

INDEPENDENT MARKET OPERATOR

Compliance of System Management
with the Market Rules and Market
Procedures

7 November 2013



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Version no:

1.0

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EXECUTIVE SUMMARY

This report sets out the results of the market audit by PA Consulting Group assessing System Management's compliance with the Market Rules and Market Procedures.

This market audit has been carried out under Market Rule 2.14.6 (b) which requires that:

In accordance with the Monitoring Protocol, the IMO must at least annually, and may more frequently where it reasonably considers that System Management may not be complying with the Market Rules and Market Procedures:

- (a) require System Management to demonstrate compliance with the Market Rules and Market Procedures by providing such records as are required to be kept under these Market Rules or any Market Procedure; or*
- (b) subject System Management to an audit by the Market Auditor to verify compliance with the Market Rules and Market Procedures.*

This year's market audit has taken the form of an "incremental" audit. We have examined those aspects of the Market Rules and Market Procedures and System Management's internal processes where:

- The clauses in the Market Rules are new or amended since last year's annual audit;
- Power System Operations Procedures or Internal Procedures are new or updated since last year's annual audit; and
- Power System Operations Procedures or Internal Procedures relate to areas of recorded breaches of the Market Rules by System Management since last year's annual audit.

That is, we have looked at areas that have changed since last year's annual audit.

We note that the IMO is intending to carry out a full audit in the near future, as per our recommendation in last year's audit.

Summary of non-compliance incidents

We have found 104 breaches, of which we judge 40 to be material.

While the number of material breaches has again increased on the number found in the previous audit, it reflects the realities of the first year of operations of the competitive balancing and load following markets:

- System Management has more obligations to meet, and therefore more opportunities to breach them;

- Automation of previously manual activities provides more opportunity for System Management to identify potential breaches; and
- Continuing improvements in self-reporting mean that more of the breaches that do occur are being reported.
- We note that while there is still room for improvement, System Management's approach to internal compliance recording and reporting is orders of magnitude improved upon three years ago, and its experience is a useful example for other organisations of its type.

Two areas of non-compliance are particularly important, as they relate to System Management's core market roles: implementing market dispatch, and developing and publishing critical market information.

- 15 of the material breaches relate to SM dispatching not in accordance with the balancing or LFAS merit order, or not using the latest information available from the IMO. While we have performed our own analysis of a sample of dispatch data, we have relied heavily on SM's self-reporting to identify these breaches. We note that neither SM nor the IMO currently have tools in place that would allow easy and systematic identification of such situations. In our view, investing effort in further analysis and tools would greatly improve market transparency, and likely identify further opportunities for improvement in this area.
- Another 20 of the material breaches relate to provision of information to the market, with SM either providing data late, or not at all. While the vast majority of information is provided to the market without incident, with the advent of the balancing and load following markets, SM's role in providing near-real-time information to market participants has become crucial.

Additional comments

One major change in the audit period has been the implementation of automated systems for planning, scheduling and dispatch. This raises a number of challenges. In particular:

- We are conscious that while SM software has previously been supported by staff embedded in the market operations team, in future these systems will be supported from outside the ring-fenced SM entity. SM must be able to agree suitable service level agreements with the (internal) support provider for these 24x7 critical operational systems;
- The processes that have supported the SMMITS systems will not be appropriate for on-going support and development of the new systems. SM will need to carefully consider and put in place rigorous change, test and release processes for the new market systems;
- SM must have a clearly articulated vision for the future state of these systems, to ensure cohesion and efficiency of future systems evolution work.

Opinion on System Management's compliance with the Market Rules and Market Procedures

Except for the specific instances of non-compliance noted in this report, we have not observed anything that causes us to believe that the System Management has not been compliant with the Market Rules and Market Procedures, in all material respects.

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1 INTRODUCTION

This document sets out the results of the market audit by PA Consulting Group in carrying out its assessment of System Management's compliance with the Market Rules and Market Procedures.

1.1 Scope of the market audit

This market audit has been carried out under Market Rule 2.14.6, which requires that:

In accordance with the Monitoring Protocol, the IMO must at least annually, and may more frequently where it reasonably considers that System Management may not be complying with the Market Rules and Market Procedures:

- a. *require System Management to demonstrate compliance with the Market Rules and Market Procedures by providing such records as are required to be kept under these Market Rules or any Market Procedure; or*
- b. *subject System Management to an audit by the Market Auditor to verify compliance with the Market Rules and Market Procedures.*

1.2 Audit period

The period covered by the audit is 11 August 2012 to 9 August 2013.

1.3 Market audit process

This year's market audit of System Management (SM) has included three components.

1. An "incremental" audit;
2. An obligation mapping; and
3. More detailed focus in selected areas.

We have looked in detail at the clauses in the Market Rules, and System Management's internal procedures¹ where:

- The clauses in the Market Rules are new or amended since last year's annual audit;
- The internal procedures are new or updated since last year's annual audit;

¹ We would normally also consider amendments to the Power System Operation Procedure, but there have been none since the last audit.

- The internal procedures are related to areas of non-compliance identified in last year's annual audit; and
- The internal procedures are related to areas of alleged breaches of the Market Rules by System Management since last year's annual audit.

That is, we have looked at areas that have changed (or should have changed) since last year's annual audit.

The incremental analysis is supported by an updated clause-by-clause mapping of System Management's obligations in the Market Rules to both the Power System Operation Procedure and System Management's internal procedures.

In conducting the market audit on the compliance of System Management with the Market Rules, PA has:

1. Ensured that it is up to date with its understanding of the West Australia Electricity Market Rules;
2. Identified all obligations placed on System Management by the Market Rules, including all new or amended obligations arising from changes to the Market Rules that came into force before 10 August 2013;
3. Reviewed the Power System Operation Procedure, and identified which Market Rule obligations are addressed therein;
4. Reviewed System Management internal procedure documentation, and identified which Market Rule obligations are addressed therein;
5. Identified System Management business functions affected by System Management internal procedures that are new or have been updated since the previous market audit;
6. Identified System Management business functions that relate to areas of non-compliance identified in the previous market audit;
7. Sought evidence that System Management is performing those business functions so as to comply with the Market Rules;
8. Had discussions with System Management managers and staff to clarify issues identified; and then
9. Prepared a draft report setting out our findings followed by a final report.

Our process was designed to provide limited assurance as defined by International Standard on Assurance Engagements ISAE 3000 "Assurance engagements other than audits or reviews of historical financial information" issued by the International Auditing and Assurance Standards Board.

As in previous years, we note that there are limitations to any external audit. Audits are not an absolute guarantee of the truth or reliability of agency information or the effectiveness of internal controls. They may not identify all matters of significance. This is because external audit techniques involve:

- Professional judgement as to "good industry and market operational practice";
- The use of sample testing;
- An assessment of the effectiveness of internal control structures; and
- An assessment of risk.

A market audit does not guarantee every procedure and action carried out in the operation of the electricity market in the audit report, nor does it examine all evidence and every transaction. However, our audit procedures should identify errors or omissions significant enough to adversely affect the decisions of market participants.

We also note that there is a high degree of compliance monitoring built into the market design. Should System Management not carry out a requirement of the Market Rules, those cases that are material will have affected Market Participants and are likely to have been raised.

Where non-compliant procedures or actions are identified, these are classified as being:

- Material, in that they may affect decisions made by Market Participants, affect the outcome of the market or otherwise affect the financial position of one or more Rule Participants; or
- Not material, in that
 - they do not comply with the wording or the Market Rules but do comply with the intention of the Market Rules; or
 - they do not comply with the Market Rules but they are not likely to affect decisions made by market participants or otherwise affect the outcome of the market.

1.4 Structure of this report

The report begins with an overview of recent changes made to the Power System Operation Procedure and System Management's internal procedures.

The remainder of the report is structured around the various chapters of the Market Rules. The chapters of this report summarise the incremental changes to the Market Rules that have occurred since the time of the last audit, the changes to System Management's internal and external procedures that are relevant to that chapter of the Market Rules, and any recorded instances of non-compliance.

Appendix A contains a table showing Market Rule clauses changed since last year's audit.

1.5 Acknowledgements

PA would like to thank the managers and staff of System Management who willingly provided information and shared in discussions while we carried out this market audit, particularly in this time of change for the organisation.

2 STATUS OF THE PROCEDURES

2.1 Power System Operation Procedure (PSOP)

The intent of the Market Rules is for the PSOP to set out processes, methodologies, algorithms and calculations for operational use by industry participants. While there have been no updates to the PSOP in the audit period, changes to several sections are under development.

As in past years, we identify specific areas for improvement in later chapters, where the Rules mandate the setting out of a particular procedure for which detail is missing in the PSOP.

2.2 System Management internal procedures

This year we have again specifically reviewed System Management's obligations with regard to its internal procedures.

As last year, we found that System Management's business processes fall into three categories:

1. Those documented in internal procedures clearly used in operational activities, which include detailed activity steps and process flow diagrams or worked examples for use by operational staff.

We noted last year that System Management has begun an initiative to improve and reorganise its internal procedures. This process has borne some fruit, but has been slow to progress. While existing procedure documentation has been reorganised into a new and consistent structure, the procedure content has not been integrated. We are pleased to see that in general, procedures in this category *have* been updated to reflect Market Rule changes.

2. Those documented in internal procedures apparently created to capture Rule obligations, which largely restate the Market Rules without adding information, and without weaving the obligations into an operational process flow.

Procedures in this category are unlikely to be used operationally, and will create administrative overhead which could be put to more valuable use in the creation and maintenance of truly operational procedures.

3. Those not captured in documentation sighted by us as part of the audit.

System Management still have important business processes that fall in this category – that is, where we have not sighted documentation setting out a definitive version of how the process is carried out. While the absence of internal documentation of particular processes does not necessarily indicate non-compliance with Market Rule obligations, its existence is a strong signal that compliance is built into operational activities.

3 MARKET RULE

CHAPTER 1 – INTRODUCTION

Market Rule Chapter 1 sets out the Introduction to the Market Rules and covers areas such as the objectives of the market, conventions and transitional arrangements.

3.1 System Management's processes and procedures

3.1.1 Rule amendments

There have been no amendments to Chapter 1 since last year's annual audit.

3.1.2 Procedures

There are neither Power System Operation Procedure sections nor internal procedures relevant to Chapter 1.

3.2 Compliance with Chapter 1

The obligations placed on System Management under Chapter 1 relate to transitional matters or matters that expired at the Energy Market Commencement.

3.3 Opinion

System Management has no current obligations under Chapter 1 of the Market Rules

4 MARKET RULE

CHAPTER 2 – ADMINISTRATION

Chapter 2 of the Market Rules sets out the Functions and Governance Rules which affect both the Market Operations and System Operations Control functions of System Management.

4.1 System Management's processes and procedures

4.1.1 Rule amendments

The following clauses in Chapter 2 have been amended since last year's market audit:

- clauses 2.22.3; 2.22.4; 2.22.6; 2.22.12; 2.23.3; 2.23.4; 2.23.5; 2.23.9; 2.23.12, 2.22.8, 2.22.8A (new), 2.22.8B (new), 2.22.13, 2.22.14, 2.22.15 (new), 2.23.8, 2.23.8A (new), 2.23.8B (new), 2.23.13 (new) and 2.23.14 (new) (RC_2011_02);
- clause 2.13.6L (new) (RC_2012_16);
- clauses 2.27.1, 2.27.1A, 2.27.2, 2.27.2A, 2.27.3, 2.27.3A, 2.27.3B, 2.27.4, 2.27.5, 2.27.6, 2.27.7(new), 2.27.8(new), 2.27.9(new), 2.27.10(new), 2.27.11(new), 2.27.12(new), 2.27.13(new), 2.27.14(new), 2.27.15(new), 2.27.16(new), 2.27.17(new) (RC 2012_07)
- clauses 2.1.1, 2.1.3, 2.2.1, 2.5.6, 2.6.3A (new), 2.6.4, 2.7.7A (new), 2.7.8, 2.8.1, 2.8.3, 2.8.11, 2.10.2A, 2.11.1, 2.17.1, 2.17.2 (RC_2012_06).
- Clause 2.13.9 (RC_2013_01)

4.1.2 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 2 of the Market Rules are under review, or are in the process of being amended:

- Monitoring and Reporting Protocol

The following internal procedures relating to Chapter 2 of the Market Rules have been updated since last year's market audit:

- Internal Procedure: 3.1 Undertake Post-Event Rules Enforced Monitoring
- Internal Procedure: 4.1 Manage Market Rules and Market Procedures
- Internal Procedure: 5.1.1.1.1 Determine ring-fence and governance arrangements

4.1.3 Relationship between Rule updates and procedures

The extent to which the Rule changes have been reflected in updates to the System Management's processes and procedures is set out in Table 1 below.

Not all Rule changes require a consequential amendment to written procedures.

4.2 Compliance with Chapter 2

4.2.1 Incidents

We found two material and one non-material instance of non-compliance with Chapter 2.

These incidents are described in Table 2 below.

4.2.2 Comment

We deem two of the breaches to this section of the Rules to be material; that is the breaches may compromise the intention of the Market Rules, and/or the decisions made by market participants, or otherwise may affect the outcome of the market.

4.3 Opinion

With the exception of the breaches noted in Table 2, we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 2 of the Market Rules.

4.4 Details of procedure changes and non-compliance

4.4.1 Rule changes and procedure updates

Table 1: Relationship between Rule changes to Chapter 2 and System Management procedure updates

Amended clauses	Description	Procedure updated?
clauses 2.22.3; 2.22.4; 2.22.6; 2.22.12; 2.23.3; 2.23.4; 2.23.5; 2.23.9; 2.23.12, 2.22.8, 2.22.8A (new), 2.22.8B (new), 2.22.13, 2.22.14, 2.22.15 (new), 2.23.8, 2.23.8A (new), 2.23.8B (new), 2.23.13 (new) and 2.23.14 (new) (RC_2011_02)	<ul style="list-style-type: none"> • Inclusion of Forecast Capital Expenditure in budget submissions. • Change in definition of Declared Market Project with respect to “cost threshold” 	<p>No</p> <ul style="list-style-type: none"> • The relevant Internal Procedure has not yet been updated
2.13.6L (new) (RC_2012_16);	Alignment of settlement and dispatch tolerances	Yes
2.27.1, 2.27.1A, 2.27.2, 2.27.2A, 2.27.3, 2.27.3A, 2.27.3B, 2.27.4, 2.27.5, 2.27.6, 2.27.7(new), 2.27.8(new), 2.27.9(new), 2.27.10(new), 2.27.11(new), 2.27.12(new), 2.27.13(new), 2.27.14(new), 2.27.15(new), 2.27.16(new), 2.27.17(new) (RC 2012_07)	<ul style="list-style-type: none"> • Changes to align loss factor determination rules with practice and the Market Procedure including <ul style="list-style-type: none"> – A refinement to the methodology used to calculate the Distribution Loss Factor for the Notional Wholesale Meter and – A minor change to the analysis period used for Transmission Loss Factor calculation in the Loss Factor Procedure. • Changes to loss factor reassessment procedure 	Not applicable
2.1.1, 2.1.3, 2.2.1, 2.5.6, 2.6.3A (new), 2.6.4, 2.7.7A (new), 2.7.8, 2.8.1, 2.8.3, 2.8.11, 2.10.2A, 2.11.1, 2.17.1, 2.17.2 (RC_2012_06)	Minor changes to with respect to clarification of Reviewable Decisions and Definitions of Regulations	Not applicable
2.13.9 (RC_2013_01)	Clarification of dispatch compliance obligations	Yes

4.4.2 Incidents of non-compliance

Table 2: Incidents of non-compliance with Chapter 2

Rule	The Issue	Material?	Comment
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Rule	The Issue	Material?	Comment
2.9.7, 2.13.6K	<p>System Management is obliged to warn a participant if it observes a facility deviating from dispatch outside a tolerance range, specified using a formula defined in the PSOP.</p> <p>SM is applying a different tolerance formula than that specified in the PSOP. Specifically, the PSOP formula includes consideration of a facility's Rate of Change (ROC), defined as 'currently dispatched ramp rate of a Scheduled Generator in a particular Trading Interval, expressed in MW per minute'. SM are actually applying the formula using the standing data ramp rate as the ROC.</p>	No	<p>The PSOP as currently written does not reflect SM's intention or practice, and the alternate ROC definition is clearly published to all participants on the IMO website.</p> <p>SM are progressing a procedure change proposal to update the PSOP to correct the formula.</p>
2.36.9	<p>SM are obliged to provide information to and receive information from the IMO in accordance with the IMS interface procedure, which prescribes a manual backup mechanism in case of issues with automated systems.</p> <p>During overnight system issues on 14 December 2012, and 27 February 2013, SM implemented the manual backup mechanism for some periods, but not others.</p>	Yes (2 breaches)	<p>In the 14 December incident, had SM continued the manual transfer process, it would have used different, up to date BMOs to dispatch balancing facilities, resulting in different market outcomes.</p> <p>In both instances, SM issued a dispatch advisory to inform market participants about system issues and unavailability of files.</p> <p>In both incidents, SM also breached Market Rule 7A.3.15 – these breaches are discussed in that chapter.</p>

5 MARKET RULE

CHAPTER 3 – POWER SYSTEM SECURITY AND RELIABILITY

Chapter 3 of the Market Rules sets out the Power System Security and Reliability Rules which affect the Market Strategic Development, Market Operations, System Operations Planning and the System Operations Control functions of System Management.

5.1 System Management's processes and procedures

5.1.1 Rule amendments

The following clauses in Chapter 3 affecting System Management have been amended since last year's market audit:

- Clauses 3.18.6, 3.21.1 and 3.21.2 (RC_2012_04)
- Clause 3.21A.7 (RC_2012_15)
- Clauses 3.21A.1, 3.21A.2, 3.21A.3, 3.21A.4, 3.21A.5, 3.21A.7, 3.21A.7A, 3.21A.8, 3.21A.9, 3.21A.10, 3.21A.11, 3.21A.12, 3.21A.13, 3.21A.14, 3.21A.15, 3.21A.16, 3.21A.17 (RC_2012_12).

5.1.2 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 3 of the Market Rules are under review, or are in the process of being amended:

- PSOP: Commissioning & Testing
- PSOP: Facility Outages

The following internal procedures relating to Chapter 3 of the Market Rules have been updated since last year's market audit:

- Internal Procedure: Market Operations Planning Procedure
- Internal Procedure: 1.2.5.1 Plan Commissioning Tests
- Internal Procedure: 1.3.2.3 Manage on the day outages
- Internal Procedure: 3.1 Undertake Post-Event Rules Enforced Monitoring

5.1.3 Relationship between Rule updates and procedures

The extent to which the Rule changes have been reflected in updates to System Management's processes and procedures is set out in Table 3.

Not all Rule changes require a consequential amendment to written procedures.

5.1.4 Additional risk areas

In addition to the incremental review above, we also specifically reviewed System Management's performance of:

- Preparation of the ST and MT PASA under the relevant PSOPs; and
- Preparation and maintenance of the Technical Envelope.

5.2 Compliance with Chapter 3

5.2.1 Incidents

We found three material and 30 non-material instances of non-compliance with Chapter 3.

Incidents associated with System Management's obligations under Chapter 3 are set out in Table 4.

5.2.2 Comment

We deem three of the breaches to this section of the Rules to be material; that is the breaches may compromise the intention of the Market Rules, and/or the decisions made by market participants, or otherwise may affect the outcome of the market.

We note that SM has addressed all material breaches to Chapter 3 found during the last audit.

5.3 Opinion

With the exception of the breaches noted in Table 4, we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 3 of the Market Rules.

5.4 Details of procedure changes and non-compliance

5.4.1 Rule changes and procedure updates

Table 3: Relationship between Rule changes to Chapter 3 and System Management procedure updates

Amended clauses	Description	Procedure updated?
<ul style="list-style-type: none"> • Clauses 3.18.6, 3.21.1 and 3.21.2 (RC_2012_04) 	Amendments to definition of consequential outages	Partially <ul style="list-style-type: none"> • Changes to the PSOP: Facility Outages are being drafted • The Internal Procedure: Market Operations Planning has been updated.
<ul style="list-style-type: none"> • Clause 3.21A.7 (RC_2012_15) 	Remove the four month limit on Commissioning Test Periods for new generating systems	No <ul style="list-style-type: none"> • Changes to the PSOP: Commissioning and Testing are being drafted
<ul style="list-style-type: none"> • Clauses 3.21A.1, 3.21A.2, 3.21A.3, 3.21A.4, 3.21A.5, 3.21A.7, 3.21A.7A, 3.21A.8, 3.21A.9, 3.21A.10, 3.21A.11, 3.21A.12, 3.21A.13, 3.21A.14, 3.21A.15, 3.21A.16, 3.21A.17 (RC_2012_12). 	Changes to commissioning processes	Partially <ul style="list-style-type: none"> • Changes to the PSOP: Commissioning and Testing are being drafted • Internal procedures have been updated, or are in the process of being updated

5.4.2 Incidents of non-compliance

Table 4: Incidents of non-compliance with Chapter 3

Rule	The Issue	Material?	Comment
3.2.6	SM must establish and modify the Technical Envelope in accordance with clause 3.2.5 and the PSOP. Section 4.1 of the PSOP: Power System Security covers the definition and operation of the Technical Envelope. SM has developed a draft document defining the Technical Envelope, but the document has not been	No	While the specifications that make up the Technical Envelope are spread across a number of repositories, in practice, SM staff understand what is meant by the technical envelope, and operate the power system in accordance with it.

Rule	The Issue	Material?	Comment
	finalised or issued. Until such a document has official standing, SM is in breach of this Rule.		
3.4.1	3.4.1 sets out the conditions under which the SWIS is in a High Risk state. On 26 July 1, 9, 13, and 31 August, 3 (twice), 4 (thrice), 5, 6 (twice) and 7 September, and 12 (twice) and 18 October 2012, SM issued a dispatch advisory declaring a High Risk state when an updated BMO was unavailable from the IMO. Unavailability of a BMO is not one of the conditions set out in 3.4.1.	No (17 breaches)	While these occasions did not constitute a high risk state, SM continued to dispatch from the latest available forecast BMO, so market outcomes were the same as if the High Risk state had not been declared. SM has issued no such declarations since October 2012.
3.11.11(a)	SM is obliged to submit an annual ancillary service report to the IMO. This report is to include, among other things, the quantity, cost and adequacy of various ancillary services provided over the previous year. In the 2013 report, SM did not specify the amount of Load Rejection Reserve Service (LRRS).	No	SM reported the total cost of LRRS as zero for the period. Market outcomes would have remained the same were the quantity reported.
3.11.14	SM is obliged to document the procedure for determining Ancillary service requirements in the PSOP. The PSOP: Ancillary Services includes information about things that SM may consider, but does not set out the actual process for determining the requirements.	No	Since SM publishes the results of its determinations, and since they have a significant amount of discretion in operating the power system, it is unlikely that the market is currently directly affected by the absence of this methodology. The market is, however affected by the values chosen, and the process by which they are calculated should be made public, so that informed discussion can be had on whether the requirements are set appropriately.
3.17.1(a)	SM must provide ST PASA results to the IMO by 4.30PM every Thursday. ST PASA results for 27 December 2012 were provided 35 minutes late. ST PASA results for 28 March 2013 were provided 30 minutes late. ST PASA results for 27 June 2013 were not provided until 29 June.	No (3 breaches)	While the information was provided to the market late, balancing forecasts and previous ST PASA projections were available, so the unavailability of this information is unlikely to have caused participants to act differently.
3.18.2(c)	SM is obliged to compile and provide to the IMO a list of all equipment subject to outage scheduling. The list must include certain generation and network equipment.	No	In practice, SM were scheduling outages for this equipment. The only impact was that the published list was not up to date. The published list was updated in August 2012. SM have updated the list internally, but

Rule	The Issue	Material?	Comment
	From July 2013, the published equipment list has not included some of the mandated equipment.		have not yet published an updated version.. SM are considering implementation of more regular formal review processes.
3.18.21	SM must follow the PSOP when planning outages. The PSOP: Facility Outages requires SM to approve or reject Day-ahead Opportunistic Maintenance outages by 8am on the scheduling day where submitted between 8am and 3.30pm on the day prior to the scheduling day. On 6 April 2013, SM responded to two DAOM outage requests submitted prior to 3.30pm the day prior to the scheduling day later than 8am on the scheduling day.	No (2 breaches)	The affected participant is unlikely to have acted differently had they received notification of the rejection a few hours earlier.
3.19.3A(b)	SM must not approve Opportunistic Maintenance requests on two consecutive trading days. On 28 and 29 June 2013, SM received on the day opportunistic maintenance requests from one particular facility, and approved both outages.	Yes	The facility in question had a planned outage approved for a period including these two days. Part way through the planned outage, the maximum capacity of the facility increased. Only the original capacity was covered by the planned outage. SM consciously decided to allow the opportunistic maintenance so that the facility would not be subject to capacity refunds, where it was too late for the facility to alter their planned outage to account for the standing data change. Had SM not approved the second day's outage, the facility would have faced capacity refunds of around \$5000.
3.21.6(a)	SM must convert participant-entered outage data using particular assumptions. SM's outage management system prevents participants from entering outages that would result in available capacity dropping below the standing data registered minimum stable running level. This is not one of the assumptions included in 3.21.6(a).	Yes	Outage values are used in IMO settlement processes. At times, participants would like to have outages which reduce their available capacity below minimum stable running, where the remaining capacity does remain available to SM for dispatch as required by 3.21.5. If participants were able to lodge such outages, then at times, market outcomes would differ from the current situation.
3.21.6(b), 3.21.6(c), 3.21.6(d)	SM must calculate outages using particular input data, including Reserve Capacity Obligation Quantities. From 1 October 2012 to 7 February 2013, SM used incorrect RCOQ figures for facilities for which the quantity of capacity credits had changed.	Yes	Outage quantities are reported to the IMO, and used in Settlement. Where SM provided an incorrect value, the capacity refund amounts calculated for the participant will have been incorrect.
3.21A.15	SM must follow the PSOP when planning commissioning tests. The PSOP: Commissioning and Testing requires SM to reject commissioning test plans submitted less than 2 days prior to the commencement of the first	No (2 breaches)	In each case, the data contained in the plans was submitted with more than 2 days' notice, but not in the format prescribed by the PSOP. SM staff made a conscious decision to breach the PSOP by approving the plan inside the prohibited window. While market outcomes on the specific day would have been different had SM not

Rule	The Issue	Material?	Comment
	Trading Day covered by the Commissioning Test plan On 19 and 26 September 2012, SM approved a commissioning test plan submitted with less than 2 days' notice.		approved the commissioning test plans, the plans would have been approved for an alternate day, with similar market outcomes overall. We recommend a PSOP change to allow SM discretion in this matter.
3.21A.16	SM must provide the IMO with details of approved Commissioning Test plans by 8.30am on the scheduling day. On 21 August 2012, SM did not provide this information until the afternoon.	No	The delay would not have affected market outcomes.
3.21B.8	SM must document in the PSOP the procedure to be followed in granting permission for a generator holding capacity credits to be placed in a state from which it would take more than four hours to resynchronise. The PSOP: Dispatch references notification of commitment decisions, but does not set out the procedure for dealing with such requests.	No	System Management deals with these situations as part of the general outage process, and their actions appear to be consistent with the Rules. Therefore, the absence of this information in the PSOP should not impact the market. SM have drafted changes to the PSOP: Dispatch for consultation.

6 MARKET RULE

CHAPTER 4 – RESERVE CAPACITY

Chapter 4 of the Market Rules sets out the Reserve Capacity Rules which affect the Market Strategic Development and System Operations Control functions of System Management.

6.1 System Management's processes and procedures

6.1.1 Rule amendments

The following clauses in Chapter 4 have been amended since last year's market audit:

- Clauses 4.5.10, 4.5.12 and 4.5.13 (RC_2012_09)
- Clauses 4.12.6, 4.26.1A (RC_2012_12)
- Clause 4.5.9 (RC_2012_21)
- Clauses 4.11.1 and 4.11.2 (RC_2012_20)

6.1.2 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 4 of the Market Rules are under review, or are in the process of being amended:

- None

The following internal procedures relating to Chapter 4 have been created or updated since last year's market audit:

- None

6.1.3 Relationship between Rule updates and procedures

None of the rule changes alter System Management's obligations under Chapter 4.

6.2 Compliance with Chapter 4

We have noted one non-material non-compliance on the part of System Management respect to its obligations under Chapter 4.

This non-compliance is described in Table 5.

6.3 Opinion

Except for the breach set out in Table 5, we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 4 of the Market Rules.

6.4 Details of non-compliance

6.4.1 Incidents of non-compliance

Table 5: Incidents of non-compliance with Chapter 4

Rule	The Issue	Material?	Comment
4.25.9(g)	SM is obliged to conduct reserve capacity tests in a specified time interval. SM failed to conduct a reserve capacity test scheduled for the interval 1 September 2012 to 7 September 2012	No	SM agreed an alternate time interval with the IMO, and was still able to conduct the test within the RC test period.

7 MARKET RULE

CHAPTER 5 –

NETWORK CONTROL

SERVICE

PROCUREMENT

Chapter 5 of the Market Rules sets out the Network Control Service Procurement Rules, which affect the System Operations Control function of System Management.

7.1 System Management's processes and procedures

7.1.1 Rule amendments

There have been no amendments to Chapter 5 since last year's annual audit.

7.1.2 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 5 of the Market Rules are under review, or are in the process of being amended:

- None

The following internal procedures relating to Chapter 5 have been created or updated since last year's market audit:

- None

7.2 Compliance with Chapter 5

We have not noted any non-compliance on the part of System Management with respect to its obligations under Chapter 5 of the Market Rules.

7.3 Opinion

We have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 5 of the Market Rules.

8 MARKET RULE

CHAPTER 6 – ENERGY MARKET

Market Rule Chapter 6 sets out the Energy Market Rules which affect the Market Strategic Development, Market Operations, System Operations Planning and System Operations Control functions of System Management.

8.1 System Management's processes and procedures

8.1.1 Rule amendments

The following clauses in Chapter 6 have been amended since last year's market audit:

- Clause 6.17.9 (RC_2012_16)
- Clauses 6.16A.2 and 6.17.3A (RC_2012_19)
- Clause 6.6.3A (RC_2012_06)
- Clause 6.15.2 (RC_2013_02)

8.1.2 Procedures

System Management has only limited obligations under Chapter 6. There are no Power System Operation Procedure sections or internal procedures relating to Chapter 6.

8.1.3 Relationship between Rule updates and procedures

None of the rule changes alter System Management's obligations under Chapter 6.

8.2 Compliance with Chapter 6

We have not noted any non-compliance on the part of System Management with respect to its obligations under Chapter 6 of the Market Rules.

8.3 Opinion

We have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 6 of the Market Rules.

9 MARKET RULE

CHAPTER 7 – DISPATCH

Market Rule Chapter 7 of the Market Rules sets out the Dispatch Rules which affect the Market Operations, System Operations Planning and the System Operations Control functions of System Management.

9.1 System Management's processes and procedures

9.1.1 Rule amendments

The following clauses in Chapter 7 have been amended since last year's market audit:

- Clause 7.9.4 (RC_2012_12)
- Clause 7.2.3A (RC_2013_06)
- Clauses 7.10.6, 7.10.6A and 7.10.7 (RC_2013_01)

9.1.2 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 7 of the Market Rules are under review, or are in the process of being amended:

- PSOP: Commissioning & Testing
- PSOP: Dispatch
- PSOP: Facility Outages
- PSOP: Monitoring & Reporting

The following internal procedures relating to Chapter 7 of the Market Rules have been updated since last year's market audit:

- Internal Procedure: 1.2.5.1 Plan Commissioning Tests
- Internal Procedure: 3.1 Undertake Post-Event Rules Enforced Monitoring
- Internal Procedure: Market Operations Planning Procedure

9.1.3 Relationship between Rule updates and procedures

The extent to which the Rule changes have been reflected in updates to System Management's processes and procedures is set out in Table 6.

Not all Rule changes require a consequential amendment to written procedures.

9.1.4 Additional risk areas

In addition to the incremental review above, we also specifically reviewed System Management's automatic monitoring of participant compliance with dispatch, the new software tools implemented for planning, forecasting and dispatch, issuance of dispatch advisories, and System Management's compliance with dispatch obligations.

9.2 Compliance with Chapter 7

9.2.1 Incidents

We found 23 material and 26 non-material incidents of non-compliance with Chapter 7.

Incidents associated with System Management's obligations under Chapter 7 are set out in Table 7 below.

9.2.2 Comment

We deem 23 of the breaches to this section of the Rules to be material; that is the breach may compromise the intention of the Market Rules, and/or the decisions made by market participants, or otherwise may affect the outcome of the market.

Seven of the material breaches relate to dispatch out of merit. This area is of particular interest, as it speaks directly to the integrity of the market. It is possible that additional systemic issues may remain. We recommend that System Management and the IMO make on-going rigorous analysis a key part of market operations to ensure that issues in this area are identified and addressed as soon as possible.

Ten of the material breaches relate to issuance of dispatch advisories, one mechanism by which SM is obliged to provide information to the market. This is another area which could potentially be improved also.

9.3 Opinion

With the exception of the breaches noted in Table 7, we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 7 of the Market Rules.

9.4 Details of procedure changes and non-compliance

9.4.1 Rule changes and procedure updates

Table 6: Relationship between Rule changes to Chapter 7 and System Management procedure updates

Amended clauses	Description	Procedure updated?
Clause 7.9.4 (RC_2012_12)	Typographical correction	Not applicable
Clause 7.2.3A (RC_2013_06)	Excludes LFAS from ancillary services estimates	Yes
Clauses 7.10.6, 7.10.6A and 7.10.7 (RC_2013_01).	Minor change to reporting requirement	Not applicable

9.4.2 Incidents of non-compliance

Table 7: Incidents of non-compliance with Chapter 7

Rule	The Issue	Material?	Comment
7.2.3A	SM must provide the IMO with forecast ancillary service information by 8.30am each day. Until 15 May 2013, this included forecast LFAS information. From 22 February to 15 May 2013, SM did not include forecasts of IPP LFAS use. On 14 July 2013, SM did not provide the information until after the deadline.	No (2 breaches)	This information is provided to the IMO for information only.
7.3.4	SM must provide the IMO with a schedule of ex-ante outages between 8am and 8.30am each day. On 13 July 2013, SM did not provide the schedule until after the deadline.	No	The schedule is used as input for the STEM, and was still able to be used in the STEM that day, albeit late. The incident was due to a system issue.
7.5.2	SM are obliged to acknowledge receipt of Non-Balancing Dispatch Merit Orders and Fuel Declarations within 5 minutes of receipt. On 23 Feb 2013 and 21 July 2013, SM did not confirm	No (2 breaches)	Acknowledgment within the timeframe would not have affected SM's use of the information.

Rule	The Issue	Material?	Comment
	receipt until after the required time.		
7.6.1	<p>SM are obliged to seek to meet various criteria for operating the SWIS when scheduling and issuing Dispatch Instructions and Dispatch Orders. Specifically SM are to seek to:</p> <ol style="list-style-type: none"> 1. Enable operation within Technical Envelope parameters 2. Minimise involuntary load shedding 3. Meet ancillary service standards <p>Since 5 December 2012, SM have generated and issued dispatch instructions using the Real Time Dispatch Engine. Dispatch instructions are automatically calculated and sent to facilities electronically, with all activity recorded in a central database, the Operational Data Store (ODS).</p> <p>However, on at least three occasions, the automatically issued dispatch instructions have been calculated using incorrect input data: for example a significantly wrong load forecast (in the most extreme case, dropping by more than 1000 MW), or incorrect facility SCADA data.</p> <p>If facilities were to follow these dispatch instructions:</p> <ol style="list-style-type: none"> 1. the system would not operate within Technical envelope parameters 2. significant involuntary load shedding would occur 3. ancillary service standards would not be met. <p>In such circumstances, SM have turned off automatic dispatch, and have issued alternate dispatch instructions by telephone. Nevertheless, some participants have responded to instructions, at least partially.</p> <p>On 21 December 2012, SM automatically issued dispatch instructions to facilities based on incorrect load</p>	Yes	<p>Regardless of the cause, if SM issues an instruction based on information that is clearly incorrect, and participants act on it, market outcomes are affected.</p> <p>While SM are proactive in advising participants not to follow the incorrect instructions, very shortly after they are sent, it would be vastly better to check first and send second. In our opinion, as part of seeking to meet the 7.6.1 criteria, SM could do more to ensure that Dispatch Instructions are correct prior to issuing.</p> <p>Incorrect Dispatch Instructions also affect the market in other ways, as in such situations, SM issues dispatch non-compliance notifications to the facility in question, and then provides these spurious notifications to the IMO. In some cases, SM manually revise the data before providing to the IMO, but this has not been feasible in all cases. While this data provision does not constitute a breach, it does reduce market transparency and hampers compliance analysis.</p>

Rule	The Issue	Material?	Comment
	<p>forecast data. Instructions were issued verbally for around an hour², it appears that all but one participant followed the verbal instructions rather than the incorrect electronic dispatch.</p> <p>On 6 May 2013, SM automatically issued dispatch instructions to facilities based on incorrect SCADA data. Some facility operators queried the instructions, and were verbally instructed to disregard the electronic instructions. Corrected electronic instructions were issued 25 minutes later. Nevertheless, three facilities followed the incorrect electronic instructions.</p> <p>On 26 July 2013, SM automatically issued a dispatch instruction to a facility based on incorrect SCADA data. A verbal instruction was issued instead.</p>		
7.6.1C, 7.6.1D	<p>SM is obliged to issue instructions to facilities in accordance with the BMO, only departing in order to deal with or avoid a high-risk or emergency operating state.</p> <p>On at least nine occasions, SM has departed from the BMO for a reason not allowed under the rules.</p> <p>Until 5 December 2012, dispatch instructions were issued manually.</p> <p>On 20 August 2012, SM calculated, but failed to issue a dispatch instruction to one facility.</p> <p>On 7 September 2012, SM issued a dispatch instruction to one facility, when the instruction was intended for another facility. The mistake was noticed immediately, and the dispatch corrected. Participants responded only to the corrected dispatch.</p> <p>On 23 October 2012, SM calculated, but failed to issue dispatch instructions to two facilities.</p> <p>From 5 December 2012, dispatch instructions have been issued automatically by SM's systems.</p>	<p>Yes</p> <p>No</p> <p>Yes</p>	<p>We noted last year that there was no audit trail to relate dispatch instructions to the BMO. This data is now recorded, but analysing it to determine compliance is a non-trivial exercise. We have analysed a sample of data for 30 July 2013 (later than all self-reported potential breaches) to assess potential for any continued systemic dispatch out of merit, but have relied entirely upon SM self-reporting to identify breaches on other dates.</p> <p>This error would have resulted in constrained payments.</p> <p>The delay in issuing and responding to the correct instruction would have been covered by load following.</p> <p>This error would have resulted in constrained payments.</p>

² These verbal instructions were not entered into the database.

Rule	The Issue	Material?	Comment
	On 17 December 2012, SM issued a dispatch instruction to a non-marginal facility for less than the cleared tranche total, when the facility was not ramp-rate constrained.	Yes	This error would have resulted in constrained payments, and most likely in other instances as well. SM's systems were changed in February 2013 to fix the underlying issue.
	On 23 February 2013, SM calculated and issued dispatch instructions including a manual constraint to record a particular facility as on outage, and unavailable for dispatch. The facility was available, but was dispatched as if it was still on outage. The facility was verbally advised to disregard the automatically sent instructions, and did so. During the same period, SM verbally issued a dispatch instruction to one facility when the instruction was intended for another facility.	Yes	This error would have resulted in constrained payments.
	On 21 March 2013, SM calculated and issued incorrect dispatch instructions to two facilities due to a problem with the real-time dispatch engine. The two facilities were verbally advised to disregard the automatically sent instructions, and did so.	No	Because the facilities maintained the appropriate BMO level, no other facilities would have had to move to compensate, therefore no constrained payments would have been incurred.
	On 23 April 2013, SM calculated and issued dispatch instructions using data including an incorrect manual ramp rate constraint for one intermittent generator. The facility should instead have been constrained to a particular capacity output.	Yes	Had the facility been constrained as intended, other generators would have provided different (lower) amounts of energy.
	On 9 May 2013, SM calculated and issued dispatch instructions using data including a manual constraint to record a particular facility as on outage, and unavailable for dispatch. The facility was available, but was dispatched as if it was still on outage. The facility was verbally advised to disregard the automatically sent instruction, and did so.	No	Although this facility disregarded the instruction, Dispatch Instructions for other facilities were also calculated assuming the outage. However, only one other facility was issued a Dispatch Instruction to compensate for this one, and that facility also disregarded the dispatch.
	On 14 May 2013, SM calculated and issued dispatch instructions using data including a manual constraint to record a particular facility as on outage, and unavailable for dispatch. The facility was available, but was dispatched as if it was still on outage. The manual constraint was removed, and dispatch for the facility returned to normal two hours later.	Yes	This error would have resulted in constrained payments.

Rule	The Issue	Material?	Comment
	<p>From 16 to 18 May 2013, SM's systems treated a non-scheduled facility as a scheduled facility, with the result that the facility output was inappropriately curtailed.</p>	Yes	<p>This error would have resulted in constrained payments. The same issue also affected two other non-scheduled facilities, but their output was not curtailed in the same way. SM's systems have been changed to ensure that this situation is not possible in future. SM have fixed system errors where they were identified as the root cause of non-compliance.</p>
7.6.2, 7.13.1(a)	<p>7.6.2 "... the dispatch of any Facility within the Verve Energy Balancing Portfolio is to be under the Dispatch Plan or a Dispatch Order in accordance with clause 7.6A ..."</p> <p>7.13.1(a) "SM must provide the IMO with ... a schedule of all the Dispatch Orders that SM issued for each Trading Interval ..."</p> <p>While the Rules are not entirely clear about when a Dispatch Order (DO) should be used instead of an update to the Dispatch Plan (DP), the intent appears to be to provide a record of Verve dispatch - by either DP or DO - in the same way as IPP dispatch is captured in a Dispatch Instruction.</p> <p>The DP is "the schedule of energy and Ancillary Services to be provided ... by the Facilities of Verve Energy in the VEBP, during a Trading Day, where these schedules may be revised by SM during the course of the Scheduling Day and the Trading day."</p> <p>A DO is "an instruction by SM under 7.6A for a Facility or Facilities in the VEBP to vary output or consumption from the Dispatch Plan".</p> <p>While SM do provide Verve with a DP at specific times each day, this plan is viewed as representing the upper and lower boundaries within which SM expects to operate Verve plant, and is not a record of the actual MW amount to be provided in real-time. We were unable to find evidence that the Dispatch Plan is updated and provided to Verve even when plant operation is expected to depart outside the upper and lower boundaries.</p> <p>Real time dispatch of Verve facilities is by phone or</p>	No	<p>The phone records of Verve dispatch are sufficient to support post-event investigations of specific incidents, but the significant manual effort involved in reconstructing events means that phone records cannot provide a complete automated history of dispatch decisions.</p> <p>The lack of a complete history for Verve dispatch increases the likelihood of breaching other obligations, such as Verve non-compliance with dispatch, and the recording of Verve forced outages, but cannot be said, prima facie, to have affected the outcomes of the market.</p>

Rule	The Issue	Material?	Comment
	<p>AGC, and phone instructions are recorded manually in the control room log. Real-time Dispatch Engine outputs record a notional dispatch for the portfolio, but this does not feed into the actual instructions given to Verve plant. There is no automatic record of the instructions given to Verve facilities, other than the recording of the telephone conversation.</p> <p>In our opinion the phone instructions given to Verve function as Dispatch Orders, should be provided to the IMO, and SM is in breach of 7.13.1(a). If the phone instructions are not Dispatch Orders, then SM is in breach of 7.6.2 by dispatching Verve under neither the DP or a DO.</p>		
7.6A.2(c)	<p>SM must provide Verve with information about expected Verve portfolio dispatch, including the Dispatch Plan, by 4pm on the scheduling day.</p> <p>On 7 December 2012, and 15 January, 30 March, 20 May and 25 May 2013, SM provided the information a few minutes late.</p>	No (5 breaches)	<p>Verve use this information to offer into balancing. The information was provided in time for them to use it for this purpose.</p> <p>While most of the process to generate this information is automatic, manual activities remain. SM are investigating how to further automate the process to reduce the time required.</p>
7.6A.2(e)	<p>SM must provide the IMO with a forecast of non-scheduled generation by 4pm on the scheduling day.</p> <p>On 17 October 2012, SM provided this information 21 hours after the deadline.</p>	Yes	This forecast is published by the IMO for participant information, and forms part of the market information available to participants when preparing balancing offers.
7.7.2(a)	<p>SM's issued DIs must be consistent with the latest data available under 7.1.1, which includes expected facility availability provided by market participants, as well as planned and forced outages.</p> <p>Facilities which are undergoing outage for their entire capacity do not appear in the BMO. SM's dispatch software currently only calculates dispatch instructions for those facilities which appear in the BMO. This means that facilities on outage may not be issued a dispatch instruction for 0 MW, and are technically obliged to maintain output at the level of their most recently issued dispatch instruction.</p>	Yes	<p>Facilities who proceed with the outage in the face of the non-zero instruction will be non-compliant with dispatch. Those who comply (even partially) with the dispatch displace generation from other facilities from the BMO, thereby affecting market outcomes.</p> <p>The Rules and Market Procedures do not currently consider how facilities should offer into the BMO when on outage. We recommend the Rules are adjusted to include this situation.</p>

Rule	The Issue	Material?	Comment
	If SM is aware of a planned outage, but leaves a non-zero dispatch instruction on issue for the affected facility rather than issuing a zero instruction, it is in breach of 7.7.2(a), regardless of whether the facility appears in the BMO or not.		
7.7.8	<p>SM are obliged to record all Dispatch Instructions in a form sufficient for independent audit and settlement purposes.</p> <p>Since 5 December 2012, SM have generated and issued dispatch instructions using the Real Time Dispatch Engine. Dispatch instructions are automatically calculated and sent to facilities electronically, with all activity recorded in a central database, the Operational Data Store (ODS).</p> <p>However, on at least 12 occasions since 12 February 2013³, the RTDE software has either failed to generate instructions, or incorrect input data has caused dispatch instructions to be sent out which, if followed, would result in undesirable system outcomes.</p> <p>In such situations, SM suspends electronic dispatch, and issues dispatch instructions verbally by telephone.</p> <p>SM's systems do allow the ex-post entry of verbal dispatch instructions into the database and sending to participants, but these are not always entered.</p> <p>Phone records remain the only guaranteed record of verbal dispatch instructions.</p>	No	<p>Verbal dispatch records are sufficient to support post-event investigations of specific incidents, but the significant manual effort involved in reconstructing events means that phone records cannot provide a complete automated history of dispatch decisions. We did not identify any case where an incorrect Dispatch Instruction record affected settlement outcomes.</p> <p>Where manual instructions are not entered into the database ex-post, assessing participant compliance with dispatch and outage logging requirements becomes extremely difficult, if not impossible.</p>
7.10.4	<p>SM is obliged to monitor participant compliance with dispatch instructions.</p> <p>From 1 to 11 March 2013, SM did not automatically monitor one particular facility, due to a limitation in their automatic monitoring tool.</p>	Yes	<p>Participant non-compliance with dispatch directly affects settlement outcomes. This facility was treated differently to other facilities for this period, and was potentially able to profit from dispatch non-compliance.</p> <p>The automatic monitoring tool has been updated to handle the specific situation in question.</p>

³ Records for earlier periods were not available.

Rule	The Issue	Material?	Comment
7.10.5(c)	<p>SM is obliged to warn a participant if it observes a facility deviating from dispatch outside a tolerance range.</p> <p>SM achieves this by automatically generating and sending warning notifications based on dispatch data and SCADA readings, but are only sent if participants have specified a receipt mechanism. Until 4 December, SM were not warning some participants, due to the lack of a registered receipt mechanism.</p>	No	<p>Significant deviations would have been identified by control room staff, and the relevant participant warned in real time. Non-compliance records were still created for these participants, so SM were still meeting obligations to monitor dispatch compliance.</p>
7.10.7(a)	<p>SM must monitor participant compliance with dispatch, and where the output of a facility is outside the defined tolerance level, must ask the facility to return to dispatch. Where a participant fails to comply with this request to return to dispatch, where, SM must report the failure to the IMO.</p> <p>As part of preparing for the introduction of the new balancing and load following markets, SM developed an automatic dispatch compliance monitor, which notifies participants every minute when they are outside tolerance. While this system was placed into service on 6 August 2012, notifications have only been sent to the IMO since 26 August 2012. As a result, SM was in breach of this obligation until that date.</p> <p>Also, on a number of occasions between 26 August 2012 and 11 March 2013, SM failed to notify the IMO of specific facility dispatch non-compliances.</p>	Yes	<p>In the new balancing market, participant non-compliance with dispatch will directly affect market outcomes. Therefore, if non-compliance has not been reported to the IMO, settlement outcomes will be affected.</p> <p>Nevertheless, the automated tool is now in place, and has been adjusted to detect and report non-compliance in additional situations, and appears to be working well.</p>
7.10.7(a)	<p>SM must provide particular information to the IMO when participants advise that they are unable to comply with dispatch, including the participant's explanation, and an assessment of whether the non-compliance affected system security.</p> <p>In practice, SM:</p> <ul style="list-style-type: none"> Automatically provides the record of non-compliance, including the data prescribed by the IMS interface procedure, May manually provide reasons given by participants. 	No	<p>As long as the IMO is provided with records of participant dispatch non-compliance, the detail of the circumstance makes no difference to market outcomes.</p> <p>The wording of this clause is a hang-over from previous treatment of dispatch instructions, and we recommend it is updated to align with the IMS interface procedure.</p>

Rule	The Issue	Material?	Comment
	This includes some but not all the information required by 7.10.7(a).		
7.11.3, 7.11.6A	<p>SM must issue Dispatch Advisories (DAs) as soon as practicable after becoming aware of a situation requiring the release of a DA.</p> <p>At around 10.30pm on 24 November 2012, several transmission lines in the North Country region suffered outage, and Geraldton was islanded, SM declared a high risk state, and curtailed generation. It did not issue a DA for the situation until 10.49am the following day.</p> <p>At around 6.30pm on 3 December 2012, SM curtailed a facility, but did not issue a DA for the situation until 9.33am the following day.</p> <p>At around 2.30pm on 9 December 2012, the North Country region became islanded, SM declared a high risk state, and curtailed generation. It did not issue a DA for the situation until 7.56pm.</p> <p>From 5.30am to 6.30am on 30 December 2012, SM curtailed a non-scheduled generator, but did not issue a dispatch advisory until 9.43am.</p> <p>At around 7.45pm on 12 February 2013, SM became aware of a significant generator trip. It did not issue a DA for the situation until 9.58am the following day, and did not include volume estimates in that DA.</p> <p>In our opinion, these DAs should have been issued earlier.</p>	Yes (5 breaches)	Had market participants known of the situation, offer behaviour would likely have been different.
7.11.5(d)	<p>SM must issue a DA in event of significant loss of generation.</p> <p>On 23 February 2013, SM failed to issue a DA following a significant loss of generation.</p>	Yes	<p>Had market participants known of the outage, offer behaviour would likely have been different.</p> <p>SM's usual practice is to issue a DA immediately on becoming aware of such a situation, and if the initial manual DA does not include the required information, follow up with another DA giving more detail once the situation is under control. That practice was not followed in this case.</p>
7.11.6, 7.11.6A	SM must include particular information in DAs, including even where confidentiality issues may apply, the facility name, likely dispatch changes, and likely out of merit	Yes (5 breaches)	<p>Without knowing the affected quantity, participants do not have sufficient information to adjust their offers to reflect the outage.</p> <p>Even so, the information to be provided under 7.11.6 and 7.11.6A is quite extensive. In</p>

Rule	The Issue	Material?	Comment
	<p>quantities.</p> <p>While SM has generally provided facility names and estimated quantities for non-scheduled generation, it has not always provided estimates of the affected quantity.</p> <p>On 13 August 2012, SM became aware of a significant generator trip, and released a DA which did not specify the facility name, or the quantum of dispatch changes that would be required.</p> <p>On 31 October 2012, SM issued a DA noting overlapping network equipment outages, but did not include information about possible or expected effects.</p> <p>On 30 January 2013, SM issued a DA to the effect that transmission network faults had resulted in out-of-merit dispatch, but did not give the quantity.</p> <p>On 6 March 2013, SM issued a DA declaring an emergency state relating to a significant loss of generation. A supplementary DA was issued several hours later, identifying the affected facility, but not the affected quantity.</p> <p>On 21 March 2013, SM issued a DA declaring out of merit generation due to a network issue, but did not identify the affected facilities or the quantity of out of merit dispatch</p>		<p>general, and particularly where SM issues a DA automatically, SM's DAs contain only a subset of this information, and could be held to be non-compliant. Given that the purpose of DAs as currently specified is to provide more information to the market, we recommend investigation of alternate approaches to more effectively provide this information. For example, one approach might be to publish SM's forecast dispatch plan, which would, as a matter of course, include SM's best estimate of the circumstances to apply in future periods, analogous to the Forecast BMO published by the IMO.</p>
7.13.1(c)	<p>SM must provide the IMO with a schedule of dispatch instructions by noon each business day.</p> <p>On 19 November 2012, SM provided the data a day late.</p>	No	This data is used in settlement, and was provided to the IMO in time for use in those calculations.
7.13.1(eD)	<p>SM must provide the IMO with response quantities for load rejection reserve and spinning reserve by noon each business day.</p> <p>On 15 and 16 December 2012, SM provided data to the IMO before noon, but the data was incorrect due to SCADA issues. SM provided corrected data after the deadline.</p> <p>On 5 March 2013, SM provided the data 52 minutes late.</p>	No (3 breaches)	This data is used in settlement, and was provided to the IMO in time for use in those calculations.

Rule	The Issue	Material?	Comment
7.13.1A(b)	<p>SM must provide ex-post outage schedules to the IMO by noon each business day.</p> <p>On 13 July 2013, SM provided the schedules after the deadline.</p>	No	This data is used in settlement, and was provided to the IMO in time for use in those calculations.
7.13.4	<p>SM must provide the IMO with Operational System Load Estimates by 10am daily for the previous trading day, in accordance with the IMS interface procedure.</p> <p>On 19 September 2012, SM provided data to the IMO prior to 10am, but the data was incorrect due to a faulty hardware component in the field. SM provided corrected data after the deadline.</p> <p>On 5 December 2012 and 12 January 2013 SM provided data to the IMO prior to 10am, but the data had not been through SM's data cleansing processes. SM provided corrected data after the deadline.</p> <p>On 17 April 2013, SM provided the data 6 minutes late</p>	No (4 breaches)	<p>This data is:</p> <ul style="list-style-type: none"> provided to participants after the fact for their information. Late provision of correct information should not affect their activities in the market; and used by the IMO to monitor participant compliance. Corrected data was provided to the IMO in time for use in this process.

10 MARKET RULE

CHAPTER 7A -

BALANCING MARKET

Market Rule Chapter 7A of the Market Rules sets out the Dispatch Rules which affect the Market Operations, System Operations Planning and System Operations Control functions of System Management.

10.1 System Management's processes and procedures

The following clauses in Chapter 7A have been amended since last year's market audit:

- Clause 7A.2.19

10.1.1 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 7A of the Market Rules are under review, or are in the process of being amended:

- PSOP: Dispatch
- PSOP: Facility Outages
- PSOP: Monitoring & Reporting

The following internal procedures relating to Chapter 7A of the Market Rules have been updated since last year's market audit:

- Internal Procedure: Market Operations Planning Procedure
- Internal Procedure: 3.1 Undertake Post-Event Rules Enforced Monitoring.

10.1.2 Relationship between Rule updates and procedures

None of the rule changes alter System Management's obligations under Chapter 7A.

10.2 Compliance with Chapter 7A

10.2.1 Incidents

We found eight material and three non-material incidents of non-compliance with Chapter 7A.

Incidents associated with System Management's obligations under Chapter 7A are set out in Table 8.

10.2.2 Comment

We deem eight of the breaches to this section of the Rules to be material; that is the breach may compromise the intention of the Market Rules, and/or the decisions made by market participants, or otherwise may affect the outcome of the market.

All these breaches are concerned with information provision. That is, SM has an obligation to provide information to the market, and where the information is not provided, market outcomes are likely to be different than if it had been.

10.3 Opinion

With the exception of the breaches noted in Table 8 , we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 7A of the Market Rules.

10.4 Details of non-compliance

10.4.1 Incidents of non-compliance

Table 8: Incidents of non-compliance with Chapter 7A

Rule	The Issue	Material?	Comment
7A.3.7	<p>SM must provide the IMO with <i>estimates</i> of SOI and EOI quantities and Relevant Dispatch Quantities no later than 10am for each interval in the previous Trading Day. On request from SM, this deadline can be extended by up to 2 business days.</p> <p>On 1 September and 4 September 2012, SM sent EOI and RDQ estimates a few minutes after the deadline.</p> <p>On 15 December 2012, SM sent EOI and RDQ estimates three hours after the extended deadline.</p>	No (3 breaches)	<p>In all cases, the IMO was still able to use the data to determine the balancing price in accordance with the Rules.</p> <p>SM is now providing these estimates shortly after the end of each interval, as well as at the end of the trading day.</p>
7A.3.15	<p>SM control room staff have a range of information available to assess the likely load, including the output of two load forecasting tools, the ability to plot similar past days against the current load, and the ability to take a combination of the various inputs to arrive at the load forecast they think is most likely to eventuate.</p> <p>One of the available load forecasts is produced by SM's Metrix load forecasting tool, and it is this forecast which is provided to the IMO for use in its Balancing Forecast, and also used in the Real-time dispatch engine which produces automatic electronic dispatch instructions to generation facilities.</p> <p>In reality, the Metrix load forecast does not always represent SM's best estimate of future RDQ, which is actually arrived at by some combination of load forecast tool outputs with similar past day profiles.</p> <p>This appears to be a breach of the obligation to provide the IMO with SM's forecast of the RDQ. A forecast is provided, but it does not represent SM's best estimate of the expected load.</p>	Yes	<p>Given that the purpose of the IMO's Balancing Forecast is "to provide Market Generators with information upon which to make an assessment regarding whether to make [or update] a Balancing Submission" (7A.3.20), it follows that a more accurate forecast could influence participants to make different decisions in the market, and the breach is therefore material.</p> <p>Since the last audit, SM has put in place a system to record which load forecast is actually being used by control room staff, but has not yet built functionality to publish this forecast to the market.</p> <p>We understand that in order to publish this information, SM must also consider the time horizon to which the manually selected load forecast applies, so that it can be merged into a single load forecast covering both the next few periods actively considered by control room staff and the remainder of the forecast horizon. We believe these considerations can be resolved, and more transparent information provided to the market.</p>

Rule	The Issue	Material?	Comment
	From 1 December 2012 to 9 August 2013, SM control room staff used the Metrix forecast 93% of the time, and an alternate forecast around 7% of the time.		
7A.3.15	<p>SM is obliged to, at least once per interval, provide the IMO with <i>forecasts</i> of the Relevant Dispatch Quantity for all intervals in the balancing horizon, updating prior forecasts when new information comes to hand. This is a load forecast.</p> <p>Every day, from 19 July 2012 to 31 January 2013, SM failed to send updated forecasts for the 00:00 to 00:30 and 00:30 to 01:00 intervals.</p> <p>On 20 October 2012, SM failed to send an updated forecast for 22 consecutive intervals.</p> <p>Overnight on 13 December 2012, SM failed to send an updated forecast for 26 consecutive intervals.</p> <p>Overnight on 14 December 2012, SM failed to send an updated forecast for 19 consecutive intervals.</p> <p>On 28 December 2012, SM failed to send an updated forecast for three consecutive intervals.</p> <p>On 28 February 2013, SM failed to send an updated forecast for twelve consecutive intervals.</p> <p>On 26 July 2013, SM failed to send an updated forecast for one interval.</p>	Yes (7 breaches)	<p>In several cases, participants would have been submitting balancing offers using forecasts that were several hours old. Had they had access to updated forecasts, their offers would likely have been different.</p> <p>In other cases, the information was provided a short time later, but some participant offers may still have been different for the intervals where gate closure occurred in the period where forecasts were not being updated.</p> <p>Most instances were due to issues with new systems commissioned in early December, and have reduced in frequency as the new systems have been bedded in.</p> <p>The 28 February issue was due to a communication issue</p>

11 MARKET RULE

CHAPTER 7B - LFAS

MARKET

Market Rule Chapter 7B of the Market Rules sets out the Load Following Ancillary Service Market Rules which affect the Market Operations, System Operations Planning and System Operations Control functions of System Management.

11.1 System Management's processes and procedures

11.1.1 Rule amendments

The following clauses in Chapter 7B have been amended since last year's market audit:

- Clauses 7B.1.6 and 7B.2.10

11.1.2 Procedures

The following sections of the Power System Operation Procedure relating to Chapter 7B of the Market Rules are under review, or are in the process of being amended:

- PSOP: Dispatch

The following internal procedures relating to Chapter 7B of the Market Rules have been updated since last year's market audit:

- Internal Procedure: Market Operations Planning Procedure
- Internal Procedure: 3.1 Undertake Post-Event Rules Enforced Monitoring

11.1.3 Relationship between Rule updates and procedures

None of the rule changes alter System Management's obligations under Chapter 7B.

11.2 Compliance with Chapter 7B

11.2.1 Incidents

We found four material incidents of non-compliance with Chapter 7B.

Incidents associated with System Management's obligations under Chapter 7B are set out in Table 9.

11.2.2 Comment

We deem all four breaches to this section of the Rules to be material; that is the breach may compromise the intention of the Market Rules, and/or the decisions made by market participants, or otherwise may affect the outcome of the market.

11.3 Opinion

With the exception of the breaches noted in Table 9, we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 7B of the Market Rules.

11.4 Details of non-compliance

11.4.1 Incidents of non-compliance

Table 9: Incidents of non-compliance with Chapter 7B

Rule	The Issue	Material?	Comment
7B.3.6	<p>SM must use facilities for LFAS in accordance with the selection information provided by the IMO.</p> <p>On 14 March 2013, SM did not follow the LFAS selection provided by the IMO for one interval.</p> <p>Overnight on 1 April, SM did not follow the LFAS selection provided by the IMO for six intervals.</p> <p>On 4 April 2013, SM did not follow the LFAS selection provided by the IMO for two intervals.</p> <p>On 8 April 2013, SM did not follow the LFAS selection provided by the IMO for one interval.</p>	<p>Yes (4 breaches)</p>	<p>The incorrect selections resulted in two participants generating different amounts than they otherwise would have, thus affecting energy and constrained payments.</p> <p>The issues were caused by a problem with SM's software, which was fixed on 11 April.</p>

12 MARKET RULE

CHAPTER 8 –

WHOLESALE MARKET METERING

Market Rule Chapter 8 sets out the Wholesale Market Metering Rules. These Rules do not apply to System Management.

12.1 Opinion

System Management has no obligations under Chapter 8 of the Market Rules.

13 MARKET RULE

CHAPTER 9 – SETTLEMENT

Chapter 9 of the Market Rules sets out the Settlement Rules which affect the Market Strategic Development, Market Operations, System Operations Planning and the System Operations Control functions of System Management.

13.1 System Management's processes and procedures

13.1.1 Rule amendments

The following clauses in Chapter 9 have been amended since last year's market audit:

- Clauses 9.16.3, 9.16.3A and 9.19.1 (RC_2012_25)
- Clause 9.3.4A (RC_2012_07)
- Clause 9.23.4 (RC_2012_24).

13.1.2 Procedures

System Management has only limited obligations under Chapter 9. There are no Power System Operation Procedure sections relating to Chapter 9, and only a small number of internal procedures.

13.1.3 Relationship between Rule updates and procedures

None of the rule changes alter System Management's obligations under Chapter 9. No procedure updates are required.

13.2 Compliance with Chapter 9

We have not noted any non-compliance on the part of System Management respect to its obligations under Chapter 9.

13.3 Opinion

We have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 9 of the Market Rules.

14 MARKET RULE

CHAPTER 10 – MARKET INFORMATION

Market Rule Chapter 10 sets out the Market Information Rules that affect the Market Strategic Development, Market Operations, System Operations Planning and System Operations Control functions of System Management.

14.1 System Management’s processes and procedures

14.1.1 Rule amendments

There have been no amendments to Chapter 10 since last year’s annual audit.

14.1.2 Procedures

System Management has only limited obligations under Chapter 10. There are no Power System Operation Procedure sections relating to Chapter 10, and only a small number of internal procedures.

14.2 Compliance with Chapter 10

14.2.1 Incidents

We found three non-material incidents of non-compliance with Chapter 10.

Incidents associated with System Management’s obligations under Chapter 10 are set out in Table 10.

14.3 Opinion

With the exception of the breaches noted in Table 10, we have not observed anything that causes us to believe that System Management has not complied with its obligations under Chapter 10 of the Market Rules.

14.4 Details of non-compliance

14.4.1 Incidents of non-compliance

Table 10: Incidents of non-compliance with Chapter 10

Rule	The Issue	Material?	Comment
10.2.4	<p>SM is obliged to comply with information confidentiality provisions.</p> <p>On three occasions, (26 Sep 2012, 28 Oct 2012, and 12 February 2013) System Management provided forecast IPP dispatch data to Verve along with the Dispatch Plan.</p> <p>Dispatch related data is classified under the Rules as 'Rule Participant Dispatch Restricted' and should only be released to the specific Rule Participant it relates to as well as the IMO, SM, the ERA and other regulatory agencies.</p>	No (3 breaches)	<p>On all three occasions, the breach occurred well in advance of real time, meaning that SM's forecast was revised several times prior to real-time, and participants would have had plenty of time to respond to any change to offer strategies that Verve may have sought to put in place.</p> <p>These breaches were due to human error during SM's process for sending the dispatch plan to Verve. SM have since automated the previously manual function of removing IPP data from the information sent to Verve.</p>

APPENDICES

A	RULE CHANGES SINCE THE LAST MARKET AUDIT
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A RULE CHANGES SINCE THE LAST MARKET AUDIT

Table 11: Market Rule changes

Date	Amendment	Reference
1 September 2012	IMO amended clauses 3.18.6, 3.21.1 and 3.21.2	RC_2012_04
1 November 2012	IMO amended clauses 2.22.3; 2.22.4; 2.22.6; 2.22.12; 2.23.3; 2.23.4; 2.23.5; 2.23.9; 2.23.12 and the Glossary	RC_2011_02
1 January 2013	IMO amended clauses 4.5.10, 4.5.12, and 4.5.13 IMO amended clauses 2.13.6L (new) and 6.17.9.	RC_2012_09 RC_2012_16
1 February 2013	IMO amended clauses 6.16A.2 and 6.17.3A.	RC_2012_19
1 March 2013	IMO amended clause 3.21A.7.	RC_2012_15
1 April 2013	IMO amended clauses 3.21A.1, 3.21A.2, 3.21A.3, 3.21A.4, 3.21A.5, 3.21A.7, 3.21A.7A, 3.21A.8, 3.21A.9, 3.21A.10, 3.21A.11, 3.21A.12, 3.21A.13, 3.21A.14, 3.21A.15, 3.21A.16, 3.21A.17, 4.12.6, 4.26.1A, 7.9.4 and the Glossary.	RC_2012_12
1 May 2013	IMO amended clauses 4.5.9, 9.16.3, 9.16.3A and 9.19.1.	RC_2012_21, RC_2012_25
15 May 2013	IMO amended clause 7.2.3A.	RC_2013_06
20 May 2013	IMO amended clauses 2.27.1, 2.27.1A, 2.27.2, 2.27.2A, 2.27.3, 2.27.3A, 2.27.3B, 2.27.4, 2.27.5, 2.27.6, 2.27.7(new), 2.27.8(new), 2.27.9(new), 2.27.10(new), 2.27.11(new), 2.27.12(new), 2.27.13(new), 2.27.14(new), 2.27.15(new), 2.27.16(new), 2.27.17(new), 9.3.4A and the Glossary.	RC_2012_07
1 June 2013	IMO amended clauses 2.1.1, 2.1.3, 2.2.1, 2.5.6, 2.6.3A (new), 2.6.4, 2.7.7A (new), 2.7.8, 2.8.1, 2.8.3, 2.8.11, 2.10.2A, 2.11.1, 2.17.1, 2.17.2, 6.6.3A, 7A.2.19, 7B.2.17 and the Glossary. IMO amended clauses 9.23.4 IMO amended clauses 7B.1.6, 7B.2.10 and the Glossary	RC_2012_06 RC_2012_24 RC_2013_03

Date	Amendment	Reference
1 July 2013	IMO amended clauses 2.22.8, 2.22.8A (new), 2.22.8B (new), 2.22.13, 2.22.14, 2.22.15 (new), 2.23.8, 2.23.8A (new), 2.23.8B (new), 2.23.13 (new) and 2.23.14 (new).	RC_2011_02
	IMO amended clauses 4.11.1, 4.11.2 and the Glossary.	RC_2012_20
	IMO amended clauses 2.13.9, 7.10.6, 7.10.6A and 7.10.7.	RC_2013_01
1 August 2013	IMO amended clause 6.15.1	RC_2013_02

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