



# **Final Report**

## 2007 Performance Audit and Asset Management System Review for Emu Downs Wind Farm

Audit	Authorisation	Name	Position	Date
Report				
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### Contents

1. EXE	ECUTIVE SUMMARY	3
1.1 1.1.2	Performance Audit Summary	
1.2	Asset Management System Review Summary	5
2. PEF	RFORMANCE AUDIT	7
2.1	Performance Audit Scope	7
2.2	Performance Audit Objective	7
2.3	Performance Audit Methodology	8
3. ASS	SET MANAGEMENT SYSTEM EFFECTIVENESS REVIEW	13
3.1	Scope Of The AMS Review	13
3.2	Objective Of The Asset Management System Review	14
3.3	Methodology For Asset Management System Review	14
4. REC	COMMENDATIONS FOR AMENDMENT TO AUDIT PROCESS	19
5. FOL	LOW UP AUDIT PROCESS	20

### LIST OF APPENDICES

- 1. EDWF Performance Audit September 2007
- 2. EDWF Asset Management System Review September 2007



This report is prepared by representatives of GES Pty Ltd in relation to the above named client's conformance to the nominated audit standard(s). Audits are undertaken using a sampling process and the report and its recommendations are reflective only of activities and records sighted during this audit process. GES Pty Ltd shall not be liable for loss or damage caused to or actions taken by third parties as a consequence of reliance on the information contained within this report or its accompanying documentation.

#### Quality Control Record

	CLIENT	DATE
REQUESTED BY	KERRY ROBERTS – EMU DOWNS WIND FARM	JUNE 2007
PREPARED BY	NICOLE DAVIES	24TH SEPTEMBER 2007
CHECKED BY	PAUL MCLAGAN	25TH SEPTEMBER 2007
REVISION	1	SEPTEMBER 2007



#### 1. EXECUTIVE SUMMARY

Emu Downs Wind Farm (EDWF) engaged Geographe Environmental Services Pty Ltd (GES) to undertake the first Performance Audit and Asset Management System Review as required by the Economic Regulation Authority (ERA/Authority) under generation licence EGL1. This combined report contains the audit findings for both the performance audit and Asset Management System Review.

The Performance Audit has been conducted in order to assess the licensee's level of compliance with the conditions of its licence.

Sections 13 & 14 of the Electricity Industry Act 2004 require as a condition of every licence that the licensee must, not less than once in every period of 24 months (or any longer period that the Authority allows) calculated from the grant of the licence, provide the Authority with a Performance Audit and Asset Management System Review conducted by an independent expert acceptable to the Authority.

The Authority approved the appointment of GES Pty Ltd on the 5th July 2007 and subsequently required the development of an audit plan for ERA approval. Notification of the approval of the audit plan for the 2007 Performance Audit of Licence EGL1 was provided on the 1st August 2007.

This audit plan has been executed as planned in accordance with the process flowchart for performance/operational audits and asset management system reviews as detailed in the Audit Guidelines – Electricity, gas and Water Licences (September 2006).

The period for the audit and review is, 23 June 2005 to 30 June 2007 and the submission of this report before 30 September 2007 is evidence of compliance with the Authority's requirements.

The Asset Management System Review and the Performance Audit have been conducted in order to assess the effectiveness of the Emu Downs Wind Farm Asset Management Systems and level of compliance with the conditions of it's Generation Licence EGL1. Through the execution of the Audit Plan and assessment and testing of the control environment, the information system, control procedures and compliance attitude, the audit team members have gained reasonable assurance that the Emu Downs Wind Farm has an effective asset management and has complied with its Generating Licence during the audit period 23 June 2005 to 30 June 2007. This audit report is an accurate representation of the audit teams findings and opinions.



#### 1.1 Performance Audit Summary

The Audit Teams findings Performance Audit against the clauses of the Generating Licence are summarised in the following table. A comprehensive report of the audit findings is included in Appendix 1.

Generating Licence Reference (CI = Clause, Sch = Schedule)	Generation Licence Criteria	Likelihood	Consequences	Inherent Risk	Adequacy of existing controls				Compliance Kating		
					Ă	0	1	2	3	4	5
CI 1	Definitions	Unlikely	Major	High	Strong						~
CI 2	Grant of Licence										
CI 3	Term	Unlikely	Major	High	Strong						~
CI 4	Fees	Unlikely	Minor	Low	Strong						~
CI 5	Compliance	Probable	Major	High	Strong					~	
CI 6	Transfer of Licence	Unlikely	Major	High	Strong						✓
CI 7	Cancellation of Licence										
CI 8	Surrender of Licence										
CI 9	Renewal of Licence										
CI 10	Amendment of Licence on application of the Licensee										
CI 11	Amendment of Licence by the Authority										
Cl 12	Expansion or Reduction of Generating Works, Distribution Systems and Transmission Systems										
CI 13	Accounting Records	Unlikely	Major	High	Strong						~
CI 14	Individual Performance Standards										
CI 15	Performance Audit	Unlikely	Major	High	Strong						~
CI 16	Asset Management System	Unlikely	Major	High	Strong						✓
CI 17	Reporting	Unlikely	Major	High	Strong						✓



CI 18	Provision of Information	Unlikely	Major	High	Strong			✓
CI 19	Publishing Information	Unlikely	Major	High	Strong		✓	
CI 20	Notices	Unlikely	Major	High	Strong			✓
CI 21	Review of the Authority's Decisions	Unlikely	Major	High	Strong			~

### 1.1.2 Limitation of Scope

There were Generation Licence compliance elements that were not included in the scope of this audit because they did not eventuate in this audit period or have not been established within licence EGL1 (refer to table above).

**Operational/Performance Audit Rating Scale** 

Compliance Status	Rating	Description of Compliance
Compliant	5	Compliant with no further action required to maintain compliance
Compliant	4	Compliant apart from minor or immaterial recommendations to improve the strength of internal controls top maintain compliance
Compliant	3	Compliant with major or material recommendations to improve the strength of internal controls top maintain compliance
Non-Compliant	2	Does not meet minimum requirements
Significantly Non-Compliant	1	Significant weaknesses and/or serious action required

#### 1.2 Asset Management System Review Summary

The Asset Management System established by the Wind Farm is effective in the maintenance of the assets. However the system is in a commissioning phase as the plant and equipment are currently under warranty requirements and as such maintenance and operational aspects are prescriptive in nature. Planning evidence for future amendments to the asset management system were sighted and provide the audit team with assurance that continual improvement environment for the management of assets will be maintained by the wind farm. The nature of the current EPC contract also provides the environment for an effective asset management system as the key driver is availability targets.

The Audit Teams assessment of the effectiveness ratings for each key process in the licensee's Asset Management System are summarised in the following table. A comprehensive report of the audit findings in included in Appendix 2.



### Asset Management Effectiveness Summary

ASSET MANAGEMENT SYSTEM	Not Performed	Performed Informally	Planned and Tracked	Well Defined	Quantitatively Controlled	Continuously Improving
AMS Criteria Effectiveness Rating	0	1	2	3	4	5
1. Asset Planning					~	
2. Asset creation/acquisition					~	
3. Asset disposal					~	
4. Environmental analysis					~	
5. Asset operations					~	
6. Asset maintenance					~	
7. Asset Management Information System					~	
8. Risk Management				~		
9. Contingency Planning					~	
10. Financial Planning					~	
11. Capital expenditure planning					~	
12. Review of Asset Management System					~	



#### 2. PERFORMANCE AUDIT

#### 2.1 Performance Audit Scope

This is the first audit of EDWF's compliance with obligations relating to Generation Licence EGL1. As such, the scope of the audit is to:

- assess the license holders internal compliance systems
- assess the license holders compliance with it's license

for the period 23<sup>rd</sup> June 2005 to 30<sup>th</sup> June 2007.

As there were no performance standards defined the Authority's Electricity Compliance Reporting Manual May 2007 was used as the performance criteria for the compliance elements.

The intent of subsequent audits and reviews will be to measure performance over time.

The General Manager of Emu Downs Wind Farm, representatives from Business Services and Marketing and Trading and representatives from Western Power Networks participated in the Performance Audit.

#### 2.2 Performance Audit Objective

The objective of the performance audit, as defined by the Audit Guidelines, is to assess the effectiveness of measures taken by the licensee to meet obligations of the performance and quality standards referred to in the licence.

In addition to compliance requirements, a specific focus is to be taken on the systems and effectiveness of processes used to ensure compliance with the standards, outputs and outcomes required by the licence. The audit outcome is to identify areas of non-compliance and areas of compliance where improvement is required and recommend corrective action as necessary.

The Audit was conducted in three phases as defined by the Audit Guidelines. The phases and the appropriate audit guide/tool are detailed below;



Phase	Auditor	Relevant Auditing Standard
1. Risk & Materiality	Nicole Davies	AUS 302: Planning
Assessment	Paul McLagan	AUS 402: Risk Assessments and Internal Controls
		AUS 808: Planning Performance Audits
Outcome - Operational/		AS/NZS ISO 19011:2003: Guidelines for quality
Performance Audit Plan		and/or environmental management systems
		auditing (i.e consistent with AUS 302)
		AS/NZS 4360:2004: Risk Management
2. System Analysis	Nicole Davies	AS/NZS 9004:2000: Quality Management Systems –
		Guidelines for performance improvements
		AUS 810: Special Purpose Reports on Effectiveness
		of Control Procedures
		As 3806-2006: Compliance Programs
3. Fieldwork	Nicole Davies	AUS 502: Audit Evidence
Assessment and testing of;	Paul McLagan	AUS 806: Performance Auditing
The control environment		
<ul> <li>Information system</li> </ul>		
Compliance procedures		
<ul> <li>Compliance attitude</li> </ul>		

### 2.3 Performance Audit Methodology

A risk assessment, assessment of control environment and allocation of audit priority was undertaken in accordance with the Audit Guidelines – Electricity, gas and Water Licences (September 2006) on each element relating to Generation licensee's of the Electricity Compliance Reporting Manual May 2007 issued by the Authority. It was the opinion of the audit team that this approach would provide an effective assessment of compliance due to each licence condition being incorporated into document.

The Electricity Compliance Reporting Manual (May 2007) specifically classifies each licence condition according to non-compliance rating. The Generation Licence held by EDWF results in only Minor and Moderate Ratings for non-compliance, there are no Major ratings classified.

In order to focus the audit effort and identify areas for testing and analysis a preliminary assessment of the risk and materiality of non-compliance with the Generation Licence was undertaken in accordance with the requirements of AS/NZS4360 Risk Management, Section 5.3 and Appendix 1 of the Audit Guidelines. This assessment rating was reviewed during the audit process subject to the verification of control environment. There were no changes made to the pre-assessment ratings during the audit process.



### Performance Audit Key Findings, Recommendations & Post Audit Plan

Ref	Licence Condition	Issue	Recommendation	Post-Audit Action Plan
81	A licensee must, not less than once every 24 months, provide the Authority with a performance audit conducted by an independent expert acceptable to the Authority.	Whilst compliance with this requirement is well evidenced, the allocation of responsibility and process for ensuring changes to licence conditions/legislation are identified was not defined.	Establish, implement and maintain a procedure to ensure the content of the Compliance Manual is executed, allocated for responsibility and kept up to date.	ACTION: Review the potential for the establishment of a compliance scheduling system for the organisation in order to manage critical compliance functions and assign responsibilities.
84	A licensee must provide the Authority with a report by an independent expert as to the effectiveness of its asset management system every 24 months, or such longer period as determined by the Authority.			RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
83	A licensee must notify details of the asset management system and any substantial changes to it to the Authority.	Appropriate notification has occurred during the audit period. However, it is noted that the Draft Asset Management System will be required to be reported to the ERA as required by the licence condition 16.2.	Post Engineer Procure Contract (EPC) changes to Asset Management System and the changes effected by the proposed Draft Asset Management System will be required to be reported to the ERA within 10 business days of such a change.	ACTION: Include in review of Compliance Manual subject to change in JV Partnership arrangements. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
107 & 108	A licensee must comply, and require its auditor to comply, with the Authority's standard audit guidelines dealing with the performance audit. A licensee must comply, and must require the licensee's expert to comply, with the relevant aspects of the Authority's standard guidelines dealing with the asset management system	The requirement for the auditor to comply with Authority's standard audit guidelines was included in the brief issued by the licensee and subsequently documented in the audit plan and issue of communications from the Authority was provided by the licensee however the Compliance Manual [EDWF 250.1236] did not reflect the most up to date copy of the audit guidelines.	Update the Compliance Manual to reflect the latest copy of the Audit Guidelines i.e. September 2006. Current reference made to draft guidelines only. Consideration could be given to establishing a Service Agreement for the conducting of audit and specify ERA audit requirements.	ACTION: Compliance Manual to be reviewed and Services Agreement established for future audits to formalise this requirement. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008



Ref	Licence Condition	Issue	Recommendation	Post-Audit Action Plan
109	A licensee must report to the Authority, in the manner prescribed, if a licensee is under external administration or there is a significant change in the circumstances upon which the licence was granted which may affect a licensee's ability to meet its obligations.	The current JV Partnership has not changed during the audit period however in the near future the arrangements are expected to change and planning to ensure compliance with Generation Licence should be flagged during the transition phase.	Requirement to communicate to the ERA changes in JV partnership should the need arise.	ACTION: Ensure compliance with General Licence requirements during the JV Partnership transition process as detailed in Compliance Manual paragraph 20. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
111	A licensee must publish any information it is directed by the Authority to publish, within the timeframes specified.	The licensee does not specifically have a website established for the Wind Farm both JV Partners have website which would facilitate publishing.	Consideration could be given to establishing a website for the wind farm to allow for the publishing of information.	ACTION: As SCL are selling their interests in the wind farm and subject to the outcome of this JV Partnership arrangement a website will be established for Emu Downs Wind Farm. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
367	A Code participant who becomes aware of an outage or malfunction of a metering installation must advise the network operator as soon as practicable.	There is no system established to notify a metering installation malfunction other than a significant deviation in metering data	Consideration could be given to install voltage relay to facilitate the trigger of an alarm to notify metering installation malfunction.	ACTION: Liaise with WPN on the proposed strategies to ensure metering systems malfunctions are identified and managed appropriately RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
397	A network operator and affected Code participants must liaise together to determine the most appropriate way to resolve a discrepancy between energy data held in a metering installation and data held in the metering database.	Although EDWF monitor the accuracy of the metering data, WPN do not have any system to become aware of discrepancy other than reactive to disputed invoice.	Access to the SCADA system for the Metering Services division of WPN similar to that of Technical Services would facilitate a more efficient process to be established.	ACTION: Nil this is the responsibility of WPN RESPONSIBILITY: NA DATE:NA



Ref	Licence Condition	Issue	Recommendation	Post-Audit Action Plan
438	A Code participant must not request a test or audit unless the Code participant is a user and the test or audit relates to a time or times at which the user was the current user or the Code participant is the IMO.	WPN Technical Services branch have access to the SCADA and are establishing an audit schedule to verify metering databases.	Liaise with WPN Technical Services to determine whether an audit of the system is scheduled.	ACTION: Liaise with WPN Technical Services to determine whether an audit of the system is scheduled. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
464	A user must, in relation to a network on which it has an access contract, comply with the rules, procedures, agreements and criteria prescribed.	A Network Access Agreement has been established and compliance is monitored. However, the Compliance Manual covers some aspects of the NAA.	Monitoring of requirements of the NAA in the compliance manual is not comprehensive. Consideration could be given to including all specific clauses as detailed in the ERA Compliance Reporting Manual for completeness	ACTION: Include in review of Compliance Manual subject to change in JV Partnership arrangements. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008
466	Code participants must use reasonable endeavours to ensure that they can send and receive a notice by post, facsimile and electronic communication and must notify the network operator of a telephone number for voice communication in connection with the Code.	WPN Metering Services indicated they have the means to communicate with EDWF however there is no telephone number recorded on their system	Provide telephone details to WPN for their records.	ACTION: Contact Metering Services Commercial Co- Ordinator to provide telephone contact details RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 October 2007
469	A Code participant must notify any affected network operator of any change to the contact details it notified to the network operator at least 3 business days before the change takes effect.	As the JV Partnership arrangements are anticipated to change notification to WPN is required to ensure compliance with the Metering Code 7.2 (5).	In the event of a change to JV partnership arrangements updated contact details will be required to be lodged with WPN in accordance with the metering code.	ACTION: Include in review of Compliance Manual subject to change in JV Partnership arrangements. RESPONSIBILITY: General Manager (EDWF MANAGER P/L) DATE: 30 Sept 2008



There has been one event (ref 397) where there has been a discrepancy of metering data during initial site commissioning. The discrepancy in the metering data was from mid/late June 2006 until late July 2006. This was due to a misunderstanding between the installers and the current transformer (CT) manufacturer, resulting in the CTs being installed in reverse direction. This was identified during transformer soaking, which was well before the meter installation "post connect". Due to the post connect not being completed no data was released to Market and there was no data lost. A combination of data manipulation and re-interrogation was performed to correct the data before it was released to Market. Subsequent to this event there have been no metering data discrepancies.

The Post Audit Plan has been developed by the audit team in consultation with the licensee. Approval of the report endorses the content of the post audit plan and implementation of the actions will be included in the next audit.



#### 3. ASSET MANAGEMENT SYSTEM EFFECTIVENESS REVIEW

#### 3.1 Scope of the AMS Review

The review has been established as a requirement of the current Generating Licence issued by the Economic Regulation Authority to Emu Downs Wind Farm (EDWF).

The scope of the AMS review includes an assessment of adequacy and effectiveness of Emu Downs Wind Farm asset management system, by evaluating during the audit period 23<sup>rd</sup> June 2005 to 30<sup>th</sup> June 2007 the following;

- 1. Asset Planning
- 2. Asset creation/acquisition
- 3. Asset disposal
- 4. Environmental analysis
- 5. Asset operations
- 6. Asset maintenance
- 7. Asset management information system
- 8. Risk management
- 9. Contingency planning
- 10. Financial planning
- 11. Capital expenditure planning
- 12. Review of asset management system

This is the first Asset Management System Review conducted since the issue of the licence and as such previous audit report findings are not relevant to the content of the report. The review was conducted during August – September 2007 and included a 2 days site audit, desktop review and interview sessions.

The General Manager of Emu Downs Wind Farm, a representative from Vestas (the Operations and Maintenance Contractor) and representatives from Business Services and Marketing and Trading participated in the AMS Review.

The key documents and other information sources are detailed within appendix 2.

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The Audit Plan for Asset Management System Review included three phases as defined by the Audit Guidelines. The phases and the appropriate audit guide/tool are detailed below;

Phase	Auditor	Relevant Auditing Standard
1. Risk & Materiality Assessment	Nicole Davies	AUS 302: Planning
Outcome – Asset Management System	Paul McLagan	AUS 402: Risk Assessments and Internal Controls
Audit Plan		AUS 808: Planning Performance Audits
		AS/NZS ISO 19011:2003: Guidelines for quality and/or
		environmental management systems auditing
		AS/NZS 4360:2004: Risk Management
2. System Analysis	Paul McLagan	AS/NZS 9004:2000: Quality Management Systems – Guidelines
	Brian McKenry	for performance improvements
		AUS 810: Special Purpose Reports on Effectiveness of Control
		Procedures
		As 3806-2006: Compliance Programs
3. Fieldwork	Paul McLagan	AUS 502: Audit Evidence
	Brian McKenry	AUS 806: Performance Auditing

### 3.2 Objective of the Asset Management System Review

The objective of the review is to examine the effectiveness of the processes used by Emu Downs Wind Farm to deliver asset management, the information systems supporting asset management activities and the data and knowledge used to make decisions about asset management. These elements were examined from a life cycle perspective i.e. planning, construction, operation, maintenance, renewal, replacement and disposal using the guidelines developed by the Economic Regulation Authority.

#### 3.3 Methodology for Asset Management System Review

The audit methodology detailed in Appendix 1 & 2 of the Audit Guidelines – Electricity, gas and Water Licences (September 2006) was used in the execution of the Asset Management System Review and is detailed in a tabular form in Appendix 2 of this report

There was only one change made the risk assessment ratings conducted for the Audit Plan for the Asset Management System Review. This was in relation to the key process Asset Maintenance (ref 6.7) where the post audit rating was changed as follows;

Inherent Risk Rating → Medium to Low Controls Rating → Strong to Weak Audit Risk → Priority 4 to Priority 5



The change in risk assessment was as a result of the Engineer Procure Contract (EPC) under which maintenance costs are fixed.

The audit elements for the Asset Management System Review followed the key processes in an asset management lifecycle as defined in the Audit Guidelines;

- 1. Asset Planning
- 2. Asset creation/acquisition
- 3. Asset disposal
- 4. Environmental analysis
- 5. Asset operations
- 6. Asset maintenance
- 7. Asset management information system
- 8. Risk management
- 9. Contingency planning
- 10. Financial planning
- 11. Capital expenditure planning
- 12. Review of asset management system

#### Asset Management System Effectiveness Rating

A 6 point rating scale was used as defined in the Audit Guidelines to evaluate the effectiveness of the Asset Management System.

Maturity Rating Model						
Rating	Descriptor	Description				
0	Not Performed					
1	Performed Informally	Base practices performed				
2	Planned & Tracked	Committing to perform				
		Planning performances				
		Disciplined performance				
		Tracking performance				
		Verifying performance				
3	Well Done	Defining a standard process				
		Tailoring standard process				
		Using data				
		Perform a defined process				
4	Quantitatively Controlled	Establishing measurable quality goals				
		Determining process capability to achieve goals				
		Objectively managing performance				
5	Continuously Improving	Establishing quantitative process for effective goals				
		Improving process effectiveness				



### Asset Management System Review Key Findings, Recommendations and Post Audit Plan

Audit Requirement	Issue	Recommendation	Post-Audit Action Plan
Asset Planning - Service levels are defined Effectiveness Rating - 4	At the time of the audit a maintenance contract for the substation was not in place	A Maintenance Contract is required for the substation	ACTION: A contractor has been appointed to ensure compliance with this requirement.
			RESPONSIBILITY: General Manager (EDWF Manager P/L)
			DATE: 30 <sup>th</sup> September 2008
Asset Creation/Acquisition - Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood Effectiveness Rating – 3	The risk summary identifies the risk, description of risk causes, impact and control measures, risks identified include ongoing legal/environmental/safety obligations and current status of actions. The service agreements and GM KPI's assign responsibilities and expected outcomes	The risk summary could be developed further to register ongoing compliance and to flag issues as they fall due	ACTION: Develop Risk Summary as per recommendation
			RESPONSIBILITY: General Manager (EDWF Manager P/L)
			DATE: 30 <sup>th</sup> September 2008
Asset Disposal - Effective management of the disposal process will minimise holdings of surplus and under- performing assets and will lower service costs	At this early stage of the project the Whole of Life Plan identifies the predicted life of the assets out to 2027, as the plan matures under- performing assets will be identified	Maintenance of the whole of life model will improve the identification of under performing assets	ACTION: Implementation and ongoing review of the Whole of Life Plan
			RESPONSIBILITY: General Manager (EDWF Manager P/L)
Effectiveness Rating – 2	Long term - the EDWF dismantling, removal & rehabilitation costs document based on a rough order of magnitude cost estimation provides estimated costs for dismantling, removal and rehabilitation, it includes in detail the plans for		DATE: 30 <sup>th</sup> September 2008
	Asset Planning - Service levels are defined         Effectiveness Rating - 4         Asset         Creation/Acquisition - Ongoing         legal/environmental/safety         obligations of the asset         owner are assigned and understood         Effectiveness Rating – 3         Asset Disposal - Effective management of the disposal process will minimise holdings of surplus and under- performing assets and will lower service costs.	Asset Planning - Service levels are definedAt the time of the audit a maintenance contract for the substation was not in placeEffectiveness Rating - 4At the time of the audit a maintenance contract for the substation was not in placeAsset Creation/Acquisition - Ongoing legal/environmental/safety obligations of the asset owner are assigned and understoodThe risk summary identifies the risk, description of risk causes, impact and control measures, risks identified include ongoing legal/environmental/safety obligations and current status of actions. The service agreements and GM KPI's assign responsibilities and expected outcomesAsset Disposal - Effective management of the disposal process will minimise holdings of surplus and under- performing assets and will lower service costs.At this early stage of the project the Whole of Life Plan identified. Long term - the EDWF dismantling, removal & rehabilitation costs document based on a rough order of magnitude cost estimated costs for dismantling, removal and rehabilitation, it includes in	Asset Planning - Service levels are definedAt the time of the audit a maintenance contract for the substation was not in placeA Maintenance Contract is required for the substationAsset Creation/Acquisition - Ongoing legal/environmental/safety obligations of the asset ounderstood Effectiveness Rating - 3The risk summary identifies the risk, description of risk causes, impact and control measures, risks identified include ongoing legal/environmental/safety obligations and current status of actions. The service agreements and GM KPI's assign responsibilities and expected outcomes and under- performing assets and will lower service costs.Athe time of the audit a maintenance of the whole of life or the sates out to 2027, as the plan matures under- performing assets and will lower service costs.Maintenance of the whole of life of life of the assets out to 2027, as the plan matures under- performing assets and will lower service costs.Maintenance of the whole of life mathematures under- performing assets and will lower service costs.Long term - the EDWF dismantling, removal & rebailitation, costs dorder of magnitude cost estimation provides estimation provides estimation provides issuination, removal and rehabilitation, it includes in detail the plans forMaintenance of the whole of life maintenance of the whole of life mathematures under- performing assets will be identified.Long term - the EDWF dismantling, removal and rehabilitation, it includes in detail the plans forLong term - the EDWF dismanting, removal and rehabilitation, it includes in detail the plans for



Ref	Audit Requirement	Issue	Recommendation	Post-Audit Action Plan
6.1	Asset Maintenance - Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost. Effectiveness Rating - 3	Maintenance plans for scheduling and resourcing are undertaken for Wind Turbine Generators (WTGs). Only fault maintenance is presently being performed on the HV system.	Maintenance plans for scheduling and resourcing for HV system required.	ACTION: The requirement for the HV system has been identified and a contractor has been appointed (RJE) to rectify issue. RESPONSIBILITY: General Manager (EDWF Manager P/L) DATE: 30 <sup>th</sup> September 2008
6.2	Asset Maintenance - Maintenance policies and procedures are documented and linked to service levels required Effectiveness Rating – 3	Maintenance policies and procedures are established and implemented for Wind Turbine Generators. Only fault maintenance is presently being performed on the HV system.	Maintenance policies and procedures for HV system required.	As above
6.3	Asset Maintenance - Regular inspections are undertaken of asset performance and condition Effectiveness Rating – 3	Inspections of Wind Turbine Generators are undertaken. Records of inspections were available for review on site. Inspections of HV system is presently being performed on an informal basis.	Maintenance inspection and test schedules for HV system required.	As above
6.4	Asset Maintenance - Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule Effectiveness Rating – 3	Emergency, corrective and preventative maintenance plans for Wind Turbine Generators are established. Only fault maintenance is presently being performed on the HV system. Discussions with the Acting Site Supervisor indicated that contingency plans have been established however these documents were not available for review during the audit.	Emergency, corrective and preventative maintenance plans for HV system required.	As above



Ref	Audit Requirement	Issue	Recommendation	Post-Audit Action Plan
8.2	Risk Management – Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system Effectiveness Rating – 3	Contract provisions currently prescribe the risk management process during the warranty period The AMP considers both internal & external risks associated with the project in the planning process	Develop an integrated risk policy which takes account of all phases of the project lifecycle including the post warranty period.	ACTION: As per recommendation RESPONSIBILITY: General Manager (EDWF Manager P/L) DATE: 30 <sup>th</sup> September 2008
8.3	Risk Management - Risks are documented in a risk register and treatment plans are actioned and monitored Effectiveness Rating - 3	The risk summary identifies the risk, description of risk causes, impact and control measures, risks identified include ongoing legal/environmental/safety obligations and current status of actions.	Further development of the risk summary to include an action plan tracking system	ACTION: Review risk management strategies as per 8.2. RESPONSIBILITY: General Manager (EDWF Manager P/L) DATE: 30 <sup>th</sup> September 2008

The Post Audit Plan has been developed by the audit team in consultation with the licensee. Approval of the report endorses the content of the post audit plan and implementation of the actions will be included in the next audit



#### 4. RECOMMENDATIONS FOR AMENDMENT TO AUDIT PROCESS

The purpose of the operational/performance audit is to assess the effectiveness of measures taken by the licensee to meet the obligations of the performance and quality standards referred to in the licence (Section 5.1 Audit Guideline – Electricity, Gas and Water Licences September 2006)

The Generation Licence EGL1 issued for Emu Downs Wind Farm does not contain any performance standards and varies significantly in content from that of a Water Utility. As such the methodology outlined in the Audit Guideline – Electricity, Gas and Water Licences September 2006 has limited applicability in some areas. For example, section 7.4.1 Operational/Performance Audit Compliance Summary. Several aspects of the Generation Licence do not apply on an ongoing basis and are not relevant to the scope of the audit which limit the value of the report, such as;

- Clause 1 Definitions
- Clause 3 Term
- Clause 7 Cancellation of Licence
- Clauses 8 Surrender of Licence
- Clause 9– Renewal Of Licence
- Clause 10 Amendment of Licence on application of the Licensee

The audit approach to the Performance Audit is subject to auditor interpretation, although reference to applicable legislation does provide a guide to audit criteria and a review of this process could facilitate more effective audit reports for Electricity Licences.

Consideration could be given to providing an alternative approach where there are a lack of specified performance standards for a licensee such as referencing of the Electricity Compliance Reporting Manual published by the Authority. This enables the auditor to follow a specified audit criteria as defined by the classification of the licence.



#### 5. FOLLOW UP AUDIT PROCESS

This is the first Performance Audit conducted since the issue of the licence and as such previous audit report findings are not relevant to the content of the report. Review of actions taken in response to recommendations will form part of subsequent audit plans as this is the initial audit/review.

Emu Downs Wind Farm is a joint development between Stanwell and Griffin Energy. The project was commissioned in June 2006 and comprises 48 turbines (each with 1.65 MW generating capacity), a substation, interconnection to the main 132 kV grid, an administration/stores building and a network of access roads.

During the Audit Scope the JV Partnership was maintained however it is understood that SCL are selling their interests in the project and as such the next audit report may vary appropriately. In addition, the change to the asset management system is anticipated to be significant due to the end of the warranty period and renegotiation of the O&M Contract.



## APPENDIX 1

## EMU DOWNS WIND FARM PERFORMANCE AUDIT SEPT 2007



## APPENDIX 2

## EMU DOWNS WIND FARM ASSET MANAGEMENT SYSTEM REVIEW SEPT 2007