meet participants. Please let the team know if you are would like a visit and they will try to fit one in.

Reconciliation rules and specifications

Relevant Parts of the Code

All reconciliation participants and service providers have compliance obligations under the Code. The rules and associated definitions relating to reconciliation can be found in the following parts of the Code:

- Part 1;
- Part 3;
- Part 10;
- Part 11;
- Part 13;
- Part 14;
- Part 15.

The Code can be downloaded from the Authority's website at:

https://www.ea.govt.nz/code-and-compliance/the-code/

Functional Specification

In addition, the reconciliation manager service provider agreement contains a functional specification document. This document provides:

- Functional requirements of the reconciliation management system,

- A comprehensive overview of the reconciliation process,

- Key participants to the process,

- Inputs and outputs of the process including file formats.

The reconciliation manager service provider agreement containing the functional specification can be downloaded from:

https://www.ea.govt.nz/operations/market-operation-service-providers/reconciliation-manager/

Obligations

In summary, the obligation and responsibilities of each of the key participants are as follows[1]:

Grid owners
Grid owners fall under the category of reconciliation participant as they are also network owners. Each grid owner must:

- Notify the reconciliation manager at least one calendar month in advance of any changes that it makes to the grid that will affect reconciliation; and

- Deliver volume information for each of its points of connection to the grid to the reconciliation manager by 1600 hours on the 4th business day of each month and, for revised information, by 1600 hours on the 13th business day of each month.

Registry
The registry must provide the reconciliation manager with:

- ICP days information;

- A list of all half-hour ICPs owned by each retailer and direct purchaser;

- Loss factors for each loss category; and

- Balancing area details provided in the NSP mapping table

by 1600 hours on the 4th business day and the 13th business day of each month.

System operator
The system operator must notify the reconciliation manager the trading periods when NSPs were disconnected from the grid (i.e. outage constraints) within two hours of final prices being published.

Reconciliation participants
Reconciliation participants include retailers, generators, network owners and direct purchasers. Reconciliation participants have many common responsibilities and some that are role-specific.

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[1] This information is intended as a summary of participants' obligations; however the definitive and full obligations are in the Code and Regulations which all participants should be familiar with.

In general, all reconciliation participants must provide the reconciliation manager with:

- Accurate submission information for all points of connection at which they have purchased or sold electricity during the current consumption period by 1600 hours on the 4th business day of each month.

- Revised submission information for all points of connection at which they have purchased or sold electricity during any previous consumption period by 1600 hours on the 13th business day of each month.

- Engineered, statistically sampled or NSP derived dynamic profile shapes by 1600 hours on the 4th business day of each month and, for revised information, by 1600 hours on the 13th business day of each month., and

- Any additional information requested by the reconciliation manager under Part 15.18 in respect of any consumption period.

Retailers
Retailers must deliver:
- ICP days information for each consumption period;

- Electricity supplied (billing) information; and

- Half-hourly metered monthly ICP aggregates

by 1600 hours on the 4th business day of each month and, for revised information, by 1600 hours on the 13th business day of each month.

Distributors/Network owners
Distributors and network owners have the following role-specific obligations:

- Embedded network owners/distributors must deliver volume information for each of their points of connection to the parent local network to the reconciliation manager by 1600 hours on the 4th business day of each month and, for revised information, by 1600 hours on the 13th business day of each month.

- Local network owners/distributors must deliver volume information for each of their interconnection points that inject and/or extract electricity from other local networks (i.e. not the grid), to the reconciliation manager by 1600 hours on the 4th business day of each month and, for revised information, by 1600 hours on the 13th business day of each month.

- Distributors must notify the reconciliation manager of any changes to their balancing area NSP groupings.

Dispatchable Load Purchasers
Dispatchable load purchasers must provide dispatchable demand information manager by 1600 hours on the 4th business day of each month and, for revised information, by 1600 hours on the 13th business day of each month.

Notifications to the Reconciliation Manager

Overview

Reconciliation participants are required to provide the following information to the reconciliation manager:

- Trading Notifications;

- Balancing area information;

- Profile information; and

- Residual volume ICP information.

Links to forms for providing this information and guides to completing the forms can be found on the reconciliation web portal homepage www.electricityreconciliation.co.nz.

Trading Notifications

Reconciliation participants are able to add, edit or delete trading notifications and also download all existing trading notifications as a CSV. If reconciliation participants are unable to use this functionality, they are required to advise the reconciliation manager about the points of connection when they are commencing or ceasing trading at least 5 business days prior to the change becoming effective.

Balancing area information

The reconciliation manager requires distributors to provide the balancing areas for the points of connection within their network area.

Profiling information

Profile owners are requested to provide details of their profiles including the profile code, effective dates, on/off times, authorised profile users and, where required, the profile shape submitter.

Embedded networks

The residual volume trader is required to provide additional information for embedded networks that are to be reconciled by differencing, as opposed to being reconciled globally. This includes who the residual volume participant is, and the number of the ICP on the Registry that represents the residual load on the embedded network.

Reconciliation System

Overview

The reconciliation system is a bespoke development built by NZX to meet the requirements of the Code, the Reconciliation Functional Specification and the Reconciliation Operational Requirements.

The reconciliation system's main processes are:

· Acceptance and validation of submissions from reconciliation participants, the Registry, grid owners, the system operator and the Board;

· Checking information is complete and of the highest available quality prior to reconciliation processing;

· Reconciliation processing – including scaling, profiling, applying losses, unaccounted for electricity (UFE) calculation and allocation, calculation of scorecard ratings, and balancing; and

· Generating reports and notifications to participants and the Authority.

Reconciliation Web Portal

The Reconciliation Web portal is also maintained as part of the reconciliation system. The web portal provides two functions:

· An information repository; and

· A data exchange mechanism.

The reconciliation web portal can be accessed at the following addresses

Primary	**https://www.electricityreconciliation.co.nz**
Secondary	**https://wlg.electricityreconciliation.co.nz**

Information repository

The homepage of the web portal (see Figure 1: Reconciliation manager portal homepage) can be accessed by the public.

It is a repository for information about reconciliation including links to the Code, news broadcasts, reconciliation manager contact details, relevant documents, forms and newsletters, and other reconciliation related topics.

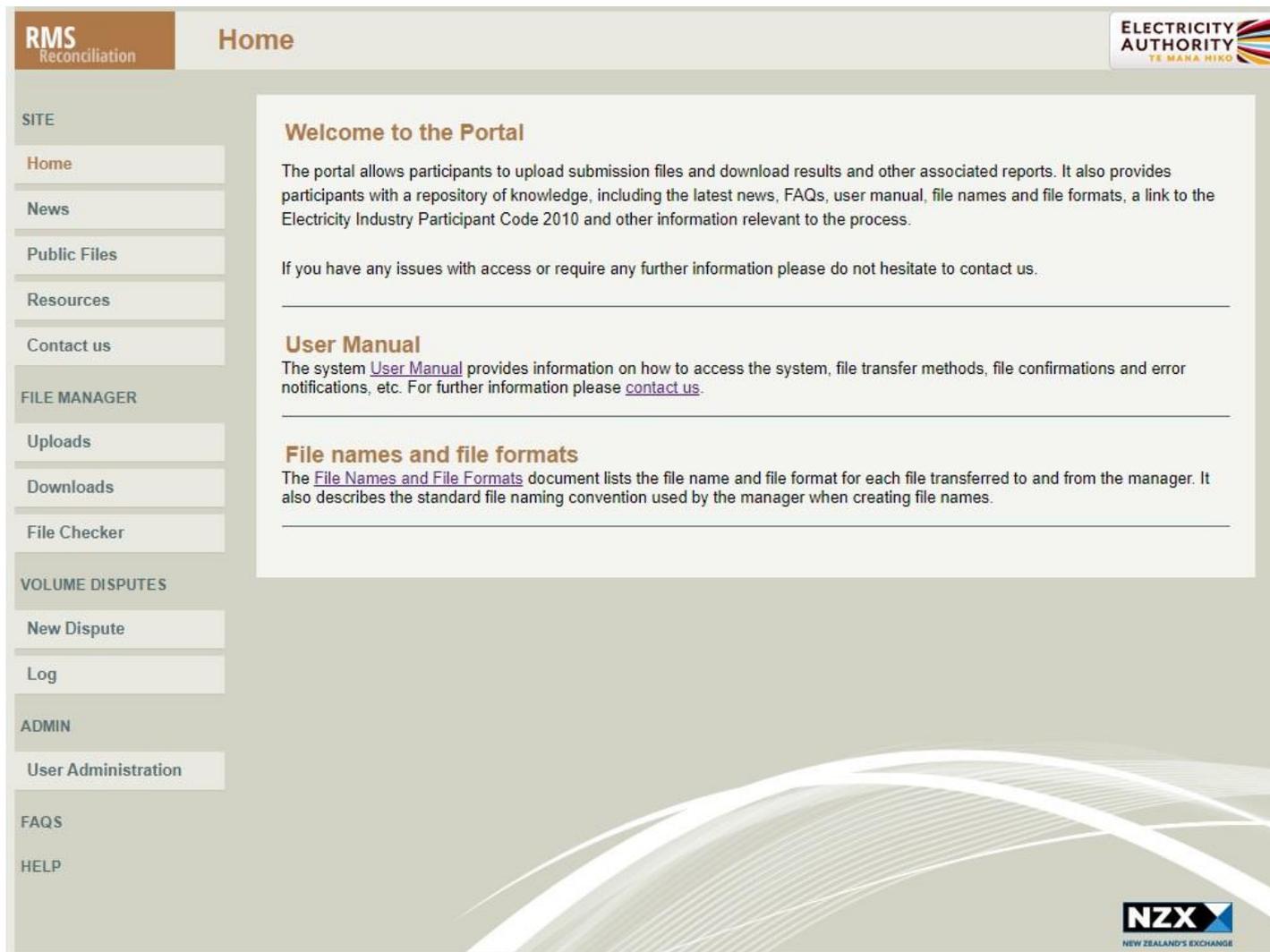**Figure 1: Reconciliation manager portal homepage**

Data exchange mechanism

The homepage also provides a login facility for participants to access the file uploads and downloads screens where they can transfer submission information to the reconciliation manager and receive reports from the reconciliation manager. The menu on the left may differ from what is depending on the reconciliation participant's roles.

Data Files

Overview

Reconciliation participants providing submission information to the reconciliation manager in accordance with their obligations under the Code must do so with the correct file names and in the correct format to ensure the files and data are validated.

File names and formats

The reconciliation manager uses a standard naming convention developed from the electricity information exchange protocols (EIEP) to create file names for the exchange of information between participants and the reconciliation manager. It has also defined a standard header format that must be included in all input and output files relating to the reconciliation process.

The reconciliation manager has agreed a set of file names for all input and output files relating to the reconciliation process.

The file naming format, agreed file names, standard header format and all file formats as defined in the reconciliation manager functional specification have been collated into a document called **Reconciliation Manager File Names and File Formats.**

The link to this document can be found on the reconciliation web portal homepage.

Upload and download compress zip file

This feature enables participants to upload multiple files into a zip file to the Reconciliation website.

The Reconciliation system unpacks the files and loads them in alphanumeric order. Participants can download their files individually or have an option to receive all the files in a zip file. This option is available on request, please send an email to NZX at **rm@nzx.com** to request.

Data Exchange

The exchange of data files between reconciliation participants and the reconciliation manager can occur in one or more of the following ways:

- Reconciliation manager web portal.

- SFTP (Secure File Transfer Protocol)

Details of each method of file transfer are provided in the sections below.

To request a web portal or SFTP account, please send an email to NZX at **rm@nzx.com**.

File compression

- All files submitted/uploaded to the reconciliation system by reconciliation participants must be **uncompressed**.

- All files downloaded from the reconciliation system to reconciliation participants are **compressed** using gzip compression. This includes acknowledgement (.ack) and error (.err) files.

A licensed copy of WinZip (http://www.winzip.com) or the open source 7-Zip utility (http://www.7-zip.org) will uncompress GZipped files. See http://www.gzip.org for more details.

Email notification of reconciliation information

Reconciliation participants will receive an email when reconciliation information has been published and is available via their selected transfer mechanism. These notifications may also be viewed on the News section of the portal.

Web portal

Overview

The web portal is the primary method of accessing the reconciliation system for small numbers of files and/or infrequent or ad-hoc access. The file checker facility is also available via this application. It is anticipated that reconciliation participants will normally use the SFTP transfer interfaces for automation of large numbers of files in and out of the reconciliation system

Participating organisations will require connectivity to the web portal via Microsoft Internet Explorer browser version 5.5 or higher, or Mozilla Firefox version 1.0 or above.

To request a web portal account, please send an email to NZX at **rm@nzx.com**.

Public files contain information about past Residual Profile Shape (RPS) and Seasonal Profile Shape (SEA) for reconciliation runs for past periods. These may be accessed without logging in.

The resources section contains a number of forms such as Residual Volume ICP, Profile and Balancing area changes. These should be completed and emailed to NZX where necessary.

Access

Reconciliation participants will be provided with a username and password to enable connectivity to the portal system. Users must select the **Login** link on top right hand side of the homepage, and log in using their new user ID and password. (See figure 2).
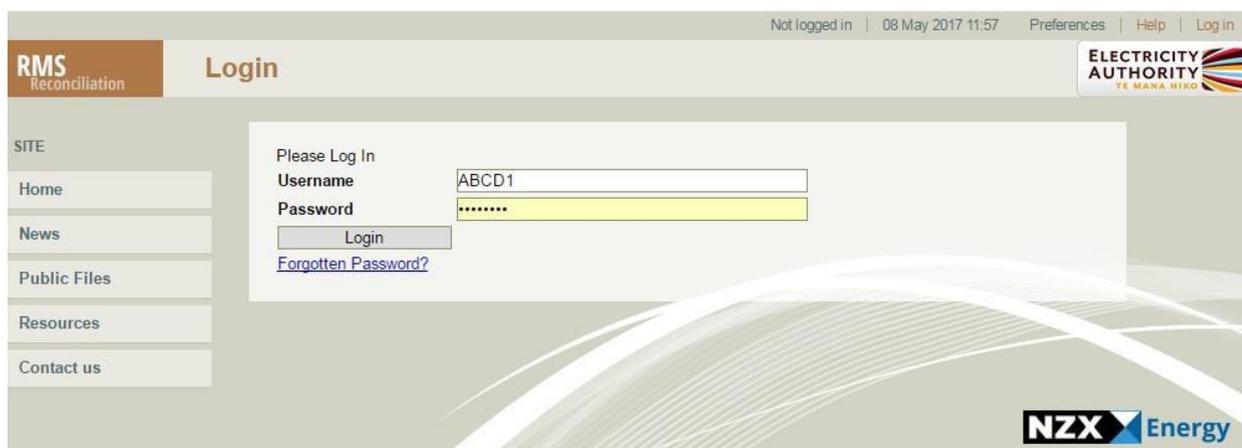

Figure 2: Login screen

Uploads

The file submissions web form within the web portal allows reconciliation participants to submit new files and to view files that have been previously submitted. Validation errors and confirmations are also visible on this page.

Submitting new files

Reconciliation participants select a local file and upload it using this web form. Once uploaded, the file will appear in the file list with a status of 'Uploaded'. A participant can submit only one file at a time via this web form.

Making submission changes

Participants can make amendments to previously uploaded files by uploading a new replacement file to the web portal. This feature is primarily used when uploading wash-up revision files to update volume submitted in the previous revision. Because re-submitting on particular data points is not compulsory, an original data point will remain in the reconciliation system unless it has been modified in the replacement file. It is not possible for participants to remove a data point that has been previously submitted by not including it in the replacement file, however 0 volume can be submitted to effectively cancel out the original submission.

Viewing uploaded files

Reconciliation participants can view the status of each of the files that have been submitted to the reconciliation manager, including files submitted via SFTP. Reconciliation participants can apply a filter to restrict the search results to specific files of interest. Invalid or errored file submissions will be highlighted. Clicking on a listed file will display more information about the file submission such as validation errors and header information.

Downloads

The Downloads page allows reconciliation participants to download reports from the reconciliation manager. Reports can be searched by consumption period, date published and type. Search results are displayed as a filtered list of downloads available to the logged on participant. Selecting on a row displays details of the report and a link to download the file.

File checker

The web portal provides a facility where participants can upload a file to check its format and validity. This facility is similar to the file submissions web form but is clearly marked as being the file checker facility. Please bear in mind that the checker only performs checks to ensure a successful upload. The participant is responsible for the accuracy of the data contained in the submission.

When files are uploaded into the file checker facility, the file's status is displayed in the same way as for a submission. To view details of the validation process, participants may click on the file entry.

The validations performed by the file checker are identical to those performed on a file submitted to the reconciliation manager (either via the file submissions web form, SFTP). On completion of the validation check the file will be discarded i.e. it will **not** be retained in the reconciliation system. Records of previously validated files will be available to view for a limited time only.

The file checker validates submissions against production standing data at the time of checking i.e. Network Supply Points (NSPs), trading notifications, loss category codes, profile codes.

Trading Notifications

The Trade Notifications page allows reconciliation participants to add, edit or delete trading notifications on the NSPs that they begin, amend or cease trading on. Participants will also have the functionality to download a CSV report of all trading notifications including inactive records.

Trade notifications must be made under a contract. A participant can have multiple contracts, and contracts can either be for purchase (consumption) or generation. Additional contracts can only be setup by the reconciliation manager. Please email NZX if a new contract is required **rm@nzx.com**

NSP Changes

Participants and agents are able to submit changes to add or edit details of the NSP Mappings that are associated with depending on their role. Filling in the form for New or Edit NSP will send a request through to the internal reconciliation system for approval and from here the Reconciliation Manager can accept, reject or ask for additional information when required for the request in question.

Reconciliation participants will also be able to see NSPs that they are responsible for and the portal also provides the functionality to track requests through the log page.

MEP Updates

Reconciliation Participants who are responsible for maintaining NSP metering will be able to access this page. This functionality lets participants alter the 'Earliest certification expiry date' and 'Metering exemption expiry date'. Both dates entered must be mutually exclusive and if an exemption expiry date is added, the MEP must be null. If the responsible participant needs to be changed, please contact the RM directly by emailing **rm@nzx.com**.

Volume Disputes

Reconciliation participants who have seen their reconciled volumes and deemed them incorrect are able to raise a volume dispute. A log of past and current volume disputes is kept in this section to view any progress made on resolving volume disputes. A news article and notification to remaining participants will be created by the RM, however the details of the dispute (including the disputing party) will remain confidential.

System help

The portal has an online help facility that is accessible once the user has logged on to the data exchange facility.

In the event that the online help facility is not providing the answers to users' queries or issues, further assistance can be obtained by contacting the reconciliation help desk at **rm@nzx.com**.

SFTP

Another way of submitting and receiving files is through the reconciliation manager's SFTP (Secure File Transfer Protocol) site. On request, an account will be set up for a participant. Once logged on to the SFTP site using an appropriate SFTP client tool, participants can download files put there by the reconciliation manager, and upload files to the reconciliation manager.

To set up test and production user accounts for SFTP transfer, please email NZX at **rm@nzx.com**. Please include your Public Key or if you would like a static password for this request.

The reconciliation SFTP is available at the following addresses.

Primary	**sftp1.energy.nzx.com**
Secondary	**sftp2.energy.nzx.com**
Test	**sftpuat.energy.nzx.com**

Validation of submissions

Validation of file submissions is carried out in accordance with the requirements in the reconciliation functional specification.

- If validation fails, an error notification file will be generated and sent to the participant.
- If validation is successful, a confirmation/acknowledgement file will be generated and sent to the participant.

Validations are described in this section in the order they are performed by the reconciliation system.

File type
The first validation is on the file type. The file type is contained in the file name e.g NHHVOLS, HHRVOLS. If the file type is invalid, the file will be rejected without further checks.

File name
The second validation is on the file name. If the file name is invalid, the file will be rejected without any further validations being performed. Note that duplicate filenames are not allowed.

Two phase validation process
Validations then go on to a two phase validation process. In the first phase validations include:

- Number of records recorded in the header vs. actual number of records.
- General header validation
- Date accuracy and formatting
- Consumption month

Second phase validations vary depending on the file type.

Notes on file validations
The system verifies a NHH trade notification is in place for the relevant consumption month for each NHH submission. If there is no trade notification established, the file will be rejected and an error message sent.

The system verifies a HHR trade notification is in place for the relevant trading periods for each HHR submission. If there is no trade notification established, the file will be rejected and an error message sent.

Confirmations and error notifications

Overview

The reconciliation system will automatically produce and issue:

- A time-stamped confirmation/acknowledgment on successful validation and processing of a file submission; or

- An error report for each invalid or rejected file.

Confirmations and error notifications

Where files are submitted via SFTP transfer, a text file will be produced containing either error notifications or confirmation of successful processing of the file. Files uploaded via the file submissions portal will display confirmations or errors on screen.

Note that confirmations and error notifications will be compressed using GZip.

Confirmations

Confirmation files will contain one header record with no detail records. This file will acknowledge successful receipt and validation of the submission.

Filename: <original filename>**.ack.gz**

Header record: `HDR,RMACK,<original filename>,<RM file id>,NZRM,<participant code>,<creation datetime>,0,<RM reference ID>`

Format:

All fields are mandatory unless otherwise specified.

Attribute	Type	Comments
Header record type	Char 3	Must be "HDR"
File type	Char 10	Must be "RMACK"
Original filename	Char 120	E.g. "CTCT_E_NZRM_NHHSUBM_200706_20070720_1329.csv"
RM file id	Number 10	E.g. "54321"
Sender	Char 4	Must be "NZRM"
Recipient	Char 4	E.g. "CTCT"
Creation datetime	dd/mm/yyyy hh:mi:ss	Datetime (24 hour time) E.g. "03/05/2008 13:23:19"
Detail row count	Number 10	Must be "0" (i.e. zero)
RM reference ID	Number 10	Optional field

Example:

CTCT_E_NZRM_NHHSUBM_200706_20070720_1329.ack.gz

HDR,RMACK,CTCT_E_NZRM_NHHSUBM_200706_20070720_1329.CSV,1234,NZRM, CTCT,21/07/2007 10:00:00,0,658

Error notifications

Error notification files will contain a header record, plus one detail record for each error being notified.

Filename: <original filename>**.err.gz**

Header record: `HDR,RMERR,<original filename>,<RM file id>,NZRM,<participant code>,<creation datetime>, <detail row count>,<RM reference ID>`

Format:

All fields are mandatory unless otherwise specified.

Attribute	Type	Comments
Header record type	Char 3	Must be "HDR"
File type	Char 10	Must be "RM**ERR**"
Original filename	Char 120	E.g. "CTCT_E_NZRM_NHHSUBM_200706_20070720_1329.csv"
RM file id	Number 10	E.g. "54321"
Sender	Char 4	Must be "NZRM"
Recipient	Char 4	E.g. "CTCT"
Creation datetime	dd/mm/yyyy hh:mi:ss	Datetime (24 hour time) E.g. "03/05/2008 13:23:19"
Detail row count	Number 10	E.g. "7750"
RM reference ID	Number 10	Optional field

Example:

CTCT_E_NZRM_NHHSUBM_200706_20070720_1329.err.gz

HDR,RMERR,CTCT_E_NZRM_NHHSUBM_200706_20070720_1329.CSV,1234,NZRM,CTCT, 21/07/2007 10:00:00,1,658

```
<file row number>,<error message>,<error code>
```
Format:

All fields will be mandatory.

Attribute	Type	Comments
File row number	Number 10	
Error message	Char 1000	String of length up to 1000 characters
Error code	Number 5	See below

Example:

1,INVALID FILE NAME,756
The Error code is 0 for informational messages. The Error code is a *negative* number for error messages (e.g. -1, -1000, -1001, etc.)

Provision of confirmations and error notifications

- Confirmation and error notifications are sent to the participant and the submitter of the file (if the submitter is a different organisation).
- Confirmation and error notifications are available via the same transfer method used to submit the file.
- Confirmation and error notification files are available on the web portal regardless if the file was transferred using the web portal or SFTP.

Production, DR and Test sites

Overview

The reconciliation production site is located in Auckland, and the DR and test sites are located in Wellington.

The reconciliation web portal is available at the following addresses.

Primary	**https://www.electricityreconciliation.co.nz**
Secondary	**https://wlg.electricityreconciliation.co.nz**
UAT	**https://uat.electricityreconciliation.co.nz**

Production

This is the main production address. It is normally configured to access the primary database in Auckland, but can be reconfigured to access the standby database system in Wellington, in a disaster recovery situation.

Secondary

This site is identical to the main production site and is normally configured to access the primary database system. In the event of a total site outage of the primary site in Auckland, the standby web application would be reconfigured to access the standby database in Wellington.

UAT

The purpose of the UAT site is to allow users to acceptance test changes made to the system. Submissions made to the UAT site will not be entered into the Production Reconciliation process.

Please note that reference data is only periodically updated to the UAT system from the production system. Please contact the RM if you require updated reference data for your testing.

Reconciliation helpdesk

Overview
The reconciliation manager provides a helpdesk for reconciliation participants to report system faults, obtain assistance with operational incidents and to answer general queries related to the reconciliation process.

The helpdesk for system faults and operational incidents (as defined below) is available from 0730 to 1930 hours on normal business days. System faults and operational incidents can be reported to the reconciliation manager on 04 498 0044.

Faults & operational incidents
A system fault means a defect, error or malfunction in the system that renders all or any part of it inoperable or unusable. An operational incident is where the system is unobtainable. The reconciliation manager will pro-actively manage all aspects of the system to minimise the likelihood of system faults or operational incidents occurring.

Users experiencing faults or operational incidents should provide such details as:

- Username;
- Company name;
- Date/time the fault occurred or was first noticed;
- What the fault is;
- Whether any other users in the same organisation are experiencing the same fault;
- Any other information that might seem relevant.

General queries
General queries regarding the reconciliation system and the reconciliation process that are not answered in the available documentation (i.e. user manual, notifications documents, rules or functional specification) may be directed via an email to rm@nzx.com.

Reconciliation participants with general queries should provide such details as:

- Company name;

- Nature of their query;

- Details of their query;

- Any other information that might seem relevant.

General queries emailed to **rm@nzx.com** acknowledged and responded to as soon as possible, and within 24 hours at the latest.

Troubleshooting

1. I want to join the market and start trading. What should I do first?

To begin the process, interested parties should contact the Electricity Authority to apply to register as a market participant. The Authority's contact details:

http://www.ea.govt.nz/contact

2. I've forgotten my SFTP password, what do I do?

Call 04 498 0044 or email **rm@nzx.com** to have your SFTP password reset.

3. I've forgotten my Web Portal password, what do I do?

Use the facility on the Web Portal to reset your password.

4. I'm locked out of my SFTP account, what do I do?

Call 04 498 0044 or email **rm@nzx.com** to have your SFTP password reset.

5. I'm locked out of my Web Portal account, what do I do?

Call 04 498 0044 or email **rm@nzx.com** to have your web portal password reset.

6. Can I have more than one SFTP or Web Portal logon?

Yes, in most circumstances you can. Please email **rm@nzx.com** to request additional accounts.