

# Retail Data Project: Access to Consumption Data Formats and Process document

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## Consultation Paper

Submissions close: 5pm, 12 May 2015

28 April 2015



## **Glossary of abbreviations and terms**

<b>Act</b>	Electricity Industry Act 2010
<b>Authority</b>	Electricity Authority
<b>Code</b>	Electricity Industry Participation Code 2010
<b>Minister</b>	Minister of Energy and Resources
<b>EIEP</b>	Electronic Information Exchange Protocol



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# 1. Introduction and purpose of this paper

## 1.1 Introduction

- 1.1.1 The purpose of this consultation paper is to seek feedback on formats the Authority has developed to provide consumption information to consumers.
- 1.1.2 The material has been developed as part of the Retail Data Project with input from a technical working group and from previous consultation papers. The Authority is also asking for feedback on a procedures document that will assist in the exchange of this information.
- 1.1.3 The Retail Data Project is divided into three phases:
- (a) Access to Consumption Data.
  - (b) Access to Tariff and Connection Data.
  - (c) Access to Monitoring Data.
- 1.1.4 Following a paper outlining the three issues above, published in early 2014, the Electricity Authority (Authority) consulted on phase one of the project: Access to Consumption Data.
- 1.1.5 The Authority published a decisions and reasons paper in January 2015. The paper outlined the Authority's intention to amend the Electricity Industry Participation Code 2010 (Code) to allow consumers to access their consumption data in a standardised and useful format.
- 1.1.6 The paper referred to the original consultation paper stating that "The formats will be based on the electronic information exchange protocol (EIEP) format described in the Authority's consultation paper, or other appropriate formats developed with input from a technical working group.<sup>1</sup> The technical working group will have broad representation, including 'non-participant' energy services companies".
- 1.1.7 On 17 March 2015, the Authority convened a technical working group to discuss the formats and a process document to use in the exchange of information. Representatives from participants and non-participant energy services companies were in attendance.
- 1.1.8 All previous documents relating to the retail data project can be found here: <http://www.ea.govt.nz/development/work-programme/retail/retail-data/>

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<sup>1</sup> Retail data project: access to consumption data, Consultation paper, 15 July 2014.

- 1.1.9 Submissions on all formats and the procedures document are sought from interested parties.

## 1.2 Submissions

The Authority's preference is to receive submissions in electronic format (Microsoft Word). It is not necessary to send hard copies of submissions to the Authority, unless it is not possible to do so electronically. Submissions in electronic form should be emailed to [submissions@ea.govt.nz](mailto:submissions@ea.govt.nz) with Consultation Paper—Retail Data Project: Access to Consumption Data Formats and Process document in the subject line.

If submitters do not wish to send their submission electronically, they should post one hard copy of their submission to the address below.

Submissions  
Electricity Authority  
PO Box 10041  
Wellington 6143

Submissions  
Electricity Authority  
Level 7, ASB Bank Tower  
2 Hunter Street  
Wellington

Tel: 0-4-460 8860

Fax: 0-4-460 8879

- 1.2.1 Submissions should be received by 5pm on 12 May 2015. Please note that late submissions are unlikely to be considered.
- 1.2.2 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions' Administrator if you do not receive electronic acknowledgement of your submission within two business days.
- 1.2.3 If possible, submissions should be provided in the format shown in Appendix B. Your submission is likely to be made available to the general public on the Authority's website. Submitters should indicate any documents attached, in support of the submission, in a covering letter and clearly indicate any information that is provided to the Authority on a confidential basis. However, all information provided to the Authority is subject to the Official Information Act 1982.

## 2. Background

### 2.1 Retail Data Project

- 2.1.1 In January 2014, the Authority consulted widely over its concerns about the availability of retail data. The consultation highlighted three areas the Authority considered could improve competition and consumer engagement in the electricity market:
- (a) Access to Consumption Data.
  - (b) Access to Tariff and Connection Data.
  - (c) Access to Monitoring Data.
- 2.1.2 In March 2014, the Authority held a forum to further discuss these areas in the consultation paper. The forum included a wider group of interested parties including energy service providers that are not participants, and consumer representatives.
- 2.1.3 The consultation closed on 11 March 2014, and submissions were collated and published on 16 July 2014.
- 2.1.4 The Authority decided on a phased approach to deal with the areas discussed in the issues paper. A consultation paper relating to the first phase, Access to Consumption Data, was released on 15 July 2014. Submissions closed on 26 August 2014.
- 2.1.5 The Authority Board approved a Code amendment that will come into effect on 1 February 2016. A decisions and reasons paper for amendment was published on 27 January 2015 along with the submissions on the original consultation paper.
- 2.1.6 One of the requirements of the Code amendment is that retailers must provide information to consumers on request. In this context “retailer” includes any participant that supplies electricity to any other person for any purpose other than for resupply by the other person. This definition includes retailers that purchase electricity from any other person to on sell to a consumer.
- 2.1.7 The clauses that require retailers to provide information are:
- (a) clause 11.32B(2): retailers must comply with the procedure publicised by the Authority
  - (b) clause 11.32F: the Authority must publicise the procedures for responding to requests, and the manner and the formats for providing information to consumers.

2.1.8 The Code amendment is attached as appendix A.

### **3. The Authority has developed procedures and formats for providing consumption information**

- 3.1.1 The Authority has developed draft procedures and three draft file formats for discussion with interested parties. This consultation focuses on these documents.
- 3.1.2 The Authority convened a technical working group on 17 March 2015 to discuss the draft procedures and the draft file formats for providing consumers' consumption data. The draft procedures and draft file formats have been developed using the technical group's recommendations.
- 3.1.3 Other international formats were considered for use in the exchange of consumption data. The Authority decided these would be too costly to implement and therefore were not viable.

### **3.2 Draft procedures for providing consumer consumption information**

- 3.2.1 The draft procedures set out process requirements that will apply when retailers provide consumption information to consumers. The draft procedures are attached as appendix C.

**Q1. Do you have any comments on the draft procedure document for the exchange of consumer consumption information?**

### **3.3 Draft file formats for providing consumer consumption information**

- 3.3.1 To facilitate the efficient transfer of consumer consumption information under the Code, the Authority has developed:
- (a) EIEP 13A: Detailed electricity consumption information for consumers or their agents (half hour and non-half hour)
  - (b) EIEP 13B: Summary consumption information
  - (c) EIEP 13C: Electronic request file for EIEP 13A.
- 3.3.2 Currently the definition for EIEP covers the exchange of information between traders and distributors. It is the Authority's intention to amend

the Code to broaden this definition. This amendment will come into effect prior to 1 February 2016.

- 3.3.3 In order to provide consumption information, retailers may need to develop processes to:
- (a) ensure that information is released only to the relevant consumer or consumer's authorised agent (this is further discussed in the draft procedures)
  - (b) provide EIEP 13A and EIEP 13B, as appropriate, on request to the relevant consumer or consumer's authorised agent
  - (c) receive an EIEP 13C from a consumer's agent and provide EIEP 13A in response.

### **3.4 EIEP 13A: Detailed electricity consumption information for consumers (half hour and non-half hour)**

- 3.4.1 EIEP 13A is attached as appendix D. EIEP 13A:
- (a) must be used by retailers when providing information on request from its consumer or the consumer's agent
  - (b) is CSV file format only
  - (c) is intended for machine to machine information exchanges
  - (d) may be used by agents acting on behalf of consumers, or by consumers with the ability to manipulate consumption information in spreadsheets
  - (e) includes both half hour and non-half hour consumption information as a date and time series as detailed below.
    - (i) If the resolution of a read is less than one whole day, the Time part of the DateTime formatted value reflects the appropriate hours and minutes of the record (e.g. a trading period record for the second trading period on 1 March 2016 will have a start date/time of "01/03/2016 00:30" and an end date/time of "01/03/2016 01:00").
    - (ii) If the interval of a record is equal to or longer than one whole day, the Time part of the DateTime format value reflects the appropriate days of the record (e.g. a read with a start date of 1 May 2016 and an end date of 5 June 2016 will be shown as start date/time of "01/05/2016 00:00" and an end date/time of "05/06/2016 00:00").

- (f) It requires retailers to use the most detailed consumption information that the retailer holds in its systems. For example, if a retailer holds half hourly information for publication on the web and non-half hourly information in its billing system, then the retailer should provide an EIEP 13A using half hour time periods.
- 3.4.2 The manner in which EIEP 13A information will be provided is electronic only, and may be transferred via either:
- (a) the registry EIEP transfer hub (EIEP hub), in which case EIEP 13A will be encrypted and decrypted automatically; or
  - (b) a valid email address, in which case the retailer and consumer or consumer's agent must determine how the contents of EIEP 13A may be protected.
- 3.4.3 To receive consumption information in the EIEP 13A format via the EIEP hub, a consumer's agent will need to request access to the EIEP hub from the Authority. If the Authority approves the request, the agent may be required to agree to an access agreement and will:
- (a) receive a four character identifier
  - (b) receive registry SFTP access to the EIEP hub.
- 3.4.4 In the case of SFTP access, the consumer's agent will need to query their registry outbox to obtain the consumption information.
- 3.4.5 To receive an EIEP 13A by email, a consumer or the consumer's agent will need to provide the retailer with a valid email address.
- 3.4.6 On receipt of an EIEP 13A by email, a consumer may elect to send the information to any other party. Protection of the contents of the email in that case is the responsibility of the consumer or the consumer's agent.

- Q2. Do you have any comments on the draft EIEP 13A?**
- Q3. Do you consider there are alternatives to an EIEP 13A? Please give reasons for the alternatives.**

## 3.5 EIEP 13B: Summary consumption information

- 3.5.1 EIEP 13B is attached as appendix E. EIEP 13B:
- (a) is CSV file format or hard copy
  - (b) is intended for machine to consumer information exchanges

- (c) may be used by consumers or agents acting on behalf of consumers
- (d) includes both half hour and non-half hour consumption information as a date and time series as detailed below.
  - (i) If the resolution of a read is less than one whole day, the Time part of the DateTime formatted value reflects the appropriate hours and minutes of the record (eg a trading period record for the second trading period on 1 March 2016 will have a start date/time of “01/03/2016 00:30” and an end date/time of “01/03/2016 01:00”).
  - (ii) If the interval of a record is equal to or longer than one whole day, the Time part of the DateTime format value reflects the appropriate days of the record (eg a read with a start date of 1 May 2016 and an end date of 5 June 2016 will be shown as start date/time of “01/05/2016 00:00” and an end date/time of “05/06/2016 00:00”).

3.5.2 The Authority recognises that retailers may find other ways to provide the information contained in the EIEP 13B to their consumers. For this reason, EIEP 13B would only apply where:

- (a) a retailer does not make equivalent information available at no cost to consumers via the Retailer’s web portal; or
- (b) the consumer asks that the information be provided in printed form.

3.5.3 Information must be provided electronically or in hard copy by post, whichever the consumer or the consumer’s agent chooses, and must be provided as follows:

- (a) If the requesting party is a consumer
  - (i) to a valid email address in which case the retailer and consumer must agree how the contents of the EIEP13B may be protected; or
  - (ii) in hard copy posted to the consumer.
- (b) If the requesting party is the consumer’s agent
  - (i) via the EIEP hub in which case EIEP 13B will be encrypted and decrypted automatically; or
  - (ii) to a valid email address in which case the retailer and the consumers agent must agree how the contents of the EIEP13B may be protected; or
  - (iii) in hard copy posted to the consumers agent.

- 3.5.4 The time period used in an EIEP 13B must be the most detailed consumption information that the retailer holds in its systems, and must comply with the following:
- (a) for electronic file delivery - if a retailer holds half hourly information for publication on the web and non-half hourly information in its billing system, then the retailer should provide an EIEP 13B using half hour time periods.
  - (b) for a printed file delivery, EIEP13B must contain the information that was used to generate the customer's invoice.
- 3.5.5 Where a consumer or the consumer's agent makes a request to a retailer for the information contained in the EIEP 13B, the retailer must either:
- (a) direct the consumer to the retailer's web portal where consumption information can be obtained; or
  - (b) email the consumer the consumption information equivalent to EIEP 13B; or
  - (c) provide a hard copy of consumption information in EIEP 13B format.
- 3.5.6 In the case of a consumer's agent using the EIEP hub, paragraphs 3.4.4 and 3.4.5 apply.
- 3.5.7 To receive the consumption data in an EIEP 13B format by email, a consumer or the consumer's agent will need to provide the retailer with a valid email address.
- 3.5.8 On receipt of their consumption data, via the EIEP 13B format, by email or post, a consumer may elect to send the information to any other party. Protection of the contents of the email or post in that case is the responsibility of the consumer or the consumer's agent.

- Q4. Do you have any comments on the proposed EIEP 13B? Please give reasons and discussion where you disagree.**
- Q5. Do you consider there are alternatives to an EIEP 13B? Please give reasons for the alternatives.**
- Q6. Do you currently have a method for providing a consumer consumption information? If yes, what is the method and does it include the information that is in EIEP 13B?**

## 3.6 EIEP 13C: Electronic request file for EIEP 13A

- 3.6.1 The draft EIEP 13C is an electronic request file for a consumer's consumption information. The electronic file is intended to be used by a consumer's agent (which could also be another retailer) authorised by the consumer.
- 3.6.2 EIEP 13C, attached as appendix F:
- (a) is CSV file format only
  - (b) can only be provided from the consumer's agent to the retailer via the EIEP hub
  - (c) is intended for machine to machine request exchange
  - (d) may only be used by agents acting on behalf of consumers
  - (e) allows the consumer's agent to request EIEP 13A.
- 3.6.3 If a retailer receives a request in EIEP 13C format, the retailer must provide the requested file format to the consumer's agent regardless of what equivalent information was available to the consumer.
- 3.6.4 To ensure that a repeat request for information is correctly processed, EIEP 13C proposes the inclusion of a unique number termed the "Consumer Authorisation code". The Consumer Authorisation code could provide a time and consumer boundary within the retailer's system, to ensure that only the appropriate information is released.

- Q7. Do you agree that an EIEP 13C is required? Please give reasons and discussion where you disagree or consider there are alternatives.**
- Q8. Do you agree that an electronic request form should be provided to allow machine to machine requests provided that the retailer has verified the consumer's request? Please give reasons where you disagree.**
- Q9. Do you agree with the use of a Consumer Authorisation code in EIEP 13C? If you disagree please give reasons.**
- Q10. Do you agree that the registry EIEP transfer hub should be used as one of the transfer mechanisms for EIEP 13A and 13C? Please give reasons where you disagree.**

## Appendix A Code amendment

### Part 11

#### Registry information management

...

##### 11.1 Contents of this Part

This Part—

- (a) provides for the management of information held by the **registry**; and
- (b) prescribes a process for switching **customers** and **embedded generators** between **traders**; and
- (c) prescribes a process for a **distributor** to change the record in the **registry** of an **ICP** so that the **ICP** is recorded as being usually connected to an **NSP** in the **distributor's network**; and
- (d) prescribes a process for switching responsibility for **metering installations** for **ICPs** between **metering equipment providers**; and
- (e) prescribes a process for dealing with **retailer events of default**; and
- (f) requires **retailers** to give **consumers** information about their own consumption of **electricity**.

...

*Access by consumers to information about their own electricity consumption*

##### **11.32A Retailers must hold information about consumer electricity consumption**

- (1) Each **retailer** must, if requested by a consumer with whom the retailer has a contract to supply **electricity**, or with whom the **retailer** has had such a contract in the last 24 months, give the **consumer** any of the information specified in subclause (2) that the **consumer** requests.
- (2) The information referred to in subclause (1) is information relating to any period in the 24 months preceding the request—
  - (a) about the **consumer's** consumption of **electricity** relating to each **ICP** at which the **retailer** supplied **electricity** to the **consumer**; and
  - (b) used by the **retailer** to—
    - (i) calculate the amount of **electricity** consumed by the **consumer** at each **ICP**; or
    - (ii) provide any service to the **consumer**.

##### **11.32B Requests for information**

- (1) A **retailer** to which a request is made must give the information to the **consumer** no later than 5 **business days** after the date on which the request is made.
- (2) In responding to a request, the **retailer** must comply with the procedures **publicised** by the **Authority** under clause 11.32F.

- (3) A **retailer** must not charge a fee for responding to a request, but if 4 requests in respect of a **consumer's** information have been made in a 12 month period, the **retailer** may impose a reasonable charge for further requests in that 12 month period.

### **11.32C Retailers must notify consumers of availability of information**

Each **retailer** must notify each **consumer** with whom it has a contract to supply **electricity** of the **consumer's** ability to make a request to the **retailer** under clause 11.32B, so that the **consumer** is notified at least once in each calendar year.

### **11.32D Information security**

A **retailer** that receives a request for information under clause 11.32B—

- (a) must not give access to that information unless it is satisfied as to the identity of the **consumer** making the request; and
- (b) must ensure, by the adoption of appropriate procedures, that any information intended for a **consumer** is received—
  - (i) only by the **consumer**; or
  - (ii) where the request is made by an agent of the **consumer**, only by the **consumer** or the **consumer's** agent.

### **11.32E Agents**

If a **consumer** authorises an agent to request information under clause 11.32B, a **retailer** must treat a request from the agent as if it were a request from the **consumer**, if the agent has the written authority of the **consumer** to obtain the information or is otherwise properly authorised by that **consumer** to obtain the information.

### **11.32F Authority must publicise procedures for responding to requests for consumption information**

- (1) The **Authority** must, no later than 20 **business days** after this clause comes into force, **publicise** (and must keep **publicised**) procedures under which a **retailer** must respond to a request from a **consumer** under clause 11.32B.
- (2) The procedures **publicised** by the **Authority** must—
  - (a) specify the manner in which information must be given to **consumers**; and
  - (b) specify 1 or more formats in which information must be given to **consumers**.

## Appendix B Questions and format for submissions

Submitter:

Question No.	Related document	Question	Response
Q1	Procedures	Do you have any comments on the draft procedure document for the exchange of consumer consumption information?	
Q2	EIEP13A	Do you have any comments on the draft EIEP 13A?	
Q3	EIEP 13A	Do you consider there are alternatives to an EIEP 13A? Please give reasons for the alternatives.	
Q4	EIEP13B	Do you have any comments on the proposed EIEP 13B? Please give reasons and discussion where you disagree.	
Q5	EIEP13B	Do you consider there are alternatives to an EIEP 13B? Please give reasons for the alternatives..	

Q6	EIEP13B	Do you currently have a method for providing a consumer consumption information? If yes, what is the method and does it include the information that is in EIEP 13B?	
Q7	EIEP13C	Do you agree that an EIEP 13C is required? Please give reasons and discussion where you disagree or consider there are alternatives.	
Q8	EIEP13C	Do you agree that an electronic request form should be provided to allow machine to machine requests provided that the retailer has verified the consumer's request? Please give reasons where you disagree.	
Q9	EIEP 13C	Do you agree with the use of a Consumer Authorisation code in EIEP 13C? If you disagree please give reasons.	
Q10	EIEP13A and 13C	Do you agree that the registry EIEP transfer hub should be used as one of the transfer mechanisms for EIEP 13A and 13C? Please give reasons where you disagree.	

## **Appendix C Draft procedures for the exchange of consumer consumption information**

# **Requests for Consumer Consumption Information Procedures**

## Introduction

1. Clauses 11.32A to 11.32F of the Electricity Industry Participation Code (Code), which take effect on 1 February 2016, will require retailers to make consumption information available to consumers and their agents, if the consumers or their agents request it. This document sets out procedures that apply to retailers when they respond to such requests. The “retailer” includes any participant that supplies electricity to any other person for any purpose other than for resupply by the other person. This definition includes retailers that purchase electricity from any other person to on sell to a consumer.
2. Any questions about this procedures document should be directed to the Market Operations Team via [marketoperations@ea.govt.nz](mailto:marketoperations@ea.govt.nz).

## What data must retailers hold and provide?

Code reference: Clause 11.32A

3. The type of information required to be held by retailers is the consumer’s electricity consumption information, used by the retailer either to calculate the amount of electricity consumed or generated by the consumer at each installation control point (ICP), or to provide any service to the consumer.
4. An example of a service to a consumer is a secure web-based access facility that provides a consumer’s consumption information in a half hourly (HHR) format, regardless of whether the HHR information is used to bill the consumer or not.
5. Each retailer must hold historical information for each consumer that purchased electricity from that retailer at any time within the last 24 months. This requirement applies from 1 February 2016 so that 24 months of information dating back to 1 February 2014 must be available to each consumer as at 1 February 2016.
6. Detail of the information related to a consumer’s consumption of electricity will vary depending on the metering equipment installed at the consumer’s ICP.
7. If the retailer receives both certified non-half hourly (NHH) and HHR information for an ICP, it must provide the certified HHR information if requested by the consumer supplied at that ICP, regardless of whether or not the HHR information is actually used to bill the consumer. If the retailer has non-certified HHR and certified NHH the retailer must provide the most detailed form of data i.e. the HHR data.
8. HHR consumption information is significantly greater in volume (usually 17520 records per year) than monthly aggregated consumption information (usually 12 records per year).
9. If available in the retailer’s information system, the retailer must provide:
  - (a) both import (consumption) and export (generation) information
  - (b) reactive power information.

## What if a consumer switches retailers?

10. The example shown in Figure 1 (page 7) shows a timeline for a switch, where a consumer initially signs up with Retailer A but later switches to Retailer B. After the switch, Retailer A (the losing retailer in the example) is still required to hold consumption information for its former consumer, but for a diminishing period of time. Once 24 months has elapsed from the date of the switch, Retailer A has no further obligation to hold information for the consumer.<sup>2</sup>
11. Retailer B picks up the obligation to hold new information for the consumer it has won from Retailer A, starting at the switch date. The amount of information Retailer B is required to hold builds up until 24 months has elapsed from the switch date.
12. Within 24 months following a retailer switch, a consumer that seeks all of its consumption information will need to make at least two requests; one request each to Retailer A and Retailer B and possibly additional requests to subsequent retailers if the consumer has switched more than once in the 24 months. The information received should be contiguous across the switch date(s).

## When must a retailer provide consumption information to a consumer?

Code reference: clause 11.32B

13. A request from a consumer or its authorised agent (collectively referred to in this document as the 'requester') will trigger provision of the consumer's consumption information by a retailer. Each retailer will need to design a business process to manage consumer requests for consumption information.
14. Each retailer must provide at least one method by which a consumer may lodge a request for its consumption information, and make it clear how consumers can request their consumption information. A consumer's authorised agent may use EIEP 13C to request consumption information. This is further discussed in paragraph 40.
15. Retailers must provide the requested consumption information to the requester no later than five business days after the date of the request.

## Can a retailer charge a fee for providing consumption information?

Code reference 11.32B(4)

16. A retailer may impose a reasonable charge only if the consumer (including any agent acting on behalf of the consumer) has made more than four requests to it in the immediately preceding 12-months.

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<sup>2</sup> At least, the retailer has no further obligation *under this section of the Code*. See Clause 18 of Schedule 15.2 for archiving and storage of raw meter data.

## **When must a retailer advise its consumers of the availability of consumption information?**

Code reference: clause 11.32C

17. At least once in each calendar year, each retailer must notify each of its consumers of the consumer's right to access its consumption information. Retailers should notify their consumers using the method they normally use to communicate important information to individual consumers (e.g. using a notice insert included with a routine mailed or emailed invoice).

## **What must retailers do to keep information secure?**

Code reference: clause 11.32D

18. Clause 11.32D requires the retailer to:
  - (a) be satisfied as to the identity of the consumer making the request for consumption information
  - (b) ensure that only the requestor, or its agent, receives the information.
19. There are a number of ways that a retailer might comply with this clause. However, this document does not provide guidance on the measures a retailer must implement to comply. Each retailer must develop and use processes that ensure that only the appropriate consumer or its agent receives consumption information provided in accordance with clause 11.32B. This process should comply with the Privacy Act and with good business practice.
20. For clarity, if the requester subsequently provides the consumer's information to any other party, these information security obligations become the responsibility of the requester.

## **How does a consumer request their consumption information?**

Code reference: clause 11.32B

21. A consumer must be able to request its consumption information by
  - (a) phone call to the retailer (mandatory)
  - (b) written request to the retailer
  - (c) electronic file request delivered by the registry EIEP hub.
22. A consumer may request its consumer's consumption information via the retailers web portal.

## What if the request comes from a consumer's agent?

Code reference: clause 11.32E

23. A consumer may authorise an agent to request the consumer's consumption information on its behalf.
24. Each retailer must ensure that a requesting agent is properly authorised by the relevant consumer before any information is provided to that agent. This process should comply with the Privacy Act and with good business practice.

## What format and transfer method must the retailer use to provide consumption information?

Code reference: clause 11.32F

25. Clause 11.32F(1) requires that the Authority must publicise, and keep publicised, procedures for responding to consumer requests for consumption information.
26. The Authority's published procedures consist of:
  - (a) this document
  - (b) EIEP 13A, which specifies the electronic format that must be used when providing detailed consumption information electronically to consumers or their agents
  - (c) EIEP 13B, which specifies the formats that must be used when providing summary consumption information either electronically or in hard copy to consumers or their agents
  - (d) EIEP13C, which is an electronic request file format that an agent may use to request a consumer's consumption information from a retailer.
27. EIEP 13A, EIEP 13B and EIEP 13C are published on the Authority's [website](#).<sup>3</sup> Transfer methods for the EIEPs are discussed below.

## EIEP 13A: Detailed electricity consumption information for consumers (half hour and non-half hour)

28. EIEP 13A:
  - (a) must be provided by a retailer on request from its consumer or the consumers agent
  - (b) is CSV file format only

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<sup>3</sup> See <http://www.ea.govt.nz/operations/retail/eiep/regulated-electricity-information-exchange-protocols/>

- (c) is intended for machine to machine information exchanges
  - (d) may be used by agents acting on behalf of consumers, or by consumers with the ability to manipulate consumption information in spreadsheets
  - (e) includes both HHR and NHH consumption information as a date and time series. The difference between the start date and time and end date and time for each record is the period that consumption occurred over.
29. The manner in which EIEP 13A information will be provided is electronic only, and may be transferred via either:
- (a) the registry EIEP transfer hub (EIEP hub), in which case EIEP 13A will be encrypted and decrypted automatically; or
  - (b) a valid email address, in which case the retailer and consumer or consumer's agent must co-operate to determine how the contents of EIEP 13A may be protected.
30. To receive consumption information in the EIEP 13A format via the EIEP hub, a consumer's agent will need to request access to the EIEP hub from the Authority. If the Authority approves the request, the agent will be required to agree to an access agreement and will:
- (a) receive a four character identifier
  - (b) receive registry SFTP access to the EIEP hub.
31. In the case of SFTP access, the consumer's agent will need to query their registry outbox to obtain the consumption information. Further information about the EIEP hub can be found in the registry's [user manual](#).
32. To receive an EIEP 13A by email, a consumer or the consumer's agent will need to provide the retailer with a valid email address.
33. When a consumer receives an EIEP 13A by email, it may elect to on-send the information to any other party. Protecting the contents of the email in that case is the responsibility of the consumer or the consumer's agent.

## **EIEP 13B: Summary consumption information**

34. EIEP 13B:
- (a) is CSV file format or hard copy
  - (b) is intended for machine to consumer information exchanges
  - (c) may be used by consumers or agents acting on behalf of consumers
  - (d) includes only NHH consumption information as a date and time series. The difference between the start date and time and end date and time for each record is the period that consumption occurred over.
  - (e) The Authority recognises that retailers may wish to develop better ways to provide information to their consumers. For this reason, EIEP 13B only applies where:
    - (i) a retailer does not make equivalent information available at no cost to consumers via the retailers web portal, or
    - (ii) the consumer asks that the information be provided in printed form.
35. The manner in which information will be provided is electronic or hard copy by post, and will be chosen by the consumer or the consumer's agent and may be transferred via either:
- (a) in the case of a consumer's agent, the EIEP hub in which case EIEP 13B will be encrypted and decrypted automatically; or
  - (b) a valid email address in which case the retailer and consumer or consumer's agent must co-operate to determine how the contents of the EIEP13B may be protected; or
  - (c) hard copy posted to the consumer.
36. Where a consumer or the consumer's agent makes a request to a retailer for EIEP 13B, the retailer must either:
- (a) direct the consumer to the retailer's web portal where consumption information can be obtained equivalent to EIEP 13B; or
  - (b) email the consumer its consumption information equivalent to EIEP 13B; or
  - (c) provide consumption information in EIEP 13B format.
37. In the case of a consumer's agent using the EIEP hub, paragraphs 30 and 31 apply.

38. To receive an EIEP 13B by email, a consumer or the consumer's agent will need to provide the retailer with a valid email address.
39. When a consumer receives an EIEP 13B by email or post, it may on-send the information to any other party. Protecting the contents of the email or post in that case is the responsibility of the consumer or the consumer's agent.

### **EIEP 13C: Electronic request file for EIEP 13A**

40. The EIEP 13C is an electronic request file for a consumer's consumption information. The electronic file is intended to be used by a consumer's agent (which could also be another retailer) authorised by the consumer.
41. EIEP 13C:
  - (a) is CSV file format only
  - (b) can only be provided from the consumer's agent to the retailer via the EIEP hub
  - (c) is intended for machine to machine request exchange
  - (d) may only be used by agents acting on behalf of consumers
  - (e) allows the consumer's agent to request either EIEP 13A.
42. If a retailer receives an EIEP 13C, the retailer must provide the requested file format to the consumer's agent regardless of what equivalent information was available to the consumer (see paragraph 34(e) for the provision of equivalent information).
43. To ensure that a repeat request for information is correctly processed, EIEP 13C includes a unique number termed the "Consumer Authorisation code". The Consumer Authorisation code provides a time and consumer boundary within the retailer's system, to ensure that only the appropriate information is released.

Figure 1 – Example timeline showing consumption information that must be held and incorporating a retailer switch

Note: The example relates to a *new consumer* starting from 1 February 2016.

HOW MUCH CONSUMER CONSUMPTION INFORMATION MUST BE HELD BY A RETAILER?													
Example Start Date		YYYY	MM	DD	RETAILER A				RETAILER B				CONSUMER INFORMATION ACCESS
Date	Year	Month	Day	Elapsed months from Start Date	Status	Start date of information to be held (inclusive)	End date of information to be held (inclusive)	Maximum number of months of information to be held	Status	Start date of information to be held (inclusive)	End date of information to be held (inclusive)	Maximum number of months of information to be held	Number of months of historic information that can be requested - NB: from switch date, may require consumer requests to both retailers
1/01/16	2016	1	1	0	Retailer A starts supplying the consumer	1/01/16							0
1/02/16	2016	2	1	1		1/01/16	31/01/16	1					1
1/03/16	2016	3	1	2		1/01/16	29/02/16	2					2
1/04/16	2016	4	1	3	Consumer information building up with Retailer A	1/01/16	31/03/16	3					3
-	-	-	-	...		-	-	-					-
1/12/17	2017	12	1	23		1/01/16	30/11/17	23					23
1/01/18	2018	1	1	24	Steady state operation after consumer has been with Retailer A for more than 24 months	1/01/16	31/12/17	24					24
1/02/18	2018	2	1	25		1/02/16	31/01/18	24					24
1/03/18	2018	3	1	26		1/03/16	28/02/18	24					24
1/04/18	2018	4	1	27		1/04/16	31/03/18	24					24
-	-	-	-	...		-	-	-					-
1/01/19	2019	1	1	36	Retailer A stops supplying the consumer	1/01/17	31/12/18	24	Retailer B starts supplying the consumer	none	none	0	24
1/02/19	2019	2	1	37		1/02/17	31/12/18	23		1/01/19	31/01/19	1	24
1/03/19	2019	3	1	38		1/03/17	31/12/18	22		1/01/19	28/02/19	2	24
1/04/19	2019	4	1	39	Consumer information winding down with Retailer A	1/04/17	31/12/18	21	Consumer information building up with Retailer B	1/01/19	31/03/19	3	24
-	-	-	-	...		-	-	-		-	-	-	-
1/11/20	2020	11	1	58		1/11/18	31/12/18	2		1/01/19	31/10/20	22	24
1/12/20	2020	12	1	59		1/12/18	31/12/18	1		1/01/19	30/11/20	23	24
1/01/21	2021	1	1	60	Retailer A obligation to hold consumer information ceases	none	none	0	Steady state operation after consumer has been with Retailer B for more than 24 months. And so on ...	1/01/19	31/12/20	24	24
1/02/21	2021	2	1	61						1/02/19	31/01/21	24	24
1/03/21	2021	3	1	62						1/03/19	28/02/21	24	24



# Appendix D EIEP 13A: Detailed electricity consumption information for consumers (half hour and non-half hour)

<b>Title:</b>	<b>EIEP 13A: Electricity conveyed information for consumers (half hour and non-half hour detailed)</b>
<b>Version:</b>	DRAFT 0D
<b>Application:</b>	This protocol allows retailers (or their appointed agents) to provide electricity conveyed volume information electronically to a consumer and/or to a consumer's authorised agent.
<b>Participants:</b>	Retailers, the Authority
<b>Non-participants:</b>	Consumers and Consumers' agents
<b>Code reference:</b>	Clause 11.32A – 11.32F (effective from 1 February 2016)
<b>Dependencies:</b>	The Code also contains requirements relevant to the information to be provided in files that are created in accordance with this format specification.

<b>Description of when this protocol applies</b>
On request from a consumer or a consumer's authorised agent, a data file formatted in accordance with this EIEP 13A must be forwarded by the retailer to the consumer, or the consumer's authorised agent, to provide consumption information as required by clauses 11.32A – 11.32F of the Code.

<b>Business requirements</b>
<ol style="list-style-type: none"> <li>1. The format in which information must be given to consumers (clause 11.32F(2)(b)) is the format specified in this document.</li> <li>2. Electricity conveyed is to be expressed as compensation-corrected volumes relevant to a date and time period that is defined by a start date/time value and an end date/time value.</li> <li>3. The time period used in an EIEP 13A must be the most detailed consumption information that the retailer holds in its systems. For example, if a retailer holds half hourly information for publication on the web and non-half hourly information in its billing system, then the retailer should provide an EIEP 13A using half hour time periods and, on request, an EIEP 13B. Retailers most frequently hold consumption information in (a) monthly and (b) half hourly time periods.</li> <li>4. Any read period comprising date and time can be accommodated using this format, whether monthly, weekly, daily, hourly, half hourly or sub half hourly: <ul style="list-style-type: none"> <li>o If the resolution of a read is less than one whole day, the Time part of the DateTime formatted value must reflect the appropriate hours and minutes of the record (eg a trading period record could have a start date/time of "01/03/2016 00:30" and an end date/time of</li> </ul> </li> </ol>

## Business requirements

- "01/03/2016 01:00").
- If the interval of a record is equal to or longer than one whole day, the Time part of the DateTime format is to be coded as 00:00 (eg a read for the on 1 May 2016 to 5 June 2016 and would have a start date/time of "01/05/2016 00:00" and an end date/time of "05/06/2016 00:00").
5. A retailer must only use codes that are:
    - (a) stipulated in this document; or
    - (b) approved and published by the Authority; or
    - (c) determined in the registry and reconciliation functional specifications.
  6. Information provided in the file must be consistent with the terminology used in the Glossary of Standard Terms published by the Authority.
  7. The file must contain all mandatory information. Failure to provide the required information will result in the file being deemed as incomplete.
  8. Information must be provided in accordance with the following status codes unless otherwise specified:
    - Optional
    - M Mandatory where applicable
    - C Conditional - Mandatory if available and required by recipient, otherwise optional.
  9. The consumption information to be provided in an EIEP 13A formatted file is the energy volume imported or exported at an ICP within a specified time period, after any 'multiplier' or compensation factor has been applied to the meter read, in units of:
    - (a) kilowatt-hours (kWh) for active energy, and
    - (b) kilovolt ampere hours (kVArh) for reactive energy.
  10. The amount of historical consumption information to be provided by the retailer in response to a consumer request is specified in clause 11.32A of the Code.
  11. If reactive energy volumes are held by the retailer, they must be provided if the consumer (or their agent) specifically requests this.
  12. If the retailer becomes aware of a format error in a transmitted file, or the file is incomplete or otherwise inaccurate, the retailer must advise the consumer as soon as practicable after becoming aware of the issue. This obligation is contained in clause 11.2 of the Code.
  13. If previously transmitted information is to be corrected, the retailer must provide a complete replacement file.
  14. The file must be named in accordance with the registry functional specification EI-030.
  15. All DateTime formatted data must specify NZDT (New Zealand Daylight Savings time) values, adjusted in accordance with the "TPR" format defined 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. For clarity, it is the responsibility of retailers to:
  - (a) comply with the Privacy Act
  - (b) maintain business confidentiality when exchanging consumer details

<b>General requirements</b>
(c) ensure that agent arrangements are recorded.

<b>Data inputs</b>
Information from a retailer's back office system.

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/Optional/Conditional</b>	<b>Validation rules</b>
<i>Header record type</i>	Char 3	M	HDR – indicates the row is a header record type
<i>File type</i>	Char 7	M	Must be ICPCONS.
<i>Version of EIEP</i>	Num 3.1	M	Version of EIEP that is being used for this file.
<i>Sender</i>	Char 20	M	Name of sending party which could be a retailer or its agent. Participant identifier to be used if the sender has an Authority approved participant identifier.
<i>Sent on behalf of</i>	Char 4	M	Retailers participant identifier
<i>Recipient Participant identifier</i>	Char 4	M	Valid recipient participant identifier. In the case of a a) customer this should be CUST b) customers agent should be an identifier of the agent provided by the customer
<i>Report run date</i>	DD/MM/YYYY	M	Date the report is run
<i>Report run time</i>	HH:MM:SS	M	Time the report is run
<i>Unique file identifier</i>	Char 15	M	Number that uniquely identifies the file
<i>Number of detail records</i>	Num 8	M	Total number of DET records in report
<i>Report period start date</i>	DD/MM/YYYY	M	Report run start date (inclusive)
<i>Report period end date</i>	DD/MM/YYYY	M	Report run end date (inclusive)
<i>Report month</i>	YYYYMM	M	The month the report is run in
<i>Utility type</i>	Char 1	M	Type of energy supply; G = Gas; or E = Electricity
<i>File status</i>	Char 1	M	I (Initial) or R (Replacement)

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/ Optional/ Conditional</b>	<b>Validation rules</b>
<i>Detail record type</i>	Char 3	M	DET – indicates the row is a detail record of consumption information.
<i>Consumer Authorisation code</i>	Char 20	M	A unique number that links the consumer's authorisation of the data to the data file
<i>ICP identifier</i>	Char 15	M	ICP identifier means a unique identifier for an ICP created by a distributor in accordance with clause 1 of Schedule 11.1
<i>NZDT adjustment</i>	Char 3	M	TPR or TPM. Refer to clause 15.36 of Part 15 of the Code
<i>ANZSIC</i>	Char 7	M	Valid code that has been assigned to the customer to differentiate domestic and business types
<i>Metering component serial number</i>	Char 15	C	Mandatory for a metering component. Identifies the metering component for installations that have multiple metering components. Includes unmetered load where there is a metering component and unmetered load on the same register content code.  Optional for solely unmetered load in which case "UNM" must be used
<i>Energy Flow direction</i>	Char 1	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").
<i>Register content code</i>	Char 6	M	Identifies the register content code that information is provided for. Refer to SD-020 of the registry functional specification for a list of register content codes
<i>Period of availability</i>	Char 6	M	Identifies the period of availability that applies to the register content code
<i>Read period start date and time</i>	DD/MM/YYYY HH:MM	M	Date and time of start of read period.

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/ Optional/ Conditional</b>	<b>Validation rules</b>
<i>Read period end date and time</i>	DD/MM/YYYY HH:MM	M	Date and time of end of read period
<i>Trading period</i>	Int 2	C	Trading period number (1...46/48/50)  Mandatory where consumption information is in trading periods  Null in all other cases
<i>Read status</i>	Char 2	M	A = actual  E = estimated
<i>Unit quantity active energy volume</i>	Num 12.2	M	Volume information for injection or extraction in kWh
<i>Unit quantity reactive energy volume</i>	Num 12.2	C	Volume information for extraction in kVARh. Mandatory if requested and the retailer has recorded this information, otherwise optional.  Null if information is not provided

<b>Protocol specifications</b>
<ol style="list-style-type: none"> <li>1. The information is to be provided as a comma delimited text file. Commas are therefore prohibited within fields.</li> <li>2. Each formatted file must consist of one or more records, with each record being a single line of text as defined in this format specification document. Records must be delimited with one of the following: <ul style="list-style-type: none"> <li>▪ a carriage return character and a line feed character combination (ASCII characters 13 and 10) commonly used in the Microsoft Windows operating system</li> <li>▪ a line feed character (ASCII character 10) commonly used in the Unix operating system, or</li> <li>▪ a carriage return character (ASCII character 13) commonly used in the Apple OS X operating system.</li> </ul> </li> <li>3. Data fields within files must be defined using the attributes in the table following these specifications.</li> <li>4. Matching of file names, code list values, etc, must be case insensitive.</li> <li>5. Any number of ICPs, register content codes and date range may be included in a single file but each file must only be for the one customer.</li> <li>6. Each data file must contain only one header line.</li> </ol>

Protocol specifications
7. The first record of a file must contain "Header" information followed by zero or more detail lines.
8. File naming process shall be in accordance with the registry functional specification EI-030

Data outputs
1. File delivered electronically to a consumer or to the consumer's agent

# 1 Table of codes used in EIEP 13A

1.1 Table 1 List of attributes to define data fields used in EIEP 13A

Logical format	Data type	Rules	Example
INT (n)	Integer	<p>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.</p> <p>Numbers only: ASCII characters 48 to 57, and 45 where applicable.</p>	<p>INT (4)</p> <p>12</p> <p>-1234</p>
NUM (n.d)	Decimal	<p>ASCII representation of a decimal number (ie a rational number), no spaces, a leading "-" if negative (no sign if positive), with up 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.</p> <p>For integers, the decimal point is not required.</p> <p>A decimal point on its own must not be used to represent zero (use "0")</p> <p>Trailing zeros are optional.</p> <p>No leading zeros other than when the number starts with "0."</p> <p>Numbers only: ASCII characters 48 to 57, and 45/46 where applicable.</p>	<p>NUM (6.2)</p> <p>123.45</p> <p>1234.0</p> <p>-12.32</p> <p>NUM (6.3)</p> <p>-0.123</p> <p>23.987</p> <p>987.000</p> <p>8</p>

Logical format	Data type	Rules	Example
CHAR (n)	Text	<p>Up to n characters (ASCII characters 32 to 43 and 45 to 126 only).</p> <p>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.</p> <p>Fields must not contain any leading or trailing spaces.</p>	The quick brown fox
DATE	Date	<p>ASCII format with: Year represented as:</p> <ul style="list-style-type: none"> <li>— YYYY for century and year</li> </ul> <p>Month represented as:</p> <ul style="list-style-type: none"> <li>— MM to display leading zero</li> </ul> <p>Day represented as</p> <ul style="list-style-type: none"> <li>— DD to display leading zero</li> </ul> <p>ASCII format for separators</p>	DD/MM/YYYY e.g. 16/02/2005
NULL	Null	Field contains no data	

1.2 Table 2 ASCII character set for use within fields of EIEP 13A

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	~

## **Glossary of abbreviations and terms**

<b>Act</b>	Electricity Industry Act 2010
<b>AMI</b>	Advanced metering infrastructure
<b>Authority</b>	Electricity Authority
<b>CBA</b>	Cost-benefit analysis
<b>Code</b>	Electricity Industry Participation Code 2010
<b>CSV</b>	Comma separated values
<b>EIEP</b>	Electricity Information Exchange Protocol
<b>FTP</b>	File Transfer Protocol
<b>GIP</b>	Grid injection point
<b>GXP</b>	Grid exit point
<b>ICP</b>	Installation Control Point
<b>kWh</b>	Kilowatt hour
<b>MUoSA</b>	Model use-of-system agreement
<b>NSP</b>	Network supply point
<b>POC</b>	Point of connection
<b>Registry</b>	National database that contains information on every point of connection on a network to or from a site for which electricity is supplied or generated.
<b>RM</b>	Reconciliation manager
<b>SDFG</b>	Standing Data Formats Group
<b>UFE</b>	Unaccounted for electricity
<b>UoSA</b>	Use of systems agreement
<b>XML</b>	Extensible mark-up language

## Appendix E EIEP 13B: Summary consumption information

<b>Title:</b>	<b>EIEP 13B: Summary consumption information</b>
<b>Version:</b>	DRAFT 0A
<b>Application:</b>	This protocol specifies how retailers (or their appointed agents) must provide half hour (HHR) and/or non-half hour (NHH) volume information electronically or non-half hour (NHH) volume information in printed paper form to a consumer.
<b>Participants:</b>	Retailers and the Authority
<b>Users:</b>	Consumers and Consumers' agents
<b>Code reference:</b>	Clause 11.32A – 11.32F (effective from 1 February 2016)
<b>Dependencies:</b>	The Code also contains requirements relevant to the information to be provided in files that are created in accordance with this format specification.

<b>When this protocol applies</b>
If a retailer receives a request for consumption data from a consumer or a consumer's authorised agent, the retailer must send the consumption information in a data file formatted in accordance with this EIEP 13B. Refer clauses 11.32A – 11.32F of the Code.

<b>Business requirements</b>
<p>9. Retailers must give consumption information to consumers (clause 11.32F(2)(b)) in the format specified in this document.</p> <p>10. Customers may choose whether to receive an output file as an electronic CSV file by email, or a printed PDF or similar page by post.</p> <p>11. Electricity conveyed must be expressed as compensation-corrected volumes for a date and time period that is defined by a start date/time value and an end date/time value.</p> <p>12. The time period used in an EIEP 13B must be the most detailed consumption information that the retailer holds in its systems and must comply with the following</p> <ul style="list-style-type: none"> <li>○ for electronic file delivery - if a retailer holds half hourly information for publication on the web and non-half hourly information in its billing system, then the retailer must provide an EIEP 13B using the trading periods and the information that was used to generate the customer's invoice.</li> <li>○ for a printed file - EIEP13B should contain the information that was used to generate the customer's invoice.</li> </ul> <p>13. Any read period comprising date and time can be accommodated using this format, whether</p>

## Business requirements

monthly, weekly, daily, hourly, half hourly or sub half hourly.

- If the resolution of a read is less than one whole day, the Time part of the DateTime formatted value must reflect the appropriate hours and minutes of the record (e.g. a trading period record could have a start date/time of "01/03/2016 00:30" and an end date/time of "01/03/2016 01:00").
- If the interval of a record is equal to or longer than one whole day, the Time part of the DateTime format must be coded as 00:00 (e.g. a read for the on 1 May 2016 to 5 June 2016 and would have a start date/time of "01/05/2016 00:00" and an end date/time of "05/06/2016 00:00").

14.A retailer must only use codes that are:

- (d) stipulated in this document; or
- (e) approved and published by the Authority; or
- (f) specified in the registry and reconciliation functional specifications.

15.Language used in the file must be consistent with the terminology used in the Glossary of Standard Terms published by the Authority.

16.The file must contain all information required by the Code.

17.Information must be provided using with the following status codes:

- O Optional
- M Mandatory where applicable
- C Conditional - Mandatory if available and required by recipient, otherwise optional.

18.The consumption information to be provided in an EIEP 13B formatted file is the energy volume imported or exported at an ICP within a specified time period, after any 'multiplier' or compensation factor has been applied., in units of

- (c) kilowatt-hours (kWh) for active energy, and
- (d) kilovolt ampere hours (kVArh) for reactive energy

19.The amount of historical consumption information to be provided by the retailer in response to a consumer request is specified in clause 11.32A of the Code.

20.If the retailer holds reactive energy volumes, the retailer must provide them if the consumer (or their agent) specifically requests this.

21.If the retailer becomes aware of a format error in a transmitted file, or the file is incomplete or otherwise inaccurate, the retailer must advise the consumer as soon as practicable after becoming aware of the issue. This obligation is contained in clause 11.2 of the Code.

22.Where previously transmitted information is to be corrected, the retailer must provide a complete replacement file.

23.The file must be named in accordance with the registry functional specification EI-030.

24.All DateTime formatted data must specify NZDT (New Zealand Daylight Savings time) values, adjusted in accordance with the "TPR" format defined in clause 15.36 of the Code.

## General requirements

25.If there are any conflicts between this document and the Code, the Code will take precedence.

26.For clarity, it is the responsibility of retailers to:

- (d) comply with the Privacy Act
- (e) maintain business confidentiality when exchanging consumer details

<b>Business requirements</b>
(f) ensure that agent arrangements are recorded.

<b>Data inputs</b>
Information from a retailer's back office system.

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/Optional/Conditional</b>	<b>Validation rules</b>
<i>Header record type</i>	Char 3	M	HDR – indicates the row is a header record type
<i>Sender</i>	Char 20	M	Name of sending party which could be a retailer or its agent. Participant identifier to be used if the sender has an Authority-approved participant identifier.
<i>Recipient Participant identifier</i>	Char 4	M	Valid recipient participant identifier. In the case of a a) customer this should be CUST b) customers agent should be an identifier of the agent provided by the customer
<i>Report run date</i>	DD/MM/YYYY	M	Date the report is run
<i>Report run time</i>	HH:MM:SS	M	Time the report is run
<i>Unique file identifier</i>	Char 15	M	Number that uniquely identifies the file
<i>Number of detail records</i>	Num 8	M	Total number of DET records in report
<i>Report period start date</i>	DD/MM/YYYY	M	Report run start date (inclusive)
<i>Report period end date</i>	DD/MM/YYYY	M	Report run end date (inclusive)
<i>Report month</i>	YYYYMM	M	The month the report is run in
<i>Utility type</i>	Char 1	M	Type of energy supply; G = Gas; or E = Electricity
<i>File status</i>	Char 1	M	I (Initial) or R (Replacement)
<i>NZDT adjustment</i>	Char 3	M	TPR or TPM. Refer to clause 15.36 of Part 15 of the Code
<i>ICP identifier</i>	Char 15	M	ICP identifier means a unique identifier for an ICP created by a distributor in accordance with clause 1 of Schedule 11.1

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/ Optional/Condi tional</b>	<b>Validation rules</b>
<i>Header record type</i>	Char 3	M	DES – indicates the row is field descriptions, to align with columns in detail records
<i>Title column 1</i>	Char 30	M	Must be “Meter serial number”
<i>Title column 2</i>	Char 30	M	Must be “Consumption/generation”
<i>Title column 3</i>	Char 30	M	Must be “Register content code”
<i>Title column 4</i>	Char 30	M	Must be “Period of availability”
<i>Title column 5</i>	Char 30	M	Must be “Tariff name”
<i>Title column 6</i>	Char 30	M	Must be “Read period start”
<i>Title column 7</i>	Char 30	M	Must be “Read period end”
<i>Title column 8</i>	Char 30	M	Must be “Trading period number”
<i>Title column 9</i>	Char 30	M	Must be “Read status”
<i>Title column 10</i>	Char 30	M	Must be “Active energy kWh”
<i>Title column 11</i>	Char 30	M	Must be “Reactive energy kVArh”

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/ Optional/ Conditional</b>	<b>Validation rules</b>
<i>Detail record type</i>	Char 3	M	DET – indicates the row is a detail record of consumption information.
<i>Metering component serial number</i>	Char 15	C	Mandatory for a metering component. Identifies the metering component for installations that have multiple metering components. Includes unmetered load where there is a metering component and unmetered load on the same register content code.  Optional for solely unmetered load in which case “UNM” must be used

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/ Optional/ Conditional</b>	<b>Validation rules</b>
<i>Energy Flow direction</i>	Char 15	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").  If "X" format must show words = "Consumption"  If "I" format must show words = "Generation"
<i>Register content code</i>	Char 6	M	Identifies the register content code that information is provided for.  Refer to SD-020 of the registry functional specification for a list of register content codes
<i>Period of availability</i>	Char 6	M	Identifies the period of availability that applies to the register content code
<i>Read period start date and time</i>	DD/MM/YYYY HH:MM	M	Date and time of start of read period.
<i>Read period end date and time</i>	DD/MM/YYYY HH:MM	M	Date and time of end of read period
<i>Trading period</i>	Int 2	C	Trading period number (1...46/48/50)  Mandatory where consumption information is in trading periods  Null in all other cases
<i>Read status</i>	Char 2	M	A = actual  E = estimated
<i>Tariff name</i>	Char 50	M	Name of tariff rate, e.g. "Anytime" or "Controlled" etc
<i>Unit quantity active energy volume</i>	Num 12.2	M	Volume information for injection or extraction in kWh

Event data	Format	Retailer to Consumer: Mandatory/ Optional/ Conditional	Validation rules
<i>Unit quantity reactive energy volume</i>	Num 12.2	M	Volume information for extraction in kVArh. Mandatory if requested and the retailer has recorded this information, otherwise optional.  Null if information is not provided

Protocol specifications
<p>27. The information is to be a comma delimited text file. Commas are therefore prohibited within fields.</p> <p>28. Each formatted file must consist of one or more records, with each record being a single line of text as defined in this format specification document. Records must be delimited with one of the following:</p> <ul style="list-style-type: none"> <li>▪ a carriage return character and a line feed character combination (ASCII characters 13 and 10) commonly used in the Microsoft Windows operating system</li> <li>▪ a line feed character (ASCII character 10) commonly used in the Unix operating system, or</li> <li>▪ a carriage return character (ASCII character 13) commonly used in the Apple OS X operating system.</li> </ul> <p>29. Data fields within files must be defined using the attributes in the table following these specifications.</p> <p>30. Matching of file names, code list values, etc., must be case insensitive.</p> <p>31. Any number of ICPs, register content codes and date range may be included in a single file but each file must only be for the one customer.</p> <p>32. Each data file must contain only one header line.</p> <p>33. The first record of a file must contain "Header" information followed by zero or more detail lines.</p> <p>34. File naming process must be in accordance with the registry functional specification EI-030</p>

Data outputs
2. File delivered electronically to a consumer or to the consumer's agent

## 2 Table of codes used in EIEP 13B

2.1 Table 3 List of attributes to define data fields used in EIEP 13B

Logical format	Data type	Rules	Example

Logical format	Data type	Rules	Example
INT (n)	Integer	<p>ASCII representation of an integer number (i.e. no decimals), no leading zeros, no spaces, a leading "-" if negative (no sign if positive), with 1 to n digits.</p> <p>Numbers only: ASCII characters 48 to 57, and 45 where applicable.</p>	<p>INT (4)</p> <p>12</p> <p>-1234</p>
NUM (n.d)	Decimal	<p>ASCII representation of a decimal number (ie a rational number), no spaces, a leading "-" if negative (no sign if positive), with up 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.</p> <p>For integers, the decimal point is not required.</p> <p>A decimal point on its own must not be used to represent zero (use "0")</p> <p>Trailing zeros are optional.</p> <p>No leading zeros other than when the number starts with "0."</p> <p>Numbers only: ASCII characters 48 to 57, and 45/46 where applicable.</p>	<p>NUM (6.2)</p> <p>123.45</p> <p>1234.0</p> <p>-12.32</p> <p>NUM (6.3)</p> <p>-0.123</p> <p>23.987</p> <p>987.000</p> <p>8</p>
CHAR (n)	Text	<p>Up to n characters (ASCII characters 32 to 43 and 45 to 126 only).</p> <p>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.</p> <p>Fields must not contain any leading or trailing spaces.</p>	<p>The quick brown fox</p>

Logical format	Data type	Rules	Example
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 separators	DD/MM/YYYY e.g. 16/02/2005
NULL	Null	Field contains no data	

2.2 Table 4 ASCII character set for use within fields of EIEP 13B

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	~

## **Glossary of abbreviations and terms**

<b>Act</b>	Electricity Industry Act 2010
<b>Authority</b>	Electricity Authority
<b>Code</b>	Electricity Industry Participation Code 2010
<b>CSV</b>	Comma separated values
<b>EIEP</b>	Electricity Information Exchange Protocol
<b>ICP</b>	Installation Control Point
<b>kWh</b>	Kilowatt hour

**Sample of electronic output file viewed as CSV file**

HDR,EANZ,CUST,20/03/2014,12:14:45,Ron001,18,20/03/2014,20/03/2015,201403,E,I,TPR,0000021314CPABC

Detail record type,Metering component serial number,Energy Flow direction,Register content code,Period of availability,Read period start date and time,Read period end date and time,Trading period number,Read status,Tariff name,Unit quantity active energy volume,Unit quantity reactive energy volume,,

DET,213515698,Consumption,UN,24,25/03/2014 0:00,20/05/2014 0:00,,A,Anytime,350,35,,

DET,213515698,Consumption,CN,17,25/03/2014 0:00,20/05/2014 0:00,,A,Controlled,450,45,,

DET,213515698,Generation,EG,24,25/03/2014 0:00,20/05/2014 0:00,,A,Embedded generation,75,0,,

DET,213515698,Consumption,UN,24,20/05/2014 0:00,18/07/2014 0:00,,A,Anytime,350,35,,

DET,213515698,Consumption,CN,17,20/05/2014 0:00,18/07/2014 0:00,,A,Controlled,450,45,,

DET,213515698,Generation,EG,24,20/05/2014 0:00,18/07/2014 0:00,,A,Embedded generation,75,0,,

DET,213515698,Consumption,UN,24,18/07/2014 0:00,22/09/2014 0:00,,A,Anytime,350,35,,

DET,213515698,Consumption,CN,17,18/07/2014 0:00,22/09/2014 0:00,,A,Controlled,450,45,,

DET,213515698,Generation,EG,24,18/07/2014 0:00,22/09/2014 0:00,,A,Embedded generation,75,0,,

DET,213515698,Consumption,UN,24,22/09/2014 0:00,25/11/2014 0:00,,A,Anytime,350,35,,

DET,213515698,Consumption,CN,17,22/09/2014 0:00,25/11/2014 0:00,,A,Controlled,450,45,,

DET,213515698,Generation,EG,24,22/09/2014 0:00,25/11/2014 0:00,,A,Embedded generation,75,0,,

DET,213515698,Consumption,UN,24,25/11/2014 0:00,20/01/2015 0:00,,A,Anytime,350,35,,

DET,213515698,Consumption,CN,17,25/11/2014 0:00,20/01/2015 0:00,,A,Controlled,450,45,,

DET,213515698,Generation,EG,24,25/11/2014 0:00,20/01/2015 0:00,,A,Embedded generation,75,0,,

DET,213515698,Consumption,UN,24,20/01/2015 0:00,17/03/2015 0:00,,A,Anytime,350,35,,

DET,213515698,Consumption,CN,17,20/01/2015 0:00,17/03/2015 0:00,,A,Controlled,450,45,,

DET,213515698,Generation,EG,24,20/01/2015 0:00,17/03/2015 0:00,,A,Embedded generation,75,0,,

Sample of electronic output file viewed as MSEXcel file (with a little formatting), or a PDF printed page

HDR	EANZ	CUST	20/03/2014	12:14:45	Ron001	18	20/03/2014	20/03/2015	201403	E	I	TPR	0000021314CPABC
Detail record type	Metering component serial number	Energy Flow direction	Register content code	Period of availability	Read period start date and time	Read period end date and time	Trading period number	Read status	Tariff name	Unit quantity active energy volume	Unit quantity reactive energy volume		
DET	213515698	Consumption	UN	24	25/03/2014 0:00	20/05/2014 0:00		A	Anytime	350	35		
DET	213515698	Consumption	CN	17	25/03/2014 0:00	20/05/2014 0:00		A	Controlled	450	45		
DET	213515698	Generation	EG	24	25/03/2014 0:00	20/05/2014 0:00		A	Embedded generation	75	0		
DET	213515698	Consumption	UN	24	20/05/2014 0:00	18/07/2014 0:00		A	Anytime	350	35		
DET	213515698	Consumption	CN	17	20/05/2014 0:00	18/07/2014 0:00		A	Controlled	450	45		
DET	213515698	Generation	EG	24	20/05/2014 0:00	18/07/2014 0:00		A	Embedded generation	75	0		
DET	213515698	Consumption	UN	24	18/07/2014 0:00	22/09/2014 0:00		A	Anytime	350	35		
DET	213515698	Consumption	CN	17	18/07/2014 0:00	22/09/2014 0:00		A	Controlled	450	45		
DET	213515698	Generation	EG	24	18/07/2014 0:00	22/09/2014 0:00		A	Embedded generation	75	0		
DET	213515698	Consumption	UN	24	22/09/2014 0:00	25/11/2014 0:00		A	Anytime	350	35		
DET	213515698	Consumption	CN	17	22/09/2014 0:00	25/11/2014 0:00		A	Controlled	450	45		
DET	213515698	Generation	EG	24	22/09/2014 0:00	25/11/2014 0:00		A	Embedded generation	75	0		
DET	213515698	Consumption	UN	24	25/11/2014 0:00	20/01/2015 0:00		A	Anytime	350	35		
DET	213515698	Consumption	CN	17	25/11/2014 0:00	20/01/2015 0:00		A	Controlled	450	45		
DET	213515698	Generation	EG	24	25/11/2014 0:00	20/01/2015 0:00		A	Embedded generation	75	0		
DET	213515698	Consumption	UN	24	20/01/2015 0:00	17/03/2015 0:00		A	Anytime	350	35		
DET	213515698	Consumption	CN	17	20/01/2015 0:00	17/03/2015 0:00		A	Controlled	450	45		
DET	213515698	Generation	EG	24	20/01/2015 0:00	17/03/2015 0:00		A	Embedded generation	75	0		

## Appendix F EIEP 13C: Request file for EIEP 13A

<b>Title:</b>	<b>EIEP 13C: Request file for EIEP 13A</b>
<b>Version:</b>	DRAFT 0A
<b>Application:</b>	This protocol allows customers (or their appointed agents) to request information specified in an EIEP13A to be provided electronically.
<b>Participants:</b>	Retailers
<b>Non-participants:</b>	Consumers and consumers' agents
<b>Code reference:</b>	Clause 11.32A – 11.32F (effective from 1 February 2016)
<b>Dependencies:</b>	The Code also contains requirements relevant to the information to be provided in files that are created in accordance with this format specification.

<b>Description of when this protocol applies</b>
The format is used when a consumer or its agent wants to electronically request EIEP 13A information from the consumer's retailer.

<b>Business requirements</b>
<p>35. The relevant Code requirements are set out in clause 11.32A – 11.32F. The format in which information must be given to consumers (clause 11.32F(2)(b)) is the format specified in this document.</p> <p>36. Information provided in the file must be consistent with the terminology used in the Glossary of Standard Terms published by the Authority.</p> <p>37. The file must be named in accordance with the registry functional specification EI-030.</p>

<b>General requirements</b>
<p>38. If there are any conflicts between this document and the Code, the Code will take precedence.</p> <p>39. For clarity, it is the responsibility of retailers and agents to:</p> <ul style="list-style-type: none"> <li>(g) comply with the Privacy Act</li> <li>(h) maintain business confidentiality when exchanging consumer details</li> <li>(i) ensure that agent arrangements are recorded.</li> </ul> <p>40. The receipt of a valid EIEP13C should trigger the release of an EIEP13A</p>

<b>Data inputs</b>
Electronic request form

<b>Event data</b>	<b>Format</b>	<b>Retailer to Consumer: Mandatory/Optional/Conditional</b>	<b>Validation rules</b>
<i>Header record type</i>	Char 3	M	HDR – indicates the row is a header record type
<i>File type</i>	Char 7	M	Must be REQCONS.
<i>Sender</i>	Char 20	M	Name of sending party which could be a customer or its agent. Participant identifier must be used if the sender has an Authority approved participant identifier.
<i>Recipient Participant identifier</i>	Char 4	M	Valid recipient participant identifier. In the case of a a) customer this should be CUST b) customers agent should be an identifier of the agent provided by the customer
<i>Report run date</i>	DD/MM/YYYY	M	Date the report is run
<i>Report run time</i>	HH:MM:SS	M	Time the report is run
<i>Unique file identifier</i>	Char 15	M	Number that uniquely identifies the file
<i>Number of detail records</i>	Num 8	M	Total number of DET records in report
<i>Utility type</i>	Char 1	M	Type of energy supply; G = Gas; or E = Electricity
<i>File status</i>	Char 1	M	I (Initial) or R (Replacement)

<b>Event data</b>	<b>Format</b>	<b>Consumer or consumers agent to retailer: Mandatory/Optional/Conditional</b>	<b>Validation rules</b>
<i>Detail record type</i>	Char 3	M	DET – indicates the row is a detail record of consumption information.
<i>Consumer name</i>	Char 6	M	Must be the responsible person recorded by the retailer against the ICP for a period within the last 2 years

<b>Event data</b>	<b>Format</b>	<b>Consumer or consumers agent to retailer: Mandatory/ Optional/ Conditional</b>	<b>Validation rules</b>
<i>Consumer Authorisation code</i>	Char 20	C	A unique number that links the consumer's authorisation of the data to the data file if an authorisation code has been previously agreed with the retailer  Mandatory where a code has been agreed otherwise NULL
<i>Retailers account number</i>	Char 20	M	The account number assigned by the retailer to the consumer for the ICP
<i>Customer name</i>	Char 100	M	Legal name or the name of the customer that is shown on the customers invoice. Must be the responsible person recorded by the retailer against the ICP for a period within the last 2 years  Multiple names to be concatenated into one field
<i>ICP identifier</i>	Char 15	M	ICP identifier means a unique identifier for an ICP created by a distributor in accordance with clause 1 of Schedule 11.1
<i>EIEP delivery method</i>	Char 7	M	EIEP13A can be delivered via either email or the registry data hub  "EMAIL" indicates a valid email address must be provided  "DATAH" indicates that a valid participant identifier must be provided that has access to the registry data hub
<i>Email address</i>	Char 50	M	Mandatory if "EMAIL" entered in EIEP delivery method otherwise NULL
<i>Recipient Participant identifier</i>	Char 4	M	Mandatory if "DATAH" entered in EIEP delivery method otherwise NULL
<i>Postal address country</i>	Char 30	M	The country for postal information that is shown on the customers invoice. Can be NULL

<b>Event data</b>	<b>Format</b>	<b>Consumer or consumers agent to retailer: Mandatory/ Optional/ Conditional</b>	<b>Validation rules</b>
<i>Postal address number</i>	Char 6	M	Number issued by government agency or local government authority that identifies a point or location on a street for postal purposes that is shown on the customers invoice. Can be NULL
<i>Postal address PO Box/RD</i>	Char 30	M	Number assigned a postal delivery box or rural delivery number that is shown on the customers invoice. Can be NULL
<i>Postal address postcode</i>	Char 30	M	The post code assigned by NZ post (zip code if outside NZ) that is shown on the customers invoice. Can be NULL
<i>Postal address street</i>	Char 30	M	Official road name issued by government agency or local government authority that is shown on the customers invoice. Can be NULL
<i>Postal address suburb</i>	Char 30	M	A bounded locality within a city, town or shire principally of urban character that is shown on the customers invoice. Can be NULL
<i>Postal address town</i>	Char 30	M	An officially recognised and named population centre, defined within a geographic boundary that is shown on the customers invoice.
<i>Postal address unit</i>	Char 25	M	Sub dwelling number; Level of sub dwelling that is shown on the customers invoice. Can be NULL

<b>Protocol specifications</b>
<p>3 The information must be provided as a comma-delimited text file. Commas are therefore prohibited within fields.</p> <p>4 Each formatted file must consist of one or more records, with each record being a single line of text as defined in this format specification document. Records must be delimited with one of the following:</p> <ul style="list-style-type: none"> <li>(a) a carriage return character and a line feed character combination (ASCII characters 13 and 10) commonly used in the Microsoft Windows operating system</li> <li>(b) a line feed character (ASCII character 10) commonly used in the Unix operating system, or</li> <li>(c) a carriage return character (ASCII character 13) commonly used in the Apple OS X operating system.</li> </ul> <p>5 Data fields within files must be defined using the attributes in the table following these</p>

Protocol specifications
<p>specifications.</p> <p>6 Matching of file names, code list values, etc, must be case insensitive.</p> <p>7 Any number of ICPs, register content codes and date range may be included in a single file but each file must only be for the one consumer.</p> <p>8 Each data file must contain only one header line.</p> <p>9 The first record of a file must contain "Header" information followed by zero or more detail lines.</p> <p>10 File naming process shall be in accordance with the registry functional specification EI-030</p>

Data outputs
3. File delivered electronically to a retailer from a consumer or the consumer's agent

## 11 Table of codes used in EIEP 13C

11.1 Table 5 List of attributes to define data fields used in EIEP 13C

Logical format	Data type	Rules	Example
INT (n)	Integer	<p>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.</p> <p>Numbers only: ASCII characters 48 to 57, and 45 where applicable.</p>	<p>INT (4)</p> <p>12</p> <p>-1234</p>
NUM (n.d)	Decimal	<p>ASCII representation of a decimal number (ie a rational number), no spaces, a leading "-" if negative (no sign if positive), with up 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.</p> <p>For integers, the decimal point is not required.</p> <p>A decimal point on its own must not be used to represent zero (use "0")</p> <p>Trailing zeros are optional.</p> <p>No leading zeros other than when the number starts with "0."</p> <p>Numbers only: ASCII characters 48 to 57, and 45/46 where applicable.</p>	<p>NUM (6.2)</p> <p>123.45</p> <p>1234.0</p> <p>-12.32</p> <p>NUM (6.3)</p> <p>-0.123</p> <p>23.987</p> <p>987.000</p> <p>8</p>

Logical format	Data type	Rules	Example
CHAR (n)	Text	<p>Up to n characters (ASCII characters 32 to 43 and 45 to 126 only).</p> <p>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.</p> <p>Fields must not contain any leading or trailing spaces.</p>	The quick brown fox
DATE	Date	<p>ASCII format with: Year represented as:</p> <ul style="list-style-type: none"> <li>— YYYY for century and year</li> </ul> <p>Month represented as:</p> <ul style="list-style-type: none"> <li>— MM to display leading zero</li> </ul> <p>Day represented as</p> <ul style="list-style-type: none"> <li>— DD to display leading zero</li> </ul> <p>ASCII format for separators</p>	DD/MM/YYYY e.g. 16/02/2005
NULL	Null	Field contains no data	

11.2 Table 6 ASCII character set for use within fields of EIEP 13C

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	~

## **Glossary of abbreviations and terms**

<b>Act</b>	Electricity Industry Act 2010
<b>Authority</b>	Electricity Authority
<b>Code</b>	Electricity Industry Participation Code 2010
<b>CSV</b>	Comma separated values
<b>EIEP</b>	Electricity Information Exchange Protocol
<b>ICP</b>	Installation Control Point
<b>kWh</b>	Kilowatt hour