

Merredin Solar Farm Nominee Pty Ltd

Electricity Generation Licence (EGL28)
2021 Asset Management System Review

Final report

17 September 2021



ASSURANCE
ADVISORY
GROUP

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17 September 2021

Mr Stephen Brass
Operations and Maintenance Manager
Merredin Solar Farm
c/- Risen Energy (Australia) Pty Ltd
4 Clunies Ross Court
Eight Mile Plains, QLD 4113

Dear Mr Brass

Electricity Generation Licence (EGL28) – 2021 Asset Management System review report

We have completed the Electricity Generation Licence Asset Management System Review for Merredin Solar Farm Nominee Pty Ltd for the period 19 December 2017 to 30 April 2021 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 audit procedures.

If you have any questions or wish to discuss anything raised in the report, please contact Andrew Baldwin at abaldwin@assuranceadvisory.com.au or myself at slinden@assuranceadvisory.com.au.

Yours sincerely

Assurance Advisory Group

Stephen Linden

Director

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1. Independent assurance practitioner's report

Modified opinion

We have undertaken a reasonable assurance engagement on the effectiveness of Merredin Solar Farm Nominee Pty Ltd's (**MSF**) Asset Management System (**AMS**), relating to its Electricity Generation Licence (EGL28) (the **Licence**) for the period 19 December 2017 to 30 April 2021 (**review period**).

In our opinion, based on the procedures we have performed and the evidence we have obtained, except for the effects of the matters described in the Basis for modified opinion paragraph below, MSF has established and maintained, in all material respects, an effective AMS for assets subject to the Licence, as measured by the effectiveness criteria in the March 2019 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* (**the Guidelines**) issued by the Economic Regulation Authority (the **ERA**).

Basis for modified opinion

During the period from commencement of operations to 30 April 2021, MSF's asset management system had the following deficiencies that require correction or improvement in order to address the effectiveness criteria nominated in the Guidelines:

Key process & effectiveness criteria	Description
1. Asset Planning 1.1. Asset management plan covers the specified processes	Two versions of MSF's Asset Management Plan provide some direction on MSF's asset management framework and practices, including an effective description of operations and key equipment, plus references to other key plans and documents. However the Plan requires further review and consolidation to ensure it reflects MSF's actual and expected processes, as well as the 12 key components of the asset management lifecycle presented in the ERA's Guidelines.
8. Risk Management 8.1 Risk management policies and procedures exist and are applied to minimise internal and external risks 8.2 Risks are documented in a risk register and treatment plans are implemented and monitored	Although the MSF register contains some useful information, it requires further work to complete all key components of the tool (e.g. assign risk owners, identify specific controls and treatment plans required to adequately treat current risks rated as High or Extreme) and to apply a full test of its effectiveness and accuracy. Risks such as sole operator risks and learnings from site specific operations (since October 2020) are not captured in the risk register. There is little evidence of risk status and risk treatment plans being monitored e.g. management of risks is not consistently featured in operational reporting, and regular reviews of the risk register have not been scheduled.

We conducted our engagement in accordance with Standard on Assurance Engagements ASAE 3500 *Performance Engagements* (**ASAE 3500**) issued by the Auditing and Assurance Standards Board.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

MSF's responsibility for the AMS

MSF is responsible for ensuring that it has:

- Complied in all material respects with the requirements of the Licence as specified by the Review Guidelines
- Established and maintained an effective AMS for assets subject to the Licence, as measured by the effectiveness criteria detailed in the Guidelines.

Our independence and quality control

We have complied with the independence and other relevant ethical requirements relating to assurance engagements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. We applied Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements* in undertaking this assurance engagement.

Our responsibilities

Our responsibility is to express an opinion on the effectiveness of MSF's AMS for assets subject to the Licence for the period to 30 April 2021. ASAE 3500 requires that we plan and perform our procedures to obtain reasonable assurance about whether MSF has established and maintained, in all material respects, an effective AMS for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines.

A reasonable assurance engagement in accordance with ASAE 3500, to report on the effectiveness of MSF's AMS for assets subject to the Licence involves performing procedures to obtain evidence about processes and controls designed and implemented within MSF's AMS for assets subject to the Licence. The procedures selected depend on our judgement, including the identification and assessment of risks of MSF's AMS for assets subject to a Licence being materially ineffective.

Our procedures included:

- Utilising the Review 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 MSF representatives and key operational and administrative 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 MSF's AMS requirements and standards
- Physical visit to operations located in Merredin
- Consideration of reports and references evidencing activity
- Consideration of activities performed by MSF that relate to operation of the assets.

Inherent Limitations

Because of the inherent limitations of an assurance engagement, together with the inherent limitation of any system of controls it is possible that fraud, error or non-compliance with the requirements of the Guidelines may occur and not be detected.

A reasonable assurance engagement relating to the period from 19 December 2017 to 30 April 2021 does not provide assurance on whether the effectiveness of MSF's AMS for assets subject to the Licence will continue in the future.

Restricted use

This report has been prepared for use by MSF for the purpose of satisfying its obligation under Section 14 of the Electricity Industry Act 2004. We disclaim any assumption of responsibility for any reliance on this report to any person other than MSF, or for any other purpose other than that for which it was prepared. We understand that a copy of the report will be provided to the ERA for the purpose of reporting on the effectiveness of MSF's AMS. We agree that a copy of this report will be given to the ERA in connection with this purpose, however we accept no responsibility to the ERA or to anyone who is provided with or obtains a copy of our report.

Assurance Advisory Group

Stephen Linden
Director

17 September 2021

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 Merredin Solar Farm Nominee Pty Ltd (**MSF**) an Electricity Generation Licence (EGL28) (the **Licence**).

The Licence relates to Merredin Solar Farm operating the 132MWdc solar farm approximately 260 kms east of Perth and delivering electricity into the South West Interconnected System (SWIS) via the Western Power Merredin Terminal Substation at 220kV. The facility commenced operations in July 2020, including bidding and dispatch of electricity in accordance with the requirements of the market operator (AEMO) and network operator (Western Power). In December 2018, there was a change in ownership of MSF from Ingenious Australian Solar Limited to Risen Energy (Australia) Pty Ltd (**Risen Energy**).

Section 14 of the Act requires MSF to provide to the ERA an asset management system review (the **review**) report conducted by an independent expert acceptable to the ERA within 24 months after the commencement date, and every 24 months thereafter, unless otherwise approved by the ERA. With the ERA's approval, Assurance Advisory Group (**AAG**) has been appointed to conduct the review for the period 19 December 2017 to 30 April 2021 (**review period**).

The review has been conducted in accordance with the ERA's March 2019 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* (**Review Guidelines**), which set out 12 key processes in the asset management life-cycle.

2.2 Findings

In considering MSF's internal control procedures, structure and environment, compliance arrangements and information systems specifically relevant to those effectiveness criteria subject to review, we observed that:

- Since commencement of operations in July 2020, MSF had maintained a largely appropriate suite of procedures and controls for the effective operation of the Merredin Facility assets
- In its initial period of operation, MSF has focussed on addressing post-commissioning issues, embedding its day-to-day operations and maintenance practices and recognising learnings. Throughout 2021 and 2022, MSF expects to further strengthen its asset management practices, including review and finalisation of key process and procedural documentation, plus review and implementation of its forward preventative maintenance program
- MSF staff appeared to have a full working understanding of their roles, particularly displaying an understanding of the asset management processes within their area of responsibility
- There are two significant opportunities for MSF to further improve elements of its asset management practices (where criteria are rated as "C" or "3"), being:
 - The update and expansion of its Asset Management Plan as a key driver of the effective and sustained management of the facility's assets (refer to Recommendation 1/2021)
 - Further development of its risk management, emergency response and contingency planning framework (refer to Recommendation 2/2021).
- There are several further opportunities for MSF to improve elements of its asset management practices (where criteria are rated as "B" or "2"). In those instances, we raised the potential improvement opportunity with MSF staff.

This review assessed that, of the 58 elements of MSF's AMS:

- For the asset management process and policy definition ratings:
 - 20 are rated as "Adequately defined"
 - 19 are rated as "Requires some improvement"
 - 1 is rated as "Requires substantial improvement"
 - 18 are not rated.
- For the asset management performance ratings:
 - 25 are rated as "Performing effectively"
 - 11 are rated as "Improvement required"
 - 2 are rated as "Corrective action required"
 - 20 are not rated.

2.3 MSF's response to previous review recommendations

As this is MSF's first asset management system review, there are no previous review recommendations.

2.4 Recommendations to address current asset system deficiencies

A. Resolved during current review period

Not applicable.

B. Unresolved at end of current review period

Reference (no./year)	Process and policy deficiency / Performance deficiency (Rating / Reference number, Asset management process & effectiveness criterion / Details of deficiency)	Auditor's recommendation	Action taken
1/2021	C2 <u>1. Asset Planning</u> <i>1.1. Asset management plan covers the specified processes</i> Two versions of MSF's Asset Management Plan provide some direction on MSF's asset management framework and practices, including an effective description of operations and key equipment, plus references to other key plans and documents. However the Plan requires further review and consolidation to ensure it reflects MSF's actual and expected processes, as well as the 12 key components of the asset management lifecycle presented in the ERA's Guidelines. The current versions of the plan do not adequately address the following elements: • Lifecycle overview, from acquisition to disposal including milestones and end of life • Current business objectives and defined service levels • Legislative and other compliance obligations • Asset performance, including cost performance indicators, condition assessment, operational risk summary • Major works, including significant scheduled maintenance and refurbishment plan and opportunities • Contingency arrangements • Arrangements for review and update of the AMP.	MSF review and expand its Asset Management Plan to ensure it reflects MSF's actual and expected processes and aligns with the 12 key components of the asset management lifecycle presented in the ERA's Guidelines.	n/a

Reference (no./year)	Process and policy deficiency / Performance deficiency (Rating / Reference number, Asset management process & effectiveness criterion / Details of deficiency)	Auditor's recommendation	Action taken
2/2021	B3 rating <u>8. Risk Management</u> <i>8.1 Risk management policies and procedures exist and are applied to minimise internal and external risks</i> <i>8.2 Risks are documented in a risk register and treatment plans are implemented and monitored</i> MSF has established an initial Risk Register, consistent with Risen Energy processes and other facilities within the group: • The MSF risk register covers a broad range of risk types, with a total of 32 risks raised in October 2020 • Although the register contains some useful information, it requires further work to complete all key components of the tool (e.g. assign risk owners, identify specific controls and treatment plans required to adequately treat current risks rated as High or Extreme) and to apply a full test of its effectiveness and accuracy • Risks such as sole operator risks and learnings from site specific operations (since October 2020) are not captured in the risk register • There is little evidence of risk status and risk treatment plans being monitored e.g. management of risks is not consistently featured in operational reporting, and regular reviews of the risk register have not been scheduled.	MSF further develop its risk management framework and processes to ensure key risks and corresponding treatment plans are fully documented, monitored for effectiveness and subject to review on a regular basis.	n/a

2.5 Scope and objectives

We have conducted a reasonable assurance engagement in order to state whether, in our opinion, based on our procedures, MSF has established and maintained, in all material respects, an effective AMS for assets subject to the Licence during the period 19 December 2017 to 30 April 2021, as measured by the effectiveness criteria in the Guidelines

Our engagement was conducted in accordance with Australian Standard on Assurance Engagements ASAE 3500 Performance Engagements, issued by the Australian Auditing and Assurance Standards Board and provides reasonable assurance as defined in ASAE 3500. The procedures we performed are described in more detail in section 2.7 below.

A reasonable assurance engagement in accordance with ASAE 3500, to report on the effectiveness of MSF's AMS for assets subject to the Licence involves performing procedures to obtain evidence about processes and controls designed and implemented within MSF's AMS for assets subject to the Licence. The procedures selected depend on our judgement, including the identification and assessment of risks of MSF's AMS for assets subject to a Licence being materially ineffective.

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

In accordance with the Review Guidelines, the review considered the effectiveness of MSF's existing control procedures within the following 12 key processes in the asset management life cycle:

Key processes	Effectiveness criteria
1. Asset Planning	1.1 Asset management plan covers the processes in this table 1.2 Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning 1.3 Service levels are defined in the asset management plan 1.4 Non-asset operations (e.g. demand management) are considered 1.5 Lifecycle costs of owning and operating assets are assessed 1.6 Funding options are evaluated 1.7 Costs are justified and cost drivers identified 1.8 Likelihood and consequences of asset failure are predicted 1.9 Asset management plan is regularly reviewed and updated.
2. Asset creation and acquisition	2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options 2.2 Evaluations include all life-cycle costs 2.3 Projects reflect sound engineering and business decisions 2.4 Commissioning tests are documented and completed 2.5 Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood
3. Asset disposal	3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process 3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken 3.3 Disposal alternatives are evaluated 3.4 There is a replacement strategy for assets
4. Environmental analysis	4.1 Opportunities and threats in the asset management system environment are assessed 4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved 4.3 Compliance with statutory and regulatory requirements 4.4 Service standard (customer service levels etc) are measured and achieved.
5. Asset operations	5.1 Operational policies and procedures are documented and linked to service levels required 5.2 Risk management is applied to prioritise operations tasks 5.3 Assets are documented in an asset register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition 5.4 Accounting data is documented for assets [new criteria] 5.5 Operational costs are measured and monitored 5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities

Key processes	Effectiveness criteria
6. Asset maintenance	6.1 Maintenance policies and procedures are documented and linked to service levels required 6.2 Regular inspections are undertaken of asset performance and condition 6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule 6.4 Failures are analysed and operational/maintenance plans adjusted where necessary 6.5 Risk management is applied to prioritise maintenance tasks 6.6 Maintenance costs are measured and monitored
7. Asset management information systems	7.1 Adequate system documentation for users and IT operators 7.2 Input controls include suitable verification and validation of data entered into the system 7.3 Security access controls appear adequate, such as passwords 7.4 Physical security access controls appear adequate 7.5 Data backup procedures appear adequate and backups are tested 7.6 Computations for licensee performance reporting are accurate 7.7 Management reports appear adequate for the licensee to monitor licence obligations 7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation [new criteria]
8. Risk management	8.1 Risk management policies and procedures exist and are applied to minimise internal and external risks 8.2 Risks are documented in a risk register and treatment plans are implemented and monitored 8.3 Probability and consequences of asset failure are regularly assessed
9. Contingency planning	9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks
10. Financial planning	10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve those 10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs 10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) 10.4 The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period 10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services 10.6 Large variances in actual/budget income and expenses are identified and corrective action taken where necessary

Key processes	Effectiveness criteria
11. Capital expenditure planning	11.1 There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates 11.2 The capital expenditure plan provides reasons for capital expenditure and timing of expenditure 11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan 11.4 There is an adequate process to ensure the capital expenditure plan is regularly updated and implemented
12. Review of asset management system	12.1 A review process is in place to ensure the asset management plan and the asset management system described in it remain current 12.2 Independent reviews (e.g. internal audit) are performed of the asset management system

Each key process and effectiveness criterion is applicable to MSF'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.

2.6 Approach

Our approach for this review involved the following activities, which were undertaken during the period May to July 2021:

- 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 MSF staff to gain an understanding of process controls in place (see Appendix B for staff involved)
- Site visit to the Merredin Facility with a focus on understanding the generation assets, their function, normal mode of operation, age and an assessment of the facilities against the AMS review criteria
- Review of documents, processes and controls to assess the overall effectiveness of MSF's AMS (see Appendix B for reference listing)
- Consideration of the resourcing applied to maintaining those controls and processes
- Reporting of findings to MSF for review and response.

3. Summary of Ratings

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

Table 1: Process and policy rating scale

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 being managed
B	Requires some improvement	- Processes and policies require 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) requires minor improvements (taking into consideration the assets being managed)
C	Requires substantial improvement	- Processes and policies are incomplete or require substantial improvement - Processes and policies do not document the required performance of the assets - Processes and policies are considerably out of date - The asset management information system(s) requires substantial improvements (taking into consideration the assets 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 being managed).

Table 2: Performance rating scale

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	Improvement required	- The performance of the process requires some improvement to meet the required level - Process effectiveness reviews are not performed regularly enough - Recommended process improvements are not implemented
3	Corrective action required	- The performance of the process requires substantial improvement to meet the required level - Process effectiveness reviews are performed irregularly, or not at all - Recommended process improvements are not implemented
4	Serious action required	Process is not performed, or the performance is so poor 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 rating
 - Asset management performance rating.
- Detailed findings, including relevant observations and recommendations (Section 4). Descriptions of the effectiveness criteria can be found in section 4 and the Review Plan at Appendix A.

Table 3: AMS effectiveness summary

			Ratings	
Ref	Asset management process and effectiveness criteria	Review priority	Process and policy	Performance
1. Asset Planning			C	2
1.1	Asset management plan covers the processes in this table	Priority 4	C	2
1.2	Planning processes and objectives reflect the needs of all stakeholders and is integrated with business planning	Priority 4	A	1
1.3	Service levels are defined in the asset management plan	Priority 4	B	2
1.4	Non-asset operations (e.g. demand management) are considered	Priority 5	Not rated	Not rated
1.5	Lifecycle costs of owning and operating assets are assessed	Priority 5	Not rated	Not rated
1.6	Funding options are evaluated	Priority 5	Not rated	Not rated
1.7	Costs are justified and cost drivers identified	Priority 5	A	1
1.8	Likelihood and consequences of asset failure are predicted	Priority 4	B	2
1.9	Asset management plan is regularly reviewed and updated.	Priority 5	Not rated	Not rated

			Ratings	
Ref	Asset management process and effectiveness criteria	Review priority	Process and policy	Performance
2. Asset creation and acquisition			Not rated	Not rated
2.1	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options	Priority 4	Not rated	Not rated
2.2	Evaluations include all life-cycle costs	Priority 4		
2.3	Projects reflect sound engineering and business decisions	Priority 4		
2.4	Commissioning tests are documented and completed	Priority 4		
2.5	Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	Priority 2		
3. Asset disposal			Not rated	Not rated
3.1	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Priority 4	Not rated	Not rated
3.2	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Priority 5		
3.3	Disposal alternatives are evaluated	Priority 5		
3.4	There is a replacement strategy for assets	Priority 4		
4. Environmental analysis			B	2
4.1	Opportunities and threats in the asset management system environment are assessed	Priority 4	B	2
4.2	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Priority 4	A	1
4.3	Compliance with statutory and regulatory requirements	Priority 4	A	1
4.4	Service standard (customer service levels etc) are measured and achieved.	Priority 4	A	1
5. Asset operations			B	2
5.1	Operational policies and procedures are documented and linked to service levels required	Priority 4	B	1
5.2	Risk management is applied to prioritise operations tasks	Priority 4	A	2
5.3	Assets are documented in an asset register including asset type, location, material, plans of components, and an assessment of assets’ physical/structural condition	Priority 4	A	1
5.4	Accounting data is documented for assets [new criteria]	Priority 4	A	1
5.5	Operational costs are measured and monitored	Priority 4	A	1
5.6	Staff resources are adequate and staff receive training commensurate with their responsibilities	Priority 4	B	2
6. Asset maintenance			B	2
6.1	Maintenance policies and procedures are documented and linked to service levels required	Priority 4	A	1
6.2	Regular inspections are undertaken of asset performance and condition	Priority 2	A	1

Ref	Asset management process and effectiveness criteria	Review priority	Ratings	
			Process and policy	Performance
6.3	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Priority 2	B	2
6.4	Failures are analysed and operational/maintenance plans adjusted where necessary	Priority 4	B	2
6.5	Risk management is applied to prioritise maintenance tasks	Priority 4	A	2
6.6	Maintenance costs are measured and monitored	Priority 4	A	1
7. Asset management information systems			A	1
7.1	Adequate system documentation for users and IT operators	Priority 5	A	1
7.2	Input controls include suitable verification and validation of data entered into the system	Priority 4	A	1
7.3	Security access controls appear adequate, such as passwords	Priority 5	A	1
7.4	Physical security access controls appear adequate	Priority 5	A	1
7.5	Data backup procedures appear adequate and backups are tested	Priority 4	A	1
7.6	Computations for licensee performance reporting are accurate	Priority 5	Not rated	Not rated
7.7	Management reports appear adequate for the licensee to monitor licence obligations	Priority 5	A	1
7.8	Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	Priority 4	A	1
8. Risk management			B	3
8.1	Risk management policies and procedures exist and are applied to minimise internal and external risks	Priority 2	B	3
8.2	Risks are documented in a risk register and treatment plans are implemented and monitored	Priority 4	B	3
8.3	Probability and consequences of asset failure are regularly assessed	Priority 2	B	2
9. Contingency planning			B	2
9.1	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Priority 2	B	2
10. Financial planning			A	1
10.1	The financial plan states the financial objectives and identifies strategies and actions to achieve those	Priority 4	A	1
10.2	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Priority 5	A	1
10.3	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Priority 5	A	1
10.4	The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period	Priority 5	A	1

Ref	Asset management process and effectiveness criteria	Review priority	Ratings	
			Process and policy	Performance
10.5	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Priority 4	A	1
10.6	Large variances in actual/budget income and expenses are identified and corrective action taken where necessary	Priority 4	A	1
11. Capital expenditure planning			Not rated	Not rated
11.1	There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates	Priority 4	Not rated	Not rated
11.2	The capital expenditure plan provides reasons for capital expenditure and timing of expenditure	Priority 5		
11.3	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Priority 4		
11.4	There is an adequate process to ensure the capital expenditure plan is regularly updated and implemented	Priority 5		
12. Review of asset management system			B	Not rated
12.1	A review process is in place to ensure the asset management plan and the asset management system described in it remain current	Priority 5	B	Not rated
12.2	Independent reviews (e.g. internal audit) are performed of the asset management system	Priority 5	B	Not rated

4. Detailed findings and recommendations

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.

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 Process and Policy/Performance rating: [Requires substantial improvement \(C\)](#) / [Improvement required \(2\)](#)

Effectiveness criteria	Findings
1.1 Asset management plan covers the processes in this table	Throughout the review period, the following plans accommodated MSF's key assets: - Merredin Solar Farm Asset Management Plan, created in March 2020 to accommodate the expected asset management activities prior to the facility's operations commencing. This plan was most recently updated in July 2021 prior to submission to the ERA - A revised Draft Asset Management Plan prepared to coincide with the beginning of the facility's operational phase, providing more detail on how Risen Energy Services will execute the Asset Integrity Requirements laid out in the Operations & Maintenance Contract between Risen Energy Services and the Owner. This version of the plan more closely matches actual processes and activity undertaken, however is not yet complete and has not been formalised. The two versions of the Asset Management Plan provide some direction on MSF's asset management framework and practices, including an effective description of operations and key equipment, plus references to other key plans and documents. However the Plan requires further review and consolidation to ensure it reflects MSF's actual and expected processes, as well as the 12 key components of the asset management lifecycle presented in the ERA's Guidelines. The current versions of the plan do not adequately address the following elements: - Lifecycle overview, from acquisition to disposal including milestones and end of life - Current business objectives and defined service levels - Legislative and other compliance obligations - Asset performance, including cost performance indicators, condition assessment, operational risk summary - Major works, including significant scheduled maintenance and refurbishment plan and opportunities - Contingency arrangements - Arrangements for review and update of the AMP. Recommendation 1/2021 <i>MSF review and expand its Asset Management Plan to ensure it reflects MSF's actual and expected processes and aligns with the 12 key components of the asset management lifecycle presented in the ERA's Guidelines.</i>
	Process and Policy Rating: Requires substantial improvement (C) Performance Rating: Improvement required (2)

Effectiveness criteria	Findings	
1.2 Planning processes and objectives reflect the needs of all stakeholders and is integrated with business planning	Through discussion with the MSF Operations and Maintenance Manager and the MSF Lead Technician; and consideration of relevant supporting documentation and MSF's business planning processes, we observed that: - MSF's business model and resources specifically accommodate the operation and maintenance of the Facility in accordance with Good Operating and Maintenance Practice and OEM Instructions - MSF has contracted Entego Group to undertake bidding and dispatch services. Entego's Control Centre Management Plan describes the protocols and incident management procedures for the bidding and dispatch of the facility's electricity production, in accordance with the requirements of AEMO and Western Power.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
1.3 Service levels are defined in the asset management plan	Through discussion with the MSF Operations and Maintenance Manager and consideration of relevant supporting documentation, we observed that the MSF facility strategy is consistent with Risen Energy's Asset management strategy, which is based on the principles of Asset Management Standard ISO 55000, Queensland Code of Practice for solar farms and O&M Best Practice Guideline of Solar Power Europe. This hybrid model is designed to deliver reliable electricity production within the agreed network limits. As noted at 1.1 above, MSF's Asset Management Plan can be updated to include a clear reference to the Facility's current business objectives and defined service levels. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Improvement required (2)
1.4 Non-asset operations (e.g. demand management) are considered	As the primary purpose of the Facility is to supply electricity to the South West Integrated Network, there is no requirement or opportunity for MSF to consider non-asset options.	
	Process and Policy Rating: Not rated	Performance Rating: Not rated
1.5 Lifecycle costs of owning and operating assets are assessed	Through discussion with the MSF Operations and Maintenance Manager and consideration of business planning and budgeting processes, we observed that: - Operating and maintenance costs are appropriately identified and built into MSF's annual budgeting process - There is currently no requirement for capital expenditure planning - Beyond Risen Energy's execution of its asset investment strategy, there is no specific need for asset lifecycle costs to be assessed by MSF.	
	Process and Policy Rating: Not rated	Performance Rating: Not rated

Effectiveness criteria	Findings	
1.6 Funding options are evaluated	MSF's current operating model and budget funds all site operations and maintenance activities. There is currently no capital expenditure plan and no requirement for other funding options to be considered.	
	Process and Policy Rating: Not rated	Performance Rating: Not rated
1.7 Costs are justified and cost drivers identified	Through discussion with the MSF Operations and Maintenance Manager and consideration of business planning and budgeting processes, we observed that operating and maintenance costs are appropriately identified and built into MSF's annual budgeting process.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
1.8 Likelihood and consequences of asset failure are predicted	Through discussion with the MSF Operations and Maintenance Manager and MSF Site Lead, consideration of MSF's risk management practices and examination of supporting documentation, we observed that MSF has applied the following mechanisms for predicting the consequences and likelihood of the facility's failure: • Regular corrective maintenance and plans for an increasing level of preventative maintenance • The MSF risk register considers major items of equipment and provides details of the O&M strategy to be applied • A forward maintenance program has been developed in accordance with OEM requirements. MSF's forward preventative maintenance program and its ability to assess probability and consequences of asset failure is expected to continue evolving in line with learnings gained during the facility's initial period of operation. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Improvement required (2)
1.9 Asset management plan is regularly reviewed and updated.	As referenced above, at the time of this review, the facility's asset management plan remained a work-in-progress and has yet to be finalised.	
	Process and Policy Rating: Not rated	Performance Rating: Not rated

4.2 Asset creation and acquisition

Key process: Asset creation/acquisition is the provision or improvement of assets

Expected outcome: The asset acquisition framework is economic, efficient and cost-effective; it reduces demand for new assets, lowers service costs and improves service delivery

Overall Process and Policy/Performance rating: Not rated

Findings: For the period subject to this review, MSF had not undertaken or contemplated any material asset creation and acquisition activities beyond the initial creation of the Solar Farm Facility and minor improvement projects. Accordingly, consideration has not yet been given to an asset creation and acquisition process relevant to the Facility's ongoing operations.

4.3 Asset disposal

Key process: Asset disposal is the consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets

Expected outcome: The asset management framework minimises holdings of surplus and underperforming assets and lowers service costs. The cost-benefits of disposal options are evaluated

Overall Process and Policy/Performance rating: Not rated

Findings: The Merredin Solar Farm Facility remains in the early phase of its life-cycle. No plans have been made to dispose of any of the facility's assets and there is a low likelihood of MSF disposing of these assets in the short-term.

4.4 Environmental analysis

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

Expected outcome: The asset management system regularly assesses external opportunities and threats and identifies corrective action to maintain performance requirements

Overall Process and Policy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness criteria	Findings
4.1 Opportunities and threats in the asset management system environment are assessed	Through discussion with the MSF Operations and Maintenance Manager and the MSF Lead Technician; and consideration of relevant supporting documentation, we observed that: • In preparation for the Facility's construction and operation, MSF undertook several assessments and studies in order to understand and manage environmental and other external threats to the effective operation of the facility. Those assessments and studies covered topics such as flora and vegetation, bushfires, stormwater, land contamination, cultural heritage, clearing requirements and other environmental management issues • In its facility risk register, MSF has recognised and captured a range of threats to its asset management system, including fire events, weather events, other external events and emergencies, failures and incidents (internal and external) and resource constraints • A Draft Emergency Response Management Plan was prepared in preparation for the Facility's construction and operation. This plan is comprehensive, however requires tailoring (including some simplification) to MSF's current risks and needs (which should be detailed in the MSF Risk Register – refer to item 8.2 of this report), and to align with other associated procedures and references such as a Bushfire Management Plan). We raised this matter with MSF staff as a potential improvement opportunity.
	Process and Policy Rating: Requires some improvement (B) Performance Rating: Improvement required (2)

Effectiveness criteria	Findings
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Through discussion with the MSF Operations and Maintenance Manager and the MSF Lead Technician; and consideration of relevant supporting documentation, we observed that: - MSF's performance standards relate to availability, safety and environmental incidents, actual and forecast electricity production and completion of work orders. Those performance standards are measured and reported on a weekly basis - MSF staff manage and monitor environmental performance in accordance with established and/or draft management plans (e.g. Bushfire Management, Environmental Management, Stormwater Management, Emergency Response Management), with support from Risen Energy staff where required - MSF's business model and resources specifically accommodate the operation and maintenance of the Facility in accordance with Good Operating and Maintenance Practice and OEM Instructions - MSF has contracted Entego Group to undertake bidding and dispatch services. Entego's Control Centre Management Plan describes the protocols and incident management procedures for the bidding and dispatch of the facility's electricity production, in accordance with the requirements of AEMO and Western Power. Process and Policy Rating: Adequately defined (A) Performance Rating: Performing effectively (1)
4.3 Compliance with statutory and regulatory requirements	Through discussion with the MSF Operations and Maintenance Manager and review of relevant supporting information, we determined that: - MSF has designed its processes and practices to operate and monitor its performance in accordance with the following statutory legislation and licences: - Environmental Operating Licence - Occupational Health and Safety Act and associated regulations - Environmental Protection Act - Aboriginal Heritage Act - Biosecurity and Agricultural Management Act - Waste Avoidance and Resource Recovery Act and subordinate legislation - MSF monitors and reports on its compliance with regulatory requirements on a weekly basis - To date, no significant incidents or breaches have been recognised and reported - The first external audit of MFS's compliance with approvals, licences and permits is scheduled to be performed in the 2021/22 financial year. Process and Policy Rating: Adequately defined (A) Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings	
4.4 Service standard (customer service levels etc) are measured and achieved	Through discussion with the MSF Operations and Maintenance Manager and consideration of MSF's business management processes, we observed that - Control and operation of the MSF Facility is dictated by Western Power and AEMO requirements for the generation and supply of electricity into the network and market, in accordance with MSF's contractual arrangements - MSF monitors and reports on its electricity production in accordance with its bidding and dispatch obligations and any operation requirements of Western Power.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)

4.5 Asset operations

Key process: Asset operations is the day-to-day running of assets (where the asset is used for its intended purpose)

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

Overall Process and Policy/Performance rating: Requires some improvement (B) / Improvement required (2)

Effectiveness criteria	Findings	
5.1 Operational policies and procedures are documented and linked to service levels required	Through discussion with the MSF Operations and Maintenance Manager and the MSF Lead Technician; and consideration of relevant supporting documentation, we observed that: - Control and operation of the MSF Facility is dictated by AEMO and Western Power requirements for the generation and supply of electricity into the network and market, in accordance with MSF's contractual arrangements - MSF has developed a comprehensive list of documented procedures, based on OEM documentation, to cover operational and maintenance tasks, including: - Control room operations, including management of alerts and faults - Raising of work orders from MEX CMMS for planned work for action by the Lead Technician or contractors - Daily site-inspection checklists - Maintenance planning - Completion of work orders - Use of key equipment and related systems. - Documentation addressing MSF's permit to work requirements and associated safe work instructions is currently spread across several references, including within a section of the Risen Energy Risk Management HSEQ Procedure, plus forms such as the HV access permit form and JSEA analysis template. We did not sight a central permit to work register and personnel tracker. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings
5.2 Risk management is applied to prioritise operations tasks	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; and consideration of relevant supporting documentation, we observed that MSF's operational processes include: • A designated MSF facility risk register, based on Risen Energy's group risk management standards • Application of a risk management approach to corrective maintenance activities • An intent to implement an effective preventative maintenance program, which targets tasks to areas of higher risk and priority. As noted at 1.8 above, MSF's ability to assess probability and consequences of asset failure and to prioritise operations tasks is expected to continue evolving in line with learnings gained during the facility's initial period of operation. We raised this matter with MSF staff as a potential improvement opportunity. Process and Policy Rating: Adequately defined (A) Performance Rating: Improvement required (2)
5.3 Assets are documented in an asset register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition	Through discussion with the MSF Lead Technician and review of MSF's MEX Computerised Maintenance Management System, we observed that: • The MEX CMMS acts as the Asset Register for each of MSF's assets • An appropriate level of detail is included for each asset, including links/references to maintenance activity relevant to each asset. Process and Policy Rating: Adequately defined (A) Performance Rating: Performing effectively (1)
5.4 Accounting data is documented for assets	Through discussion with the MSF Lead Technician and consideration of MSF's MEX CMMS asset register, we observed that the asset register and corporate records capture relevant information for accounting purposes, including: • Acquisition/creation date • Capital cost • Depreciation rates and costs. Process and Policy Rating: Adequately defined (A) Performance Rating: Performing effectively (1)
5.5 Operational costs are measured and monitored	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; and consideration of MSF's information systems and relevant supporting documentation such as weekly and monthly reports, we observed that MSF tracks and reports operational costs on a monthly basis. Costs measured and monitored against budget include salaries and wages, contractors, materials, lease payments, licence fees and other utilities and services. Process and Policy Rating: Adequately defined (A) Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings	
5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities	Through discussion with the MSF Lead Technician and consideration of relevant supporting documentation, we observed that: - Two primary staff are allocated to the operation of the MSF facility, being the Operations and Maintenance Manager (based in Brisbane) and the MSF Lead Technician (on-site during normal Monday to Friday work hours) - Coverage is available from other Risen Energy sites in the case of the Lead Technician being on leave - A skills and training matrix has been developed for Risen Energy's collective solar farm operations to identify the key competencies and training requirements for staff operating solar farms. The current matrix does not clearly record when required training modules have been completed by staff required to operate the MSF facility. Dates currently recorded are listed as "due" dates, rather than completed dates. Also, site competencies listed for Risen Energy's other Solar Farm activities have not been specifically recognised for MSF's purposes. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Improvement required (2)

4.6 Asset maintenance

Key process: Asset maintenance is the upkeep of assets

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

Overall Process and Policy/Performance rating: Requires some improvement (B) / Improvement required (2)

Effectiveness criteria	Findings	
6.1 Maintenance policies and procedures are documented and linked to service levels required	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; and consideration of relevant supporting documentation, we observed that: - MSF has a comprehensive suite of documented procedures and work instructions in place to cover maintenance tasks, including: - Transformer Oil Sampling Procedure - Fulcrum3D Soiling Station Calibration Procedure - MVPS Structure Inspection Work Instruction - Inverter Inspection Work Instruction - PV String & Tracker Inspection Work Instruction - MVPS Transformer & MV Switchgear Inspection Work Instruction - Harmonic Filter Inspection Work Instruction - Procedures for the scope and frequency of routine maintenance of equipment have been developed based on OEM documentation, such as vendor manuals. At the time of this review, MSF's maintenance program was focussed on addressing issues and learnings from the initial phase of the facility's life (primarily corrective maintenance rather than preventative maintenance), in order to improve reliability and operating efficiency to meet the requirements of AEMO, Western Power and Risen Energy's investment in the facility.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings	
6.2 Regular inspections are undertaken of asset performance and condition	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; consideration of relevant supporting documentation and sample testing of evidence of inspections and maintenance activity, we determined that: MSF performs daily visual site inspections to provide full coverage of asset/equipment operations, performance and condition. These site inspections generate corrective maintenance requirements, which are captured and monitored within the MEX CMMS.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; consideration of relevant supporting documentation and sample testing of evidence of inspections and maintenance activity, we determined that: - MSF has performed regular corrective maintenance and has plans for an increasing level of preventative maintenance - As noted at 1.8 above, a forward preventative maintenance program has been developed in accordance with OEM requirements, however that plan has not yet been implemented while MSF has focussed on corrective maintenance during the facility's initial period of operation. MSF plans to further develop and implement its forward preventative maintenance program in line with learnings gained during the facility's initial period of operation. We raised this matter with MSF staff as a potential improvement opportunity - Completion of maintenance work orders are managed by the MSF Lead Technician, with oversight from the MSF Operations and Maintenance Manager, plus support from contractors when considered necessary and within budget parameters - A listing of outstanding work orders can be extracted from the MEX CMMS system, however MSF does not currently apply a practice for tracking the age and relative priority of overdue and current work orders to ensure highest priority maintenance tasks are addressed in a timely manner. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Improvement required (2)

Effectiveness criteria	Findings
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; and consideration of relevant supporting documentation, we observed that: • It is one of MSF's primary interests to ensure the Facility is operating efficiently (for potentially increased electricity production) and at target availability levels. Accordingly, it focusses on investigating failures and determining actions to prevent reoccurrence • Since commencement of operations in July 2020, MSF has gained significant learnings from issues encountered, including identification and rectification of the cause of failure • To date however, MSF has not compiled a comprehensive list of all defects to highlight reoccurring problems in the type of equipment or individual pieces of equipment, and to identify more opportunities for effective corrective action. We raised this matter with MSF staff as a potential improvement opportunity. Process and Policy Rating: Requires some improvement (B) Performance Rating: Improvement required (2)
6.5 Risk management is applied to prioritise maintenance tasks	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; and consideration of relevant supporting documentation, we observed that MSF's maintenance processes include: • A designated MSF facility risk register, based on Risen Energy's group risk management standards • Application of a risk management approach to corrective maintenance activities • An intent to implement an effective preventative maintenance program, which targets tasks to areas of higher risk and priority. • As noted at 1.8 above, MSF's ability to assess probability and consequences of asset failure and to prioritise maintenance tasks is expected to continue evolving in line with learnings gained during the facility's initial period of operation. We raised this matter with MSF staff as a potential improvement opportunity. Process and Policy Rating: Adequately defined (A) Performance Rating: Improvement required (2)
6.6 Maintenance costs are measured and monitored	Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician; and consideration of MSF's information systems and relevant supporting documentation such as weekly and monthly reports, we observed that maintenance costs are a significant element of MSF's monthly tracking and reporting of operational costs. Costs measured and monitored against budget include salaries and wages, contractors, materials and other services allocated to maintenance activities. Process and Policy Rating: Adequately defined (A) Performance Rating: Performing effectively (1)

4.7 Asset management information systems

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

Expected outcome: The asset management information system provides authorised, complete and accurate information for the day-to-day 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

Overall Process and Policy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness criteria	Findings	
7.1 Adequate system documentation for users and IT operators	Through discussions with MSF staff and consideration of relevant system documentation, we observed that MSF maintains an appropriate suite of system documentation for its key control systems, network and infrastructure. That documentation includes: • MSF Infrastructure Guide • Real-Time Automation Controller SEL-3555 Gateways User Manual • Human Machine Interface User Manual • SCADA Infrastructure User Guide • SCADA Operational and Maintenance Manual • MEX Computerised Maintenance Management System User Guide.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
7.2 Input controls include suitable verification and validation of data entered into the system	Through discussion with MSF staff, consideration of relevant system documentation and walkthrough of a sample of functions managed by the MEX Computerised Maintenance Management System, we observed that MSF's core systems maintained appropriate data verification and validation controls and techniques.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
7.3 Security access controls appear adequate, such as passwords	Through discussions with MSF staff and consideration of relevant supporting documentation, we observed that MSF has established and maintained procedures and controls which enable all key system access and permissions (including remote access) to be managed in accordance with Risen Energy IT standards, policies and procedures.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings	
7.4 Physical security access controls appear adequate	Through discussions with MSF staff and consideration of relevant supporting documentation, we observed that MSF has established and maintained appropriate processes and procedures relating to the access of facilities and the physical protection of information assets and systems. Specifically in the context of access to computer server rooms and other control systems on site, we observed that: • Access to the site operations building, main control room and key plant control facilities is via locked door, with all keys managed by the MSF Lead Technician • All visitors and contractors are required to report to and be accompanied by the MSF Site Lead or another designated MSF representative.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
7.5 Data backup procedures appear adequate and backups are tested	Through discussions with MSF staff and consideration of relevant supporting documentation, we observed that: • Procedures for managing data backup and data restore of MSF servers have been established and maintained with Risen Energy IT standards, and with the support of expert consultants • MSF's procedures provide for regular backups of all key data in accordance with accepted industry practice, with regular testing of back-ups recommended • Risen Energy IT staff provide full support for MSF staff, including management of backups for data maintained on Risen Energy's central servers.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
7.6 Computations for licensee performance reporting are accurate	MSF's asset management information systems do not directly provide data used in any computation related to MSF's performance reporting.	
	Process and Policy Rating: Not rated	Performance Rating: Not rated
7.7 Management reports appear adequate for the licensee to monitor licence obligations	Through discussions with MSF staff and consideration of relevant supporting documentation and management reporting procedures, we determined that: • MSF's MEX CMMS and Power Quality SCADA Sapphire systems are capable of generating a substantial variety of reports • Management reports relating to the operation and performance of the facility are produced on a scheduled basis and can also be produced on request.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings	
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	Through discussions with MSF staff and consideration of relevant supporting documentation, we observed that with the full support of Risen Energy staff and resources, MSF has established and maintained appropriate processes and procedures relating to the protection of information assets and systems, including: • Comprehensive user access controls, including user permissions and remote access • Contemporary cyber security processes and procedures.	
	Process and Policy 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: The risk management framework effectively manages the risk that the licensee does not maintain effective service standards

Overall Process and Policy/Performance rating: Requires some improvement (B) / Corrective action required (3)

Effectiveness criteria	Findings
8.1 Risk management policies and procedures exist and are applied to minimise internal and external risks 8.2 Risks are documented in a risk register and treatment plans are implemented and monitored	8.1 and 8.2 Through discussion with the MSF Operations and Maintenance Manager and MSF Lead Technician, consideration of MSF's risk management practices and examination of supporting documentation, we observed that: - MSF applies Risen Energy's established risk management framework and processes - MSF staff did display a good understanding of known operational risks and issue, with evidence of tasks being initiated and completed to address those risks and issues - MSF has established an initial Risk Register, consistent with Risen Energy processes and other facilities within the group: - The MSF risk register covers a broad range of risk types, with a total of 32 risks raised in October 2020 - Although the register contains some useful information, it requires further work to complete all key components of the tool (e.g. assign risk owners, identify specific controls and treatment plans required to adequately treat current risks rated as High or Extreme, link to existing and planned documents such as the MSF Emergency Response Plan, Bushfire Management Plan [including weed control]) and to apply a full test of its effectiveness and accuracy - Risks such as sole operator risks and learnings from site specific operations (since October 2020) are not captured in the risk register - There is little evidence of risk status and risk treatment plans being monitored e.g. management of risks is not consistently featured in operational reporting, and regular reviews of the risk register have not been scheduled - A Hazardous Chemicals Register is maintained. Recommendation 2/2021 <i>MSF further develop its risk management framework and processes to ensure key risks and corresponding treatment plans are fully documented, monitored for effectiveness and subject to review on a regular basis.</i> Process and Policy Rating: Requires some improvement (B) Performance Rating: Corrective action required (3)

Effectiveness criteria	Findings	
8.3 Probability and consequences of asset failure are regularly assessed	Through discussion with the MSF Operations and Maintenance Manager and MSF Site Lead, consideration of MSF's risk management practices and examination of supporting documentation, we observed that MSF has applied the following mechanisms for identifying and assessing the consequences and likelihood of the facility's failure: • Regular corrective maintenance and plans for an increasing level of preventative maintenance • The MSF risk register considers major items of equipment and provides details of the O&M strategy to be applied • A forward maintenance program has been developed in accordance with OEM requirements. As noted at 1.8 above, MSF's forward preventative maintenance program and its ability to assess probability and consequences of asset failure is expected to continue evolving in line with learnings gained during the facility's initial period of operation. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Improvement required (2)

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 major disruptions to service standards

Overall Process and Policy/Performance rating: Requires some improvement (B) / Improvement required (2)

Effectiveness criteria	Findings	
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Through discussion with the MSF Operations and Maintenance Manager and MSF Site Lead; and examination of MSF's emergency response and contingency planning mechanisms, we determined that: • In line with the Risen Energy governance framework, MSF has developed a suite of emergency response procedures and management plans, such as: ▪ Fire Risk Management Plan ▪ Operational Environmental Management Plan ▪ Site Emergency Evacuation Points Plan ▪ Emergency Response Management Plan (draft). As noted at item 4.1 above, this plan is comprehensive, however requires tailoring (including some simplification) to MSF's current risks and needs, and to align with other associated procedures and references. We raised this matter with MSF staff as a potential improvement opportunity • MSF's risk register captures higher risk areas, which may result in major disruptions to asset operations. The register provides a starting point, however more work is required to develop and implement effective procedures and plans which ensure adequate contingencies are in place to effectively minimise any major disruption to asset operations • To date, contingency plans in place have not been tested for effectiveness and MSF has not yet developed a process or schedule for doing so. We recognise that the Facility has been operating for a relatively short period and MSF has forecast plans for further strengthening and tailoring its risk management, emergency response and contingency planning framework in the year ahead. We raised this matter with MSF staff as a potential improvement opportunity.	
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Improvement required (2)

4.10 Financial planning

Key process: Financial brings together the financial elements of the service delivery to ensure its financial viability over the long term

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

Overall Process and Policy/Performance rating: [Adequately defined \(A\)](#) / [Performing effectively \(1\)](#)

Effectiveness criteria	Findings	
10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve those	Through discussion with the MSF Operations and Maintenance Manager and consideration of MSF's financial planning mechanisms, we observed that the MSF Facility's financial plan takes the form of an annual budget, prepared to reflect its financial objectives and contractual agreements.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs	Through discussion with the MSF Operations and Maintenance Manager and consideration of MSF's financial planning mechanisms, we determined that the MSF annual budget is aligned with MSF's overall business plans and is expected to be fully funded through its operational revenue.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Through discussion with the MSF Operations and Maintenance Manager and consideration of MSF's financial planning mechanisms, we determined that MSF annual budget: - Is comprised of a summary of forecast revenue and expenses relating to the production and dispatch of electricity in accordance with contractual agreements - Provides projections of operating profit and loss financial position attributable to the Facility - Contains projections that are sufficient to cover future operating costs.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
10.4 The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period	Through discussion with the MSF Operations and Maintenance Manager and consideration of MSF's financial planning mechanisms, we determined that the MSF annual budget provides projections of income, which can be extended for the duration of the Facility's life and relevant contractual agreements.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Through discussion with the MSF Operations and Maintenance Manager and examination of the MSF annual budget, we determined that the budget provides a sufficient level of detail relating to forecast operational, maintenance and administrative costs. There are currently no expectations for capital expenditure.	
	Process and Policy Rating: Adequately defined (A)	Performance Rating: Performing effectively (1)

Effectiveness criteria	Findings	
10.6 Large variances in actual/budget income and expenses are identified and corrective action taken where necessary	Through discussion with the MSF Operations and Maintenance Manager and consideration of MSF's financial planning mechanisms, we determined that actual versus budgeted expenditure is monitored on a monthly basis, with variances identified and investigated where required to determine whether corrective action is required.	
	Process and Policy 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 for these works 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: The capital expenditure plan provides reliable forward estimates of capital expenditure and asset disposal income. Reasons for the decisions and for the evaluation of alternatives and options are documented

Overall Process and Policy/Performance rating: Not rated

Findings

All costs associated with the operations and maintenance of the Facility are and will be treated as operational costs. That is, there is currently no provision for capital items in the MSF Facility Operations and Maintenance Budget.

4.12 Review of asset management system

Key process: The asset management system is regularly reviewed and updated

Expected outcome: The asset management system is regularly reviewed and updated

Overall Process and Policy/Performance rating: Requires some improvement (B) / Not rated

Effectiveness criteria	Findings	
12.1 A review process is in place to ensure the asset management plan and the asset management system described in it remain current	MSF's current asset management plan and asset management system were relatively recently developed, to support commencement of operations in July 2020. At the time of this review, the plan and system were still being effectively established and finetuned, and had not yet been subject to formal review, which is appropriate in the circumstances. However, there is currently no formal mechanism in place to subject the asset management plan and asset management system to review for currency, including input from independent staff or consultants. We raised this matter with MSF staff as a potential improvement opportunity.	
12.2 Independent reviews (e.g. internal audit) are performed of the asset management system		
	Process and Policy Rating: Requires some improvement (B)	Performance Rating: Not rated

5. Status of recommendations addressing asset system deficiencies from the previous review

Reference (no./year)	Process and policy deficiency / Performance deficiency (Rating / Reference number, Asset management process & effectiveness criterion / Details of deficiency)	Reviewer's recommendation or action planned	Date resolved	Details of further action required (including current recommendation Further action required (Yes/No/Not Applicable) reference, if applicable)
A. Resolved during current review period				
B. Unresolved at end of current review period				
Not applicable – there was no previous review.				

Appendix A - Review Plan



ASSURANCE
ADVISORY
GROUP

Merredin Solar Farm Nominee Pty Ltd

Electricity Generation Licence (EGL28)

2021 Asset Management System Review

Review Plan

14 May 2021

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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 Merredin Solar Farm Nominee Pty Ltd (Merredin Solar Farm) an Electricity Generation Licence (EGL 28) (the **Licence**).

Section 14 of the Act requires Merredin Solar Farm to provide to the ERA an asset management system review (the review) report conducted by an independent expert acceptable to the ERA not less than once in every 24-month period unless otherwise approved by the ERA. With the ERA's approval, Assurance Advisory Group (**AAG**) has been appointed to conduct the review for the period 19 December 2017 to 30 April 2021 (**review period**).

The Licence relates to Merredin Solar Farm operating the 132MWdc solar farm approximately 260 kms east of Perth and delivering electricity into the South West Interconnected System (SWIS) via the Western Power Merredin Terminal Substation at 220kV.

The review will be conducted in accordance with the ERA's March 2019 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* (**Review Guidelines**). In accordance with the Review Guidelines this document represents the Review Plan (the **Plan**) that is to be agreed upon by AAG and Merredin Solar Farm and presented to the ERA for approval.

Objective

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

Scope

In accordance with the Review Guidelines, the review will consider the effectiveness of Merredin Solar Farm'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 Merredin Solar Farm's Licence and as such will be individually considered in this review.

Table 1 – Asset management system key processes and effectiveness criteria

Key processes	Effectiveness criteria
1. Asset Planning	1.1 Asset management plan covers the processes in this table 1.2 Planning processes and objectives reflect the needs of all stakeholders and is integrated with business planning 1.3 Service levels are defined in the asset management plan 1.4 Non-asset operations (e.g. demand management) are considered 1.5 Lifecycle costs of owning and operating assets are assessed 1.6 Funding options are evaluated 1.7 Costs are justified and cost drivers identified 1.8 Likelihood and consequences of asset failure are predicted 1.9 Asset management plan is regularly reviewed and updated.

Key processes	Effectiveness criteria
2. Asset creation and acquisition	2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options 2.2 Evaluations include all life-cycle costs 2.3 Projects reflect sound engineering and business decisions 2.4 Commissioning tests are documented and completed 2.5 Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood
3. Asset disposal	3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process 3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken 3.3 Disposal alternatives are evaluated 3.4 There is a replacement strategy for assets
4. Environmental analysis	4.1 Opportunities and threats in the asset management system environment are assessed 4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved 4.3 Compliance with statutory and regulatory requirements 4.4 Service standard (customer service levels etc) are measured and achieved.
5. Asset operations	5.1 Operational policies and procedures are documented and linked to service levels required 5.2 Risk management is applied to prioritise operations tasks 5.3 Assets are documented in an asset register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition 5.4 Accounting data is documented for assets [new criteria] 5.5 Operational costs are measured and monitored 5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities
6. Asset maintenance	6.1 Maintenance policies and procedures are documented and linked to service levels required 6.2 Regular inspections are undertaken of asset performance and condition 6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule 6.4 Failures are analysed and operational/maintenance plans adjusted where necessary 6.5 Risk management is applied to prioritise maintenance tasks 6.6 Maintenance costs are measured and monitored
7. Asset management information systems	7.1 Adequate system documentation for users and IT operators 7.2 Input controls include suitable verification and validation of data entered into the system 7.3 Security access controls appear adequate, such as passwords 7.4 Physical security access controls appear adequate 7.5 Data backup procedures appear adequate and backups are tested 7.6 Computations for licensee performance reporting are accurate 7.7 Management reports appear adequate for the licensee to monitor licence obligations 7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation [new criteria]

Key processes	Effectiveness criteria
8. Risk management	8.1 Risk management policies and procedures exist and are applied to minimise internal and external risks 8.2 Risks are documented in a risk register and treatment plans are implemented and monitored 8.3 Probability and consequences of asset failure are regularly assessed
9. Contingency planning	9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks
10. Financial planning	10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve those 10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs 10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) 10.4 The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period 10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services 10.6 Large variances in actual/budget income and expenses are identified and corrective action taken where necessary
11. Capital expenditure planning	11.1 There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates 11.2 The capital expenditure plan provides reasons for capital expenditure and timing of expenditure 11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan 11.4 There is an adequate process to ensure the capital expenditure plan is regularly updated and implemented
12. Review of asset management system	12.1 A review process is in place to ensure the asset management plan and the asset management system described in it remain current 12.2 Independent reviews (e.g. internal audit) are performed of the asset management system

Merredin Solar Farm's responsibility for maintaining an effective asset management system

Merredin Solar Farm 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.

AAG's responsibility

Our responsibility is to express a reasonable assurance conclusion on whether, based on the procedures performed and the evidence obtained, we believe that Merredin Solar Farm's AMS for assets subject to its Licence have been established and maintained, in all material respects, in accordance with the Licence as measured by the effectiveness criteria in the Guidelines for the period from 19 December 2017 to 30 April 2021. The review will be conducted in accordance with Australian Standard on Assurance Engagements ASAE 3500 Performance Engagements (**ASAE 3500**), issued by the Australian Auditing and Assurance Standards Board.

ASAE 3500 requires that we plan and perform the review to obtain assurance about whether the AMS for assets subject to the Licence is materially ineffective. A reasonable assurance engagement conducted in accordance with ASAE 3500 involves identifying areas where the AMS for assets subject to a Licence is likely to be materially ineffective, addressing the areas identified and considering the process used to prepare the AMS for assets subject to the Licence.

Limitations of use

Our report will be produced solely for the information and internal use of Merredin Solar Farm 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 our report.

We understand that a copy of our report will be provided to the ERA for the purpose of meeting Merredin Solar Farm'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, however we accept no responsibility to the ERA or to anyone who is provided with or obtains a copy of our reports.

This plan is intended solely for the use of Merredin Solar Farm for the purpose of its reporting requirements under section 14 of the Act.

Inherent limitations

Reasonable assurance means a high but not absolute level of assurance. Absolute assurance is very rarely attainable as a result of factors such as: the use of selective testing, the inherent limitations of internal control, the fact that much of the evidence available to us is persuasive rather than conclusive and the use of judgement in gathering and evaluating evidence and forming conclusions based on that evidence.

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 instances of non-compliance or performance issues which may occur.

An assurance engagement relating to the period from 19 December 2017 to 30 April 2021 will not provide assurance on whether the AMS for assets subject to the Licence will remain effective in the future.

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 Review Guidelines. Each step of the review is discussed in detail below.

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 Merredin Solar Farm's asset management systems established for the assets subject to Merredin Solar Farm's licence. The risk assessment considers changes to Merredin Solar Farm's relevant systems and processes and any matters of significance raised by the ERA and/or Merredin Solar Farm. 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 Merredin Solar Farm not effectively maintaining an asset management system for the assets subject to its licence, in the absence of mitigating controls. The consequence classification descriptions listed at Table 1 of the Reporting Manual, 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 Merredin Solar Farm 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 17 of the Review Guidelines (refer to Appendix 1). 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 the Review 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

Likelihood	Consequence		
	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 specified in the Audit Guidelines (refer to Appendix 1-3). Once inherent risks and control risks are established, the audit priority can then be determined using the matrix specified in the Audit Guidelines (refer to Table 3 below). Essentially, the higher the level of risk the more substantive testing is required.

Table 3: Assessment of Review Priority

	Preliminary 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.

Table 4: Review Priority Table

Priority rating	Audit requirement
Review Priority 1	• Via interview and walkthrough, understand relevant processes and controls • Examine relevant documents, registers and reports • Obtain evidence of policies, procedures and controls being in place and working effectively • Controls testing and extensive substantive testing of activities and/or transactions • Follow-up and if necessary, re-test matters previously reported.
Review Priority 2	• Via interview and walkthrough, understand relevant processes and controls • Examine relevant documents, registers and reports • Obtain evidence of policies, procedures and controls being in place and working effectively • Controls testing and moderate substantive testing of activities and/or transactions • Follow-up and if necessary, re-test matters previously reported.
Review Priority 3	• Via interview and walkthrough, understand relevant processes and controls • Examine relevant documents, registers and reports • Limited controls testing (moderate sample size). Only substantively test transactions if further control weakness found • Follow-up of matters previously reported.
Review Priority 4	• Confirmation of existing controls via observation and walk through testing • Follow-up of matters previously reported.
Review 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 Merredin Solar Farm representatives 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:

- Our understanding of Merredin Solar Farm Nominee Pty Ltd's assets and internal processes
- Any other factors that may influence the level or strength of controls.
- Consideration of relevant circumstances and activity that trigger specific performance issues.

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. The risk assessment is attached at Appendix 2.

System analysis / policy and procedure review

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

- Interviewing Merredin Solar Farm 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 Merredin Solar Farm'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 Merredin Solar Farm representatives and key operational and administrative staff
- Physical visit to the facility's site at Merredin
- Consideration of the facility's function, normal modes of operation and age.

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

The review report will also be structured to address all of the minimum contents specified in section 5 of the Review Guidelines.

In accordance with the Review 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 Merredin Solar Farm's asset management system.

Merredin Solar Farm is responsible for providing a separate post review implementation plan, if required.

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.

Resources and team

Key Merredin Solar Farm contacts

The key contacts for this audit are:

- Operations and Maintenance Manager, Merredin Solar Farm
- Site Lead, Merredin Solar Farm.

AAG Staff

AAG staff who will be involved with this assignment are:

- Andrew Baldwin Executive Director
- Tanuja Sanders Senior Engineer
- Margaret-Mary Gauci Consultant
- Stephen Linden Director (QA review).

Resumes for key AAG staff are outlined in the proposal accepted by Merredin Solar Farm and subsequently presented to the ERA.

Timing

The initial risk assessment phase was completed on 28 April 2021, after which the draft review plan and risk assessment were presented to Merredin Solar Farm for comment prior to submission to the ERA for review and approval.

The remainder of the fieldwork phase is scheduled to be performed over the period May and June 2021, enabling draft and final reports to be submitted to the ERA by the due dates of 30 June 2021 and 31 July 2021 respectively.

AAG time and staff commitment to the completion of the review is outlined in the proposal accepted by Merredin Solar Farm. In summary, the estimated time allocated to each activity is as follows:

- Planning (including risk assessment): 12 hours
- Fieldwork (including system analysis/walkthrough and testing/review): 65 hours
- Reporting: 25 hours.

Appendix 1 - Risk assessment key

1-1 Criteria for classification of consequence of ineffective performance

Source: Modified from Electricity Compliance Reporting Manual June 2020

Classification	Criteria for classification
Major	Classified on the bases that: • The consequences of ineffective performance would cause major damage, loss or disruption to customers; or • The consequences of ineffective performance would endanger or threaten to endanger the safety or health of a person.
Moderate	Classified on the basis that the consequences of ineffective performance affect the efficiency and effectiveness of the licensee's operations or service provision, but do not cause major damage, loss or disruption to customers.
Minor	Classified on the basis that: • The consequences of ineffective performance are relatively minor – i.e. ineffective performance will have minimal effect on the licensee's operations or service provision and do not cause damage, loss or disruption to customers; • Assessment of performance against the obligation is immeasurable; • The matter of ineffective performance is identified by a party other than the licensee; or • The licensee only needs to use its reasonable or best endeavours to demonstrate effective performance, or where the obligation does not otherwise impose a firm obligation on the licensee.

1-2 Likelihood ratings

Source: Review Guidelines: Electricity and Gas Licences March 2019

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

1-3 Preliminary adequacy ratings for existing controls

Source: Review Guidelines: Electricity and Gas Licences March 2019

Level	Description
Strong	Controls mitigate the identified risks to a suitable level
Moderate	Controls only cover significant risks; improvement required
Weak	Controls are weak or non-existent and do little to mitigate the risks

Appendix 2 - Risk assessment

1. Asset Planning						
Key process	Asset planning strategies focus on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price)					
Outcome	Asset planning is integrated into operational or business plans, providing a framework for existing and new assets to be effectively utilised and their service optimised					
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
1.1	Asset management plan covers the processes in this table	Moderate	Probable	Medium	Moderate	Priority 4
1.2	Planning process and objectives reflect the needs of all stakeholders and are integrated with business planning	Moderate	Unlikely	Medium	Moderate	Priority 4
1.3	Service levels are defined in the asset management plan	Moderate	Unlikely	Medium	Moderate	Priority 4
1.4	Non-asset options (e.g. demand management) are considered	Minor	Unlikely	Low	Moderate	Priority 5
1.5	Lifecycle costs of owning and operating assets are assessed	Minor	Probable	Low	Moderate	Priority 5
1.6	Funding options are evaluated	Minor	Unlikely	Low	Moderate	Priority 5
1.7	Costs are justified and cost drivers identified	Minor	Probable	Low	Moderate	Priority 5
1.8	Likelihood and consequences of asset failure are predicted	Moderate	Probable	Medium	Moderate	Priority 4
1.9	Asset management plan is regularly reviewed and updated	Minor	Probable	Low	Moderate	Priority 5

2. Asset creation and acquisition						
Key process		Asset creation/acquisition is the provision or improvement of assets				
Outcome		The asset acquisition framework is economic, efficient and cost-effective; it reduces demand for new assets, lowers service costs and improves service delivery				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
2.1	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options	Moderate	Unlikely	Medium	Moderate	Priority 4
2.2	Evaluations include all life-cycle costs	Moderate	Unlikely	Medium	Moderate	Priority 4
2.3	Projects reflect sound engineering and business decisions	Moderate	Unlikely	Medium	Moderate	Priority 4
2.4	Commissioning tests are documented and completed	Moderate	Unlikely	Medium	Moderate	Priority 4
2.5	Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	Major	Unlikely	High	Moderate	Priority 2

3. Asset disposal						
Key process		Asset disposal is the consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets				
Outcome		The asset management framework minimises holdings of surplus and underperforming assets and lowers service costs. The cost-benefits of disposal options are evaluated				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
3.1	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Moderate	Unlikely	Medium	Moderate	Priority 4
3.2	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Minor	Unlikely	Low	Moderate	Priority 5
3.3	Disposal alternatives are evaluated	Minor	Unlikely	Low	Moderate	Priority 5
3.4	There is a replacement strategy for assets	Moderate	Probable	Medium	Moderate	Priority 4

4. Environmental analysis						
Key process		Environmental analysis examines the asset management system environment and assesses all external factors affecting the asset management system				
Outcome		The asset management system regularly assesses external opportunities and threats and identifies corrective action to maintain performance requirements				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
4.1	Opportunities and threats in the asset management system environment are assessed	Moderate	Probable	Medium	Strong	Priority 4
4.2	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Moderate	Probable	Medium	Moderate	Priority 4
4.3	Compliance with statutory and regulatory requirements	Moderate	Probable	Medium	Moderate	Priority 4
4.4	Service standard (customer service levels etc) are measured and achieved.	Moderate	Unlikely	Medium	Strong	Priority 4

5. Asset operations						
Key process		Asset operations is the day-today running of assets (where the asset is used for its intended purpose)				
Outcome		The asset operation plans adequately document the processes and knowledge of staff in the operation of assets so service levels can be consistently achieved				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
5.1	Operational policies and procedures are documented and linked to service levels required	Moderate	Probable	Medium	Moderate	Priority 4
5.2	Risk management is applied to prioritise operations tasks	Moderate	Probable	Medium	Moderate	Priority 4
5.3	Assets are documented in an asset register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition	Moderate	Probable	Medium	Moderate	Priority 4
5.4	Accounting data is documented for assets	Moderate	Probable	Medium	Moderate	Priority 4
5.5	Operational costs are measured and monitored	Moderate	Probable	Medium	Moderate	Priority 4
5.6	Staff resources are adequate and staff receive training commensurate with their responsibilities	Moderate	Probable	Medium	Moderate	Priority 4

6. Asset maintenance						
Key process		Asset maintenance is the upkeep of assets				
Outcome		The asset maintenance plans cover the scheduling and resourcing of the maintenance tasks so work can be done on time and on cost				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
6.1	Maintenance policies and procedures are documented and linked to service levels required	Moderate	Probable	Medium	Moderate	Priority 4
6.2	Regular inspections are undertaken of asset performance and condition	Major	Probable	High	Moderate	Priority 2
6.3	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Major	Probable	High	Moderate	Priority 2
6.4	Failures are analysed and operational/maintenance plans adjusted where necessary	Moderate	Probable	Medium	Moderate	Priority 4
6.5	Risk management is applied to prioritise maintenance tasks	Moderate	Probable	Medium	Moderate	Priority 4
6.6	Maintenance costs are measured and monitored	Moderate	Probable	Medium	Moderate	Priority 4

7. Asset management information systems						
Key process	An asset management information system is a combination of processes, data and software supporting the asset management functions					
Outcome	The asset management information system provides authorised, complete and accurate information for the day-to-day 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
7.1	Adequate system documentation for users and IT operators	Minor	Probable	Low	Moderate	Priority 5
7.2	Input controls include suitable verification and validation of data entered into the system	Moderate	Probable	Medium	Moderate	Priority 4
7.3	Security access controls appear adequate, such as passwords	Minor	Probable	Low	Moderate	Priority 5
7.4	Physical security access controls appear adequate	Minor	Probable	Low	Moderate	Priority 5
7.5	Data backup procedures appear adequate and backups are tested	Moderate	Probable	Medium	Moderate	Priority 4
7.6	Computations for licensee performance reporting are accurate	Minor	Probable	Low	Moderate	Priority 5
7.7	Management reports appear adequate for the licensee to monitor licence obligations	Minor	Probable	Low	Moderate	Priority 5
7.8	Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	Moderate	Probable	Medium	Moderate	Priority 4

8. Risk management						
Key process		Risk management involves the identification of risks and their management within an acceptable level of risk				
Outcome		The risk management framework effectively manages the risk that the licensee does not maintain effective service standards				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
8.1	Risk management policies and procedures exist and are applied to minimise internal and external risks	Major	Probable	High	Moderate	Priority 2
8.2	Risks are documented in a risk register and treatment plans are implemented and monitored	Moderate	Probable	Medium	Moderate	Priority 4
8.3	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 major disruptions to service standards.				
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
9.1	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		Financial brings together the financial elements of the service delivery to ensure its financial viability over the long term				
Outcome		The financial plan 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
10.1	The financial plan states the financial objectives and identifies strategies and actions to achieve those	Moderate	Probable	Medium	Moderate	Priority 4
10.2	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Minor	Probable	Low	Moderate	Priority 5
10.3	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Minor	Probable	Low	Moderate	Priority 5
10.4	The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period	Minor	Probable	Low	Moderate	Priority 5
10.5	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Moderate	Probable	Medium	Moderate	Priority 4
10.6	Large 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 for these works 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	The capital expenditure plan provides reliable forward estimates of capital expenditure and asset disposal income. Reasons for the decisions and for the evaluation of alternatives and options are documented					
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
11.1	There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates	Moderate	Probable	Medium	Moderate	Priority 4
11.2	The capital expenditure plan provides reasons for capital expenditure and timing of expenditure	Minor	Probable	Low	Moderate	Priority 5
11.3	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Moderate	Probable	Medium	Moderate	Priority 4
11.4	There is an adequate process to ensure the capital expenditure plan is regularly updated and implemented	Minor	Probable	Low	Moderate	Priority 5

12. Review of asset management system						
Key process	The asset management system is regularly reviewed and updated					
Outcome	The asset management system is regularly reviewed and updated					
Ref	Effectiveness criteria	Consequence	Likelihood	Inherent risk rating	Controls assessment	Review priority
12.1	A review process is in place to ensure the asset management plan and the asset management system described in it remain current	Minor	Probable	Low	Moderate	Priority 5
12.2	Independent reviews (e.g. internal audit) are performed of the asset management system	Minor	Probable	Low	Moderate	Priority 5

Appendix B - References

MSF representatives participating in the review

- MSF Operations and Maintenance Manager
- MSF Lead Technician

AAG staff participating in the review

	Hrs
• Andrew Baldwin Executive Director	68
• Tanuja Sanders Senior Engineer	32
• Margaret-Mary Gauci Consultant	3
• Stephen Linden Director (QA review)	1

Key documents and other information sources examined

- Draft MSF Asset Management Plans
- MSF Asset Life Plan
- MSF O&M Budget (2019/20, 2020/21)
- MSF Weekly reports (x15 over the period October 2020 to April 2021)
- MSF Operating Strategy
- MSF Asset Management Schedule
- MSF Risk Register (November 2020)
- MSF Asset Register (MEX CMMS)
- Hazardous Chemicals Register
- MSF Task List (2020)
- Outstanding work order listings
- MEX Work Order User Guide
- SMA MV Power Station Skid System Manual
- Switchgear Operating Instructions and User Guides
- Permit to Work template
- HV Switching Program template
- ABB Oil Sampling Transformer Procedure
- Fulcrum3D Soiling Station Calibration Procedure
- PPC/WAGO communication fault – supporting documentation (September 2020)
- Resolution of Combiner box wind damage – supporting documentation (October 2020)
- Equipment Inspection Work Instructions (Combiner Box, Inverter, PV String and Tracker, Transformer, Harmonic Filter, Switchgear)
- Clearing Permits – supporting documentation (2018)
- Application Development – supporting documentation (2018)
- Flora and Vegetation Survey (2017)
- Flood Modelling Assessment (2017)
- Bushfire Management Plan (2018)

- Stormwater Management Plan (2018)
- Construction Environmental Management Plan (2018)
- Emergency Response Management Plan (2018)
- Cultural Heritage Survey (2018)
- Fire Risk Management Plan
- Operational Environmental Management Plan
- Site Emergency Evacuation Points Plan
- Risen Energy Risk Management HSEQ Procedure
- SCADA Controls System Functionality Specification
- MSF Infrastructure Guide
- Real-Time Automation Controller SEL-3555 Gateways User Manual
- Human Machine Interface User Manual
- SCADA Infrastructure User Guide
- SCADA Operational and Maintenance Manual
- MEX Computerised Maintenance Management System User Guide
- MSF Network Operator Technical Rules Compliance Monitoring Program
- Network Operating Protocol (MSF and Western Power)
- Representations from MSF Operations and Maintenance Manager
- Representations from MSF Lead Technician.