

Nova Scotia Wholesale and Renewable to Retail Electricity Market Rules

Chapter 5: Settlement

Issue: 02

Effective Date: 2007 02 01

Amended: 2016 06 10

Table of Contents

	Page
5, Settlement	5-1
5.0, Description	5-1
5.1, Metering Data Management	5-1
5.2 Adjustments	5-2
5.3, Settlement – general.....	5-3
5.4, Energy Re-dispatch	5-3
5.5, Ancillary Services procured	5-8
5.6, Transmission Tariff	5-11
5.7, Reserved	5-11
5.8, Invoicing and financial settlement	5-11
5.9, Publication and Confidentiality.....	5-12

Document Control and General Provisions

Issue and Revision History

Issue	Date	Reason for Issue
01	2007 02 01	Original Issue
02	2016 06 10	Amended to include Renewable to Retail

Contact for Queries and Submissions

For queries concerning the application or interpretation of this Market Rule and for submission of documents required under associated Market Procedures (unless noted otherwise) contact:

Name: Market Administrator

Phone: 902 428 7719

Address: 5 Long Lake Drive
Halifax, Nova Scotia

B3J 1N8

E-mail: nspsoadmin@nspower.ca

5, Settlement

5.0, Description

This chapter sets out the rules relating to the settlement arising from market operations. These rules therefore apply to settlement between the NSPSO and Market Participants, and do not apply to settlement between Market Participants and other parties (including other Market Participants) in respect of their bilateral transactions which may be scheduled over the Transmission System by the NSPSO. These rules do not apply to settlement between NSPI and its customers for Bundled Service. The rules for invoicing and payment do not apply to transactions between the NSPSO and other divisions of NSPI; such inter-divisional transactions will be recorded where appropriate as book entries.

5.1, Metering Data Management

5.1.1, Meter reading

5.1.1.1, The NSPSO shall arrange for the collection and management of all metering data required for settlement under the Market Rules, including through the use of the resources of NSPI Customer Service division.

5.1.2, Error correction

5.1.2.1, For all Generating Facilities that are the subject of a Generator Interconnection Agreement, the process for error correction and adjustment shall be as set out in article 7 of that agreement. For all Generating Facilities that are the subject of a Standard Small Generator Interconnection and Operating Agreement the process for error correction and adjustment shall be as set out in article 2.5 of that agreement.

5.1.2.2, For all Load Facilities or Distribution Systems, the process for error correction and adjustment shall be in accordance with Regulation 5.5 of the NSPI Rates and Regulations approved by the Board.

5.1.3, Data access

5.1.3.1, Metering data is the confidential property of the NSPSO.

5.1.3.2, Metering data, including meter output data and all error corrections and adjustments, shall be made available in a reasonable and convenient form to the Transmission Provider and to any Market Participant whose settlement under the Transmission Tariff or Market Rules is directly dependent on such metering data.

5.1.4, Metering disputes

5.1.4.1, For all Generating Facilities that are the subject of a Generator Interconnection Agreement, any disputes over metering are subject to resolution in accordance with Section 7 of the transmission Generator Interconnection Agreement or Section 2.5 of the Standard Small Generator Interconnection Agreement as applicable.

5.1.4.2, For all Load Facilities or Distribution Systems, any disputes over metering are subject to resolution in accordance with Regulation 6.7 of the NSPI Rates and Regulations approved by the Board.

5.2 Adjustments

5.2.1, Local loss factors and adjustments

5.2.1.1, All metered energy and demand quantities shall for the purposes of settlement under the Market Rules be adjusted as necessary to reflect the quantities at transmission voltage.

5.2.2, Special Locational Loss Factor

5.2.2.1, In the event that a new or significantly expanded Generating Facility has been assigned a Special Locational Loss Factor in accordance with paragraph 2.2.6.4, the metered output of the Facility shall be further adjusted accordingly.

5.3, Settlement – general

5.3.1.1, The NSPSO shall undertake settlement calculations and prepare settlement statements for all Market Participants including NSPI, on a common basis, subject to limitations imposed by the unavailability of revenue-quality metering data at NSPI PP Generating Facility Points of Receipt and at transmission Points of Delivery used only for the supply of Bundled Service.

5.3.1.2, Settlement within NSPI, including transactions between the NSPSO and other parts of NSPI, will not be subject to invoicing and cash payment, but will be recorded as book entries only.

5.4, Energy Re-dispatch

5.4.1, Eligibility for energy Re-dispatch settlement

5.4.1.1, In accordance with paragraph 4.3.7.8 and except as noted in paragraphs 5.4.1.3 to 5.4.1.5, Market Participants for Generating Facilities that are required to adjust their schedule including in the Day Ahead in order to address transmission constraints, except in the case of Point to Point Transmission Service, or voltage support requirements are eligible for energy Re-dispatch settlement.

5.4.1.2, Except as noted in paragraphs 5.4.1.3 to 5.4.1.5, Market Participants for Generating Facilities that are Re-dispatched up or down by the NSPSO relative to their schedule, are eligible for energy Re-dispatch settlement, including in respect of reserve activation initiated by the Reliability Coordinator and the repayment following reserve activation.

5.4.1.3, Market Participants for Generating Facilities that are Re-dispatched down as a result of proportionate reduction of Point-to-Point transmission flows are not eligible for energy Re-dispatch settlement in respect thereof.

5.4.1.4, NSPI PP is not eligible for energy Re-dispatch settlement in respect of Re-dispatch to address energy imbalance.

5.4.1.5, NSPI PP is not eligible for energy Re-dispatch settlement in respect of Re-dispatch associated with inadvertent energy flows on the intertie to New Brunswick or the repayment of such inadvertent flows.

5.4.2, Determination of quantity of Re-dispatch eligible for settlement

5.4.2.1, The quantity of eligible Re-dispatch up in any hour, measured in MWh, is the lesser of:

- a) the excess of the total MWh output implied by a Re-dispatch instruction over the hour or the relevant portion thereof, over that implied by the Market Participant's schedule; and
- b) the excess of the total actual MWh output measured over the hour or the relevant portion thereof, over that implied by the Market Participant's schedule.

5.4.2.2, The quantity of eligible Re-dispatch down in any hour, measured in MWh, is the greater of:

- a) the excess of the total MWh output implied by the Market Participant's schedule over that implied by a Re-dispatch instruction, measured over the hour or the relevant portion thereof; and
- b) the excess of the total MWh output implied by the Market Participant's schedule over the actual output, measured over the hour or the relevant portion thereof, but not more than 120% of the excess implied by the Re-dispatch instruction.

5.4.3, Determination of settlement amount for Re-dispatch up

5.4.3.1, Following any event of Re-dispatch up, the Market Participant may, at any time prior to the end of the month following the event, submit a claim for Re-dispatch settlement to the NSPSO.

5.4.3.2, Any such claim shall be supported by data setting out the actual variable fuel and operation and maintenance cost per MWh of compliance with the Re-

dispatch instruction, which may include reference to previously filed cost information.

5.4.3.3, For the case of a hydraulic Generating Facility for which the Re-dispatch up has an opportunity cost, the Market Participant may make its claim on the basis of such opportunity cost per MWh, together with appropriate supporting data.

5.4.3.4, The rate per MWh of Re-dispatch up shall be the lesser of the appropriate actual or opportunity cost thus established and 120% of the Re-dispatch cost estimate provided to the NSPSO in accordance with section 4.6.

5.4.3.5, The amount payable by the NSPSO to the Market Participant shall be the product of the rate thus established and the quantity established in accordance with paragraph 5.4.2.1.

5.4.4, Determination of settlement amount due for Re-dispatch down

5.4.4.1, Following any event of Re-dispatch down, the NSPSO shall determine the Re-dispatch settlement amount, and shall provide its determination prior to the end of the month following the event.

5.4.4.2, The NSPSO may require the Market Participant to submit data setting out the actual variable fuel and operation and maintenance cost per MWh that the Market Participant has avoided through compliance with the Re-dispatch instruction, which may include reference to previously filed cost information.

5.4.4.3, For the case of a hydraulic Generating Facility for which the Re-dispatch down has an opportunity benefit, the NSPSO may require the Market Participant to provide data with respect to such opportunity benefit per MWh.

5.4.4.4, The NSPSO may require the Market Participant to submit its calculation of the settlement amount in respect of Re-dispatch down.

5.4.4.5, Any Market Participant required by the NSPSO to submit data in accordance with paragraphs 5.4.4.2, 5.4.4.3 or 5.4.4.4 shall do so within 10 business days.

5.4.4.6, The NSPSO may rely on previously filed cost information, including that filed under sub-section 5.4.3 above, in its determination of the settlement amount for Re-dispatch down.

5.4.4.7, The rate per MWh of Re-dispatch down shall be the greater of the actual saving or opportunity benefit thus established and 80% of the Re-dispatch cost estimate provided to the NSPSO in accordance with section 4.6.

5.4.4.8, The settlement amount payable by the Market Participant to the NSPSO shall be the product of the rate thus established and the quantity established in accordance with paragraph 5.4.2.2.

5.4.5, NSPSO right to audit data and to make adjustments

5.4.5.1, The NSPSO may request additional supporting data and may review or audit data submitted under this section at any time within a year of the Re-dispatch event to which it applies.

5.4.5.2, The Market Participant shall promptly submit any additional data thus requested, and shall assist the NSPSO in any review or audit.

5.4.5.3, If the NSPSO determines that such additional data, review or audit reveals any Re-dispatch settlement to have been in error, it may following notice to the Market Participant make appropriate settlement adjustments.

5.4.6, Offsets and waivers

5.4.6.1, The NSPSO and a Market Participant may, subject to the following conditions, agree to offset or waive settlement for Re-dispatch:

- a) such agreement shall be for no more than one year at a time;
- b) such agreement shall generally apply to all transactions between the NSPSO and the Market Participant with respect to one or more categories listed in paragraph 5.4.7.1;

- c) such agreement shall not in the judgement of the NSPSO be expected to cause additional cost or harm to any other Market Participant; and
- d) the NSPSO shall Publish the existence of such agreements, including their duration, scope and Market Participant.

5.4.7, Accounting for Re-dispatch settlement amounts

5.4.7.1, The NSPSO shall allocate all Re-dispatch settlement amounts to:

- a) reactive power and voltage control;
- b) imbalance; or
- c) congestion management.

5.4.7.2, The NSPSO may make such allocation on the basis of its estimates of the causes of Re-dispatch.

5.4.8, Re-dispatch in response to a Control Action directive

5.4.8.1, In the event that a Generation Market Participant other than NSPI PP is subject to Re-dispatch as a Control Action either;

- a) in respect of a Dispatchable Generating Facility to a level of output that is not covered by a marginal cost estimate provided in accordance with subsection 4.6; or
- b) in respect of a Generating Facility that is not a Dispatchable Generating Facility;

then that Generation Market Participant shall be eligible for Re-dispatch settlement notwithstanding the lack of an applicable marginal cost estimate.

5.4.9, Market Procedure

5.4.9.1, The NSPSO may issue a Market Procedure setting out the process for submitting Re-dispatch settlement claims and the information that the NSPSO requires.

5.5, Ancillary Services procured

5.5.1, Reactive power and voltage support

5.5.1.1, The NSPSO shall pay Generation Market Participants for the variable and opportunity costs of actual provision of reactive power and, for the balance, in proportion to the capability of their Generating Facilities, all as set out below.

Determination of Generating Facility reactive power capability

5.5.1.2, On an annual basis, and otherwise as required as a result of the addition, retirement or modification of a Generating Facility, the NSPSO shall determine the Facility Reactive Power Capability of each registered Generating Facility that provides reactive power under the direction of the NSPSO. The Facility Reactive Power Capability shall be measured in MVAR at transmission voltage and shall be the lesser of:

- a) actual reactive power injection capability while generating energy output at its nominal energy capability; and
- b) reactive power injection capability requirement at nominal energy capability as determined by the applicable technical standard or any higher standard determined in the System Impact Study to be applicable to that Facility.

Determination of System Reactive Power Capability and Facility Reactive Power Capability Share

5.5.1.3, The System Reactive Power Capability is the total of all the Facility Reactive Power Capabilities.

5.5.1.4, The Facility Reactive Power Capability Share of any Facility in any month is the Facility Reactive Power Capability divided by the System Reactive Power Capability.

Determination of the variable and opportunity costs of providing reactive power

5.5.1.5, The variable cost of providing reactive power is limited to:

- a) the variable cost of synchronous condenser operation; and
- b) the net cost of Re-dispatch of energy in order to address voltage support requirements as determined in accordance with section 5.4.

5.5.1.6, Any requirement by the NSPSO for synchronous condenser operation of a generation facility for the purposes of providing reactive power and voltage support shall be treated as a Re-dispatch up and settled in accordance with section 5.4.

5.5.1.7, The opportunity cost of providing reactive power is limited to circumstances where the NSPSO requires provision of reactive power in excess of the Facility Reactive Power Capability as determined above.

5.5.1.8, To the extent that the provision of reactive power in excess of the Facility Reactive Power Capability results in a net variable cost to the Market Participant, it shall be settled as Re-dispatch down in respect of the reduced energy output in accordance with section 5.4.

Determination of total reactive power revenue and net reactive power revenue

5.5.1.9, The total reactive power revenue in any month is the amount determined in accordance with schedule 2 of the transmission tariff, as applied to all transmission service including that used by NSPI for Bundled Service and other purposes.

5.5.1.10, The net reactive power revenue in any month is the total reactive power revenue less the variable and opportunity costs of providing reactive power as determined in accordance with paragraphs 5.5.1.5 to 5.5.1.8 above for the respective month.

Determination of Market Participant reactive power credit

5.5.1.11, The Market Participant Reactive Power Capability Share in any month as the total of the Facility Reactive Power Capability Shares in respect of the Facilities for which it is the Market Participant.

5.5.1.12, The NSPSO shall credit to each Market Participant its Reactive Power Capability Share of the net reactive power revenue for each month.

5.5.2, Energy imbalance procurement

5.5.2.1, NSPI PP fulfills all energy imbalance requirements except those fulfilled by re-dispatch of other Market Participant Generating Facilities.

5.5.2.2, The NSPSO shall therefore credit the full amounts collected for energy imbalance under the transmission tariff to NSPI PP, less the net amount of settlement with other Market Participants in respect of Re-dispatch for purposes of matching energy imbalance.

5.5.3, Other Ancillary Service procurement

5.5.3.1, Certain other Ancillary Services are procured only from NSPI PP, so that the NSPSO shall credit to NSPI PP the full amounts collected under the transmission tariff schedules in respect of :

- a) load following;
- b) operating reserve; and
- c) supplemental reserve.

5.6, Transmission Tariff

5.6.1.1, Charges to Transmission Customers shall be determined and invoiced in accordance with the Transmission Tariff.

5.7, Reserved

5.8, Invoicing and financial settlement

5.8.1, Invoice and settlement statement

5.8.1.1, The NSPSO shall invoice each Market Participant for the net amount of charges and credits arising in the respective month.

5.8.1.2, The NSPSO shall make available to each Market Participant, in the invoice or by other agreed means, the calculation of each amount included in the invoice.

5.8.2, Deadlines

5.8.2.1, The NSPSO shall issue its invoices within a reasonable time after the end of the month in which the charges and credits arise.

5.8.2.2, The NSPSO and Market Participants shall make full payment of such invoices no later than the last Business Day not more than 20 days after the date of issue of the invoice. For payments by mail, the payment date shall be the date of the postmark.

5.8.3, Disputes

5.8.3.1, If a Market Participant becomes aware of an error or otherwise disputes an invoice, it shall promptly notify the NSPSO.

5.8.3.2, The NSPSO may if appropriate issue a revised invoice.

5.8.3.3, Disputes that cannot be resolved at the normal staff level shall be subject to the dispute resolution process set out in section 2.8, unless the disputes relate to

metering data, in which case the relevant metering data dispute resolution process identified in sub-section 5.1.4 shall apply.

5.8.3.4, Payment of invoiced amounts is due in full, irrespective of any such notification of error or dispute, and without prejudice to the resolution of such error or dispute.

5.8.3.5, A Market Participant may, following notification to the NSPSO, pay any disputed portion into an independent escrow account pending resolution of the dispute.

5.8.4, Delay and Default

5.8.4.1, Interest on any unpaid amounts (including amounts placed in escrow) shall be calculated in accordance with the methodology specified in Regulation 5.4 of NSPI Rates and Regulations as approved by the Board.

5.8.4.2, In the event of a Market Participant payment default that has not been remedied within 30 days of notice by the NSPSO, the NSPSO may suspend all or certain of the Market Participant's rights as a Market Participant in accordance with the provisions of section 2.5, and may ultimately Terminate market participation in accordance with that section. Such actions are in addition to, and not in replacement of, rights of recovery and rights under the Transmission Tariff or other agreements.

5.9, Publication and Confidentiality

5.9.1, Confidential Information

5.9.1.1, Settlement information is confidential except as specifically required to be Published.

5.9.2, Publication

5.9.2.1, The NSPSO shall Publish the following information:

- a) invoicing dates and payment deadlines;

- b) system aggregates of energy and peak monthly demand, based on metering data, and as used in the determination of charges under the Transmission Tariff;
- c) information specified in sub-paragraph 5.4.6.1 (d); and
- d) the System Reactive Power Capability.