Electricity Information Exchange Protocols (EIEP)

EIEP2: Aggregated billing and volume information
Regulated

Effective from 1 April 2021

Version control

Version	Date amended	EIEP Ref	Comments
10	11 November 2013 1 May 2014 30 May 2014	EIEP2	Amendments from March 2013 consultation Template reformatted Approved and publicised by the Authority
10.1 draft	30 June 2017	EIEP2	Amendments include: Terminology alignment with ENA pricing guidelines and preferences agreed with ENA Improvements to add clarity and consistency to content
11	2 October 2018	EIEP2	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. Requirements for New Zealand Daylight Time adjustment techniques, consistent with the corresponding changes made to EIEPs 1 and 3. Change 'Price category code" field to 'Price description", and amend the validation rule, consistent with the changes to EIEP1 Amend file types for distributor to trader files Amend the 'Unit or measure' table, consistent with the changes to EIEP1
11.1	28 January 2020	EIEP2	Amendments include: 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 Consistency with EIEP1

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Title:	EIEP2: Aggregated billing and volume information
Version:	11.1
Application:	This protocol allows: a) traders to provide aggregated EIEP1 billing and volume information to distributors b) distributors to provide aggregated billing and volume information to traders that supports the distributor's invoice and enables reconciliation of the distributor's network charges covered by the file
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. This protocol is particularly useful for distributors that calculate network charges based only on aggregate categories of ICPs. If required by the distributor, traders must provide an EIEP2 file to enable billing of network charges for aggregated categories of ICPs, or to support buyer created invoices. If the distributor uses data from EIEP2 files for billing of network charges for aggregated categories of ICPs, it must provide an EIEP2 file to traders to support its invoice for network charges and to enable traders to reconcile the network charges at aggregated level. Where chargeable quantities derived from reconciled volumes are used for billing of variable network charges (e.g. where the distributor has GXP peak demand and/or GXP volume pricing), the distributor must provide an EIEP2 file to support its invoice for the variable network charges.

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 EIEP2 file containing billing information for the previous month to the distributor by 1700 hours on the 5th business day (business

Business requirements

day as defined in the Code) of the current month.

4. Unless otherwise agreed with the distributor, traders must deliver EIEP2 '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 EIEP2 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 EIEP2 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 functional specifications; or

   (d)   in the case of price category codes or price component codes, these must be those in the distributor's published delivery price schedule.

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)

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. If both EIEP1 and EIEP2 files are provided for ICP priced networks, the sum of the EIEP1 quantities by price component code must match the corresponding aggregate total quantities by price component code in the EIEP2 file for same report month.

13. Injection and extraction is 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).

14. 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 be summated as this would result in incorrect interpretation of the data

15. The data in an EIEP2 file must cover a complete calendar month, unless the sender makes it clear that a different period applies.

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

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

18. 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 is required.

Business requirements
19. Recipients of EIEP2 files must be prepared to receive 'I' (initial) and 'R' (complete replacement) files. The first file for the report month should have file status I (initial). Subsequent files must be R (full replacement) files. 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.
20. Traders must report the distributor's price component code and delivery price in the EIEP2 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.
21. 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.

General requirements
1. If there are any conflicts between this document and the Code, the Code will take 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, 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 in order for the EIEP process to take place. Unless the relevant participants have agreed not to use the EIEP, these data transfers must be those required by the EIEP. At all times data transfers must take place in a secure and predictable manner.
4. It is the responsibility of participants to meet the principles of 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

Event data	Format	Trader to Distributor: Mandatory/ Optional/ Conditional	Distributor to Trader: Mandatory/ Optional/ Conditional	Validation rules
File type	Char 7	M	M	For Trader to Distributor files: If summary of EIEP1 ICPHHAB - SUMHHAB If summary of EIEP1 ICPMMRM - SUMMMRM For Distributor to Trader files: If summary of EIEP1 ICPHHR – SUMHHR If summary of EIEP1 ICPMM – SUMMM If summary of EIEP1 ICPALL – SUMALL If billing file is for chargeable quantities derived from reconciled volumes - SUMRECN
Version of EIEP	Num 3.1	M	M	Version of EIEP protocol 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 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
File status	Char 1	M	M	I = Initial or R = Replacement

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.
Region	Char 20	M	M	Name of POC or region (group of POCs). Use "ALL" when information represents a total for the price component code.
Distributor participant identifier	Char 4	M	M	Valid code of the network participant
Price description	Char 75	O	O	Null unless required to further describe the price code.
Price component code	Char 25	M	M	Price component code[1] as per the distributor's published delivery price schedule
Delivery price	Num 12.6	M	M	Fixed or variable delivery price[2] 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.
Fixed/Variable	Char 1	M	M	F (Fixed) or V (Variable)
ICP Count	Int 6	M	C	Count of ICPs in category (not required for SUMRECN files)
Chargeable days	Int 7	M	C	Sum of chargeable days between Start date and End date (both dates inclusive) for all ICPs represented in the record (not required for SUMRECN files)
Energy flow direction	Char 1	M	M	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"). Refer to business rules in relation to same price component code options for both X and I.
Peak charge date	DD/MM/YY YY	C	C	Where relevant, indicates the date that the load for the peak charge is taken from.
Peak charge trading period	Int 2	C	C	Where relevant, indicates the trading period (of the date above) that the load for the peak charge is taken from.

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

[2] 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
Unit of measure	Char 25	M	M	The type of unit applicable to the value in the 'Unit quantity' field, as per the distributor's published delivery price schedule[3] (examples are in table 3)
Unit quantity	Num12.2	M	M	Total unit quantity as appropriate to the 'Unit of measure' field
Network charge	Num 11.2	C	M	The total network charge (in $ excluding GST and net of any prompt payment discount) Mandatory where the information supports an invoice.
Report month	YYYYMM	M	M	The month the report is run for, must match the month given in the header for 'Report Month'.
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.

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 will consist of one or more records, with each record being a single line of text as defined in the business rules. Records are to 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 are defined using the attributes in the table following these specifications.

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

5. Each data file will contain only one header, but may contain any number of detail records.

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

7. Each file created will 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_SUMMMRM_201910_20191102_ UniqueID.TXT [Char4_Char1_Char4_ Char7_yyyymm_yyyymmdd_Char60.TXT]

8. The format provides for several EIEP2 file types supporting the following:
   - (a) For trader to distributor files, a summary total of an EIEP1 file (with matching total days, kWh, and dollars by region by price component code) where the file type corresponds to a total of the file types defined in EIEP1 as follows:
     - (i) SUMHHAB – used for summary of EIEP1 ICPHHAB file

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

Protocol specifications

(ii)   SUMMMRM – used for summary of EIEP1 ICPMMRM file
  (b)   For distributor to trader files, file types as follows:
       (i)   SUMHHR – used for summary of EIEP1 ICPHHR
       (ii)   SUMMM – used for summary of EIEP1 ICPMM
       (iii)   SUMALL – used for summary of EIEP1 ICPALL
       (iv)   SUMRECN – used where the billing file is for chargeable quantities derived from reconciled volumes, e.g. GXP peak demand and/or GXP volume pricing

Data outputs
Completed file for transmission.

2 Table of codes used in EIEP2

2.1 Table 1 List of attributes to define data fields used in EIEP2

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.	NUM (6.2) 123.45 1234.0 -12.32
		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 (6.3) -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	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 ASCII format for any separators used Note: both NZST and NZDT will be used and will be indicated as necessary	HH:MM:SS e.g. 13:15:01 HH:MM e.g. 13:15
DATETIME	Date/Time	ASCII format with same rules as both Date and Time Data Types	YYYYMMDDHHMMSS e.g. 20050216131501

Logical format	Data type	Rules	Example
NULL	Null	Field contains no data	

2.2 Table 2 ASCII character set for use within fields of EIEP2

Character	ASCII	Character	ASCII	Character	ASCII
32	Space	64	@	97	a
33	!	65	A	98	b
34	"	66	B	99	c
35	#	67	C	100	d
36	$	68	D	101	e
37	%	69	E	102	f
38	&	70	F	103	g
39	'	71	G	104	h
40	(	72	H	105	i
41	)	73	I	106	j
42	*	74	J	107	k
43	+	75	K	108	l
		76	L	109	m
45	-	77	M	110	n
		78	N	111	o
46	.	79	O	112	p
47	/	80	P	113	q
48	0	81	Q	114	r
49	1	82	R	115	s
50	2	83	S	116	t
51	3	84	T	117	u
52	4	85	U	118	v
53	5	86	V	119	w
54	6	87	W	120	x
55	7	88	X	121	y
56	8	89	Y	122	z
57	9	90	Z	123	{
58	:	91	[	124		
59	;	92	\	125	}
60	<	93	]	126	~
61	=	94	^		
62	>	95	_		
63	?	96	`		

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

Unit	Description
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 or per ICP per day delivery prices
Equipment	typically used for specific dedicated equipment (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 delivery price schedule.	