Audit Report

Performance Audit and Asset Management Review

3607-22

Prepared for

TEC Hedland Pty Ltd

26 February 2019

Cardno

Contact Information

Cardno (Qld) Pty Ltd
ABN 57 051 074 992

Level 11
515 St Paul's Terrace
Fortitude Valley QLD 4006
Australia

www.cardno.com
Phone +61 7 3369 9822
Fax +61 7 3369 9722

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Author(s):

Justin Edwards
Senior Consultant

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Simon Martin
Senior Consultant

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Executive Summary

General

TEC Hedland Pty Ltd (TECH) is a subsidiary of TransAlta Energy (Australia) Pty Ltd.

TECH holds an integrated regional licence (EIRL9). TECH owns and operates a dual fuel (natural gas and diesel) fired facility supplying electricity to Horizon Power and The Pilbara Infrastructure Pty Ltd (a subsidiary of the Fortescue Metals Group) (FMG) on Horizon Power's transmission and distribution network. The electricity generated services FMG's port operations located in Port Hedland and provides additional capacity for the Pilbara to meet the long term electricity requirements of Horizon Power.

TECH's assets are solely located at South Hedland Power Station (SHPS) in the Pilbara Region of Western Australia. This 150 megawatt (MW) combined cycle power station was built by TECH under an engineering, procurement and construction (EPC) contract with IHI Engineering Australia. TECH now owns and operates the power station.

The audit was carried out shortly after audits for two other TransAlta subsidiaries, Goldfields Power Pty Ltd (GPPL) and the Southern Cross Energy Partnership (SCE), which were undertaken in August 2018. Some references for GPPL and SCE have been used as evidence for TECH. Due to the common TransAlta ownership across these assets many of the corporate processes and systems used for management and operations are common across SCE, GPPL and TECH.

Audit and review objectives

This audit has been conducted in order to assess:

1. TECH's level of compliance with the conditions of their electricity licence.
2. The effectiveness of TECH's asset management system.

This report outlines the findings of the audit and review of TECH to fulfil the above objectives, conducted on 1 and 2 November 2018. The audit and review covers the operating period of 15 October 2014 to 31 October 2018.

Performance Audit - Findings

This is the initial audit and no previous audits have been performed and therefore there have been no previous non-compliances.

During the current audit, the following non-compliances have been observed:

1. The invoice issued in November 2017 for the ERA licence fee was not paid within the 30 days required.
2. TECH failed to provide the data required to calculate the licence standing data charges within the prescribed timeframe, due 30 September 2016, provided 14 October 2016.

We have recommended that TECH improves its risk mitigation measures for the non-compliance related to late payment of license fees, including having in place an independent alert via its contract management system each quarter to check whether invoices have been received and processed.

We consider that the second non-compliance has been resolved and no further action is required.

Performance Audit - Effectiveness of controls

We consider that TECH has adequate controls in place that are appropriate to the nature and scale of its activities.

Performance Audit - Overall compliance

The overall compliance of TECH with its licence is summarised in Section 4.2 of this report. Two items were rated as non-compliant, although they have already been rectified. All other items were assessed as compliant, not applicable or not able to be rated.

Asset Management System Review – Findings

There were no asset management system recommendations from the previous review as this is the initial review.

The recommendations from this current review are provided in the following table.

Reference (no./year)	Asset Management System Component	Issue	Auditor's recommendation
R1/2018	*A1* *Asset Planning* *Asset management plan covers key requirements*	The SAMP has a section for Key Asset Risks, but the tables for overarching asset risks and specific asset risks are incomplete.	We recommend that TECH complete the key asset risks tables. Furthermore, we observed that corporate risks are not currently detailed and would recommend that these are included.
R2/2018	*A1* *Review of Asset Management System* *A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current*	In the SAMP there is no Improvement Plan that sets out timeframes and responsibilities.	We recommend that an Improvement Plan is included in the SAMP to summarise the opportunities that have been identified in the Plan and to assign responsibilities and timeframes.

Asset Management System Review – Control Environment

We consider that TECH has adequate controls in place for its asset management functions that are appropriate to the nature and scale of its activities.

Asset Management System Review - Overall effectiveness

A summary of our assessment of the effectiveness of TECH's Asset Management System is provided in Section 4.3. Although some improvement opportunities have been identified, all elements have been rated "A" for policy and procedures, and "1" for performance.

Table of Contents

Appendices

Tables

1 Introduction

1.1 Background

The Economic Regulation Authority (ERA) is responsible for regulating the licensing schemes for gas, electricity and water services in Western Australia. The primary objective of regulation is to ensure the provision of a safe, competitive and fair environment, particularly where businesses operate as natural monopolies.

TEC Hedland Pty Ltd (TECH) holds an integrated regional licence (EIRL9). TECH owns and operates a dual fuel (natural gas and diesel) fired facility supplying electricity to Horizon Power and The Pilbara Infrastructure Pty Ltd (a subsidiary of the Fortescue Metals Group) (FMG) on Horizon Power's transmission and distribution network. The electricity generated services FMG's port operations located in Port Hedland and provides additional capacity for the Pilbara to meet the long term electricity requirements of Horizon Power.

1.2 Overview of TEC Hedland

TECH is a wholly owned subsidiary of TransAlta Energy (Australia) Pty Ltd and owns and operates the South Hedland Power Station (SHPS). TECH holds all licences and contracts in relation to SHPS.

1.3 TEC Hedland's Assets

TECH's assets are solely located at South Hedland Power Station in the Pilbara Region of Western Australia. This 150 megawatt (MW) combined cycle power station was built by TECH under an engineering, procurement and construction (EPC) contract with IHI Engineering Australia. TECH now owns and operates the power station.

This power station was constructed on the existing site of a 100MW temporary power station. The balance of plant (BoP) of this power station has been absorbed into the new 150MW combined cycle power plant. The existing BoP including raw water supply and storage, demineralised water treatment plant and storage, water distribution systems, 415V room, 11KV room and associated distribution systems, diesel fuel storage farm, loading facilities and fuel forwarding systems and oily water systems are now part of the new plant.

The SHPS consists of one IHI LM6000-PF Dual Fuel SPRINT gas turbine for an Open Cycle Gas Turbine (OCGT) facility, and two IHI LM6000-PF Dual Fuel SPRINT gas turbines for a Combined Cycle Gas Turbine (CCGT) facility in a 2-2-1 configuration, with two Once Through Steam Generators (OTSG) and one Steam Turbine with an air-cooled condenser.

First operation of the power station was on 18th December 2016 with GT 40 (OCGT) being placed into commercial operation. Commercial Operation Date (COD) for the two CCGT units (GT30 & GT 40) was declared at ~08:00 hours on 28th July 2017.

There are two Power Purchase Agreements (PPAs) governing supply to the two foundation customers, Horizon Power (HP) and Fortescue Metals Group (FMG). The PPA term for both foundation customers is 25 years.

1.4 Purpose of this report

As a condition of the licences, licensees are required to conduct a performance audit and asset management review that assesses the performance of the licensee against its obligations under the licenses.

The purpose of the performance audit was to assess the effectiveness of measures taken by the licensee to meet the conditions referred to in the licence including the legislative obligations called up by the licence. The scope of the audit report includes assessing the adequacy and effectiveness of performance against the requirements of the licensee by considering:

- process compliance
- outcome compliance
- output compliance
- integrity of reporting
- compliance with any individual license conditions.

The asset management system reviews covers:

- a description of the audit or review objectives and the methodology used to conduct the audit or review
- the interval of time covered by the audit or review and the previous audit or review, if applicable
- the period over which the audit or review has been performed
- details of the licensee's representatives participating in the audit or review
- details of key documents and other information sources examined by the auditor during the course of the audit or review
- details of the audit or review team members and hours utilised by each member
- any other information the auditor considers relevant to the audit or review scope of work.

The *Electricity Industry Act 2004 (WA)* obligate the licensee to provide the ERA with a performance audit conducted by an independent expert acceptable to the ERA not less than every 24 month period (or such longer period as the ERA allows) and provide the ERA with a report by an independent expert acceptable to the ERA as to the effectiveness of the asset management system not less than every 24 month period (or such longer period as the ERA allows).

Version 1 of EIRL9 was issued on 15 October 2014, version 2 was issued 01 July 2015, and version 3 was issued on 01 July 2018. This will be the initial Performance Audit and Asset Management Review for the period 15 October 2014 to 31 October 2018.

2 Audit/Review Scope

2.1 Audit/Review Objectives

The objectives of this audit were to:

1. Provide to the ERA an independent assessment of TECH's compliance with all of the relevant obligations under the licence.
2. Provide to the ERA an independent assessment of the effectiveness of TECH's asset management system in relation to EIRL9.
3. Provide recommendations to address noncompliance.

2.2 Scope of Works

The audit encompassed an assessment of the following four key areas using a risk based approach (to ISO 31000:2009):

- Process compliance: assessment of the effectiveness of systems and procedures
- Outcome compliance: assessment of actual performance against the prescribed licence standards
- Output compliance: assessment of records to indicate procedures are followed and controls are maintained
- Integrity of reporting: assessment of the completeness and accuracy of the compliance and performance reports.

The scope of works of this audit included:

- Interviews with key staff members from TECH to:
  - Assess performance against licence conditions for EIRL9
  - Assess performance against each asset management process for EIRL9
- Reviews of documents, procedures and policy manuals in relation to financial management and planning, service performance standards, asset management, operations and maintenance functions and reporting
- Testing and assessment to determine whether the procedures and policies are followed and determine its effectiveness
- Preparation of an audit report in accordance with the format outlined in the ERA Audit and Review Guidelines: Electricity and Gas Licences (April 2014).

2.2.1 Performance Audit

The audit of the licence covered the entire licence, and contained the following key areas as outlined in Table 2-1.

Table 2-1 Licence Performance Audit Areas

Clause	Licence Requirements	EIRL9
3.7	Notices	✓
3.8	Publishing information	✓
3.9	Review of the ERA's Decisions	✓
4.1	Compliance	✓
4.2	Fees	✓
4.3	Accounting Records	✓
4.4	Reporting change in circumstances	✓
4.5	Provision of information	✓
5.1	Asset Management System	✓
5.2	Individual Performance Standards	✓
5.3	Performance Audit	✓
6.1	Approved Scheme	✓
6.3	Marketers	✓
6.4	Customer Contracts	✓
6.5	Amending the Standard Form Contract	✓
6.6	Directions by the ERA	✓
6.7	Supplier of Last Resort	✓
6.8	Notification of Default Supply	✓

2.2.2 Performance Audit Excluded Conditions

Some of the reporting obligations for retail have been excluded from the audit because they are not applicable to TECH.

Table 2-2 Excluded conditions

2017 Compliance Manual Reference	Reference	Reason for exclusion
1-71	Electricity Industry Customer Transfer Code	No retail transfers are available; therefore the Customer Transfer Code does not apply.
72-100	Electricity Industry (Obligation to Connect) Regulation	No small use customers
108-109, 111, 114-118	Electricity Industry Act: Section 54	No small use customers
110	Electricity Industry Act: Section 76	The Licensee is not a retailer of last resort
120	Electricity Industry Act: Section 11	There are no individual performance standards
129-316	Code of Conduct	Code of conduct does not apply because there are no small use customers
334	Electricity Industry Metering Code	The Licensee customers consumes more than 750MWh/a
335	Electricity Industry Metering Code	Compensation is not required.
350-353	Electricity Industry Metering Code	As the Licensee's network operator does not operate in the WEM conditions relevant to the market rules are not applicable
354	Electricity Industry Metering Code	The licensee has not switched between regulated and nonregulated contracts during the period of this audit
362, 363	Electricity Industry Metering Code	Code of conduct does not apply because there are no small use customers
393,394	Electricity Industry Metering Code	Code of Conduct does not apply because there are no small use customers
395, 396	Electricity Industry Metering Code	No retail transfers are available; therefore the Customer Transfer Code does not apply.
436	Electricity Industry Metering Code	Electricity networks corporation is not the metering data agent
442-446	Electricity Industry Metering Code	The licensee is not a licensed network operator. These clauses apply only to holders of distribution or transmission licences, or holders of EIRLs that authorise distribution or transmission activities. No small use customers
467, 468-469, 472-476, 481-482, 483-485	Electricity Industry (Network Quality and Reliability of Supply) Code	The licensee is not a licensed network operator. These clauses apply only to holders of distribution or transmission licences, or holders of EIRLs that authorise distribution or transmission activities. No small use customers
486-496	Electricity Industry(Licence Conditions) Electricity Industry Act section 61 and 11 Electricity Industry (Customer Contracts) Regulations 2005	Licensee Specific Conditions that don't apply to TECH. These obligations only apply to Electricity Corporations

2.2.3 Asset Management System Review

The review of TECH's asset management system for EIRL9 will cover the following asset management elements:

- Asset planning
- Asset creation and acquisition
- Asset disposal
- Environmental analysis
- Asset operations
- Asset maintenance
- Asset management information system
- Risk management
- Contingency planning
- Financial planning
- Capital expenditure planning
- Review of AMS

2.3 Methodology and Approach

The audit was undertaken in accordance with ASAE3000. Our approach to the reporting work was to work closely with the licensee so that comments and challenges could be responded to and addressed before the audit report was finalised. The key areas of our approach included:

- A start-up discussion (by telephone) with TECH to:
  - Discuss the main issues to be addressed at audit
  - Identify any issues arising from changes to the Licence or operating environment requirements
  - Discuss the audit plan.
- Preparation of a draft audit plan for comment by the licensee. The audit plan identified the number and location of audits, the information to be addressed and the auditor responsible.
- Submission of the draft audit plan to the ERA for approval
- A start-up meeting on-site at the beginning of our audit work
- On site audit work comprising:
  - Face-to-face interviews with business staff responsible for the audit area
  - Demonstration of key systems
  - Sample testing for outcome compliance (assessing sample of documents to confirm procedures / policies are followed and implemented)
  - Review of any non-compliances and assess if any corrective action was undertaken and its effectiveness
  - Controls assessment on obligations that are found to be non-compliant
  - Site visit to TransAlta's Perth office on 1 November 2018
  - Site visit to Port Hedland on 2 November 2018 to meet with the TransAlta employees responsible for operating and maintaining TECH's infrastructure.
- Preliminary audit feedback at the audit close-out meeting
- Preparation of a draft report for TECH's review and comment
- Preparation of a final report for submission to the ERA.

Our methodology for completing this audit assignment was based on:

- A risk assessment that determined the priority of each audit area, using the risk management framework in Appendix A.
- Our understanding of the licensee's business
- The experience of our audit team in undertaking regulatory audits which has been gained in several jurisdictions in Australia and in the United Kingdom

Our audit methodology, including the key documents required to be reviewed and the supporting systems that we would like to see demonstrated, is detailed in Table 2-3 and Table 2-4.

Table 2-3 Licence Audit Methodology

Audit Area	Priority	Approach	Systems	Key Documents
Licence Audit				
Notices (Clause 3.7)	4	▪ Confirm all notices are issued in writing	▪ Correspondence register	▪ Issued notices
Publishing Information (Clause 3.8)	4	▪ Check if any requests have been issued by the ERA to publish any information relating to the performance of the Licensee and correlating response	▪ Correspondence register	▪ Letters of notification / requests from the ERA ▪ Response to the ERA
Review of the ERA's Decisions (Clause 3.9)	4	▪ Confirm if any requests of a reviewable decision has been issued to the ERA and correlating response		▪ Requests for review of decision (Correspondence)
Compliance (Clause 4.1)	Various	▪ Review legislative requirements and confirm compliance ▪ Identify any corrective action applied to correct / prevent breaches of compliance	▪ Work scheduling system	▪ Performance standards ▪ Compliance Summary Reports (record of breaches)
Fees (Clause 4.2)	5	▪ Review invoices from the ERA and receipts of payment		▪ Invoices and receipts
Accounting Records (Clause 4.3)	4	▪ Check that recent financial statements are signed off as being to appropriate standards	▪ Finance system	▪ 2017 Financial Statement
Reporting change in circumstances (Clause 4.4)	5	▪ Review any correspondence with the ERA	▪ Correspondence register	▪ Correspondence with ERA
Provision of Information (Clause 4.5)	4	▪ Confirm that the licensee has provided the ERA with data required for performance monitoring purposes as set out in the Compliance Reporting Manual.	▪ Correspondence register	▪ Annual compliance reports ▪ Correspondence register
Asset Management System (Clause 5.1)	Various	▪ Confirm that the asset management policies and procedures meet legislative requirements.	▪ Enterprise Asset Management System ▪ Computerised Maintenance Management System	▪ Asset Management Policies ▪ Asset Management Plans ▪ Asset Management Systems and Procedures Manual ▪ Asset Register
Individual Performance Standards (Clause 5.2)	NA	▪ Confirm that it's not applicable		
Performance audit (Clause 5.3)	4	▪ Review information reported to the ERA ▪ Confirm methodology used to determine performance conforms to legislation and procedures.		▪ Performance Audit ▪ Annual Performance Reports ▪ Procedures / Policy Manual ▪ Correspondence between TECH and the ERA regarding review requirements

Audit Area	Priority	Approach	Systems	Key Documents
Licence Audit				
Approved Scheme (Clause 6.1)	NA	▪ Confirm that it's not applicable		
Marketers (Clause 6.3)	NA	▪ Confirm that it's not applicable		
Customer Contracts (Clause 6.4)	NA	▪ Confirm that it's not applicable		
Amending the Standard Form Contract (Clause 6.5)	NA	▪ Confirm that it's not applicable		
Directions by the ERA (Clause 6.6)	5	▪ Confirm that directions from the ERA have been complied with.	▪ Correspondence register	▪ Correspondence with ERA
Supplier of Last Resort (Clause 6.7)	NA	▪ Confirm that it's not applicable		
Notification of Default Supply (Clause 6.8)	NA	▪ Confirm that it's not applicable		

Table 2-4 Asset Management Review Methodology

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Asset Management Review				
Asset planning	▪ Asset management plan covers key requirements ▪ Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning ▪ Service levels are defined ▪ Non-asset options (eg, demand management) are considered ▪ Lifecycle costs of owning and operating assets are assessed ▪ Funding options are evaluated ▪ Costs are justified and cost drivers identified ▪ Likelihood and consequences of asset failure are predicted ▪ Plans are regularly reviewed and updated	▪ Review and assess the adequacy of asset planning processes ▪ Review and assess adequacy of asset management plans ▪ Assess if asset management plans are up to date ▪ Assess implementation of asset management plans (status) ▪ Assess whether the asset management plan clearly assigns responsibilities and if these have been applied in practice	▪ Asset database / information system	▪ Overview of planning approach ▪ Population projections ▪ Infrastructure Planning Reports ▪ Asset management plans ▪ Service level agreements ▪ Business Case/project justification
Asset creation and acquisition	▪ Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions ▪ Evaluations include all life-cycle costs ▪ Projects reflect sound engineering and business decisions ▪ Commissioning tests are documented and completed ▪ Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	▪ Review adequacy of policies and procedures in relation to asset creation and acquisition ▪ Review examples of creations / acquisitions to check if policies and procedures were followed and check costs against estimates		▪ Policies and procedures for asset creating and acquisition. Accounting and engineering ▪ Overview of planning approach ▪ Business Case/project justification ▪ Asset management plans ▪ Commissioning certificates
Asset disposal	▪ Under-utilised and under-performing assets are identified as part of a regular systematic review process ▪ The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	▪ Review adequacy of policies and procedures in relation to asset disposal, asset replacement, identification of under-performing assets ▪ Determine if a review on the usefulness of assets are undertaken		▪ Policies and procedures for asset disposal. Accounting and engineering ▪ Asset management plans ▪ Decommissioning certificates

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
	▪ Disposal alternatives are evaluated ▪ There is a replacement strategy for assets	▪ Review examples to check that policies and procedures are being followed		
Environmental analysis	▪ Opportunities and threats in the system environment are assessed ▪ Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved ▪ Compliance with statutory and regulatory requirements ▪ Achievement of customer service levels	▪ Review performance and service standards over audit period ▪ Review performance / identify any breaches and non-compliances and corrective action taken ▪ Review adequacy of reporting and monitoring tools		▪ Relevant policies and procedures ▪ Planning reports ▪ Performance standards ▪ Compliance reports ▪ Strategic plans (if appropriate) ▪ Monthly KPI reports
Asset operations	▪ Operational policies and procedures are documented and linked to service levels required ▪ Risk management is applied to prioritise operations tasks ▪ Assets are documented in an Asset Register, including asset assessment of assets' physical, structural condition and accounting data ▪ Operational costs are measured and monitored ▪ Staff receive training commensurate with their responsibilities	▪ Review adequacy of policies and procedures in relation to asset operations ▪ Review staff skills / training and resources available ▪ Check that operations procedures are being followed including testing of the asset register, observation of operational procedures and analysis of costs ▪ Identify any operational events and corrective actions	▪ Asset information system ▪ SCADA ▪ Finance system ▪ Works management system ▪ HR system	▪ Asset register ▪ Operations procedures ▪ Operational costs ▪ Daily / weekly / monthly check sheets ▪ Staff skills / resourcing structure ▪ Asset management plan ▪ Incident register
Asset maintenance	▪ Maintenance policies and procedures are documented and linked to service levels required ▪ Regular inspections are undertaken of asset performance and condition ▪ Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule ▪ Failures are analysed and operational / maintenance plans adjusted where necessary ▪ Risk management is applied to prioritise maintenance tasks	▪ Review adequacy of policies and procedures in relation to asset maintenance / maintenance functions ▪ Check that policies and procedures have been followed including testing of maintenance schedules, analysis of costs, ▪ Review maintenance schedules / plans ▪ Identify any maintenance events and corrective actions	▪ Asset information system ▪ Works management system	▪ Maintenance procedures and schedules ▪ Record of maintenance ▪ Maintenance costs

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
	▪ Maintenance costs are measured and monitored			
Asset management information system	▪ Adequate system documentation for users and IT operators ▪ Input controls include appropriate verification and validation of data entered into the system ▪ Logical security access controls appear adequate, such as passwords and that appropriate system access and functionality is provided to users ▪ Physical security access controls appear adequate ▪ Data backup procedures appear adequate ▪ Key computations related to licensee performance reporting are materially accurate ▪ Management reports appear adequate for the licensee to monitor licence obligations	▪ Review adequacy of asset information system: ▪ Asset coverage ▪ Functionality ▪ Data coverage ▪ Security ▪ User functionality granted is appropriate ▪ Review outputs / reports generated by systems and assess suitability for reporting against performance standards / licence obligations	▪ Asset Management Information system	▪ Asset Management Information System manual ▪ AMIS data coverage and quality report ▪ Asset reports
Risk management	▪ Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system ▪ Risks are documented in a risk register and treatment plans are actioned and monitored ▪ The probability and consequence of risk failure are regularly assessed	▪ Review risk assessment coverage ▪ Review sample of risk mitigation to check policies and procedures are followed ▪ Assess staff understanding of risk management and adequacy of risk management training for staff	▪ Risk systems	▪ Corporate Risk management framework ▪ Risk assessment ▪ Risk Register
Contingency Planning	▪ Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	▪ Review adequacy / relevance and currency of contingency plans ▪ Review if plans have been tested and report on findings ▪ Identify any improvements that have been actioned as a result of testing of the contingency plans		▪ Contingency plans

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Financial Planning	▪ The financial plan states the financial objectives and strategies and actions to achieve the objectives ▪ The financial plan identifies the source of funds for capital expenditure and recurrent costs ▪ The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) ▪ The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period ▪ The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services ▪ Significant variances in actual / budget income and expenses are identified and corrective action taken where necessary	▪ Review adequacy and effectiveness of financial planning and reporting processes ▪ Review current financial plan and assess whether the process is being followed		▪ Financial Plan
Capital expenditure planning	▪ There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates ▪ The plan provides reasons for capital expenditure and timing of expenditure ▪ The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan ▪ There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	▪ Review adequacy and effectiveness of capital planning processes through examination of application of process and example documents	▪ Spreadsheets for capital planning and prioritisation	▪ Capital expenditure planning process outline ▪ Value engineering documents ▪ Risk management applied to investment planning ▪ Program management documents ▪ Review of capex estimate v outturn ▪
Asset management plan	▪ A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	▪ Review adequacy and currency of Asset Management Plan ▪ Assess when the Asset Management Plan was last updated / reviewed ▪ Assess outcomes of independent review of AMPs	▪ Asset management system	▪ Asset management plans

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
	▪ Independent reviews (e.g., internal audit) are performed of the asset management system	▪ Identify if AMP needs to be updated		

2.4 Time Period Covered by the Audit/Review

This audit covers the period from 15 October 2014 to 31 October 2018.

2.5 Time Period of the Audit/Review Process

The audit/review commenced in September 2018 with preparation of the draft Audit Plan. Interviews with TECH staff were carried out on 1 November 2018 at TECH's office in Perth, WA, and on 2 November 2018 at South Hedland Power Station, Port Hedland, WA.

2.6 Details of the Licensee Representatives Participating in the Audit/Review

Details of representatives from TECH who participated in the audit and review process are provided in Table 2-5.

Table 2-5 Details of Licensee Representatives

Name	Organisation	Role
Troy Forward	TEC Hedland Pty Ltd	Group Manager, Commercial and Markets
Kristian Myhre	TEC Hedland Pty Ltd	Commercial Manager
Keith Adams	TEC Hedland Pty Ltd	Operations Service Manager
Nigel Feletti	TEC Hedland Pty Ltd	Environmental, Health and Safety
Andrew Stoodley	TEC Hedland Pty Ltd	Finance
Nathalie Glindholm	TEC Hedland Pty Ltd	Finance
Ian Pratt	TEC Hedland Pty Ltd	Operations Superintendent
David Paul	TEC Hedland Pty Ltd	Plant Manager
Andy Perera	TEC Hedland Pty Ltd	Maintenance Manager

2.7 Details of Key Documents and Other Information Sources

The audit was carried out shortly after audits for two other TransAlta subsidiaries, Goldfields Power Pty Ltd (GPPL) and the Southern Cross Energy Partnership (SCE), which were undertaken in August 2018. Some references for GPPL and SCE have been used as evidence for TECH. Due to the common TransAlta ownership across these assets, many of the corporate processes and systems used for management and operations are common across SCE, GPPL and TECH. Additionally, some of the personnel involved in the audits for the same for all three licensees.

Asset Planning

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- Life Cycle Planning 20110201.ppt presentation
- 2019 Australia Budget Timelines memo, dated 16 July 2018
- Budget Process PowerPoint, dated June 2017
- Australia 2018 L01.xlsx long range forecast spreadsheet
- AFE Policy document
- AFE (Authorisation For Expenditure) Standards document
- Capital Actuals June 18.xlsx spreadsheet

Asset Creation

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- GAS.07.1342 PROCUREMENT GOVERNING PRINCIPLES.pdf

- Financial Policy 230 (a) PP&E.pdf (Describes capitalisation criteria for property, plant and equipment)
- Life Cycle Planning 20110201.ppt presentation
- 2019 Australia Budget Timelines memo, dated 16 July 2018
- Budget Process PowerPoint, dated June 2017
- Australia 2018 L01.xlsx long range forecast spreadsheet
- AFE Policy document
- AFE (Authorisation For Expenditure) Standards
- Capital Actuals June 18.xlsx spreadsheet
- SHPS asset creation documents:
  - Asset_Creation_SHPS_Container.pdf
  - Asset_Creation_SHPS_Demin_Water.pdf
  - Asset_Creation_SHPS_Site_Wide_Alarm.pdf

Asset Disposal

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- Asset register showing existence of all assets, newly created assets and major asset maintenance plans
- 5 and 10 year asset major maintenance budget and NTA budgets
- Financial Policy 230 (a) PP&E.pdf
- Financial Policies 230(k) Decommissioning & Restoration Obligations
- SHPS asset disposal documents:
  - Asset_Disposal_Form.xls
  - Asset Sale Process.doc
- 12_1123_SHPS_FAR.XLSX

Environmental Analysis

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- TransAlta FY18 NPI & NGER V3.0 2366518 3.xlsx emissions register
- Policies/procedures:
  - GAS.03.0848 VEGETATION CLEARING PROCEDURE.pdf
  - GAS.03.0849 WASTE MANAGEMENT.pdf
  - GAS.03.0850 SOLID, LIQUID AND GAS SPILL RESPONSE.pdf
  - GAS.03.1037 FLORA AND FAUNA CONSERVATION.pdf
  - GAS.03.1059 SOIL AND GROUND WATER PROTECTION.pdf
  - GAS.04.1260 LEGIONELLA HEALTH RISK MANAGEMENT.pdf
  - GAS.03.0820 ENVIRONMENTAL ASPECTS, HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROLS.pdf
  - GAS.03.0876 HAZARDS, NEAR MISSES AND INCIDENT REPORTING.pdf
  - GAS.03.1061 SITE ENVIRONMENTAL LICENCES.pdf
  - GAS.04.1171 SOUTH HEDLAND ENVIRONMENTAL MANAGEMENT PLAN

  - GAS.04.1398 ENVIRONMENTAL MANAGEMENT
- 2018_NPI_SHPS_Emission_Report.pdf
- DG Licence - DGS021 826 (TECH OP's).pdf (dangerous goods licence)
- SHPS.pdf (site summary report)

Asset Operations

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- South Hedland v2 2018-12-03.pdf (weekly production ('heat rate') graphs)
- KPI reports:
  - PSD KPI Overview.jpg
  - PSD KPI Priority Risk Control Area.pdf
  - PSD Maintenance Management KPI Overview.jpg
- Live SAP asset register in structured hierarchy showing all assets for SHPS
- Equipment Register – Example.txt (structured SAP asset register)
- Operational procedures:
  - SOI 010 CCGT Water Chemistry Silica Test Procedure.docx
  - SOI 014 ISOCH In A Hurry.docx
- EHS&T 2018 Programme V2.pdf (TransAlta's Environmental, Health and Safety Training Programme)
- ERA #027 Training Compliance Report.xlsx
- ERA #027 Training History Report.xlsx
- Training Needs Analysis V2.9.xlsx
- ID 81 GAS.09.1404 MANAGEMENT OF CHANGE (MOC) GUIDELINE.pdf
- 9666-MAN-002 - Phase 2 Training Manual for Dispatch Scheduler (004).doc
- 9666-SPC-007 - Phase 2 Dispatch PLC Functional Description_Rev 1.doc

Asset Maintenance

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- Viewed live on SAP:
  - Structured asset register
  - List of maintenance plans
  - Example maintenance plan
  - Example maintenance record
- GAS.06.1324 Maintenance Work Management.docx (Covers environmental management; health, injury management and wellness initiatives; safety; training, learning and development; auditing and document control, contractor management; TSE reporting and measurement; budget management; and resourcing)
- Maintenance Policy Engineering Standard - Example List.jpg

Asset Management Information System

- SHPS SAMP Ver 1 20171020.pdf

- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- The following key asset management information systems were observed:
  - SAP Asset Register
  - SAP PM (Plant maintenance) work schedules
  - Safety Performance Reporting for its incident reporting
  - Citect SCADA system for asset operations and performance monitoring
  - Synergi Incident reporting, audit reporting and management and risk management database
  - Total Safety Documents (TSD) system for its risk management.
  - Operational Integrity Program (OIP) for reviewing and identifying equipment and safety aspects.
  - TapRooT for Root Cause analysis
- Examples of monthly operation and maintenance reports and financial reports

Risk Management

- SHPS SAMP Ver 1 20171020.pdf
- Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG
- TransAlta Australia Risk Register on Synergi
- Synergi Incident reporting, audit reporting and management and risk management database
- SHPS RISK REGISTER EXTRACT from Synergi Data Base.PNG
- TAC.09.0098 TECHNICAL RISK METHOD.pdf
- TAC.07.0118 TSMS ELEMENT 2 - OPERATIONAL RISK MANAGEMENT.pdf
- TAC.03.0069 RISK MATRIX STANDARD.pdf
- TA Emergency Management Standard.pdf
- TSMS Mapping to TEA EHSMS v1.1 05-09-2018
- EHS Portal on TransAlta intranet
- Various EHS reports (screenshots)
- SHPS incident investigation reports:
  - Incident_Investigation_ Report_6830_V2.pdf
  - Incident_Investigation_Report_8853 v3.pdf
  - Incident_Investigation_Report_10864_Final.pdf
- GAS.06.1324 Maintenance Work Management.docx
- TAC.13.0257 WORK MANAGEMENT WORK EXECUTION STANDARD.pdf
- TAC.13.0259 WORK MANAGEMENT DOCUMENT CLOSURE STANDARD.pdf
- TAC.09.0097 RISK INTOLERABILITY CRITERIA AND ALARP CONCEPT.pdf
- SHPS Job Hazard Analysis forms:
  - AP_20180928_SHPS_JHA_A.pdf (Clean ST10 exhaust drain pump/strainer)
  - AP_20180928_SHPS_JHA_B.pdf (Install new rectifier module)
  - AP_20181026_SHPS_JHA_A.pdf (Reroute supply from DB)
  - AP_201810261_SHPS_JHA_B.pdf (Removal of waste water pump)
  - IP_20181023 SHPS_JHA_A.pdf (Critical function testing)
- SHPS incident reports:
  - Stray Voltage detected while working in de-energized & isolated DB board (Case no.10833)

- Sleep Pattern (Case no.10923)
- Vehicle driving on wrong side on road (Case no.10864)

> GAS.07.1418 TA AUSTRALIA DOCUMENT AND RECORDS CONTROL PROCEDURE.pdf

> TAC.07.0124 TSMS ELEMENT 7 - DOCUMENT AND RECORDS CONTROL.pdf

> Incident Register extract.PNG (SHPS)

Contingency Planning

> SHPS SAMP Ver 1 20171020.pdf

> Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG

> TA Emergency Management Standard.pdf

> TAC.02.0023 CORPORATE EMERGENCY MANAGEMENT STANDARD.pdf

> TAC.07.0130 TSMS ELEMENT 11 - EMERGENCY MANAGEMENT.pdf

> GAS.03.0913 EMERGENCY RESPONSE GUIDE.pdf

> GAS.02.1331 SOUTH HEDLAND EMERGENCY RESPONSE PLAN.pdf

> GAS.02.1253 SOUTH HEDLAND CYCLONE MANAGEMENT PLAN

> Synergi History of Drills.xlsx

> SHPS Evacuation Drill (Synergi case no. 4692)

Financial Planning

> SHPS SAMP Ver 1 20171020.pdf

> Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG

> South_Hedland_Oct18_F.xlsx (monthly business planning forecast)

> Australia Capital Detail 2018 L01 Final.xlsx (Long range forecast 2018-2042)

> Budget MRF 2018 BUD.xls

> 1806 Day 8 Report Jun18.xlsx

> Australia Jun18 F.xlsx (Spreadsheet shows budget vs actual costs for each TransAlta Australia site for June 2018)

Capital Expenditure Planning

> SHPS SAMP Ver 1 20171020.pdf

> Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG

> Australia Capital Detail 2018 L01 Final.xlsx (Long range forecast 2018-2042)

Review of Asset Management System

> SHPS SAMP Ver 1 20171020.pdf

> 2017 Compliance Report

2.8 Details of auditors participating in the audit/review and hours utilised

The audit/review team comprised three staff members from Cardno.

Details of their roles and hours utilised in the audit/review process are provided in the table below.

Table 2-6 Details of Audit / Review Team Members

Name	Organisation	Role	Summary of Task	Hours Utilised
Simon Martin	Cardno	Auditor/Reviewer	▪ Audit preparation ▪ Audit ▪ Preparation of Report	75 hours
Justin Edwards	Cardno	Auditor/Reviewer	▪ Audit preparation ▪ Audit ▪ Preparation of Report	20 hours
Patrick Lamb	Cardno	Project Manager	▪ Project Management ▪ Audit Plan	30 hours

3 Licensee's Response to Previous Audit Recommendations

This is the initial audit and there have been no previous audits.

4 Performance Summary

The findings of the performance audit is summarised in a table with adequacy of control and compliance rating. The table includes all applicable compliance reporting items and are numbered according to the Electricity Compliance Reporting Manual 2018. Description of the rating scale and outcomes of the performance audit are provided in the following sections.

4.1 Assessment Rating Scales

In accordance with the Audit Guidelines, an assessment of the performance of TECH was completed using the rating scale in Table 4-1 and asset management system effectiveness using the rating scales in Table 4-2 and Table 4-3. In addition to these ratings a NP indicates that a control rating was not performed for those obligations that were considered to be compliant and having an audit priority of 3, 4 or 5.

Table 4-1 Audit Compliance and Controls Rating Scales

Adequacy of Controls Rating		Compliance Rating	
Rating	Description	Rating	Description
A	Adequate controls - no improvement needed	1	Compliant
B	Generally adequate controls - improvement needed	2	Non-compliant – minor impact on customers or third parties
C	Inadequate controls – significant improvement required	3	Non-compliant – moderate impact on customers or third parties
D	No controls evident	4	Non-compliant – major impact on customers or third parties

Table 4-2 Asset Management Process and Policy Definition Adequacy Rating

Rating	Description	Criteria
A	Adequately defined	▪ Processes and policies are documented. ▪ Processes and policies adequately document the required performance of the assets. ▪ Processes and policies are subject to regular reviews, and updated where necessary. ▪ The asset management information system(s) are adequate in relation to the assets that are being managed.
B	Requires some improvement	▪ Process and policy documentation requires improvement. ▪ Processes and policies do not adequately document the required performance of the assets. ▪ Reviews of processes and policies are not conducted regularly enough. ▪ The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).
C	Requires significant improvement	▪ Process and policy documentation is incomplete or requires significant improvement. ▪ Processes and policies do not document the required performance of the assets. ▪ Processes and policies are significantly out of date. ▪ The asset management information system(s) require significant improvements (taking into consideration the assets that are being managed).
D	Inadequate	▪ Processes and policies are not documented. ▪ The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).
NP	Not performed	▪ Obligation is compliant and asset priority was considered to be either four or five

Table 4-3 Asset Management Performance Ratings

Rating	Description	Criteria
1	Performing effectively	▪ The performance of the process meets or exceeds the required levels of performance. ▪ Process effectiveness is regularly assessed, and corrective action taken where necessary.
2	Opportunity for improvement	▪ The performance of the process requires some improvement to meet the required level. ▪ Process effectiveness reviews are not performed regularly enough. ▪ Process improvement opportunities are not actioned.
3	Corrective action required	▪ The performance of the process requires significant improvement to meet the required level. ▪ Process effectiveness reviews are performed irregularly, or not at all. ▪ Process improvement opportunities are not actioned.
4	Serious action required	▪ Process is not performed, or the performance is so poor that the process is considered to be ineffective.

4.2 Performance Audit Compliance Summary

Table 4-4 provides a summary of TECH's compliance rating against each licence obligation, and an adequacy of controls rating where the item has been found to be non-compliant.

Na = Not applicable - Determined during the audit that the compliance obligation does not apply to the Licensee's business operations

Nr = Not rated - No relevant activity took place during the audit period, therefore it is not possible to assess compliance.

Table 4-4 Audit Obligation Ratings

2017 Compliance Obligation Ref No.	Licence Reference	Condition	Audit Priority applied [rated 1 (Highest) to 5 (Lowest)]	Adequacy of Controls Rating					Compliance Rating					
				A	B	C	D	NP	1	2	3	4	Na	Nr
Electricity Industry Act														
101	5.3.1	13(1)	4					✓	✓					
102	5.1.1	14(1)(a)	5					✓	✓					
103	5.1.2 and 5.1.3	14(1)(b)	4					✓						✓
104	5.1.4	14(1)(c)	5					✓	✓					
105	5.1.4	17(1)	5		✓					✓				
106	4.1.1	31(3)	5					✓	✓					
107	4.1.1	41(6)	4					✓	✓					
119	4.3.1	11	4					✓	✓					
121	5.3.2	11	4					✓	✓					
122	5.1.5	11	5					✓	✓					
123	4.4.1	11	5					✓	✓					
124	4.5.1	11	4	✓						✓				
125	3.8.1 and 3.8.2	11	4					✓						✓
126	3.7.1	11	4					✓						✓
127	6.9.1	11	4					✓					✓	
128	6.9.3	11	4					✓					✓	
Electricity Industry Metering Code														
317	4.1.1	2.2(1)(a)	5					✓					✓	
318	4.1.1	2.2(1)(b)	4					✓					✓	
319	4.1.1	3.1	4					✓					✓	
320	4.1.1	3.2(1)	4					✓					✓	
321	4.1.1	3.3(1)	4					✓					✓	
322	4.1.1	3.3(3)	4					✓					✓	
323	4.1.1	3.3A(1)	4					✓					✓	
324	4.1.1	3.3B	4					✓					✓	
325	4.1.1	3.3C	5					✓					✓	
326	4.1.1	3.5(1) and (2)	4					✓					✓	
327	4.1.1	3.5(3)	4					✓					✓	

2017 Compliance Obligation Ref No.	Licence Reference	Condition	Audit Priority applied [rated 1 (Highest) to 5 (Lowest)]	Adequacy of Controls Rating					Compliance Rating					
				A	B	C	D	NP	1	2	3	4	Na	Nr
328	4.1.1	3.5(4)	4					✓					✓	
329	4.1.1	3.5(6)	4					✓					✓	
330	4.1.1	3.5(9)	4					✓					✓	
331	4.1.1	3.7	4					✓					✓	
332	4.1.1	3.8	4					✓					✓	
333	4.1.1	3.9(3)	4					✓					✓	
336	4.1.1	3.10	4					✓					✓	
337	4.1.1	3.11(1)	4					✓					✓	
338	4.1.1	3.11(2)	4					✓					✓	
339	4.1.1	3.11(3)	4					✓					✓	
340	4.1.1	3.11A(1)	4					✓					✓	
341	4.1.1	3.11A(2)	4					✓					✓	
342	4.1.1	3.12(1)	4					✓					✓	
343	4.1.1	3.12(2)	4					✓					✓	
344	4.1.1	3.12(3)	4					✓					✓	
345	4.1.1	3.12(4)	4					✓					✓	
346	4.1.1	3.13(1)	4					✓					✓	
347	4.1.1	3.13(3)(c)	4					✓					✓	
348	4.1.1	3.13(4)	4					✓					✓	
349	4.1.1	3.14(3)	4					✓					✓	
355	4.1.1	3.20(1)	4					✓					✓	
356	4.1.1	3.20(3)	4					✓					✓	
357	4.1.1	3.21(1)	4					✓					✓	
358	4.1.1	3.21(2)	4					✓					✓	
359	4.1.1	3.22	4					✓					✓	
360	4.1.1	3.23(a)	4					✓					✓	
361	4.1.1	3.23(b)	4					✓					✓	
364	4.1.1	3.27	4					✓					✓	
365	4.1.1	3.29	4					✓					✓	
366	4.1.1	4.1(1)	4					✓					✓	
367	4.1.1	4.1(2)	4					✓					✓	
368	4.1.1	4.1(3)	4					✓					✓	
369	4.1.1	4.2(1)	4					✓					✓	
370	4.1.1	4.3(1)	5					✓					✓	
371	4.1.1	4.4(1)	5					✓						✓
372	4.1.1	4.5(1)	4					✓						✓
373	4.1.1	4.5(2)	5					✓						✓
374	4.1.1	4.6(1)	4					✓					✓	
375	4.1.1	4.6(2)	4					✓					✓	

2017 Compliance Obligation Ref No.	Licence Reference	Condition	Audit Priority applied [rated 1 (Highest) to 5 (Lowest)]	Adequacy of Controls Rating					Compliance Rating					
				A	B	C	D	NP	1	2	3	4	Na	Nr
376	4.1.1	4.7(1)	4					✓					✓	
377	4.1.1	4.8(3)	4					✓					✓	
378	4.1.1	4.8(3A)	4					✓					✓	
379	4.1.1	4.8(4)(a)	4					✓					✓	
380	4.1.1	4.8(4)(b)	4					✓					✓	
381	4.1.1	4.8(5)	4					✓					✓	
382	4.1.1	4.9	4					✓					✓	
383	4.1.1	5.1 (1)	5					✓					✓	
384	4.1.1	5.1(2)	5					✓					✓	
385	4.1.1	5.3	4					✓					✓	
386	4.1.1	5.4(1)	5					✓					✓	
387	4.1.1	5.4(1A)	5					✓					✓	
388	4.1.1	5.4(2)	5					✓					✓	
389	4.1.1	5.5(2)	4					✓					✓	
390	4.1.1	5.5(2A)	4					✓					✓	
391	4.1.1	5.6(1)	4					✓					✓	
392	4.1.1	5.7	4					✓					✓	
397	4.1.1	5.12(1)	4					✓					✓	
398	4.1.1	5.13	4					✓					✓	
399	4.1.1	5.14(3)	4					✓					✓	
400	4.1.1	5.15	4					✓					✓	
401	4.1.1	5.16	4					✓	✓					
402	4.1.1	5.17(1)	4					✓	✓					
403	4.1.1	5.17A(1)	5					✓					✓	
404	4.1.1	5.17A(3)	5					✓					✓	
405	4.1.1	5.18	4					✓	✓					
406	4.1.1	5.19(1)	5					✓						✓
407	4.1.1	5.19(2)	5					✓	✓					
408	4.1.1	5.19(3)	4					✓						✓
409	4.1.1	5.19(5)	4					✓					✓	
410	4.1.1	5.19(6)	5					✓	✓					
411	4.1.1	5.20(1)	4					✓						✓
412	4.1.1	5.20(2)	4					✓						✓
413	4.1.1	5.20(4)	4					✓						✓
414	4.1.1	5.21(2)	4					✓						✓
415	4.1.1	5.21(4)	4					✓						✓
416	4.1.1	5.21(5)	4					✓					✓	
417	4.1.1	5.21(6)	4					✓						✓
418	4.1.1	5.21(8)	4					✓					✓	

2017 Compliance Obligation Ref No.	Licence Reference	Condition	Audit Priority applied [rated 1 (Highest) to 5 (Lowest)]	Adequacy of Controls Rating					Compliance Rating					
				A	B	C	D	NP	1	2	3	4	Na	Nr
419	4.1.1	5.21(9)	4					✓					✓	
420	4.1.1	5.21(11)	4					✓					✓	
421	4.1.1	5.21(12)	4					✓					✓	
422	4.1.1	5.22(1)	4					✓					✓	
423	4.1.1	5.22(2)	4					✓					✓	
424	4.1.1	5.22(3)	4					✓					✓	
425	4.1.1	5.22(4)	4					✓					✓	
426	4.1.1	5.22(5)	4					✓					✓	
427	4.1.1	5.22(6)	4					✓					✓	
428	4.1.1	5.23(1)	4					✓					✓	
429	4.1.1	5.23(3)	4					✓					✓	
430	4.1.1	5.24(1)	4					✓					✓	
431	4.1.1	5.24(2)	4					✓					✓	
432	4.1.1	5.24(3)	4					✓					✓	
433	4.1.1	5.24(4)	4					✓					✓	
434	4.1.1	5.25	4					✓					✓	
435	4.1.1	5.27	4					✓					✓	
437	4.1.1	5.30(1)	4					✓					✓	
438	4.1.1	5.31(1)	4					✓					✓	
439	4.1.1	5.31(2)	4					✓					✓	
440	4.1.1	5.34(2)	4					✓					✓	
441	4.1.1	5.37(1)(a)	4					✓					✓	
447	4.1.1	6.1(1)	3					✓					✓	
448	4.1.1	6.1(2)	4					✓						✓
448A	4.1.1	6.2	4					✓					✓	
448B	4.1.1	6.18	5					✓					✓	
448C	4.1.1	6.19A(1)	5					✓					✓	
448D	4.1.1	6.19B(1)	4					✓					✓	
449	4.1.1	6.20(4)	5					✓					✓	
450	4.1.1	6.20(5)	5					✓					✓	
451	4.1.1	7.2(1)	4					✓	✓					
452	4.1.1	7.2(2)	4					✓					✓	
453	4.1.1	7.2(4)	4					✓	✓					
454	4.1.1	7.2(5)	4					✓	✓					
455	4.1.1	7.5	4					✓	✓					
456	4.1.1	7.6(1)	5					✓						✓
457	4.1.1	8.1(1)	5					✓						✓
458	4.1.1	8.1(2)	5					✓						✓
459	4.1.1	8.1(3)	4					✓						✓

2017 Compliance Obligation Ref No.	Licence Reference	Condition	Audit Priority applied [rated 1 (Highest) to 5 (Lowest)]	Adequacy of Controls Rating					Compliance Rating					
				A	B	C	D	NP	1	2	3	4	Na	Nr
460	4.1.1	8.1(4)	5					✓						✓
461	4.1.1	8.3(2)	4					✓						✓
Electricity Industry (Network Quality and Reliability of Supply) Code 2005														
462	4.1.1	5(1)	5					✓					✓	
463	4.1.1	8	5					✓					✓	
464	4.1.1	9	5					✓					✓	
465	4.1.1	10(1)	5					✓					✓	
466	4.1.1	10(2)	5					✓					✓	
470	4.1.1	14(8)	4					✓					✓	
471	4.1.1	15(2)	4					✓					✓	
477	4.1.1	23(1)	5					✓					✓	
478	4.1.1	23(2)	4					✓					✓	
479	4.1.1	24(3)	4					✓					✓	
480	4.1.1	24(4)	4					✓					✓	

4.3 Asset Management Review Effectiveness Summary

The asset management system review assessed the effectiveness of the asset management system in delivering the services as required under the operating licence.

The review was conducted utilising the asset management adequacy and performance ratings as outlined in the Audit Guidelines. A summary of the outcomes of the review is provided in Table 4-5. TECH has adequate controls in place for the various asset management system components. Some recommendations and process improvements were identified during this audit but they are considered minor and are not considered needed improvements. Therefore we do not consider a rating of B appropriate for those components.

Table 4-5 Asset Management Review Effectiveness Summary

Asset Management System Component	Asset management process and policy definition adequacy rating	Asset management performance rating
Asset planning	A	1
Asset creation/acquisition	A	1
Asset disposal	A	1
Environmental analysis	A	1
Asset operations	A	1
Asset maintenance	A	1
Asset management information system	A	1
Risk management	A	1
Contingency planning	A	1
Financial planning	A	1
Capital expenditure planning	A	1
Review of AMS	A	1

5 Observations and Recommendations

5.1 Performance Audit

Table 5-1 Performance Audit Observations

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
101	5.3.1	Electricity Industry Act, section 13(1)	A licensee must provide the ERA with a performance audit conducted by an independent expert acceptable to the ERA, not less than once every 24 months.	▪ TECH's EIRL9 licence was granted in 2014. ▪ The original performance audit period was extended by ERA from 24 months to 48 months after the initial granting of the licence in 2014. This Performance Audit is the first occurrence.	▪ EIRL9 version 1 (2014) viewed.	1
102	5.1.1	Electricity Industry Act, section 14(1)(a)	A licensee must provide for an asset management system.	▪ TECH have provided for an effective asset management system to support their physical assets. Further details of TECH's asset management system are included in Table 5-2.	▪ Refer to Table 5-2	1
103	5.1.2 and 5.1.3	Electricity Industry Act, section 14(1)(b)	A licensee must notify details of the asset management system and any substantial changes to it to the ERA.	▪ The asset management system was provided to ERA as part of TECH's licence application. ▪ Details of our asset management effectiveness review are included in Section 5.2. There have been no such substantial changes to the AMS within the audit period. Therefore, the obligation has not been rated for the audit period.	▪ Interview with Troy Forward and Kristian Myhre ▪ SAP Asset Register ▪ SAP Plant Maintenance programs and tasks ▪ SCADA Operations and performance data and outputs ▪ Various Asset Management documentation/Plans/Standards	Nr
104	5.1.4	Electricity Industry Act, section 14(1)(c)	A licensee must provide the ERA with a report by an independent expert about the effectiveness of its asset management system every 24 months, or such longer period as determined by the ERA.	▪ TECH's EIRL9 licence was granted in 2014. ▪ The asset management review period was extended by ERA from 24 months to 48 months after the initial 2014 granting of the licence. ▪ A written report as to the effectiveness of TECH's asset management system will be provided as part	▪ EIRL9 version 1 (2014) viewed.	1

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
				of this Performance Audit i.e. within the required timescales.		
105	4.2.1	Electricity Industry Act, section 17(1) Economic Regulation Authority (Licensing Funding) Regulations 2014	A licensee must pay the prescribed licence fees to the ERA according to clauses 6, 7 and 8 of the *Economic Regulation Authority (Licensing Funding) Regulations 2014.*	▪ Licence fees have been paid. However, the invoice issued in November 2017 was not paid within the 30 days required. ▪ As a result, we have rated this obligation as non-compliant for the audit period. ▪ TECH did not have in place particular controls for paying the licence fees during the audit period and instead relied on its normal accounts payable process for payment of invoices. This process is normally sufficient but there is always potential for both technical glitches and human error in the process. ▪ The missed payment was as a result of the original invoice from ERA being sent directly to an employee who was out of office for an extended period. The ERA system that generates the invoices does not allow for more than one email address in the 'To' field. ▪ Following this incident TECH asked that all invoices be sent to its generic accounts payable email address to avoid similar incidences in future. ▪ In addition, TECH is improving its risk mitigation measures for this obligation, including having in place an independent alert via our contract management system each quarter to check whether invoices have been received and processed.	▪ Tax invoice from ERA to TECH ▪ TECH bank statements ▪ RE Outstanding Invoice ERA 101369 - TEC Hedland Pty Ltd due by 13122017.msg	2
106	4.1.1	Electricity Industry Act, section 31(3)	A licensee must take reasonable steps to minimise the extent, or duration, of any interruption, suspension or restriction of the supply of electricity due to an accident, emergency, potential danger or other unavoidable cause.	▪ TECH have taken reasonable steps to minimise the extent or duration of any unavoidable interruption, suspension or restriction of electricity. ▪ TECH have introduced an Operational Integrity Program to review and identify equipment from a safety aspect (loss of primary containment) to ensure the asset does not fail and does not impact during the review period. ▪ There are strong financial disincentives for any interruptions to supply.	▪ Interview with Troy Forward and Kristian Myhre ▪ PPAs with customers Horizon Power and FMG viewed ▪ Operational Integrity Program documentation	1

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
107	4.1.1	Electricity Industry Act, section 41(6)	A licensee must pay the costs of taking an interest in land or an easement over land.	▪ TECH has complied with this obligation and met all costs associated with interests in land and easements over land. ▪ TECH has included site lease in the rolling forecast and other financial records	▪ Interview with Troy Forward and Kristian Myhre ▪ Horizon Invoice_Lease South Hedland Power Station - Nov 18.pdf ▪ 2018 EBIT Current Rolling Forecast - South Hedland	1
119	4.3.1	Electricity Industry Act, section 11	A licensee and any related body corporate must maintain accounting records that comply with the Australian Accounting Standards Board Standards or equivalent International Accounting Standards.	▪ TECH has complied with the requirements. TECH does not have its own accounting records, the records are prepared for the whole of TransAlta's Australian business. ▪ Accounting records are prepared in accordance with AASB standards. ▪ TransAlta Energy (Australia) Financial Statements 2014, 2015, 2016, 2017 were reviewed. These are signed-off by Ernst & Young as complying with the Australian Accounting Standards. The 2018 annual report that includes the last 6 months of the audit period has not yet been prepared. This is because TECH use a calendar year as its financial year.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TransAlta Financial Statements for calendar years ending 2014, 2015, 2016 and 2017 viewed. ▪ Letter from Ernst & Young regarding satisfactory audit of these documents in accordance with Australian Accounting Standards.	1
121	5.3.2	Electricity Industry Act, section 11	A licensee must comply, and require its auditor to comply, with the ERA's standard audit guidelines for a performance audit.	▪ TECH complies with the ERA's standard audit guidelines dealing with the performance audit. ▪ Cardno has complied with the ERA's standard audit guidelines for a performance audit throughout the audit. ▪ This Performance Audit is the first occurrence for the licensee.	▪ Interview with Troy Forward and Kristian Myhre. ▪ Compliance reports dated 2017 and 2018 viewed. ▪ 20170831_TECHedlandElectricityLicenceComplianceReport.pdf ▪ Letter dated 18 October 2018 from ERA approving TECH audit plan viewed.	1
122	5.1.5	Electricity Industry Act, section 11	A licensee must comply, and must require the licensee's expert to comply, with the relevant aspects of the ERA's standard audit guidelines for an	▪ TECH complies with the ERA's standard audit guidelines dealing with the asset management system review. ▪ Cardno has complied with the ERA's standard audit guidelines for an asset management system review.	▪ Interview with Troy Forward and Kristian Myhre. ▪ Letter dated 18 October 2018 from ERA approving TECH audit plan viewed.	1

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			asset management system review.	▪ This asset management system review is the first occurrence for the licensee.		
123	4.4.1	Electricity Industry Act, section 11	In the manner prescribed, a licensee must notify the ERA, if it is under external administration or if there is a significant change in the circumstances that the licence was granted which may affect the licensee's ability to meet its obligations.	▪ No significant changes in circumstances have occurred over the audit period. ▪ TECH has not been under external administration during the audit period.	▪ Interview with Troy Forward and Kristian Myhre.	1
124	4.5.1	Electricity Industry Act, section 11	A licensee must provide the ERA, in the manner prescribed, with any information that the ERA requires in connection with its functions under the Electricity Industry Act.	▪ TECH is non-compliant with this obligation. TECH failed to provide the data required to calculate the licence standing data charges within the prescribed timeframe, due 30 September 2016, provided 14 October 2016. ▪ TECH clarified the non-compliance with the ERA and notes that the standing data for the year ending 30 June 2018 was provided on 28 August 2017, well in advance of the due date. ▪ TECH has a contract management system that allows reminders to be assigned for obligations and requirements included in contracts and licences.	▪ Interview with Troy Forward and Kristian Myhre. ▪ Compliance reports dated 2017 and 2018 viewed. ▪ 20170831_TECHedlandElectricityLicenceComplianceReport.pdf	2
125	3.8.1 and 3.8.2	Electricity Industry Act, section 11	A licensee must publish any information as directed by the ERA to publish, within the timeframes specified.	▪ TECH has not been directed to publish any information by the ERA during the audit period.	▪ Interview with Troy Forward and Kristian Myhre ▪ Compliance reports dated 2017 and 2018 viewed. ▪ 20170831_TECHedlandElectricityLicenceComplianceReport.pdf	Nr
126	3.7.1	Electricity Industry Act, section 11	All notices must be in writing, unless otherwise specified.	▪ No Notices have been required by the ERA ▪ The licensee has not undertaken any actions that required notifying the ERA in writing.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
127	6.9.1	Electricity Industry	A distributor must create and maintain a Priority Restoration Register.	▪ TECH has had three versions of its EIRL09 licence in place over the duration of the audit period. Under Clause 29 of Version 1, Clause 29 of Version 2 and	▪ Interview with Troy Forward and Kristian Myhre.	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		Act, section 11		Clause 6.9 of Version 3 of the licence, TECH is not required to maintain a priority restoration register. This is because it is not a distributor.	▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	
128	6.9.3	Electricity Industry Act, section 11	The Priority Restoration Register must comply with any criteria determined by the Minister.	▪ TECH has had three versions of its EIRL09 licence in place over the duration of the audit period. Under Clause 29 of Version 1, Clause 29 of Version 2 and Clause 6.9 of Version 3 of the licence, TECH is not required to maintain a priority restoration register. This is because it is not a distributor.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
317	4.1.1	Electricity Industry Metering Code, clause 2.2(1)(a)	A network operator must treat all Code participants that are its associates on an arms-length basis.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
318	4.1.1	Electricity Industry Metering Code, clause 2.2(1)(b)	A network operator must ensure that no Code participant that is its associate receives a benefit in respect of the Code, unless the benefit is attributable to an arm's length application of the Code or is also made available to all other Code	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			participants on the same terms and conditions.		▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
319	4.1.1	Electricity Industry Metering Code, clause 3.1	A network operator must ensure that its meters meet the requirements specified in the applicable metrology procedure and also comply with any applicable specifications or guidelines, including any transitional arrangements, specified by the National Measurement Institute under the National Measurement Act.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
320	4.1.1	Electricity Industry Metering Code, clause 3.2(1)	An accumulation meter must at least conform to the requirements specified in the applicable metrology procedure and display, or permit access to a display of the measurements that are specified in subclauses 3.2(1)(a)(b) using dials, a cyclometer, an illuminated display panel or some other visual means.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
321	4.1.1	Electricity Industry Metering Code, clause 3.3(1)	An interval meter must at least have an interface to allow the interval energy data to be downloaded in the manner prescribed using an interface compatible with the	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			requirements specified in the applicable metrology procedure.		▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
322	4.1.1	Electricity Industry Metering Code, clause 3.3(3)	If a metering installation is required to include a communications link, the link must, where necessary, include a modem and isolation device approved under the relevant telecommunications regulations that allows the interval energy data to be downloaded in the manner prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
323	4.1.1	Electricity Industry Metering Code, clause 3.3A(1)	A network operator must ensure that bi-directional electricity flows do not occur at a metering point unless the metering installation for the metering point is capable of separately measuring and recording electricity flows in each direction.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
324	4.1.1	Electricity Industry Metering	If a user is aware of bi-directional electricity flows at a metering point that was not previously subject to a bi-	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		Code, clause 3.3B	directional flows or any changes in a customer's or user's circumstances in a metering point that will result in bi-directional flows, the user must notify the network operator within 2 business days.		▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
325	4.1.1	Electricity Industry Metering Code, clause 3.3C	An accumulation meter or an interval meter that separately measures and records bi-directional electricity flows at the metering point must record: · the net electricity production transferred into the network that exceeds electricity consumption; and · the net electricity consumption transferred out of the network that exceeds electricity production.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
326	4.1.1	Electricity Industry Metering Code, clause 3.5(1) and (2)	A network operator must ensure that there is a metering installation at every connection point on its network that is not a Type 7 connection point. Unless it is a Type 7 metering installation, the metering installation must meet the functionality requirements prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
327	4.1.1	Electricity Industry Metering Code, clause 3.5(3)	For each metering installation on its network, a network operator must provide, install, operate and, subject to subclause 3.7(5), maintain the metering installation in the manner prescribed, unless otherwise agreed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
328	4.1.1	Electricity Industry Metering Code, clause 3.5(4)	Except for a Type 7 metering installation, a network operator must ensure that the metering point for a revenue metering installation is located as close as practicable to the connection point in accordance with good electricity industry practice.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na
329	4.1.1	Electricity Industry Metering Code, clause 3.5(6)	A network operator may only impose a charge for providing, installing, operating or maintaining a metering installation in accordance with the applicable service level agreement that it has with the user.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
330	4.1.1	Electricity Industry Metering Code,	If a network operator becomes aware that a metering installation does not comply with the Code, it must advise	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		clause 3.5(9)	affected parties of the non-compliance and arrange for the non-compliance to be corrected as soon as practicable.		▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
331	4.1.1	Electricity Industry Metering Code, clause 3.7	All devices that may be connected to a telecommunications network must be compatible with the telecommunications network and comply with all applicable State and Commonwealth enactments.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
332	4.1.1	Electricity Industry Metering Code, clause 3.8	Subject to clause 3.27, a network operator must ensure that each metering installation on its network is secured by devices or methods that hinder unauthorized access and enable unauthorized access to be detected, consistent with the standards of good electricity industry practice.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ Licence Area Plan ERA-EL-140	
333	4.1.1	Electricity Industry Metering Code, clause 3.9(3)	Subject to subclauses 3.9(4), 3.9(5) and 3.9(7), each metering installation must meet at least the requirements for that type of metering installation as specified in Table 3 in Appendix 1 of the Code.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
336	4.1.1	Electricity Industry Metering Code, clause 3.10	A network operator must ensure that any programmable settings in any of its metering installations, data loggers or peripheral devices, which may affect the resolution of displayed or stored data, satisfy the relevant requirements specified in the applicable metrology procedure and comply with any applicable instructions by the National Measurement Institute under the National Measurement Act.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
337	4.1.1	Electricity Industry Metering Code, clause 3.11(1)	A network operator must ensure that a metering installation on its network is operating consistently with good electricity industry practice to measure and record data, and permits the collection of data within the time specified	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			in the applicable service level agreement, for at least the percentages of the year specified.		▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
338	4.1.1	Electricity Industry Metering Code, clause 3.11(2)	If an outage or malfunction occurs to a metering installation, the network operator must repair the metering installation in accordance with the applicable service level agreement.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
339	4.1.1	Electricity Industry Metering Code, clause 3.11(3)	A Code participant who becomes aware of an outage or malfunction of a metering installation must advise the network operator as soon as practicable.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
340	4.1.1	Electricity Industry Metering Code, clause 3.11A(1)	A network operator must ensure that the meters on its network are systematically sampled and tested for accuracy in accordance with AS 1284.13.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
341	4.1.1	Electricity Industry Metering Code, clause 3.11A(2)	Subject to clause 3.11A(3), if a "population" of meters is deemed to have failed under AS 1284.13, the network operator must ensure that all of the meters in that population are removed and replaced with new meters within 3 years of the testing of the population.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
342	4.1.1	Electricity Industry Metering Code, clause 3.12(1)	A network operator must ensure that each metering installation complies with at least the prescribed design requirements.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
343	4.1.1	Electricity Industry Metering Code, clause 3.12(2)	A network operator must ensure that instrument transformers in its metering installations comply with the relevant requirements of any applicable specifications or guidelines, including any transitional arrangements, specified by the National Measurement Institute under the National Measurement Act and any requirements specified in the applicable metrology procedure.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
344	4.1.1	Electricity Industry Metering Code, clause 3.12(3)	A network operator must provide isolation facilities of a standard consistent with good electricity industry practice, to facilitate testing and calibration of the metering installation.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
345	4.1.1	Electricity Industry Metering Code, clause 3.12(4)	A network operator must maintain drawings and supporting information, of a standard consistent with good electricity industry practice, to detail the metering installation for maintenance and auditing purposes.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
346	4.1.1	Electricity Industry Metering Code, clause 3.13(1)	A network operator must procure the user, or the user's customer, to install, or arrange for the installation of, a full check metering installation or partial check metering installation in accordance with the prescribed requirements.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
347	4.1.1	Electricity Industry Metering Code, clause 3.13(3)(c)	A partial check metering installation must be physically arranged in a manner determined by the network operator, acting in accordance with good electricity industry practice.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
348	4.1.1	Electricity Industry Metering Code, clause 3.13(4)	A check metering installation for a metering point must comply with the prescribed requirements.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
349	4.1.1	Electricity Industry Metering Code, clause 3.14(3)	If, under clause 3.14(2), a metering installation uses metering class CTs and VTs that do not comply with the Table 3 in Appendix 1, then the network operator must install meters of a higher class accuracy and/or apply accuracy calibration factors within the meter to compensate for CT and VT errors, in order to achieve the accuracy requirements in Table 3 in Appendix 1.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
355	4.1.1	Electricity Industry Metering Code, clause 3.20(1)	If reasonably requested by a Code participant, a network operator must provide enhanced technology features in a metering installation.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
356	4.1.1	Electricity Industry Metering Code, clause 3.20(3)	A network operator may only impose a charge for the provision of metering installations with enhanced technology features in accordance with its applicable service level agreement with the user.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
357	4.1.1	Electricity Industry Metering Code, clause 3.21(1)	Meters containing an internal real time clock must maintain time accuracy as prescribed. Time drift must be measured over a period of 1 month.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
358	4.1.1	Electricity Industry Metering Code, clause 3.21(2)	If a metering installation includes measurement elements and an internal data logger at the same site, it must include facilities on-site for storing the interval energy data for the periods prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
359	4.1.1	Electricity Industry Metering Code, clause 3.22	A network operator providing one or more metering installations with enhanced technology features must be licensed to use, and access, the metering software applicable to all devices being installed and be able to program the devices and set parameters.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
360	4.1.1	Electricity Industry Metering Code, clause 3.23(a)	Where signals are provided from the meter for the user or the user's customer, a network operator must ensure that signals are isolated by relays or electronic buffers to prevent accidental or malicious damage to the meter.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
361	4.1.1	Electricity Industry Metering Code, clause 3.23(b)	Where signals are provided from the meter for the user or the user's customer, a network operator must provide the user, or the user's customer, with sufficient details of the signal specification to enable compliance with clause 3.23(c) of the Code.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
364	4.1.1	Electricity Industry Metering Code, clause 3.27	A person must not install a metering installation on a network unless the person is the network operator or a registered metering installation provider for the network operator doing the type of work authorised by its registration.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
365	4.1.1	Electricity Industry Metering Code, clause 3.29	A network operator must publish a list of registered metering installation providers, including the prescribed details, and update the list at least annually.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
366	4.1.1	Electricity Industry Metering Code, clause 4.1(1)	A network operator must establish, maintain and administer a metering database containing standing data and energy data for each metering point on its network.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
367	4.1.1	Electricity Industry Metering Code, clause 4.1(2)	A network operator must ensure that its metering database with its associated links, circuits, information storage and processing systems are secured by devices or methods consistent with a good industry practice to hinder unauthorised access and enable unauthorised access to be detected.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
368	4.1.1	Electricity Industry Metering Code, clause 4.1(3)	A network operator must prepare and, if applicable, implement a disaster recovery plan to ensure that it is able, to rebuild the metering database and provide energy data to Code participants within 2 business days after the day of any disaster.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
369	4.1.1	Electricity Industry Metering Code, clause 4.2(1)	A network operator must ensure that its registry complies with the Code and the prescribed clause of the market rules.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
370	4.1.1	Electricity Industry Metering Code, clause 4.3(1)	The standing data for a metering point must comprise at least the items specified.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
371	4.1.1	Electricity Industry Metering Code, clause 4.4(1)	If there is a discrepancy between energy data held in a metering installation and in the metering database, the affected Code participants and the network operator must liaise to determine the most appropriate way to resolve the discrepancy.	▪ No such event has occurred within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
372	4.1.1	Electricity Industry Metering Code, clause 4.5(1)	A Code participant must not knowingly permit the registry to be materially inaccurate.	▪ No such event has occurred within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
373	4.1.1	Electricity Industry Metering	Subject to subclause 5.19(6), if a Code participant, other than a network operator, becomes	▪ No such event has occurred within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		Code, clause 4.5(2)	aware of a change to, or inaccuracy in, an item of standing data in the registry, then it must notify the network operator and provide details of the change or inaccuracy within the timeframes prescribed.			
374	4.1.1	Electricity Industry Metering Code, clause 4.6(1)	If the network operator is notified of a change to, or inaccuracy in, an item of standing data by a Code participant that is the designated source for the item of standing data under Table 2 in clause 4.3(1), then the network operator must update the registry to reflect the change to, or correct the inaccuracy in, the standing data.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
375	4.1.1	Electricity Industry Metering Code, clause 4.6(2)	If a network operator is notified of a change to, or inaccuracy in, an item of standing data by a Code participant which is not the designated source for the item of standing data, or otherwise becomes aware of a change to or inaccuracy in an item of standing data, then the network operator must undertake investigations to the standard of good electricity industry practice to determine whether the registry should be updated, and update the registry as required.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
376	4.1.1	Electricity Industry Metering Code, clause 4.7(1)	If standing data for a metering point is updated in the registry, the network operator must, within 2 business days after the update (or such other time as is specified in the applicable service level agreement) notify the update to the current user and each previous user, if the updated standing data relates to a period or periods when the previous user was the current user.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
377	4.1.1	Electricity Industry Metering Code, clause 4.8(3)	A network operator must allow a user who is a retailer or a generator to have local and, where a suitable communications link is installed, remote access to the energy data for metering points at its associated connection points, using a password provided by the network operator that provides 'read only' access.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
378	4.1.1	Electricity Industry Metering Code, clause 4.8(3A)	A network operator must allow a user who is a retailer or a generator to have access to data held in its metering database for metering points at its associated connection points, by means of a website, or otherwise by remote access to a "data storage device" as that expression is defined in the	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			Electronic Transactions Act 2003), using a password provided by the network operator which provides 'read only' access.		▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
379	4.1.1	Electricity Industry Metering Code, clause 4.8(4)(a)	A network operator must have devices and methods in place to ensure that energy data held in its metering installation is secured from unauthorised local or remote access using the methods prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na
380	4.1.1	Electricity Industry Metering Code, clause 4.8(4)(b)	A network operator must have devices and methods in place to ensure that the data held in its metering database is secured from unauthorised local, or remote, access using the methods prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
381	4.1.1	Electricity Industry Metering Code, clause 4.8(5)	Without limiting subclause 4.8(4), a network operator must ensure that electronic passwords and other electronic security controls are only issued to the specified authorised personnel and otherwise keep its records of electronic passwords, and other electronic security	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			controls, secure from unauthorised access.		▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
382	4.1.1	Electricity Industry Metering Code, clause 4.9	A network operator must retain energy data in its metering database for each metering point on its network, including any energy data that has been replaced under subclause 5.24, for at least the periods, and with the level of accessibility, prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
383	4.1.1	Electricity Industry Metering Code, clause 5.1 (1)	A network operator must use all reasonable endeavours to accommodate another Code participant's requirement to obtain a metering service and requirements in connection with the negotiation of a service level agreement.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
384	4.1.1	Electricity Industry Metering Code, clause 5.1(2)	Without limiting subclause 5.1(1), a network operator must expeditiously and diligently process all requests for a service level agreement and negotiate its terms in good faith, and, to the extent reasonably practicable in accordance with good electricity industry practice, permit a Code participant to acquire a metering service containing only those elements of the metering service which the Code participant wishes to acquire.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
385	4.1.1	Electricity Industry Metering Code, clause 5.3	A network operator must, for each metering point on its network, obtain energy data from the metering installation and transfer the energy data into its metering database by no later than 2 business days after the date for the scheduled meter reading for the metering point (or such other time as is specified in the applicable service level agreement).	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
386	4.1.1	Electricity Industry Metering Code, clause 5.4(1)	A network operator must, for each meter on its network, at least once in every 12 month period undertake a meter reading that provides an actual value that passes the validation processes in Appendix 2.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
387	4.1.1	Electricity Industry Metering Code, clause 5.4(1A)	The meter reading referred to in clause 5.4(1) must not be undertaken by the customer associated with the meter, and must be undertaken by a person who is employed or appointed by the network operator and who is suitably skilled in accordance with good electricity industry practice to carry out meter readings.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
388	4.1.1	Electricity Industry Metering Code, clause 5.4(2)	A user must, when reasonably requested by a network operator, assist the network operator to comply with the network operator's obligation under subclause 5.4(1).	▪ TECH has received no such request from the network operator. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
389	4.1.1	Electricity Industry Metering Code, clause 5.5(2)	Subject to subclause 5.5(2A)(b), a network operator may impose a charge for the provision of data, but only if a user has requested the energy data to the extent permitted by, and in accordance with the applicable service level agreement between it and the user, and if a customer has given a direction under	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			subclause 5.17A(1), in accordance with the prescribed conditions.		▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
390	4.1.1	Electricity Industry Metering Code, clause 5.5(2A)	A network operator must not impose a charge for the provision of standing data and for the provision of energy data if another enactment prohibits it doing so.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
391	4.1.1	Electricity Industry Metering Code, clause 5.6(1)	Subject to subclause 5.6(2), a network operator must provide validated, and where necessary, substituted or estimated energy data for a metering point to the user for the metering point and the IMO within the timeframes prescribed in subclause 5.6(1)(2).	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
392	4.1.1	Electricity Industry Metering Code, clause 5.7	If a replacement energy data value is inserted in a metering database for a metering point, the network operator must provide replacement energy	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			data to the user for the metering point and the IMO within the timeframes prescribed.		▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
397	4.1.1	Electricity Industry Metering Code, clause 5.12(1)	If a user gives a network operator an energy data request for a metering point in accordance with the communication rules, and the energy data request relates only to a time or times for which the user was the current user at the metering point, then the network operator must provide a user with a complete set of energy data for the metering point within the timeframes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
398	4.1.1	Electricity Industry Metering Code, clause 5.13	If the current user for a metering point gives the network operator a standing data request for the metering point in accordance with the communication rules then the network operator must provide the current user with a complete current set of standing data for a metering point and advise whether there is a communications link for the metering point, within the timeframes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
399	4.1.1	Electricity Industry Metering Code, clause 5.14(3)	If a user makes a bulk standing data request, the network operator must in accordance with the communication rules, acknowledge receipt of the request and provide the requested standing data within the timeframes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
400	4.1.1	Electricity Industry Metering Code, clause 5.15	If a network operator provides energy data to a user or the IMO it must also provide the date of the meter reading in accordance with the requirements specified.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
401	4.1.1	Electricity Industry Metering Code, clause 5.16	If a user collects or receives energy data from a metering installation then the user must provide the network operator with the energy data (in accordance with the communication rules) within the timeframes prescribed.	▪ TECH collects data at the request of Horizon Power (as the network operator) for the purposes of the metering code. The data has been provided within the timeframes prescribed. ▪ TECH only collects data from its own metering installation and that this data is provided to Horizon Power as part of the invoicing process under the PPA. Horizon Power separately collects data from its own metering installation which sits at the Horizon Power side of the connection. TECH is not	▪ Interview with Troy Forward and Kristian Myhre.	1

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
				in any way involved with collection of data from Horizon Power's metering installation. ▪ Horizon Power does not issue any verification of continued compliance and only breaches are recorded in writing.		
402	4.1.1	Electricity Industry Metering Code, clause 5.17(1)	A user must provide standing data and validated, and where necessary substituted or estimated, energy data to the user's customer to which that information relates where the user is required by an enactment or an agreement to do so for billing purposes or for the purpose of providing metering services to the customer.	▪ TECH has complied with the requirements. ▪ TECH only collects data from its own metering installation and that this data is provided to Horizon Power as part of the invoicing process under the PPA. Horizon Power separately collects data from its own metering installation which sits at the Horizon Power side of the connection. TECH is not in any way involved with collection of data from Horizon Power's metering installation. ▪ The only meter and National Metering Identifier (NMI) related to TECH are those for the SHPS. TECH is not involved with retailing activities and, as such, it does not have anyone to pass on standing data or energy data to. ▪ Horizon Power does not issue any verification of continued compliance and only breaches are recorded in writing.	▪ Interview with Troy Forward and Kristian Myhre.	1
403	4.1.1	Electricity Industry Metering Code, clause 5.17A(1)	A network operator must provide data for a metering point from its metering database to a person if (and to the extent that) the customer associated with the metering point gives the network operator a direction to do so that complies with subclause 5.17A(2).	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
404	4.1.1	Electricity Industry Metering Code, clause 5.17A(3)	A network operator must comply with a direction under subclause 5.17A(1) within the timeframes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
405	4.1.1	Electricity Industry Metering Code, clause 5.18	If a user collects or receives information regarding a change in the energisation status of a metering point then the user must provide the network operator with the prescribed information, including the stated attributes, within the timeframes prescribed.	▪ TECH collects information regarding the energisation at the request of Horizon Power (as the network operator) for the purposes of the metering code. ▪ TECH does not have any retail customers and the only connection point TECH is involved with is the one for the SHPS. The SHPS was commissioned during the licence audit period and the metering point was energised during this period. ▪ Energisation of the connection point was done in close co-operation with Horizon Power and the connection point has not changed status since. ▪ Going forwards, it is very unlikely that the connection point will be de-energised, although it is possible. What is more likely is that equipment behind the connection point may be re-configured and this may lead to a need to re-test / recommission equipment that is part of the connection point.	▪ Interview with Troy Forward and Kristian Myhre.	1
406	4.1.1	Electricity Industry Metering Code,	A user must, when requested by the network operator acting in accordance with good electricity industry practice, use reasonable endeavours to	▪ No requests have been made by the network operator during the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		clause 5.19(1)	collect information from customers, if any, that assists the network operator in meeting its obligations described in the Code and elsewhere, and provide that information to the network operator.			
407	4.1.1	Electricity Industry Metering Code, clause 5.19(2)	A user must, to the extent that it is able, collect and maintain a record of the prescribed information in relation to the site of each connection point with which the user is associated.	▪ TECH has complied with the requirements. ▪ The prescribed information is contained in various documents between Horizon Power and TECH, including the Dispatch and Operating Procedure and the PPA. TECH only has one connection point and these details are unlikely to ever change.	▪ Interview with Troy Forward and Kristian Myhre ▪ PPAs between TECH and Horizon Power	1
408	4.1.1	Electricity Industry Metering Code, clause 5.19(3)	Subject to subclauses 5.19(3A) and 5.19(6), the user must, within 1 business day after becoming aware of any change in an attribute described in subclause 5.19(2), notify the network operator of the change.	▪ TECH has not been aware of any change in attribute. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
409	4.1.1	Electricity Industry Metering Code, clause 5.19(5)	A network operator must give notice to a user, or (if there is a different current user) the current user, acknowledging receipt of any customer, site or address attributes from the user within the timeframes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
410	4.1.1	Electricity Industry Metering Code, clause 5.19(6)	The user must use reasonable endeavours to ensure that it does not notify the network operator of a change in an attribute described in subclause 5.19(2) that results from the provision of standing data by the network operator to the user.	▪ TECH has complied with the requirements. ▪ Unlike Wester Power, the network operator for the SWIS, Horizon Power, the NWIS network operator, does not have automated systems in place that can be affected by 'loop' scenarios. ▪ TECH only has a single connection point and has stated that it would always elect to send such notices (about changes to standing data) in a more manual way, e.g. by email.	▪ Interview with Troy Forward and Kristian Myhre	1
411	4.1.1	Electricity Industry Metering Code, clause 5.20(1)	A network operator must, by not later than 6 months after the date this Code applies to the network operator, develop, in accordance with the communication rules, an Energy Data Verification Request Form.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
412	4.1.1	Electricity Industry Metering Code, clause 5.20(2)	An Energy Data Verification Request Form must require a Code participant to provide the information prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
413	4.1.1	Electricity Industry Metering Code, clause 5.20(4)	If a Code participant requests verification of energy data under subclause 5.20(3), the network operator must, in accordance with the metrology procedure: subject to subclause 5.20(5), use reasonable endeavours to verify energy data; and inform the requesting Code participant of the result of the verification and provide the verified energy data to that Code participant within the timeframes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
414	4.1.1	Electricity Industry Metering Code, clause 5.21(2)	A network operator must comply with any reasonable request under subclause 5.21(1).	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
415	4.1.1	Electricity Industry Metering Code, clause 5.21(4)	A test or audit under subclause 5.21(1) is to be conducted in accordance with the metrology procedure and the applicable service level agreement.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
416	4.1.1	Electricity Industry Metering Code, clause 5.21(5)	A Code participant must not request a test or audit under subclause 5.21(1) unless the Code participant is a user and the test or audit relates to a time or times at which the user was the current user or the Code participant is the IMO.	▪ TECH has not requested a test or audit during the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
417	4.1.1	Electricity Industry Metering Code, clause 5.21(6)	A Code participant must not make a request under subclause 5.21(1) that is inconsistent with any access arrangement or agreement.	▪ TECH has not requested a test or audit during the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
418	4.1.1	Electricity Industry Metering Code, clause 5.21(8)	A network operator may only impose a charge for the testing of the metering installations, or auditing of information from the meters associated with the metering installations, or both, in accordance with the applicable service level agreement between it and the user.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
419	4.1.1	Electricity Industry Metering	Any written service level agreement entered into under subclause 5.21(7) must include	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		Code, clause 5.21(9)	a provision that no charge is to be imposed if the test or audit reveals a non-compliance with this Code.		▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
420	4.1.1	Electricity Industry Metering Code, clause 5.21(11)	If a test or audit shows that the accuracy of the metering installation or information from the meter associated with the metering installation does not comply with the requirements under this Code, the network operator must advise the affected parties as soon as practicable of errors detected under a test or audit, the possible duration of the errors, and must restore the accuracy of the metering installation in accordance with the applicable service level agreement.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
421	4.1.1	Electricity Industry Metering Code, clause 5.21(12)	The original stored error correction data in a meter must not be altered except during accuracy testing and calibration of a metering installation.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
422	4.1.1	Electricity Industry Metering Code, clause 5.22(1)	A network operator must validate energy data in accordance with this Code applying, as a minimum, the prescribed rules and procedures set out in Appendix 2 and must, where necessary, substitute and estimate energy data under this Code applying, as a minimum, the prescribed rules and procedures set out in Appendix 3.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
423	4.1.1	Electricity Industry Metering Code, clause 5.22(2)	The network operator must use check metering data, where available, to validate energy data provided that the check metering data has been appropriately adjusted for differences in metering installation accuracy in accordance with subclause 3.13.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
424	4.1.1	Electricity Industry Metering Code,	If a check meter is not available or energy data cannot be recovered from the metering installation within the time required under this Code, then	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		clause 5.22(3)	the network operator must prepare substitute values using a method contained in Appendix 3 and agreed where necessary with the relevant Code participants.		▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
425	4.1.1	Electricity Industry Metering Code, clause 5.22(4)	If a network operator detects a loss of energy data or incorrect energy data from a metering installation, it must notify each affected Code participant of the loss or error within 24 hours after detection.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
426	4.1.1	Electricity Industry Metering Code, clause 5.22(5)	Substitution or estimation of energy data is required when energy data is missing, unavailable or corrupted, including in the circumstances described in this subclause.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
427	4.1.1	Electricity Industry Metering Code, clause 5.22(6)	A network operator must review all validation failures before undertaking any substitution.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
428	4.1.1	Electricity Industry Metering Code, clause 5.23(1)	If a network operator determines that there is no possibility of determining an actual value for a metering point, then the network operator must designate an estimated or substituted value for the metering point to be a deemed actual value for the metering point.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
429	4.1.1	Electricity Industry Metering Code, clause 5.23(3)	If a network operator has designated a deemed actual value for a metering point then the network operator must repair or replace the meter or one or more of components of metering equipment (as appropriate) at the metering point and subclauses 5.24(3(c) and 5.24(4) apply in respect of	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			the estimated or substituted value which was designated to be the deemed actual value.		▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
430	4.1.1	Electricity Industry Metering Code, clause 5.24(1)	If a network operator uses an actual value (first value) for energy data for a metering point, and a better quality actual or deemed actual value is available (second value), the network operator must replace the first value with the second value if doing so would be consistent with good electricity industry practice.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
431	4.1.1	Electricity Industry Metering Code, clause 5.24(2)	If a network operator uses a deemed actual value (first value) for energy data for a metering point, and a better quality deemed actual value is available (second value), then the network operator must replace the first value with the second value if doing so would be consistent with good electricity industry practice.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
432	4.1.1	Electricity Industry Metering Code, clause 5.24(3)	If a network operator uses an estimated or substituted value (first value) for energy data for a metering point, and a better quality actual, deemed, estimated or substituted value is available (second value), then the network operator must replace the first value with the second value if doing so would be consistent with good electricity industry practice or the user and its customer jointly request it to do so.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
433	4.1.1	Electricity Industry Metering Code, clause 5.24(4)	A network operator (acting in accordance with good electricity industry practice) must consider any reasonable request from a Code participant for an estimated or substituted value to be replaced under subclause 5.24.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
434	4.1.1	Electricity Industry Metering Code, clause 5.25	A network operator must ensure the accuracy of estimated energy data in accordance with the methods in its metrology procedure and ensure that any transformation or processing of data preserves its accuracy in accordance with the metrology procedure.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
435	4.1.1	Electricity Industry Metering Code, clause 5.27	Upon request from a network operator, the current user for a connection point must provide the network operator with customer attribute information that it reasonably believes are missing or incorrect within the timeframes prescribed.	▪ TECH has received no such request. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na
437	4.1.1	Electricity Industry Metering Code, clause 5.30(1)	If a network operator makes an election under subclause 5.28 in relation to the network, then the parties must enter into an agreement in relation to the network, which must deal with at least the matters prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
438	4.1.1	Electricity Industry Metering Code, clause 5.31(1)	If a network operator makes an election under subclause 5.28 in relation to a network, the electricity networks corporation must assess the compliance of each metering installation in the network with this Code and notify the electing network	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
			operator of each non-compliant metering installation.		▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
439	4.1.1	Electricity Industry Metering Code, clause 5.31(2)	For each non-compliant metering installation notified under subclause 5.31(1)(b), the electing network operator may, by notice to the electricity networks corporation, require the electricity networks corporation to upgrade a non-compliant metering installation, in which case the electricity networks corporation must undertake the upgrade in accordance with the metering data agency agreement and good electricity industry practice.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
440	4.1.1	Electricity Industry Metering Code, clause 5.34(2)	Except to the extent that the metering data agency agreement provides otherwise, the costs which may be recovered by the electricity networks corporation under subclause 5.34(1) must not exceed the amounts prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
441	4.1.1	Electricity Industry Metering Code, clause 5.37(1)(a)	A network operator must for the year ending on each 30 June, prepare a report setting out the information listed in subclause 5.37(2) for each metering service it was requested during the year to provide or scheduled during the year to carry out.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
447	4.1.1	Electricity Industry Metering Code, clause 6.1(1)	A network operator must, in relation to its network, comply with the agreements, rules, procedures, criteria and processes prescribed.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
448	4.1.1	Electricity Industry Metering Code, clause 6.1(2)	A user must, in relation to a network on which it has an access contract, comply with the rules, procedures, agreements and criteria prescribed.	▪ In relation to the Metrology procedure, communication rules and mandatory link criteria, TECH's metering equipment is installed on the TECH side of the fence and is used for its own purposes. The official metering (to which the NMI is attached) is installed on the Horizon Power side of the fence and owned and operated by Horizon Power. As the official metering equipment is owned and operated by Horizon Power, TECH is not involved with activities under these documents,	▪ Interview with Troy Forward and Kristian Myhre.	NR

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
				including obtaining and communicating metering reads. ▪ There is no Service Level Agreement in place between TECH and Horizon Power. ▪ As no activity took place during the audit period with regard to this obligation, the obligation has not been rated.		
448A	4.1.1	Electricity Industry Metering Code, clause 6.2	A network operator must, as soon as practicable and in any event no later than 6 months after the date this Code applies to it, submit to the ERA for its approval the prescribed documents in subclauses 6.2(a)-(d).	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
448B	4.1.1	Electricity Industry Metering Code, clause 6.18	A network operator must publish the document within 10 business days after notification of the ERA's approval under subclauses 6.13(1)(a)(i), 6.16 or 6.17.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
448C	4.1.1	Electricity Industry Metering Code, clause 6.19A(1)	A network operator must publish its communication rules as soon as practicable, and in any event within 6 months after the date this Code applies to it.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
448D	4.1.1	Electricity Industry Metering Code, clause 6.19B(1)	Once communication rules have been published for a network under clause 6.19A, or amended under clause 6.21(3), the communication rules may only be amended thereafter in accordance with the communication rules made under subclause 6.7(1)(k) or clause 6.19C.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
449	4.1.1	Electricity Industry Metering Code, clause 6.20(4)	A network operator must amend any document in accordance with the ERA's final recommendation.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
450	4.1.1	Electricity Industry Metering Code, clause 6.20(5)	The network operator must publish any document that has been amended under subclause 6.20(4).	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	Na
451	4.1.1	Electricity Industry Metering Code, clause 7.2(1)	Code participants must use reasonable endeavours to ensure that they can send and receive a notice by post, facsimile and electronic communication and must notify the network operator of a telephone number for voice communication in connection with the Code.	▪ TECH has complied with the requirements. Email, phone and postal address are available.	▪ Interview with Troy Forward and Kristian Myhre.	1
452	4.1.1	Electricity Industry Metering Code, clause 7.2(2)	A network operator must notify each Code participant of its initial contact details and of any change to its contact details at least 3 business days before the change takes effect.	▪ TECH is not a network operator. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
					▪ TECH's licence EIRL9, Version 1 (15 October 2014) ▪ Licence Area Plan ERA-EL-141 ▪ Licence Area Plan ERA-EL-140	
453	4.1.1	Electricity Industry Metering Code, clause 7.2(4)	If requested by a network operator with whom it has entered into an access contract, the Code participant must notify its contact details to a network operator within 3 business days after the request.	▪ TECH has complied with this obligation. A request for information was received on the 10 May 2017 from network operator) response issued to the network operator on 15 May 2017, 3 business days later.	▪ Interview with Troy Forward and Kristian Myhre.	1
454	4.1.1	Electricity Industry Metering Code, clause 7.2(5)	A Code participant must notify any affected network operator of any change to the contact details it notified to the network operator under subclause 7.2(4) at least 3 business days before the change takes effect.	▪ TECH has complied with this obligation. Change of contact details were issued to Horizon Power in December 2016.	▪ Interview with Troy Forward and Kristian Myhre.	1
455	4.1.1	Electricity Industry Metering Code, clause 7.5	A Code participant must subject to subclauses 5.17A and 7.6 not disclose, or permit the disclosure of, confidential information provided to it under or in connection with the Code and may only use or reproduce confidential information for the purpose for which it was disclosed or another purpose contemplated by the Code.	▪ TECH has not disclosed or permitted the disclosure of confidential information.	▪ Interview with Troy Forward and Kristian Myhre	1
456	4.1.1	Electricity Industry Metering Code, clause 7.6(1)	A Code participant must disclose or permit the disclosure of confidential information that is required to be disclosed by the Code.	▪ TECH has not been required to disclose or permit the disclosure of confidential information that is required to be disclosed by the Code during the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre	Nr

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
457	4.1.1	Electricity Industry Metering Code, clause 8.1(1)	If any dispute arises between any Code participants then (subject to subclause 8.2(3)) representatives of disputing parties must meet within 5 business days after a notice given by a disputing party to the other disputing parties and attempt to resolve the dispute by negotiations in good faith.	▪ There have been no disputes between Code participants within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
458	4.1.1	Electricity Industry Metering Code, clause 8.1(2)	If a dispute is not resolved within 10 business days after the dispute is referred to representative negotiations, the disputing parties must refer the dispute to a senior management officer of each disputing party who must meet and attempt to resolve the dispute by negotiations in good faith.	▪ There have been no disputes between Code participants within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
459	4.1.1	Electricity Industry Metering Code, clause 8.1(3)	If the dispute is not resolved within 10 business days after the dispute is referred to senior management negotiations, the disputing parties must refer the dispute to the senior executive officer of each disputing party who must meet and attempt to resolve the dispute by negotiations in good faith.	▪ There have been no disputes between Code participants within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
460	4.1.1	Electricity Industry Metering Code, clause 8.1(4)	If the dispute is resolved by representative negotiations, senior management negotiations or CEO negotiations, the disputing parties must prepare a written and signed record of the resolution and adhere to the resolution.	▪ There have been no disputes between Code participants within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
461	4.1.1	Electricity Industry Metering Code, clause 8.3(2)	The disputing parties must at all times conduct themselves in a manner which is directed towards achieving the objective in subclause 8.3(1).	▪ There have been no disputes between Code participants within the audit period. Therefore, this obligation has not been rated.	▪ Interview with Troy Forward and Kristian Myhre.	Nr
462	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 5(1)	A distributor or transmitter must, so far as reasonably practicable, ensure that electricity supply to a customer's electrical installations complies with prescribed standards.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
463	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 8	A distributor or transmitter must, so far as reasonably practicable, disconnect the supply of electricity to installations or property in specified circumstances, unless it is in the interest of the customer to maintain the supply.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
464	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 9	A distributor or transmitter must, as far as reasonably practicable, ensure that the supply of electricity is maintained and the occurrence and duration of interruptions is kept to a minimum.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
465	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 10(1)	A distributor or transmitter must, so far as reasonably practicable, reduce the effect of any interruption on a customer.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
466	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 10(2)	A distributor or transmitter must consider whether, in specified circumstances, it should supply electricity by alternative means to a customer who will be affected by a proposed interruption.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
470	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 14(8)	A distributor or transmitter must, on request, provide to an affected customer a free copy of an instrument issued by the Minister and of any notice given under section 14(7) of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
471	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005,	A distributor or transmitter that agrees with a customer to exclude or modify certain provisions must set out the advantages and disadvantages to the customer of doing so in their agreement.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015)	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		clause 15(2)			▪ TECH's licence EIRL9, Version 1 (15 October 2014)	
477	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 23(1)	A distributor or transmitter must take all such steps as are reasonably necessary to monitor the operation of its network to ensure compliance with specified requirements.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
478	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 23(2)	A distributor or transmitter must keep records of information regarding its compliance with specific requirements for the period specified.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
479	4.1.1	Electricity Industry (Network Quality and Reliability of Supply) Code 2005, clause 24(3)	A distributor or transmitter must complete a quality investigation requested by a customer in accordance with specified requirements.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre. ▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	Na
480	4.1.1	Electricity Industry (Network Quality and	A distributor or transmitter must report the results of an investigation to the customer concerned.	▪ TECH is not a distributor or a transmitter. Therefore, this obligation has been rated as not applicable.	▪ Interview with Troy Forward and Kristian Myhre.	Na

2018 No.	Licence Condition	Obligations under Condition	Description	Observations	TECH Evidence	Compliance Rating
		Reliability of Supply) Code 2005, clause 24(4)			▪ TECH's licence EIRL9, Version 3 (1 July 2018) ▪ TECH's licence EIRL9, Version 2 (1 July 2015) ▪ TECH's licence EIRL9, Version 1 (15 October 2014)	

5.2 Asset Management System Review

Table 5-2 provides detailed commentary based on the findings observed during the audit process.

Table 5-2 Asset Management System Review Observations

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
Asset Planning – Overall Rating: A1		
▪ Asset management plan covers key requirements ▪ Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning ▪ Service levels are defined ▪ Non-asset options (eg, demand management) are considered ▪ Lifecycle costs of owning and operating assets are assessed ▪ Funding options are evaluated ▪ Costs are justified and cost drivers identified ▪ Likelihood and consequences of asset failure are predicted ▪ Plans are regularly reviewed and updated	**Overview** ▪ All TECH's assets are located at the South Hedland Power Station (SHPS). The majority of these assets were installed within the review period as part of the construction of the new power station. ▪ SHPS's assets are all generation assets. There are no transmission or distribution assets. ▪ Assets are managed in accordance with TransAlta's asset management framework. ▪ SHPS was constructed based on contracts with Horizon Power and the Pilbara Infrastructure Pty Ltd (a subsidiary of the Fortescue Metals Group) (FMG) ▪ There are a number of assets that were existing prior to the review period, and not part of the new power station construction project. These include raw water supply and storage, demineralised water treatment plant and storage, water distribution systems, 415V room, 11KV room and associated distribution systems, diesel fuel storage farm, loading facilities and fuel forwarding systems and oily water systems. These assets are now part of the SHPS facility. ▪ A smaller power station owned and operated by APR was located on the same site as the SHPS in the interim period while the SHPS was being constructed. Once the IHI built SHPS facility was constructed, the APR assets were largely decommissioned and removed. Some assets have been left in situ and may be used in future expansion of the SHPS. ▪ The electricity generated at SHPS is supplied on Horizon Power's transmission and distribution network. **Asset Management Plans** ▪ TECH has developed a Strategic Asset Management Plan (SAMP) during the review period. The TECH SAMP defines the activities required over the life of the asset to achieve the strategic objectives and desired customer levels of service. The plan represents an integrated view of financial, commercial, human resources, operations, maintenance and engineering perspective required to manage the facility. ▪ The SAMP was prepared in a different format to the SAMPs developed for TransAlta's other WA facilities. As a result, the SHPS SAMP was not approved and is currently being modified to fit into the same format as the other facilities.	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ Life Cycle Planning 20110201.ppt presentation viewed. ▪ 2019 Australia Budget Timelines memo, dated 16 July 2018, viewed. ▪ Budget Process PowerPoint, dated June 2017, viewed. ▪ Australia 2018 L01.xlsx long range forecast spreadsheet viewed ▪ AFE Policy document viewed. ▪ AFE (Authorisation For Expenditure) Standards document viewed ▪ Capital Actuals June 18.xlsx spreadsheet viewed. Shows actuals and forecast capital spend

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ The SAMP has been developed to be consistent with the requirements of PAS 55. ▪ The relationship between organisational level and asset integration focus is illustrated in Figures 4 in the SAMP. This establishes the responsibilities for the different asset management levels and the systems, processes, procedures and other key documentation. ▪ Maintenance and operational works are assigned to site maintenance and operational teams and carried out by them. Other functions are not clearly assigned, but it is an understanding that most of these are handled by head office teams. ▪ The SAMP has a review process set up in Total Safety Documents, the corporate system. The next review of the document is due in 2021. The review of the SAMP is completed every 3 years. **Stakeholder Requirements** ▪ TECH has PPAs with Horizon Power and FMG. Performance guarantees under the PPA contract terms are set out in the SAMP. ▪ The PPAs are structured as capacity-based PPAs, with some variable operational and maintenance charges included in the contract. ▪ TECH's SAMP acknowledges that operating and maintenance strategies will need to be modified if there are changes to the PPAs depending on the extent of Horizon Power's and FMG's operations into the future. Depending on the future operating scenarios, this may involve moving major maintenance events, reducing operating spares, changing duty/standby programs and decommissioning plant to meet changing demand. ▪ Appropriate capital and operating plans and budgets will be developed by TECH depending on the future energy requirements of its customers. **Levels of Service** ▪ Levels of Service are covered under the Horizon Power Technical Rules for the NWIS. The PPA between TECH and Horizon Power requires TECH to comply with the Technical Rules. The Technical Rules are owned by Horizon Power and included as an annexure to the PPA. ▪ The PPA includes dispatch and operational requirements and provide the operational context of how TECH need to operate the SHPS in order to provide the necessary electricity to Horizon Power. ▪ Heat rates are required to be maintained at the optimum level through sound operating and maintenance practices.	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ PPA obligations are managed through the Australian Contract Management System Database. This database is set up to provide automatic notifications to the relevant owners, with an escalation mechanism to ensure the obligations are met. ▪ The PPAs specifies availability targets for the SHPS and there are financial incentives for meeting the targets. ▪ In addition to the requirements of the contracts, TECH has internal performance indicators for gas turbine trip reliability, Root Cause Analysis (RCA) investigations and the Injury Frequency Rate (IFR). Safety KPIs are developed each year as part of TransAlta's "Target Zero Initiative" and business planning. **Asset Planning Processes** ▪ The construction of the SHPS went through TransAlta's capital planning, risk and financial processes, as for all its capital projects. A Go/No Go process was used to assess the risks and benefits. The project was managed through TransAlta's Management of Change (MOC) process to completion. Part of the MOC process included optioneering to assess different options to meet Horizon Power's requirements included in its request for Expressions of Interest. ▪ TransAlta corporate has well-developed and documented asset management criteria, procedures and planning requirements which are applied across all of TransAlta's assets, including TECH's. ▪ Performance of existing assets are regularly monitored and checked against expected performance – underperforming assets are flagged for critical review for remedial actions and/or ultimately for disposal if justified. ▪ Investments for new assets are critically reviewed in accordance with TransAlta's asset investment / asset creation criteria, including financial considerations, technology choices, technical alternatives, operations and maintenance considerations, etc. ▪ Asset replacements are based on asset performance, in many instances utilising hours run. This is monitored regularly. As with new assets, the justification for asset retirement is strictly considered and takes into account not only financial factors, but technological, environmental, commercial / legal and relative benefit, comparing continuation of operating and maintaining the underperforming asset versus replacing it. ▪ TECH has a full governance structure across the development and finance for new projects. This is set out in the SAMP. ▪ For new asset projects, costs, risks, rate of return requirements, funding and approval processes are assessed. Once a project has been approved, it goes through the corporate processes to form the arrangements for that specific project, e.g. expenditure and contract term sheets for the business unit responsible, legal and tax	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	implications, etc. There are also approval processes for international approval as Canadian laws, under which TransAlta's global business operate, differ from Australian laws that there Australian operations are subject to. ▪ Projects are screened to look at options and to assess risks, timeframes and technology in order to arrive at the best solution. Hybrid solutions are also considered. Typically asset projects are funded from TECH's balance sheet or from debt equity. ▪ Designs for plant augmentation and remedial work are typically done in-house (using TransAlta's corporate engineering and technical resources) but are also commonly outsourced to engineering companies who specialise in the various services and/or directly to competitive OEM's for new / significant asset modifications or additions. ▪ External independent consultants are used to prepare and/or confirm financial models, performance analysis, comparisons between different technical solutions, preparation of tender documents, vetting of options analysis etc. **Lifecycle Costs and Funding** ▪ The plant has a nominal 25 year asset life, and so is currently forecast to expire in 2042. ▪ Full lifecycle costs are included in the project development. TECH uses TransAlta's corporate gateway processes for approval of the project through the different stages before it is added to the approved capital program. ▪ TECH have a detailed short-term forecast for the next three years. The long-term forecast goes out to 2038 although this is not as detailed as is expected. TECH interacts with its customers to develop its future asset planning and identify the future asset portfolio. ▪ Lifecycle costs are taken into consideration when assessing new assets. ▪ Capital expenditure is analysed on a global basis across all of TransAlta's operations, including those in Australia. The assets are compared on an asset by asset basis, using normalised ranking methods. Costs, risks, timing and other considerations are factored. ▪ Capital funds are sourced from TransAlta in Canada.	
Asset Creation and Acquisition – Overall Rating: A1		
▪ Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	▪ Requests for new assets are generally driven directly by customer needs. Utilisation of assets is assessed in order to review if an operations solution is feasible rather than a solution based on acquiring or creating a new asset. The example of capital projects we reviewed included provisions for options where a non-asset solution was considered in the options analysis.	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
▪ Evaluations include all life-cycle costs ▪ Projects reflect sound engineering and business decisions ▪ Commissioning tests are documented and completed ▪ Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	▪ TECH use the TransAlta corporate Australian Capital Process to summarise the capital projects and present the business case in order to receive funding. ▪ The TransAlta Application for Expenditure (AFE) template includes associated operating costs impacting from the new capital spend, details of the people involved in the project, the project details, project alternatives and supplier . ▪ Gate checks, as part of the Australian Capital Process, are used to assess the options at an earlier stage prior to the preparation of the AFE template. Gate 2 is required to be passed in order to progress to developing the AFE. The corporate gateway documentation has been developed this year although the business was already using the process informally prior to this year. Approvals for individual spend/projects are granted by the Australian Managing Director once the Capital budget is approved. If the proposed project is estimated to cost more than $0.5M, the project has to be approved by the Australian MD. ▪ TECH are required to follow the corporate financial policies with regard to project planning and purchasing. ▪ Engineering and development teams are responsible for reviewing technical designs. Internal engineering standards are used for the development of new assets. ▪ The majority of TECH's asset acquisitions during the review period have been new assets installed as part of the new power station project at SHPS. The TransAlta corporate Australian Capital Process, including the completing the Application for Expenditure template, was used for the acquisition of the new power station assets. This included predictions of capital costs and lifecycle costs. ▪ Ongoing legal, environmental and safety obligations in relation to asset planning are understood by TECH (refer to Environmental Analysis section). ▪ TECH uses TransAlta's corporate procedure for adding new assets into the asset register.	▪ GAS.07.1342 PROCUREMENT GOVERNING PRINCIPLES.pdf viewed. ▪ Financial Policy 230 (a) PP&E.pdf viewed. Describes capitalisation criteria for property, plant and equipment. ▪ Life Cycle Planning 20110201.ppt presentation viewed. ▪ 2019 Australia Budget Timelines memo, dated 16 July 2018, viewed. ▪ Budget Process PowerPoint, dated June 2017, viewed. ▪ Australia 2018 L01.xlsx long range forecast spreadsheet viewed ▪ AFE Policy document viewed. ▪ AFE (Authorisation For Expenditure) Standards document viewed ▪ Capital Actuals June 18.xlsx spreadsheet viewed. Shows actuals and forecast capital spend ▪ The following SHPS asset creation documents were viewed: – Asset_Creation_SHPS_Container.pdf – Asset_Creation_SHPS_Demin_Water.pdf – Asset_Creation_SHPS_Site_Wide_Alarm.pdf
Asset Disposal – Overall Rating: A1		
▪ Under-utilised and under-performing assets are identified as part of a regular systematic review process ▪ The reasons for under-utilisation or poor performance are critically examined and corrective action	▪ TECH's polices for disposal are included in its Financial Policy. TransAlta corporate document "230(k) Decommissioning & Restoration Obligations" details the financial requirements for decommissioning and 230(a) describes de-recognition as capital of disposed asset. ▪ Performance of existing assets are regularly monitored and checked against expected performance. Underperforming assets are flagged for critical review for remedial actions and/or ultimately for disposal if justified. ▪ Replacement strategies for different assets are set out in the Engineering Standard documents. The Standards provide the policies, guidelines, expectations for inspection and maintenance activities for different types of assets. When the gas	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ Asset register showing existence of all assets, newly created assets and major asset maintenance plans were viewed. ▪ 5 and 10 year asset major maintenance budget and NTA budgets were exhibited.

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
or disposal undertaken ▪ Disposal alternatives are evaluated ▪ There is a replacement strategy for assets	turbines have completed 50,000 running hours, the engines will be replaced with new or refurbished engines. ▪ Hot section replacements are examples of scheduled and monitored major maintenance activities for TECH's turbines. ▪ Condition based performance monitoring and testing – results of which are considerations for any asset remedial and/or disposal decisions. ▪ Asset disposals are recorded in TECH's asset register in SAP. The scrap or sale values of disposed assets are recorded in the system ▪ TECH has not disposed of any assets during the review period.	▪ Examples of Engineering Standard documents, including Dam Safety Management System, Asset-based Criticality, Tracking of Hot Gas Path Components, Relief Devices and Critical Valve Maintenance and Inspection, Pressure Equipment Repair Guidelines and Expectations. ▪ Financial Policy 230 (a) PP&E.pdf viewed. Describes de-recognition as capital of disposed asset. ▪ Financial Policies 230(k) Decommissioning & Restoration Obligations viewed. ▪ The following SHPS asset disposal documents were viewed: – Asset_Disposal_Form.xls – Asset Sale Process.doc ▪ 12_1123_SHPS_FAR.XLSX viewed
Environmental Analysis – Overall Rating: A1		
▪ Opportunities and threats in the system environment are assessed ▪ Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved ▪ Compliance with statutory and regulatory requirements ▪ Achievement of customer service levels	**Opportunities and Threats** ▪ A legal due diligence was completed at the start of the project to identify and assess the approvals that were needed for the facility. The process was not able to start until TECH had been approved for its Integrated Regional Licence by the ERA. ▪ The 2018 EHS Strategic Plan sets out the environmental planning for TECH. ▪ TECH engaged a consultant to develop a data collection and reporting procedure for SHPS based on a review that identified what information needs to be collected and reported. TransAlta is using this procedure as a model for its other facilities. **Asset Performance** ▪ Asset performance is regularly monitored. Incentives and penalties are included in the PPAs for fuel conversion efficiencies, plant availability and reliability, impact on production, unplanned outages, etc. ▪ Key Performance Indicators are set out in the SAMP document. ▪ The KPIs associated with availability and fuel conversion efficiencies take the form of specific charges / rebates that are invoiced. For example, TECH must pay the customer a set $/MWh amount for any MWhs that is not delivered, unless the outage is an allowed outage. With regard to heat rate efficiency, TECH has an annual calculation performed that compares the actual fuel consumption against an agreed benchmark heat rate (the calculation is carried out at the interval level). There is a	▪ Interview with Nigel Feletti ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ TransAlta FY18 NPI & NGER V3.0 2366518 3.xlsx emissions register viewed. ▪ The following policies/procedures were viewed: – GAS.03.0848 VEGETATION CLEARING PROCEDURE.pdf – GAS.03.0849 WASTE MANAGEMENT.pdf – GAS.03.0850 SOLID, LIQUID AND GAS SPILL RESPONSE.pdf – GAS.03.1037 FLORA AND FAUNA CONSERVATION.pdf – GAS.03.1059 SOIL AND GROUND WATER PROTECTION.pdf – GAS.04.1260 LEGIONELLA HEALTH RISK MANAGEMENT.pdf

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	deadband around the central benchmark heat rate and any performance outside this band leads to payments to/from the customer to reflect the additional efficiency/inefficiency. ▪ Strong commitment to root cause analysis for all incidents, particularly those causing loss of production and/or non-compliances with any statutory or PPA requirements. ▪ Utilisation of fuel and maintenance are cost drivers. **Statutory and Regulatory Compliance** ▪ An external third party is engaged by TECH to provide information on legislative and environmental changes. A monthly bulletin that outlines any changes to State or Federal legislation is received and entered into TECH's legislative register. The register is stored in an Excel spreadsheet. The spreadsheet is used to identify actions and assign responsibilities. ▪ Management of compliance is achieved through the Environmental, Health & Safety Plan and associated procedures. ▪ The impact from carbon pricing on the business is yet to be determined due to government authorities currently changing the structure. ▪ TECH maintains a Spills and Discharges Register for its lagoon assets and this was observed during the review in case it is required to report to the EPA for discharges from the SHPS to the environment. ▪ All of the process units are bunded to prevent discharges to the environment and any collected water is pumped to the oily water separators. ▪ There have been a number of minor environmental incidents at SHPS, but all occurred inside the site fenceline. **Emissions Reporting** ▪ TECH undertakes annual National Greenhouse and Energy Reporting (NGER) and National Pollutant Inventory (NPI) reporting. It also reports internally on a number of sustainability performance indicators. ▪ TECH has a process to put its greenhouse gas data into a series of verification sheets for each of its sites. The Plant Managers at each site collect the sheets from the Operations staff and verify the data on a monthly basis. The data collected includes diesel and gas used for electricity generation and vehicles. There is a sense check of the information before TECH forward this data to a third-party consultant to verify. The monthly sheets are consolidated into an annual report each year. ▪ "Operational Emissions Thresholds" are defined in the Environmental operating licence.	– GAS.03.0820 ENVIRONMENTAL ASPECTS, HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROLS.pdf – GAS.03.0876 HAZARDS, NEAR MISSES AND INCIDENT REPORTING.pdf – GAS.03.1061 SITE ENVIRONMENTAL LICENCES.pdf – GAS.04.1171 SOUTH HEDLAND ENVIRONMENTAL MANAGEMENT PLAN – GAS.04.1398 ENVIRONMENTAL MANAGEMENT ▪ 2018_NPI_SHPS_Emission_Report.pdf viewed ▪ DG Licence - DGS021 826 (TECH OP's).pdf (dangerous goods licence) viewed ▪ SHPS.pdf (site summary report) viewed

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	Incident Reporting ▪ TECH uses the corporate Safety Performance Reporting ((Synergi)) for its incident reporting. This system utilises an online set-up that all the staff in the business can access. ▪ Examples of incidents for TECH that have been recorded in the system were observed during the review. **Levels of Service** ▪ The PPAs specify the levels of service to the client. Heat rates are required to be maintained at the optimum levels through sound operating & maintenance practices. ▪ PPA obligations are managed through the Australian Contract Management System Database. This database is set up to provide automatic notifications to the relevant owners, with an escalation mechanism to ensure the obligations are met.	
Asset Operations – Overall Rating: A1		
▪ Operational policies and procedures are documented and linked to service levels required ▪ Risk management is applied to prioritise operations tasks ▪ Assets are documented in an Asset Register, including asset assessment of assets' physical, structural condition and accounting data ▪ Operational costs are measured and monitored ▪ Staff receive training commensurate with their responsibilities	**TECH Assets** ▪ TECH's assets fall into the following classes: – Dual fuel gas turbines – Steam turbine – Generators – Black start generation – Boilers – Air compressors – Balance of plant: ▪ ancillaries such as gas and diesel fuel handling and water supply & treatment ▪ buildings ▪ fences ▪ roads ▪ There is a compressed argonite system for fire purposes at the plant. ▪ There is an 11kV underground supply out to Horizon Power's site adjacent to the SHPS. ▪ The commissioning phase for the SHPS was completed with final sign-off in July 2018. However, the first gas turbine (GT40) has been in operation and being used to provide electricity since December 2016.	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ Visit to SHPS site: – Generation plant assets – Switchboards and controls – Control room including SCADA screens – Example hard copy procedures in control room viewed ▪ South Hedland v2 2018-12-03.pdf (weekly production ('heat rate') graphs) ▪ The following KPI reports were viewed: – PSD KPI Overview.jpg – PSD KPI Priority Risk Control Area.pdf – PSD Maintenance Management KPI Overview.jpg

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	Process Water ▪ The process water is supplied from the raw water supply into Port Hedland. This is stored in two raw water feed tanks before being treated through an onsite water treatment plant. A reverse osmosis (RO) plant is used to demineralise the raw water to remove impurities in the feed water that may impact on the assets. SHPS also has a drinking water supply that is monitored for chlorine levels and can be used as a back-up supply if required. ▪ The treated demineralised water is pumped out into the steamer circuit and also mixed for use in the evaporation coolers. ▪ There are two evaporation ponds at the SHPS for the collected process water. The site is able to discharge during cyclones if required. Any discharges are sampled in case they need to be reported. ▪ There is a separate building that operates as a laboratory for carrying out water quality testing. Water from different processes in the SHPS are directly piped into the laboratory for direct testing. The feeds in include treated water, demineralised water, condensate, feed water, steam turbine and auxiliary boiler water steam water. The water quality is also automatically monitored around the facility and in addition, TECH has a contractor carrying out monthly checks. **Overall Asset Operations** ▪ The Operations Service Division provides support and governance to the engineers at each of TransAlta's facilities. The SHPS site has its own Plant Engineer. ▪ The control room at SHPS is operated by TECH and is manned 24/7/365. The control centre can be remote accessed if required. ▪ Performance monitoring is driven by the requirements of the contract with Horizon Power. Assets are monitored for heat rate, with the plant's overall performance based on heat rate curves for output.The SCADA system is used to provide all real-time monitoring information, data trending, alarming and reporting, which is backed up on a Plant Historian system. ▪ Operator intervention is executed on a real-time basis for any deviations (e.g. sudden departure from limits) or assets are removed from production and investigations carried out to remedy any non-performance issue (e.g. transducers, rotor-earth faults, control system failures). ▪ Longer trending unfavourable performance is flagged for further investigation while assets still remain in operation, and maintenance schedules adjusted to ensure degraded performance is addressed proactively, in preference to reactively.	▪ Live SAP asset register in structured hierarchy showing all assets for SHPS viewed ▪ Equipment Register – Example.txt (structured SAP asset register) viewed ▪ The following weekly production graphs, including SHPS, were viewed: – Production Graphs - 21st August 2018.pdf – Production Graphs - 28th August 2018.pdf – Production Graphs - 4th September 2018.pdf ▪ The following operational procedures were viewed: – SOI 010 CCGT Water Chemistry Silica Test Procedure.docx – SOI 014 ISOCH In A Hurry.docx ▪ EHS&T 2018 Programme V2.pdf viewed. This is TransAlta's Environmental, Health and Safety Training Programme ▪ ERA #027 Training Compliance Report.xlsx viewed ▪ ERA #027 Training History Report.xlsx viewed ▪ Training Needs Analysis V2.9.xlsx viewed ▪ ID 81 GAS.09.1404 MANAGEMENT OF CHANGE (MOC) GUIDELINE.pdf viewed ▪ 9666-MAN-002 - Phase 2 Training Manual for Dispatch Scheduler (004).doc viewed ▪ 9666-SPC-007 - Phase 2 Dispatch PLC Functional Description_Rev 1.doc

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ Plant performance data is shown daily on production graphs but can be displayed half-hourly. Trends are able to be used to determine if any there are issues with generators or other equipment. ▪ In addition to the SCADA, IHI Corporation, the original equipment manufacturer are currently monitoring the SHPS performance remotely. TECH is looking to establish a contract with IHI to continue to undertake this work on an ongoing basis. As the SHPS is a new facility, TECH is looking to use expert advice as it develops its own knowledge through experience of operating the assets. ▪ Modelling at a plant level is being carried out by TransAlta ODC. **Asset Register** ▪ TECH uses SAP for the operational asset register. SAP is configured with a functional location structure, which sets out the hierarchy for all the assets. TECH also uses SAP for its materials master system. ▪ TECH has a separate financial asset register for its assets in SAP. ▪ The asset registers include information on the asset attributes, although no condition data is kept. ▪ Functional location hierarchy has been developed by a third party contractor for the SHPS assets. Construction was not completed at the time this took place and some additional work in this area has been completed by TECH since then. ▪ Condition information from inspection and maintenance tasks is captured in the work orders and related back to the functional location descriptor. Asset scores are not assigned but the work orders are used to record and highlight any issues. ▪ TECH depreciates its assets based on age. **Operation of the SHPS assets** ▪ The SHPS is maintained and operated by a local team of O&M staff. It is possible to run the facility remotely from TransAlta's Parkeston Power Station in Kalgoorlie but this is not being considered as an option at the moment. ▪ The SHPS operates one dual fuel gas turbine for an Open Cycle Gas Turbine (OCGT) facility, and two dual fuel gas turbines for a Combined Cycle Gas Turbine (CCGT) facility in a 2-2-1 configuration, with two Once Through Steam Generators (OTSG) and one Steam Turbine with an air-cooled condenser. ▪ Gas nominations are completed daily to meet the contractual output of the SHPS. The gas supply to the SHPS is provided by Horizon Power and FMG through a piped supply to the plant. SHPS has approximately two days of diesel stored onsite that can be used in an emergency to power the turbines if there is no available gas.	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ The automated control philosophy for the SHPS system minimises fuel burn and maintains frequency and voltage. Efficiency of dispatch in managed by the control room operators and dispatch follows the various machine efficiency curves. ▪ TECH's metering for the SHPS is on the low voltage line inside the boundary of the facility. This is the delivery point to both Horizon Power and FMG and these meters are used for billing both of TECH's customers. ▪ There is a relay back from the Horizon Power substation downstream of the SHPS that is used to show the load to the Port and how much of the total production is being provided to FMG. **Operational Levels of Service** ▪ Levels of Service are covered under the Horizon Power Technical Rules for the NWIS. The PPA between TECH and Horizon Power requires TECH to comply with the Technical Rules. The Technical Rules are owned by Horizon Power and included as an annexure to the PPA. ▪ The PPA includes dispatch and operational requirements and provide the operational context of how TECH need to operate the SHPS in order to provide the necessary electricity to Horizon Power. ▪ Provisions for outages are agreed between the parties. ▪ TECH also has its own internal KPIs related to operating the SHPS. TECH has its own internal levels of service related to the merit levels of the plant which set out the order of assets to use. **Operating Procedures** ▪ O&M procedures are in place and were rolled out prior to the assets being commissioned. Operating procedures continue to be reviewed and updated as required through a process of refinement. ▪ The operations manuals are stored in the control room. There is no overall operating manual for the entire plant and the manuals are split up into different process areas within the facility. The control system for generation is relatively automated and the system steps through the operating processes during the course of being operated. ▪ The operating procedures are also stored electronically in TransAlta's document management system (TSD), allowing them to be accessed through the global system. **Operational Reporting**	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ The weekly production performance meeting is used by TECH to review and assess performance, the current financial situation, any work carried out and any outages that have been experienced. ▪ Operations and performance data is analysed to assess trends. The performance of the engines is reported fortnightly. Performance via graphical data from SCADA is reviewed and discussed at the weekly production meeting. The data reviewed at the weekly meetings includes: – Availability – Start rate reliability – Diesel usage for unplanned outages – Gas usage – Spinning reserve – Machine performance (actual/target heat rates and outputs) ▪ The operations and performance information is reported up to the Group Operations Manager. ▪ Monthly operation outcomes are included in the monthly invoice to TECH's customers Horizon Power and FMG, to allow the operations outcomes to be validated by the customer. **Operating Costs** ▪ TECH uses load forecasts from its customers to develop its operational cost forecasts. ▪ TECH's budget process defines the expenditure requirements for a rolling three year period, with the next year budget being locked in at the end of each year's budget process. ▪ As TECH's parent company is Canadian, all financial management is carried out with regard to a calendar year financial year. ▪ Monthly reporting is carried out to report against the budget. ▪ Fuel gas and diesel are sourced from Horizon Power/FMG and Caltex respectively. **Staff Resources and Training** ▪ TECH sources its own workforce independently of any other party. There are currently 26 staff employed at SHPS. Some staff from other TransAlta sites are employed on rotation, which promotes good knowledge sharing. Personnel from IHI or other contractors also undertake maintenance at the plant as required.	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ TECH is at liberty to utilise subcontractors to support the operation and maintenance efforts. Subcontractors are qualified on an as-needed basis as specified by TransAlta's corporate contracting strategy document ▪ TECH's training is split into compliance training directly related to work activities undertaken by each member of staff, and individual development training to improve skills and knowledge. The Environment Health and Safety (EHS) team identify training needs through a training matrix and schedule the required activities. Training is managed through the corporate system called DART. The Training Coordinator Manager receives alerts from the system when training needs become overdue. TECH staff also have a quarterly staff appraisal where training needs can be identified. ▪ Contractors have been selected for specific works as required to meet the overall Asset and maintenance plans. These include: – Fire systems – Pressure vessel inspections – Protection testing HV and unit. – Fuel quality – Lubrication quality – Delivery of fuel – Boiler water quality reference testing – Specialized contractors for V/v and associated equipment – Gas turbine inspection and repair – Steam Turbine inspection and repairs – Pest control – Weed control – Lifting gear inspections including cranes and ladders	
Asset Maintenance – Overall Rating: A1		
▪ Maintenance policies and procedures are documented and linked to service levels required ▪ Regular inspections are undertaken of asset performance and condition	**Overview** ▪ The SHPS maintenance team are based at the site and reside locally. Currently only the Plant Manager is employed on a FIFO basis. ▪ Maintenance is supported by external contractors when required. ▪ Maintenance management information can be accessed through Total Safety Documents, the corporate system available through the intranet to everyone in the business. ▪ TECH's service levels are set out in the contracts with its customers.	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ SAP viewed live including: – Structured asset register – List of maintenance plans

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
▪ Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule ▪ Failures are analysed and operational / maintenance plans adjusted where necessary ▪ Risk management is applied to prioritise maintenance tasks ▪ Maintenance costs are measured and monitored	▪ Regular meetings are held to firm up the outage plans and ensure all stakeholders are engaged. ▪ Major maintenance outages are planned by the maintenance manager three years in advance. **Maintenance Management System** ▪ TECH uses SAP PM (Plant Maintenance) to manage the maintenance program. Backlog is managed well with the forward log being properly planned and scheduled. SHPS's customers are informed of planned outages as required and output tracked in real time. ▪ TECH also uses SAP for as its materials master system. ▪ TECH has a separate financial asset register for its assets. Depreciation is calculated in age as there is no condition data kept. ▪ SHPS employs a dedicated maintenance planner for maintenance planning. **Maintenance Procedures** ▪ TECH's maintenance management follows TransAlta's Maintenance Work Management procedure (AUS-243) which details: – Work Identification and prioritisation – Planning work – Kitting and staging – Scheduling work – Work Execution – Work closure and documentation – Work meetings and communication – Work management compliance ▪ TECH has a number of Standard Operating Procedures to operate the plant. Some of these are based on Plant Maintenance, while other are purely for the operations of the plant. ▪ SAP is used to generate work orders as per the loaded maintenance program or as and when required to suit plant operations, maintenance and plant shutdowns. **Maintenance Strategies** ▪ The turbines and generators are now all out of their warranty period so maintenance is now fully TECH's responsibility.	– Example maintenance plan – Example maintenance record ▪ GAS.06.1324 Maintenance Work Management.docx viewed. Covers environmental management; health, injury management and wellness initiatives; safety; training, learning and development; auditing and document control, contractor management; TSE reporting and measurement; budget management; and resourcing ▪ Maintenance Policy Engineering Standard - Example List.jpg viewed.

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ Turbine maintenance is structured around the standard Original Equipment Manufacturer (OEM) guidelines and based on condition, hours run and operational experience. TransAlta monitors equipment condition to optimise asset life prior to completion of hot sections and major overhauls. This is accepted practice in the industry. No negative impacts are considered to have been experienced by other TransAlta subsidiaries who have employed this strategy. ▪ Major maintenance for the turbines and generators is conducted by GE under an LTSA, in place until end 2020, with minor servicing and repairs conducted by TransAlta site personnel. TECH has a long-term agreement with the OEM for the major maintenance servicing of the assets. ▪ TECH's maintenance strategy follows the standard OEM servicing regime. Ancillaries receive appropriate care through predictive and preventive maintenance. ▪ The gas turbines are to be conditioned-managed beyond their default major service intervals which has proven to be worthwhile for these machines, based on TransAlta's operating experience at its other power generation facilities in WA. **Maintenance Plans** ▪ TECH has been developing preventative maintenance plans for its highest risk assets. This work is expected to be finished during November 2018 and work on the plans for the lower risk assets will continue at the start of 2019. ▪ Maintenance plans have are prepared in accordance with TransAlta's corporate standards and the appropriate and relevant Australian Standards. The requirements are also reviewed to assess where the Canadian standards differ from the Australian Standards. TECH has auditing schedules set up to review it operating risks and compliance with these. ▪ There is a maintenance plan for each asset loaded into SAP. We observed examples of planned maintenance tasks loaded into SAP during the review. We confirmed that corrective, preventative and compliance maintenance activities are included in the maintenance schedules. ▪ Maintenance is managed through a front-end dashboard to SAP that was developed by a third-party vendor. ▪ Apart from SAP PMs and the major maintenance schedule there is no asset lifecycle maintenance plan. Major maintenance, including capital works, is planned by the maintenance planner according to the TransAlta MRF and budgeting processes. **Condition Monitoring, Inspections and Maintenance Tasks** ▪ Asset performance attributes that are monitored throughout the facility include: – Online & offline vibration analysis	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	– On-line temperature monitoring – Oil analysis – Partial Discharge (annual test on the generators) – Motor flux analysis (on the generators) – Dissolved Gas Analysis (on transformers) – Thermography – Water quality ▪ TECH has a wide range of engineering standards that set out the inspection requirements, including the tests that need to be completed, the frequency of the tests and the required results that need to be returned. Within the Total Safety Documents system, there is a separate area for the standards that apply to TransAlta's Australian sites. ▪ SAP is configured with a functional location structure, which sets out the hierarchy for all the assets. If notifications are received from the field, these can be recorded against the specific asset using the location structure. Asset condition scores are not assigned but the work orders are used to record and highlight any issues. ▪ A weekly production meeting is used to look at heat rate performance, plant capacity and any outages. This information is subsequently used to develop the asset inspection and maintenance program for the work that needs to be carried out. ▪ There is a weekly maintenance meeting to discuss the maintenance work coming up in the next three weeks. SHPS has a Maintenance Planner who schedules the work based on the priority of the required maintenance work and available resources. The schedule for the maintenance tasks to be completed during the upcoming Wednesday-Tuesday week is locked down by the Plant Manager after the meeting. ▪ All preventative maintenance work orders recorded in SAP have a priority rating. The work is carried out in accordance with TransAlta's work management standard. Lower priority work can be rescheduled if appropriate.The SAP work orders are used to record the work history, including findings, work carried out, as well as the labour and material costs associated with completing the work order. ▪ TECH minimises its warehouse inventory as much as possible while retaining an acceptable risk of non-availability of spares. Inventory is restricted to high turnover consumables and insurance items. Exceptions to this are determined by TECH using a risk assessment process considering the impact of a part not being available when required. Parts that are required for planned maintenance are ordered when the work becomes due. **Maintenance Resourcing**	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ A total of 19 O&M staff are employed at SHPS. This includes mechanical and electrical maintenance resources. Remote support is also available as TECH's operations systems can be logged into remotely. ▪ TECH's maintenance staff are available 24/7, 365 days a year. Maintenance staff are rostered to be on-call to carry out any reactive maintenance on the turbines or HV assets. On call staff are able to call in addition internal and/or external support if required. Maintenance staff visit the site every day and conduct inspection rounds. **Asset Failure Analysis** ▪ TECH use TapRooT for root cause analysis. The software has been developed to include the standards to trigger when investigations should be undertaken and this analysis is used for high risk events and critical assets. ▪ Failure history is recorded in the SAP work order data. This information is grouped by discipline (e.g. Civil, mechanical electrical etc.) and then by the subgroup of failure type. The specific component failing and an overview of the cause of the failure and the damage incurred can also be recorded. The actions completed to rectify the failure are also recorded. ▪ TECH reports on the failure codes as part of the weekly production meetings when assessing any outages and issues but other than looking at any repeat failures, no detailed analysis of the failures has yet been carried out. There is a KPI on the SAP dashboard for repeat failures on same equipment. ▪ Failures are assigned a failure code and a damage code to assist in analysis, although currently no analysis is performed using this data. **Maintenance Reporting** ▪ TECH uses hard copy Functional Check Sheets with the work order to allow the correct and appropriate data to be recorded when carrying out maintenance tasks. The hard copies of the check sheets are maintained and archived. ▪ TECH uses an internal process safety system called the Process Safety Dashboard which is accessed through its intranet site to provide an overview of the operations and maintenance performance at each site against eight different areas. ▪ This has been facilitated through ranking each piece of equipment with a criticality score based on engineering standards that determines whether an asset has a high, medium or low criticality. This approach allows TECH to focus on the work orders for the most critical assets as opposed to the previous approach that treated all assets and their associated work orders as equal. ▪ Each performance indicator has a details document that sets out how the indicator has been calculated.	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ The weekly production performance meeting is used by TECH to review and assess performance, the current financial situation, any work carried out and any outages that have been experienced. ▪ Unplanned outages are reported to Horizon Power when they occur. **Maintenance Cost Forecasting** ▪ The medium range forecast (MRF) is a budget for expenditure over a three-year period and is built from minor and major maintenance activities. Major maintenance intervals are tracked, updated and planned using an Excel spreadsheet. This sheet is updated at the budget and MRF intervals and any unplanned engine event.	
Asset Management Information System – Overall Rating: A1		
▪ Adequate system documentation for users and IT operators ▪ Input controls include appropriate verification and validation of data entered into the system ▪ Logical security access controls appear adequate, such as passwords and that appropriate system access and functionality is provided to users ▪ Physical security access controls appear adequate ▪ Data backup procedures appear adequate ▪ Key computations related to licensee performance reporting	**Overview** ▪ TECH use SAP PM to manage its maintenance program. ▪ SAP is also used for the operational asset register. SAP is configured with a functional location structure, which sets out the hierarchy for all the assets. ▪ TECH also uses SAP for as its materials master system. ▪ TECH has a separate financial asset register for its assets in SAP. ▪ TECH use the Approval for Expenditure (AFE) process to develop capital projects and present the business case for approval for it to be added to the approved budget. ▪ TECH uses the corporate Safety Performance Reporting ((Synergi)) for its incident reporting. This system utilises an online set-up that all the staff in the business can access. ▪ The SCADA system is used to provide all real-time monitoring information, data trending, alarming and reporting, which is backed up on a Plant Historian system ▪ TECH uses the corporate Total Safety Documents (TSD) system for its risk management. The dashboard provides access to the consequence guidelines, risk matrices and responsibilities. ▪ TECH operates an Operational Integrity Program (OIP). This is used to review and identify equipment safety aspects. The OIP is used to assess the loss of primary containment (the energy within the assets). The TSD and OIP are used to cover the management of assets and people. ▪ TECH uses TapRooT for root cause failure analysis. ▪ SharePoint is used throughout business. ▪ There is extensive system documentation for users and IT operators stored on the corporate intranet site.	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ The following key asset management information systems were observed during the review: – SAP Asset Register – SAP PM (Plant maintenance) work schedules – Safety Performance Reporting for its incident reporting – Citect SCADA system for asset operations and performance monitoring – Total Safety Documents (TSD) system for its risk management. – Operational Integrity Program (OIP) for reviewing and identifying equipment and safety aspects. – TapRooT for Root Cause analysis ▪ Examples of monthly operation and maintenance reports and financial reports were observed during the course of the review.

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
are materially accurate ▪ Management reports appear adequate for the licensee to monitor licence obligations	**Data Entry and Validation** ▪ Calculations are checked using financial settlement data and raw data. ▪ TECH conducts daily and ongoing monitoring of its contract compliance. Levels of Service are covered under the Horizon Power Technical Rules for the NWIS. Under the Horizon Power and FMG PPA, TECH is required to comply with the Technical Rules. ▪ Operations data is primarily collated automatically and stored on the Aspen server. Operator's check this data for accuracy and amends as necessary on a daily basis using an Excel-based interrogation tool to interact with the Aspen database ▪ The Citect SCADA system is connected to the Aspen server located in Perth and is also mirrored on a server located in Canada. **Management Reports** ▪ Operations and performance data is analysed to assess trends. The performance of the engines is reported weekly. Performance via graphical data from SCADA is reviewed and discussed at the weekly production meeting. ▪ The operations and performance information is reported up to the Group Operations Manager. ▪ Monthly operation outcomes are included in the monthly invoices to customers Horizon Power and FMG, to allow the operations outcomes to be validated by the customer. ▪ A weekly report of scheduled vs completed work orders, high priority planned maintenance tasks and extra work orders is generated, along with forthcoming week's work, for discussion at the weekly maintenance meeting. ▪ The weekly maintenance meeting is attended by all in the maintenance team, with minutes recorded. ▪ TECH's maintenance culture is very effective. Essentially, maintenance teams are self-scheduling and able to review, propose and execute the maintenance activities from the plan to prevent backlog, yet ensure the asset maintenance needs are met. This takes into account priorities, risks to operations, production, compliance, safety and finance. ▪ A monthly financial pack is prepared and provided to management to show the financials for the month, year to date, balance of the year and the annual estimate. This financial pack provides overall profit and loss information and details of the capital expenditure program. ▪ In addition, SHPS has a separate monthly finance report that is prepared for the Plant Manager which contains more detail.	

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ Management reports are considered to be adequate for the licensee to monitor licence obligations. TECH's licence obligations are reviewed annually during the preparation of the annual compliance reports. **Security access of assets and systems** ▪ Physical access to the SHPS sites is strictly controlled and the security access controls are effective. ▪ Access to the TECH's servers is strictly controlled and a ticket needs to be lodged to gain access. Staff are only able to interface with the systems and are not able to edit the recorded information without going through an approval process to be able to carry out these functions. SQL queries have been set up for non-approved staff to get information when required. ▪ Password changes are required every 1-2 months.	
Risk Management – Overall Rating: A1		
▪ Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system ▪ Risks are documented in a risk register and treatment plans are actioned and monitored ▪ The probability and consequence of risk failure are regularly assessed	**Risk Management Procedures** ▪ TransAlta has carried out improvements to its risk management and risk register in the last few months. This work has included developing an All-Australia Risk Register for all of TransAlta's facilities, including SHPS. ▪ Risk assessments and risk quantification are carried out throughout TransAlta's business activities. This includes pre-job planning, asset maintenance, justification for expenditure, asset creation / disposal, incident investigation and asset management. ▪ Risk assessments based on criticality have also been carried out for the SHPS assets. ▪ TECH takes a consistent approach towards assessing and quantifying the risks based on well-defined risk assessment procedures, with likelihood and consequence considered. Risk rankings are consistent with Australian Risk Standards. **Risk Reporting and Management** ▪ An Environmental Health and Safety team of two people is employed to serve TECH and the other TransAlta subsidiaries. ▪ TECH uses the corporate Total Safety Documents (TSD) system for its risk management. The dashboard provides access to the consequence guidelines, risk matrices and responsibilities. ▪ TECH employs an Operational Integrity Program (OIP) to review and identify equipment and safety aspects. The OIP is used to assess the loss of primary containment (the energy within the assets).	▪ Interview with Nigel Feletti ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ TransAlta Australia Risk Register on Synergi viewed. ▪ SHPS RISK REGISTER EXTRACT from Synergi Data Base.PNG ▪ SHPS-SF-0049 SHPS Hazard and Risk Register Rev 9 ▪ TAC.09.0098 TECHNICAL RISK METHOD.pdf ▪ TAC.07.0118 TSMS ELEMENT 2 - OPERATIONAL RISK MANAGEMENT.pdf viewed. ▪ TAC.03.0069 RISK MATRIX STANDARD.pdf viewed ▪ TA Emergency Management Standard.pdf ▪ TSMS Mapping to TEA EHSMS v1.1 05-09-2018 viewed. ▪ Synergi system on TransAlta intranet viewed. ▪ EHS Portal on TransAlta intranet viewed.

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	▪ The TSMS and OIP are used to cover the management of assets and people. ▪ TECH's corporate EHS portal is the business's system for reporting EHS issues and for accessing information on EHS policies, procedures and reporting. The portal also provides access to the chemical database, site licences, relevant Acts and other legislative documents, the learning management system and the TapRooT tool. ▪ Incident reports are completed when required and high-consequence incidents are escalated to corporate level. ▪ TECH uses the corporate TapRooT root cause analysis tool to assess asset failures and significant near misses based on risk assessment. **TECH Risk Management Documentation** ▪ All applicable EHS Management System controls appropriate to operate and maintain plant and equipment are documented within the site specific EHS Management Plan and supporting procedures. ▪ Section 8 of the SHPS SAMP identifies the key asset risks. Although, at the time of the review there was only one overarching risk and one specific risk included in the SAMP, TECH has updated the section to include a hyperlink to the SHPS Hazard and Risk Register. The register provides detailed site specific risks] and includes descriptions of the treatment or action required to mitigate the risk. **Risk Register** ▪ TECH uses a corporate risk register for all TransAlta Australia sites, which can be filtered to show only SHPS risks. The Risk Register details specific hazards and controls for SHPS ie risks of the steam that is generated onsite to power the turbines that is not present at other TransAlta operations within Australia ▪ Dashboard links provide access to the individual risk assessments recorded in TECH's corporate system, Synergi. The assessments include the controls used to manage the risks. The Synergi dashboards also provide links to business risks and non-WHS risks. **Workplace Health and Safety Risk Management** ▪ Permits and training are required to carry out hot work activities, and for working at heights and confined space entry. Lock out tag out procedures are in place. ▪ TECH's training requirements and management of compliance training are very comprehensive (refer to Asset Operations section). ▪ The TSMS core element implementation plan was viewed, which shows the status of the rollout). To date, five of the twelve core elements have been implemented. Seven are still outstanding. An example audit report for the implementation was viewed.	▪ Various EHS reports (screenshots) viewed. ▪ The following SHPS incident investigation reports were viewed: – Incident_Investigation_ Report_6830_V2.pdf – Incident_Investigation_Report_8853 v3.pdf – Incident_Investigation_Report_10864_Final.pdf ▪ GAS.06.1324 Maintenance Work Management.docx viewed. ▪ TAC.13.0257 WORK MANAGEMENT WORK EXECUTION STANDARD.pdf viewed ▪ TAC.13.0259 WORK MANAGEMENT DOCUMENT CLOSURE STANDARD.pdf viewed ▪ TAC.09.0097 RISK INTOLERABILITY CRITERIA AND ALARP CONCEPT.pdf ▪ The following SHPS Job Hazard Analysis forms were viewed – AP_20180928_SHPS_JHA_A.pdf (Clean ST10 exhaust drain pump/strainer) – AP_20180928_SHPS_JHA_B.pdf (Install new rectifier module) – AP_20181026_SHPS_JHA_A.pdf (Reroute supply from DB) – AP_201810261_SHPS_JHA_B.pdf (Removal of waste water pump) – IP_20181023 SHPS_JHA_A.pdf (Critical function testing) ▪ The following SHPS incident reports were viewed: – Stray Voltage detected while working in de-energized & isolated DB board (Case no.10833) – Sleep Pattern (Case no.10923) – Vehicle driving on wrong side on road (Case no.10864) ▪ GAS.07.1418 TA AUSTRALIA DOCUMENT AND RECORDS CONTROL PROCEDURE.pdf

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
		▪ TAC.07.0124 TSMS ELEMENT 7 - DOCUMENT AND RECORDS CONTROL.pdf ▪ Incident Register extract.PNG viewed (SHPS)
Contingency Planning – Overall Rating: A1		
▪ Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	**Contingency Plan Policies and Standards** ▪ TECH has an Emergency Management Policy and also a Standard. Under this there are individual plans for crisis management, threat responses, communications plan and IT contingency. Under this there are business unit plans for emergency response and continuity. ▪ The Emergency Management Standard defines the TransAlta Corporate Emergency Management Program through documentation, procedures and activities to be used by the TransAlta Corporation and its wholly owned subsidiaries. The standard specifies that it is to be used prior to, during and post emergency situations. ▪ The Emergency Management Standard sets out the emergency policies, the management program with all the relevant management plans, leadership and accountability details, training and evaluation requirements and processes and the executive review processes for the Standard. ▪ TECH's corporate Emergency Response Guide for emergencies sets out the internal and external contacts for managing incidents and emergencies. **TECH Contingency Plans and Procedures** ▪ Contingency plans for business continuity is well-developed and includes back-up and off-site data storage and restoration of business. ▪ Contingency Plans and Procedures documents are stored on the corporate Total Safety Documents system. ▪ The Emergency Response Plan that was in place during the construction phase was updated to reflect the change in status of the facility when it became operational. ▪ The Emergency Management Plan needs to be updated to include input from local emergency response stakeholders e.g. does the hospital have the capacity to cope in an emergency. ▪ TECH also has a standalone Cyclone Management Plan for the SHPS. ▪ Contingency procedures covering various aspects of asset operation and maintenance have been developed. ▪ Operations and Maintenance teams are well aware of contingency documents and procedures. Procedures are reviewed on a regular basis and updated to suit outcomes of review process.	▪ Interview with Nigel Feletti ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ TA Emergency Management Standard.pdf ▪ TAC.02.0023 CORPORATE EMERGENCY MANAGEMENT STANDARD.pdf ▪ TAC.07.0130 TSMS ELEMENT 11 - EMERGENCY MANAGEMENT.pdf ▪ GAS.03.0913 EMERGENCY RESPONSE GUIDE.pdf ▪ GAS.02.1331 SOUTH HEDLAND EMERGENCY RESPONSE PLAN.pdf ▪ GAS.02.1253 SOUTH HEDLAND CYCLONE MANAGEMENT PLAN ▪ Synergi History of Drills.xlsx ▪ SHPS Evacuation Drill (Synergi case no. 4692)

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
	Testing of Contingency Plans ▪ Three-monthly emergency drills are undertaken at the SHPS. The EHS team consult with the Plant Manager to decide the scenario to be tested and EHS can also decide the drill scenario without input if considered required. ▪ The hierarchy of site drills to be undertaken is as follows: – Tabletop exercise – Functional exercise – Full scale exercise	
Financial Planning – Overall Rating: A1		
▪ The financial plan states the financial objectives and strategies and actions to achieve the objectives ▪ The financial plan identifies the source of funds for capital expenditure and recurrent costs ▪ The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) ▪ The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period ▪ The financial plan provides for the operations and	**Budgets and Forecasts** ▪ Annual budgets are prepared and justification for expenditure are strictly controlled. All business cases have the required criteria well-defined in the justification template, including risks, financial returns, impact on commercial / contractual, options, legal, legislative, maintenance, operations, personnel, timing, etc. ▪ TECH has a long-range forecast (LRF) and a medium range forecast (MRF). The latest medium range forecast goes out three years from 2018 to 2020 and is developed between June and September each year. Between March and April each year a refresh of the budgets for these years is carried out and the LRF is also reviewed. The LRF currently goes out to 2038. ▪ The LRF includes estimates for revenue that includes lines for contract, merchant and miscellaneous revenue. The LRF includes estimates for operating costs that include labour, staff costs, vehicles, office, materials, insurance and contract staff. The budgets/forecasts are developed for each site using a bottom-up approach. ▪ The latest annual budget (for 2019) for SHPS is the first time that historical data has been available, and so is considered to be a more accurate reflection of requirements. **Financial Plan** ▪ A legal due diligence was completed at the start of the project to identify and assess the approvals that were needed for the facility. The process was not able to start until TEC had been approved for its Integrated Regional Licence by the ERA. As part of the application process, TECH were required to provide the ERA with the financial plan for the SHPS. ▪ TECH's current financial plan is included in its Asset Management Plan. **Financial Reporting**	▪ Interview with Andrew Stoodley and Nathalie Glindholm (Marvin Menjivar for GPPL and SCE audit) ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ South_Hedland_Oct18_F.xlsx (monthly business planning forecast) ▪ Australia Capital Detail 2018 L01 Final.xlsx viewed. Long range forecast 2018-2042. ▪ Budget MRF 2018 BUD.xls viewed. ▪ 1806 Day 8 Report Jun18.xlsx viewed. ▪ Australia Jun18 F.xlsx viewed. Spreadsheet shows budget vs actual costs for each TransAlta Australia site for June 2018.

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
maintenance, administration and capital expenditure requirements of the services ▪ Significant variances in actual / budget income and expenses are identified and corrective action taken where necessary	▪ A monthly financial pack is prepared and provided to management to show the financials for the month, year to date, balance of the year and the annual estimate. This financial pack provides overall profit and loss information and details of the capital expenditure program by site and project. ▪ The monthly financial reports also include information on the availability of supply and power outages as there are financial impacts for these performance indicators under the conditions of the contract that TECH has with its customers. ▪ The monthly reports data is extracted from SAP, the corporate financial system used by TECH. The data extracted and reported is based on a transactional level. There is a monthly meeting to discuss the business finances. ▪ In addition, SHPS has a separate monthly finance report that is prepared for the Plant Manager which provides transactional detail. ▪ TECH works to a calendar year for its financial planning, budgeting processes and reporting. This is due to TECH's parent company being a Canadian company. Annual budgets are approved for use by November of the preceding year.	
Capital Expenditure Planning – Overall Rating: A1		
▪ There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates ▪ The plan provides reasons for capital expenditure and timing of expenditure ▪ The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan ▪ There is an adequate process to ensure that the capital expenditure plan is	▪ SHPS was constructed based on contracts with Horizon Power and the Pilbara Infrastructure Pty Ltd (a subsidiary of the Fortescue Metals Group) (FMG) ▪ The construction of the plant was undertaken through TransAlta'a AFE process as for any other capital project. ▪ Capital expenditure planning is included in TECH's annual budgeting process. ▪ TECH's capital plans and budgets are managed in spreadsheets and capital expenditure is forecast out to the end of 2022. ▪ At the current time there is no requirement to increase the capacity of TECH's through additional capital investment. The costed schedule for capital purchases provides clarity for TECH's major expenditure into the future and provides a basis for optimisation of that spend. The forecast expenditure has been developed by TECH considering the stage of the contract life. ▪ The annual capital plans out to the end of 2022 are included in the SHPS SAMP. ▪ The capital forecast is reviewed each year to ensure that it meets TransAlta's business objectives. ▪ TECH use the Australian Capital Process to summarise the capital projects and present the business case in order to receive funding. ▪ The Application for Expenditure (AFE) template includes associated operating costs impacting from the new capital spend, details of the people involved in the project, the project details, project alternatives and supplier.	▪ Interview with Andrew Stoodley and Nathalie Glindholm (Marvin Menjivar for GPPL and SCE audit) ▪ SHPS SAMP Ver 1 20171020.pdf ▪ Power Purchasing Agreements between TECH and Horizon Power, and between TECH and FMG viewed ▪ Australia Capital Detail 2018 L01 Final.xlsx viewed. Long range forecast 2018-2042.

Asset Management Process / Effectiveness Criteria	Observations / Comments	Evidence (Include Contact)
regularly updated and actioned	▪ The WAVE system uses gate checks as part of the Australian Capital Process to assess the options at an earlier stage prior to the preparation of the AFE template. Gate 2 is required to be passed in order to progress to developing the AFE. The corporate gateway documentation has been developed this year although the business was already using the process informally prior to this year. Approvals for individual spend/projects are granted by the Australian Managing Director once the capital budget is approved. If the proposed project is estimated to cost more than $0.5M, the project has to be approved by the Australian MD. TECH are required to follow the corporate financial policies with regard to project planning and purchasing. ▪ A number of capital projects are either currently in progress or have been recently completed. The plant-based improvements are managed by the Plant Manager. ▪ The capital improvement works being carried out at the SHPS are the responsibility of the Plant Manager. TransAlta has different corporate levels of financial authority depending on the dollar value of any proposed capital works.	
Review of Asset Management System – Overall Rating: A1		
▪ A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current ▪ Independent reviews (e.g., internal audit) are performed of the asset management system	▪ As the SHPS is a very new asset, a review of the asset management system put in place has yet to occur. However, TECH is currently planning the review process and a review framework is expected to be put in place during the first half of 2019. ▪ Version 1.0 of the SHPS SMAP was issued in September 2017. It is under development so that it aligns more with the SAMPs for the other TransAlta subsidiaries. An updated version of the SAMP (Version 8, May 2018) was provided after the site visit. ▪ The SAMP includes an Issues Action List for each process unit within the SHPS. TECH has already completed and resolved a number of the actions that it had recorded in the SAMP. However, there is no section for improvement opportunities. We recommend that an Improvement Plan is included in the SAMP to summarise the opportunities that have been identified in the Plan and to assign responsibilities and timeframes. ▪ External review of the AMS is undertaken as part of Clause 20.4 of TECH's current integrated regional licence under section 14(1)(c) of the *Electricity Industry Act*. This review covers the period 15 October 2014 to 31 October 2018 and is the first time that TECH's AMS has been reviewed. ▪ TECH's AMS is considered appropriate, fit-for-purpose and suitable for the organisation. We have identified a number of improvement opportunity improvements and have included these in Table 6-2.	▪ Interviews with Troy Forward, Kristin Myhre, Keith Adams, Ian Pratt, David Paul and Andy Perera ▪ SHPS SAMP Ver 1 20171020.pdf ▪ 2017 Compliance Report

6 Recommendations

6.1 Performance Audit

Table 6-1 Table of Current Audit Non Compliances and Recommendations

A. Resolved during current audit period				
Electricity compliance reporting manual 2017 (ref. no./ year)	**(Compliance rating/ Legislative obligation / details of the issue)**	**Auditor's recommendation or action undertaken**	**Date resolved**	**Further action required (Yes/No/Not applicable) & details of further action required including current recommendation reference if applicable**

B. Unresolved at end of current Audit period			
(Compliance rating/ Legislative obligation / details of the issue)	**Auditor's recommendation or action undertaken**	**Date resolved**	**Further action required (Yes/No/Not applicable) & details of further action required including current recommendation reference if applicable**
105 *"A licensee must pay the prescribed licence fees to the ERA according to clauses 6, 7 and 8 of the Economic Regulation Authority (Licensing Funding) Regulations 2014."* The invoice issued in November 2017 was not paid within the 30 days required.	We recommend that TECH improves its risk mitigation measures for this obligation, including having in place an independent alert via its contract management system each quarter to check whether invoices have been received and processed.		

6.2 Asset Management Review

Table 6-2 Table of Current Review Asset System Deficiencies/Recommendations

A. Resolved during current audit period			
Ref.	**Asset System Deficiency** **(Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)**	**Date Resolved (& management action taken)**	**Auditor's Comments**

B. Unresolved at end of current Audit period			
Reference (no./year)	**Asset System Deficiency** **(Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)**	**Auditor's recommendation**	**Management action taken by end of Audit Period**
R1/2018	*A1* *Asset Planning* *Asset management plan covers key requirements* The SAMP has a section for Key Asset Risks, but the tables for overarching asset risks and specific asset risks are incomplete.	We recommend that TECH complete the key asset risks tables. Furthermore, we observed that corporate risks are not currently detailed and would recommend that these are included.	
R2/2018	*A1* *Review of Asset Management System* *A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current* In the SAMP there is no Improvement Plan that sets out timeframes and responsibilities.	We recommend that an Improvement Plan is included in the SAMP to summarise the opportunities that have been identified in the Plan and to assign responsibilities and timeframes.	

7 Confirmation of the Audit/Review

I confirm that the audit/review carried out at TECH on 13 – 16 August 2018 and recorded in this report is an accurate presentation of our findings and opinions.

Justin Edwards PhD MEng

Cardno (QLD) Pty Ltd

515 St Paul's Terrace

Fortitude Valley QLD 4006

25 February 2019

APPENDIX

A

RISK MANAGEMENT FRAMEWORK

Types of Compliance Risk

Type of Risk	Examples
Supply quality and reliability	Delays in new connections, excessive supply interruptions, supply quality standards not met.
Consumer protection	Customer service levels not met, incorrect bills, disconnection and reconnection standards not met, customers unable to access financial hardship assistance.
Legislation/licence	Breach of industry Acts, regulations and codes, contravention of licence conditions.

Risk Assessment Rating Scales

The consequence, likelihood and inherent risk are assessed using a 3-point rating scale as described below. The rating scale is as per the Audit and Review Guidelines: Electricity and Gas Licences, (Economic Regulation Authority), April 2014.

Consequence Rating

The consequence rating scale is outlined below.

	Rating	Supply Quality and Reliability	Consumer Protection	Breaches of Legislation or Other Licence Conditions
1	Minor	Breaches of supply quality or reliability standards – affecting small number of customers. Delays in providing a small proportion of new connections.	Customer complaints procedures not followed in a few instances. Small percentage of disconnections or reconnections not completed on time. Small percentage of bills not issued on time.	Legislative obligations or licence conditions not fully complied with, minor impact on customers or third parties. Compliance framework generally fit for purpose and operating effectively.
2	Moderate	Supply quality breach events that significantly impact customers; large number of customers affected and/or extended duration and/or damage to customer equipment. Supply interruptions affecting significant proportion of customers on the network for up to one day. Significant number of customers experiencing excessive number of interruptions per annum. Significant percentage of new connections not provided on time/ some customers experiencing extended delays.	Significant percentage of complaints not being correctly handled. Customers not receiving correct advice regarding financial hardship. Significant percentage of bills not issued on time. Ongoing instances of disconnections and reconnections not completed on time, remedial actions not being taken or proving ineffective. Instances of wrongful disconnection.	More widespread breaches of legislative obligations or licence conditions over time. Compliance framework requires improvement to meet minimum standards.
3	Major	Supply interruptions affecting significant proportion of customers on the network for more than one day. Majority of new connections not completed on time/ large number of customers experiencing extended delays.	Significant failure of one or more customer protection processes leading to ongoing breaches of standards. Ongoing instances of wrongful disconnection.	Wilful breach of legislative obligation or licence condition. Widespread and/or ongoing breaches of legislative obligations or licence conditions. Compliance framework not fit for purpose, requires significant improvement.

Likelihood Ratings

The likelihood rating scale is described below.

	Level	Description
A	Likely	Non-compliance is expected to occur at least once or twice a year
B	Probable	Non-compliance is expected to occur once every three years
C	Unlikely	Non-compliance is expected to occur once every 10 years or longer

Inherent Risk Assessment Rating and Description

The inherent risk rating is based on the combined consequence and likelihood rating. The inherent risk assessment rating scale and descriptions are outlined below.

Likelihood	Consequence		
	Minor	Moderate	Major
Likely	Medium	High	High
Probable	Low	Medium	High
Unlikely	Low	Medium	High

Level	Description
High	Likely to cause major damage, disruption or breach of licence obligations
Medium	Unlikely to cause major damage but may threaten the efficiency and effectiveness of service
Low	Unlikely to occur and consequences are relatively minor

Adequacy Ratings for Existing Controls

The adequacy of existing internal controls is also assessed based on a 3-point scale as indicated below.

Level	Description
Strong	Controls that mitigate the identified risks to an appropriate level
Moderate	Controls that only cover significant risks; improvement required
Weak	Controls are weak or non-existent and have minimal impact on the risks

Assessment of Audit Priority

The assessment of audit priority is used to determine the audit objectives, the nature of audit testing and the extent of audit testing required. It combines the inherent risk and risk control adequacy rating to determine the priority level.

Inherent Risk	Adequacy of Existing Controls		
	Weak	Medium	Strong
High	Audit Priority 1	Audit Priority 2	
Medium	Audit Priority 3	Audit Priority 4	
Low	Audit Priority 5		

APPENDIX

B

ASSET MANAGEMENT PERFORMANCE RATING DEFINITIONS

Compliance Assessment Rating Scale

In accordance with the Audit Guidelines – Electricity, Gas and Water Licences (ERA, April 2014), a 7-point rating scale has been adopted to assess the licensee's compliance against each licence condition. The rating scale and description of compliance is outlined below.

Compliance Status	Rating	Description of Compliance
Compliant	5	Compliant with no further action required to maintain compliance
Compliant	4	Compliant apart from minor or immaterial recommendations to improve the strength of internal controls to maintain compliance
Compliant	3	Compliant with major or material recommendations to improve the strength of internal controls to maintain compliance
Non-Compliant	2	Does not meet minimum requirements
Significantly Non-Compliant	1	Significant weaknesses and/or serious action required
Not Applicable	N/A	Determined that the compliance obligation does not apply to the licensee's business operations.
Not Rated	N/R	No relevant activity took place during the audit period therefore it is not possible to assess compliance.

Asset Management Review Rating Scales

The asset management review utilises a combination of asset management adequacy ratings and asset management performance ratings, which are outlined below. These are based on the Audit Guidelines – Electricity, Gas and Water Licenses (ERA, April 2014).

Asset Management Adequacy Ratings

Rating	Description	Criteria
A	Adequately defined	▪ Processes and policies are documented. ▪ Processes and policies adequately document the required performance of the assets. ▪ Processes and policies are subject to regular reviews, and updated where necessary. ▪ The asset management information system(s) are adequate in relation to the assets that are being managed
B	Requires some improvement	▪ Process and policy documentation requires improvement. ▪ Processes and policies do not adequately document the required performance of the assets. ▪ Reviews of processes and policies are not conducted regularly enough. ▪ The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed)
C	Requires significant improvement	▪ Process and policy documentation is incomplete or requires significant improvement ▪ Processes and policies do not document the required performance of the assets ▪ Processes and policies are significantly out of date ▪ The asset management improvement system(s) require significant improvement s (taking into consideration the assets that are being managed).
D	Inadequate	▪ Processes and policies are not documented. ▪ The asset management information system is not fit for purpose (taking into consideration the assets that are being managed).

Asset Management Performance Ratings

Rating	Description	Criteria
1	Performing effectively	▪ The performance of the process meets or exceeds the required levels of performance ▪ Process effectiveness is regularly assessed and corrective action taken when necessary
2	Opportunity for improvement	▪ The performance of the process requires some improvement to meet the required level ▪ Process effectiveness reviews are not performed regularly enough ▪ Process improvement opportunities are not actioned
3	Corrective action required	▪ The performance of the process requires significant improvement to meet the required level ▪ Process effectiveness reviews are performed irregularly or not at all ▪ Process improvement opportunities are not actioned
4	Serious action required	▪ Process is not performed or the performance is so poor that the process is considered to be ineffective.