Electricity Information Exchange Protocols (EIEP)

EIEP 1: Detailed ICP billing and volume information

Regulated

Effective from 1 April 2021

Version control

Version	Date amended	EIEP reference	Comments
10	11 November 2013 1 May 2014 30 May 2014	EIEP1	Amendments from March 2013 consultation Template reformatted Approved and publicised by the Authority
10.1 draft	30 June 2017	EIEP1	Amendments include: Terminology alignment with ENA pricing guidelines and preferences agreed with ENA Improvements to add clarity and consistency to content Corrections to content where appropriate Guidance on approach to determination of reporting methodology for trader files Changes to names of normalised reporting methodologies to better reflect data sources Guidance on application of mixed reporting methodologies Minimum requirements for replacement RM normalised revision files
11	2 October 2018	EIEP1	Amendments include: Improvements to add further clarity and consistency following submissions received in response to the 4 August 2017 consultation paper and the Authority's responses and decisions set out in the decision paper. Guidance on split or single files (business requirement 12) Application of mixed methodologies (business requirements 22 and 23) Minimum requirements for replacement RM normalised revisions New file types for distributor to trader files Validation rules for attributes used to calculate network charge Validation rule for register content code where HHR data framed for time-blocked prices Clarity around requirements for NZ Daylight Time adjustment techniques
11.1	28 January 2020	EIEP1	Amendments include: General improvements to add clarity and consistency Changes to ICP classification, replacement of NHH ICP with MM ICP (mass market ICP), and definitions for MM ICP and HHR ICP Mandating EIEP1 'replacement RM normalised' for MM ICPs for both interposed and conveyance

Version	Date amended	EIEP reference	Comments
			arrangements, deleted other options for MM ICPs.
			Providing EIEP1 'as billed' as an option available to distributors for HHR ICPs
			Traders may only provide 'X' partial replacement files if agreed by distributor
			Some changes to requirements for providing and processing of revision month files.
			Clarity around relationship between registry events dates, 'Active' ICP status, start date and end date

Contents

1 EIEP1: Detailed ICP billing and volume information

Title:	EIEP1 – Detailed ICP billing and volume information
Version:	11.1
Application:	This protocol allows: a) traders to provide billing and volume information to distributors at an ICP level to enable distributors to invoice fixed and variable network charges, meet the distributor's network planning, pricing design, and regulatory information disclosure reporting requirements, and provide information to the extended reserve manager. b) distributors to provide billing and volume information to traders to support their invoices for network charges, and to enable traders to reconcile the network charges at detailed level. For trader to distributor files this protocol requires that: c) If the distributor requires billing and volume information for MM ICPs, traders must provide EIEP1 'replacement RM normalised' files for networks with interposed and conveyance arrangements. d) If the distributor requires billing and volume information for HHR ICPs, traders must provide EIEP1 'as billed' files.
Participants:	Trader/Distributor
Code reference:	Clause 3 of Schedule 12A.2
Dependencies:	The use of system agreement (UoSA) between the distributor and the trader may also set out the distributor's billing policies and processes and requirements relating to the information that must be provided in this file.

Description of when this protocol applies
For the purposes of EIEPs 1, 2 and 3: a) a MM ICP (mass market ICP) means an ICP where the highest metering category is 2, or the metering category is 9, or there is no metering installation, and for which the distributor's price category does not require half-hour metering information (or has specified time-blocked periods) for the application of delivery prices b) a HHR ICP (half hour ICP) means an ICP that is not a MM ICP. EIEP1 files are required for invoicing and reconciliation of network charges which are based on ICP fixed and variable delivery prices, to meet the distributor's network planning, pricing design, and regulatory information disclosure requirements, and to enable distributors to provide information to the extended reserve manager. The distributor and trader may also agree that the data provided in EIEP1 files may be used by consumer trusts/distributors for the calculation of income distribution amounts. Unless a distributor has requested otherwise, and the trader agrees (and that agreement is recorded in writing), EIEP1 must be used where a distributor has specified time blocked periods for the application of delivery prices. A data file formatted in accordance with EIEP1 is to be forwarded by the trader to the distributor to provide billing and volume information that enables the calculation of network charges for individual ICPs. EIEP1 files may also be provided to support buyer created invoices for network charges. The billing and volume information for MM ICPs contained in an EIEP1 file provided by the trader to the distributor must use the 'replacement RM normalised' reporting methodology for both interposed and conveyance arrangements.

Description of when this protocol applies

The billing and volume information for HHR ICPs contained in an EIEP1 file provided by the trader to the distributor must use the 'as billed' reporting methodology.

Distributors use data in the EIEP1 files and from other sources (e.g. EIEP2, EIEP3, registry data, reconciliation manager reports) as applicable to their pricing and billing methodology to generate invoices for the fixed and variable network charges and to provide information to traders that supports their invoices for the network charges.

Traders may then use the information provided by distributors in their EIEP1 files to reconcile the network charges at detailed level.

Business requirements

1. The distributor and each trader must agree on the file transport mechanism by which the trader or distributor will provide information and the destination address. Non-manual interfaces use electronic file transfer either via File Transfer Protocol (FTP) or Secure File Transfer Protocol (SFTP) connectivity. In the case of FTP a security mechanism must be used to protect confidentiality. Whatever method is agreed that method must be in a format approved and published by the Authority. The electronic file transport mechanism commonly used for EIEP files is the registry EIEP transfer hub (via the registry EIEP SFTP server).

2. Where information is to be transferred using email, the contents must be delivered in a secure manner and password protected.

3. Unless otherwise agreed between the parties, a trader must deliver any EIEP1 initial file containing billing and volume information for the previous month to the distributor by 1700 hours on the 5th business day (business day as defined in the Code) of the current month.

4. Unless otherwise agreed with the distributor, traders must deliver EIEP1 'replacement RM normalised' revision month files to distributors by 1700 hours on the 5th business day of the month following the month in which the revised submission information for the corresponding reconciliation revision month was delivered to the reconciliation manager. As revised submission information is provided to the reconciliation manager on the 13th business day, traders may provide EIEP1 revision month files to the distributor any day between the 13th business day and 5th business day of the following month.

5. An agent may provide data on behalf of the relevant reconciliation participant, in which case the header for EIEP1 will identify the reconciliation participant. The appointment of an agent must be a permission function of the responsible reconciliation participant and receiving participants must allow for agents in their systems.

6. A trader or distributor must only use codes that are:

    (a)   stipulated in this document; or

    (b)   approved and published by the Electricity Authority (Authority); or

    (c)   determined in the registry and reconciliation manager functional specifications; or

    (d)   in the case of network price category codes or price component codes, these must be those in the distributor's published delivery price schedule (except where a delivery price is unbillable without repackaging the trader may determine and report its own price code).

7. Information relating to individual price component codes must be formatted on separate lines.

8. Information provided in the file must be consistent with the terminology used in the Glossary of Standard Terms published by the Authority.

9. The file must contain all mandatory information, failure to provide the required information will result in the file being deemed as incomplete.

10. Information is to be provided in accordance with the following status codes unless otherwise specified:

    O   Optional

    M   Mandatory

    C   Conditional - Mandatory if available, otherwise Null (also refer to validation rules)

Business requirements

11. To assist in understanding where these apply when files can be communicated both ways between participants, the relevant status code is given in the assigned column either Trader to Distributor or Distributor to Trader.

12. Recipients of EIEP1 files must be capable of receiving I (initial) and R (complete replacement) files. A trader may only provide a X (partial replacement) file if agreed by the distributor.

13. For trader to distributor files, unless the distributor has requested otherwise, and the trader agrees (and that agreement is recorded in writing):

    (e)   billing and volume data relating to MM ICPs must be provided in a separate EIEP1 file to that of HHR ICPs, with a file type of ICPMMRM;

    (f)   billing and volume data for HHR ICPs, if required by the distributor for billing of network charges, must be provided in a separate EIEP1 file to that for MM ICPs, with a file type of ICPHHAB.

14. For distributor to trader files, it is preferable that the distributor provides matching separate files for MM ICPs and HHR ICPs, however where this isn't supported by the distributor's systems, or the parties have agreed to a single file, the distributor may provide a single file containing all ICPs. Each file must include the appropriate file type in the header record.

15. Injection and extraction must to be shown with the 'energy flow direction' indicator, where X (extraction/volume consumed) together with a positive 'unit quantity' represents electricity leaving the network, and I (injection as a result of generation) together with a positive 'unit quantity' represents electricity entering the network (e.g. from embedded generation)..

16. Delivery price schedules should have different price component codes for extraction and injection delivery prices, notwithstanding that the delivery price for injection may be $0.00/kWh. If this is not the case, the extraction and injection volumes must be represented as separate records in the file and must not be netted off against each other or summated as this would result in incorrect interpretation of the data.

17. The data in an EIEP1 file must cover a complete calendar month, unless the sender makes it clear that a different period applies. For as billed this means the volume billed with a bill date during the report month.

18. The 'report month' used in the report detail section must be the same as the 'report month' used in the header.

19. If the trader or distributor becomes aware of a format error or that the file is incomplete, that party must advise the other party as soon as practicable after becoming aware of the issue.

20. If no agreement can be reached as to whether the file is to be a partial or full replacement for the correction of the error as noted above, then a full replacement file must be provided.

21. The first file for the report month must have file status I (initial). Subsequent files must either be R (full replacement), or X (partial replacement) if the distributor has agreed to receive a X (partial replacement) file. On receiving an R file the recipient must remove all previous data for that report month and replace it with the data from the new file. Data for individual ICPs can be replaced by using an X file status, in which case just data for those ICPs must be removed and replaced.

22. If any previously transmitted records are reversed these must be represented by re-reporting the data but with the following changes:

    (a)   Reversal of the sign of the originally transmitted "unit quantity" (recognising that the original unit quantity may have been negative and therefore the reversal would be positive);

    (b)   Capacity and demand figures remain as previously reported and the reversal is inferred from the presence of negative days in the associated 'chargeable days' field; and

    (c)   The 'start date' and 'end date' of a reversal record must replicate the dates that were provided with the original incorrect data and be in the correct chronological order.

Business requirements

23. Prior period correction events, the treatment of which is discussed in each of the reporting methodology options (as appropriate), include:

    (d)   cancelled switches;

    (e)   backdated switches;

    (f)   late processing of switches;

    (g)   switch read changes;

    (h)   late processing of meter changes;

    (i)   correction of readings from stopped/slow/fast meters;

    (j)   meter reading errors; and

    (k)   meter channel multiplier errors.

24. If the distributor requires billing and volume information for MM ICPs, traders must provide EIEP1 'replacement RM normalised' files for networks with interposed and conveyance arrangements.

25. If the distributor requires billing and volume information for HHR ICPs, traders must provide EIEP1 'as billed' files (fie type ICPHHAB).

26. Traders must report the distributor's price component code and delivery price in the EIEP1 files regardless of what they invoice the customer, except where a delivery price is unbillable at the time of customer billing and forces repackaging (e.g. where the chargeable peak period(s) required to bill a coincident peak demand charge is(are) unknown at the time of customer billing) in which case the trader may determine and report its own price code and repackaged price.

27. Volume information exchanged between traders and distributors that contains trading period specific data, or is derived from trading period specific data, must, if applicable, be adjusted for New Zealand Daylight Time using the 'trading period run on technique' which requires that daylight saving adjustment periods are allocated as consecutive trading periods within the relevant day, in the sequence they occur. Further information relevant to New Zealand Daylight Time adjustment techniques can be found in clause 15.36 of the Code.

'As billed' methodology (for HHR ICPs)

28. As billed is a reporting methodology that for both the fixed and variable network charges reflects the actual quantities by network price component code billed to the trader's customer (whether unbundled from or bundled with the retail charges on the customer's bill) with a bill date at any time in the report period. All billed quantities that have a bill date in the report period must be included in the as billed EIEP1 file. The as billed methodology also requires that:

    (a)   fixed and variable charges by network price component code are applied as per the delivery prices in the distributor's published delivery price schedule;

    (b)   ICPs with an 'Active' registry ICP status, and for which the trader was the responsible trader for any part of the report period, but which were not billed by the trader during the report period, are represented by a single detail record per ICP, with UB (unbilled) as the 'meter read status'. For these ICPs, all other mandatory fields must be left blank;

    (c)   where the 'end date' represents a final bill date (e.g. where a customer is moving out or is switching traders), the 'meter read status' must be shown as FL (final);

    (d)   as billed data must contain fixed and variable quantities as billed to the customer (whether unbundled from or bundled with the retail charges on customer bills);

Business requirements

(e) all corrections for under or over-estimates, and for prior period correction events, must be included in future reporting periods by reflecting the corresponding correction that is applied to the customer's bill; and

(f) the I (initial) file must show the correct start and end dates for any corrections or omissions relating to prior periods.

29. Where an ICP has been vacant but has an Active ICP status on the registry, the 'start date' reported in an 'as billed' file must be the date of the new customer contract. Note this may result in data gaps in the 'as billed' file between the new 'start date' and the previous 'end date' associated with the previous customer at that ICP.

30. The start date for as billed must be the 'bill from' date on the bill to the customer which has had a bill produced during the report period.

31. The end date for as billed must be the 'bill to' date on the bill to the customer.

32. The RD (read) status must be used for 'meter read status' if the bill to the customer was based on an actual read, otherwise the status code ES (estimate) must be used. If any bills to a customer have been reversed during the report period, the RV status code must be used.

33. In an 'as billed' file, the RV (reversal), RD (read), ES (estimate) and FL (final) 'meter read status' applies to both F (fixed) and V (variable) network price component code records.

'Replacement RM normalised' methodology (for MM ICPs)

34. 'Replacement RM normalised' is a reporting methodology that for the variable charges reflects volume information submitted to the reconciliation manager, and for the fixed network charges reflects the chargeable days, in both cases for all ICP-days with a registry ICP status of Active against the trader at any time in the report period.

35. This method requires:

(a) that traders must report the distributor's price component code and delivery price in the EIEP1 files regardless of what they invoice the customer, except where a delivery price is unbillable without repackaging (e.g. where the chargeable peak period(s) required to bill a coincident peak demand charge is(are) unknown at the time of customer billing) the trader may determine and report its own price code and repackaged price;

(b) the provision of data for all ICP-days that have had the registry status of Active against the trader at any time during the report period;

(c) volume reported by price component code must align in aggregate (subject to minor exceptions that may occur with month 0[1] processing and timing of reconciliation revisions) with the volume information submitted to the reconciliation manager;

(d) where used by the distributor for invoicing network charges, EIEP1 files must be provided for:

(i) the initial month 0;

(ii) revision months aligned with the reconciliation revision cycle (months 1, 3, 7, 14)[2]; and

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[1] Month 0 is the initial submission file that reconciliation participants must provide to the reconciliation manager on business day 4 of a month for the previous month, and is sometimes also referred to as R0.

[2] Months 1, 3, 7, 14 is the revision submission file that reconciliation participants must provide to the reconciliation manager on business day 13 of a month for the previous month, and is sometimes also referred to as R1, R3, R7 and R14 respectively.

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    (iii) any other revision month aligned with special reconciliations that may be directed by the Authority;

  (e) while the parties may agree in writing that the distributor is not required to produce a wash-up invoice for all the revision files provided by traders:

    (i) the distributor must as a minimum process the files provided by traders and produce an associated wash-up invoice for network charges for:

      1) revision month 3;

      2) any additional revision month requested by a trader; and

      3) any additional revision month for which revision files have been provided by traders aligned with special reconciliation revisions that may be directed by the Authority; and

    (ii) the distributor may at its discretion produce a wash-up invoice for any or all of revision months 1, 7 and/or 14;

  (f) that the distributor's processing of a 'replacement RM normalised' revision file must result in full replacement of all data provided in the previous file, and for the avoidance of doubt there will be valid reasons (e.g. backdated switches) why some ICPs appear in a previous file but not in the replacement file, or appear in the replacement file but not in the previous file;

  (g) volumes reported in revision month files to correct for prior period correction events must align with the volumes submitted to the reconciliation manager for the relevant reconciliation revision cycle.

36. Each revision file must have a 'file status' of R (replacement) and fully replace the previous file.

37. Where an ICP has belonged to the trader for only part of the month, then the date range must only be for that part of the month when the ICP was 'Active' in the registry and the responsibility of that trader.

38. The 'start date' must always be in the same month as the report month, and be either:

 a) the first day of the month being reported;

 b) the date of the day of the event date where the ICP has been electrically connected (if the ICP previously had a registry ICP status of 'Ready') or electrically reconnected (if the ICP previously had a registry ICP status of 'Inactive'), reflecting when the registry ICP status of 'Active' commences; or

 c) the date the ICP switched to the trader.

39. The 'end date' must always be in the same month as the report month, and be either:

 a) the last day of the month being reported;

 b) the date of the day before the event date where the ICP has been electrically disconnected, reflecting when the registry ICP status of 'Active' ends before it changes to 'Inactive' or 'Decommissioned'; or

 c) the date the ICP switched away from the trader (which is the date that the ICP switched to the new trader minus 1 day).

40. Relationship between start date, end date, registry event date and registry 'Active' ICP status:

 a) 'start date' and 'end date' must align with the registry 'Active' ICP status;

 b) Clause 6 of Schedule 15.2 of the Code states that, for NHH meter readings:

Business requirements

<blockquote>

a. If the NHH meter reading is also a switch event meter reading, switch event meter readings are deemed to apply at 0000 hours on the day of the switch event for the gaining trader and to end at 2400 hours on the day before the switch event date for the losing trader.

b. In all other cases, up to and including 2400 hours on the day of meter reading.

</blockquote>

c) where an ICP has been electrically connected (or reconnected), the event date should be the day the ICP was electrically connected (or reconnected), and as it is deemed to have occurred at 0:00:00 on the day of the event date the 'start date' for the purposes of trader EIEP1 files and distributor billing/EIEP1 files (i.e. when the registry ICP status of 'Active' commences).

d) where an ICP has been disconnected or decommissioned, the event date should be the day the ICP was electrically disconnected or decommissioned, but as the event is deemed to have occurred at 23:59:59 on the day before the event date the 'end date' for the purposes of trader EIEP1 files and distributor billing/EIEP1 files must be the date of the day before the event date (i.e. when the registry ICP status of 'Active' ends before it changes to Inactive').

General requirements

1. If there are any conflicts between this document and the Code, the Code takes precedence.

2. In general, all participants must provide the recipient with:

    (a) accurate information for all points of connection at which they are responsible for the current report period

    (b) when available and applicable to the methodology, revised information for all points of connection at which they have purchased or sold electricity during any previous report period

    (c) any additional information requested in respect of any report period.

3. A number of data transfers are required between participants for the EIEP process to take place. Unless the relevant participants have previously agreed otherwise, these data flows must be those required by the Code. At all times data transfers must take place in a secure and predictable manner.

4. It is the responsibility of participants to comply with the Privacy Act when exchanging customer information.

Data inputs

Information from a participant's billing system and/or reconciliation submission files.

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
Header record type	Char 3	M	M	HDR – indicates the row is a header record type
File type	Char 7	M	M	For Trader to Distributor files: If 'as billed' file for HHR ICPs - ICPHHAB If 'replacement RM normalised' file for MM ICPs - ICPMMRM For Distributor to Trader files: If separate billing file for HHR ICPs – ICPHHR If separate billing file for MM ICPs – ICPMM If single billing file for both HHR and MM ICPs - ICPALL
Version of EIEP	Num 3.1	M	M	Version of EIEP that is being used for this file.
Sender	Char 20	M	M	Name of sending party. Participant identifier to be used if the sender is a participant. *E.g. POCO where Powerco as a participant is the sender, or NGConsulting where as an agent, NGConsulting is the sender on behalf of a participant.*
Sent on behalf of participant identifier	Char 4	M	M	Participant identifier of party on whose behalf volume data is provided.
Recipient participant identifier	Char 4	M	M	Valid recipient participant identifier
Report run date	DD/MM/YYYY	M	M	Date the report is run
Report run time	HH:MM:SS	M	M	Time the report is run
Unique file identifier	Char 15	M	M	Number that uniquely identifies the file
Number of detail records	Num 8	M	M	Total number of DET records in report
Report period start date	DD/MM/YYYY	M	M	Report run start date (inclusive)
Report period end date	DD/MM/YYYY	M	M	Report run end date (inclusive)
Report month	YYYYMM	M	M	The month the report is run for.
Utility type	Char 1	M	M	Type of energy supply; G = Gas; or E = Electricity

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
File status	Char 1	M	M	I (Initial) or R (Replacement) or X (Partial Replacement, replace only those ICPs contained in this partial replacement file)

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
Detail record type	Char 3	M	M	DET – indicates the row is a detail record.
ICP identifier	Char 15	M	M	Unique identifier for an ICP created by a distributor in accordance with clause 1 of Schedule 11.1 of the Code
Start date	DD/MM/YYYY	C	M	Start date of fixed or variable record. Mandatory unless as billed file and 'meter read status' equals UB
End date	DD/MM/YYYY	C	M	End date of fixed or variable record. Mandatory unless as billed file and 'meter read status' equals UB
Price description	Char 75	O	O	Null unless required to further describe the price code.
Unit of measure	Char 25	C	M	The type of unit applicable to the value in the 'Unit quantity' field. Examples are provided in table 3. Mandatory unless as billed file and 'meter read status' equals UB.
Unit quantity	Num 12.2	C	M	Unit quantity as appropriate to the 'Unit of measure' field (e.g. injection or extraction volume in kWh, chargeable demand or capacity in kW or kVA, or the number of chargeable items for connection, equipment or fixture per day delivery prices) Mandatory unless as billed file and 'meter read status' equals UB.
Meter read status	Char 2	C	C	Mandatory except Null where only fixed charges apply. RD = Read, ES = Estimate, RV = Reversal. For as billed files only, FL = Final, UB = Unbilled.

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
POC	Char 8	C	M	Valid code for the point of connection to which the ICP is connected for the period between the start date and the end date. For local networks 'POC' is typically referred to as the GXP. Mandatory for trader to distributor files where relevant to the distributor's pricing (and Null in the as billed file where the 'meter read status' equals UB).
Network participant identifier	Char 4	M	M	Network participant identifier
Spare		O	O	Empty
Price component code	Char 25	C	M	Price component code[3] for each fixed and variable delivery price as per the distributor's published delivery price schedule. Mandatory unless as billed file and 'meter read status' equals UB
Delivery price	Num 12.6	C	M	Fixed or variable delivery price[4] as per the distributor's published delivery price schedule. The delivery price is to be expressed in $ excl GST and net of prompt payment discount. Mandatory unless as billed file and 'meter read status' equals UB
Fixed/Variable	Char 1	C	M	F (Fixed) or V (Variable). Mandatory unless as billed file and 'meter read status' equals UB
Chargeable days	Int 7	C	C	Number of days between start date and end date (both dates inclusive) where used in the network charge calculation for per day prices. otherwise Null Mandatory unless as billed file and 'meter read status' equals UB
Network charge	Num 11.2	C	M	The network charge (in $ excluding GST, net of any prompt payment discount) which is the product of 'Unit quantity', 'Chargeable days' and 'Delivery price' as applicable. Mandatory unless as billed file and 'meter read status' equals UB, and where information supports an invoice.

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[3] Except where the delivery price is unbillable at the time of customer billing and forces the trader to repackage.

[4] Except where the delivery price is unbillable at the time of customer billing and forces the trader to repackage.

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
Register content code	Char 6	C	O	A code that identifies the type of information being recorded by the channel and must reflect the physical or programmed configuration of the metering installation. Selected from a list in the registry. For clarity, where HHR data is aggregated for time-blocked prices the register content code must reflect the physical or programmed channel.
Period of availability	Num 2	C	O	Minimum number of hours within a day that supply is available, or controlled part is available for an inclusive channel (<=24) Where HHR data is aggregated for time-blocked prices the period of availability must reflect the physical or programmed NHH channel, rounded up or down where the period is for an odd number of trading periods (provided the total for a day is <=24).
Report month	YYYYMM	M	M	The month for which the report is run. Must match the month given in the header for 'Report Month'.
Customer no	Char 15	C	O	Trader's customer number (the identifier that the trader assigns to the customer, which remains the same across all the connections for the customer). Required in the trader to distributor file where available, otherwise Null (and Null in the as billed file where the 'meter read status' equals UB
Consumer no	Char 15	C	O	Trader's consumer number. Defined as the trader's unique ID that links the premises and the customer. Required in the trader to distributor file where available, otherwise Null (and Null in the as billed file where the 'meter reading status' equals UB
Invoice date	DD/MM/YYYY	O	M	
Invoice or invoice reference number	Char 20	O	M	Populate with actual invoice number or a reference number which is quoted on the invoice to the trader.

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
Energy flow direction	Char 1	C	C	An identifier of whether the channel records the import (injection from the ICP into the network) ("I"), or the export (extraction from the network to the ICP) ("X"). Mandatory unless as billed and 'meter read status' equals UB. Null if fixed charge

Protocol specifications

1. The information is to be provided as a comma delimited text file. Commas are therefore prohibited within fields.

2. Each formatted file must consist of one or more records, with each record being a single line of text as defined in the business rules. Records must be delimited with one of the following:

   (a) a carriage return character and a line feed character combination (ASCII characters 13 and 10) commonly used in Windows based programs; or

   (b) a line feed character (ASCII character 10) commonly used in Unix based programs; or

   (c) a carriage return character (ASCII character 13) commonly used in Mac based programs.

3. Data fields within files must be defined using the attributes in the table following these specifications.

4. Matching of file names, code list values, etc, must be case insensitive.

5. Each data file must contain only one header but can contain any number of detail records.

6. The first record of a file must contain 'Header" information followed by one or more detail lines.

7. Each file created must have a file name as outlined below and must have names that are unique within any month.

   Sender + Utility Type (only "E" to be used) + Recipient + File Type + Report Month + Report Run Date + UniqueID# (e.g. hhmm run time, or ICP but limited to Char (60)) with an extension of .TXT and with the components concatenated using the underscore character, to assist readability.

   e.g. TRUS_E_UNET_ICPMMRM_201910_20191105_UniqueID.TXT
   [Char4_Char1_Char4_Char7_yyyymm_yyyymmdd_Char60.TXT]

8. The format provides for several EIEP1 file types supporting the following:

   (a) For trader to distributor files:

      (i) ICPMMRM - used for 'replacement RM normalised' file for MM ICPs, where ICP level data summed at meter channel - delivery price level aligns in aggregate with the volume information submitted to the reconciliation manager for a report month

      (ii) ICPHHAB – used for 'as billed' file for HHR ICPs, where ICP level data reflects that billed to customers in a report month

   (b) For distributor to trader files:

      (i) ICPMM - used for a separate billing file of MM ICPs

      (ii) ICPHHR – used for a separate billing file of HHR ICPs

      (iii) ICPALL - used for a single billing file of all ICPs

Data outputs

Completed file for transmission to traders.

2 Table of codes used in EIEP1

2.1 Table 1 List of attributes to define data fields used in EIEP1

Logical format	Data type	Rules	Example
INT (n)	Integer	ASCII representation of an integer number (ie no decimals), no leading zeros, no spaces, a leading "-" if negative (no sign if positive), with 1 to n digits. Numbers only: ASCII characters 48 to 57, and 45 where applicable.	INT (4) 12 -1234
NUM (n.d)	Decimal	ASCII representation of a decimal number (ie a rational number), no spaces, a leading "-" if negative (no sign if positive), with up to n digits including up to (n minus d) digits to the left of the decimal place, and up to d digits to the right of the decimal place. For integers, the decimal point is not required. A decimal point on its own must not be used to represent zero (use "0") Trailing zeros are optional. No leading zeros other than when the number starts with "0." Numbers only: ASCII characters 48 to 57, and 45/46 where applicable.	NUM (6.2) 123.45 1234.0 -12.32 NUM (6.3) -0.123 23.987 987.000 8
CHAR (n)	Text	Up to n characters (ASCII characters 32 to 43 and 45 to 126 only). As commas (ASCII character 44) are used as field separators, they must not be used within the field data (it is recommended that any commas found in source data be changed to a semi-colon (ASCII character 59) when files are created. Fields must not contain any leading or trailing spaces.	The quick brown fox
DATE	Date	ASCII format with: Year represented as: — YYYY for century and year Month represented as: — MM to display leading zero Day represented as — DD to display leading zero ASCII format for any separators used	YYYYMMDD e.g. 20050216 DD/MM/YYYY e.g. 16/02/2005
TIME		ASCII in 24 hour format Hour represented as HH with leading zeros Minutes represented as MM with leading zeros Seconds represented as SS with leading zeros	HH:MM:SS e.g. 13:15:01 HH:MM e.g. 13:15

Logical format	Data type	Rules	Example
		ASCII format for any separators used Note: both NZST and NZDT will be used and will be indicated as necessary	
DATETIME	Date/Time	ASCII format with same rules as both Date and Time Data Types	YYYYMMDDHHMMSS e.g. 20050216131501
NULL	Null	Field contains no data	

2.2   Table 2 ASCII character set for use within fields of EIEP1.

ASCII character set for use within fields of EIEPs

Character	ASCII
32	Space
33	!
34	"
35	#
36	$
37	%
38	&
39	'
40	(
41	)
42	*
43	+
45	-
46	.
47	/
48	0
49	1
50	2
51	3
52	4
53	5
54	6
55	7
56	8
57	9
58	:
59	;
60	<
61	=
62	>
63	?

Character	ASCII
64	@
65	A
66	B
67	C
68	D
69	E
70	F
71	G
72	H
73	I
74	J
75	K
76	L
77	M
78	N
79	O
80	P
81	Q
82	R
83	S
84	T
85	U
86	V
87	W
88	X
89	Y
90	Z
91	[
92	\
93	]
94	^
95	_
96	`

Character	ASCII
97	a
98	b
99	c
100	d
101	e
102	f
103	g
104	h
105	i
106	j
107	k
108	l
109	m
110	n
111	o
112	p
113	q
114	r
115	s
116	t
117	u
118	v
119	w
120	x
121	y
122	z
123	{
124		
125	}
126	~

2.3   Table 3 Unit of measure table

Unit	Description
kWh	kilowatt hour energy (real energy)
kW	kilowatt demand (real power), or capacity
kVAh	kilovolt ampere hour energy (apparent energy)
kVA	kilovolt ampere demand (apparent power), or capacity rating
kVArh	kilovolt ampere reactive hour energy (reactive energy)
kVAr	kilovolt ampere reactive demand (reactive power)
kVA-km	kilovolt ampere capacity multiplied by kilometres
Con or ICP	used for per connection per day or per ICP per day delivery prices
Equipment	typically used for dedicated equipment delivery prices (e.g. transformers)
Fixture	typically used for per fixture delivery prices associated with streetlighting
Note: This list is not exhaustive, alternative units of measure and descriptions may be used if contained in the distributor's published delivery price schedule.	