



**ROBINSON BOWMAKER PAUL**



# AUSTRALIAN ENERGY MARKET OPERATOR

INDEPENDENT ASSURANCE REPORT ON AEMO'S COMPLIANCE WITH  
THE GSI RULES AND GSI PROCEDURES – FINAL

6 DECEMBER 2021

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# EXECUTIVE SUMMARY

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This independent assurance report sets out the results of the market audit by Robinson Bowmaker Paul (RBP). The audit assesses AEMO's compliance with the Gas Services Information (GSI) Rules and GSI Procedures for the period 1 July 2020 to 30 June 2021.

## REGULATORY CONTEXT AND SCOPE

### Regulatory context

The regulatory context for the audit is summarised in Table 1.

Table 1: Regulatory context for the market audit

Rule reference	Comment
174 (1)	Requirement for AEMO to appoint market auditor at least annually
174(2)	Defines the scope of the Audit to include, at minimum: <ul style="list-style-type: none"><li>• the compliance of AEMO's Internal Procedures and business processes with the GSI Rules</li><li>• AEMO's compliance with the GSI Rules and Procedures</li></ul> AEMO's software systems for the Gas Bulletin Board (GBB) and the calculation of GSI Fees and processes for software management

### Scope

Given the regulatory context above, the purpose of the GSI Compliance Audit is to assess:

- How AEMO implements its obligations under the GSI Rules
- How AEMO manages non-compliance risk with respect to the obligations above
- Instances of non-compliance by AEMO during the Audit period.
- AEMO's market software systems and its processes for software management. It includes an assessment of whether:
  - AEMO maintains appropriate records.
  - The software used by AEMO to implement its obligations under the GSI Rules is compliant with the underlying mathematical formulations and the GSI Rules themselves.
  - AEMO has been compliant with its market systems certification obligations.

The GSI Compliance Audit includes the following work streams:

- Compliance Assessment of AEMO's operational compliance and application of controls to mitigate compliance risk.
- Procedures Assessment of GSI Procedures and Internal Procedures that have changed during the Audit Period.
- Software Compliance Assessment.

## KEY THEMES AND FINDINGS

### **Extensive automation means GSI obligations are well-controlled**

AEMO uses automated software to implement most of its GSI obligations. The alleged breaches self-reported by AEMO relate to the remaining manual activities. No new findings have been reported by RBP.

The extensive automation and the pre-existing ability of AEMO staff to access systems remotely has meant that remote working conditions during Covid-19 lockdown have not materially impacted on AEMO's day to day GSI operations.

### **Strong compliance culture and accountability prevalent across AEMO**

AEMO teams generally have a strong culture of compliance where self-reporting of alleged breaches is encouraged and the approach to compliance risk management is proactive rather than reactive.

This is supported by the following:

- Audit findings from previous years have been consistently addressed and closed. There have been no new findings this year.
- Our interviews and walkthroughs have indicated that AEMO teams continue to maintain a strong compliance culture and apply effective controls to manage compliance risk.

### **Summary**

We have historically consistently noted small numbers of findings of low risk with the GSI audit. No new findings have been detected this audit year.

Table 2: Audit findings summary by risk rating: 2017/18, 2018/19 and 2019/20.

	2018/19	2019/20	2020/21			
Risk Rating	Total	Total	Total	Breaches <sup>1</sup> - reported by		Control Observations <sup>2</sup>
				AEMO	RBP	
High	0	0	0	0	0	0
Medium	0	0	0	0	0	0
Low	5	2	0	0	0	0
<b>Totals</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Table 3: Audit findings at start and end of Audit Period by closed/open status

Finding status	Risk Rating			Total
	High	Medium	Low	
<b>Open @ 01/07/2020</b>	0	0	0	<b>0</b>
Add: new findings (01/07/20 – 30/06/21)	0	0	0	<b>0</b>
Less: closed findings (01/07/20 – 30/06/21)	0	0	0	<b>0</b>
<b>Open @ 01/07/2021</b>	0	0	0	<b>0</b>
<i>Prior year findings</i>	0	0	0	<b>0</b>
<i>Current year findings</i>	0	0	0	<b>0</b>

<sup>1</sup> Findings that are instances of non-compliance with the WEM Rules

<sup>2</sup> Findings that are not instances of non-compliance with the WEM Rules, but which pose compliance risk (Rating 2) or are opportunities for improvement which do not affect compliance risk (Rating 3)

Figure 1: Audit findings summary by risk rating and finding type (2018/19 - 2020/21)

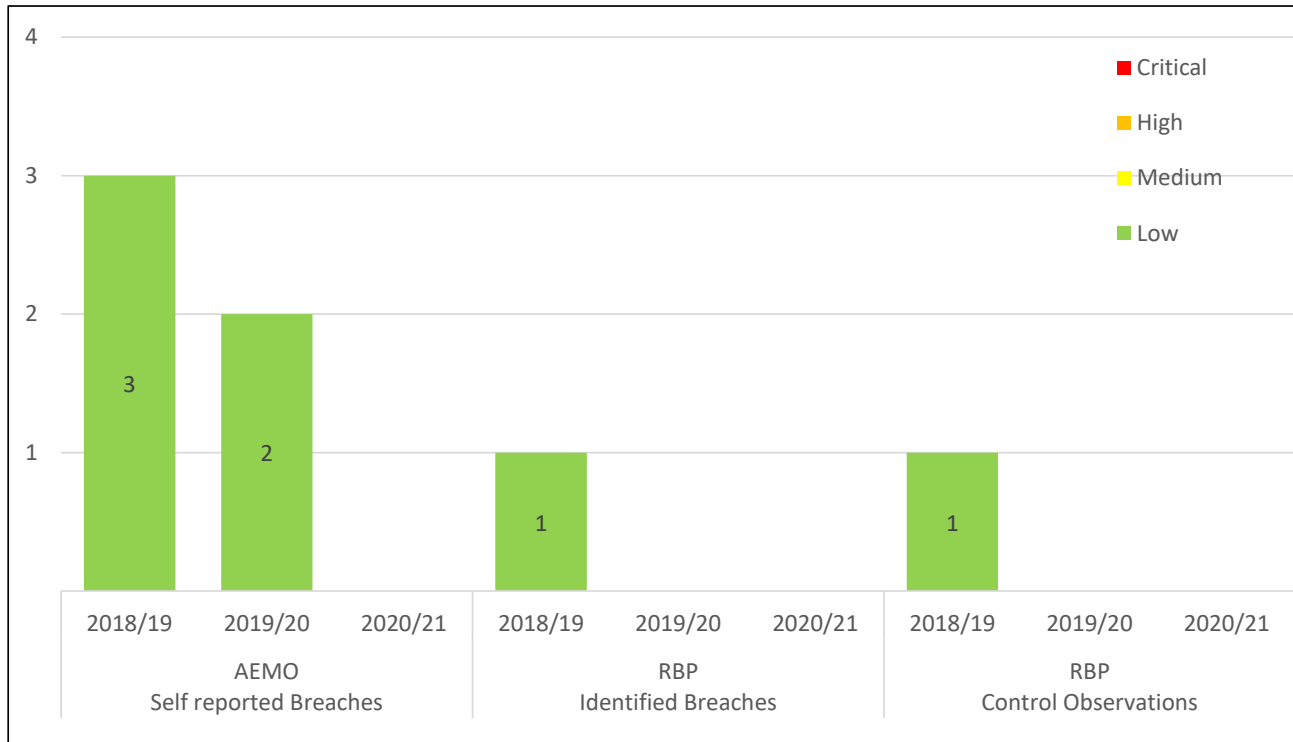
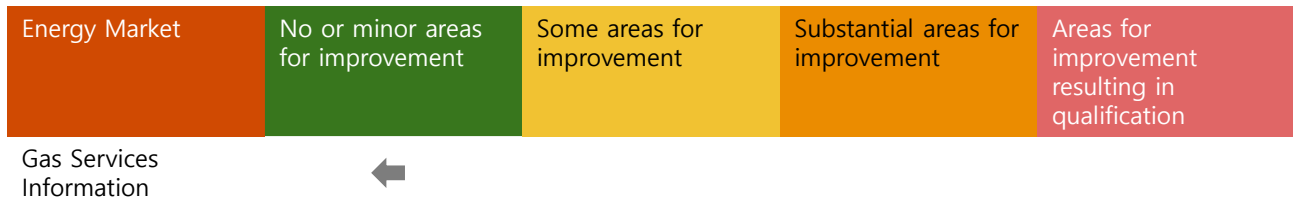


Table 4: Summary of audit findings identified by RBP during the current audit period 2020/21

Process	Finding Type	Risk Rating	Ref#	Findings
There were no audit findings identified by RBP during the current audit period.				

Figure 2. Rating by Energy Market

**Rating by Energy Market**



## OPINION

### Qualifications

We have no qualifications to note with respect to the opinions provided below.

### Conclusion

#### *Opinion on AEMO's operational compliance with the GSI Rules and GSI Procedures*

Subject to the inherent limitations set out in the detailed audit report, based on the audit procedures we have performed and the evidence we have examined, nothing has come to our attention that causes us to believe AEMO has not been compliant with the GSI Rules and GSI Procedures during the Audit Period, in all material respects.

#### *Opinion on the compliance of AEMO's Market Software Systems with the GSI Rules*

Based on the audit procedures we have performed and the evidence we have examined, AEMO's Market Software Systems are compliant with the GSI Rules in all material respects.

#### *Opinion with respect to the compliance of AEMO's software management processes with the GSI Rules*

Subject to the inherent limitations set out in the detailed audit report, based on the audit procedures we have performed and the evidence we have examined, nothing has come to our attention that causes us to believe that AEMO's processes for software management have not been compliant with the GSI Rules and GSI Procedures during the Audit Period in all material respects.

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# 1 INTRODUCTION

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This chapter sets out the regulatory context for the market audit and our approach to performing the audit.

## 1.1 AUDITED ENTITY

The audited entity for this report is AEMO.

## 1.2 AUDIT PERIOD

The Audit Period is 1 July 2020 to 30 June 2021, both dates inclusive.

## 1.3 REGULATORY CONTEXT AND SCOPE

### 1.3.1 Regulatory context

The regulatory context for the audit is summarised in the table below.

Table 5: Regulatory context for the market audit<sup>3</sup>

GSI Rule reference	Comment
174 (1)	Requirement for AEMO to appoint market auditor at least annually
174(2)	Defines the scope of the Audit to include, at minimum: <ul style="list-style-type: none"><li>• the compliance of AEMO's Internal Procedures and business processes with the GSI Rules</li><li>• AEMO's compliance with the GSI Rules and Procedures</li><li>• AEMO's software systems for the Gas Bulletin Board (GBB) and the calculation of GSI Fees and processes for software management</li></ul>

### 1.3.2 Scope

Given the regulatory context above, the purpose of the market audit is to assess:

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<sup>3</sup> Rules references are as at 1 March 2019 unless otherwise indicated.

- How AEMO implements its obligations under the GSI Rules
- How AEMO manages non-compliance risk with respect to the obligations above
- Instances of non-compliance by AEMO during the Audit Period.
- AEMO’s market software systems, its processes for software management, and its general IT controls. It includes an assessment of whether:
  - AEMO maintains appropriate records.
  - The software used by AEMO to implement its obligations under GSI Rules is compliant with the underlying mathematical formulations and the GSI Rules themselves.
  - AEMO has been compliant with its market systems certification obligations.

The market audit includes the following work streams:

- Compliance Assessment of:
  - Areas where we have noted breaches or non-compliance risk during past audits.
  - Areas that have changed or been introduced in the past Audit Period (e.g., in terms of rule changes, system changes, operational practice changes)
  - AEMO’s self-reported instances of non-compliance with the GSI Rules
- Procedures Assessment of GSI Procedures and Internal Procedures that have changed during the Audit Period.
- Software Compliance Assessment. We reviewed the software used to meet obligations under the GSI Rules. In particular, we:
  - Reviewed AEMO’s Market Systems (used to implement GSI obligations), and in particular the nature of changes to the Gas Bulletin Board (GBB) software and GSI Fees tool to assess compliance with Part 1 Rule 19(1) of the GSI Rules
  - Reviewed AEMO’s software management processes.

## 1.4 AUDIT CRITERIA

### 1.4.1 Criteria for determining operational and procedural compliance

The criterion we have used for determining the compliance of AEMO’s GSI Procedures (referred to as the *GSI Procedures*) is the Gas Services Information Rules dated 1 March 2019 (referred to as the *GSI Rules*).

The criteria we have used for determining AEMO’s operational compliance and the compliance of AEMO’s Internal Procedures are the GSI Rules and the GSI Procedures.

**1.4.2 Criteria for determining control application**

When assessing whether AEMO has applied effective controls during the Audit Period we have used relevant Internal Procedure and Confluence Work Instruction documentation as our audit criteria. This includes the following:

Table 6: Procedures reviewed to assess control application

AEMO functional area	Procedures against which control application have has been assessed
Market Operations	Daily Operations Procedure Work Instructions
Finance	WEM and GSI Procedure Internal Procedure: Fees
IT	IT Change Management Policy, Software Configuration Management Plan

Where AEMO does not have documented controls or procedures relating to a business process under review we have used best practice criteria for a prudent market operator. This includes:

- The use of automated/semi-automated tools to reduce risk of errors.
- Use of automated alerts or calendar reminders.
- Approval and authorisation processes
- Issue escalation processes
- Validation and review processes
- Exception reporting
- Practices at other market operators with which we are familiar.

**1.5 APPROACH**

**1.5.1 Assurance**

Our audit has been conducted in accordance with Australian Auditing and Assurance Standards Board’s ‘*Framework for Assurance Engagements*’, ASAE 3000 ‘*Assurance Engagements Other than Audits and Reviews of Financial Information*’.

- We provide reasonable assurance under this standard with respect to our review of AEMO’s software changes and the compliance of AEMO’s market software systems with the GSI Rules and GSI Procedures
- We provide limited assurance under this standard with respect to our review of:
  - AEMO’s compliance with the GSI Rules and GSI Procedures
  - AEMO’s software management processes and controls.

## 1.5.2 Risk ratings and materiality

### Compliance and risk ratings

Audit findings are categorised as follows:

Table 7: Compliance and risk rating definitions

Compliance rating	Risk Rating
<b>1:</b> Instances of non-compliance with the GSI Rules	<b>Critical:</b> Potential for catastrophic impact on market or system operations or other market outcomes if not addressed immediately. Requires executive actions and monitoring at board level.
<b>2:</b> Findings that are not an instance of non-compliance, but pose compliance risk	<b>High:</b> Potential for major impact on market or system operations or other market outcomes if not addressed as a matter of priority. Requires senior management attention with regular monitoring at executive meetings.
<b>3:</b> Findings related to minor housekeeping issues that do not affect compliance risk	<b>Medium:</b> Potential for moderate impact on market or system operations or other market outcomes if not addressed within a reasonable timeframe. Requires management attention with regular monitoring.
	<b>Low:</b> Potential for minor impact on market or system operations or other market outcomes if not addressed in the future. Requires team level attention with regular monitoring.

Further information on risk and compliance ratings is provided in Appendix A.

### Materiality (qualification of audit opinion)

In determining whether to qualify our opinion on whether AEMO has complied “in all material respects”, we have taken the following factors into account:

- Purpose and objectives of the market audit
- AEMO’s overall objectives
- AEMO’s risk matrix definitions of impact

- Financial impacts on Gas Market Participants
- The number of Gas Market Participants or other stakeholders affected.
- The impact of an issue on market objectives such as transparency, equity, and efficiency
- Whether or not an issue is systemic
- Whether or not an issue is recurring (from previous audits)

### 1.5.3 Audit activities

We have undertaken a combination of:

- Reviewing self-reported incidents of AEMO non-compliance with the GSI Rules and GSI Procedures
- Business process walkthroughs and interviews with staff to audit the application of operating controls and to determine the level of compliance risk associated with selected business processes.
- Reviewing AEMO’s GSI Procedures, Internal Procedures, and IT Procedures to ensure GSI Rules changes and other changes (e.g., processes, systems, etc.) have been reflected in the procedures.
- Compliance testing to audit AEMO’s operational compliance with the GSI Rules and GSI Procedures and to determine the effectiveness of operating controls. In doing so, we have sourced information from all AEMO (WA) teams, with a particular emphasis on the market operations team.

The first two activities were conducted via screensharing and teleconferencing facilities in May 2020. Remaining activities have been undertaken remotely.

Compliance testing and business process walkthroughs were focussed on a subset of functional areas based on residual compliance risk, materiality, and rule changes occurring in the Audit Period. These areas include:

Table 8: Audit focus areas

AEMO functional area	Focus areas
Market Operations	Daily operations - GBB Operations Registration GS00 Publication Monitoring GBB participant compliance (GSI Rule 165A(2))



#### **1.5.4 Inherent limitations**

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 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 market outcomes.

Our opinion with respect to AEMO’s compliance with the GSI Rules and GSI Procedures is therefore subject to the following caveats:

- Our audit procedures did not include assessing irregularities such as fraudulent or illegal activities. As such, our audit should not be relied upon to disclose such irregularities. However, if we were to detect any fraudulent or illegal activity, we would report this to AEMO. No such findings have been made during this audit.
- Our audit is not designed to detect all weaknesses in control procedures as it is not performed continuously throughout the Audit Period and is performed on a sample basis.

## **1.6 STRUCTURE OF THIS REPORT**

The remainder of this report is structured as follows:

- Chapters 2 to 11 present our audit findings relating to the Compliance Assessment and Procedures Assessment work streams on an GSI Rule Chapter by Chapter basis.
- Chapter 12 presents findings relating to AEMO’s GBB and GSI Fees software

## 1.7 ACKNOWLEDGMENTS

RBP would like to thank AEMO managers and staff who willingly provided information and shared in discussions with us while we carried out this audit.

## **2 PART 1 – INTRODUCTORY & ADMINISTRATIVE MATTERS**

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

### **2.1 RULE AMENDMENTS**

There have been no changes to Part 1.

### **2.2 AEMO PROCEDURES**

AEMO's GSI Procedures and Internal Procedures are compliant with Part 1 of the GSI Rules in all material respects.

### **2.3 OPERATIONAL COMPLIANCE WITH PART 1**

We have not conducted any audit procedures to assess AEMO's compliance with Part 1 of the GSI Rules.

There have been no self-reported instances of non-compliance with Part 1.

## **3 PART 2 - REGISTRATION**

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Part 2 of the GSI Rules covers the registration of Gas Market Participants and facilities, including registration, deregistration, transfers, and exemptions.

### **3.1 RULE AMENDMENTS**

There have been no changes to Part 2.

### **3.2 AEMO PROCEDURES**

AEMO's GSI Procedures and Internal Procedures are compliant with Part 2 of the GSI Rules in all material respects.

### **3.3 OPERATIONAL COMPLIANCE WITH PART 2**

We have reviewed AEMO's procedures regarding registration and conducted compliance testing on an actual registration conducted during the audit year.

There have been no detected or self-reported instances of non-compliance with Part 2.

## **4 PART 3 – PROVISION OF INFORMATION FOR GBB**

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Part 3 of the GSI Rules deals with the GBB information requirements pertaining to Gas Market Participants and the various classes of Facilities.

### **4.1 RULE AMENDMENTS**

There have been no amendments to Part 3.

### **4.2 AEMO PROCEDURES**

AEMO's GSI Procedures and Internal Procedures are compliant with Part 3 of the GSI Rules in all material respects.

### **4.3 OPERATIONAL COMPLIANCE WITH PART 3**

AEMO has limited obligations under Part 3; the obligations are all automated via the GBB which is independently tested and certified. Therefore, we have not conducted any audit procedures to assess AEMO's compliance with Part 3 of the GSI Rules.

There have been no self-reported instances of non-compliance with Part 3.

## 5 PART 4 – THE GAS BULLETIN BOARD

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Part 4 of the GSI Rules describes the information that is required to be published on the Gas Bulletin Board.

### 5.1 RULE AMENDMENTS

There have been no changes to Part 4.

### 5.2 AEMO PROCEDURES

AEMO's GSI Procedures and Internal Procedures are compliant with Part 4 of the GSI Rules in all material respects.

### 5.3 OPERATIONAL COMPLIANCE WITH PART 4

#### 5.3.1 Audit activities

GBB processes under Part 4 are largely automated. We have additionally reviewed AEMO's daily procedures and work instructions to verify controls exist to mitigate errors arising during day-to-day activities.

There have been no detected or self-reported instances of non-compliance with Part 4.

## **6 PART 5 – EMERGENCY MANAGEMENT FACILITY**

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Part 5 of the GSI Rules describes the operation of the Emergency Management Facility (EMF), the information that is to be published on the EMF, and the access requirements and limitations.

### **6.1 RULE AMENDMENTS**

There have been no amendments to Part 5 of the GSI Rules.

### **6.2 AEMO PROCEDURES**

AEMO's GSI Procedures and Internal Procedures are compliant with Part 5 of the GSI Rules in all material respects.

### **6.3 OPERATIONAL COMPLIANCE WITH PART 5**

There have been no activations of the EMF during the Audit Period.

There have been no self-reported instances of non-compliance with Part 5.

## 7 PART 6 – THE GAS STATEMENT OF OPPORTUNITIES

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Part 6 of the GSI Rules describes the high-level requirements for the publication and content of the Gas Statement of Opportunities (GSOO).

### 7.1 RULE AMENDMENTS

There have been no amendments to Part 6 of the GSI Rules.

### 7.2 AEMO PROCEDURES

AEMO's GSI Procedures and Internal Procedures are compliant with Part 6 of the GSI Rules in all material respects.

### 7.3 OPERATIONAL COMPLIANCE WITH PART 6

#### 7.3.1 Audit activities

We have reviewed AEMO's procedures regarding the GSOO and conducted compliance testing on the published GSOO.

There have been no detected or self-reported instances of non-compliance with Part 6.



## **8 PART 7 – BUDGET AND FEES**

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Part 7 of the GSI Rules covers AEMO’s allowable revenue, budget, and fees.

### **8.1 RULE AMENDMENTS**

There have been no amendments to Part 7.

### **8.2 AEMO PROCEDURES**

AEMO’s GSI Procedures and Internal Procedures are compliant with Part 7 of the GSI Rules in all material respects.

### **8.3 OPERATIONAL COMPLIANCE WITH PART 7**

We have not conducted any audit activities regarding Part 7.

There have been no self-reported instances of non-compliance with Part 7.

## **9 PART 8 – RULE CHANGES**

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Part 8 of the GSI Rules details the process for making changes to the GSI Rules.

### **9.1 RULE AMENDMENTS**

There have been no amendments to Part 8.

### **9.2 AEMO PROCEDURES**

AEMO has no obligations under Part 8 of the GSI Rules. Therefore, AEMO has no procedures relating to Part 8.

### **9.3 OPERATIONAL COMPLIANCE WITH PART 8**

As noted above, AEMO has no obligations under Part 8 of the GSI Rules. Therefore, we have conducted no audit activities in relation to Part 8.

## **10 PART 9 – GSI PROCEDURES**

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Part 9 of the GSI Rules details the process for developing and changing GSI Procedures.

### **10.1 RULE AMENDMENTS**

There have been no amendments to Part 9.

### **10.2 AEMO PROCEDURES**

AEMO's GSI Procedures and Internal Procedures are compliant with Part 9 of the GSI Rules in all material respects.

### **10.3 OPERATIONAL COMPLIANCE WITH PART 9**

No procedure changes have been progressed or implemented during the Audit Period. Therefore, we have conducted no audit activities relating to Part 9.

There have been no self-reported instances of non-compliance with Part 9.

## **11 PART 10 – COMPLIANCE AND ENFORCEMENT**

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Part 10 of the GSI Rules describes the monitoring, investigating, and enforcing compliance of Gas Market Participants with the GSI Rules and GSI Procedures. It also covers auditing of AEMO's own compliance.

### **11.1 RULE AMENDMENTS**

There have been no amendments to Part 10.

### **11.2 AEMO PROCEDURES**

AEMO's GSI Procedures and Internal Procedures are compliant with Part 10 of the GSI Rules in all material respects.

### **11.3 OPERATIONAL COMPLIANCE WITH PART 10.**

We have conducted no audit activities relating to Part 10.

There have been no self-reported instances of non-compliance with Part 10.

## 12 GSI SYSTEMS AND IT CONTROLS

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This chapter covers the compliance of AEMO's software systems for the GBB and GSI Fees calculations and software management processes with the GSI Rules and GSI Procedures, in accordance with rule 174(2)(c) of the GSI Rules.

- Section 12.1 sets out our review of AEMO's software systems for the GBB and the calculation of GSI Fees.
- Section 12.2 sets out our review of AEMO's general IT controls, including processes for software management.

### 12.1 COMPLIANCE OF AEMO SOFTWARE

The software testing and certification process assesses whether the mathematical formulations specified in the GSI Rules and GSI Procedures have been correctly implemented by the software.

The software systems covered by this section of the review are:

- The Gas Bulletin Board (GBB)
- The GSI Fee Calculation Tool.

#### 12.1.1 Certification of the GBB

The initial version of the GBB was certified in June 2013, prior to the official start of GBB operations on 1 August 2013. Since that time, a number of minor changes have been made to the GBB systems, none of which, in the IMO's or AEMO's opinion, required certifying under rule 19.

19 Certifying GBB software

(1) Subject to this rule, AEMO must ensure that any version of the GBB software used by AEMO has been certified as compliant with the Rules and Procedures by an independent auditor.

(2) AEMO may implement changes to the current version of the GBB software without obtaining certification under subrule (1) where AEMO considers that the change will not have a material impact on any one or more of the following:

(a) the provision of information to AEMO by Gas Market Participants under the Rules;

(b) the processing and publication of information on the GBB or the EMF; or

(c) the calculation and processing of GSI Invoices.

(3) Where AEMO considers that changes to the current version of the GBB software are urgently required and essential for the efficient operation of the GBB, AEMO may implement the changes to the current version of the GBB software prior to certification under subrule (1), and must obtain that certification as soon as practicable.

Details of production software changes made prior to this Audit Period are shown in Table 9. Releases with certification status of 'maintained' did not require additional testing, as they did not involve changes that would be expected to have material impact on prices or quantities.

Table 9: Previous production software changes

System	Version number	Release date	Material impact under 19(2)?	Certification status
GBB	1.0	01/08/2013	Yes	Certified
GBB	1.0.9	20/08/2013	No	Maintained
GBB	1.1.3	11/12/2013	No	Maintained
GBB	1.1.4	19/12/2013	No	Maintained
GBB	1.2.0	23/01/2014	No	Maintained
GBB	1.2.38	30/01/2014	No	Maintained
GBB	1.2-57.7	25/06/2014	No	Maintained
GBB	1.3-145	27/08/2014	No	Maintained
GBB	1.3-145-3	8/01/2015	No	Maintained
GBB	1.4-193	18/03/2015	No	Maintained
GBB	1.4-201	20/05/2015	No	Maintained
GBB	1.4-209-7	9/09/2015	No	Maintained
GBB	1.5-255-3	3/11/2015	No	Maintained

System	Version number	Release date	Material impact under 19(2)?	Certification status
GBB	1.6-289-4	29/11/2015	No	Maintained
GBB	1.6-289-7	30/03/2016	No	Maintained
GBB	1.7-303-6	21/06/2016	No	Maintained
GBB	1.8-316-4	7/11/2016	No	Maintained
GBB	1.9-329	15/11/2017	No	Maintained
GBB	1.9-331	12/01/2018	No	Maintained
GBB	1.9-333	13/02/2018	No	Maintained
GBB	1.11-345	03/09/2018	No	Maintained
GBB	1.16-370-1	25/11/2020	No	Maintained
GBB	1.16-370-2	15/12/2020	No	Maintained

For this audit, we reviewed the release notes for all changes made to the GBB during the Audit Period and assessed the changes in relation to rule 19(2) of the GSI Rules.

**12.1.2 Certification of the GSI Fee Calculation Tool**

While the GSI Fee Calculation Tool is not specifically required to be certified under the GSI Rules, the calculation of GSI Fees is a part of this compliance audit.

There have been changes to the GSI Fees tool since the previous Audit Period.

We have reviewed the latest version of the GSI Fees tool<sup>4</sup> and verified that the calculations are compliant with the GSI Rules. We have checked:

- The tool calculates the budget for the period (F(p)) as defined in GSI Rule 116(a).
- Shipper fees on the Shipper tab are calculated in accordance with GSI Rule 116(2)
- Producer fees on the Shipper tab are calculated in accordance with GSI Rule 116(3)
- The Invoice summary reads correct values from elsewhere in the tool.

The GSI Fees tool is compliant with the requirements of GSI Rule 116.

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<sup>4</sup> We audited the tools used to calculate initial invoices for Quarter 1 of 2020 (Jan-Mar) and adjustments for Quarter 1 of 2019.

### 12.1.3 Compliance of GSI software with the GSI Rules

We have no audit findings to report with respect to the compliance of the GSI software with the GSI Rules.

## 12.2 SOFTWARE MANAGEMENT PROCESSES

Software management processes are also reviewed in the Electricity Compliance Audit. We carried out a single review covering both audits.

### 12.2.1 Audit activities

We reviewed AEMO's policies and procedures for:

- Business continuity
- Service management

We carried out compliance testing on:

- Release notes
- Service management records (including AEMO Jira and ServiceNow incident, problem, change and release records)

### 12.2.2 Management of the GBB software

AEMO's obligations in this regard are specified in rule 18(1) of the GSI Rules.

18(1) Where AEMO uses software (GBB software) and IT systems (GBB systems) to receive, store, collate and publish information for the operation of the GBB, AEMO must:

- (a) maintain a record of which version of GBB software was used at each point in time;
- (b) where changes are made to GBB software, maintain records of the differences between each version and the reasons for the changes between versions;
- (c) ensure that appropriate testing of new GBB software versions is conducted; and
- (d) ensure that any version of the GBB software used by AEMO has been certified in accordance with rule 19.

## 12.3 AUDIT FINDINGS

There have been no self-reported or other instances of non-compliance with rule 18(1) of the GSI Rules.



**12.3.1 Compliance of software management processes with the GSI Rules**

AEMO's software management processes for the GBB remain sufficient to comply with the GSI Rules.

Table 10: Comment on AEMO's compliance with rule 18(1) of the GSI Rules during the Audit Period

Clause	Comment on compliance
18(1)(a)	AEMO has maintained a record of all versions of market software used together with their dates in service, in the form of JIRA and ServiceNow records.
18(1) (b)	AEMO has maintained records of the differences between each version and the reasons for the differences, in the form of release notes and JIRA records.
18(1) (c)	AEMO has conducted appropriate testing of all new releases of the market software prior to their being placed in service.
18(1) (d)	AEMO has ensured that all software versions are covered by an independent certification prior to implementation where required.

## 13 APPENDIX – COMPLIANCE AND RISK RATINGS

This appendix contains information on the compliance and risk ratings used to classify audit findings. The only difference from AEMO’s internal ratings is that we assess the financial impact to market participants in addition to AEMO.

### 13.1 COMPLIANCE AND RISK RATINGS

Audit findings are categorised as follows:

Table 11: Compliance ratings

Compliance rating	Description
1	Instances of non-compliance with the GSI Rules
2	Findings that are not an instance of non-compliance, but pose compliance risk
3	Findings related to areas for improvement that do not affect compliance risk

Table 12: Risk ratings

Risk rating	Description
Critical	Potential for catastrophic impact on market or system operations or other market outcomes if not addressed immediately. Requires executive actions and monitoring at board level.
High	Potential for major impact on market or system operations or other market outcomes if not addressed as a matter of priority. Requires senior management attention with regular monitoring at executive meetings.
Medium	Potential for moderate impact on market or system operations or other market outcomes if not addressed within a reasonable timeframe. Requires management attention with regular monitoring.
Low	Potential for minor impact on market or system operations or other market outcomes if not addressed in the future. Requires team level attention with regular monitoring.

Table 13: Risk rating matrix

		CONSEQUENCE				
		<i>Immaterial</i>	<i>Minor</i>	<i>Moderate</i>	<i>Major</i>	<i>Extreme</i>
LIKELIHOOD	<i>Almost Certain</i>	Medium	Medium	High	Critical	Critical
	<i>Likely</i>	Low	Medium	High	Critical	Critical
	<i>Possible</i>	Low	Medium	High	High	Critical
	<i>Unlikely</i>	Low	Low	Medium	Medium	High
	<i>Rare</i>	Low	Low	Medium	Medium	High

AEMO’s definitions of likelihood and consequence are provided in the sections below.

## 13.2 AEMO LIKELIHOOD RATINGS

LIKELIHOOD	ANNUAL PROBABILITY	QUALITATIVE DESCRIPTION
Almost Certain	>90%	Will occur in most circumstances; statistical record of several occurrences
Likely	51% - 90%	Can be expected to occur in most circumstances; statistical record of multiple occurrences
Possible	11% - 50%	May occur, but not expected in most circumstances; statistical record of a few occurrence
Unlikely	1% - 10%	Conceivable but unlikely to occur in any given year; statistical record of at least one occurrence
Rare	<1%	Will only occur in exceptional circumstances; no history of occurrence

## 13.3 AEMO IMPACT RATINGS

AEMO’s impact rating matrix is provided below. When assessing the financial impact of non-compliance and risk on market participants, we have used the Financial (AEMO) category below as a guideline to assign risk ratings.

Type of impact	EXTREME	MAJOR	MODERATE	MINOR	IMMATERIAL
Reputation & Stakeholders	Significant long-term damage to stakeholder confidence and relationships; total loss of public confidence; intensive adverse media exposure	Significant short-term damage to stakeholder confidence and relationships; some loss of public confidence; adverse media exposure	Some damage to stakeholder confidence and relationships	Manageable reduction in stakeholder confidence	No lasting effects
AEMO Financial Impact	>\$25M	>\$5M-25M	>\$500K-\$5M	>\$100K-\$500K	<\$100K
Safety	Single fatality or permanent injury or widespread impact on public safety	Serious injury requiring hospitalisation >5 days or localised impact on public safety	Injury requiring <5 days hospitalisation or medical treatment	Medical treatment only	First aid
Infrastructure, Assets & Environment	Permanent long-term effect and or rectification not possible	Significant effect, difficult rectification	Measurable effect, easy rectification	Measurable effect, no rectification required	No measurable damage or effect
Market	Loss of supply to >50% of customer demand in any one jurisdiction or >25% across multiple jurisdictions Market suspension in one jurisdiction or market	Loss of supply to >25% of customer demand in any one jurisdiction or >10% across multiple jurisdictions Market suspension in one jurisdiction or market	Loss of supply to >10% of customer demand in any one jurisdiction or >5% across multiple jurisdictions Market operating in an administered state for > 5 days for gas market or >1 day for electricity market	Loss of supply to >5% of customer demand in any one jurisdiction or >2% across multiple jurisdictions Market operating in an administered state for <5 days for gas market or <1 day for electricity market	No restriction of supply No disruption to markets
Legal & Regulatory	Imprisonment or fine >\$100 personal liability to officer or director of company Disqualification as officer/director Regulator or parliamentary inquiry with loss of market participants and public confidence	>\$100K personal liability to officer or director Disqualification as officer/director Regulator or parliamentary inquiry with substantial loss of reputation, financial cost, loss of stakeholder confidence, political impact	Fine of less than \$100K and no personal liability Regulator or government inquiry with loss of reputation or adverse government impact	Nominal fine Regulator or government inquiry resolved by routine management procedures	No fine No government or regulator inquiry