



**ROBINSON BOWMAKER PAUL**



## OMAN POWER AND WATER PROCUREMENT COMPANY

INDEPENDENT AUDIT REPORT FOR THE OMAN ELECTRICITY MARKET  
FOR THE AUDIT YEAR 2025

31 March 2026

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**Document version:** FINAL PUBLIC 1.1

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# EXECUTIVE SUMMARY

The Oman Power and Water Procurement Company (OPWP) has engaged Robinson Bowmaker Paul (RBP) to conduct the Market Audit of the Oman Electricity Market in accordance with Section C of the Market Rules for the Audit Year from 1 January 2025 to 31 December 2025.

## SCOPE AND AUDIT CRITERIA

The scope of the Market Audit is set by Section C of the Market Rules and is detailed below.

**Table 1: Scope of Market Audit**

Party	Scope of Market Audit
<b>Market Operator</b>	<ul style="list-style-type: none"> <li>• Market Scheduling processes (insofar as they affect settlement)</li> <li>• Settlement processes including scarcity pricing and energy settlement</li> <li>• Maintenance of the Market Register</li> <li>• Registration processes</li> <li>• Processes used to implement relevant Approved Methodologies</li> <li>• MMS management processes (software release, business continuity and disaster recovery and information security)</li> </ul>
<b>Power Procurer</b>	<ul style="list-style-type: none"> <li>• Processes used to implement relevant Approved Methodologies</li> <li>• Market information provision obligations</li> <li>• The appropriateness of Power Procurer IT systems used to implement its obligations</li> </ul>
<b>Transmission Company</b>	<ul style="list-style-type: none"> <li>• Processes used to implement relevant Approved Methodologies</li> <li>• Market information provision obligations</li> <li>• The appropriateness of Power Procurer IT systems used to implement its obligations</li> </ul>
<b>Pool Participants</b>	<ul style="list-style-type: none"> <li>• Meter data management, validation, verification and estimation processes used to implement Data Aggregation Rules</li> <li>• Appropriateness of Pool Participant IT systems relating to meter data submissions</li> <li>• Offer derivation from contracts (PPAs)</li> </ul>

For Pool Participants, we have selected three generators to focus our efforts on three Pool Participants and their Generators. In addition, we have followed up on findings recorded for audited Pool Participants in the previous audit (Audit 2024) to verify whether these findings have been closed.

We have assessed compliance against the following audit criteria:

- Market Rules version 4.1 dated 01 January 2025
- MRP-E version 1.0
- MRP-H version 1.0
- Approved Methodologies – see Table 2.

**Table 2: Approved Methodologies in scope of Market Audit**

Owner	Approved Methodology	Version number
<b>Market Operator</b>	Administered Pricing Methodology (L.2.5.1)	4.0, 30 December 2021
	Economic Fuel Price Calculation Methodology (J.3.2)	Authority derogation in place to defer publication (expires 31 December 2026)
	Forecast Pool Demand Methodology (K.2.1.1)	4.1, 29 August 2024
	Monthly Scarcity Credit Cap Methodology (Section M.5.4.4)	4.0, 30 December 2021
	Must Run Methodology (E.2.7.5)	4.0, 30 December 2021
	Reserve Holding Adjustment Methodology (K.2.8.1)	4.2, 06 October 2025
	Scarcity Factor Table Methodology (M.2.2.1)	4.1, 06 October 2025
<b>Power Procurer</b>	Availability Certification Methodology (E.2.12.1)	4.0, 30 December 2021
	Availability Certification – Spot Performance Test	0.2 (Draft)
	Demand Side Arrangements Methodology (E.2.5.3)	Authority derogation to defer publication expired 30 June 2025. PWP has advised that they are organising a new derogation.
	Offer Derivation from Contract Terms Principles	4.0, 30 December 2021
<b>Transmission Company</b>	Curtailed Quantity Methodology (K.2.3.1)	Rev 1.0, 09 July 2025
	Demand Shedding Volume Methodology (K.2.1.4)	1.0, 1 January 2022

## Inherent Limitations

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 market outcomes.

Our opinion with respect to Market Operator and other Pool Party compliance with the Market Rules, Market Rule Procedures and Approved Methodologies 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 the Market Operator. 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 Year and is performed on a sample basis.

## FINDINGS

Our findings are classified using the compliance and risk ratings defined below.

Table 3: Compliance and risk ratings

Compliance rating	Risk Rating
0: Technical non-compliance with the rules due to typos or manifest errors in the rules. Not a compliance issue.	<b>Critical:</b> Potential for catastrophic impact on market or other market outcomes if not addressed immediately. Requires executive actions and monitoring at board level.
1: Non-compliance with the rules (or other relevant documentation)	<b>High:</b> Potential for major impact on market operations other market outcomes if not addressed as a matter of priority. Requires senior management attention with regular monitoring at executive meetings.
2: No non-compliance noted, however, risk of non-compliance exists (i.e., opportunities to improve controls)	<b>Medium:</b> Potential for moderate impact on market operations or other market outcomes if not addressed within a reasonable timeframe. Requires management attention with regular monitoring.
3: Minor housekeeping issues that are not a compliance issue but may improve efficiency	<b>Low:</b> Potential for minor impact on market operations or other market outcomes if not addressed in the future. Requires team level attention with regular monitoring.

### Market Operator compliance

Table 4 summarises audit findings relating to the Market Operator’s obligations; the number of findings from the previous audit (2024) is provided in brackets for comparison.

We have recorded 10 compliance related findings for the Audit Year 2025. This is a minor decrease from the number of findings reported last year (11). The Market Operator has addressed all findings from the previous audit, taking action to remediate these findings. As a result, there are no open findings from the previous Audit Year 2024.

Table 4: Summary of Market Operator related audit findings and comparison with Audit Year 2024 findings.

		Risk rating			Totals
		Low	Moderate	High	
Compliance rating	0	1 (1)*	0 (0)	0 (0)	1 (1)
	1	2 (3)	0 (0)	0 (0)	2 (3)
	2	2 (4)	0 (1)	0 (0)	2 (5)
	3	5 (2)	0 (0)	0 (0)	5 (2)
Totals		10 (10)	0 (1)	0 (0)	10 (11)

\*Enclosed in parentheses are the number of findings from the previous Audit Year 2024 for comparison

No high- or moderate-risk findings were reported this year. All compliance related findings have risk ratings of low:

- Two out of the 10 findings are minor breaches of the Market Rules. The Market Operator has implemented remedial actions to prevent the recurrence of one of these breaches – as such, this finding is deemed to be closed.
- We have also reported one technical breach of the Market Rules arising as a result of the operational application of Data Aggregation Rules being inconsistent with the requirements in Market Rules Section F.3 and F.4.
- Two of the low-risk findings relate to opportunities to improve current practices to reduce compliance risk. One finding is related to an opportunity to improve controls and audit trail of Scarcity Factor Processes, while the other relates to the opportunity to improve documentation processes related to MMS releases.
- The remaining five low risk findings are related to house-keeping issues that do not affect compliance risk.

### Power Procurer compliance

The Power Procurer has very few obligations to implement under current market arrangements.

In the previous Audit Year 2024, we noted one low-risk audit finding relating to the Power Procurer’s compliance, which has since been closed.

We have no findings to report on the Power Procurer’s compliance.

### Transmission Company compliance

Table 5 summarises audit findings pertaining to the Transmission Company’s compliance.

**Table 5: Summary of Transmission Company related audit findings and comparison with Audit Year 2024 findings**

		Risk Rating			Totals
		Low	Moderate	High	
Compliance rating	0	0 (0)*	0 (0)	0 (0)	0 (0)
	1	1 (3)	1 (1)	0 (0)	2 (4)
	2	1 (0)	1 (0)	0 (0)	2 (0)
	3	0 (1)	0 (0)	0 (0)	0 (1)
	<b>Totals</b>	<b>2 (4)</b>	<b>2 (1)</b>	<b>0 (0)</b>	<b>4 (5)</b>

\*Enclosed in parentheses are the number of findings from the previous Audit Year 2024 for comparison

This year we have reported four findings pertaining to the Transmission Company’s compliance. The five findings reported in the previous audit have been closed

- Two out of the four findings are breaches of the Market Rules.
  - One breach is rated moderate-risk and pertains to errors in a Price Taker’s Curtailment Quantity calculations for 6 March 2025 and 5 December 2025. We have assigned this breach a moderate-risk rating as similar issues are highly likely to recur given the increasing prevalence of curtailment instructions and the Transmission Company’s weak control environment in this area.
  - The second breach is rated low-risk and relates to errors in Demand Shedding calculations for 15 September 2025.

- The other two findings are opportunities to mitigate compliance risk.
  - The first finding recommends requiring Deemed Energy (theoretical output) and metered quantity (SCADA) to be provided by the Price Taker at one-minute granularity so that the Transmission Company can validate the Price Taker’s Curtailed Quantity calculations. The Transmission Company has advised that (based on discussions with Price Takers and the Power Procurer), Deemed Energy and SCADA meter values cannot be provided at one-minute granularity. We disagree with this advice as the Transmission Company provided us with Deemed Energy and SCADA meter values at one minute granularity (as provided by curtailed Price Takers) for the annual market audits for Audit Years 2023 and 2024.
  - The second finding is low-risk and relates to opportunities to improve the documentation of the Forecast Pool Demand inputs spreadsheet that the Transmission Company submits to the Market Operator (to facilitate Forecast Pool Demand calculations).

**Pool Participant compliance**

Table 6 summarises audit findings pertaining to the Pool Participant’s compliance opinion.

**Table 6: Summary of Pool Participant related audit findings and comparison with Audit Year 2024 Findings\***

		Risk Rating			Totals
		Low	Moderate	High	
Compliance rating	1	14 (5)*	4 (5)	1 (2)	19 (12)
	2	1 (1)	0 (1)	0 (0)	1 (2)
	3	0 (0)	0 (0)	0 (0)	0 (0)
	<b>Totals</b>	<b>15 (6)</b>	<b>4 (6)</b>	<b>1 (2)</b>	<b>20 (14)</b>

\*Enclosed in parentheses are the number of findings from the previous Audit Year 2024 for comparison

This year we have reported 20 findings, 19 of which are breaches of the Market Rules. This is an increase since last year when we reported 14 findings (of which 12 were breaches).

- One of the 20 findings is an open breach from the previous Audit Year (2024) relating to potential errors meter data submissions. We have been unable to close this finding due to delays

in providing us the information and ultimately providing us incorrect information<sup>1</sup>. We have further noted a scope limitation due to the Pool Participant's failure to provide us the required data on time to close this finding.

- Ten of the breaches related to delays in or failures to submit accurate offer, meter and availability data to the Market Operator on time.
  - Offer data submission before gate closure has seen considerable improvement from 2024 to 2025. The total number of non-compliant days is less than 5 days in 2025 among all participants with 3 of them achieving 100% compliance.
  - Non-compliance among other participants range from just 1 to 6 days.
  - The three new participants have been able to achieve 100% compliance across submission of various parameters before gate closure. This is an indication that new participants are able to adjust and familiarise themselves with their spot market obligations.
- The remaining nine findings were detected as part of our audit of the three selected Pool Participants:
  - Four of the nine findings relate to one of the Pool Participants:
    - a. One of the findings is a breach of the Market Rules pertaining to systemically incorrect Commercial Offer Data. We believe there are potentially significant errors in the Generator's variable (fuel) cost components of their offer curve and no load costs (in addition to other issues). We have also noted significant errors in the non-fuel component of their no-load costs.
    - b. Two of the findings are moderate-risk rated breaches of the Market Rules. The first relates to the ramp rates submitted with their offers being inconsistent with their Offer Derivation from Contract Terms (ODFCT) approach document; the other relates to potentially erroneous meter data submissions, where we have been unable to recreate the Generator's meter data submission using their raw data and data aggregation rules.
    - c. The last finding is a low-risk breach that relates to the Generator's non-fuel variable costs being rounded to one decimal place (a breach of Market Rule B.3.3.2).

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<sup>1</sup> The information provided to us spanned incorrect dates which prevented us from verifying whether the finding could be closed

- Three of the findings are moderate-risk rated breaches of the Market Rules by the second audited Pool Participant:
  - a. The Generator’s meter data submission has been systemically incorrect due to a misinterpretation of the definition of Trading Period which the Pool Participant has interpreted as ending on the hour instead of beginning on the hour (per the Market Rules definition). This issue has been rectified so should not recur.
  - b. We have noted errors in the Generator’s nominated quantities (as submitted for their offers) on Trading Days 30 July and 18 August.
  - c. The Generator has also submitted incorrect Curtailed Quantity volume calculations to OETC for Trading Days 6 March 2025 and 5 December 2025. The March 6 errors would not have had any impact on spot market outcomes as the Generator was commissioning at the time and not in commercial operation.
- The last two findings are breaches of the Market Rules by the third Pool Participant:
  - a. One finding is a low-risk breach of the Market Rules where we noted (mostly minor) discrepancies between the Generator’s:
    - i. Submitted technical offer parameters and their ODFCT approach document. The Pool Participant has advised that the resource minimum output value varies by ambient conditions (per their ODFCT approach). However, we have reviewed their working offer tools and note that resource minimum output is static and not a function of temperature or humidity.
    - ii. Submitted commercial offers and the data contained in their working offer files. The Pool Participant has advised the discrepancies are likely because the working offer files contain different temperature and humidity data to the file that was actually used to create offer submissions on the sampled days. As the participant does not maintain an adequate audit trail to enable recalculation of their offers, we cannot confirm their assertion.
  - b. We have reported one low-risk rated compliance risk finding relating to transition banking output errors in offer derivation tools (which do not affect the accuracy of their offer submissions to the MMS).

## COMPLIANCE OPINION

### Opinion with respect to Market Operator compliance

Subject to the inherent limitations set out above, 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 the Market Operator has not been compliant with the Market Rules, Market Procedures and Approved Methodologies during the Audit Year, in all material respects.

### Opinion with respect to Transmission Company compliance

Subject to the inherent limitations set out above, 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 the Transmission Company has not been compliant with the Market Rules, Market Procedures and Approved Methodologies during the Audit Year, in all material respects.

### Opinion with respect to Power Procurer compliance

Subject to the inherent limitations set out in above, 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 the Power Procurer has not been compliant with the Market Rules, Market Procedures and Approved Methodologies during the Audit Year, in all material respects.

### Opinion with respect to Pool Participant compliance

Our opinion is limited to the three Pool Participants that we audited. We refer to the anonymous Audited Participants as:

- Pool Participant A (in respect of Generator A)
- Pool Participant B (in respect of Generator B)
- Pool Participant C (in respect of Generator C)

Our opinion is qualified and has a scope limitation as follows:

Subject to the inherent limitations set out above, based on the audit procedures we have performed and the evidence we have examined, and with the exception of two findings pertaining to Pool Participant A and two findings pertaining to Pool Participant B, nothing has come to our attention that causes us to believe that the audited Pool Participants have not been compliant with the Market

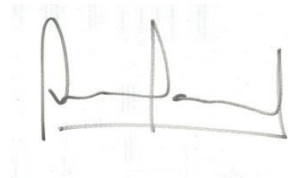
Rules, Market Procedures and Approved Methodologies during the Audit Year, in all material respects

*Qualifications*

Our compliance opinion for Pool Participant A and Pool Participant B is qualified:

- For Pool Participant A, our opinion is qualified due to one high risk breach relating to potential systemic errors in Commercial Offer Data and one moderate risk breach relating to errors in meter data submissions.
- For Pool Participant B, our opinion is qualified due to two moderate risk rated breaches. One relates to systemic meter data errors due to misinterpretation of the definition of Trading Period. While this finding can be closed (as the systemic error has been rectified), we note that the Generator's meter data submissions would have been consistently incorrect during the Audit Year. The second finding pertains to potentially systemic errors in nominated quantity

*Scope limitation.* As indicated previously, we were unable to close a finding from Audit 2024 relating to incorrect meter data submissions. Our audit of the relevant Generator's meter data submission is limited as the participant has provided raw meter data and submitted meter data for different dates preventing us from assessing whether the submitted meter data was calculated correctly on the sampled Trading Days.



Sue Paul

Principal