

ELECTRICITY INDUSTRY ACT

**ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY
MARKET) REGULATIONS 2004**

WHOLESALE ELECTRICITY MARKET RULES

**Power System Operation Procedure:
Dispatch**

VERSION HISTORY

<u>21 September 2006</u>	<u>Power System Operation Procedure (Market Procedure) for Dispatch</u>
<u>30 September 2009</u>	<u>System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0013</u>
<u>5 January 2010</u>	<u>System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0014</u>
<u>4 March 2010</u>	<u>System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0015</u>
<u>28 June 2010</u>	<u>System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0018</u>
<u>Balancing Market Commencement Day</u>	<u>Replacement of the Procedure resulting from Procedure Change Proposal PPCL0021</u>

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RELATIONSHIP WITH MARKET RULES

1. This Power System Operation Procedure (PSOP): Dispatch (Procedure) has been developed in accordance with, and should be read in conjunction with, the Wholesale Electricity Market Rules (Market Rules).
2. References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as of the Balancing Market Commencement Day. These references are included for convenience only, and are not part of this Procedure.
3. This Procedure is subservient to the Market Rules. In the event of conflict between this Procedure and the Market Rules or any other document, the order of precedence is as set out in the Market Rules **[MR 1.5.2]**
4. This Procedure may include explanatory text, including quotations from the Market Rules. Such explanatory text is for information only, does not form part of the Procedure, and is italicised and contained in a rectangular box.
5. A word or phrase defined in the Electricity Industry Act 2004, or in the Regulations or Market Rules made under that Act, has the same meaning when used in this Procedure.

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RELATED DOCUMENTS

1. This document is related to, and should be read in conjunction with, the following documents:
 - a. SWIS Technical Rules and Operating Standards
 - b. PSOP – Power System Security
 - c. PSOP – Ancillary Services
 - d. PSOP – Communications and Control Systems
 - e. PSOP – Commissioning and Testing
 - f. PSOP – Monitoring and Reporting
 - g. Market Procedure: IMS Interface

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COMMENCEMENT

1. This Procedure replacement has effect from the Balancing Market Commencement Day.

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1 SCOPE

1. This Procedure has been developed in accordance with the Market Rules and documents:

- a. the format and method by which each Market Generator must provide to System Management for each of its Intermittent Generators with capacity exceeding 10MW, its most current forecast of the MWh energy output of the Intermittent Generator [MR 7.2.5];
- b. the procedure to be followed when scheduling and issuing Operating Instructions to dispatch Registered Facilities covered by any Ancillary Services Contract [MR 7.6.13];
- c. the format and time resolution for the provision of data by Verve Energy to System Management with respect to the scheduling of Stand Alone Facilities for Ancillary Services and the scheduling of Facilities in the Verve Energy Balancing Portfolio [MR 7.6A.2];
- d. The process for selecting Non-Balancing Facilities from the Non-Balancing Dispatch Merit Order [MR 7.7.4A];
- e. the information that must be provided by a Market Participant to System Management for each of its Non-Scheduled Generators to enable an estimation of the Facility's output by either the IMO or System Management, as applicable [MR 7.7.5A & 7.7.5C];
- f. the procedure for System Management to estimate the maximum amount of sent out energy, in MWh, which each Non-Scheduled Generator, by Trading Interval, would have supplied in the Trading Interval has a Dispatch Instruction not been issued [MR 7.7.5B];
- g. the procedure to be followed by System Management and Market Participants in forming, issuing, recording, receiving, confirming and responding to Dispatch Instructions and Operating Instructions [MR 7.7.9];
- h. the procedure to be following by System Management in determining the quantities described under clause 7.7.5A(a) [MR 7.7.9];
- i. the procedure for calculating the Load Rejection Reserve Response Quantity and the Spinning Reserve Response Quantity [MR 7.13.1(eD)];
- j. the procedure to be followed in providing settlement and monitoring data to the IMO [MR 7.13.3];
- k. the procedure for determining an estimate for each Trading Interval in the Trading Day and for each Balancing Facility of the:
 - i. SOI Quantity;
 - ii. EOI Quantity; and
 - iii. Relevant Dispatch Quantity at the end of a Trading Interval [MR 7A.3.7];

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l. the procedure for determining forecasts of the Relevant Dispatch Quantity and EOI Quantity for Non-Scheduled Generators for each future Trading Interval in the Balancing Horizon [MR 7A.3.15]; and

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m. the procedure for determining the forecast LFAS Quantity for each Trading Interval in the next Trading Day [MR 7B.1.4],

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2. This Procedure covers both Verve Energy and non-Verve Energy Facilities. It covers both System Management's general dispatch obligations, and those relating to scheduling the Verve Energy Balancing Portfolio as a service provided to Verve Energy.

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3. This Procedure documents the obligations on:

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a. System Management in respect of the scheduling and dispatch of Market Participants' Facilities and the provision of information to the IMO and to Market Participants on dispatch-related matters

b. Market Participants in respect of the provision of information and the operation of their Facilities

c. the IMO in respect of the provision of information.

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2 MANAGEMENT OF DISPATCH INFORMATION

1. System Management must store, and maintain from time to time, all necessary data needed to carry out the following processes:

a. preparing the information submitted to the IMO on the Scheduling Day; and

b. planning for dispatch; and

c. issuing Dispatch Advisories; and

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d. issuing Dispatch Instructions, Operating Instructions and Dispatch Orders; and

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e. preparing the ex-post settlement and monitoring data.

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2. The IMO must provide all new and updated data in the Standing Data relating to a Trading Day to System Management as soon as practicable for updating of System Management's Information Technology Systems in accordance with the Market Rules [MR 2.34.1(b)].

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3 DISPATCH CRITERIA

1. When scheduling and dispatching Market Participant's Facilities, System Management must at all times seek to meet the criteria described in the Market Rules [MR 7.6.1].

The criteria are, in order of priority:

a. *to enable operation of the SWIS within the Technical Envelope Parameters appropriate for the applicable SWIS Operating State;*

- b. to minimise involuntary load shedding on the SWIS; and
- c. to maintain Ancillary Services to meet the Ancillary Services standards appropriate for the applicable SWIS Operating State.

For the avoidance of doubt, satisfying the Dispatch Criteria will always take precedence over other dispatch rules such as adherence to the Balancing Merit Order.

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4 SCHEDULING AND DISPATCH OF THE VERVE ENERGY BALANCING PORTFOLIO

1. System Management's and Verve Energy's obligations for scheduling and dispatching the Facilities of the Verve Energy Balancing Portfolio are set out in the Market Rules **[MR 7.6A]**.
2. Verve Energy must provide System Management with a set of dispatch guidelines for its Facilities comprising the Verve Energy Balancing Portfolio in a form agreed between Verve Energy and System Management.
3. System Management must prepare a Verve Energy Dispatch Plan daily for the Verve Energy Balancing Portfolio in a form agreed between Verve Energy and System Management.
4. Verve Energy may update the Verve Energy Balancing Portfolio dispatch guidelines from time to time and advise System Management of the date and time from which the updated guidelines are to take effect.
5. Communication of the Verve Energy Balancing Portfolio dispatch guidelines must be made in a form agreed by Verve Energy and System Management.
6. Communication of, and consultation in relation to, the information referred to in the Market Rules [MR 7.6A.2 (c)] must normally be by means of an electronic interface. Verve Energy and System Management may communicate by other means where necessary provided that all communications create, or are subsequently verified by, an electronic record.

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5 PRE GATE CLOSURE

5.1 Pre-Dispatch Plan

1. System Management must produce, and update as required, a pre-Dispatch Plan covering all periods in the Balancing Horizon.
2. The pre-Dispatch Plan referred to in step 5.1.1 must, where practicable, be produced using a mathematical program based on the same formulation used to create Dispatch Instructions (refer section 6.3 below).
3. Upon receiving a Forecast BMO from the IMO, System Management must formulate any constraints necessary to maintain Power System Security and use those constraints when producing the pre-Dispatch Plan referred to in step 5.1.1.

4. System Management must report any pre-dispatch constraints binding, and any pre-dispatch constraints violated, via Dispatch Advisory notices as described in section 5.8 of this Procedure.
5. System Management may communicate warnings to individual Market Participants if it detects significant discrepancies between Standing Data equipment limits and the pre-Dispatch Plan.

The warnings referred to in step 5.1.5 are for information only. It remains the Market Participant's responsibility to ensure their Balancing Submissions reflect the physical capabilities of their Facilities at all times.

5.2 Constraints used in the pre-Dispatch Plan

1. The constraints referred to in step 5.1.3 may include, as appropriate, constraints to ensure any one or more of the following:
 - a. Maintenance of Ancillary Services standards
 - b. Appropriate use of contracted services, including Dispatch Support Services and Network Control Services
 - c. Maintenance of the Ready Reserve Standard
 - d. Adherence to Equipment Limits, but only to the extent that those limits are not inconsistent with the dispatch of Balancing Facilities that, but for the Equipment Limits, would be dispatched under clause 7.6.1C
 - e. Maintenance of overall system security
 - f. Appropriate management of fuel, if and to the extent that System Management is required to manage such constraints during a fuel supply emergency.

5.3 Load forecasts

1. System Management must, by 8:30 AM on the Scheduling Day associated with a Trading Day, determine and provide Verve Energy with a forecast of total system demand for the Trading Day, [MR 7.6A.2(b)].
2. Forecasts of total system demand, in relation to step 5.3.1, must separately itemise, for each Trading Interval in the Trading Day, the following quantities, Loss Factor adjusted to the Reference Node:
 - a. Forecast SWIS system load, in MW, at the end of the Trading Interval; and
 - b. Forecast total energy output, in MWh, over the Trading Interval.
3. The SWIS system load must be calculated as the combined energy (or power) exported from all generating facilities connected to each Network Operator's networks, as measured at the generating facility's connection points, Loss Factor adjusted to the Reference Node.

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- <#>Load forecasts provided in relation to Paragraph 5.3.1 must, where practicable, utilise the most recent information available to System Management at the time the forecast is produced. ¶
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Load forecasts are considered to be for system demand in the absence of any curtailment by Non-Balancing Facilities (i.e. Demand Side Management). Forecast curtailment will be communicated to the market via a Dispatch Advisory notice.

4. Forecasts of total system demand must be provided to Verve Energy through System Management's market system or any other medium agreed between System Management and Verve Energy.
5. System Management must, by 7:30 AM on the Scheduling Day associated with a Trading Day, determine and provide the IMO with a Load Forecast for the Trading Day [MR 7.2.11].
6. Load Forecasts must be provided to the IMO electronically in accordance with the Market Procedure: IMS Interface.
7. When determining forecast quantities in step 5.3.1 or step 5.3.5, System Management must, where practicable, utilise the most recent information available to it at the time the forecast is produced.
8. System Management must, for each future Trading Interval in the Balancing Horizon, determine and provide the IMO with a forecast of the Relevant Dispatch Quantity. System Management must, each time it has new information on which to determine these quantities, update these forecasts and provide the update to the IMO, but is not required to do so more than once per Trading Interval [MR 7A.3.15].
9. Forecasts of Relevant Dispatch Quantities must be provided to the IMO electronically in accordance with the Market Procedure: IMS Interface.
10. System Management must, by 12:00 PM on the Scheduling Day, provide the IMO with System Management's forecast of the LFAS Quantity for each Trading Interval in the next Trading Day.
11. The LFAS Quantity will be forecast by adjusting the Load Following Service Requirement specified in the Ancillary Service Report to account for forecast conditions of Load and Non-Scheduled Generation available to System Management on the Scheduling Day.
12. The LFAS Quantity may be further adjusted to account for Commissioning that has been approved by System Management to take place on the Trading Day.

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This section, intended to cover treatment of significant discrete loads, is blank at this time.

System Management is considering whether it is necessary to model significant discrete loads (suggested definition is a load at a single connection point on the SWIS with a non-Loss Factor adjusted peak greater or equal to than 20MW or a set of related loads with more than one connection point sharing coincident load profiles with the sum of the non-Loss Factor adjusted peaks being greater than or equal to 20

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MW). A summary of the requirements proposed by System Management for Significant Discrete Loads is as follows:

- A load forecast for the significant discrete load must be produced by the load customer or its retailer on the Scheduling Day for the upcoming Trading Day.
- Load forecast must be sent by the load customer or its retailer to System Management via System Management's market system interface by 12:00 PM on the Scheduling Day.
- The significant discrete load forecast must then be incorporated into System Management's system load forecast which is then used by the IMO to produce the market forecasts and then by System Management for its security constrained pre-dispatch and furthermore for security and dispatch purposes including Dispatch Advisories, Dispatch Instructions and Operating Instructions.

A Market Rule change would be required to give these requirements heads of power. System Management may propose a rule change to this effect in the future.

5.5 Forecasts of non-scheduled generation

1. Unless specifically excused by System Management, each Market Generator must provide, for each of its Intermittent Generators with a maximum output capacity exceeding 10 MW, the data specified in the Market Rules [MR 7.2.5].
2. A Market Generator must provide the forecast information referred to in step 5.5.1 via the interface to System Management's market system unless an alternative medium is agreed between System Management and the Market Generator.
3. Where so required by System Management, if applicable, each Market Generator must provide, for each of its Non-Scheduled Generators, modelling data sufficient to allow System Management to forecast the output of that Non-Scheduled Generator [MR 7.7.5A, MR 7.7.5C].
4. The modelling data provided in step 5.5.3 must include, but is not necessarily limited to, identification of the main independent variables affecting output and the function relating those variables to output. All modelling data shall be provided on, or be sufficient to allow conversion to, a sent-out basis.
5. Where System Management is required to determine a forecast of the output of a Non-Scheduled Generator:
 - a. System Management may utilise a forecast of sent-out energy for the Non-Scheduled Generator provided by the Market Generator in a Resource Plan or Balancing Submission; or
 - b. Where System Management considers that a forecast of sent-out energy received for a Non-Scheduled Generator is not reflective of the level of output actually occurring or likely to occur, System Management may estimate the expected Non-Scheduled Generator output using the

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information provided under step 5.5.3 and may substitute this data for part or all of the data provided for that Non-Scheduled Generator; or

c. System Management may utilise other forecast data where required, if Non-Scheduled Generator forecast data is received late or if sections of data are missing. This may be output data derived from recordings of injection levels from past Trading Intervals, or a separate forecast derived for that purpose.

6. Non-Scheduled Generation forecasts [MR 7.6A.2(e), MR 7A.3.15] must be provided to the IMO electronically in accordance with the Market Procedure: IMS Interface.

5.6 Forecasts of Ancillary Services demand

1. System Management must determine the estimated Ancillary Service requirements for each Market Participant that is a provider of Ancillary Services in accordance with the Market Rules [MR 7.2.3A].
2. System Management must submit the Ancillary Service forecast data calculated pursuant to the Market Rules [MR 7.2.3A] to the IMO in accordance with the Market Procedure: IMS Interface.

5.7 Updating the Verve Energy Dispatch Plan

1. System Management is required to notify Verve Energy of significant changes to the Verve Energy Dispatch Plan [MR 7.6A.2(f)].
2. The changes referred to in step 5.7.1 must be deemed to be significant when they indicate:
 - a. previously uncommitted generating Facilities are expected to be committed, or previously committed generating Facilities are expected to be de-committed; or
 - b. fuel required is forecast to be outside the limits set by Verve Energy; or
 - c. System Management expects to need to dispatch Facilities in the Verve Energy Balancing Portfolio outside the Verve Energy Balancing Portfolio dispatch guidelines described in step 4.2.
3. System Management must transmit the revised Verve Energy Dispatch Plan to Verve Energy as soon as practicable through the interface to System Management's market system.
4. Verve Energy may request changes to the Verve Energy Dispatch Plan, which System Management must use reasonable endeavours to accommodate.

System Management has an obligation to consult with Verve Energy in preparing the Verve Energy Dispatch Plan [MR 7.6A.2(d)].

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<#>The Non-Scheduled Generator forecast information must be submitted to System Management via the interface to System Management's market system unless an alternative medium agreed between System Management and the Market Participant.¶
<#>Where System Management considers that the forecast of sent-out energy for an IntermittentNon-Scheduled Generator is not reflective of the level of output actually occurring or likely to occur, System Management may estimate expected intermittentNon-Scheduled generation output using the information provided under Paragraph 5.5.2 and may substitute this data for part or all of the data provided for that IntermittentNon-Scheduled Generator.¶
<#>System Management may utilise other forecast data where required, if Non-Scheduled Generator forecast data is received late or if sections of data are missing. This may be output data derived from recordings of injection levels from past Trading Intervals, or a separate forecast derived for that purpose.¶

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5.8 Dispatch Advisory notices

1. The requirements for the issue and release of Dispatch Advisory notices to Market Participants, **Network Operators** and the IMO are specified in the Market Rules **[MR 7.11]**.
2. Dispatch Advisories may arise as a result of one or more of:
 - a. Conditions detected in the pre-Dispatch Plan; or
 - b. Conditions detected in the Dispatch Plan; or
 - c. Real-time monitoring thresholds being reached; or
 - d. Conditions detected or forecast manually by System Management Controllers.

Types of Dispatch Advisory notices are listed in Appendix 1.

3. System Management must transmit **automatically generated** Dispatch Advisory notices as soon as practicable after the completion of each Trading Interval, and at other times if required. Manually generated Dispatch Advisory notices must be transmitted as soon as practicable.
4. Where there is a communication failure or insufficient time to issue such a notice, System Management may convey the content of the notice via telephone or such other means as are practicable at the time, but must provide confirmation in the form of a formal Dispatch Advisory notice as soon as practicable.
5. System Management has an obligation under the Market Rules **[MR 7.11.6A]** to ensure that confidential information is not disclosed in Dispatch Advisory notices.

5.9 Content and management of Dispatch Advisory notices

1. Each occurrence of a condition triggering a Dispatch Advisory notice must result in a separate Dispatch Advisory notice being produced.
2. Each Dispatch Advisory notice must contain:
 - a. **The information required under the Market Rules [MR 7.11.6];** and
 - b. A Dispatch Advisory Type field, as defined in Appendix 1 of this Procedure.
3. Dispatch Advisory notices remain in force until withdrawn.
4. Withdrawal of Dispatch Advisory notices must occur as follows:
 - a. Dispatch Advisory notices issued pursuant to the pre-Dispatch Plan or Dispatch Plan cover one Trading Interval and are deemed to have been withdrawn at the end of that Trading Interval; or
 - b. Dispatch Advisory notices issued retrospectively in response to events that have already occurred are deemed to have been withdrawn at the

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<#>An ending time, being the time at which the conditions triggering the Dispatch Advisory notice are expected to cease; and¶

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later of the time of issue and the ending time. Such Dispatch Advisories may also be withdrawn by issuing a withdrawal notification; or

- c. Dispatch Advisory notices issued in circumstances not covered above are issued when required and expire automatically at the ending time unless withdrawn earlier.

5.10 Pre-issuing of Dispatch Instructions

1. Where System Management determines that a specific Facility is required to operate in a particular way in a future period for the maintenance of **Power System Security**, System Management may issue Dispatch Instructions to the required Facility prior to the normal issuance time.
2. Where the Facility referred to in **step 5.10.1** would be required to be dispatched **under Market Rule 7.6.1C(c)**, System Management **must:**
 - a. observe the Facility's Standing Data minimum response time when issuing Dispatch Instructions to that Facility; **and**
 - b. if Dispatch Instructions for the Facility are issued via System Management's portal, also provide the Dispatch Instruction using voice communication; **and**
 - c. System Management must specify in its Dispatch Instruction that the Dispatch Instruction is being issued under Market Rule 7.6.1C(c).
3. Where System Management determines that a Non-Balancing Facility is required to operate in a future period for the maintenance of **Power System Security**, System Management must issue Dispatch Instructions to the required Facility in accordance with that Facility's notice period.
4. System Management may issue new Dispatch Instructions to replace Dispatch Instructions issued pursuant to **step 5.10.1** or **step 5.10.3** if required.

6 POST GATE CLOSURE

6.1 Bona fide changes to physical status of Facilities

1. The Market Rules **[MR 7A.2.10]** require a Market Participant, except Verve Energy in respect of the Verve Energy Balancing Portfolio, to update **its** Balancing Submission if after **Balancing Gate Closure** **it** becomes aware that the Balancing Submission does not reflect the physical capabilities of **its** Facilities.
2. If the circumstances described in **step 6.1.1** occur, and reflect a reduction or expected reduction in the capability of the Market Participant's **Facility** or **Facilities**, the affected Market Participant must also advise System Management of the nature and extent of that reduction as soon as practicable. **[This notification must initially be by telephone or other voice communication but then followed as soon as practicable on System Management's market system.]**

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3. When advised in accordance with [step 6.1.2](#), System Management must for any Trading Intervals for which it expects to receive no further updates to the Balancing Merit Order:
 - a. Assess power system security in accordance with the [PSOP](#); Power System Security, and take any required actions resulting from that assessment; and
 - b. Immediately issue a Dispatch Advisory notice specifying the extent of the reduction in capacity and whether the affected Facility is marginal, above or below the balancing point; and
 - c. [If required to issue a Dispatch Instruction to the affected Facility take the notification in step 6.1.2 to be an advice given under step 6.6.6.](#)

6.2 Commitment of generating Facilities

1. The obligations of System Management and Market Participants in respect of commitment and de-commitment of generating Facilities are set out in the Market Rules [\[MR 7.9\]](#).
2. A Market Participant, except Verve Energy with respect to the Verve Energy Balancing Portfolio, must communicate confirmation of expected time of synchronization and de-synchronisation under the Market Rules via telephone [or other voice communication \[MR 7.9.1\]](#).
3. System Management must log the reasons when permission to synchronise or de-synchronise is refused.

6.3 Creation of Dispatch Instructions and Dispatch Orders

1. System Management must create Dispatch Instructions and Dispatch Orders in such a way as to ensure the Dispatch Criteria [in the Market Rules \[MR 7.6.1\]](#) are met at all times.
2. System Management must, wherever practicable, create Dispatch Instructions and Dispatch Orders using a mathematical program.
3. The Market Rules [\[MR 7.6.1A, 7.6.1B, 7.6.1C and 7.6.1D\]](#) stipulate the priority rules that System Management must follow in formulating Dispatch Instructions.
4. System Management must [\[MR 7.6.1A\]](#) give priority to the dispatch of a Registered Facility under a Network Control Service (NCS) [Contract](#) if doing so would assist System Management to meet the Dispatch Criteria. System Management must consider that [an NCS Contract](#) would assist it to meet the Dispatch Criteria if System Management considers that:
 - a. The dispatch of the power system without calling upon the NCS Contract would adversely affect [Power System Security](#); and

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<#>Immediately following the issue of the Dispatch Instruction referred to in Part c, issue a new Dispatch Instruction to the affected Facility consistent with the advice referred to in Paragraph 6.1.2; and¶
<#>Deem the affected Facility to have refused to comply with the Dispatch Instruction referred to in Part c above; and ¶
<#>Deem the affected Facility to have refused to comply with any future Dispatch Instruction instructing the affected Facility to operate above its advised reduced capability, notwithstanding that such a Dispatch Instruction has not yet been issued.¶

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Deleted: <#>In determining which Facility or Facilities best meet the Dispatch Criteria when dispatching out-of-merit in accordance with [\[MR 7.6.1B \(b\)\]](#), System Management must consider, in order, each Facility in the Balancing Merit Order until either:¶
<#>System Management has determined that issuing Dispatch Instructions out of merit to either or both of the next two Facilities in the BMO would resolve the issue leading to out-of-merit dispatch; or ¶
<#>System Management has determined that issuing Dispatch Instructions out of merit to either or both of the next two Facilities in the BMO would not resolve the issue leading to out-of-merit dispatch.¶
<#>If System Management makes a determination in accordance with Part b of Paragraph 6.3.4, System Management must:¶
<#>Dispatch, in order, either or both of the next two Facilities out of merit to the extent that doing so would resolve the issue leading to out of merit dispatch; and¶
<#>Dispatch such other Facilities as System Management determines are required in accordance with [\[MR 7.6.1B \(c\)\]](#).¶

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b. Dispatching the ~~F~~ facilities covered by the NCS ~~C~~ contract according to the terms of the contract would prevent the circumstances described in ~~step 6.3.4(a)~~ from arising or alleviate them if they have already arisen.

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5. System Management may ~~[MR 7.6.1B]~~ give priority to the issuing of Operating Instructions that call on Ancillary Services, NCS or Supplementary Capacity Contracts, or enable a Test. System Management must, as far as possible without breaching its obligations in relation to maintaining ~~P~~ower ~~S~~ystem ~~S~~ecurity, apply its discretion in the following manner:

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- a. NCS Contracts must be called upon in accordance with ~~step 6.3.4~~ or as agreed with the applicable Network Operator; or
- b. Ancillary Services Contracts must be called upon in accordance with the terms of the ~~c~~ontract; in accordance with System Management's approved Ancillary Services Plan; and in a way that at all times meets the Ancillary Services Standards; or
- c. Supplementary Capacity Contracts must be called upon in accordance with the terms of the ~~c~~ontract; or
- d. Tests must be scheduled in accordance with the ~~PSOP~~; Commissioning and Testing.

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6. System Management must ~~[MR 7.6.1C]~~ take into account ~~Ramp Rate Limits~~ when formulating Dispatch Instructions in accordance with the Balancing Merit Order. For the avoidance of doubt:

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- a. A ~~F~~acility that is below the balancing point in the BMO and is not dispatched for its full offered quantity, but that is dispatched for the maximum quantity its Ramp Rate Limit implies it is capable of achieving in the Trading Interval, must be considered to have been dispatched "in merit"; or
- b. A ~~F~~acility that is above the balancing point in the BMO and is dispatched for a non-zero quantity, being the minimum quantity its Ramp Rate Limit implies it is capable of achieving, must be considered to have been dispatched "in merit".

- Deleted: <#>Any agreements with Verve Energy in relation to the provision of Ancillary Services, including those embodied in the Verve Energy Balancing Portfolio Dispatch Guidelines, must be considered to be an Ancillary Services Contract for the purposes of Paragraph 6.3.7.¶
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System Management will not consider Standing Data minimum generation constraints when formulating Dispatch Instructions in accordance with the BMO. Market Participants must prepare their Balancing Submissions in such a way as to achieve either dispatch above minimum generation, or de-commitment. When System Management issues Dispatch Instructions out of merit in accordance with Market Rule 7.6.1C(b), it will however observe minimum generation constraints.

7. Where System Management determines in accordance with the Market Rules [MR 7.7.4A] that dispatch of a Non-Balancing Facility is required, System Management must apply the following process to select the Non-Balancing Facility or Facilities from the Dispatch Merit Order:

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- c. Exclude from selection any Non-Balancing Facility that could not offer the required response inside its specified Minimum Response Time or for any other Standing Data limitation;
- d. Exclude from selection any Non-Balancing Facility that System Management reasonably believes, on the basis of the Pre-Dispatch Plan described in Section 5.1, will be required to be dispatched at some later time within the Balancing Horizon; that its dispatch at that later time would provide a larger benefit in terms of system security than its dispatch to meet immediate system needs; and that the Standing Data limitations, under which the Facility may be dispatched preclude it from being dispatched on both occasions;
- e. Exclude from selection any Non-Balancing Facility that System Management reasonably believes will be required to be dispatched at some later time (or times) outside of the Balancing Horizon; that its dispatch at that later time (or times) would provide a larger benefit in terms of system security than its dispatch to meet immediate system needs; and that the Standing Data limitations under which the Facility may be dispatched may preclude it from being dispatched on all occasions;
- f. Otherwise, dispatch Non-Balancing Facilities in merit order, using the merit order type applicable to the Trading Intervals in which the Non-Balancing Facility or Facilities will be required.

6.4 Creation of Operating Instructions

1. System Management must issue Operating Instructions to:
 - a. Call on services provided by Facilities (other than Facilities in the Verve Energy Balancing Portfolio) under an NCS Contract, an Ancillary Service Contract, or a Supplementary Capacity Contract; or
 - b. call on Stand Alone Facilities to provide Ancillary Services other than LFAS but including LFAS Backup Enablement; or
 - c. in connection with a Test.
2. Where System Management identifies, based on the BMO or Forecast BMO, that a Facility's Balancing Submission is inconsistent with an Operating Instruction to that Facility, System Management may send a warning to the Market Participant.

The obligation to ensure dispatch consistent with Operating Instructions remains with the Market Participant. Any warning from System Management is provided for information only.

3. Where a Market Participant with a contract to provide Ancillary Services or NCS, provides the contracted service automatically and in accordance with the terms of the contract, System Management must communicate the Operating Instruction to the relevant Market Participant as early as practicable.

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Where System Management is required to call on NCS from a Facility whose Standing Data notice period is less than gate closure, System Management will issue the Operating Instruction immediately after gate closure based on the Forecast BMO. The NCS Facility would then update its Balancing Submission after gate closure, as allowed under the Market Rules [MR 7A.2.10].

Note the above only applies where the NCS is for the provision of real power. Calling an NCS contract for reactive power will be done by a direction, i.e. outside the market.

6.5 Issuing of Dispatch Instructions and Dispatch Orders

1. The Market Rules detail the requirements for Dispatch Instructions [MR 7.7.1, MR 7.7.2 and MR 7.7.3], and Dispatch Orders.
2. All Dispatch Instructions and Dispatch Orders for a Facility remain in force until superseded by a new Dispatch Instruction or Dispatch Order is issued.

Dispatch Instructions to Demand Side Programmes, will be expressed in terms of "quantity of curtailment".

3. System Management must issue Dispatch Instructions and Dispatch Orders, electronically via one of the following methods (in order of preference):
 - a. SCADA, if available; or
 - b. System Management's interface to its market system; or
 - c. Email (SMS may be used as an adjunct to email); or
 - d. Telephone (or other voice communication), with subsequent confirmation by one of the means above.
4. Other than for Facilities over which System Management has direct control and so the Facility is capable of responding faster, when dispatching Facilities in merit [MR 7.6.1C(a)] or just out of merit [MR 7.6.1C(b)] System Management must provide at least 5 minutes between the issuing and commencement time of Dispatch Instructions and Dispatch Orders.
5. System Management must respect Standing Data Minimum Response Times when issuing Dispatch Instructions or Dispatch Orders to Facilities out of merit for system security reasons under Market Rule 7.6.1C(c), unless advised otherwise by the Market Participant concerned.
6. Where it is not practicable for System Management to issue Dispatch Instructions or Dispatch Orders in the manner described in step 6.5.3, System Management may use such other means as it deems best suited to the circumstances and the requirements of step 6.5.3 shall be deemed to have been fulfilled.
7. If a generating facility, which does not carry an obligation to provide a Spinning Reserve Service or Load Following Service, satisfies the two following criteria:

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Option 1: Issue OI for NCS before gate closure to allow allow NCS Facility to update bids and offers in the normal timeframe; or¶
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- a. the system frequency moves above 50.025Hz or below 49.975Hz; and
- b. the generator facility's governor automatically moves the generator away from its most recent Dispatch Instruction to a point outside its Tolerance Range in a manner that assists reducing the frequency deviation,

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then System Management must inform the IMO, when advising it of a breach by the relevant Market Participant of the Market Rules [MR 7.10.1], that the deviation was due to an automatic governor response and state whether the deviation from the Dispatch Instruction was consistent with the Technical Rules. To ensure a controlled restoration of the frequency back to 50Hz, System Management may issue Dispatch Instructions or Dispatch Orders to hold some Facilities at levels they have stabilised at after the frequency disturbance.

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System Management requires that each generating unit operating in parallel with the SWIS must have its governor enabled and governor response set at 4% droop, and have governor frequency dead band of less than 0.05 Hz, in accordance with the Technical Rules. Refer to clauses 3.3.4.4 (d) and (e) of the Technical Rules.

The above step is included to ensure that penalties are not imposed upon Market Generators that respond to assist in the event of a system emergency.

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6.6 Response to Dispatch Instructions and Dispatch Orders

1. Where System Management has operational control of a Facility, System Management must deem any Dispatch Instruction or Dispatch Order issued to that Facility to have been accepted.

For the avoidance of doubt, System Management is still required to issue Dispatch Instructions to Facilities under its operational control.

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2. Where System Management issues a Dispatch Instruction to a Market Participant by telephone or other voice communication, the Market Participant must advise System Management during that conversation if it cannot comply with the Dispatch Instruction and if so advise the extent and nature of its non-compliance.

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3. Where System Management issues a Dispatch Instruction or Dispatch Order via telephone or other voice communication and subsequently provides a confirmation of the Dispatch Instruction or Dispatch Order via System Management's interface to its market system, the Market Participant is not required to provide a response to this subsequent electronic notification.

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4. A Market Participant must confirm receipt of a Dispatch Instruction or Dispatch Order issued via SCADA within 30 seconds of receipt and in accordance with the Operating Protocol. If the Facility is unable to comply with the Dispatch Instruction or Dispatch Order the Market Participant must also advise System Management by telephone or other voice communication that it cannot comply and the nature and extent of its non-compliance.

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5. A Market Participant must confirm receipt of a Dispatch Instruction or Dispatch Order issued via System Management's secure business-to-business gateway within 1 minute. If the Facility is unable to comply with the Dispatch Instruction or Dispatch Order the Market Participant must also advise System Management by telephone or other voice communication that it cannot comply and the nature and extent of its non-compliance.

6. Where a Market Participant receives Dispatch Instructions or Dispatch Orders for a Facility via System Management's portal, and the Market Participant receives one or more Dispatch Instructions or Dispatch Orders for the Facility and a Trading Interval over the period ending 5 minutes before the start of the Trading Interval, the Market Participant must, by no later than 3 minutes before the start of the Trading Interval:

- a. identify the most recent Dispatch Instruction or Dispatch Order received for the Facility and Trading Interval in the period ending 5 minutes before the start of the Trading Interval; and
- b. if the Facility is unable to comply with this Dispatch Instruction or Dispatch Order, advise System Management by telephone or other voice communication that it cannot comply and the nature and extent of its non-compliance; and
- c. confirm receipt of this Dispatch Instruction or Dispatch Order via System Management's portal.

The Market Participant may, but is not required to respond to any earlier Dispatch Instructions or Dispatch Orders received for the Facility and Trading Interval in this period.

7. Where a Market Participant advises System Management that it cannot follow its Dispatch Instruction, or Dispatch Order, System Management must:

- a. Issue a new Dispatch Instruction or Dispatch Order to the Market Participant consistent with their advised capability, and tag the original Dispatch Instruction or Dispatch Order for non-compliance; and

If, under clause 7.7.6B, a Market Participant notifies System Management that its Facility cannot meet a Dispatch Instruction and advises a reduced quantity or Ramp Rate. System Management is obliged to use the generator to the maximum of that reduced quantity or Ramp Rate possible. For example, if a Dispatch Instruction was to move from 20 MW to 60 MW at a Ramp Rate of 6 MW/minute, and the Market Participant advises that it can only deliver 40 MW, then System Management must issue a second Dispatch Instruction to move to 40 MW. Alternatively, if the Market Participant advises that it can reach 60 MW but only at a Ramp Rate of 4 MW/minute, then System Management must issue a Dispatch Instruction to move to 60 MW at 4 MW/minute.

- b. Issue Dispatch Instructions or Dispatch Orders to other Facilities as required; and

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c. Issue a Dispatch Advisory notice to advise the market of dispatch out of merit (where applicable).

8. Where System Management does not receive confirmation that a **Dispatch Instruction or Dispatch Order** has been received within **3 minutes of the start of the Trading Interval to which the Dispatch Instruction relates**, System Management must deem the **Dispatch Instruction or Dispatch Order** to have been refused. System Management must then:

- a. Send the Market Participant concerned a new **Dispatch Instruction or Dispatch Order** instructing them to stay at the output specified on their last accepted Dispatch Instruction or Dispatch Order; and
- b. Tag the **Dispatch Instruction or Dispatch Order** to which the Facility did not respond as non-compliant; and
- c. Issue Dispatch Instructions or Dispatch Orders to other Facilities as required; and
- d. Issue a Dispatch Advisory notice to advise the market of dispatch out of merit (where applicable).

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6.7 Issuing of and response to Operating Instructions

1. The Market Rules detail the requirements for Operating Instructions [MR 7.7.3A].

2. System Management must issue Operating Instructions electronically via one of the following methods (in order of preference):

- a. Email (SMS may be used as an adjunct to email); or
- b. Telephone (or other voice communication), with subsequent confirmation by email.

3. A Market Participant must confirm receipt of an Operating Instruction by email as soon as practicable. If the Market Participant cannot comply with the Operating Instruction, then the email must advise that the Market Participant cannot comply and the nature and extent of the non-compliance.

4. If, after issuing an Operating Instruction for the provision of an Ancillary Service, NCS or service provided under a Supplementary Capacity Contract, System Management requires the service provision to be extended beyond the estimated end time provided in the Operating Instruction, System Management must issue another Operating Instruction for the expected period of the extension.

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For the avoidance of doubt, a Market Participant must not modify the output level of its Balancing Facility simply because it has received an Operating Instruction for that Facility, but only in response to a Dispatch Instruction. System Management will issue any required Dispatch Instructions to the Balancing Facility as appropriate.

6.8 Dispatch of generating Facility for system security

1. System Management may issue a Dispatch Instruction or Dispatch Order requiring a Facility to move from zero generation to positive generation, or vice versa, where doing so is necessary to maintain **Power System Security**.

Dispatch Instructions/Dispatch Orders referred to in [step 6.8.1](#) are implicitly instructions to synchronise and operate (commit) or de-synchronise (de-commit). The Dispatch Instruction protocol does not allow for explicit commit/de-commit instructions.

2. When the system is forecast to move into a High Risk Operating State, System Management must observe as far as practicable the BMO or Forecast BMO for the **Trading Intervals** in which the threat to **Power System Security** occurs when selecting the Facility or Facilities to commit.

3. System Management **may** select the Facility or Facilities to commit that provide the most flexibility for System Management to deal with current or potential threats to **Power System Security when the system is:**

- a. **In a High Risk Operating State; or**
- b. **In a Emergency Operating State; or**
- c. **Forecast to move into an Emergency Operating State.**

In general, [step 6.8.3](#) will result in the preferential commitment of large, fast-moving and/or flexible generating units.

6.9 Activation of Load Following Ancillary Service

1. System Management must activate Load Following Ancillary Service from units scheduled to provide the service via System Management's AGC system.

7 TRADING INTERVAL

7.1 Real-time monitoring during **a Trading Interval**

1. System Management must monitor the operation of the power system in real time and must issue Dispatch Instructions **or Dispatch Orders** to re-balance if it considers that it is prudent to do so.
2. System Management must not re-balance during a **Trading Interval** (including to return **LFAS Facilities** to their base point prior to the end **of the Trading Interval**) **except to the extent that re-balancing is required to maintain Power System Security.**
3. In determining whether it is prudent to re-balance, System Management must consider a range of factors including but not limited to one or more of the following:
 - a. System frequency; or

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- b. Position of LFAS Facilities relative to their AGC control target; or
- c. Any reduction in Spinning Reserve; or
- d. The behaviour of Balancing Facilities, in particular Facilities outside their Tolerance Range or, if applicable, Facility Tolerance Range; or
- e. Significant changes in load or wind forecasts; or
- f. The behaviour of commissioning generators; or
- g. The time remaining until the end of the Trading Interval.

System Management will establish a Tolerance Range [IMR 2.13.6D] and Facility Tolerance Ranges [IMR 2.13.6E] according to the requirements of the Market Rules.

4. System Management must create and issue any Dispatch Instructions or Dispatch Orders required to re-balance in accordance with the priority rules stipulated in the Market Rules [IMR 7.6.1A, MR 7.6.1B, MR 7.6.1C and MR 7.6.1D].

5. If a Facility is outside its Tolerance Range or, if applicable, Facility Tolerance Range and System Management determines it is prudent to re-balance, System Management must:

- a. Tag the affected Facility as non-compliant with its Dispatch Instruction; and
- b. Issue the affected Facility with a new Dispatch Instruction to stay at its current output level; and
- c. Issue new Dispatch Instructions as required in accordance with the BMO, skipping the affected Facility.

6. If the Facility is outside its Tolerance Range or, if applicable, Facility Tolerance Range and System Management determines that no re-balancing is required, System Management must tag the affected Facility as non-compliant with its Dispatch Instruction.

System Management may follow up verbally with the Market Participant but will take no further action for so long as re-balancing is not required.

7.2 Formulation and issuing of intermediate Dispatch Instructions and Dispatch Orders

1. System Management may issue one or more Dispatch Instructions to a single Facility within a Trading Interval.

2. System Management must provide voice communications as well as electronic notifications for Dispatch Instructions whose response time is in the same Trading Interval as its issued time, unless:

- a. System Management has operational control of the Facility; or
- b. Dispatch Instructions are issued to the Facility via SCADA or System Management's secure business-to-business gateway.

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System Management will need to issue intermediate Dispatch Instructions and Dispatch Orders to manage intra-period changes in ramp rate, contingency events, fluctuations in net system load outside the Load Following range, and for other reasons.

3. If, in the opinion of System Management, a Facility providing LFAS is not performing adequately and either:
- the Facility is assigned more than 20% of the Upwards LFAS Quantity or Downwards Quantity (as applicable); or
 - the LFAS output of other LFAS Facilities (measured as the MW difference between the Facility's dispatch point and its current output), in aggregate, is greater than 70% of the Upwards LFAS Quantity or Downwards LFAS Quantity (as applicable).

then System Management must enable backup LFAS allocation on a Verve Energy Registered Facility for the required LFAS Quantity, and disable LFAS allocation on the non-performing Facility.

4. In all other cases where, in the opinion of System Management, a Facility providing LFAS is not performing adequately, System Management must investigate the reasons for non-performance and may at its discretion initiate the disabling of the non-performing LFAS Facility and enabling of a Verve Energy Registered Facility to provide some or all of the LFAS that was meant to be provided by the disabled LFAS Facility as backup LFAS.

5. System Management may enable one or more Verve Energy Registered Facilities to provide backup LFAS if the quantity of LFAS required by System Management in a Trading Interval is greater than the most recent LFAS Quantity published for the Trading Interval.

7.3 Constrained operation of a Non-Scheduled Generator

- System Management may issue a Dispatch Instruction to a Non-Scheduled Generator to restrict the MW or MWh output of the Non-Scheduled Generator over specified Trading Intervals where the Dispatch Criteria are not being met, to restrict the variability that is occurring in the MW output from the Facility, if a High Risk Operating State or Emergency Operating State exists, or if adherence to the Balancing Merit Order requires it.
- The reasons for non-observance of the limits of SWIS operation as defined in the Technical Envelope may include, but are not limited to one or more of the following:
 - the Ancillary Service Requirements are not being satisfied; or
 - operation of the Non-Scheduled Generator Facility is causing voltage swings in the region of the Facility's connection to the Network to exceed the range permitted by the Technical Rules or Security Limits; or
 - operation of the Non-Scheduled Generator is causing Equipment Limits or Security Limits to be exceeded; or

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Where the Verve Portfolio is providing Spinning Reserve or Load Rejection, the Operating Instruction will be issued to the Verve Portfolio and individual Facilities dispatched in accordance with the Verve Dispatch Guidelines.¶

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- d. operation of the Non-Scheduled Generator is causing frequency deviations to exceed the normal frequency operating range.

3. In determining whether to constrain the operation of a Non-Scheduled Generator, System Management may take account of the extent of any difference between the current operation of the generator, and any forecast of that generator's operation used to set the requirement for LFAS.

Except where required by the BMO, System Management will generally only constrain Non-Scheduled Generator operation if the intermittency of that generator significantly exceeds what was planned for when setting the LFAS requirement.

Turn-down price, except for a marginal Non-Scheduled Generator being dispatched in accordance with the BMO, plays no role in System Management's decisions with respect to constraining Non-Scheduled Generators.

7.4 Voltage control

- 1. System Management may, in accordance with the Technical Rules, direct a Facility to change its reactive power output to assist with voltage control on the SWIS.

The Technical Rules (current as of June 2012) require "The overriding objective of a generating Facility's voltage control system is to maintain the specified voltage range at the connection point. Each Market Generator must therefore provide sufficient reactive power injection into, or absorption from, the transmission or distribution system to meet the reactive power requirements of its loads, plus all reactive power losses required to deliver its real power output at system voltages within the ranges specified in the relevant connection agreement for normal operation and contingency conditions."

This may reduce the capacity of a Facility to a level below its Dispatch Instruction. System Management would then have to increase MW output from the next generator on the BMO. System Management would issue a Dispatch Advisory and Dispatch Instructions for this instance. Similarly if voltage issues on the network required System Management to modify the generation plan across the SWIS (say move MW generation from one part of the SWIS to another to remove the voltage constraint), System Management would have to issue a Dispatch Advisory, dispatch as per BMO if the market did respond or dispatch out of merit as per Standing Data if the market did not respond.

8 DISPATCH SETTLEMENT DATA

- 1. The requirements for System Management to provide settlement data to the IMO are specified in the Market Rules **[MR 7.13]**.
- 2. System Management must submit the data to the IMO in accordance with the Market Procedure: IMS Interface.
- 3. The IMO must confirm to System Management receipt of the data in accordance with the Market Procedure: IMS Interface.

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<#>Where there are a number of Non-Scheduled Generators operating at high output during light system demand conditions, a reduction in the output of one or more IntermittentNon-Scheduled Generators may be needed to meet the dispatch criteria.¶

<#>Where the requirement for a reduction or constraint in the output of IntermittentNon-Scheduled Generators can be attributed to a single Non-Scheduled Generator, a Dispatch Instruction requiring output to be constrained down must be issued to that Non-Scheduled Generator.¶

<#>The quantity of output reduction sought from the Non-Scheduled Generator in Paragraph 7.4.2 is the quantity that ensures that Non-Scheduled Generator is not the source of the conflict with the Dispatch Criteria¶

<#>Where System Management considers that the conflict with the Dispatch Criteria is due to the operation of two or more Non-Scheduled Generators, then System Management must constrain down the Non-Scheduled Generators in proportion to their contribution to the conflict with the Dispatch Criteria.¶

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4. If System Management has not received confirmation of receipt of the data by 12.10 PM on the required Business Day, System Management must re-send the data.
5. If System Management has not received confirmation of receipt of the data by 12.20 PM, System Management and IMO should investigate the cause of the data failure and if necessary, transfer the data in accordance with the backup procedures defined in the Market Procedure: IMS Interface.

8.1 Quantification of Constrained off Quantities.

1. Where System Management requires a Non-Scheduled Generator to reduce output in a Trading Interval, System Management must provide the IMO with an estimate of the maximum quantity of sent out energy in MWh which the Non-Scheduled Generator would have generated in that Trading Interval had a Dispatch Instruction not been issued [MR 7.13.1 (eF)].
2. System Management may use, at its discretion, any of the following means to estimate the quantity referred to in step 8.1.1:
 - a. a predictive algorithm provided by the Market Participant, providing an assessment of the Non-Scheduled Generator's MWh output from relevant independent variables over the Trading Interval; or
 - b. a predictive algorithm developed by System Management, providing an assessment of the Non-Scheduled Generator's MWh output from relevant independent variables over the Trading Interval; or
 - c. an assessment by System Management based on output of the Non-Scheduled Generator in a past Trading Interval under similar conditions; or
 - d. an estimate using participant data provided to System Management that uses output data from particular generating facilities that continue to operate unconstrained after the Dispatch Instruction, with the output data subsequently scaled up to represent the output from all generating facilities that otherwise would have operated.
3. System Management must, from time to time, consult with the relevant Market Participant concerning the choice of option selected by System Management in step 8.1.2.

8.2 Calculation of Spinning Reserve Response Quantities

1. For the purposes of this Section 8.2, "Spinning Reserve Event" means a sudden loss to the power system of output from a Generating Unit.
2. Where a Facility provides a Spinning Reserve Response for a Spinning Reserve Event, System Management must determine the response period of the Facility for the Spinning Reserve Event as the period which starts at the time of the Spinning Reserve Event and has a duration equal to the longest

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<#>System Management must make an assessment of the MWh output that would have been achieved by the Non-Scheduled Generator should the Dispatch Instruction not have been issued. The assessment must be produced using the algorithm chosen for this purpose (refer Paragraph 8.2.1). ¶

<#>System Management must make an estimate of the constrained off quantities caused by the Dispatch Instruction for each Trading Interval the Dispatch instruction applies to, by subtracting the measured output (Paragraph 8.1.2) from the assessment of output that would otherwise have occurred (Paragraph 8.1.3) (... [49])

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sustained response time of the classes of Spinning Reserve the Facility is certified to provide (defined in section 2.2 of the PSOP: Ancillary Services).

3. If for a Facility and a Trading Interval there is no Spinning Reserve Event for which the Facility's response period, as determined in step 8.2.2, overlaps the Trading Interval, then System Management must determine the Spinning Reserve Response Quantity for that Facility and Trading Interval to be zero.

4. Where a Spinning Reserve Event has occurred, the Spinning Reserve Response Quantity of each Facility in each Trading Interval overlapping its response period must be calculated according to the formula:

$$RESP_n = \text{Max} (0, \text{AVG_MW}(\text{Start_Time}, \text{End_Time}), G_0) / (\text{Duration_Mins}/60)$$

Where:

$RESP_n$ is the Spinning Reserve Response Quantity in MWh for the Facility in the Trading Interval;

$\text{AVG_MW}(\text{Start_Time}, \text{End_Time})$ is the average MW output of the Facility over the period between Start Time and End Time, measured at the generator terminals by System Management's SCADA system with a resolution of 4 seconds or less;

G_0 is the MW output of the Facility at the time of the Spinning Reserve Event, measured at the generator terminals by System Management's SCADA system;

Start Time is the later of the start time of the Trading Interval and the start time of the response period determined in step 8.2.2;

End Time is the earlier of the end time of the Trading Interval and the end time of the response period determined in step 8.2.2;

Duration Mins is the time, in minutes, between Start Time and End Time.

5. The Spinning Reserve Response Quantity for the Verve Energy Balancing Portfolio in a Trading Interval is the sum of the Spinning Reserve Response Quantities of the individual Facilities within the Verve Energy Balancing Portfolio.

8.3 Calculation of Load Rejection Reserve Response Quantities

1. For the purposes of this Section 8.3, "Load Rejection Reserve Event" means a sudden decrease in SWIS load.

2. Where a Facility provides a Load Rejection Reserve Response for a Load Rejection Reserve Event, System Management must determine the response period of the Facility for the Load Rejection Reserve Event as the period which starts at the time of the Load Rejection Reserve Event and has a duration equal to the longest sustained response time of the classes of Load Rejection Reserve the Facility is certified to provide (defined in section 2.3 of the PSOP: Ancillary Services).

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 $G_{s(n)}$ is the generation of the Facility at the sustain time applicable to Class n Spinning Reserve (defined in Section 2.2 of the Power System Operating Procedure: Ancillary Services, measured at the generator terminals by System Management's SCADA system) after the Spinning Reserve Event;

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<#>To the interval in which the Spinning Reserve Event occurred, if the Facility or Verve Balancing Portfolio (as applicable) reached the Spinning Reserve Response Quantity by the end of the Interval; and ¶
<#>To the interval after the Spinning Reserve Event occurred, if the Spinning Reserve Event occurred within 15 minutes prior to the start of that interval. ¶

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3. If for a Facility and a Trading Interval there is no Load Rejection Reserve Event for which the Facility's response period, as determined in step 8.3.2, overlaps the Trading Interval then System Management must determine the Load Rejection Reserve Response Quantity for that Facility and Trading Interval to be zero.

4. Where a Load Rejection Reserve Event has occurred, the Load Rejection Reserve Response Quantity of each Facility in each Trading Interval overlapping its response period must be calculated according to the formula:

$$RESP_i = \text{Max} (0, G_{0i} - \text{AVG_MW}(\text{Start_Time}, \text{End_Time})) / (\text{Duration_Mins}/60)$$

Where:

RESP_i is the Load Rejection Reserve Response Quantity in MWh for the Facility in the Trading Interval;

AVG_MW(Start_Time, End_Time) is the average MW output of the Facility over the period between Start_Time and End_Time, measured at the generator terminals by System Management's SCADA system with a resolution of 4 seconds or less;

G_{0i} is the MW output of the Facility at the time of the Load Rejection Reserve Event, measured at the generator terminals by System Management's SCADA system;

Start_Time is the later of the start time of the Trading Interval and the start time of the response period determined in step 8.3.2;

End_Time is the earlier of the end time of the Trading Interval and the end time of the response period determined in step 8.3.2;

Duration_Mins is the time, in minutes, between Start_Time and End_Time.

5. The Load Rejection Reserve Response Quantity for the Verve Energy Balancing Portfolio in a Trading Interval is the sum of the Load Rejection Reserve Response Quantities of the individual Facilities within the Verve Energy Balancing Portfolio.

8.4 SOI and EOI estimates

1. System Management must determine the SOI Quantity for a Facility and a Trading Interval to be the EOI Quantity of the previous Trading Interval.

2. The EOI Quantity for a Facility and a Trading Interval will be the latest recorded value from System Management's SCADA system within that Trading Interval.

3. System Management may substitute this value if it has reason to believe it is inaccurate or if SCADA values were not recorded for the Trading Interval concerned.

4. Subject to step 8.4.5, where System Management does not monitor the output of a Facility by use of SCADA, System Management must determine the EOI Quantity for the Facility for each Trading Interval as the MW offer

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G _{s(m)} is the generation of the Facility at the sustain time applicable to Class L Load Rejection (defined in Section 2.3 of the Power System Operating Procedure: Ancillary Services, measured at the generator terminals by [... [51]
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quantity listed for that Facility in the BMO used by System Management for the Trading Interval.

5. Where System Management has reason to believe that an EOI Quantity determined in step 8.4.4 is inaccurate System Management may determine and provide to the IMO a substitute value.

9 ADMINISTRATION AND REPORTING IN RELATION TO VERVE ENERGY

1. The requirements of sections 9.2, 9.3 and 9.4 shall apply only to sections 4 and 5.7 of this Procedure.

9.1 Reporting in relation to Verve Energy's Market Rules obligations

1. The requirements for System Management to report to the IMO any instance where it believes that Verve Energy has failed to meet its obligations under this Procedure are specified in the Market Rules [MR 7.6A.5(c)], [MR 7.6A.5(e)].
2. The reports referred to in step 9.1.1 must be submitted to the IMO within 5 Business Days of the occurrence of the event, or within 5 Business Days of either party becoming aware of the event.

9.2 Appointment of Representative

1. Verve Energy and System Management must:
 - a. each appoint a representative who must act as the formal point of contact with regard to the operation of this Procedure; and
 - b. provide each other and the IMO with the name, title and contact details of its representative; and
 - c. maintain the appointed representative's currency.

9.3 Keeping of Records

1. The requirements for Verve Energy and System Management to retain records created by the operation of this Procedure are specified in Market Rules [MR 7.6A.6].

9.4 Failure to Agree on an issue within the Procedure

1. The requirements for System Management and Verve Energy to address and reach agreement on any issues arising from the application of this Procedure are specified in the Market Rules [MR 7.6A.5(b)].
2. Where agreement cannot be reached and arbitration is required, the party seeking arbitration must, in good faith, seek to agree with the other party on an arbitrator.

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3. If, within 7 days, the parties are unable to agree on an arbitrator, the IMO shall be the arbitrator.
4. Within 7 days of the appointment of an arbitrator, the party seeking arbitration must provide the arbitrator with a report setting out:
 - a. a description of the issue in dispute; and
 - b. the background to the dispute and a description of the endeavours of the parties to resolve the issue; and
 - c. the position of both parties on the issue, including what is required to resolve the dispute.
5. The party submitting the report must provide a copy of the report to the other party at the same time the report is submitted to the arbitrator.
6. The other party must submit its own report on the issue to the arbitrator within 2 Business Days of the receipt of the report referred to in [step 9.4.5](#).
7. In reviewing the issue, the arbitrator must have regard to the following, in order of precedence:
 - a. the Market Rules; and
 - b. this Procedure; and
 - c. other Market Procedures and PSOPs; and
 - d. the alignment of the above to the Wholesale Market Objectives in the context of the issue.
8. The arbitrator may seek further information from either party, and this information must be provided within 2 Business Days of receipt of the request.
9. The arbitrator must provide its draft recommendation to Verve Energy and System Management within two weeks of the receipt of the report in [step 9.4.5](#). Both parties have 2 Business Days to provide the arbitrator with comments on the draft recommendation.
10. The arbitrator must, within 2 Business Days of receiving comments, issue a binding decision.

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APPENDIX 1: LIST OF DISPATCH ADVISORY NOTICE TYPES

DA type code	Description
<u>A</u>	Change in Power System Operating State
<u>B</u>	Energy shortfall
<u>C</u>	Energy surplus
<u>D</u>	Ramp rate shortfall
<u>E</u>	Ancillary Service shortfall
<u>F</u>	Ready Reserve shortfall
<u>G</u>	Change in outage status
<u>H</u>	Out-of-merit dispatch
<u>I</u>	Excessive intermittency
<u>J</u>	Commitment risk
<u>K</u>	Communications / IT issue
<u>L</u>	Fuel management issue
<u>Z</u>	Other

Version history

21 September 2006	Power System Operation Procedure (Market Procedure) for Dispatch
30 September 2009	System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0013
5 January 2010	System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0014
4 March 2010	System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0015
28 June 2010	System Management proposed amendments to this procedure resulting in publication of Procedure Change Report PPCL 0018

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Forecast Non-Scheduled Generation, in MW, at the end of the Trading Interval; and

Forecast energy from Non-Scheduled Generation, in MWh, over the trading interval;
and.

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Ben Connor

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Forecast energy from commissioning generators, in MWh, over the trading interval.

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In determining which Facility or Facilities best meet the Dispatch Criteria when dispatching out-of-merit in accordance with [MR 7.6.1B (b)], System Management must consider, in order, each Facility in the Balancing Merit Order until either:

System Management has determined that issuing Dispatch Instructions out of merit to either or both of the next two Facilities in the BMO would resolve the issue leading to out-of-merit dispatch; or

System Management has determined that issuing Dispatch Instructions out of merit to either or both of the next two Facilities in the BMO would not resolve the issue leading to out-of-merit dispatch.

If System Management makes a determination in accordance with Part b of Paragraph 6.3.4, System Management must:

Dispatch, in order, either or both of the next two Facilities out of merit to the extent that doing so would resolve the issue leading to out of merit dispatch; and

Dispatch such other Facilities as System Management determines are required in accordance with [MR 7.6.1B (c)].

Paragraphs 6.3.4 and 6.3.5 essentially mean that System Management will only go to the next two Facilities in the BMO before it starts looking for the best Facility to resolve the issue on technical grounds. The rationale for this approach is that the further the Facility being considered is from the balancing point, the less chance the Facility will be in a position to respond. (When System Management calls a Facility under Part c, it is required to observe standing data response time).

[MR 7.6.1B states that:

“In seeking to meet the Dispatch Criteria System Management must, subject to clause 7.6.1C, issue Dispatch Instructions in the following, descending order of priority:

(a) Dispatch Instructions to Balancing Facilities in the order and for the quantities they appear in the BMO, taking into account Ramp Rate Limits;

(b) a Dispatch Instruction to a Balancing Facility Out of Merit but only to the next Facility or Facilities, and associated quantity in the BMO that System Management reasonably considers best meets the Dispatch Criteria, taking into account the associated Ramp Rate Limit;

(c) a Dispatch Instruction to any Balancing Facility Out of Merit, taking into account the Ramp Rate Limit and non-ramp rate Standing Data limitations and any other relevant information available to System Management; and

(d) a Dispatch Instruction to a Non-Balancing Facility in accordance with the Non-Balancing Dispatch Merit Order, taking into account Standing Data limitations.”

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System Management must deem Verve Energy's obligations as the default provided of Ancillary Services to be an Ancillary Services Contract for the purposes of Paragraph 6.4.1.[a1]

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AS requirements for Verve will be outlined in Verve Dispatch Plan and thus OIs for AS are not required and thus this deeming an AS Contract is not required.

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System Management will thus issue Operating Instructions to the Verve Balancing Portfolio and/or Verve Stand Alone Facilities when calling on Verve to provide Ancillary Services other than Load Following Ancillary Service.

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System Management must make an estimate of the actual output of the Non-Scheduled Generator over each Trading Interval for which the Dispatch Instruction applies. This may be through access to MWh metering at the Generator Facility, or by measuring the instantaneous MW output from the Non-Scheduled Generator MW output using System Management's SCADA system, and integrating these measurements over each Trading Interval to produce a MWh estimate.

System Management must make an assessment of the MWh output that would have been achieved by the Non-Scheduled Generator should the Dispatch Instruction not have been issued. The assessment must be produced using the algorithm chosen for this purpose (refer Paragraph 8.2.1).

System Management must make an estimate of the constrained off quantities caused by the Dispatch Instruction for each Trading Interval the Dispatch instruction applies to, by subtracting the measured output (Paragraph 8.1.2) from the assessment of output that would otherwise have occurred (Paragraph 8.1.3).

Choice of Algorithm for Assessing Constrained off MWh Quantities

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$G_{r(L)}$ is the generation of the Facility at the response time applicable to Class L Load Rejection (defined in Section 2.3 of the Power System Operating Procedure: Ancillary Services, measured at the generator terminals by System Management's SCADA system) after the Load Rejection Event;

$G_{s(n)}$ is the generation of the Facility at the sustain time applicable to Class L Load Rejection (defined in Section 2.3 of the Power System Operating Procedure: Ancillary Services, measured at the generator terminals by System Management's SCADA system) after the Load Rejection Event;

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The Load Rejection Response Quantity for a Facility shall be the minimum of its response quantity in each of Load Rejection Classes A and B

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shall be the minimum of the portfolio's combined response in each of Load Rejection Classes A and B, where the portfolio's combined response in a Load Rejection Class shall be the sum of the individual Facility responses in that Class.

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The Load Rejection Response Quantity determined above shall be deemed to apply:

To the interval in which the Load Rejection Event occurred, if the Facility or Verve Balancing Portfolio (as applicable) reached the Load Rejection Response Quantity by the end of the Interval; and

To any interval that overlaps a period of 60 minutes after the Spinning Reserve Event occurred.

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