

Market Rules

Chapter 9

Settlements and Billing - Appendices

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Table of Contents

Appendix 9.1 – VEE Process	1
1.1 Introduction and Interpretation	1
1.2 Manner of Data Collection by the IESO	1
1.3 Obligation of the Metered Market Participant to Provide Data	2
1.4 Automated Processes and Trouble Calls	2
1.5 Validation, Estimation and Editing: Main/Alternate Metering Installations and Main/Check Metering Installations.....	3
1.6 Validation, Estimation and Editing: Single Metering Installations	8
1.7 Adjustments and Failure to Resolve Trouble Call	9
Appendix 9.2 – [Intentionally left blank]	11



Appendix 9.1 – VEE Process

1.1 Introduction and Interpretation

- 1.1.1 This Appendix sets forth the obligations of the *IESO* and of *metered market participants* with respect to the validation, estimation and editing of *metering data*.
- 1.1.2 This Appendix does not apply to *physical allocation data*.
- 1.1.3 For the purposes of this Appendix, a reference to an interval means:
 - 1.1.3.1 in the case of a *metering installation* that collates *metering data* by *metering intervals*, a *metering interval*; and
 - 1.1.3.2 in all other cases, such multiple of *metering intervals* for which the *metering installation* collates *metering data*.

1.2 Manner of Data Collection by the IESO

- 1.2.1 The *IESO* shall collect or receive *metering data* for *settlement* purposes using, in respect of a given *RWM*, one or more of the following methods as may be applicable:
 - 1.2.1.1 electronic access to the *RWM* as described in Chapter 6;
 - 1.2.1.2 a wide area network or similar mode of communication for *check metering data*; or
 - 1.2.1.3 such manual collection method as may be required to resolve a trouble call in respect of the *RWM*.

1.3 Obligation of the Metered Market Participant to Provide Data

- 1.3.1 Each *metered market participant* shall, for each *RWM* in respect of which it is the *metered market participant* and that is a *main/alternate metering installation*, provide to the *IESO*, for validation purposes, *metering data* from each of the main *meter* and the alternate *meter* in accordance with the provisions of Chapter 6 and the *VEE standard*.
- 1.3.2 Each *metered market participant* shall, for each *RWM* in respect of which it is the *metered market participant* and that is a *main/check metering installation*, provide to the *IESO*, for validation purposes, *metering data* from each of the main *meter* and the check *meter* in accordance with section 1.3.3 and the provisions of Chapter 6 and the *VEE standard*.
- 1.3.3 Each *metered market participant* shall, for each *trading day*, provide to the *IESO* *metering data* from each *check meter* forming part of an *RWM* in respect of which it is the *metered market participant* no later than 06:00 EST on the day following such *trading day* using the mode of communication referred to in section 1.2.1.2 and in a format compatible and suitable for processing by the *IESO's* validation software as described in section 2.3 of the *VEE standard*.
- 1.3.4 Each *metered market participant* shall, for each *RWM* in respect of which it is the *metered market participant* and that is a *single metering installation*, provide to the *IESO*, for validation purposes:
- 1.3.4.1 *metering data* from the *meter* in accordance with the provisions of Chapter 6 and the *VEE standard*; and
 - 1.3.4.2 the validation criteria for *single metering installations* set forth in section 2.4 of the *VEE standard*.

1.4 Automated Processes and Trouble Calls

- 1.4.1 The validation and estimation procedures described in this Appendix 9.1 shall be effected by means of automated processes following the collection or receipt of *metering data* by the *IESO's* automated systems.

- 1.4.2 Where the *metering data* from any *meter* in an *RWM* is unavailable or fails to successfully pass the validation procedures referred to in:
- 1.4.2.1 sections 1.5.1 and, where applicable, 1.5.2; or
 - 1.4.2.2 sections 1.6.1 and, where applicable, 1.6.2,
- as the case may be, the *IESO* shall:
- 1.4.2.3 issue a trouble call to the *metering service provider* for the *metering installation* to which the *metering data* relates; and
 - 1.4.2.4 notify the *metered market participant* for the *metering installation* of the issuance of the trouble call.
- 1.4.3 A *metering service provider* to whom a trouble call has been issued pursuant to section 1.4.2.3 shall respond to and resolve the trouble call in accordance with the requirements of sections 11.1.2.1 and 11.1.2.2 of Chapter 6.
- 1.4.4 A *metering service provider* that has resolved a trouble call issued pursuant to section 1.4.2.3 shall:
- 1.4.4.1 so notify the *IESO*;
 - 1.4.4.2 provide the *IESO* with a written description of the cause of and the actions taken to resolve the trouble call; and
 - 1.4.4.3 where applicable, provide to the *IESO* a request for an adjustment to the *metering data* that was the subject of the trouble call, together with auditable documentary justification for the adjustment,
- in accordance with the requirements of the *VEE standard* and in such form and manner as may be required by the *IESO*.

1.5 Validation, Estimation and Editing: Main/Alternate Metering Installations and Main/Check Metering Installations

- 1.5.1 The following validation procedures shall be conducted, in accordance with the *VEE standard*, by the *IESO's* automated validation process in respect of each *RWM* that is a *main/alternate metering installation* or a *main/check metering installation* to the extent permitted by the configuration of such *metering installation*:

- 1.5.1.1 determine whether any *metering data* has failed to be delivered to or received by the *IESO* from each of:
 - a. the main *meter*; and
 - b. the alternate *meter* or the *check meter*, as the case may be, in the manner and at the time required by these *market rules* and the intervals for which such *metering data* is missing;
 - 1.5.1.2 test current and voltage data, if it has been provided;
 - 1.5.1.3 conduct the data transmission/multiplier verification;
 - 1.5.1.4 test for synchronization of the clock in each of:
 - a. the main *meter*; and
 - b. the alternate *meter* or the *check meter*, as the case may be, against the standard of accuracy described in section 11.2.2 of Chapter 6;
 - 1.5.1.5 test for replacement of the *data logger* in each of the main *meter* and the alternate *meter*;
 - 1.5.1.6 monitor error messages, flags and alarms received from each of:
 - a. the main *meter*; and
 - b. the alternate *meter* or the *check meter*, as the case may be; and
 - 1.5.1.7 compare the *metering data* collected or received from the main *meter* with the *metering data* collected or received from the alternate *meter* or the *check meter*, as the case may be.
- 1.5.2 The *IESO* may, in addition to the validation procedures referred to in section 1.5.1, carry out such additional automated validation procedures in respect of *RWMs* that are *main/alternate metering installations* or *main/check metering installations* as it determines appropriate.
- 1.5.3 Where the *metering data* from each of:
- 1.5.3.1 the main *meter*; and

1.5.3.2 the alternate *meter* or the *check meter*, as the case may be,

in an *RWM* that is a *main/alternate metering installation* or a *main/check metering installation* has successfully passed the validation procedures referred to in sections 1.5.1 and, where applicable, 1.5.2, such *metering data* shall be deemed validated *metering data* and the *metering data* from the main *meter* shall, subject to any adjustment and totalization that may be required pursuant to Chapter 6, be used by the *IESO* for *settlement* purposes.

1.5.4 Where the *metering data* from the main *meter* in an *RWM* that is a *main/alternate metering installation* or a *main/check metering installation* has successfully passed the validation procedures described in sections 1.5.1 and, where applicable, 1.5.2, such *metering data* shall, subject to:

1.5.4.1 any adjustment and totalization that may be required pursuant to Chapter 6; and

1.5.4.2 any subsequent adjustment made pursuant to section 1.5.10.2,

be used for *settlement* purposes notwithstanding that the *metering data* from the alternate *meter* or the *check meter*, as the case may be, is unavailable or has not successfully passed such validation procedures.

1.5.5 Where the *metering data* from the main *meter* in an *RWM* that is a *main/alternate metering installation* or a *main/check metering installation* is unavailable or has not successfully passed the validation procedures referred to in section 1.5.1 and, where applicable, 1.5.2, the *metering data* from the alternate *meter* or the *check meter*, as the case may be, shall, subject to:

1.5.5.1 any adjustment and totalization that may be required pursuant to Chapter 6;

1.5.5.2 where *metering data* from the *check meter* is used, being adjusted by the registered mathematical correlation factor; and

1.5.5.3 any subsequent adjustment made pursuant to section 1.5.11.2,

be used for *settlement* purposes provided that the *metering data* from the alternate *meter* or the *check meter*, as the case may be, has successfully passed the validation procedures referred to in sections 1.5.1 and, where applicable, 1.5.2. The substitution of the *metering data* from the alternate *meter* or the *check meter*, as the case may be, for the *metering data* from the main *meter* shall be flagged in the *metering database*.

- 1.5.6 Where the *metering data* from both *meters* in an *RWM* that is a *main/alternate metering installation* or a *main/check metering installation* is unavailable or has not successfully passed the validation procedures referred to in sections 1.5.1 and, where applicable, 1.5.2, an estimate of the *metering data* shall be prepared by automated process in accordance with section 1.5.7 and the *VEE standard*. Such estimate shall, subject to:
- 1.5.6.1 any adjustment and totalization that may be required pursuant to Chapter 6; and
 - 1.5.6.2 any subsequent adjustment made pursuant to section 1.5.12.2, be used for *settlement* purposes. Such estimation shall be flagged in the *metering database*.
- 1.5.7 An estimate of *metering data* referred to in section 1.5.6, 1.6.4 or 1.7.1.2 shall be based:
- 1.5.7.1 where the period for which the *metering data* is unavailable or has not successfully passed the validation procedures described in:
 - a. section 1.5.1 and, where applicable, 1.5.2; or
 - b. section 1.6.1 and, where applicable, 1.6.2, is less than one hour, on a straight line joining the demand observed in the *metering data* in the interval immediately preceding such period and the interval immediately following such period; or
 - 1.5.7.2 where such period is one hour or more, on validated *metering data* collected or received from the *metering installation* in the three most recent comparable *trading days* selected in accordance with section 1.5.8.
- 1.5.8 For the purposes of section 1.5.7.2, where the *metering data*:
- 1.5.8.1 relates to a *generation facility*, the *metering data* for the interval recording the lowest quantity shall be used for estimation; and
 - 1.5.8.2 relates to a *load facility*, the *metering data* for the interval recording the highest quantity shall be used for estimation.
- 1.5.9 For the purposes of section 1.5.7.2, validated *metering data* shall include, where applicable, *metering data* that has been:
- 1.5.9.1 used in accordance with section 1.5.4 or 1.6.3;

- 1.5.9.2 substituted in accordance with section 1.5.5; or
- 1.5.9.3 estimated in accordance with section 1.5.6, 1.6.4 or 1.7.1.2,
- subject to such adjustments as may have been made to such *metering data* in accordance with those sections at the time that the estimate is prepared pursuant to section 1.5.7.2.
- 1.5.10 Upon receipt of the notification, the description and, where applicable, the request referred to in section 1.4.4, the *IESO* shall, where the *metering data* from the main *meter* is being used in accordance with section 1.5.4:
- 1.5.10.1 use such *metering data* for *settlement* purposes provided that the *IESO* is satisfied that such *metering data* is correct and any flags in respect of the *metering data* previously entered into the *metering database* shall be modified accordingly; or
- 1.5.10.2 adjust such *metering data* in accordance with section 1.7.1 if the *IESO* is satisfied that such *metering data* has been affected by the failure of the alternate *meter* or the *check meter*, as the case may be.
- 1.5.11 Upon receipt of the notification, the description and, where applicable, the request referred to in section 1.4.4, the *IESO* shall, where the *metering data* from the alternate *meter* or the *check meter* is being used in accordance with section 1.5.5:
- 1.5.11.1 use such *metering data* for *settlement* purposes provided that the *IESO* is satisfied that such *metering data* is correct and any flags in respect of the *metering data* previously entered into the *metering database* shall be modified accordingly; or
- 1.5.11.2 adjust such *metering data* in accordance with section 1.7.1 if the *IESO* is satisfied that such *metering data* has been affected by the failure of the main *meter*.
- 1.5.12 Upon receipt of the notification, the description and, where applicable, the request referred to in section 1.4.4, the *IESO* shall, where an estimate has been prepared pursuant to section 1.5.6:
- 1.5.12.1 adjust such estimate in accordance with section 1.7.1 if the *IESO* is satisfied that resolution of the trouble call has identified a source of *metering data* that is more accurate than such estimate; or
- 1.5.12.2 in all other cases, use such estimate for *settlement* purposes.

1.6 Validation, Estimation and Editing: Single Metering Installations

- 1.6.1 The following validation procedures shall be conducted, in accordance with the *VEE standard*, by the *IESO*'s automated validation process in respect of each *RWM* that is a *single metering installation*:
- 1.6.1.1 determine whether any *metering data* has failed to be delivered to or received by the *IESO* from the *meter* in the manner and at the time required by these *market rules* and the intervals for which such *metering data* is missing;
 - 1.6.1.2 test current and voltage data, if it has been provided;
 - 1.6.1.3 conduct the data transmission/multiplier verification;
 - 1.6.1.4 test for synchronization of the *meter* clock against the standard of accuracy described in section 11.2.2 of Chapter 6;
 - 1.6.1.5 test for replacement of the *data logger* in the *meter*; and
 - 1.6.1.6 monitor error messages, flags and alarms received from the *meter*.
- 1.6.2 The *IESO* may, in addition to the validation procedures referred to in section 1.6.1, carry out such additional automated validation procedures in respect of *RWMs* that are *single metering installations* as it determines appropriate.
- 1.6.3 Where the *metering data* from the *meter* in a *single metering installation* has not successfully passed the validation procedures referred to in section 1.6.1 and, where applicable, 1.6.2, such *metering data* shall, subject to:
- 1.6.3.1 any adjustment and totalization that may be required pursuant to Chapter 6; and
 - 1.6.3.2 any adjustment made pursuant to section 1.6.5.2,
- nonetheless be used for *settlement* purposes by the *IESO*. Such failure of validation shall be flagged in the *metering database*.
- 1.6.4 Where the *metering data* from the *meter* in a *single metering installation* is unavailable, an estimate of the *metering data* shall be prepared by automated process in accordance with section 1.5.7 and the *VEE standard*. Such estimate shall, subject to:

- 1.6.4.1 any adjustment and totalization that may be required pursuant to Chapter 6; and
- 1.6.4.2 any subsequent adjustment made pursuant to section 1.6.6.1, be used for *settlement* purposes. Such estimation shall be flagged in the *metering database*.
- 1.6.5 Upon receipt of the notification, the description and, where applicable, the request referred to in section 1.4.4, the *IESO* shall, where the *metering data* from the *meter* is being used pursuant to section 1.6.3:
 - 1.6.5.1 use such *metering data* for *settlement* purposes if the *IESO* is satisfied that such *metering data* is correct and any flags in respect of the *metering data* previously entered into the *metering database* shall be modified accordingly; or
 - 1.6.5.2 adjust such *metering data* in accordance with section 1.7.1.
- 1.6.6 Upon the notification, the description and, where applicable, the request referred to in section 1.4.4, the *IESO* shall, where an estimate has been prepared pursuant to section 1.6.4:
 - 1.6.6.1 adjust such estimate in accordance with section 1.7.1 if the *IESO* is satisfied that resolution of the trouble call has identified a source of *metering data* that is more accurate than such estimate; or
 - 1.6.6.2 in all other cases, use such estimate for *settlement* purposes.

1.7 Adjustments and Failure to Resolve Trouble Call

- 1.7.1 An adjustment referred to in section 1.5.10.2, 1.5.11.2, 1.5.12.1, 1.6.5.2 or 1.6.6.1, as the case may be, shall be effected by the *IESO* by means of:
 - 1.7.1.1 the application of a multiplier, an adder or subtractor or an absolute value for each applicable *metering interval*; or
 - 1.7.1.2 the application of the estimation process referred to in section 1.5.7, as the *IESO* determines appropriate in accordance with section 1.7.2, having regard to the written description and, where applicable, the request made by the *metering service provider* pursuant to section 1.4.4. Any flags in respect of the

metering data previously entered into the *metering database* shall be modified accordingly.

- 1.7.2 The *IESO* shall, as between the adjustment methods referred to in section 1.7.1, select the method that in the *IESO's* opinion will result in the use of *metering data* for *settlement* purposes that most closely reflects the flow of *energy* through the *RWM* during the applicable intervals. Where both methods are determined by the *IESO* to be equivalent in this regard, the *IESO* shall select the method that is less likely to result in the *metered market participant* for the *RWM* to which the *metering data* relates obtaining a benefit from the adjustment relative to what the *metered market participant's* position would otherwise have been.
- 1.7.3 Where a trouble call has been issued pursuant to section 1.4.2.3 and:
- 1.7.3.1 the *IESO* does not receive the notification referred to in section 1.4.4.1;
 - 1.7.3.2 the *IESO* does not receive the written description referred to in section 1.4.4.2; or
 - 1.7.3.3 the trouble call is not resolved to the satisfaction of the *IESO*,
- the *IESO* shall for *settlement* purposes use:
- 1.7.3.4 the *metering data*, substituted *metering data* or estimated *metering data* referred to in section 1.5.4, 1.5.5, 1.5.6, 1.6.3 or 1.6.4, as the case may be; and
 - 1.7.3.5 where applicable, the estimates referred to in section 11.1.4A of Chapter 6, until such time as the trouble call is resolved to the satisfaction of the *IESO*.



Appendix 9.2 – [Intentionally left blank]

9