



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00121-R01		
Subject:	Data, Scheduling, Dispatch, Prices		
Title:	Market Treatment of Facilities With Multiple Connection Points – Replacement Energy Offers		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	7	Appendix:	
Sections:	3.3		
Sub-sections proposed for amending:	3.3.4B and 3.3.4C (new)		

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Submit for Technical Panel Review	May 18, 2006
2.0	Publish for Stakeholder Review and Comment	May 24, 2006
Approved Amendment Publication Date:		
Approved Amendment Effective Date:		

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IESO-administered markets* if the amendment is not made.
- Alternative solutions considered.
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IESO-administered markets*.

Summary

This proposed rule amendment would:

- allow a registered market participant whose hydroelectric generation facility, combined cycle generation facility, enhanced combined cycle facility or cogeneration facility experiences a forced outage to submit revised dispatch data for a related generation facility (i.e. a replacement energy offer) under shorter timelines than is currently permitted under the market rules;
- allow the market participant to provide, and require the IESO to accept replacement energy from the related facility until the market tools process the revised dispatch data; and
- authorize the IESO to adjust any congestion management settlement credit (CMSC) payments resulting from the provision of replacement energy during the period between the forced outage and the time the market tools process the revised dispatch data.

This rule amendment is needed so that market participants can better manage energy production at their facilities and also so that the market experiences more efficient outcomes when forced outages take place.

Background

The resolution of dispatch issues is one of the measures proposed to improve the reliability of the power system in advance of the summer of 2006. The volatility of dispatch instructions and the ability to manage plant operational requirements fall within the scope of the Dispatch Issues Working Group. Permitting replacement offers, which is the transfer of energy production obligations of one generation facility to another when the first generating facility has a forced outage, is one of several proposed solutions coming from this working group. The Stakeholder Engagement Plan (SE-9) of the Dispatch Issues Working Group may be found at the following web location:

http://www.theimo.com/imoweb/pubs/consult/se9/se9_Dispatch-Issues-stakeholder-plan-r2.pdf

The individual generating units at hydroelectric generating stations are registered as separate facilities if the units have separate connections to the IESO-controlled grid. The registered market participant is required to submit separate offers for each facility. These offers may have different price-quantity amounts to reflect the participant's desired generation pattern. For example, the market participant may offer one facility at low prices so that "must-run" water is more likely to be economically selected and scheduled. The market participant may also offer other related facilities at a higher price to reflect opportunity costs. When a facility that was selected economically and scheduled to generate has a forced outage another related facility, with a higher priced offer, may be physically capable of using the "lower priced" water associated with the failed facility (e.g. both facilities draw water from the same forebay). However, the energy cannot currently be generated by another facility in real-time without being non-compliant to its dispatch instructions.

The market participant is also restricted in its ability to revise dispatch data to reflect these changed

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

circumstances. Under the present market rules the offer window closes two hours prior to the dispatch hour. If the water cannot be stored within that period of time, generators are left with a decision either to spill water or to depart from dispatch instructions for regulatory reasons. Neither result is desirable. It would not be an economically efficient outcome for the market if water were spilled. If water were spilled, that low priced energy is “lost” and resources offered into the market at higher prices would replace the facility on outage, resulting in higher market clearing prices. The present requirements of the market rules restrict lower priced energy from accessing the market, adversely impacting the efficiency of the market. Similarly a departure from dispatch instructions should not be rationalized for regulatory reasons where a market based solution is available.

A similar efficiency rationale to the one described above for hydroelectric facilities also applies to combined cycle facilities. Combined cycle facilities are generation facilities that produce electricity using a combination of combustion turbines and steam turbines and where the steam turbines operate on steam recovered as wasted heat from the combustion turbines. For combined cycle facilities, instead of spilling water there would be an unnecessary loss in electricity production for the steam turbine when the gas turbine fails if another gas turbine cannot take its place¹.

Although the concept was originally brought up to support hydroelectric stations, the Dispatch Issues Working Group recognized that it would also be useful for combined cycle and cogeneration facilities to manage forced outages to gas turbines and the subsequent impact on the steam turbine and related gas turbines. The working group ran a pilot on Replacement Offers for hydroelectric generation facilities. Although no opportunity to exercise the option occurred for the pilot participants, the working group recommended that the IESO should nonetheless go ahead with the initiative. The IESO agrees as it uses procedures that are already in place to manage facilities that must depart from dispatch instructions for regulatory reasons (e.g. for safety or environmental reasons).

This rule amendment would provide operational flexibility to the 21 existing hydroelectric stations, the two cogeneration facilities and the one combined cycle generation facility that are unable to aggregate for purposes of submitting offers. In addition, there are a number of identified future combined cycle and cogeneration facilities that could make use of this amendment to better manage their facilities during forced outages.

Recent monitoring of these types of events during the Dispatch Issues Working Group initiatives indicates that their frequency is likely to be in range of one to two events per year per generation facility.

The rule amendment proposed herein would allow generators the flexibility necessary to operate their facilities more efficiently. It is included under MR-00121 because it relates to, and assists in, the aggregation of units with multiple connection points. For a discussion of aggregation and the need for the added flexibility that it provides, see the “Background” discussion in the earlier rule amendment MR-00121-R00, Market Treatment of Facilities With Multiple Connection Points – Aggregation as Single Connection, at the following location: http://www.theimo.com/imoweb/pubs/mr/mr_00121-

¹ The gas turbine in a combined cycle generation facility causes both electricity and steam production. The steam is utilized in a steam turbine, which in turn causes additional electricity production. If the gas turbine is forced out of service, the steam turbine is orphaned and additional electricity production is lost unless another gas turbine can take its place.

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT[R00-BA.pdf](#)**Discussion**

This amendment proposal would allow generators who experience a forced outage at a hydroelectric facility or who experience a forced outage of a gas turbine at a combined cycle generation facility, an enhanced combined cycle facility, or a cogeneration facility to submit revised dispatch data for a related facility under the following conditions:

- Market participants for these facilities submit revised dispatch data (i.e. the replacement energy offer) for the related facility no later than 10 minutes prior to a given dispatch hour. If the revised dispatch data is submitted less than 10 minutes prior to the dispatch hour, the revised dispatch data will be processed for the subsequent dispatch hour. The 10 minute period is necessary to process the revised data within market systems.
- In the case of a hydroelectric facility, the related facility utilizes water that would have otherwise been utilized by the facility experiencing the forced outage. In the case of a combined cycle generation facility, an enhanced combined cycle facility or a cogeneration facility, the related facility is a gas turbine that would make up for the loss in steam production to the steam turbine unit from the gas turbine unit experiencing the forced outage.
- The submission of revised dispatch data must take place no later than one hour after the facility experiences the forced outage.

The restriction on when the generator is allowed to submit revised dispatch data is judged to be reasonable given that there was ample opportunity to submit the revised data. If the generator fails to submit dispatch data within the one hour of the forced outage, the existing 2-hour offer window would apply. See the proposed new section 3.3.4B.

The generator must notify the IESO of its intention to submit revised dispatch data. In the interim period, before the revised dispatch data is processed by market systems, the IESO must accept the replacement energy from the related facility for the facility that is forced out, provided there is no adverse impact on the reliability of the IESO-controlled grid. The replacement energy is limited to the original energy scheduled for the facility experiencing the forced outage. See the proposed new section 3.3.4C.

It is also proposed that any applicable congestion management settlement credit payments to the related facility during the interim period be limited to what would have been received by the facility experiencing the forced outage as set out in the applicable market manual. This is judged to be a reasonable outcome because the facility on outage and its replacement would receive similar economic treatment. For example, if the facility experiencing the forced outage was not receiving any CMSC payments prior to the outage, the IESO would recover all CMSC payments made to the related facility during the interim period. See the proposed new section 3.5.8 of Chapter 9 under MR-00121-R02.

PART 4 – PROPOSED AMENDMENT

3.3 Dispatch Data Submissions

- 3.3.1 Subject to section 3.3.9, a *registered market participant* that submits or is required to submit *dispatch data* for the initial *pre-dispatch schedule*, shall submit initial *dispatch data* for each *dispatch hour* of the *dispatch day* after 06:00 EST but before 11:00 EST of each *pre-dispatch day*. Such initial *dispatch data* may thereafter be revised as permitted by this section 3.3.
- 3.3.2 The *IMOIESO* shall use the initial *dispatch data* submitted by *registered market participants* to determine and *publish* the initial *pre-dispatch schedule* in accordance with section 5.
- 3.3.3 Subject to section 3.3.4A, a *registered market participant* may submit revised *dispatch data* with respect to any *dispatch hour* without restriction until 2 hours prior to the beginning of that *dispatch hour*.
- 3.3.4 [Intentionally left blank]
- 3.3.4A A *registered market participant* may submit revised *dispatch data* for an *hour-ahead dispatchable load* with respect to any *dispatch hour*, without restriction, until 3 hours prior to that *dispatch hour*.

Replacement Energy Offers

- 3.3.4B A registered market participant for a hydroelectric generation facility, a combined cycle generation facility, an enhanced combined cycle facility or a cogeneration facility may submit revised dispatch data for a related facility, with respect to any dispatch hour up until 10 minutes prior to the beginning of that dispatch hour. If the revised dispatch data is submitted less than 10 minutes prior to the beginning of that dispatch hour, the revised dispatch data will apply to the subsequent dispatch hour. This section is subject to the following conditions:
- In the case of a hydroelectric generation facility that is a related facility, another hydroelectric generation facility has experienced a forced outage.
 - In the case of an combined cycle generation facility, any enhanced combined cycle facility or any cogeneration facility that is a related facility, one or more gas turbine units within another related facility has experienced a forced outage.
 - The submission of revised dispatch data takes place no later than one hour after the facility experiences the forced outage and is limited to the MW amount on forced outage.
 - The registered market participant whose facility experienced a forced outage promptly notified the IESO of its intention to submit revised dispatch

data for the related facility for the next available dispatch hour and of its intention to provide replacement energy from that facility.

- The related facility and the facility experiencing the forced outage have the same registered market participant.
- The related facility and the facility experiencing the forced outage have the same metered market participant .

Related facilities are facilities that, in the case of a hydroelectric generation facility, can utilize the water of the facility experiencing the forced outage without delay. In the case of combined cycle facilities, enhanced combined cycle facilities or cogeneration facilities, related facilities are facilities that can make up the loss in steam production to the steam turbine unit that would otherwise have been produced by the gas turbine unit experiencing the forced outage.

3.3.4C In the period after the notification and before the market tools process the revised dispatch data, the IESO shall accept replacement energy from the related facility, provided there is no adverse impact on the reliability of the IESO-controlled grid. The replacement energy shall be limited to the original energy scheduled for the facility experiencing a forced outage.

3.3.5 Except as permitted by sections 3.3.4B, 3.3.8, 3.3.9.2 and 3.3.11, no registered market participant may, without the approval of the IMOIESO, submit revised dispatch data with respect to any dispatch hour within 2 hours of that dispatch hour or, in the case of an hour-ahead dispatchable load, within 3 hours of that dispatch hour.

3.3.6 Where pursuant to section 3.3.5, the authorization of the IMOIESO is required for the submission of revised dispatch data, the IMOIESO shall, unless the change in quantity poses risks in relation to the reliability or security of the electricity system, authorize the submission of revised dispatch data where:

3.3.6.1 [Intentionally left blank]

3.3.6.2 the revision relates solely to the quantity element of the dispatch data; and

3.3.6.3 the registered market participant indicates, at the time of the submission of the revised dispatch data, that the revision is required in order to reflect a proposed change in the operational status of the registered facility designed solely to prevent the registered facility from operating in a manner that would violate any applicable law, endanger the safety of any person or damage property or the environment.

3.3.7 Dispatch data submitted during the dispatch day to which it applies need refer only to the remaining dispatch hours of that dispatch day.

3.3.8 Notwithstanding any other provision of this section 3.3 and with the exception of testing specified in section 6.6 of Chapter 5, a registered market participant shall

as soon as practical submit to the *IESO* revised *dispatch data* for any *registered facility* in respect of which it is the *registered market participant* if, for any *dispatch hour* in the current *pre-dispatch schedule*, the quantity of any *physical service* scheduled for that *registered facility* differs from the quantity the *registered market participant* reasonably expects to be delivered or withdrawn by more than the greater of (i) 2 percent (ii) such absolute amount as may be determined by the *IESO* based on considerations of *reliability* and *facility* specific characteristics, (iii) in the case of a *cogeneration facility* that is either a *dispatchable* or *self-scheduling generation facility*, such amount based on the impact that the production of the other forms of useful energy within the *facility* has on *energy* production based on the information outlined in section 2.2.6.10, and the [IMOIESO](#), and (iv) in the case of an *enhanced combined cycle facility* that is either a *dispatchable* or *self-scheduling generation facility*, such amount based on the impact that the recovery of waste heat from an industrial process/processes within the *facility* has on *energy* production based on the information outlined in section 2.2.6.10, and the [IMOIESO](#):

3.3.8.1 shall, unless the change in quantity poses risks in relation to the *reliability* or *security* of the *electricity system*, include such change as an input in respect of any subsequent *market schedules* determined following receipt of the change; and

3.3.8.2 may refer such changes or revision of *dispatch data* to the *market surveillance panel*.

3.3.9 If the *dispatch data* for a registered facility for a given trading day of a trading week will not change from trading week to trading week, the registered market participant for that registered facility may, as and for its *dispatch data* described in section 3.3.1, submit standing *dispatch data* for that registered facility. Such standing *dispatch data* shall:

3.3.9.1 define the *dispatch data* for each *dispatch hour* of each *dispatch day*;

3.3.9.1A in respect of each *dispatch day* for which it is in effect, be deemed for the purposes of this section 3.3 to be initial *dispatch data* at 06:00 EST on the *pre-dispatch day*; and

3.3.9.2 remain in effect until the expiration date specified in the standing *dispatch data* unless earlier withdrawn or earlier revised by the *registered market participant*:

a. as standing *dispatch data* prior to 06:00 EST on the *pre-dispatch day*; or

b. in accordance with sections 3.3.3 to 3.3.8.

3.3.10 Notwithstanding sections 3.3.3, 3.3.4, [3.3.4B](#), 3.3.5 and 3.3.8, where the [IMOIESO](#) determines, on the basis of the initial *pre-dispatch schedule* or any subsequent *pre-dispatch schedule* determined in accordance with section 5, that a revision to *dispatch data* will not allow it to maintain the *reliability* of the

- IMOIESO-controlled grid, the IMOIESO may, subject to sections 3.3.15 and 3.3.16:
- 3.3.10.1 refuse to accept a revision to the quantity element of *dispatch data* submitted by a *registered market participant*; or
 - 3.3.10.2 direct a *registered market participant* to submit or to resubmit a revision to the quantity element of its *dispatch data*, or both. The IMOIESO shall notify the *registered market participant* of a refusal referred to in section 3.3.10.1 and shall include in any direction issued pursuant to section 3.3.10.2 a description of the revised *dispatch data* to be submitted or resubmitted by the *registered market participant*.
- 3.3.10A A *registered market participant* in respect of a *transitional scheduling generator* may treat a direction referred to in section 3.3.10.2 that means an increase in the quantity element of its *dispatch data* as a request and shall confirm with the IMOIESO its intention to comply or not comply with the request issued. If the *registered market participant* indicates its intentions are not to comply with the direction, the *registered market participant* shall provide the reasons for non-compliance to the IMOIESO.
- 3.3.11 A *registered market participant* to which a direction has been issued pursuant to section 3.3.10.2 shall submit revised *dispatch data* to the IMOIESO in accordance with the terms of the direction within 2 hours of the time of receipt of the direction.
- 3.3.12 If the IMOIESO determines, on the basis of the initial *pre-dispatch schedule* or any subsequent *pre-dispatch schedule* determined in accordance with section 5, that it requires the supply of *energy, ancillary services*, other than *contracted ancillary services*, or both from additional *registered facilities* in order to maintain the *reliability* of the IMOIESO-controlled grid, the IMOIESO shall determine if there are additional *registered facilities* that have not submitted *dispatch data* and that can, to the IMOIESO's knowledge, be made available within the time required in order to help maintain the *reliability* of the IMOIESO-controlled grid.
- 3.3.13 Subject to sections 3.3.14 to 3.3.16, the IMOIESO may direct the *registered market participant* for an additional *registered facility* identified pursuant to section 3.3.12 to submit *dispatch data*, and shall include in such direction a description of the *dispatch data* to be submitted by the *registered market participant*.
- 3.3.14 A *registered market participant* to which a direction is issued pursuant to section 3.3.13 shall submit *dispatch data* to the IMOIESO in accordance with the terms of the direction within 2 hours of the time of receipt of the direction.
- 3.3.15 The IMOIESO shall not issue a direction pursuant to section 3.3.10 or 3.3.13 for the purposes of addressing a lack of overall *adequacy* of the IMOIESO-controlled grid.

- 3.3.16 Where a *registered facility* to which a direction issued pursuant to section 3.3.10.2 or 3.3.13 relates has a *reliability must-run contract* with the ~~IMO~~IESO, any such direction shall, subject to the time period for the submission of *dispatch data* referred to in sections 3.3.11 and 3.3.14, be consistent with the terms of such *reliability must-run contract*.
- 3.3.17 Nothing in sections 3.3.10 to 3.3.16 shall preclude the application of the provisions of sections 7.3.2.3 or of Appendix 7.6 in respect of *dispatch data* that is revised or submitted in accordance with sections 3.3.10 to 3.3.16.
- 3.3.18 A *registered market participant* may, for any one or more of its *registered facilities* that is a *dispatchable load*, identify all or a portion of the consumption at such *registered facilities* as *non-dispatchable load* by submitting *dispatch data* in accordance with the applicable *market manual*.

PART 5 – IESO BOARD DECISION RATIONALE

Insert Text Here



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00121-R02		
Subject:	Data, Scheduling, Dispatch, Prices		
Title:	Market Treatment of Facilities With Multiple Connection Points – Replacement Offers		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	9	Appendix:	
Sections:	3.5		
Sub-sections proposed for amending:	3.5.2 and 3.5.8 (new)		

PART 2 – PROPOSAL HISTORY – SEE MR-00121-R01

Version	Reason for Issuing	Version Date
Approved Amendment Publication Date:		
Approved Amendment Effective Date:		

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IESO-administered markets* if the amendment is not made.
- Alternative solutions considered.
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IESO-administered markets*.

Summary

Please refer to MR-00121-R01

Background

Please refer to MR-00121-R01.

Discussion

This amendment proposes to authorize the IESO to limit the CMSC payments for the replacement energy provide by the related facility during the interim period until the market tools can process the replacement energy offer. The proposed limitation is that the CMSC payments to the related facility would not exceed the level of CMSC that would have been paid to the facility experiencing the forced outage.

It is proposed that the IESO would estimate the level of CMSC that would have been paid for the facility experiencing the forced outage and that the estimation methodology would be detailed in a market manual.

PART 4 – PROPOSED AMENDMENT

3.5 Hourly Settlement Amounts for Congestion Management

- 3.5.1 The *dispatch instructions* provided by the IESO to *market participant k* will sometimes instruct *k* to deviate from its *market schedule* in ways that, based on *market participant k's offers* and *bids*, imply a change to *market participant k's* net operating profits relative to the operating profits implied by *market participant k's market schedule*. When this occurs and *market participant k* responds to the IESO's *dispatch instructions*, *market participant k* shall, subject to Appendix 7.6 of Chapter 7, receive as compensation a *settlement* credit equal to the change in implied operating profits resulting from such response, calculated in accordance with section 3.5.2. If *market participant k* does not fully or accurately respond to its *dispatch instructions* from the IESO, the compensation paid to

market participant k shall be altered as set forth in this section 3.5, or as otherwise specified by the IESO.

3.5.1A A registered market participant for a constrained off facility is not entitled to a congestion management settlement credit determined in accordance with section 3.5.2 as the result of the facility’s own equipment or operational limitations, if

3.5.1A.1 a dispatchable load facility does not fully or accurately respond to its dispatch instructions; or

3.5.1A.2 if the ramping capability of a dispatchable load facility, as represented by the ramp rate set out in the offers or bids, is below the threshold for the IESO to modify dispatch instructions and thereby prevents changes to the dispatch;

and then the IESO may withhold or recover such congestion management settlement credits and shall redistribute any recovered payments in accordance with section 4.8.2 of Chapter 9.

3.5.2 Subject to sections 3.5.6, ~~and~~ 3.5.7 and 3.5.8 and subject to Appendix 7.6 of Chapter 7, the hourly congestion management settlement credit for market participant k for settlement hour h (“CMSC_{k,h}”) shall be determined by the following equation:

●●●●●●●●

3.5.8 The IESO may limit, withhold or recover any congestion management settlement credits that result from the acceptance by the IESO of the replacement energy referred to in section 3.3.4C of Chapter 7 and shall redistribute any recovered payments in accordance with section 4.8.2. Any applicable congestion management settlement credits for replacement energy accepted by the IESO shall be limited to an IESO estimate of what would have been received by the original facility had it not experienced the forced outage as set out in the applicable market manual.

PART 5 – IESO BOARD DECISION RATIONALE

Insert Text Here



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00121-R03		
Subject:	Data, Scheduling, Dispatch, Prices		
Title:	Market Treatment of Facilities With Multiple Connection Points – Replacement Offers		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	9	Appendix:	
Sections:	4.8		
Sub-sections proposed for amending:	4.8.2.X		

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
Approved Amendment Publication Date:		
Approved Amendment Effective Date:		

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IESO-administered markets* if the amendment is not made.
- Alternative solutions considered.
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IESO-administered markets*.

Summary

Please refer to MR-00121-R01.

This amendment proposes to authorize the IESO to distribute any CMSC payments recovered under section 3.5.8 of chapter 9 at the end of a billing period on the basis of allocated quantities of energy withdrawals.

Background

Please refer to MR-00121-R01.

Discussion

The acceptance by the IESO of replacement energy may result in recovery of CMSC payments from market participants for replacement energy provided by a related facility, as proposed in MR-00121-R03. These recovered amounts would have to be distributed to other market participants. This amendment would allow the IESO to redistribute these payments as a non-hourly settlement amount at the end of the energy market billing period on the basis of monthly allocated quantities of energy withdrawals. This distribution is appropriate and efficient given the expected relative infrequency of these short lived events. The IESO would be able to use manual processes to effect the proposed distributions.

PART 4 – PROPOSED AMENDMENT

4.8 Additional Non-Hourly Settlement Amounts

.....

4.8.2 The *IESO* shall, at the end of each *energy market billing period*, distribute to *market participants*, on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*, the following amounts:

.....

[4.8.2.X any adjustments made by the IESO in accordance with section 3.5.8.](#)

PART 5 – IESO BOARD DECISION RATIONALE

Insert Text Here