Regional Power Corporation (t/a Horizon Power)

Electricity Integrated Regional Licence (EIRL2)

2017 Asset Management System Review

Report

December 2017

Deloitte.

Deloitte Risk Advisory Pty Ltd
ACN 611 748 184
Brookfield Place, Tower 2
123 St Georges Terrace
Perth, WA, 6000
Australia

Phone: +61 8 9365 7000
www.deloitte.com.au

Mr Liang Tay
Risk and Audit Manager
Regional Power Corporation (t/a Horizon Power)
18 Brodie Hall drive
Bentley, WA 6102

4 December 2017

Dear Liang

Regional Power Corporation (t/a Horizon Power) – 2017 Asset Management System (AMS) review report

We have completed the Electricity Integrated Regional Licence AMS review for Horizon Power for the period 1 July 2014 to 30 June 2017 and are pleased to submit our report to you.

I confirm that this report is an accurate presentation of the findings and conclusions from our review procedures.

If you have any questions or wish to discuss anything raised in the report, please contact Andrew Baldwin on 0414 924 346 or me on 0420 456 526.

Yours sincerely

Kobus Beukes
Partner
Deloitte Risk Advisory Pty Ltd

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1 Independent Reviewer's report

With the approval of the Economic Regulation Authority (the **ERA**), the Regional Power Corporation t/a Horizon Power (**Horizon Power**) engaged Deloitte Risk Advisory Pty Ltd (**Deloitte**) to conduct a review of the effectiveness of Horizon Power's Asset Management System (**AMS**) relating to its Electricity Integrated Regional Licence No. 2 (EIRL2) (the **Licence**) for the period 1 July 2014 to 30 June 2017 (**review period**).

Deloitte conducted the review as a limited assurance engagement in accordance with the specific requirements of the Licence and the April 2014 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* issued by the ERA (the **Guidelines**).

Horizon Power's responsibility for maintaining an effective AMS

Horizon Power is responsible for establishing and maintaining an effective AMS for the assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines. This responsibility includes implementing and maintaining policies, procedures and controls, which are designed to provide for an effective AMS for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines.

Deloitte's responsibility

Our responsibility is to express a conclusion, based on our procedures, on the effectiveness of Horizon Power's AMS for assets subject to the Licence. The limited assurance engagement has been conducted in accordance with the Guidelines and the Australian Standard on Assurance Engagements (**ASAE**) 3500 Performance Engagements issued by the Australian Auditing and Assurance Standards Board, in order to state whether, in all material respects, based on the work performed, anything has come to our attention to indicate that Horizon Power had not established and maintained an effective AMS for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines and in operation during the review period.

ASAE 3500 also requires us to comply with the relevant ethical requirements of the Australian professional accounting bodies.

Our procedures consisted primarily of:

- Utilising the Guidelines as a guide for development of a risk assessment, which involved discussions with key staff and review of documents to perform a preliminary controls assessment
- Development of a Review Plan for approval by the ERA and an associated work program
- Interviews with and representations from relevant Horizon Power staff to gain an understanding of the development and maintenance of policies and procedural type documentation (a full list of staff engaged has been provided at **Appendix B**)
- Examination of documented policies and procedures for key functional requirements and consideration of their relevance to Horizon Power's AMS requirements and standards
- Physical visits to operations in Port Hedland, Broome and Kununurra
- Consideration of reports and references evidencing activity
- Consideration of activities performed by the Horizon Power Control Centre (**HPCC**) that relate to operation of the assets
- Reporting of findings to Horizon Power for review and response.

Limitations of use

This report is made solely for the information and internal use of Horizon Power and is not intended to be, and should not be, used by any other person or entity. No other person or entity is entitled to rely, in any manner, or for any purpose, on this report.

We understand that a copy of the report will be provided to the ERA for the purpose of reporting on the effectiveness of Horizon Power's AMS. We agree that a copy of this report may be provided to the ERA in connection with this purpose but only on the basis that we accept no duty, liability or

responsibility to the ERA in relation to the report. We accept no duty, responsibility or liability to any party, other than Horizon Power, in connection with the report or this engagement.

Inherent limitations

A limited assurance engagement is substantially more limited in scope than a reasonable assurance engagement conducted in accordance with ASAE 3500 and consequently does not allow us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we will not express an opinion providing reasonable assurance.

Because of the inherent limitations of any compliance procedure, it is possible that fraud, error or non-compliance may occur and not be detected. We cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and its responsibility to prevent and detect irregularities, including fraud. Accordingly, readers of our reports should not rely on the report to identify all potential instances of AMS deficiencies, which may occur.

Any projection of the evaluation of the effectiveness of AMS processes and procedures to future periods is subject to the risk that the processes and procedures may become inadequate because of changes in conditions, or that the degree of compliance with management procedures may deteriorate.

Independence

In conducting our engagement, we have complied with the independence requirements of the Australian professional accounting bodies.

Conclusion

Based on our work described in this report, in all material respects, nothing has come to our attention to indicate that Horizon Power had not established and maintained an effective AMS for assets subject to the Licence, and in operation during the period 1 July 2014 to 30 June 2017, as measured by the effectiveness criteria in the Guidelines.

Table 3 of this report provides the effectiveness ratings for each of the 12 key processes in the asset management life-cycle assessed by this engagement. For seven aspects of Horizon Power's AMS that were assessed as having a minor opportunity for improvement, relevant observations, recommendations and action plans are summarised at section 2.5 of this report and detailed at section 4 of this report.

DELOITTE TOUCHE TOHMATSU

Kobus Beukes
Partner
Perth, 4 December 2017

2 Executive summary

2.1 Introduction and background

The Economic Regulation Authority (the **ERA**) has under the provisions of the Electricity Industry Act 2004 (the **Act**), issued to Regional Power Corporation t/a Horizon Power (**Horizon Power**) the Electricity Integrated Regional Licence No.2 (EIRL2) (the **Licence**).

Section 14 of the Act requires Horizon Power to provide to the ERA an Asset Management System (**AMS**) review (the **review**) conducted by an independent expert acceptable to the ERA not less than once in every 24 month period (or any longer period that the ERA allows). The ERA set the period to be covered by the review as 1 July 2014 to 30 June 2017 (**review period**).

At the request of Horizon Power, Deloitte Risk Advisory Pty Ltd (**Deloitte**) has undertaken a limited assurance review of Horizon Power's AMS.

Horizon Power has been granted a licence to operate and maintain the North West Interconnected System (**NWIS**) and a number of smaller micro-grids located within regional Western Australia. Horizon Power operates in a vast and remote environment, with its assets dispersed at significant distances across harsh terrain. As a result, Horizon Power's AMS has been designed to take the aforementioned factors into account and its maintenance plans have been designed accordingly.

The review has been conducted in accordance with the April 2014 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* (the **Guidelines**), which set out 12 key processes in the asset management life-cycle. The limited assurance review was undertaken in order to state whether, based on the work performed, in all material respects, anything has come to our attention to indicate that Horizon Power had not established and maintained an effective AMS (**AMS**) for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines and in operation during the period 1 July 2014 to 30 June 2017.

2.2 Findings

In considering Horizon Power's internal control procedures, structure and environment, its compliance arrangements and its information systems specifically relevant to those effectiveness criteria subject to review and with a focus on its transmission and distribution activity, we observed that Horizon Power:

- Has continued to improve its AMS, by implementing the following initiatives:
    - Revision of the Asset Management Planning process – streamlined the approach, which was captured within the Asset Management Plan (**AMP**) Guidelines that are reviewed annually to ensure improvements to the process are captured and implemented every year
    - Revision of the risk management process – undertook a project, commenced during the review period, to develop and implement a refined risk management process
    - Conducted multiple projects aimed at improving the quality of and access to data. Projects included:
        - Upgrade of the monthly Asset Management Reports (**AMR**s) to provide access to live performance data, reducing the time lag to action performance issues
        - Upgrade of the workforce mobility tool to better integrate with the Enterprise Asset Management system (Ellipse)
        - Upgrade of the HPCC
        - Updated asset records by linking photos of nameplate data to records within Ellipse and the Geographic Information System (**GIS**)
- Actioned all recommendations made during the 2014 AMS Review.

This review assessed that, of the 56 elements of Horizon Power's AMS:

- For the asset management process and policy definition adequacy ratings:
    - 50 are rated as "Adequately defined"
    - Six are rated as "Requires some improvement".

- For the asset management performance ratings:
  - 54 are rated as "Performing effectively"
  - Two are rated as "Opportunity for improvement".
- There are a total of six opportunities for improvement where further action is recommended.

Specific assessments for each criterion are summarised at **Table 3** in section 3 "Summary of ratings" of this report.

Detailed findings, including relevant observations, recommendations and action plans are located in section 4 "Detailed findings, recommendations and action plans" of this report.

2.3 Asset portfolio

Horizon Power operates in the Pilbara, Kimberley, Gascoyne, Mid-West and the southern region of WA, which includes the Southern Goldfields, Esperance, Hopetoun and Norseman. It has regional depots based in Karratha, Broome, Kununurra, Carnarvon, Esperance and Port Hedland, with administrative support being delivered from Perth. Operations support is also provided remotely via the HPCC.

Horizon Power maintains three systems connected in the East Kimberley (Kununurra, Wyndham and Lake Argyle), two rural systems (Esperance and Hopetoun), the NWIS between Port Hedland and Karratha and 32 micro grids, or isolated power systems.

Horizon Power's decentralised delivery model allows it to have a presence locally, so that it can respond immediately to local concerns.

2.4 Horizon Power's response to previous review recommendations

This review considered Horizon Power's progress in completing the action plans detailed in the 2014 AMS report.

Based on our examination of relevant documents, discussion with staff and consideration of the results of this review's testing against the criteria, we determined that all 10 action plans were fully completed during this review period.

Refer to section 5 of this report for further detail.

2.5 Current Review Asset System Deficiencies/Recommendations

A. Resolved at end of current review period

Not applicable.

B. Unresolved at end of current review period

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 1/2017
Asset Planning *1 (e) Lifecycle costs of owning and operating assets are assessed* **Asset Creation & Acquisition** *2 (b) Evaluations include all life-cycle costs* **Asset Disposal** *3 (c) Disposal alternatives are evaluated*	Requires some improvement (B) **Performance rating** Performing Effectively (1)	Horizon Power considers the costs of disposal of assets through the following mechanisms: • Checklist item on the Finance Impact Statement regarding disposal costs • Decommissioning of existing assets at the point of replacement factored into the Financial Evaluation • Net Present Value (**NPV**) calculations for new assets • Provision account is incremented to reflect the aforementioned costs. In addition, the nature of the intergenerational assets within the HP portfolio, historically a provision for the decommissioning had not been considered on the grounds of materiality. However, Horizon Power's Business Case template does not specifically provide for disposal or decommissioning costs to be identified and evaluated during the asset acquisition process. As a result, the liability as a result of asset disposal may not be fully understood when assessing capital projects.

Recommendation 1/2017
Horizon Power consider updating:
• Part B of its business case template to include consideration of:
  ○ Costs for disposal
  ○ Options relating to decommissioning, divestment or replacement
• The AMP Guidelines to include a checklist item for consideration of disposal costs at acquisition.
		Action Plan 1/2017
		1. Finance will communicate with the PMO Custodian to make the relevant changes to Business Case Part B to consider
		  ○ Cost of Disposal
		  ○ Option relating to decommissioning, divestment or replacement.
		2. AMP Guidelines will be updated to consider disposal cost (if required) at acquisition or factor in disposal costs as an OPEX cost element.
		Responsible Person:
		1. Finance Business Partner (Cate Bertram)
		2. Asset Service Delivery Manager (Lorrie Di Cicco)
		Target Date: December 2017

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 2/2017
Asset Creation and Acquisition *2 (e) Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood*	Adequately defined (A) **Performance rating** Opportunity for improvement (2)	Environmental Management Plans (**EMPs**) for four of the five regions had not been reviewed within the prescribed three yearly timeframe. The most recent review was dated 20 August 2013 for each of the East Pilbara, West Pilbara, East Kimberly and West Kimberly EMPs.
Recommendation 2/2017 Horizon Power review and update all overdue EMPs to ensure consistency and accuracy of information.		**Action Plan 2/2017** All EMPs will be reviewed and updated. **Responsible Person:** • Regional Managers (Scott Beckwith, James Carney, Joe Griessmann, Layton Baker) • Land, Environmental, Native Title & Heritage Manager (Alastair Trolove) will coordinate with Regional Managers **Target Date:** June 2018

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 3/2017
Asset Maintenance *6 (c) Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule*	Requires some improvement (B) **Performance rating** Opportunity for improvement (2)	The June 2017 AMR reported 68 High Priority and 605 Normal Priority transmission and distribution maintenance work orders as overdue at 30 June 2017 Of the High Priority overdue work orders: • Seven were at least 12 months overdue • One was approximately four years overdue • A number appeared to relate to activities that present a high risk to asset operations. For example, six work orders, which were raised in November 2016 and due in June 2017, related to bushfire prevention work before the dry season. Each work order was completed on 3 July 2017. As only three categorisations for overdue (scheduled) work orders are reported in the monthly AMRs, it is difficult to distinguish and prioritise work requiring immediate action. The associated age of the overdue work orders (e.g. work orders overdue by three, six or 12 months) is also not reported to assist in prioritising work. We recognise that each of the long overdue work orders related to non-urgent works, with no significant, immediate impact on network asset operations and for which the relevant regions were able to continue to effectively manage. We also recognise that as it is common for electricity asset operators to encounter slippage in completing maintenance works, overdue work orders in themselves do not pose a significant problem as long as the highest priority work orders are rescheduled and managed appropriately.
Recommendation 3/2017 Horizon Power consider: • Enhancing, based on risk, the granularity of its work order prioritisation to clearly indicate the age of overdue work orders • Developing a monitoring mechanism whereby outstanding work orders requiring immediate action are reported to regional managers • Scheduling future work orders to reflect the enhanced prioritisation approach.		**Action Plan 3/2017** ASD will: 1. Refine the AMR/Clickview to incorporate time based aged overdue work orders KPIs. 2. Communicate to the regions to ensure all work order have a prioritisation identifier. **Responsible Person:** Asset Service Delivery Manager (Lorrie Di Cicco) **Target Date:** 1. June 2018 2. December 2017

<table>
<tr><th>AMS Key Process and Effectiveness Criteria</th><th>Adequacy rating</th><th>Issue 4/2017</th></tr>
<tr><td rowspan="2">Risk Management
8 (b) Risks are documented in a risk register and treatment plans are actioned and monitored</td><td>Requires some improvement (B)
Performance rating
Performing Effectively (1)</td><td>Horizon Power appears to perform its risk management activities effectively at a strategic and divisional level, with oversight by relevant General Managers (GMs) and the Corporate Risk Team. However, in relation to risk treatment plans recorded as complete in CURA (Horizon Power's Enterprise Risk Management system), we observed that:
A significant number of plans were overdue as at 30 June 2017, including plans that related to severe and maintenance-related risks
Due dates for many risk treatment plans appear to have been optimistic, which resulted in revisions to due dates and, in some cases, actions becoming overdue
Given the time lag between revising CAPEX project dates and the bi-annual risk assessment process, risk treatment plan information is out of date and not accurate in some instances
Risk treatment plan closure is not reported within AMRs.</td></tr>
<tr><td colspan="2">Recommendation 4/2017
Horizon Power consider revising its processes for updating CAPEX project dates (that relate to risk treatment plans) to require update within CURA against the relevant risk treatment plan.</td><td>Action Plan 4/2017
1. The Risk Function will send out a communication to the General Managers and Level 3 Managers reminding them to conduct more frequent reviews of their CURA tasks and to follow-up on overdue tasks. Furthermore, the communication will recommend that treatment plan owners synchronise the CAPEX project dates with the CURA treatment plan due dates and that risk treatment plan closure is reported within the AMRs.
2. The Risk Function will continue to report overdue treatment plans to the Executive Team as part of the corporate risk consolidation process that is held every 6 months.
Responsible Person:
Risk & Audit Manager (Liang Tay)
Target Date:
December 2017</td></tr>
</table>

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 5/2017
Risk Management *8 (b) Risks are documented in a risk register and treatment plans are actioned and monitored*	Requires some improvement (B) **Performance rating** Performing Effectively (1)	Based on our review of risk registers for a sample of regions (Port Hedland and Broome/Kununurra), we observed that: • All recorded risks related to either safety or compliance risks • No risks relating to asset failure have been recorded in those registers. We acknowledge that asset failure risks are documented within regions' contingency plans, which enables Horizon Power to recognise and manage asset failure risk at an individual region and system level. However, it is most appropriate for all key risks to be captured in regional risk registers as the single repository for key operational risks.
Recommendation 5/2017 Horizon Power: • Review the current risk categories in CURA to confirm coverage of asset failure risks • Update its risk registers to include relevant extreme or high risks relating to asset failure (e.g. substation failure where N-1 has not been achieved).		**Action Plan 5/2017** The implementation of the Electricity Network Safety Management System (**ENSMS**) on 6 August 2017 has identified asset safety risk. The ENSMS Working Group will review all Extreme and High Asset Failure Risks and these will be captured in CURA, which will be Horizon Power's up-to-date risk register. **Responsible Person:** Asset Service Delivery Manager (Lorrie Di Cicco) **Target Date:** June 2018

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 6/2017
Contingency Planning *9 (a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks*	Requires some improvement (B) **Performance rating** Performing Effectively (1)	Horizon Power has implemented a Business Continuity Management (**BCM**) framework, which identifies the relevant activities to be taken during a business continuity or crisis event. The framework is supported by the Crisis and Emergency Management Plan (**CEMP**), which is to be used in conjunction with the following tactical plans: • Severe Weather procedures • Contingency plans. Horizon Power's regional Contingency Plans contain relevant and useful guidance specific to each network, including a description of the network, the actions to be taken for managing certain failures, key contacts to be involved and a list of critical spares available. However the plans do not contain all key tactical steps to take when in a contingency situation. In practice, the actions taken when in a contingency situation are based on the knowledge and understanding of certain individuals, which gives rise to a moderate key person reliance risk.
Recommendation 6/2017 Horizon Power update its contingency plans to include all key tactical steps to take when in a contingency situation.		**Action Plan 6/2017** 1. ASD will develop a template and standardised approach to the content of the contingency plans to ensure all key tactical steps are identified and actionable. 2. Regional Managers will update the standardised contingency plan to include all key tactical steps. **Responsible Person:** 1. Asset Service Delivery Manager (Lorrie Di Cicco) 2. Regional Managers (Scott Beckwith, James Carney, Joe Griessmann, Layton Baker) **Target Date:** 1. December 2017 2. June 2018

2.6 Scope and objectives

The objective of the review was to independently examine the effectiveness and performance of the AMS established for assets subject to Horizon Power's Licence during the review period.

In accordance with the Guidelines, the review considered the effectiveness of Horizon Power's existing control procedures within the following 12 key processes in the asset management life-cycle.

Table 1 – AMS key processes and effectiveness criteria

#	Key processes	Effectiveness criteria
1	Asset planning	(a) Asset management plan covers key requirements (b) Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning (c) Service levels are defined (d) Non-asset options (e.g. demand management) are considered (e) Lifecycle costs of owning and operating assets are assessed (f) Funding options are evaluated (g) Costs are justified and cost drivers identified (h) Likelihood and consequences of asset failure are predicted (i) Plans are regularly reviewed and updated.
2	Asset creation and acquisition	(a) Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions (b) Evaluations include all life-cycle costs (c) Projects reflect sound engineering and business decisions (d) Commissioning tests are documented and completed (e) Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.
3	Asset disposal	(a) Under-utilised and under-performing assets are identified as part of a regular systematic review process (b) The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken (c) Disposal alternatives are evaluated (d) There is a replacement strategy for assets.
4	Environmental analysis (all external factors that affect the system)	(a) Opportunities and threats in the system environment are assessed (b) Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved (c) Compliance with statutory and regulatory requirements (d) Achievement of customer service levels.
5	Asset operations	(a) Operational policies and procedures are documented and linked to service levels required (b) Risk management is applied to prioritise operations tasks (c) Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data (d) Operational costs are measured and monitored (e) Staff resources are adequate and staff receive training commensurate with their responsibilities.

#	Key processes	Effectiveness criteria
6	Asset maintenance	(a) Maintenance policies and procedures are documented and linked to service levels required (b) Regular inspections are undertaken of asset performance and condition (c) Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule (d) Failures are analysed and operational/maintenance plans adjusted where necessary (e) Risk management is applied to prioritise maintenance tasks (f) Maintenance costs are measured and monitored.
7	Asset management information system	(a) Adequate system documentation exists for users and IT operators (b) Input controls include appropriate verification and validation of data entered into the system (c) Logical security access controls appear adequate, such as passwords (d) Physical security access controls appear adequate (e) Data backup procedures appear adequate and backups are tested (f) Key computations related to licensee performance reporting are materially accurate (g) Management reports appear adequate for the licensee to monitor licence obligations.
8	Risk management	(a) Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the AMS (b) Risks are documented in a risk register and treatment plans are actioned and monitored (c) The probability and consequences of asset failure are regularly assessed.
9	Contingency planning	(a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.
10	Financial planning	(a) The financial plan states the financial objectives and strategies and actions to achieve the objectives (b) The financial plan identifies the source of funds for capital expenditure and recurrent costs (c) The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) (d) The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period (e) The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services (f) Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.
11	Capital expenditure planning	(a) There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates (b) The plan provides reasons for capital expenditure and timing of expenditure (c) The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan (d) There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.
12	Review of AMS	(a) A review process is in place to ensure that the asset management plan and the AMS described therein are kept current (b) Independent reviews (e.g. internal audit) are performed of the AMS.

Each key process and effectiveness criterion is applicable to Horizon Power's Licence and as such was individually considered as part of the review. The Review Plan, set out at Appendix A, details the risk assessments made for and review priority assigned to each key process and effectiveness criterion.

2.7 Approach

Our approach for this review involved the following activities, which were undertaken during June and July 2017:

- Utilising the Guidelines, development of a risk assessment, which involved discussions with key staff and review of documents to undertake a preliminary assessment of relevant controls
- Development of a Review Plan (see Appendix A) for approval by the ERA
- Correspondence and interviews with Horizon Power staff to gain an understanding of process controls in place (see Appendix B for staff involved)
- Visited the Port Hedland and Kununurra (including a visit to the Broome office, from which Kununurra operations are managed) regional depots with a focus on understanding the assets, their function, normal mode of operation, age and an assessment of the network against the AMS review criteria
- Review of documents, processes and controls to assess the overall effectiveness of Horizon Power's AMS (see Appendix B for reference listing)
- Consideration of the resourcing applied to maintaining those controls and processes
- Reporting of findings to Horizon Power for review and response.

3 Summary of ratings

In accordance with the Guidelines, the assessment of both the process and policy definition adequacy rating (refer to **Table 1**) and the performance rating (refer to **Table 2**) for each of the key AMS processes is performed using the below ratings.

For the avoidance of doubt, these ratings do not provide reasonable assurance.

Table 1: Asset management process and policy definition 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 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).

Table 2: 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.

This report provides:

- A breakdown of each function of the AMS into sub-components as described in the Guidelines. This approach is taken to enable a more thorough review of key processes where individual components within a larger process can be of greater risk to the business therefore requiring different review treatment
- A summary of the ratings applied by the review (**Table 3**) for each of:
  - Asset management process and policy definition adequacy (**definition adequacy rating**)
  - Asset management performance (**performance rating**).
- Detailed findings, including relevant observations, recommendations and action plans (**Section 4**).

Table 3: AMS effectiveness summary

			Ratings	
Ref	Effectiveness criteria	Review Priority	Definition Adequacy	Performance
1.	**Asset planning**		**A**	**1**
1(a)	Asset management plan covers key requirements	Priority 4	A	1
1(b)	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	Priority 5	A	1
1(c)	Service levels are defined	Priority 5	A	1
1(d)	Non-asset options (e.g. demand management) are considered	Priority 5	A	1
1(e)	Lifecycle costs of owning and operating assets are assessed	Priority 4	B	1
1(f)	Funding options are evaluated	Priority 5	A	1
1(g)	Costs are justified and cost drivers identified	Priority 4	A	1
1(h)	Likelihood and consequences of asset failure are predicted	Priority 2	A	1
1(i)	Plans are regularly reviewed and updated	Priority 5	A	1
2.	**Asset creation and acquisition**		**A**	**1**
2(a)	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	Priority 4	A	1
2(b)	Evaluations include all life-cycle costs	Priority 4	B	1
2(c)	Projects reflect sound engineering and business decisions	Priority 4	A	1
2(d)	Commissioning tests are documented and completed	Priority 4	A	1
2(e)	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	Priority 2	A	2
3.	**Asset disposal**		**A**	**1**
3(a)	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Priority 5	A	1
3(b)	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Priority 5	A	1
3(c)	Disposal alternatives are evaluated	Priority 5	B	1
3(d)	There is a replacement strategy for assets	Priority 4	A	1
4.	**Environmental analysis**		**A**	**1**
4(a)	Opportunities and threats in the system environment are assessed	Priority 4	A	1
4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Priority 4	A	1
4(c)	Compliance with statutory and regulatory requirements	Priority 4	A	1
4(d)	Achievement of customer service levels	Priority 4	A	1
5.	**Asset operations**		**A**	**1**
5(a)	Operational policies and procedures are documented and linked to service levels required	Priority 2	A	1
5(b)	Risk management is applied to prioritise operations tasks	Priority 4	A	1
5(c)	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	Priority 3	A	1
5(d)	Operational costs are measured and monitored	Priority 4	A	1

Ref	Effectiveness criteria	Review Priority	Ratings	
			Definition Adequacy	Performance
5(e)	Staff resources are adequate and staff receive training commensurate with their responsibilities	Priority 3	A	1
6.	**Asset maintenance**		**A**	**1**
6(a)	Maintenance policies and procedures are documented and linked to service levels required	Priority 2	A	1
6(b)	Regular inspections are undertaken of asset performance and condition	Priority 2	A	1
6(c)	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Priority 2	B	2
6(d)	Failures are analysed and operational/maintenance plans adjusted where necessary	Priority 2	A	1
6(e)	Risk management is applied to prioritise maintenance tasks	Priority 2	A	1
6(f)	Maintenance costs are measured and monitored	Priority 4	A	1
7.	**Asset management information system**		**A**	**1**
7(a)	Adequate system documentation exists for users and IT operators	Priority 5	A	1
7(b)	Input controls include appropriate verification and validation of data entered into the system	Priority 4	A	1
7(c)	Logical security access controls appear adequate, such as passwords	Priority 5	A	1
7(d)	Physical security access controls appear adequate	Priority 5	A	1
7(e)	Data backup procedures appear adequate and backups are tested	Priority 3	A	1
7(f)	Key computations related to licensee performance reporting are materially accurate	Priority 5	A	1
7(g)	Management reports appear adequate for the licensee to monitor licence obligations	Priority 5	A	1
8.	**Risk management**		**A**	**1**
8(a)	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the AMS	Priority 2	A	1
8(b)	Risks are documented in a risk register and treatment plans are actioned and monitored	Priority 4	B	1
8(c)	The probability and consequences of asset failure are regularly assessed	Priority 2	A	1
9.	**Contingency planning**		**B**	**1**
9(a)	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Priority 2	B	1
10.	**Financial planning**		**A**	**1**
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Priority 4	A	1
10(b)	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Priority 5	A	1
10(c)	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Priority 5	A	1
10(d)	The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period	Priority 5	A	1
10(e)	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Priority 4	A	1
10(f)	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	Priority 4	A	1
11.	**Capital expenditure planning**		**A**	**1**
11(a)	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Priority 4	A	1
11(b)	The plan provides reasons for capital expenditure and timing of expenditure	Priority 5	A	1
11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Priority 4	A	1
11(d)	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Priority 5	A	1
12.	**Review of AMS**		**A**	**1**
12(a)	A review process is in place to ensure that the asset management plan and the AMS described therein are kept current	Priority 5	A	1
12(b)	Independent reviews (e.g. internal audit) are performed of the AMS	Priority 5	A	1

4 Detailed findings, recommendations and action plans

Summary of Horizon Power's distribution and transmission works

Horizon Power's asset portfolio and structure

Horizon Power operates and maintains three systems connected in the East Kimberley (Kununurra, Wyndham and Lake Argyle), two rural systems (Esperance and Hopetoun), the NWIS between Port Hedland and Karratha and 32 individual micro-grids, or isolated power systems. Given the rural and vast nature of the environment within which Horizon Power operates (e.g. Horizon Power services approximately one customer every 53.5 square kilometre), increased controls are required to ensure the network is maintained to an appropriate standard.

In addition to its networks, Horizon Power is responsible for the operation of multiple generating units (not subject to this licence). A key factor of Horizon Power's performance depends on its relationships with other generators, upon whom it relies to supply electricity into its networks.

Operation of Horizon Power's transmission and distribution networks is managed and monitored through its control centre (the HPCC). The HPCC is manned on a 24 hour basis and provides support to teams located within the following regional offices:

- Broome/Kununurra
- Port Hedland
- Karratha
- Carnarvon
- Esperance.

Horizon Power operates a decentralised delivery model, with responsibility for managing asset-related activities assigned to its regions. Performance information is consolidated by the Power System Services Team and reported within monthly AMRs. A project is currently underway to improve data quality and develop a live performance reporting portal, which aims to reduce the time delay in communication of performance data.

Horizon Power's Asset Management Planning process

Horizon Power has developed a comprehensive Asset Management Strategy and System, which provides an overview of its Asset Management Framework. The document is supported by a suite of policies, procedures, guidelines and work instructions, which aims to operationalise its AMS.

An annual AMS review process is conducted, commencing February each year, whereby individual AMPs for each Operating Division are reviewed and presented for approval by the Executive. Once approved, Divisional AMPs are consolidated into Horizon Power's AMP, supported by a Corporate Budget.

The following tables contain:

- *Findings:* the reviewer's understanding of the process and any issues that have been identified during the review
- *Recommendations (where applicable):* recommendations for improvement or enhancement of the process or control
- *Action plans (where applicable):* Horizon Power's formal response to review recommendations, providing details of action to be implemented to address the specific issue raised by the review.

4.1 Asset planning

Key process: Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price)

Expected outcome: Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>1(a)</td><td>AMP covers key requirements</td><td colspan="2">Through discussions with the Asset Services Delivery Manager and consideration of Horizon Power's asset management framework, system, policies and processes, we determined that:
Horizon Power developed and implemented a refined process for asset management planning, first implemented during the 2016 planning cycle. The process, formally documented within the AMP Guidelines, is reviewed and updated annually to capture any improvements from the prior year. The process includes the following high level stages:
Planning commencement and communication of data request
Receipt and allocation of Department of Treasury funding to Regions
Provision of Regional forward estimates
Challenge session of Regional forecasts
Review and submission to Department of Treasury.
The Asset Management policy defines Horizon Power's Asset Management Principles, which have been incorporated into the planning process
AMPs are developed and reviewed annually for each region. The AMPs are built based on tactical plans within the regions.
Note that prior to January 2016, Horizon Power's asset planning processes remained unchanged from the prior review. This review focussed on the refined AMP process and related documentation in place from 2016 onwards.
Adequacy Rating: Adequately defined (A) | Performance Rating: Performing effectively (1)</td></tr>
<tr><td>1(b)</td><td>Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning</td><td colspan="2">Through discussions with the Asset Services Delivery Manager and consideration of Horizon Power's asset management framework, system, policies and processes, we determined that:
Horizon Power's asset management framework has been defined based on industry best practice and follows the principles of the ISO55000:2014 standard for asset management (as stated in the Asset Management Strategy)
The Asset Management Policy outlines Horizon Power's guiding principles for managing its assets, being:
Safety
Value
Community</td></tr>
</table>

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td></td><td></td><td colspan="2">• The AMP process has been designed to allow for the following stakeholder input:
  • Regional Managers to submit AMP forecasts
  • Peer review of forecasts
  • GM input via challenge sessions
  • Finance input via review of budget forecasts
  • Department of Treasury input via presentations from Horizon Power
• The Strategic Development Plan (SDP) provides the linkage between Corporate Strategy and the AMP process.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>1(c)</td><td>Service levels are defined</td><td colspan="2">Through discussions with the Asset Services Delivery Manager and examination of the East Pilbara, Geraldton and Kimberly AMPs, and related AMRs, we determined that:
• The plans provide detail in relation to the maintenance and capital budgets to be applied for each year, as well as information in relation to key performance metrics such as the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI)
• Performance against service levels and key metrics are tracked within the monthly AMRs
• Additional performance metrics are defined by each region for operational activities. Examples of metrics include:
  • Non-performing feeders
  • Work orders overdue
  • Priority work orders.
• Service levels contained in relevant plans have been reflected in the maintenance arrangements applied to the assets.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>1(d)</td><td>Non-asset options (e.g. demand management) are considered</td><td colspan="2">Through discussions with the Asset Services Delivery Manager and consideration of Horizon Power's asset management framework, system, policies and processes, we determined that:
• During the AMP process, alternative options are considered under the "Economics" driver, which requires Horizon Power to identify whether current asset options are cost effective
• AMP "Challenge Sessions" held for Regional CAPEX and OPEX budgets (following creation of draft AMP) act as an additional control to drive consideration of non-asset options. For example, if a certain asset project has been put forward and attending GMs believe there are alternative ways to address the need, the project funding will be rejected
• Projects such as the Operating Model Review, contained in the SDP, have been undertaken to reduce operating and overhead costs, resulting in considerable cost savings
• The following alternative supply/demand management arrangements are in place:</td></tr>
</table>

No	Effectiveness Criteria	Findings	
		• Independent Power Producer (**IPP**) arrangements provide Horizon Power with additional contingency in the event an increase in demand was to occur • Customer Funded Projects (**CFP**) are projects that are partially or entirely funded by a customer • Contracts with some customers include options where Horizon Power is able to reduce the electricity supply allocation. The Customer Account Manager confirmed that this option has never been activated by Horizon Power.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

1(e)	Lifecycle costs of owning and operating assets are assessed	Through discussions with the Asset Services Delivery Manager and consideration of Horizon Power's asset management framework, system, policies and processes, we determined that Horizon Power has the following processes in place to assess lifecycle costs of its assets during the planning process:
		• For existing assets:
		  • The Regional AMPs look at past performance and OPEX costs involved in operating the asset to determine future projections, which are made based on trends and are calculated out to ten years
		  • AMRs capture details on costs involved in owning and operating the assets, which are discussed and reviewed monthly
		• For new assets:
		  • All capital projects are required to be assessed in NPV and Internal Rate of Return (IRR) terms
		  • The business case process includes NPV and IRR calculations for lifecycle costs.
		However, the Business Case process could be further improved to provide for explicit consideration of disposal costs.
		Refer to Recommendation and Action Plan 1/2017 at 2(b) below.	

		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Performing effectively (1)

1(f)	Funding options are evaluated	Through discussions with the Asset Services Delivery Manager and the Finance Business Partner and consideration of Horizon Power's asset planning processes, we determined that:
		• Horizon Power considers the following funding options:
		  • Department of Treasury allocations
		  • Customer Funded projects
		  • Other Government programmes (e.g. Royalties for Regions).
		• Funding options have been incorporated into the Corporate Budget, SDP and Statement of Corporate Intent.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>1(g)</td><td>Costs are justified and cost drivers identified</td><td colspan="2">Through discussions with the Asset Services Delivery Manager and the Finance Business Partner and consideration of Horizon Power's asset planning processes, we determined that:
Horizon Power aligns its internal cost drivers to the Department of Treasury drivers, being:
Asset Services
Regulatory Compliance
Safety
Capacity
Reliability
Economics
Quality.
The above drivers have been incorporated into all key elements of the AMS, including, but not limited to, budget allocations, capital spend justifications and KPI reporting.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>1(h)</td><td>Likelihood and consequences of asset failure are predicted</td><td colspan="2">Through discussion with the Asset Services Delivery Manager, examination of relevant risk assessment and asset planning documentation, and consideration of Horizon Power's processes for predicting the likelihood and consequence of asset failure, we determined that:
Horizon Power has the following processes in place to incorporate operational monitoring outputs into the AMP process:
Section E6 of the Asset Management Strategy refers to the Asset Replacement process, to be followed when determining OPEX and CAPEX costs for replacement
The Square Table reports, which include specific detail relating to non-performing assets by priority
Likelihood and consequences of asset failure are assessed according to the As Low As Reasonably Practicable (ALARP) principle, utilising Horizon Power's Corporate risk tables
Asset failure risks (e.g. damage due to operating outside specified performance criteria) are captured and assessed in regional contingency plans
Safety risks relating to asset failure are captured and assessed in Operating Division risk registers
For certain assets, programs are in place for addressing replacement of assets at end-of-life. For example, the Pole Replacement Program that highlights the work required to be conducted
AMRs are used to track asset performance, which is assessed at a regional and corporate level. AMRs include the following, which is reviewed by regional and Operating Division GMs:
Performance of assets based on predefined variance limits (e.g. over 5% variance from prior month)
Performance KPIs for pole failure (per 10,000 poles)
Performance against SAIDI and SAIFI</td></tr>
</table>

No	Effectiveness Criteria	Findings	
		• Additional reporting is developed for each type of asset. For example, a traffic light report has been developed to show pole life, highlighting the "poles at risk" for replacement • Physical monitoring activities are performed during the year to capture changes to asset condition, which are reflected in the Ellipse system. Data is revisited during the AMP process (e.g. historical data relating to degradation or issues identified during the year).	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(i)	Plans are regularly reviewed and updated	Through discussion with the Asset Services Delivery Manager and consideration of Horizon Power's asset management framework, system, policies and processes, we determined that: • The AMP guidelines are reviewed annually, prior to the AMP cycle, to incorporate lessons from the prior year • AMPs for each Division are reviewed annually as part of the AMP process and Corporate Budget process • Challenge sessions are conducted on Divisional AMP budgets to rationalise proposed spend for the year.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.2 Asset creation and acquisition

Key process: Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay

Expected outcome: A more economic, efficient and cost-effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>2(a)</td><td>Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions</td><td colspan="2">Through discussion with the Asset Services Delivery Manager and consideration of Horizon Power's Project Management (PMM) process, we determined that:
A project classification tool is completed prior to commencing any project evaluation. The tool assists to determine project complexity
For complex projects (greater than $500k):
A six phase project evaluation process is conducted, with associated stage gates at the end of each phase
A four part business case is required to be completed. Each business case is required to be approved in accordance with Horizon Power's Authorities and Delegations Manual (DFA)
For non-complex projects (less than $500k):
A four phase project evaluation process is conducted, starting at phase three of the standard PMM process
Business cases take the form of a minor budget request form, or a line item incorporated into the AMP process (e.g. proposed works for the following year, reflected in the CAPEX projection)
Project evaluations are performed during Part B of the business case, which includes completion of the following, for each option:
Risk assessment
Financial impact statement
Financial evaluation (NPV and IRR)
Funding analysis
Future state project plan.
Based on our walkthrough of two sample projects [the Pilbara Power Project (PPP) and Kununurra Power Station upgrade], we determined that all steps were followed as required, with sufficient evidence maintained.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>2(b)</td><td>Evaluations include all life-cycle costs</td><td colspan="2">Through discussion with the Asset Services Delivery Manager and Finance Business Partner, consideration of Horizon Power's processes for evaluating project lifecycle costs and examination of Horizon Power's Business Case templates, we determined that Horizon Power's processes provide for:
• Consideration of costs of ownership within NPV calculations captured in the Business Case template: Part B, Options Analysis. A provision of 2.5% is placed on all assets with extended lives to account for the increase in maintenance and expected decommissioning costs
• Specific checklist item included in the Finance impact statement for decommissioning
• Project costs to be projected for a five year period
• From a financial perspective, development of a liability for decommissioning, which is accounted for in the financial statements [section 2 (tii) Decommissioning costs]
Improvement opportunity
However, Horizon Power's Business Case template does not specifically provide for disposal or decommissioning costs to be identified and evaluated during the asset acquisition process. As a result, the liability as a result of asset disposal may not be fully understood when assessing capital projects.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>Recommendation 1/2017
Horizon Power consider updating:
• Part B of its business case template to include consideration of:
○ Costs for disposal
○ Options relating to decommissioning, divestment or replacement
• The AMP Guidelines to include a checklist item for consideration of disposal costs at acquisition.</td><td>Action Plan 1/2017
1. Finance will communicate with the PMO Custodian to make the relevant changes to Business Case Part B to consider
○ Cost of Disposal
○ Option relating to decommissioning, divestment or replacement.
2. AMP Guidelines will be updated to consider disposal cost (if required) at acquisition or factor in disposal costs as an OPEX cost element.
Responsible Person:
1. Finance Business Partner (Cate Bertram)
2. Asset Service Delivery Manager (Lorrie Di Cicco)
Target Date: December 2017</td></tr>
</table>

No	Effectiveness Criteria	Findings	
2(c)	Projects reflect sound engineering and business decisions	Through discussion with the Asset Services Delivery Manager, consideration of Horizon Power's project management process and examination of the DFA, we determined that: • The Part A business case (section A13) requires a stakeholder impact assessment to be performed, which identifies all relevant stakeholders to be involved during the project evaluation process • Parts B to D all contain checklist items for consideration relating to the engagement of stakeholders identified in Part A • Each stakeholder identified in Part A must complete an impact statement to approve progression of the project to the next phase • Part 2, table 5 of the DFA outlines the relevant approvers for projects ($2m limit for GMs and $10m limit for the CEO) • Where contractors are involved, a minimum competency requirement is included on tenders to confirm proposing contractors have sound engineering understanding • A project Steering Committee is established for all complex projects, which incorporates quality assurance and project decision making.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
2(d)	Commissioning tests are documented and completed	Through discussion with the Asset Services Delivery Manager and examination of relevant documentation provided for the PPP and Kununurra Power Station projects, we observed that: • Commissioning activities are documented in a punch list, which is completed for all complex projects • Documentation of commissioning activities is maintained in Horizon Power's document management system • For each of the PPP and Kununurra Power Station projects, punch lists were completed and agreed and approved by the contractor.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>2(e)</td><td>Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood</td><td colspan="2">Through discussion with the Asset Services Delivery Manager and consideration of relevant policies and procedures, we confirmed that Horizon Power conducts the following activities for identifying and managing regulatory obligations relating to its assets:
• Project obligations are tracked in spreadsheets by the Projects Services Governance Officer
• Checklists are completed to track environmental and native title approvals
• Regulatory obligation breaches are identified, escalated and reported through the following mechanisms:
  • Non-compliance is logged in relevant project issues logs
  • All non-compliances identified are required to be reported to the project Steering Committee by Project Directors
  • A summary of non-compliances are reported in Project Status Reports (PSRs) and communicated to GMs.
Improvement opportunity
Based on our examination of EMPs, we identified that, for four of the five regions, EMPs had not been reviewed within the prescribed three year timeframe. Also, as a result of an internal organisational restructure, the EMPs do not align to Horizon Power's current organisational structure. The most recent review was conducted on 20 August 2013 for:
• East Pilbara
• West Pilbara
• East Kimberly
• West Kimberly.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
<tr><td></td><td></td><td>Recommendation 2/2017
Horizon Power review and update all overdue EMPs to ensure consistency and accuracy of information.</td><td>Action Plan 2/2017
All EMPs will be reviewed and updated.
Responsible Person:
• Regional Managers (Scott Beckwith, James Carney, Joe Griessmann, Layton Baker)
• Land, Environmental, Native Title & Heritage Manager (Alastair Trolove) will coordinate with Regional Managers
Target Date: June 2018</td></tr>
</table>

4.3 Asset disposal

Key process: Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms.

Expected outcome: Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	

3(a)	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Through discussion with the Asset Services Delivery Manager and examination of relevant supporting documentation, we determined that Horizon Power has the following processes in place for identifying under-performing assets:
		• Monitoring of asset performance and utilisation is conducted as follows:
		  • Live monitoring through the HPCC (in terms of capacity and fault management)
		  • Monthly data is collated by the Asset Systems Services Team, which develops the AMRs and presents to the Regions
		  • The AMRs include SAIDI and SAIFI figures for the month, which are discussed by Regional Managers during monthly team meetings
		• Horizon Power is currently implementing a new system to provide live performance data, which will reduce the need for data to be collated monthly and will reduce the time lag for actioning performance related issues
		• During the AMP process, regional data is peer reviewed to confirm accuracy and completeness.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
3(b)	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Through discussion with the Asset Services Delivery Manager and examination of relevant supporting documentation, we determined that Horizon Power has the following processes in place for implementing corrective action in relation to asset disposal: • Root causes of asset failure are highlighted in the AMR and investigated by the relevant region • In the instance of a disposal, investigations will be performed to determine root cause and whether disposal/replacement action is required • Strategic decisions on replacement are incorporated into spending programs (e.g. Pole Replacement Program) and form part of the annual budgeting cycle (i.e. OPEX budgets) • For disposals outside of the budgeting cycle, the formal CAPEX business case process will be followed.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
3(c)	Disposal alternatives are evaluated	Through discussion with the Asset Services Delivery Manager and Finance Business Partner, and examination of supporting documentation, we determined that Horizon Power's processes include: • A five year outlook on OPEX and CAPEX spend in AMP projections	

No	Effectiveness Criteria	Findings	

		• Section 6 of the SDP specifically highlights "Management of Wood Poles" as an emerging issue, for which actions have and will be undertaken to address this issue. Actions taken to date include:
		  • Revision of pole inspection techniques
		  • Development of a strategy to move from an age-based replacement strategy to a condition-based replacement strategy
		• The Disposal of Assets policy includes specific reference to the option of selling an asset as an alternative to disposal.
		However, the Business Case process could be further improved to provide for explicit consideration of disposal costs.
		Refer to Recommendation and Action Plan 1/2017 at 2(b) above.	

		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Performing effectively (1)

3(d)	There is a replacement strategy for assets	Through discussion with the Asset Services Delivery Manager and consideration of Horizon Power's replacement strategies for its key assets, we determined that:
		• The following ongoing programs have been developed:
		  • A Pole Replacement Program is in place for all poles (at a standard life of 40 years)
		  • A new Powerline Program to address safety and reliability of supply concerns (captured through strategic extension projects in the SDP)
		  • Replacement of unserviceable assets
		• Any other disposal or replacement activities are subject to the standard business case approval process and aligned to the DFA
		• Replacement needs identified during the course of the year (in addition to those captured in the aforementioned programs) are highlighted in AMRs and discussed by relevant GMs.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.4 Environmental analysis

Key process: Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.

Expected outcome: The AMS regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	
4(a)	Opportunities and threats in the system environment are assessed	Through discussion with the Asset Services Delivery Manager and the Land Environment Native Title & Heritage Manager, and examination of Horizon Power's policies and reporting mechanisms, we determined that: • Long term forecasts and annual reviews of the AMS are performed to analyse opportunities and threats in the system environment • Safety and environmental considerations flow through to the AMP (as a driver), which consider the impacts of the changing environment on asset operations • Demand forecasts are conducted to identify trends in performance requirements across assets • An online compliance register (via Powerlink) is maintained by King & Wood Mallesons (a subscription based service) • AMRs are generated monthly to identify shortfalls in performance requirements and create action plans to address shortfalls • Risks are identified and managed through CURA • Incident reporting is managed through the Cintellate environmental, health and safety reporting system, which is reported to relevant stakeholders.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Through discussion with the Asset Services Delivery Manager and the Land Environment Native Title & Heritage Manager, and examination of Horizon Power's policies and reporting mechanisms, we determined that:
		• The AMS strategy (2015-2020) provides an overarching vision of performance of assets which feeds through to the AMPs
		• AMRs are produced on a monthly basis and maintained on Horizon Power's intranet
		• AMRs are reviewed by level 3 managers and summarised in a Square Table report
		• A variety of indicators are employed to monitor asset performance monthly and annually. Performance standards are grouped into the following key drivers:
		  • Safety (and environment)
		  • Reliability
		  • Quality
		  • Cost
		  • Asset service	

No	Effectiveness Criteria	Findings	
		• Regulatory • Service delivery. We examined AMRs for the months of January 2017, February 2017, March 2017 and June 2017, and confirmed that the aforementioned information was reported accordingly.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4(c)	Compliance with statutory and regulatory requirements	Through discussion with the Asset Services Delivery Manager and the Land Environment Native Title & Heritage Manager and examination of Horizon Power's policies and reporting mechanisms, we determined that:
		• Horizon Power's compliance register consists of drill down capabilities to identify obligations by operating division
		• Environmental and Heritage requirements are managed through clearance request forms, which are reviewed by the Environment and Land Management Team. Clearance request forms are accessible via the intranet
		• Environmental requirements are managed through zone based EMPs
		• Performance compliance management is monitored through AMRs (as discussed above). Horizon Power performs additional compliance reporting across:
		  • Power quality
		  • Distribution defects
		  • Customer outages
		  • Streetlight customer charter.
		Based on our review of the performance reports, we determined that, for the instances where Horizon Power was non-compliant with a performance standard (e.g. outages, quality), sufficient controls were in place to report and manage those non-compliances.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4(d)	Achievement of customer service levels	Through discussion with the Asset Services Delivery Manager and the Land Environment Native Title & Heritage Manager and examination of Horizon Power's policies and reporting mechanisms, we determined that:
		• AMRs include targets, performance metrics and breaches, and are presented at monthly performance meetings
		• Not all service levels had been achieved throughout the review period. Examples of internal performance standards that have not been achieved relate to:
		  • SAIDI and SAIFI
		  • Customer outages >12 hours
		  • Outstanding incidents >7 days.	

No	Effectiveness Criteria	Findings	
		• Non-performing metrics are subject to review at monthly Square Table meetings (for level 3 managers) and are managed on an on-going basis. Live performance reporting, due to be in place from August 2017, is expected to reduce the time lag of performance data. The metrics have been designed to drive improvements and as a result, performance standards are not always achieved • The Environment and Land Management Team is responsible for impacts relating to native flora and fauna and enables Horizon Power to manage effective communications between local communities • Adequate documentation and reporting mechanisms are in place to achieve customer service levels.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.5 Asset operations

Key process: Operational functions relate to the day-to-day running of assets and directly affect service levels and costs.

Expected outcome: Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>5(a)</td><td>Operational policies and procedures are documented and linked to service levels required</td><td colspan="2">Through discussion with the Asset Services Delivery Manager, Regional Asset Managers of Kimberley and Pilbara, Regional Officers and Coordinators for Port Hedland, Broome/Kununurra and examination of documented policies, procedures and protocols, we observed that Horizon Power has:
Comprehensive documented policies, procedures and protocols for each of its asset sites, designed to facilitate the effective operation of its assets. All asset related policies, procedures and protocols are documented within the Horizon Power document management system and are version controlled
Developed procedures that refer to required service levels (where appropriate) for the operation of the specific equipment, or specific electrical or mechanical procedures to be applied
Developed operating instructions and control plans for major aspects of the network
Regional operational plans are prepared annually to describe the full scope and strategies required to achieve service and performance levels
The Asset Management Strategy and System outlines overall organisation wide processes. Region specific AMPs provide descriptions of relevant operational activities and tasks.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>5(b)</td><td>Risk management is applied to prioritise operations tasks</td><td colspan="2">Through discussion with the Asset Services Delivery Manager, Regional Asset Managers of Kimberley and Pilbara, Regional Officers and Coordinators for Port Hedland, Broome/Kununurra and examination of documented policies, procedures and protocols, we observed that Horizon Power:
Has applied a risk-based process to manage its key assets, with higher risk tasks given priority over lower risk tasks
Implemented a weekly meeting to discuss and prioritise operational and maintenance tasks at each location
Implemented daily pre-start meetings to discuss and prioritise work for the day
Has adopted the seven cost drivers, applicable to the AMPs and budgeting processes, to prioritise and allocate operational tasks
Has developed risk registers for all assets. Risk management has been incorporated into operational tasks, through:
Risk identification
Take fives and hazard identification tools.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

No	Effectiveness Criteria	Findings	

5(c)	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	Through discussion with the Asset Services Delivery Manager, Regional Asset Managers of Kimberley and Pilbara, Regional Officers and Coordinators for Port Hedland, Broome/Kununurra and examination of documented policies, procedures and protocols, we observed that:
		• Ellipse is the primary asset register and is used to track the following:
		  • Equipment type
		  • Equipment ID and relevant information
		  • Work orders
		  • Maintenance tasks
		  • Cost
		• Horizon Power's GIS incorporates data within Ellipse, which is used to track certain asset detail (e.g. location, nameplate data, etc.)
		Based on a walkthrough of the data accuracy project conducted during the review period (commenced due to the prior review recommendation), we observed that:
		• Audits of asset data were performed through a series of site visits
		• During those audits, photos were taken of all assets, including nameplate data
		• Photo information was converted to a format to upload into Ellipse
		• Ellipse has been updated with photos and relevant nameplate data.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(d)	Operational costs are measured and monitored	Through discussion with the Asset Services Delivery Manager, Regional Asset Managers of Kimberley and Pilbara, Regional Officers and Coordinators for Port Hedland, Broome/Kununurra and examination of documented policies, procedures and protocols, we observed that: • Operational costs are included within the annual OPEX budget during the AMP process • Each operating division submits its OPEX budget, which is challenged by relevant peer GMs • Following the challenge session, OPEX budgets are collated and incorporated within the Corporate Budget, which is submitted to the Department of Treasury for approval • Once approved, the budgets are managed by the relevant regions and monitored accordingly • AMRs include information relating to performance against OPEX budgets.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
5(e)	Staff resources are adequate and staff receive training commensurate with their responsibilities	Through discussion with the Asset Services Delivery Manager, Regional Asset Managers of Kimberley and Pilbara, Regional Officers and Coordinators for Port Hedland, Broome/Kununurra, and examination of Horizon Power's VETtrack corporate training and skills register, we observed that: • Staff job descriptions and qualification requirements are documented within the VETtrack register • The VETtrack register is updated at least annually and contains requirements, qualifications, competency of staff and required training, by role • The VETtrack register is used by managers responsible for ensuring staff have received required training • Staff resource levels, as documented in VETtrack, are adequate to deliver against operational objectives.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.6 Asset maintenance

Key process: Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.

Expected outcome: Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	

6(a)	Maintenance policies and procedures are documented and linked to service levels required	Through discussion with the Asset Services Delivery Manager, East Pilbara and West Kimberley Regional Asset Managers, Regional Officers and Coordinators for Port Hedland and Broome/Kununurra, walkthrough of relevant maintenance arrangements, and examination of documented policies, procedures and protocols, we determined that:
		• Maintenance policies are defined in the Asset Management Strategy and System. During the review period, Horizon Power used a mixture of:
		  • Preventive, required fixed time/cycle-based maintenance
		  • Reactive and predictive maintenance (incorporating inspections) on the basis of risk assessment
		  • Corrective maintenance to fix conditions identified during inspection
		  • Reactive maintenance (emergency)
		• Policies are available via the intranet
		• Procedures used on site refer to required service levels (where appropriate) for the operation of the specific item of equipment, or specific electrical or mechanical procedures
		• Operating instructions/control plans for major aspects of the network have been developed and are used throughout Horizon Power's network operations
		• Regional operational plans (in conjunction and within the AMP) are prepared on a yearly basis to describe the full scope and strategies required to achieve the required service and performance levels.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(b)	Regular inspections are undertaken of asset performance and condition	Through discussion with the Asset Services Delivery Manager, East Pilbara and West Kimberley Regional Asset Managers, Regional Officers and Coordinators for Port Hedland and Broome/Kununurra, testing of relevant maintenance arrangements, and examination of documented policies, procedures, protocols and reports, we determined that: • Thermographic surveys are performed of the network on a two yearly rolling basis. Issues identified are investigated accordingly • Non-performing feeders are tracked within monthly asset performance reports • Re-occurring performance issues with feeders are investigated • Large critical assets (such as large transformers) have oil testing performed on a regular basis. We sighted evidence of oil testing performed • Maintenance Scheduled Tasks (**MST**) and Standard Jobs are used to define and drive the regular maintenance tasks such as inspections	

No	Effectiveness Criteria	Findings	
		• Regular inspection maintenance tasks (MSTs created as regular work orders, such as pole and street light inspections) are typically undertaken as campaigns. The campaign may also include an overall area check, where any asset information mismatches or missing equipment would be identified and addressed. Toughbooks (electronic devices) are used to assist with inspections, where a checklist is loaded into the Toughbook device and used during the inspection to record information collected and to identify any issues. The Toughbook device is also loaded with GIS data to assist in identification of assets and to assist with confirming the GIS data is still valid. We confirmed the use of Toughbooks containing such checklists during our physical visit to Horizon Power's Port Hedland and Broome/Kununurra operations • Faults found during regular inspections (and otherwise) are entered into Horizon Power's defect management system as applicable. Defects are investigated and addressed • An annual network scorecard is prepared by regions, containing a detailed assessment of network performance with granular detail • Network faults are reviewed by regions daily and any required actions are taken in conjunction with HPCC. We tested an example of a poorly performing feeder with relevant Horizon Power staff and reviewed documentation outlining plans being undertaken to address possible underlying causes of the poor performance. We also confirmed that the number of non-performing feeders by region/depot is tracked on a monthly basis.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(c)	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Through discussion with the Asset Services Delivery Manager, East Pilbara and West Kimberley Regional Asset Managers, Regional Officers and Coordinators for Port Hedland and Broome/Kununurra, plus other staff at Port Hedland, Broome, Kununurra and Bentley, testing of relevant maintenance arrangements, and examination of documented policies, procedures and protocols, we determined that: • Maintenance plans are documented within the AMP and Horizon Power's Ellipse maintenance system • Daily pre-start meetings and weekly planning meetings are held, which are used to discuss and plan upcoming work, and where relevant to discuss outstanding work. We observed pre-start meetings held during our physical visit to Horizon Power's Port Hedland and Broome operations • Scheduled maintenance work is undertaken by regions, predominantly using designated regional staff and contractors. We sighted evidence of a number of scheduled maintenance work orders being performed within the East Pilbara (Port Hedland office) and West Kimberley (Broome/Kununurra offices) regional operations • Monthly AMRs and other reports are used to track maintenance progress and asset performance. AMRs highlight the extent of outstanding work from the prior period, including overdue High Priority maintenance work orders • Maintenance costs are tracked on a regular basis and any underspend or overspend of maintenance budgets is investigated. This process acts as a secondary check of maintenance schedules as any variation to budget could indicate delays or changes to the maintenance schedules.	

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td></td><td></td><td colspan="2">Improvement opportunity
The June 2017 AMR reported 68 High Priority and 605 Normal Priority transmission and distribution maintenance work orders as overdue at 30 June 2017. Of the High Priority overdue work orders:
Seven were at least 12 months overdue
One was approximately four years overdue
A number appeared to relate to activities that present a high risk to asset operations. For example, six work orders, which were raised in November 2016 and due in June 2017, related to bushfire prevention work before the dry season. Each work order was completed on 3 July 2017.
As only three categorisations for overdue (scheduled) work orders are reported in the monthly AMRs, it is difficult to distinguish and prioritise work requiring immediate action. The associated age of the overdue work orders (e.g. work orders overdue by three, six or 12 months) is also not reported to assist in prioritising work.
We recognise that each of the long overdue work orders related to non-urgent works, with no significant, immediate impact on network asset operations and for which the relevant regions were able to continue to effectively manage. We also recognise that as it is common for electricity asset operators to encounter slippage in completing maintenance works, overdue work orders in themselves do not pose a significant problem as long as the highest priority work orders are rescheduled and managed appropriately.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
<tr><td></td><td></td><td>Recommendation 3/2017
Horizon Power consider:
Enhancing, based on risk, the granularity of its work order prioritisation to clearly indicate the age of overdue work orders
Developing a monitoring mechanism whereby outstanding work orders requiring immediate action are reported to regional managers
Scheduling future work orders to reflect the enhanced prioritisation approach.</td><td>Action Plan 3/2017
ASD will:
Refine the AMR/Clickview to incorporate time based aged overdue work orders KPIs.
Communicate to the regions to ensure all work order have a prioritisation identifier.
Responsible Person:
Asset Service Delivery Manager (Lorrie Di Cicco)
Target Date:
June 2018
December 2017</td></tr>
<tr><td>6(d)</td><td>Failures are analysed and operational/maintenance plans adjusted where necessary</td><td colspan="2">Through discussion with the Asset Services Delivery Manager, East Pilbara and West Kimberley Regional Asset Managers, Regional Officers and Coordinators for Port Hedland and Broome/Kununurra, plus other staff at Port Hedland, Broome, Kununurra and Bentley, testing of relevant maintenance arrangements, and examination of documented policies, procedures and protocols, we determined that:
Monthly AMRs and associated reports track equipment failures, such as poorly performing feeders, and outline the type/cause of the faults, which are tracked on a regular basis. Work is included in upcoming AMPs as relevant to address any performance issues or risks. We sighted adjustments to maintenance plans as a result of assessment of equipment failure/poor performance</td></tr>
</table>

No	Effectiveness Criteria	Findings	
		• Common faults not related to equipment performance, but common external factors (such as bats or geese) are investigated and, where appropriate, work is included in upcoming AMPs. For example, the installation of bat guards onto some parts of the network where bat activity is above average • The Cintellate incident reporting system is also used to track any incidents that warrant investigation, such as safety incidents or client outages.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

6(e)	Risk management is applied to prioritise maintenance tasks	Through discussion with the Asset Services Delivery Manager, East Pilbara and West Kimberley Regional Asset Managers, Regional Officers and Coordinators for Port Hedland and Broome/Kununurra, and examination of documented policies, procedures and protocols, we determined that Horizon Power has:
		• Applied a risk-based process to manage its key assets, with higher risk tasks given priority over lower risk tasks
		• Implemented a weekly meeting to discuss and prioritise maintenance tasks at each location
		• Implemented daily pre-start meetings at each operational location to discuss and prioritise work for the day
		• Adopted seven cost drivers, applicable to the AMPs and budgeting processes, to prioritise and allocate operational tasks
		• Developed risk registers to accommodate all assets. Risk management has been incorporated into operational tasks, through:
		  • Risk identification
		  • Take fives and hazard identification tools.
		We observed risk practices on site and identified examples where risk management was being actively applied to prioritise maintenance tasks, such as work being undertaken to address degraded concrete structures in substations.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(f)	Maintenance costs are measured and monitored	Through discussion with the Asset Services Delivery Manager, East Pilbara and West Kimberley Regional Asset Managers, Regional Officers and Coordinators for Port Hedland and Broome/Kununurra, plus other staff at Port Hedland, Broome, Kununurra and Bentley, we observed that: • Maintenance costs are budgeted in the AMPs and recorded in Ellipse. Data from Ellipse is extracted in spreadsheets to support monthly AMRs • Monthly AMRs are supported by other reports, which provide monthly updates of profit and loss and information on activities, trends, and impact of events etc. • The various reports are provided to Divisional management on a monthly basis for cost and forecast monitoring.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.7 Asset Management Information System

Key process: An asset management information system is a combination of processes, data and software that support the asset management functions.

Expected outcome: The asset management information system provides authorised, complete and accurate information for the day-to-date running of the AMS. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	

7(a)	Adequate system documentation for users and IT operators	Through discussion with the IT Security Risk and Governance Specialist and examination of Horizon Power's IT policies and system reporting documentation, we determined that Horizon Power maintains:
		• An overarching Information Technology Policy that provides guidance on:
		  • Information Security (including password policy)
		  • Removable Media
		  • Patch Management
		  • Acceptable use
		  • Remote Access
		  • Data Storage
		• Specific policies and procedures covering:
		  • Back up policy and procedure
		  • Disaster Declaration and Execution
		  • Disaster Recovery Test plan.
		We confirmed that the following references appeared to be up-to-date and easily accessible via Horizon Power's intranet:
		• Corporate Policies register
		• Forms and automated workflow approvals
		• IT security management information
		• Staff specific guidelines and tools.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
7(b)	Input controls include appropriate verification and validation of data entered into the system	Through discussion with the IT Security Risk and Governance Specialist, walkthrough of Ellipse and relevant information systems, and examination of Horizon Power's IT related documentation, we determined that: • Input controls have been implemented to validate data within the Ellipse system • Attribute fields to accept certain data types and ranges have been set within the Ellipse system • Health checks are performed to identify data quality issues, which are followed up with the relevant regions to address in a timely manner • Data is validated further on a monthly basis during the compilation of AMRs • A data team within the Power Systems Services operating division manages any exceptions within the Ellipse system and issues are logged by individuals. Horizon Power outsourced Work-In-Progress tasks to Cyient (outsourced service provider) in 2014 (as per the prior review recommendation), which completed all outstanding work by August 2014 • Processes are in place to verify and validate data entered into Ellipse • A limited number of staff have access to input data.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(c)	Logical security access controls appears adequate, such as passwords	Through discussion with the IT Security Risk and Governance Specialist and examination of Horizon Power's IT policies and system reporting documentation, we determined that: • Horizon Power's processes and procedures provide for all users to be assigned a unique 'global profile' user account and password that adhere to Horizon Power's IS security standards. Account password requirements provide for a minimum and mixture of characters • Horizon Power's Access Control Guidelines and Privilege Account Management policy outline how access is granted and permissions are managed • Horizon Power provides support and reminders on updating passwords and required password protocols • Horizon Power conducts monthly vulnerability reporting for all devices. During our on boarding process, we were provided access to Horizon Power's systems and confirmed that the above controls were in place and followed.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	

7(d)	Physical security access controls appear adequate	Through discussion with the IT Security Risk and Governance Specialist and examination of Horizon Power's IT policies and system reporting documentation, we determined that Horizon Power has the following physical security controls in place:
		• Building card locks
		• CCTV in some locations at Head Office
		• Specific Access Listing for the HPCC (segregated within its own room, with appropriate climate controls in place)
		• A back up HPCC located within Port Hedland, which is tested periodically (at least annually)
		• Data storage physical controls include
		  • Dual site data storage layout – Malaga production sites (Fujitsu data centre with replication in Bentley)
		  • Card swipe access to server room
		  • Temperature monitoring reporting for server room and air conditioning system set up
		  • Annual Disaster Recovery (**DR**) exercise, which includes testing the performance of the uninterruptible power supply(UPS)
		  • Fire extinguishers
		  • Access to server room controlled by the Property Management team via request. Only persons who have roles requiring them to be able to access the server room (i.e. support staff, fire wardens and first aid officers) are permitted access.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(e)	Data backup procedures appear adequate and backups are tested	Through discussion with the IT Security Risk and Governance Specialist and examination of Horizon Power's IT Back Up Policy and reporting, we determined that: • The IT Back Up Policy is up to date and outlines the requirement to perform back up testing as part of daily operations • Weekly back up reports are automatically generated and provided to staff • Back up tests are performed and reported through standard service requests (e.g. document recovery requests) • Comprehensive recovery exercises (e.g. full system restorations) are performed as part of the annual DR exercises • Horizon Power has a Tier 1 data centre (outlined above) – with services covered under contractual arrangement.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	

7(f)	Key computations related to licensee performance reporting are materially accurate	Through discussion with the Asset Services Delivery Manager and consideration of Horizon Power's processes for sourcing, compiling and verifying network performance data, we determined that:
		• Horizon Power's Ellipse asset management information system does not directly provide data used in any computation related to its licence performance reporting
		• Horizon Power's Trouble Call System (**TCS**) and Supervisory Control and Data Acquisition (**SCADA**) systems are the primary sources of data used for reporting on the performance of its network
		• The Asset Services Delivery Team is responsible for sourcing, compiling and verifying data obtained from the TCS and SCADA systems in order to meet its annual network performance reporting requirements in accordance with the Electricity Distribution Licence Performance Reporting Handbook (relating to network reliability) and the Electricity Industry (Network Quality and Reliability of Supply) Code 2005
		• Procedures applied by the Asset Services Delivery Team to source, compile and verify network performance data includes:
		  • Extraction of data (including asset failures, incidents, interruptions/outages and faults) on a monthly basis and at an individual system level for inclusion in AMRs
		  • Use of normalised data sets
		  • Presentation of performance against established targets
		  • Review and analysis of trends, causes, emerging issues.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(g)	Management reports appear adequate for the licensee to monitor licence obligations	Through discussion with the IT Security Risk and Governance Specialist and consideration of Horizon Power's management reporting procedures, we determined that: • A variety of scheduled reports are capable of being generated from Ellipse, Qlikview and Quickbase • Asset performance reports are run monthly in the form of AMRs We note that live reporting functionality has been developed and is scheduled to be in place from August 2017.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.8 Risk management

Key process: Risk management involves the identification of risks and their management within an acceptable level of risk.

Expected outcome: An effective risk management framework is applied to manage risks related to the maintenance of service standards.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	

8(a)	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the AMS.	Through discussions with the Risk & Audit Specialist, examination of policies and procedures and walkthrough of Horizon Power's risk management process, we determined that:
		• Horizon Power's Risk Management Framework and Risk Management Policy was last formally reviewed in December 2014, with the next review due in December 2016
		  • Formal review of these documents was postposed to allow for changes as a result of an improvement project to be captured and communicated to staff
		  • The improvement project aimed to simplify current risk management processes to align to industry and global best practice
		  • Final ExCo approval of the project outcomes is scheduled for August 2017.
		• Risk management activities are driven by the regions and summarised by the Corporate Risk team to present to the Audit and Risk Management Committee (**ARMC**) and Board
		• Horizon Power's risk appetite has been set at "medium", as per its Corporate risk matrix, where all risks rated higher than medium are considered outside of Horizon Power risk tolerance and require action to reduce exposure
		• The ARMC has accountability for ensuring risk management practices are established and are fit for purpose. Given the decentralised nature of the organisation, the Operating Division GMs have overarching responsibility for ensuring that the risk management process has been embedded throughout the organisation. Roles have been formally captured within the Risk Management Framework document
		• The risk management process includes the following key elements:
		  • A risk register is required to be developed for each Operating Division
		  • Risks are assessed on a bi-annual basis, with a more formal annual assessment whereby risks are challenged by peers
		  • Following the bi-annual assessment, risk registers are consolidated, reviewed and approved by GMs, ExCo and presented to ARMC
		• For all high and severe risks, treatment plans are required to be developed and tracked to completion.
		Based on examination of risk management activities applied at the Port Hedland and Broome/Kununurra sites, we confirmed that the corporate risk management process is being applied as described above.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	

8(b)	Risks are documented in a risk register and treatment plans are actioned and monitored	Through discussion with the Risk & Audit Specialist and the Pilbara Grid Asset Manager, examination of regional risk outputs; and walkthrough of Horizon Power's risk management process, we determined that:
		• Operating Division GMs are responsible for developing risk registers and accountable for management of risks
		• Risk registers are updated quarterly to reflect changes to the risk profile, controls and ownership
		• In addition to the quarterly update, a formal bi-annual risk assessment is performed, whereby all risks identified as high and severe are assigned risk treatment plans to manage the risk to within Horizon Power's risk tolerance (medium)
		• Risk treatment plans are developed within the CURA system and assigned ownership and due dates for completion
		• Monitoring of completion of treatment plans is performed primarily by action owners within Qlikview, which reports and notifies actions upcoming, due and overdue. The Corporate Risk Team provides an additional layer of oversight/escalation on action completion.
		Improvement opportunity 1
		In relation to risk treatment plans recorded as complete in CURA, we observed that:
		• 284 plans were developed on 1 July 2016, of which:
		  • 71 were completed
		  • 213 remained open (of which some were listed as "overdue")
		  • A number of overdue plans related to severe and maintenance-related risks
		• Due dates for many risk treatment plans appear to be optimistic, which resulted in revisions to due dates and, in some cases, actions becoming overdue
		• Given the time lag between revising CAPEX project dates and the bi-annual risk assessment process, risk treatment plan information is out of date and not accurate in some instances
		• Risk treatment plan closure is not reported within AMRs.
		Improvement opportunity 2
		Based on our review of risk registers for a sample of regions (Port Hedland and Broome/Kununurra), we observed that:
		• All recorded risks related to either safety or compliance risks
		• No risks relating to asset failure have been recorded in those registers.
		We acknowledge that asset failure risks are documented within regions' contingency plans, which enables Horizon Power to recognise and manage asset failure risk at an individual region and system level. However, it is most appropriate for all key risks to be captured in regional risk registers as the single repository for key operational risks.	

		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
		Recommendation 4/2017 Horizon Power consider revising its processes for updating CAPEX project dates (that relate to risk treatment plans) to require update within CURA against the relevant risk treatment plan.	**Action Plan 4/2017** 1. The Risk Function will send out a communication to the General Managers and Level 3 Managers reminding them to conduct more frequent reviews of their CURA tasks and to follow-up on overdue tasks. Furthermore, the communication will recommend that treatment plan owners synchronise the CAPEX project dates with the CURA treatment plan due dates and that risk treatment plan closure is reported within the AMRs. 2. The Risk Function will continue to report overdue treatment plans to the Executive Team as part of the corporate risk consolidation process that is held every 6 months. **Responsible Person:** Risk & Audit Manager (Liang Tay) **Target Date:** December 2017
		Recommendation 5/2017 Horizon Power: • Review the current risk categories in CURA to confirm coverage of asset failure risks • Update its risk registers to include relevant extreme or high risks relating to asset failure (e.g. substation failure where N-1 has not been achieved).	**Action Plan 5/2017** The implementation of the ENSMS on 6 August 2017 has identified asset safety risk. The ENSMS Working Group will review all Extreme and High Asset Failure Risks and these will be captured in CURA, which will be Horizon Power's up-to-date risk register. **Responsible Person:** Asset Service Delivery Manager (Lorrie Di Cicco) **Target Date:** June 2018

No	Effectiveness Criteria	Findings	
8(c)	The probability and consequences of asset failure are regularly assessed	Through discussions with the Risk & Audit Specialist, examination of relevant risk assessment and asset planning documentation, and walkthrough of Horizon Power's risk management process, we determined that Horizon Power has the following mechanisms in place for identifying and assessing the consequence and likelihood of asset failure: • The AMP process includes consideration of asset failure, which is reflected in the CAPEX and OPEX plans developed annually • Horizon Power's risk matrix includes consequence categories that would be affected by asset failure (i.e. safety & health, service interruption and legal) • AMRs report on key performance indicators such as SAIDI and SAIFI, which are reviewed by the regional GMs and the Asset Services Delivery Team • Risk assessments are performed by site-based staff to identify and assess asset failure risks as they arise. Risks identified are escalated to Asset Managers, then to regional GMs and captured in Operating Division risk registers or regional contingency plans • Reporting on asset performance is being developed to provide real time information to Asset Managers and regional GMs. *Refer to Asset Planning 1(h) for further information on consideration of asset failure within the asset planning process.*	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.9 Contingency planning

Key process: Contingency plans document the steps to deal with the unexpected failure of an asset.

Expected outcome: Contingency plans have been developed and tested to minimise any significant disruptions to service standards.

Overall Adequacy/Performance rating: Requires some improvement (B) / Performing effectively (1)

No	Effectiveness Criteria	Findings

9(a)	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Through discussion with the Risk and Audit Specialist and other staff at Port Hedland and Broome/Kununurra and examination of relevant supporting documentation, we determined that:
		• Horizon Power's BCM Framework is structured according to the following phases:
		  • Risk assessment and business impact analysis
		  • Identify response options
		  • Develop response plan
		  • Testing and maintenance
		• Horizon Power updated its intranet to better guide users to relevant BCM policies and procedures
		• A CEMP has been developed, which applies to all regions
		• The CEMP is supported by local contingency plans, developed for all regions, to support the overall BCM process and to document a description of the network, the actions to be taken for managing certain failures, key contacts to be involved and a list of critical spares available
		• The Crisis & Emergency Management Handbook summarises the key elements of the CEMP, including:
		  • Identification and initial assessment of incidents
		  • Immediate post-incident actions
		  • Roles and responsibilities
		  • Severity Assessment Matrix (Emergency, Crisis or Worsening Situation)
		  • Communication protocols
		  • Team structures and key contacts
		  • Incident close-out and review
		• Local Response Plans (**LRP**s) act as a tactical version of the CEMP and have been developed for all regions. LRPs are managed by the relevant Regional Managers. In addition to the LRPs, specific response plans have been developed for certain risks, such as severe weather and fire
		• The CEMP and all LRPs are required to be reviewed every two years
		• Emergency Response Team structures are in place and include:
		  • Crisis Management Team (**CMT**) - provides strategic decision-making and direction during a crisis and supports the activities of the Emergency Management Team
		  • Emergency Management Team (**EMT**) - manages operational and technical issues arising from a disruptive event, provides technical and logistical support to the On-Scene Commander, and provides regular information updates to the CMT

No	Effectiveness Criteria	Findings
		• Local Response Team (**LRT**) – provides timely information to the EMT and CMT and coordinates local response activities. The LRT and CMT are linked by the On-Scene Commander (generally the Regional Manager of the impacted area), usually through the On-Scene Commander's attendance on the EMT • The Communications Plan and CEMP outline arrangements and protocols to be followed for emergency situations managed by other agencies. For example, information on the processes to be followed and relevant Horizon Power contacts to be involved in State-run emergency situations are included in the plan • Horizon Power has the following processes and mechanisms to manage the risk of data loss: • Back-up and recovery procedures in place • Performance of annual back up tests • Additional IT security access controls (e.g. authentication requirements, firewalls, etc.). On 10 March 2015, Horizon Power activated its CEMP to respond to a cyclone affecting its Port Hedland operations. Based on examination of supporting documentation, we determined that Horizon Power: • Provided notification to staff from the GM NIS on the emergency and the actions required • Conducted regular EMT meetings to discuss the progression of the cyclone, with appropriate evidence maintained on file • Conducted an EMT debrief on 4 April 2015 to discuss actions taken, risks and future actions required • Submitted a business case in May 2015 to repair damaged assets. Through discussions with relevant site representatives and walkthrough of an example where a contingency plan was activated, we determined that: • For infrastructure: arrangements are in place with organisations to supply mobile infrastructure as required. For example, Western Power will provide a mobile substation if full substation failure was to occur • For critical spares: • Registers are maintained for each region (reflected within contingency plans) • Registers include high use items such as fuses and poles, as well as critical items such as transformers for systems deemed higher risk or where one transformer may act as a spare for many common assets • Agreements with other utility organisations are in place to provide certain spares that are not stocked. Several contingencies are inherent in the design and operations of Horizon Power's assets, examples include: • Kununurra Power Station • Control system – while the power station is predominantly operated remotely/automatically from HPCC, local control systems can be used to operate the plant in the case of remote control / automation failure

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td></td><td></td><td colspan="2">

NWIS

Horizon Power's network is broadly designed on the typical N-1 philosophy, where the majority of network assets are able to maintain customer supply in the event of one item of equipment failing
For areas that do not meet the N-1 philosophy, staff are made aware of the increased risk and documented contingency plans are in place to manage such risks. Awareness largely depends on the knowledge and understanding of key individuals, although a support structure is available through Horizon Power's regional offices and the HPCC

Remote locations and micro-grids

Remote locations that do not have a Horizon Power depot in reasonable proximity are managed by local contractors and, in conjunction with the closest/relevant Horizon Power depot, contingencies are in place to manage customer supplies in the event of issues.

Improvement opportunity
Horizon Power's regional Contingency Plans contain relevant and useful guidance specific to each network, including a description of the network, the actions to be taken for managing certain failures, key contacts to be involved and a list of critical spares available. However the plans do not contain all key tactical steps to take when in a contingency situation. In practice, the actions taken when a situation arises are based on the knowledge and understanding of certain individuals, which gives rise to a moderate key person reliance risk.
</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td></td><td></td><td>Recommendation 6/2017
Horizon Power update its contingency plans to include the key tactical steps to take when in a contingency situation.</td><td>Action Plan 6/2017
1. ASD will develop a template and standardised approach to the content of the contingency plans to ensure all key tactical steps are identified and actionable.
2. Regional Managers will update the standardised contingency plan to include all key tactical steps.
Responsible Person:
1. Asset Service Delivery Manager (Lorrie Di Cicco)
2. Regional Managers (Scott Beckwith, James Carney, Joe Griessmann, Layton Baker)
Target Date:
1. December 2017
2. June 2018</td></tr>
</table>

4.10 Financial planning

Key process: The financial planning component of the AMP brings together the financial elements of the service delivery to ensure its financial viability over the long term.

Expected outcome: A financial plan that is reliable and provides for the long-term financial viability of the services.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Through discussion with the Finance Business Partner and examination of Horizon Power's financial planning and reporting documentation, we determined that: • Financial objectives are captured in section 4 of the SDP and the Statement of Corporate Intent and aligned to Horizon Power's seven key asset management drivers [refer to 1(g) above for drivers] • The Corporate Budget is the key financial plan, which is built both bottom-up (in relation to Operating Division budgets) and top-down (in relation to overall financial allocation, by Operating Division, of the Department of Treasury's funding) • A submission paper is prepared for the Corporate Budget for approval by the Executive and includes the annual Capital Budget • Financial objectives are supported by defined KPIs (documented in Appendix B of the SDP), which are monitored monthly (via reporting to the Board) to confirm objectives are being met • A full financial budget and plan is submitted by each Operating Division, detailing projections for OPEX and CAPEX spend • Regional budgets are incorporated into the Corporate Budget, which is aligned to corporate strategic objectives.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

10(b)	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Through discussion with the Finance Business Partner and examination of Horizon Power's financial planning and reporting documentation, we determined that:
		• Horizon Power considers the following funding options:
		  • Department of Treasury allocations
		  • Customer Funded projects
		  • Other Government programmes (e.g. Royalties for Regions).
		• Funding options have been incorporated into the Corporate Budget, SDP and Statement of Corporate Intent.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
10(c)	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Through discussion with the Finance Business Partner and examination of Horizon Power's financial planning and reporting documentation, we determined that: • Horizon Power's SDP, Strategic Asset Plan and Statement of Corporate Intent include an extract of the financial statements within the Appendix of each document, which refers to the income statement, balance sheet and cash flow statement. The statements are prepared to show a four year projection (aligned to the SDP period) • Detailed projections of expenditure and variances by Operating Division are provided in Operating Division budgets and are performed for a rolling five year period.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10(d)	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period	Through discussion with the Finance Business Partner and examination of Horizon Power's financial planning and reporting documentation, we determined that: • The Corporate Budget includes projections out to 10 years, which is built bottom-up (through the AMP process) and top-down (based on allocation of Department of Treasury funding) • The Corporate Budget and AMP budgets include relevant detail on OPEX and CAPEX costs, revenue and other additional costs of ownership • Challenge sessions are performed by Finance and Operating Division GMs to challenge costs contained within Operating Division budgets.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

10(e)	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Through discussion with the Finance Business Partner and Asset Services Delivery Manager, and examination of Horizon Power's financial planning and reporting documentation, we determined that:
		• The Corporate Budget includes the following standardised items, which are broken down by Operating Division:
		  • Sales
		  • Other Revenue
		  • Labour
		  • Non-labour.
		• Appendix 4 of the Corporate Budget includes a detailed breakdown of costs and revenue, covering maintenance, administration and capital expenditure
		• Maintenance costs are tracked against SAIFI figures within the AMRs, to monitor cost per km
		• CAPEX and OPEX costs by Operating Division are reflected in the AMP process outputs.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	

10(f)	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	Through discussions with the Finance Business Partner and an examination of relevant budget analysis information, we determined that:
		• Monthly variance reporting is prepared by Finance (on a whole-of-organisation level) and Operating Divisions (on a regional level)
		• The Finance Team's analysis is developed using the outputs from Operating Division analyses
		• The following processes are in place to follow-up on variances:
		  • Monthly follow-up and review by Finance, where any significant variances are redirected to regions for further information
		  • All major projects (>$500k) will develop PSRs, which track project performance against budget
		  • The monthly Major Project summary report provides a summarised view of PSR variances for the Board.	

		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.11 Capital expenditure planning

Key process: The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates

Expected outcome: A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	
11(a)	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Through discussion with the Finance Business Partner and Asset Services Delivery Manager and consideration of Horizon Power's CAPEX processes, we determined that: • A CAPEX plan is established annually, based on consolidated figures by each Operating Division • The planning process for CAPEX is performed as part of the annual AMP process, whereby CAPEX and OPEX budgets are developed, challenged and approved in accordance with DFA • Monitoring of CAPEX spend is performed within AMRs, with actions taken to address any variances identified • A formal CAPEX business case process is used for new CAPEX projects • CAPEX projects are tracked within a project register (Quickbase), managed by relevant Project Managers.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11(b)	The plan provides reasons for capital expenditure and timing of expenditure	Through discussion with the Finance Business Partner and Asset Services Delivery Manager and consideration of Horizon Power's CAPEX processes, we determined that: • Reasons for expenditure are provided as project justifications within the business case • Project justifications are challenged by peers prior to the project being approved to progress to the next phase • Mechanisms are in place for stakeholders to raise issues or concerns in relation to CAPEX projects.	
		Adequacy Rating: Adequately documented (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	

11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the AMP	Through discussion with the Finance Business Partner and Asset Services Delivery Manager and consideration of Horizon Power's CAPEX processes, we determined that:
		• CAPEX projects are identified through the following sources:
		  • Risk registers – risk treatment plans may require CAPEX projects to be conducted to manage identified risks
		  • AMP process – the annual planning cycle will include all planned work to be performed during the coming year, prioritised based on risk
		  • Ad-hoc CAPEX project requests – captured within Quickbase and initiated via the PMM process (CAPEX business cases).
		• The AMRs, which report against performance metrics for Horizon Power's assets, are used as input into CAPEX investment decisions
		• The AMP for each region will reflect the priority of CAPEX work, which is presented for funding annually within the Operating Division's CAPEX budget.	

		Adequacy Rating: Adequately documented (A)	**Performance Rating:** Performing effectively (1)
11(d)	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Through discussion with the Finance Business Partner and Asset Services Delivery Manager and examination of Horizon Power's CAPEX plans, we determined that: • The CAPEX budget is reviewed annually as part of the AMP process • Changes to CAPEX spend are reflected within Quickbase and Qlikview, which report against project status and budget • PSRs are developed for all CAPEX projects, which are used to track project milestones and changes. All changes will be updated within Qlikview.	
		Adequacy Rating: Adequately documented (A)	**Performance Rating:** Performing effectively (1)

4.12 Review of AMS

Key process: The AMS is regularly reviewed and updated.

Expected outcome: Review of the AMS to ensure the effectiveness of the integration of its components and their currency.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	
12(a)	A review process is in place to ensure that the AMP and the AMS described therein are kept current	Through discussion with the Asset Services Delivery Manager and examination of relevant review outputs, we determined that Horizon Power's processes provide for: • Annual review and update of the AMP Guidelines • Independent reviews to be conducted on various elements of the AMS • Review actions from prior AMS reviews to be entered into CURA and tracked to completion. We sighted evidence of individual tasks being created for the relevant owners to track completion.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
12(b)	Independent reviews (e.g. internal audit) are performed of the AMS	Through discussion with the Asset Services Delivery Manager and examination of relevant review outputs, we determined that the following independent reviews had been performed during the review period: • LineTech (external consultant) – high level review of Asset Management of Horizon Power's Distribution Assets • Annual review and update of AMP guidelines by the Asset Services Delivery team, which is independent from the regions who own the AMPs – improvement opportunities identified during the previous AMP process were reviewed and actioned.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

5 Follow-up of previous review action plans

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's Recommendation or action taken	Date Resolved	Further action required
A. Resolved before end of previous Review period				
N/A - The 2014 AMS Review report did not contain any recommendations or action plans which were resolved before the end of the previous review period.				
B. Resolved during current Review period				
1/2014	A2 ***Asset Planning*** *1(a) Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning* During the review Horizon Power noted that, due to the Business Transformation Program and system restructure, documentation updates were kept on hold awaiting the system development.	**Recommendation:** Restart documentation review and updates following the completion of the Business Transformation Program. The documents supporting the AMS should receive review in accordance with a review program. **Action/s taken:** Horizon Power undertook the following actions: • Reviewed and updated key policies and procedure documents supporting the AMS • Established an annual review process for the AMP Guidelines.	July 2015 and March 2015	No
	A2 ***Asset Operations*** *5(a) Operational policies and procedures are documented and linked to service levels required* The "Policies and Procedure Register" (HP3010410) includes lists of policies and procedures relating to the business, however some of the documents quoted are now past their review date and some of the documents such as the "Operations Strategic Plan 2008/09 to 2011/12" appear to be out of date.	**Recommendation:** Restart documentation review and updates following the completion of the Business Transformation Program. The documents supporting the AMS should receive review in accordance with a review program. **Action/s taken:** Horizon Power undertook the following actions: • Re-established and updated the policies register (on intranet) • Reviewed relevant policies within the register.	October 2015	No

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's Recommendation or action taken	Date Resolved	Further action required
2/2014	C3 ***Asset Operations*** *5(c) Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets physical/structural condition and accounting data.* The quality of data (where quality is conformance to requirements) in the Asset Register has not yet achieved the level necessary for satisfactory operation of the AMS; programs are already in place to improve the data accuracy.	**Recommendation:** Complete the implementation of programs aimed at improving the quality of data in the Asset Register to achieve the level necessary for satisfactory operation. These include at present: "A&W Field 3272 Quality Data Capture" project due for completion in 2016 and "Asset Data Accuracy Project", due for completion in 2014. **Action/s taken:** Horizon Power undertook the following actions: • Established data accuracy targets based on the asset risk to the business • Finalised the program of works for improving data accuracy to achieve targets already initiated within the business (including field audit A&W Field 3272 Quality Data Capture").	April 2016	No
3/2014	B2 ***Asset Operations*** *5(e) Staff receive training commensurate with their responsibilities* Horizon Power has been gathering all its training information from the Districts into VETtrack, the corporate training database to enable future access by the Districts. This work is not complete and progress of this work will need continued support.	**Recommendation:** (OFI) Gathering all training information from the Districts into VETtrack and enabling a portal to allow access to the District will need continued support to achieve completion. **Action/s taken:** Horizon Power undertook the following actions: • Finalised the high level policy that identifies the roles, which are required to be managed by VETtrack system • Completed the implementation of VETtrack system for identified roles already initiated within the business.	July 2015 and March 2015	No
4/2014	A2 ***Asset Maintenance*** *6(c) Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule* By June 2014 there were 66 Work Orders open which were due to have been completed by that date; five WO were due for completion by 31 December 2013.	**Recommendation:** 66 overdue Work Orders were open in June 2014. Five of the Work Orders were due for completion by 31 December 2013. Implement action to close, delete or justify Work Orders open past the due date. **Action/s taken:** Horizon Power undertook the following actions: • Created a CURA task to address overdue work orders • Each region reviewed and closed all overdue work orders	March 2015 and July 2015	No

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's Recommendation or action taken	Date Resolved	Further action required
5/2014	B1 ***Asset Management Information System*** *7(e) Data backup procedures appear adequate* There are checklists in place for power outage events as well as disaster recovery test guides, Ref: "DR Test Guide: Wintel", although the latter appeared to be in draft form, with no document owner recorded or signatory identified. A1 ***Asset Management Information System*** *7(f) Key computations related to licensee performance reporting are materially accurate* Several user guides were sighted, further providing confidence of a repeatable reporting process: • TCS Reliability Report User Guide; and • Asset Management Reporting, Cognos Express Procedures. Neither of the above appeared as controlled / final documents.	**Recommendation:** Documentation such as the "DR Test Guide: Wintel", "TCS Reliability Report User Guide" and "Asset Management Reporting, Cognos Express Procedures" should be formally issued so that their currency can be maintained/verified. Refer to Recommendation 1/2014 for overall requirement. **Action/s taken:** Horizon Power reviewed and formalised its DR Test Guide, TCS Reliability Report User Guide and Asset Management Reporting, Cognos Express Procedures.	December 2014	No
6/2014	B2 ***Contingency Planning*** *9(a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.* The Instruction Module issued December 2012 indicated that the "West Kimberley Contingency Plan" should have been finalised, but the plan last issue was April 2011.	**Recommendation:** Update or finalise Contingency Plans as identified. **Action/s taken:** Horizon Power undertook the following actions: • Created CURA tasks for each region • Regional representatives reviewed and updated relevant contingency plans.	January 2016	No

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's Recommendation or action taken	Date Resolved	Further action required
7/2014	***Special Area[1]*** *1.4: Data integrity of the data that has been imported to the systems from the legacy systems* Not all data present in the legacy system was found to be useful for the operation of the assets, in addition new attributes were identified that were not present in the legacy system. The result was that only around 45% of the fields in the new AMS were able to be populated from the legacy fields. The remaining attributes will have to be populated through future in field inspections. Horizon Power have recognised the importance of this shortcoming and identified a project for collecting the data, the "A&W Field 3272 Quality Data Capture" project which is now in Ellipse but due for completion in 2016.	**Recommendation:** Progress the "A&W Field 3272 Quality Data Capture" project. Process of inspection and audits should be managed to ensure that the asset management data is complete and accurately records the attributes and conditions of real life assets. **Action/s taken:** Horizon Power undertook the following actions: • Elected to not go ahead with phase 2 of the workforce mobility project, decision made 10 March 2015. To address the ongoing mobility issues, a new project was initiated to purchase a product that aligned with Ellipse • Product was purchased, designed and installed • New product will go live on 4 September 2017.	March 2015	No
8/2014	***Special Area[1]*** *1.4: Data integrity of the data that has been imported to the systems from the legacy systems* Data tests have shown that there are still discrepancies between the systems and between the data in the legacy and the new systems. The Review has noted that even the legacy systems had long standing problems with data accuracy, so full integration of data with legacy system is no guarantee of data accuracy. It is important that a process of inspection and audits be undertaken to ensure that the asset management data is complete and accurately records the attributes and conditions of real life assets.	**Recommendation:** Continue with Asset Data Accuracy Project to achieve the set objectives. **Action/s taken:** Horizon Power undertook the following actions: • Audited asset data through a series of site visits • During the audit, photos were taken of all assets, as well as nameplate data • Photo information was converted to a format to upload into Ellipse • Ellipse has been updated with photos and relevant nameplate data.	March 2015	No

[1] The finding and associated recommendation relate to a special area of interest stipulated by the ERA. The ERA has not raised any special areas of interest for the 2017 AMS review and as a result, we have not assessed these actions for the current audit period 1 July 2014 to 30 June 2017.

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's Recommendation or action taken	Date Resolved	Further action required
9/2017	***Special Area[1]*** *1.5: Currency of the data in the AMSs* The lag in data processing is evident in the AMRs which report on the trends of WIP (Work In Progress), where the gap between "New Work" value and "End of Month WIP" value has doubled since January 2013.	**Recommendation:** Progress actions to reduce the amount of data entry lag. **Action/s taken:** Horizon Power undertook the following actions: • Commenced a project to reduce the backlog of IT work • Outsourced the work to Cyient, who completed all outstanding tasks in August 2014 • Established an outsourced model for IT support.	March 2015	No
10/2014	***Special Area[1]*** *1.6: Reporting capability, with a particular focus on reporting required for regulatory purposes under the licence* In regard to current reporting the review noted that the June 2014 AMR was not yet able to report on the quantity of equipment with no Earth Resistance readings (this required a relationship to be created to parent equipment which was due to have been created in May 2014, the resolution was imminent at the end of June 2014). The lack of completeness of the data in equipment attributes means that there is a limitation on the capability of reporting the asset information.	**Recommendation:** Pursue the completion of actions necessary for regulatory reporting such as Earth Resistance Reading. **Action/s taken:** Horizon Power undertook the following actions: • Finalised Energy Safety audit actions for regulatory reporting • Updated CURA with progress.	March 2015	No
C. Unresolved at end of current Review period				
N/A – There are no unresolved action plans from the 2014 AMS Review.				

Appendix A: Review plan

Regional Power Corporation (t/a Horizon Power)

Electricity Integrated Regional Licence (EIRL2)

2017 Asset Management System Review

Review Plan

June 2017

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Introduction

Overview

The Economic Regulation Authority (the **ERA**) has under the provisions of the Electricity Industry Act 2004 (**the Act**), issued to Regional Power Corporation T/A Horizon Power (**Horizon Power**) an Electricity Integrated Regional Licence (**the Licence**). The Licence relates to Horizon Power's electricity transmission, distribution and retail operations.

Section 14 of the Act requires Horizon Power to provide to the ERA an asset management system review (the **review**) conducted by an independent expert acceptable to the ERA not less than once in every 24 month period (or any longer period that the ERA allows). With the ERA's approval, Deloitte Risk Advisory Pty Ltd (**Deloitte**) has been appointed to conduct the review for the period 1 July 2014 to 30 June 2017 (36 months).

Horizon Power develops, operates and maintains two major interconnected systems, the North West Interconnected System (**NWIS**) in the Pilbara and the interconnected transmission network between Kununurra and Wyndham, as well as 38 non-interconnected or islanded systems in regional towns and remote communities.

The review will be conducted in accordance with the April 2014 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* (the **Guidelines**). In accordance with the Audit Guidelines this document represents the Review Plan (the **Plan**) that is to be agreed upon by Deloitte and Horizon Power and presented to the ERA for approval.

Objective

The objective of the review is to independently examine the effectiveness and performance of the respective asset management system established for assets subject to Horizon Power's Licence during the review period.

Scope

In accordance with the Review Guidelines, the review will consider the effectiveness of Horizon Power's existing control procedures within the 12 key processes in the asset management life-cycle as outlined below at Table 1. Each key process and effectiveness criteria is applicable to Horizon Power's Licence and as such will be individually considered as part of the review.

Table 1 – Asset management system key processes and effectiveness criteria

#	Key processes	Effectiveness criteria
1	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 (e.g. 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.

#	Key processes	Effectiveness criteria
2	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.
3	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 • Disposal alternatives are evaluated • There is a replacement strategy for assets.
4	Environmental analysis (all external factors that affect the system)	• 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.
5	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 type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data • Operational costs are measured and monitored • Staff resources are adequate and staff receive training commensurate with their responsibilities.
6	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 • Maintenance costs are measured and monitored.
7	Asset management information system	• Adequate system documentation exists 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 • Physical security access controls appear adequate • Data backup procedures appear adequate and backups are tested • Key computations related to licensee performance reporting are materially accurate • Management reports appear adequate for the licensee to monitor licence obligations.

#	Key processes	Effectiveness criteria
8	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 consequences of asset failure are regularly assessed.
9	Contingency planning	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.
10	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.
11	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.
12	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 • Independent reviews (e.g. internal audit) are performed of the asset management system.

Responsibility

Horizon Power's responsibility for maintaining an effective asset management system

Horizon Power is responsible for putting in place policies, procedures and controls, which are designed to provide for an effective asset management system for assets subject to the Licence.

Deloitte's responsibility

Our responsibility is to express a conclusion on the effectiveness of Horizon Power's asset management system to meet Licence requirements based on our procedures. The engagement will be conducted in accordance with Australian Standard on Assurance Engagements (ASAE) 3500 Performance Engagements issued by the Australian Auditing and Assurance Standards Board and the Guidelines, to state whether, in all material respects, based on the work performed, anything has come to our attention to indicate that Horizon Power had not established and maintained an effective asset management system for assets subject to the Licence, as measured by the

effectiveness criteria in the Guidelines and the systems have not operated effectively for the period 1 July 2014 to 30 June 2017. These standards also require us to comply with the relevant ethical requirements of the Australian professional accounting bodies. Our engagement provides limited assurance as defined in ASAE 3500.

Limitations of use

Our report will be produced solely for the information and internal use of Horizon Power, and is not intended to be and should not be used by any other person or entity. No other person or entity is entitled to rely, in any manner or for any purpose, on this report.

We understand that a copy of our report will be provided to the ERA for the purpose of meeting Horizon Power's reporting requirements of section 14 of the Act. We agree that a copy of our report may be provided to the ERA for its information in connection with this purpose, but only on the basis that we accept no duty, liability or responsibility to the ERA in relation to the report. We accept no duty, responsibility or liability to any party, other than Horizon Power, in connection with the report or this engagement.

Inherent limitations

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement conducted in accordance with ASAE 3500 and consequently does not allow us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we will not express an opinion providing reasonable assurance. We cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and their responsibility to prevent and detect irregularities, including fraud. Accordingly, readers of our report should not rely on the report to identify all potential opportunities for improvement which may be required. Any projection of the evaluation of the level of effectiveness to future periods is subject to the risk that the systems may become inadequate because of changes in conditions, or that the degree of effectiveness with management procedures may deteriorate.

Independence

In conducting our engagement, we will comply with the independence requirements of the Australian professional accounting bodies.

Approach

The review will be conducted in three distinct phases, being a risk assessment, system analysis/policy and procedure review and examination of performance. From the review results, a report will be produced to outline findings, overall assessments and recommendations for improvement in line with the Guidelines. Each step of the review is discussed in detail below.

We will prepare, in consultation with Horizon Power, a project execution strategy and plan to detail the work to be performed for the engagement. The strategy will include the communication protocols, reporting and engagement activities we will apply during the review.

Risk assessment

The review will focus on identifying or assessing those activities and management control systems to be examined and the matters subject to review. Therefore, the purpose of conducting the risk assessment as a preliminary phase enables the reviewer to focus on pertinent/high risk areas of Horizon Power's asset management systems established for the assets subject to the Licence. The risk assessment gives specific consideration to changes to Horizon Power's relevant systems and processes and any matters of significance raised by the ERA and/or Horizon Power. The level of risk and materiality of the process determine the level of review required i.e. the greater the materiality and the higher the risk, the more effort will be applied.

The first step of the risk assessment is the rating of the potential consequences of Horizon Power not effectively maintaining an asset management system for the assets subject to its licence, in the absence of mitigating controls. The consequence rating descriptions listed at Table 15 of the Guidelines (refer to **Appendix 1-1**), provides the risk assessment with context to enable the appropriate consequence rating to be applied to each component of the asset management system subject to review.

Once the consequence has been determined, the likelihood of Horizon Power not effectively maintaining an asset management system for the assets subject to its Licence (with reference to the defined effectiveness criteria) is assessed using the likelihood rating listed at Table 16 of the Guidelines (refer to **Appendix 1-2**). The assessment of likelihood is based on the expected frequency of non-performance against the defined criteria, over a period of time.

Table 2 below (sourced from Table 17 of the Guidelines) outlines the combination of consequence and likelihood ratings to determine the level of inherent risk associated with each individual effectiveness criteria.

Table 2: Inherent risk rating

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

Once the level of inherent risk has been determined, the adequacy of existing controls is assessed in order to determine the level of control risk. Controls are assessed and prioritised as weak, moderate or strong dependant on their suitability to mitigate the risks identified. The control adequacy ratings used by this risk assessment are aligned to the ratings listed at Table 19 of the Guidelines (refer to **Appendix 1-3**).

Once inherent risks and control risks are established, the review priority can then be determined using the matrix listed at Table 20 of the Guidelines (refer to **Table 3** below). Essentially, the higher the level of risk the greater the level of examination is required.

Table 3: Assessment of Review Priority

	Adequacy of existing controls		
Inherent Risk	Weak	Moderate	Strong
High	Review priority 1	Review priority 2	
Medium	Review priority 3	Review priority 4	
Low	Review priority 5		

The following table outlines the review requirement for each level of review priority. Testing can range from extensive substantive testing around the controls and activities of particular processes (including physical inspection of asset infrastructure, which will be given greater attention for those processes with a review priority of 1, 2 or 3) to confirming the existence of controls through discussions with relevant staff. Review procedures to be performed will be selected from those procedures included in *Table 1: Example of possible audit procedures for each audit priority* of the Guidelines.

Table 4: Review Priority Table

Priority Rating and Resulting Review Procedures	
Rating	Review requirement
Priority 1	• Controls testing and extensive substantive testing of activities, including • Follow-up and if necessary, re-test matters previously reported.
Priority 2	• Controls testing and moderate substantive testing of activities • Follow-up and if necessary, re-test matters previously reported.
Priority 3	• Limited controls testing (moderate sample size). Only substantively test activities if further control weakness found • Follow-up of matters previously reported.
Priority 4	• Confirmation of existing controls via observation and walk through testing • Follow-up of matters previously reported.
Priority 5	• Confirmation of existing controls via observation, discussions with key staff and/or reliance on key references ("desktop review").

The risk assessment has been discussed with stakeholders to gain their input as to the appropriateness and factual accuracy of risk and control ratings and associated explanations. The key sources considered in reaching our preliminary assessment of the risk and control ratings were based on:

- Prior assessments of the state of controls during preliminary discussions with Horizon Power representatives
- Our understanding of Horizon Power's assets and internal processes
- Our understanding of the electricity industry and regulatory environment
- Any other factors that may have an effect on the level of risk or strength of controls.

At this stage, the risk assessment can only be a preliminary assessment based on reading of documentation and interviews by the auditors. It is possible that the ratings and risk assessment comments may be revised as we conduct our work and new evidence comes to light. Accordingly, the risk assessment for this review is a preliminary draft, not a final report, and no reliance should be placed on its findings. It is however, an invaluable tool for focussing review effort.

The asset management system review risk assessment is attached at **Appendix 2**.

Systems analysis/policy and procedure review

The level of policy and procedure review required will be determined utilising the aforementioned priority scale. Once the priority level has been defined, the review will consist of:

- Interviewing Horizon Power representatives and key operational and administrative staff responsible for the development and maintenance of policies and procedural type documentation
- Examination of documented policies and procedures for key functional requirements and consideration of their relevance to Horizon Power's asset management system requirements and standards.

The policy and procedure definition element of the asset management system review will be performed to provide a rating as defined under Table 5 (refer below).

Key documents which may be subject to review are not specifically disclosed in this plan. A list of documents examined will be included in the review report.

Examination of performance

The actual performance of the relevant controls and processes in place will then be examined via:

- Consideration of reports and references evidencing activity
- Interviews with Horizon Power representatives and key operational and administrative staff
- Physical visit to the Port Hedland and Esperance network operations
- Consideration of the networks' operation and maintenance arrangements.

A full work program will be completed to record the specific aspects of our review and examination of the performance of each asset management system key process. This work program will be based on:

- The review priority determined by the risk assessment to be applicable to each effectiveness criteria
- The results of the policy and procedure review, as described above
- The location of personnel and activity to be tested.

The performance effectiveness element of the asset management system review will be performed to provide a rating as defined under Table 6 (refer below).

Reporting

In accordance with the Guidelines, the reviewer must provide an assessment of both the process and policy definition rating (refer to **Table 5** below and **Table 8** of the Guidelines) and the performance rating (refer to **Table 6** below and **Table 9** of the Guidelines) for each of the key processes in Horizon Power's asset management system.

Table 5: Asset management process and policy definition 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 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).

Table 6: 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.

The asset management review report will be structured to address all key components expected by the Guidelines, including:

- Response to previous review recommendations (refer to Appendix 3)
- Performance summary and rating for each effectiveness criteria (Table 1), utilising the process and policy definition adequacy (Table 5) and performance (Table 6) ratings
- Review observations for each effectiveness criteria
- Status and response to recommendations from the previous review
- Where appropriate, recommendations on actions required to address opportunities for improvement or process deficiencies.

Where appropriate, Horizon Power will provide a post review implementation plan for incorporation into the report as an appendix.

General Information

All aspects of the review will undergo quality assurance and review procedures as outlined in our previous communications to Horizon Power. Before delivery of a final report, full quality procedures will be applied, including second partner review.

Key Horizon Power contacts

The key contacts for this review are:

- GM Power System Services
- GM Corporate Services
- GM Pilbara Grid
- GM Commercial Services & Finance
- GM Micro Grid
- Manager Engineering & Project Services
- A/Manager Finance.
- Manager Technology
- Manager Pilbara Network
- Asset Services Delivery Review Manager
- Risk and Audit Manager
- Risk and Audit Specialist
- Land, Environment, Native Title & Heritage Manager

Deloitte Staff

Deloitte staff who will be involved with this assignment are:

- Kobus Beukes Partner
- Richard Thomas QA Partner
- Andrew Baldwin Principal (Specialist Leader – Internal audit and Regulatory compliance)
- Emlyn King Senior Analyst
- Bryn Durrans Engineer and Technical Specialist
- Shailesh Tyagi Engineer and Technical QA Partner

Resumes for key Deloitte staff are outlined in the proposal accepted by Horizon Power and the Auditors Approval Submission document presented to the ERA.

Timing

The initial risk assessment phase was completed on 14 June 2017 after which the review plan and detailed risk assessment were submitted to the ERA for review and comment.

The remainder of the fieldwork phase is scheduled to be performed from late-June to August 2017.

Deloitte's time and staff commitment to the completion of the review is outlined in the proposal accepted by Horizon Power and subsequently presented to the ERA. In summary, the estimated time allocated to each activity is as follows:

- Planning (including risk assessment): 30 hours
- Fieldwork (including system analysis/policy & procedure review and examination of performance): 256 hours
- Reporting: 75 hours.

Site visits

The review will include a physical site visit by Deloitte's Engineer and Technical Specialist to the following regional operations:

- Port Hedland
- Kununurra (including a visit to the Broome office, from which Kununurra operations are managed).

Appendix 1 – Risk assessment key

1-1 Consequence ratings

Source: Guidelines – Electricity and Gas Licences April 2014

	Rating	Examples of non-compliance		
		Supply quality and reliability	**Consumer protection**	**Breaches of legislation or other licence conditions**
1	Minor	Breach of supply quality or reliability standards minor - affecting a 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.

1-2 Likelihood ratings

Source: Guidelines – Electricity and Gas Licences April 2014

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

1-3 Adequacy ratings for existing controls

Source: Guidelines – Electricity and Gas Licences April 2014

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

Appendix 2 – Risk assessment

1	Asset Planning
Key Process:	Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).
Outcome:	Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
1(a)	Asset management plan covers key requirements	Moderate	Probable	Medium	Moderate	Priority 4
1(b)	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	Minor	Probable	Low	Weak	Priority 5
1(c)	Service levels are defined	Minor	Unlikely	Low	Moderate	Priority 5
1(d)	Non-asset options (e.g. demand management) are considered	Minor	Probable	Low	Moderate	Priority 5
1(e)	Lifecycle costs of owning and operating assets are assessed	Moderate	Probable	Medium	Moderate	Priority 4
1(f)	Funding options are evaluated	Minor	Probable	Low	Moderate	Priority 5
1(g)	Costs are justified and cost drivers identified	Moderate	Probable	Medium	Moderate	Priority 4
1(h)	Likelihood and consequences of asset failure are predicted	Major	Probable	High	Moderate	Priority 2
1(i)	Plans are regularly reviewed and updated	Minor	Unlikely	Low	Moderate	Priority 5

2	Asset Creation and Acquisition
Key Process:	Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay
Outcome:	A more economic, efficient and cost-effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
2(a)	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	Moderate	Unlikely	Medium	Moderate	Priority 4
2(b)	Evaluations include all life-cycle costs	Moderate	Unlikely	Medium	Moderate	Priority 4
2(c)	Projects reflect sound engineering and business decisions	Moderate	Unlikely	Medium	Moderate	Priority 4
2(d)	Commissioning tests are documented and completed	Moderate	Unlikely	Medium	Moderate	Priority 4
2(e)	Ongoing legal/environmental/ safety obligations of the asset owner are assigned and understood	Major	Unlikely	High	Moderate	Priority 2

3	Asset Disposal
Key Process:	Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms.
Outcome:	Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
3(a)	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Minor	Probable	Low	Moderate	Priority 5
3(b)	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Minor	Probable	Low	Moderate	Priority 5
3(c)	Disposal alternatives are evaluated	Minor	Probable	Low	Moderate	Priority 5
3(d)	There is a replacement strategy for assets	Moderate	Probable	Medium	Moderate	Priority 4

4	Environmental analysis
Key Process:	Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.
Outcome:	The asset management system regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
4(a)	Opportunities and threats in the system environment are assessed	Moderate	Probable	Medium	Moderate	Priority 4
4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Moderate	Probable	Medium	Moderate	Priority 4
4(c)	Compliance with statutory and regulatory requirements	Moderate	Probable	Medium	Moderate	Priority 4
4(d)	Achievement of customer service levels	Moderate	Probable	Medium	Moderate	Priority 4

5	Asset operations
Key Process:	Operational functions relate to the day-to-day running of assets and directly affect service levels and costs.
Outcome:	Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
5(a)	Operational policies and procedures are documented and linked to service levels required	Moderate	Likely	High	Moderate	Priority 2
5(b)	Risk management is applied to prioritise operations tasks	Moderate	Probable	Medium	Moderate	Priority 4
5(c)	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	Moderate	Probable	Medium	Weak	Priority 3
5(d)	Operational costs are measured and monitored	Moderate	Probable	Medium	Moderate	Priority 4
5(e)	Staff resources are adequate and staff receive training commensurate with their responsibilities	Moderate	Probable	Medium	Weak	Priority 3

6	Asset maintenance
Key Process:	Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.
Outcome:	Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
6(a)	Maintenance policies and procedures are documented and linked to service levels required	Major	Unlikely	High	Moderate	Priority 2
6(b)	Regular inspections are undertaken of asset performance and condition	Major	Unlikely	High	Moderate	Priority 2
6(c)	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Major	Probable	High	Moderate	Priority 2
6(d)	Failures are analysed and operational/maintenance plans adjusted where necessary	Major	Probable	High	Moderate	Priority 2
6(e)	Risk management is applied to prioritise maintenance tasks	Major	Probable	High	Moderate	Priority 2
6(f)	Maintenance costs are measured and monitored	Moderate	Probable	Medium	Moderate	Priority 4

7	Asset Management Information System
Key Process:	An asset management information system is a combination of processes, data and software that support the asset management functions.
Outcome:	The asset management information system provides authorised, complete and accurate information for the day-to-date running of the asset management system. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
7(a)	Adequate system documentation for users and IT operators	Minor	Probable	Low	Moderate	Priority 5
7(b)	Input controls include appropriate verification and validation of data entered into the system	Moderate	Probable	Medium	Moderate	Priority 4
7(c)	Logical security access controls appear adequate, such as passwords	Minor	Probable	Low	Moderate	Priority 5
7(d)	Physical security access controls appear adequate	Minor	Probable	Low	Moderate	Priority 5
7(e)	Data backup procedures appear adequate and backups are tested	Moderate	Probable	Medium	Weak	Priority 3
7(f)	Key computations related to licensee performance reporting are materially accurate	Minor	Probable	Low	Weak	Priority 5
7(g)	Management reports appear adequate for the licensee to monitor licence obligations	Minor	Probable	Low	Moderate	Priority 5

8	Risk Management
Key Process:	Risk management involves the identification of risks and their management within an acceptable level of risk.
Outcome:	An effective risk management framework is applied to manage risks related to the maintenance of service standards

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Control Risk	Review Priority
8(a)	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	Major	Probable	High	Moderate	Priority 2
8(b)	Risks are documented in a risk register and treatment plans are actioned and monitored	Moderate	Probable	Medium	Moderate	Priority 4
8(c)	The probability and consequences of asset failure are regularly assessed	Major	Probable	High	Moderate	Priority 2

9	Contingency Planning
Key Process:	Contingency plans document the steps to deal with the unexpected failure of an asset.
Outcome:	Contingency plans have been developed and tested to minimise any significant disruptions to service standards.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
9(a)	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Major	Probable	High	Moderate	Priority 2

10	Financial Planning
Key Process:	The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.
Outcome:	A financial plan that is reliable and provides for the long-term financial viability of the services.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Moderate	Probable	Medium	Moderate	Priority 4
10(b)	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Minor	Probable	Low	Moderate	Priority 5
10(c)	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Minor	Probable	Low	Moderate	Priority 5
10(d)	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period	Minor	Probable	Low	Moderate	Priority 5
10(e)	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Moderate	Probable	Medium	Moderate	Priority 4
10(f)	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	Moderate	Probable	Medium	Moderate	Priority 4

11	Capital expenditure planning
Key Process:	The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates
Outcome:	A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
11(a)	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Moderate	Probable	Medium	Moderate	Priority 4
11(b)	The plan provides reasons for capital expenditure and timing of expenditure	Minor	Probable	Low	Moderate	Priority 5
11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Moderate	Probable	Medium	Moderate	Priority 4
11(d)	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Minor	Probable	Low	Moderate	Priority 5

12	Review of AMS
Key Process:	The asset management system is regularly reviewed and updated.
Outcome:	Review of the Asset Management System to ensure the effectiveness of the integration of its components and their currency.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
12(a)	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	Minor	Probable	Low	Moderate	Priority 5
12(b)	Independent reviews (e.g. internal audit) are performed of the asset management system	Minor	Probable	Low	Moderate	Priority 5

Appendix 3 – Previous review recommendations

<table>
<tr><td colspan="2">Issue 1/2014
Asset Planning: 1(a) Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning
During the review Horizon Power noted that, due to the Business Transformation Program and system restructure, documentation updates were kept on hold awaiting the system development.

Asset Operations: 5(a) Operational policies and procedures are documented and linked to service levels required
The “Policies and Procedure Register” (HP3010410) includes lists of policies and procedures relating to the business, however some of the documents quoted are now past their review date and some of the documents such as the “Operations Strategic Plan 2008/09 to 2011/12” appear to be out of date.</td></tr>
<tr><td>Recommendation 1/2014
Restart documentation review and updates following the completion of the Business Transformation Program. The documents supporting the asset management system should receive review in accordance with a review program.</td><td>Action Plan 1/2014 - for 1(a)
a) Review and update key policies and procedure documents supporting the Asset Management System
• Asset Management System
• System Planning & Environmental
• Technology
• Safety & Health Systems
• Procurement System
• Risk and Governance
• Finance
b) Incorporate guidelines regarding review of Asset Management System within the Asset Management Strategy document.
Responsible Person
Justin Murphy
Target Date
June 2015

Action Plan 1/2014 – for 5(a)
a) Re-establish and update policies and procedure register
b) Review the policies and procedures within the register
Responsible Person
a) Frank van der Kooy
b) Managers responsible for policies
Target Date
a) October 2015
b) June 2015</td></tr>
</table>

Issue 2/2014 *Asset Operations: 5(c) Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets physical/structural condition and accounting data.* The quality of data (where quality is conformance to requirements) in the Asset Register has not yet achieved the level necessary for satisfactory operation of the AMS; programs are already in place to improve the data accuracy.	
Recommendation 2/2014 Complete the implementation of programs aimed at improving the quality of data in the Asset Register to achieve the level necessary for satisfactory operation. These include at present: "A&W Field 3272 Quality Data Capture" project due for completion in 2016 and "Asset Data Accuracy Project", due for completion in 2014.	**Action Plan 2/2014** a) Establish data accuracy targets based on the asset risk to the business b) Finalise the program of works for improving data accuracy to achieve targets already initiated within the business(including field audit A&W Field 3272 Quality Data Capture") **Responsible Person** a) Justin Murphy b) General Manager NWIS and General Manager NIS **Target Date** a) March 2015 b) June 2016

Issue 3/2014 *Asset Operations: 5(e) Staff receive training commensurate with their responsibilities* Horizon Power has been gathering all its training information from the Districts into VETtrack, the corporate training database to enable future access by the Districts. This work is not complete and progress of this work will need continued support.	
Recommendation 3/2014 (OFI) Gathering all training information from the Districts into VETtrack and enabling a portal to allow access to the District will need continued support to achieve completion.	**Action Plan 3/2014** a) Finalise the high level policy which identifies the roles which are required to be managed by VETtrack system. b) Complete the implementation of VETtrack system for identified roles already initiated within the business. **Responsible Person** Lance Roberts **Target Date** a) June 2015 b) December 2015

Issue 4/2014 *Asset Maintenance: 6(c) Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule* By June 2014 there were 66 Work Orders open which were due to have been completed by that date; five WO were due for completion by 31 December 2013.	
Recommendation 4/2014 66 overdue Work Orders were open in June 2014. Five of the Work Orders were due for completion by 31 December 2013. Implement action to close, delete or justify Work Orders open past the due date.	**Action Plan 4/2014** a) Finalise the reporting of the work orders through the system. b) Review and Close off Work orders **Responsible Person** a) Justin Murphy b) Brett Hovingh, Layton Baker, Scott Beckwith and Jo Griessman **Target Date** a) January 2015 b) June 2015

Issue 5/2014 *Asset Management Information System: 7(e) Data backup procedures appear adequate* There are checklists in place for power outage events as well as disaster recovery test guides, Ref: "DR Test Guide: Wintel", although the latter appeared to be in draft form, with no document owner recorded or signatory identified. *Asset Management Information System: 7(f) Key computations related to licensee performance reporting are materially accurate* Several user guides were sighted, further providing confidence of a repeatable reporting process: • TCS Reliability Report User Guide; and • Asset Management Reporting, Cognos Express Procedures. Neither of the above appeared as controlled / final documents.	
Recommendation 5/2014 Documentation such as the "DR Test Guide: Wintel", "TCS Reliability Report User Guide" and "Asset Management Reporting, Cognos Express Procedures" should be formally issued so that their currency can be maintained/verified. Refer to Recommendation 1/2014 for overall requirement.	**Action Plan 5/2014** Review, update and formalise DR Test Guide Wintel. **Responsible Person** Paul Thomas **Target Date** Complete

Issue 6/2014 *Contingency Planning: 9(a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.* The Instruction Module issued December 2012 indicated that the "West Kimberley Contingency Plan" should have been finalised, but the plan last issue was April 2011.	
Recommendation 6/2014 Update or finalise Contingency Plans as identified.	**Action Plan 6/2014** Review and update contingency plans. **Responsible Person** Brett Hovingh, Layton Baker, Scott Beckwith and Jo Griessmann **Target Date** March 2015

Issue 7/2014 *Special Area 1.4: Data integrity of the data that has been imported to the systems from the legacy systems* Not all data present in the legacy system was found to be useful for the operation of the assets, in addition new attributes were identified that were not present in the legacy system. The result was that only around 45% of the fields in the new AMS were able to be populated from the legacy fields. The remaining attributes will have to be populated through future in field inspections. Horizon Power have recognised the importance of this shortcoming and identified a project for collecting the data, the "A&W Field 3272 Quality Data Capture" project which is now in Ellipse but due for completion in 2016.	
Recommendation 7/2014 Progress the "A&W Field 3272 Quality Data Capture" project. Process of inspection and audits should be managed to ensure that the asset management data is complete and accurately records the attributes and conditions of real life assets.	**Action Plan 7/2014** Finalise the Workforce Mobility Phase-2 program of works. **Responsible Person** Justin Murphy **Target Date** December 2014

Issue 8/2014 *Special Area 1.4: Data integrity of the data that has been imported to the systems from the legacy systems* Data tests have shown that there are still discrepancies between the systems and between the data in the legacy and the new systems. The Review has noted that even the legacy systems had long standing problems with data accuracy, so full integration of data with legacy system is no guarantee of data accuracy. It is important that a process of inspection and audits be undertaken to ensure that the asset management data is complete and accurately records the attributes and conditions of real life assets.	
Recommendation 8/2014 Continue with Asset Data Accuracy Project to achieve the set objectives.	**Action Plan 8/2014** Review and action discrepancies highlighted by the data test undertaken during the audit. Other actions same as Item 2. **Responsible Person** Justin Murphy **Target Date** December 2014

Issue 9/2014 *Special Area 1.5: Currency of the data in the asset management systems* The lag in data processing is evident in the Asset Management Reports which report on the trends of WIP (Work In Progress), where the gap between "New Work" value and "End of Month WIP" value has doubled since January 2013.	
Recommendation 9/2014 Progress actions to reduce the amount of data entry lag.	**Action Plan 9/2014** Finalise Data Backlog project. **Responsible Person** Justin Murphy **Target Date** November 2014

Issue 10/2014 *Special Area 1.6: Reporting capability, with a particular focus on reporting required for regulatory purposes under the licence* In regard to current reporting the review noted that the June 2014 AMR was not yet able to report on the quantity of equipment with no Earth Resistance readings (this required a relationship to be created to parent equipment which was due to have been created in May 2014, the resolution was imminent at the end of June 2014). The lack of completeness of the data in equipment attributes means that there is a limitation on the capability of reporting the asset information.	
Recommendation 10/2014 Pursue the completion of actions necessary for regulatory reporting such as Earth Resistance Reading.	**Action Plan 10/2014** Finalise Energy Safety audit actions for regulatory reporting. **Responsible Person** Brett Hovingh, Layton Baker, Scott Beckwith and Jo Griessmann **Target Date** As per CURA due dates already defined

Appendix B: References

Horizon Power staff participating in the review

- GM Power System Services
- Manager Engineering & Project Services
- Asset Services Delivery Manager
- Regional Manager, Kimberley
- Regional Manager, East Pilbara
- Asset Manager, Kimberley
- Asset Manager, East Pilbara
- Risk and Audit Manager
- Risk and Audit Specialist
- GM Pilbara Grid
- GM Commercial Services & Finance
- GM Corporate Services
- A/Manager Finance
- Finance Business Partner
- Manager Technology
- IT Security Risk and Governance Specialist
- Land, Environment, Native Title & Heritage Manager

Deloitte staff participating in the review

Name	Position	Hours
• Kobus Beukes	Partner	16
• Richard Thomas	QA Partner	5.5
• Andrew Baldwin	Specialist Leader – Internal audit & Regulatory compliance	107
• Emlyn King	Specialist Senior	160
• David Herbert	Senior Analyst	22
• Bryn Durrans	Engineer and Technical Specialist	57
• Shailesh Tyagi	Engineer and Technical QA Partner	2

Key documents and other information sources examined

Document name/description
Asset Planning
Horizon Power Asset Management Strategy AND System
Horizon Power Asset Management policy
East Pilbara Asset Management Plan FY 17-18
Kimberley Asset Management Plan FY 17-18
Quarterly performance report – July to September 2015, July to September 2016
Asset Management Plan Workshop Agenda - April 2017
Asset Management Services Power Services Group - Technical Bulletin February 2015
Kimberley Region, Maintenance Works Program Forecast - 2016/17 - 2020/21
2017 System planning Report - Kununurra
Condition Based Plant replacement Table
Asset Creation and Acquisition
Horizon Power Authorities and Delegations Manual
Horizon Power Business Case templates (Complex and Non Complex)
Pilbara Power Project Business Case documentation, Project Impact Statements, Project Status Reports and Punch List
Kununurra Power Station Project Business Case documentation, Project Impact Statements, Project Status Reports and Punch List
Broome - LV Voltage Study
Distribution Commissioning Work Instruction - High Voltage XLPE Cables

Document name/description
Capital Works Management Process (AP150) - Cheat Sheet No. WK1
AST 505.0 McKay Feeder Replacement - Business Case (non-complex project)
Example work orders - NX000052, EP013063, TN003998, EP012207, WK015296, EP012747, EP013170, EP012696, TN003783
Asset Disposal
Horizon Power Disposal of Assets Policy
Asset disposal write-off form
Square Table Report - June 2017
Environmental Analysis
Horizon Power TCS Reliability Reporting Process
Horizon Power Environmental Management Policies
Incident Management Procedure
Example incident summary report
Example Monthly Safety and Health Meeting Agendas
Environmental Management Plans- all Regions
Asset Operations
G & B Refresher Training Job Package
GHD Kununurra Black Start Procedure
Distribution Network Access Request (DNAR) Quick Reference Guide
Distribution Pole Metal (Pole) Data Sheet
Copy of Incomplete Task Report - March 2017
Horizon Power Fault Crew Incident Management Flowchart
2015/16 Load and Circuits Report
East Pilbara Design Quality Checks
East Pilbara Distribution Planning Report
NWIS - Transmission Planning Report 2014/15
HPCC Update - TCS Incidents - East Pilbara Transmission
Investigation Report - Failed Wyndham RMU April 2016
Job Planning, Work Parcel Form - Operational Services
Switching Process and Rules - Systems Operations Framework
P1 Transmission Opex Job Planning - Work Parcel Forms
Network Diagram Updating Procedure (DFIS and ENMAC)
Example substation 66/22kV Single line switching diagram
Network Impact Assessment Checklist
Example Electrical Switching Schedule
ENMAC NMS Work Flow - Broome
Electrical Switching Program 30569
East Pilbara Transmission Meeting Agenda - 28 November 2016
ENMAC Network Management Procedure
Job Risk Assessment - Remove HV Poly's & Re-join
Asset Maintenance
Maintenance strategy/plans/philosophy
Example maintenance work orders - EK028262, EK023848, EK007313, EK028327, EK023691, EK023693, EK023697, EK010128, EK009942, EK023246
Example Oil Analysis Reports
Forecast Report - HP Resource hours required for P1 Preventative Maintenance
SWG Maintenance - AST 704.0 Switchgear Maintenance Forms
Transformer Maintenance and Testing Report August 2016
Transformer Fitness - Insulating Oil Analysis Report
Maintenance Criteria & Inspection Sheet for Switchgear Inspection/ Maintenance
Kimberly Region - Preventative works - standards jobs costs review
Asset Management Information System
IT Policy and Guidelines
Technology Group Password policy
Horizon Power Backup and Recovery Process
Arcserve UDP Work Instruction
IT Disaster Declaration and Execution Plan
Risk Management
Horizon Power Risk management Framework

Document name/description
Horizon Power Risk management Policy
Horizon Power Risk tables/matrices
Risk registers – Pilbara Grid, Microgrids, Power Systems Services
Corporate Risk Profile Report to Audit and Risk Management Committee – April 2017
Summary of status of treatment plans, per Business Unit
CURA Assessor - risk on a page report
Streetlight Risk Assessment
MST Risk Register Kimberley Region
Contingency Planning
Horizon Power Crisis and Emergency Management Handbook
Horizon Power Crisis Management Plan
EMT and CMT exercise report – September 2015
District Contingency Plan - Pilbara Network
Kimberley District Emergency Management Committee - example agenda and minutes
Kimberley District Emergency Management Committee - Contact Register
Kimberley Emergency Management District Risk Assessment Report
Kimberley Emergency Preparedness and Response Procedure
Emergency Evacuation Procedure - Kununurra Depot
Emergency Procedure - Severe Storm, Cyclone, Flood and Bushfire Response
Broome Emergency Evacuation Procedure
Cyclone Olwyn Executive submission, Local Response Team and Emergency Management Team meeting minutes – March 2015
Cyclone Olwyn GM NIS Business communications
Evacuation Exercise Information
District Asset Management Contingency - Plan Kimberley Region 2016
Financial Planning
Financial plan analysis pack (SDP and SCI) – 14/15, 15/16, 16/17
Financial statement notes (disposal costs)
Budget vs Actual variance analysis reports (spreadsheet) – 14/15, 15/16, 16/17
Pilbara Grid - Performance Report - YTD May 2017
Kimberley Performance Review Meeting - example agenda and actions
Kimberley Region - 2018 Budget Review
Current budget forecast
Example Dashboard reports – Kimberley May 2017, NWIS October 2016
Main / Capex Report - Opex tables February 2017
Capital Expenditure (CAPEX) Planning
Quickbase snapshot – AMP - 14/15, 15/16, 16/17
Business Case template for CAPEX projects
Kimberley Region - Maintenance/Capex Works Program - Networks Energy Assets
Kimberley Region - Network Asset related Capital/Preventative Maintenance Works Program
Kimberley Region Maintenance/Capex Work Program - Network Energy Assets Status Report YTD 2017
Kimberley Capital Budget FY16/17
Review of AMS
Linetech High Level Review of Asset Management of Horizon Power Distribution Assets – July 2015
AMP Improvement Plan
General
Asset Management Reports, May 2015, April 2017, June 2017
Asset Management Plan Program Steering Committee Terms of Reference
AMP Instruction Guide
Organisational chart
AMP Steering Committee December 2016 meeting pack
Horizon Power Technical Skills Matrix
Training - Reauthorisation Process
Training Guide
Training Program 2017

Appendix C: Post Review Implementation Plan

Issue 1/2017

Asset Planning: 1 (e) Lifecycle costs of owning and operating assets are assessed

Asset Creation & Acquisition: 2 (b) Evaluations include all life-cycle costs

Asset Disposal: 3 (c) Disposal alternatives are evaluated

Horizon Power considers the costs of disposal of assets through the following mechanisms:

- Checklist item on the Finance Impact Statement regarding disposal costs
- Decommissioning of existing assets at the point of replacement factored into the Financial Evaluation
- Net Present Value calculations for new assets
- Provision account is incremented to reflect the aforementioned costs.

In addition, the nature of the intergenerational assets within the HP portfolio, historically a provision for the decommissioning had not been considered on the grounds of materiality.

However, Horizon Power's Business Case template does not specifically provide for disposal or decommissioning costs to be identified and evaluated during the asset acquisition process. As a result, the liability as a result of asset disposal may not be fully understood when assessing capital projects.

Recommendation 1/2017	**Action Plan 1/2017**

Horizon Power consider updating:
• Part B of its business case template to include consideration of:
  ○ Costs for disposal
  ○ Options relating to decommissioning, divestment or replacement
• The AMP Guidelines to include a checklist item for consideration of disposal costs at acquisition.
	1. Finance will communicate with the PMO Custodian to make the relevant changes to Business Case Part B to consider
	  ○ Cost of Disposal
	  ○ Option relating to decommissioning, divestment or replacement.
	2. AMP Guidelines will be updated to consider disposal cost (if required) at acquisition or factor in disposal costs as an OPEX cost element.
	Responsible Person:
	1. Finance Business Partner (Cate Bertram)
	2. Asset Service Delivery Manager (Lorrie Di Cicco)
	Target Date: December 2017

Issue 2/2017

Asset Creation and Acquisition: 2 (e) Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood

Environmental Management Plans (**EMPs**) for four of the five regions had not been reviewed within the prescribed three yearly timeframe. The most recent review was dated 20 August 2013 for each of the East Pilbara, West Pilbara, East Kimberly and West Kimberly EMPs.

Recommendation 2/2017	**Action Plan 2/2017**
Horizon Power review and update all overdue EMPs to ensure consistency and accuracy of information.	All Environmental Management Plans will be reviewed and updated. **Responsible Person:** • Regional Managers (Scott Beckwith, James Carney, Joe Griessmann, Layton Baker) • Land, Environmental, Native Title & Heritage Manager (Alastair Trolove) will coordinate with Regional Managers **Target Date:** June 2018

Issue 3/2017

Asset Maintenance: 6 (c) Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule

The June 2017 AMR reported 68 High Priority and 605 Normal Priority transmission and distribution maintenance work orders as overdue at 30 June 2017. Of the High Priority overdue work orders:

- Seven were at least 12 months overdue
- One was approximately four years overdue
- A number appeared to relate to activities that present a high risk to asset operations. For example, six work orders, which were raised in November 2016 and due in June 2017, related to bushfire prevention work before the dry season. Each work order was completed on 3 July 2017.

As only three categorisations for overdue (scheduled) work orders are reported in the monthly AMRs, it is difficult to distinguish and prioritise work requiring immediate action. The associated age of the overdue work orders (e.g. work orders overdue by three, six or 12 months) is also not reported to assist in prioritising work.

Recommendation 3/2017	**Action Plan 3/2017**
Horizon Power consider: • Enhancing, based on risk, the granularity of its work order prioritisation to clearly indicate the age of overdue work orders • Developing a monitoring mechanism whereby outstanding work orders requiring immediate action are reported to regional managers • Scheduling future work orders to reflect the enhanced prioritisation approach.	ASD will: 1. Refine the AMR/Clickview to incorporate time based aged overdue work orders KPIs. 2. Communicate to the regions to ensure all work order have a prioritisation identifier. **Responsible Person:** Asset Service Delivery Manager (Lorrie Di Cicco) **Target Date:** 1. June 2018 2. December 2017

Issue 4/2017

Risk Management: 8 (b) Risks are documented in a risk register and treatment plans are actioned and monitored

Horizon Power appears to perform its risk management activities effectively at a strategic and divisional level, with oversight by relevant General Managers (GMs) and the Corporate Risk Team. However, in relation to risk treatment plans recorded as complete in CURA (Horizon Power's Enterprise Risk Management system), we observed that:

- A significant number of plans were overdue as at 30 June 2017, including plans that related to severe and maintenance-related risks
- Due dates for many risk treatment plans appear to have been optimistic, which resulted in revisions to due dates and, in some cases, actions becoming overdue
- Given the time lag between revising CAPEX project dates and the bi-annual risk assessment process, risk treatment plan information is out of date and not accurate in some instances
- Risk treatment plan closure is not reported within AMRs.

Recommendation 4/2017	**Action Plan 4/2017**
Horizon Power consider revising its processes for updating CAPEX project dates (that relate to risk treatment plans) to require update within CURA against the relevant risk treatment plan.	1. The Risk Function will send out a communication to the General Managers and Level 3 Managers reminding them to conduct more frequent reviews of their CURA tasks and to follow-up on overdue tasks. Furthermore, the communication will recommend that treatment plan owners synchronise the CAPEX project dates with the CURA treatment plan due dates and that risk treatment plan closure is reported within the AMRs. 2. The Risk Function will continue to report overdue treatment plans to the Executive Team as part of the corporate risk consolidation process that is held every 6 months. **Responsible Person:** Risk & Audit Manager (Liang Tay) **Target Date:** December 2017

Issue 5/2017

Risk Management: 8 (b) Risks are documented in a risk register and treatment plans are actioned and monitored

Based on our review of risk registers for a sample of regions (Port Hedland and Broome/Kununurra), we observed that:

- All recorded risks related to either safety or compliance risks
- No risks relating to asset failure have been recorded in those registers. We acknowledge that asset failure risks are documented within regions' contingency plans, which enables Horizon Power to recognise and manage asset failure risk at an individual region and system level.

Recommendation 5/2017	**Action Plan 5/2017**
Horizon Power: • Review the current risk categories in CURA to confirm coverage of asset failure risks • Update its risk registers to include relevant extreme or high risks relating to asset failure (e.g. substation failure where N-1 has not been achieved).	The implementation of the ENSMS on 6 August 2017 has identified asset safety risk. The ENSMS Working Group will review all Extreme and High Asset Failure Risks and these will be captured in CURA, which will be Horizon Power's up-to-date risk register. **Responsible Person:** Asset Service Delivery Manager (Lorrie Di Cicco) **Target Date:** June 2018

Issue 6/2017

Contingency Planning: 9 (a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks

Horizon Power has implemented a Business Continuity Management (**BCM**) framework, which identifies the relevant activities to be taken during a business continuity or crisis event. The framework is supported by the Crisis and Emergency Management Plan (**CEMP**), which is to be used in conjunction with the following tactical plans:

- Severe Weather procedures
- Contingency plans.
- However, Horizon Power's regional Contingency Plans do not contain all key tactical steps to take when in a contingency situation. In practice, the actions taken when in a contingency situation are based on the knowledge and understanding of certain individuals, which gives rise to a key person reliance risk.

Recommendation 6/2017	**Action Plan 6/2017**
Horizon Power update its contingency plans to include all key tactical steps to take when in a contingency situation.	1. ASD will develop a template and standardised approach to the content of the contingency plans to ensure all key tactical steps are identified and actionable. 2. Regional Managers will update the standardised contingency plan to include all key tactical steps. **Responsible Person:** 1. Asset Service Delivery Manager (Lorrie Di Cicco) 2. Regional Managers (Scott Beckwith, James Carney, Joe Griessmann, Layton Baker) **Target Date:** 1. December 2017 2. June 2018