

# EDB 2023 AMP REVIEW

Consultant Report – AMP Information Disclosure Requirements Review

IAEngg Pty Ltd

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## Executive Summary

A review of the Electricity Disclosure Information Determination requirements and ISO 55001 (the international asset management standard) was conducted to determine whether the annually submitted Asset Management Plans (AMP) from 29 Electricity Distribution Businesses (EDBs) and Transpower were fit for purpose.

**29** EDBs

### ELECTRICITY DISTRIBUTION BUSINESSES

Whilst ISO 55001 does not prescribe AMP content, ISO 55002 (guidance for ISO 55001 implementation) alludes to content requirements. The existing AMP format from the Determination exceeds ISO55002 guidance and is invariably a documented representation of how AM is conducted within EDBs, which is not the intent of the AMP document from an ISO 55001 perspective. By separately documenting AM strategy, processes and providing clearer representation of the AMS / AM Framework, a more purposeful AMP would prevail.



Most AMPs articulated how stakeholders were considered within strategic decision-making frameworks. Suggested improvements are clearer articulation of the engagement process and the information exchange.







The approach to risk is largely well documented across the AMPs, the ISO 31000 framework evident for all. Asset criticality has been successfully implemented within a number of AMPs, others referencing their intent to mature in this space by incorporating the Electricity Engineers Association guideline. For those AMPs that included asset criticality, most aligned it to asset health indices that furthered the asset-orientated approach to risk management. Performance evaluation from an ISO 55001 perspective covers asset performance, asset management performance and the effectiveness of the asset management system. Performance metrics ideally have a blend of leading and lagging indicators, however most traditional network performance and maintenance orientated metrics adopted within the AMPs are lagging indicators. Whilst the lagging indicators provide good support for the assessment of service levels, leading indicators would provide an indication of whether service levels are likely to be achieved, thus a response can be

implemented sooner. An important business metric to drive improved culture is employee satisfaction. Satisfied employees willingly drive improvement activity, key to ensuring stakeholder requirements are captured, pursued and incorporated within asset management outcomes.

It was pleasing to note most AMPs incorporated their Asset Management Maturity Assessment Tool (AMMAT) result and annual progressions to inform improvement activity. AMMAT does not perfectly align to ISO 55001, as Asset Management System (AMS) development, scope confirmation, awareness, change management and management review haven't been considered within AMMAT. Noting AMMAT is a 31-question subset of the 121 questions contained within the Institute of Asset Management (IAM) PAS 55 Assessment Methodology, the missing elements can readily be captured from the remaining 90 questions.

It was evident that those with ISO 55001 certification, including those aligned but not certified, had much stronger asset management approaches (and therefore AMPs) due to greater process orientation.

Nine improvement recommendations are presented. These are collectively intended to improve assurance of asset management practices, confirm AMPs are fit for purpose, and further improve the efficiencies for their development and assessment.



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## 1. Requirements of Engagement

This report responds to deliverables outlined within the Commerce Commission New Zealand (**the Commission**) RFP Ref: PRJ0046582 dated 24 May 2023, and as follows in italics.



### *AMP information disclosure requirements*

*Section 2.6.2, Electricity Disclosure Information Determination sets the requirements for EDBs on what is to be included in annual AMP. There are several EDBs that are also following the ISO 55001 standard in developing AMPs. We are interested in reviewing the determination requirements and ensuring that AMPs are fit for purpose.*

***The review should be undertaken across all 29 EDBs and Transpower's AMP and include:***

<i>gap analysis between ISO 55001 and Commerce Commission determination disclosure requirements</i>		<i>review the AMPs structure and requirements, and the role of a strategic asset management plan</i>	
<i>asset management performance metrics being utilised by EDBs</i>	<i>review the effectiveness of AMMAT (Schedule 14)</i>	<i>identify and review AMP performance metrics</i>	<i>asset planning risk and criticality assessments</i>
<i>reviewing how the needs and expectations of stakeholders is included in asset planning</i>	<i>recommendations on areas to improve Commerce Commission information disclosures</i>	<i>development roadmap for improving and analysis of AMPs, with the aim to improve the level of assurance from AMPs</i>	<i>spotlighting EDBs with good electricity industry practice</i>

## 2. Preliminary Information

The response to each of the questions posed and other opinions are based upon best judgement in considering the disclosed Asset Management Plan (**AMP**) from each Electricity Distribution Business (**EDB**), sourced reference material from peak industry bodies and noted experience of the author.



### ISO 55001

The primary sourced reference material is *ISO 55001:2014 Asset management – Management systems – Requirements* (hereafter referred to as **ISO 55001**). ISO 55001 is the international asset management standard that seeks to assist organisations efficiently and effectively manage their asset portfolio throughout its whole life cycle. ISO 55001 specifies requirements for the establishment, implementation, maintenance, and improvement of a management system for asset management (**AM**).

### MSS

The broader suite of ISO Management System Standards (**MSS**), of which ISO 55001 is but one (e.g. ISO 9001, ISO 14001, ISO 45001 etc), are intended to establish frameworks for organisations to achieve their objectives by promoting a systemised approach for process orientation. Such orientation is intended to instil a business culture whereby engaged employees actively pursue self-evaluation, correction and improvement activities for the ultimate benefit of stakeholders.

### ISO 55002

ISO 55001 is supported by *ISO 55002:2019 Asset management – Management systems – Guidelines for the application of ISO 55001* (hereafter referred to as **ISO 55002**), which provides informative guidance on how ISO 55001 requirements should be implemented.



### 3. Detailed Response

#### 3.1. Gap Analysis between ISO 55001 and Commission's determination disclosure requirements.

*Electricity Distribution Information Disclosure Determination 2012* (hereafter referred to as the **Determination**) outlines the information required to be published by each EDB detailing business and operational asset management data, including for pricing, future expenditure forecasts, outages and interruptions and financial statements. The Commission provides an analysis of this information to help consumers understand how their local EDB is performing, including comparatively with other EDBs, and to track changes over each regulatory period.



In seeking to conduct a gap analysis between ISO55001 and the Determination, it should be noted that the collective outcome from individual requirements within each source document differs. ISO55001 focusses on a management system for assets that considers leadership, alignment, assurance, value and adaptability as underlying fundamentals, whilst the Determination seeks to assure the performance and intentions of EDBs to stakeholders via a documented AMP and associated Schedules.

Noting the purpose of the gap analysis is to understand whether the Commission's approach for AMP content aligns to requirements from ISO 55001 for AMP content, ISO 55001 does not prescribe AMP content, nor does ISO 55002. There is however inference within both ISO 55001 and ISO 55002 to what would otherwise be expected as content for an AMP, particularly in response to the Strategic Asset Management Plan (**SAMP**), for which content is informatively prescribed in Annex C of ISO 55002.

There exists 72 shall statements in ISO 55001. These shall statements specify the requirements of ISO 55001 for certification (and alignment) purposes and will therefore form the basis upon which the gap analysis will be performed. The 72 shall statements appear across the following seven of ten clause sections; Context of Organisation, Leadership, Planning, Support, Operation, Performance Evaluation, Improvement. Any ISO MSS emphasises repeatability of process (cyclic orientation) as the basis for continual improvement, hence such is a key feature and intended outcome throughout application of ISO 55001.

Within *Attachment A – Asset Management Plans (Attachment A)* of the Determination, sections 3 through 17 contain normative guidance for expected AMP content (see Table 2). The gap analysis therefore focusses on these requirements in comparison to ISO 55001. Table 1 below identifies the existing alignment between ISO 55001 and Attachment A

Table 1: Alignment of Attachment A with ISO 55001

ISO 55001 CLAUSE	SHALL STATEMENT #	THEME	ATTACHMENT A SECTION ALIGNMENT
4.1	<b>1</b>	internal / external issues	3.8, 3.9
	<b>2</b>	AM objectives aligned to corporate	3.3.5
4.2	<b>3</b>	determine stakeholders, their expectations, decision making criteria, fin/non-fin reporting	3.6, 8
4.3	<b>4</b>	AMS boundaries	
	<b>5</b>	scope aligned to SAMP and policy	
	<b>6</b>	scope considers ext/int requirements, stakeholder requirements, other MS	
	<b>7</b>	portfolio defined in scope	4.1
	<b>8</b>	scope documented	
4.4	<b>9</b>	AMS established, w/ processes	3.10/.13/.14ii/v
	<b>10</b>	SAMP documented (incl. role of AMS supporting achievement of AM objectives)	3.10
5.1	<b>11</b>	top management demonstrate leadership by ...	
5.2	<b>12</b>	establish AM policy that ...	
	<b>13</b>	AM policy includes ...	
5.3	<b>14</b>	top management assigns and communicates responsibilities and authorities	3.7.1/.2/.3
	<b>15</b>	top management assigns responsibility and authority for ...	3.7.1/.2/.3
6.1	<b>16</b>	determine risks and opportunities to ...	14.1
	<b>17</b>	plan to address actions and how to integrate, implement and evaluate	
6.2.1	<b>18</b>	establish AM objectives	3.2, 3.3.5



ISO 55001 CLAUSE	SHALL STATEMENT #	THEME	ATTACHMENT A SECTION ALIGNMENT
	<b>19</b>	consider stakeholders and other requirements for AM objectives	
	<b>20</b>	AM objectives consider ...	
	<b>21</b>	AM objectives are documented	3.2
6.2.2	<b>22</b>	planning to achieve AM objectives is integrated with corporate planning	3.10
	<b>23</b>	AM plans documented	3
	<b>24</b>	AM plans aligned to policy and SAMP	3.10
	<b>25</b>	AM plans consider matters external to AMS	3.10
	<b>26</b>	AM plans include ...	3
	<b>27</b>	AM risks are included in corporate approach	
7.1	<b>28</b>	resources provided for AMS	3.7
	<b>29</b>	resources provided for AM plans	3.7
7.2	<b>30</b>	AM competence considerations include ...	
7.3	<b>31</b>	AM awareness considerations include ...	
7.4	<b>32</b>	AM communications requirements consider what, when, who and how	3.15
7.5	<b>33</b>	determine info requirements	3.11.1a
	<b>34</b>	info requirements will consider ...	3.11.1c
	<b>35</b>	determine for info requirements ...	3.11.1a
	<b>36</b>	processes for info requirements	3.11.1a
	<b>37</b>	info requirements align fin/non-fin	
	<b>38</b>	traceability between data	

ISO 55001 CLAUSE	SHALL STATEMENT #	THEME	ATTACHMENT A SECTION ALIGNMENT
7.6.1	<b>39</b>	AMS will include documented info ...	3.3.3/.4, 3.14i
7.6.2	<b>40</b>	documented info to include appropriate characteristics ...	
7.6.3	<b>41</b>	documented info is controlled to ...	
	<b>42</b>	controlled documented info will consider ...	
	<b>43</b>	required external documented information is controlled	
8.1	<b>44</b>	processes established that include ...	3.13, 3.14ii/v
8.2	<b>45</b>	change risks are assessed before implementation	3.8.3
	<b>46</b>	change risks are managed within AMS	
	<b>47</b>	change is managed to mitigate adverse effects	
8.3	<b>48</b>	outsourcing risk is assessed	3.7.3, 3.14iii/iv
	<b>49</b>	outsourced activities / processes are controlled	3.7.3, 3.14iii/iv
	<b>50</b>	control and integration of outsourced activities is documented	
	<b>51</b>	clarity for outsourced processes, activities, responsibilities, authorities, knowledge / info sharing	3.7.3, 3.14iii/iv
	<b>52</b>	outsourcing considers competence, awareness, documented info, monitoring etc	
9.1	<b>53</b>	what needs to monitored / measured and associated methods	15
	<b>54</b>	when will monitoring / measuring happen	
	<b>55</b>	when will monitoring / measuring be analysed	

ISO 55001 CLAUSE	SHALL STATEMENT #	THEME	ATTACHMENT A SECTION ALIGNMENT
	<b>56</b>	report on assets, AM and AMS	15.3
	<b>57</b>	report on processes for managing risks and opportunities	
	<b>58</b>	reporting is documented and retained	
	<b>59</b>	reporting meets stakeholder expectations	
9.2.1	<b>60</b>	internal audits are conducted at planned intervals	3.14v
9.2.2	<b>61</b>	internal audit program will consider ...	3.14v
	<b>62</b>	internal audit program will consider the importance of processes and results of previous audits	3.14v
9.3	<b>63</b>	top management will review AMS	3.14v
	<b>64</b>	top management review will include ...	
	<b>65</b>	top management review outcomes will be captured as CI / change	
	<b>66</b>	top management review will be documented	
10.1	<b>67</b>	if NC or incident occurs ...	
	<b>68</b>	corrective action/s appropriate to nature of NC / incident	15.4
	<b>69</b>	documented info generated to record NC, incident, corrective action	15
10.2	<b>70</b>	processes established to identify potential asset performance failures	
	<b>71</b>	potential failure initiates NC process	
10.3	<b>72</b>	AM and AMS is continually improved	15.4



The following summary of Table 1 highlights the **ALIGNMENT** between the Determination and ISO 55001 requirements

» Consideration of Internal / External Issues	» Alignment of Objectives	» Stakeholder Expectations
» Asset Portfolio Scope	» Asset Management System (AMS) Established and w/ Processes	» AM Strategy
» Roles / Responsibilities / Authorities	» Plans to Address Actions Emanating from Risks	» Hierarchical AM Objectives
» Documented and Aligned AMP	» Resources	» Communications
» Information Requirements	» Documented Information	» Operational Processes
» Change Risks	» Outsourcing Risk & Controls	» Performance Monitoring
» Internal Audit	» Corrective Actions	» Continual Improvement

The following summary of Table 1 highlights the **GAPS** between the Determination and ISO 55001 requirements

» Scope	» Leadership Characteristics	» Policy
» Awareness	» Competence	» Requirements for AM Objectives
» Change Management	» Performance Monitoring Schedule and Reporting	» Management Review
» Preventive Action	» Non-Conformance / Incident Process	» Documented Information Characteristics
» Plans to Address Actions Emanating from Opportunities	» Traceability Between Data (including Financial and Non-Financial)	

Of these gaps, the following would complement existing AMP content and likely lead to better outcomes

### Plans to Address Actions Emanating from Opportunities

Incorporation of opportunities within the risk framework, whereby opportunities are often referred to as positive risk (i.e. if the uncertain event transpires, a positive outcome is experienced), can help to realise additional benefits from agreed actions (Example – access to meteorological data, that is otherwise utilised to manage network reliability, to support optimisation of customer rooftop solar generation).

### Competence

Defining the skill acquisition and knowledge maturation requirements for all AM practitioners can support more efficient outcomes. Documenting such within an AMP can help to ensure the visibility of skill acquisition / knowledge maturation pathways and plan orientation to drive the intended outcome (Section 2.8 of the Determination is noted).

### Performance Reporting

Clarifying how, what, when and to whom reporting of performance management (i.e. monitoring, measurement, analysis and evaluation) occurs ensures the inputs for the cyclic review of the AMP are clearly defined and available, and that interested stakeholders are readily informed. It is realised that Information Disclosures are reporting on business and operational asset management data (otherwise alluding to performance outcomes), however greater clarity of purpose, notably with respect to how and what each stakeholder wants to receive, would likely produce better outcomes.

All other gaps relate to different elements within an AMS, which highlights the challenges of preparing a gap analysis between ISO 55001 and the Determination when the focus document is the AMP, noting AMP content is not prescribed within ISO 55001. These challenges will be resolved as an outcome of the following section.

### 3.2. Review the AMPs structure and requirements, and the role of a SAMP.

The Determination identifies AMP content requirements within Sections 3 through 17, notably Section 3 *Contents of the AMP*. Table 2 below identifies key themes that are evident from the AMP content listed in the Determination, whereby the intended content has been identified as a response to the question posed.

Table 2 - AMP Content Requirements from the Determination

Attachment A - Section	Content Theme	Has the AMP documented ...?
<b>3.1</b>	Exec Summary	an Exec Summary that fairly represents all content of the AMP?
<b>3.3.1</b>	Purpose	a Purpose Statement that describes what the AMP fulfils within the broader AM context?
<b>3.2, 3.3.5</b>	Objective Hierarchy	the objectives of the AM and planning processes, including how they respond to business direction?
<b>3.3.2</b>	Vision	the corporate vision and how it relates to AM?
<b>3.3.3/.4, 3.14i</b>	Doc Structure	the AM document hierarchy, including how the AMP fits and interacts with other AM/business docs?
<b>3.4</b>	AMP Horizon	the timeframe horizon for the AMP?
<b>3.5</b>	AMP Approval	when approved?
<b>3.6</b>	Stakeholder Engagement & Input	how stakeholder interests have been captured, prioritised and considered for purposes of inclusion in a decision-making framework?
<b>3.7.1/.2/.3</b>	Org Structure / RASCI	the broad hierarchy of personnel contributing to AM and their responsibilities?
<b>3.7.3</b>	Operational Activities	how field activities are managed and confirmed the involvement of field personnel in decision making?



Attachment A - Section	Content Theme	Has the AMP documented ...?
<b>3.7.3, 3.14iii/iv</b>	Outsourcing	how outsourcing is managed, including risk thereof?
<b>3.8</b>	Assumptions	the significance of (and quantified where possible) key assumptions and their impact on uncertainty?
<b>3.9</b>	Potential Change Factors	potential change factors that may impact future AMP outcomes?
<b>3.10</b>	AM Strategy and Life Cycle	an overview of the AM Strategy, including alignment to other business strategies / policies, consideration of all asset life cycle phases, and provision of necessary guidance for development of the AMP?
<b>3.10</b>	Control Processes (performance / cost / risk focus)	how performance, cost and risk is managed / controlled?
<b>3.11.1a/e</b>	Data Requirements	how AM data requirements are determined and specifically what each parameter is used for?
<b>3.11.1b/d</b>	Data Systems	what data systems are used (including field based) and how are they integrated?
<b>3.11.1c</b>	Data Quality	how data quality is managed?
<b>3.11.1f</b>	Decision Making	the AM decision making process?
<b>3.12</b>	Data Limitations	if there any limitations to data availability? If yes, what rectification measures are being pursued?
<b>3.13/3.14ii/v</b>	Processes	what processes have been documented for AM?
<b>3.15</b>	Communication & Participation	how the intent of AM is communicated to internal / external AM personnel and what guarantees their engagement?
<b>4</b>	Assets Covered	network description, network configuration, condition, network assets by category

Attachment A - Section	Content Theme	Has the AMP documented ...?
5	Service Levels	performance targets
6	Service Levels	SAIDI and SAIFI
7	Service Levels	consumer orientated indicators, asset performance, asset efficiency and effectiveness, asset utilisation and operation (technical and financial)
8	Service Levels	stakeholder needs
9	Service Levels	historic comparison
10	Service Levels	target improvement should align to financial/performance increase
11	Network Development Planning	planning criteria, standardised design, priority process/criteria, demand forecast (incl. growth and load), optioneering, project program, DER policy, augmentation alternatives, non-network solutions
12	LC AM Planning (Maintenance & Renewal)	maintenance planning (incl. refurb/replace), capex forecasts, veg management
13	Non-Network Development, Maintenance & Renewal	non-network development
14	Risk Management	risk analysis, emergency response and contingency planning
15	Evaluation of Performance	performance measurement, evaluation, and improvement
16	Capability to Deliver	org structure
17	Requirements to Provide Qualitative Info in Narrative Form	





*Furthermore, asset management plans are often based on a review of earlier achievements.<sup>1</sup>*

ISO 55002 further explains what should also be considered when developing or reviewing an AMP, including

- » its scope and what objectives, risks and opportunities it addresses over a particular timeframe, including the actions that have been identified to achieve such and whether they could be outsourced,
- » in what environment the asset portfolio operated and how it performed, including readiness for future demand,
- » who is responsible for its development and implementation, as well as its continual improvement and how it's communicated to stakeholders,
- » supporting processes and methods to achieve the actions, including for those unplanned and associated change management as well as for continual improvement, preventive and corrective actions,
- » non-asset solutions and the trade-off between capital and operating expenditures in considering a life cycle approach,
- » what risks need to be managed, including for outsourcing, continuity / contingency planning and residual liability matters that may exceed the lifespan of the asset portfolio,

» resource capabilities over the appropriate timeframe, and

» necessary standards and technical specifications.

The non-italicised dot points above are not prescribed content for an AMP but indicative of what should be considered and/or addressed. The italicised dot points above highlight the intended connectivity of the tactically focused AMP to deliver the objectives (strategy) and guide the operational activities, and the justifications for doing so in optimising performance, cost and risk outcomes.

The current AMP content requirements listed within the Determination exceed this basic intention. It is recognised that the AMP content is being driven from a regulatory perspective and likely progressively expanded in further capturing new requirements. The AMP content has shifted the premise of the AMP from a document that foremost responds to business requirements to rather responding to regulatory needs.

As a suggested reset for AMP content, Table 3 provides recommendations for AMP responsiveness, which will see separation of tactical requirements from strategic requirements. Table 4 will identify what role a strategic orientated document (e.g. SAMP) can play in providing direction for an AMP but still capture key information requirements from the current Determination. Importantly, the recommendations do not suggest content outright but rather pose a series of questions that each document ideally responds to in satisfying intentions from ISO 55001 and ISO 55002, thus forming hierarchical alignment that can further cascade down towards operational level documentation, including functional plans.

<sup>1</sup> International Organisation for Standardisation. 2019. Asset management – Management systems –

Guidelines for the application of ISO 55001 (ISO Standard No. 55002:2019).

Table 3 - Recommended AMP Content

AMP Table of Contents	Question	Inclusions / Considerations
<b>Asset Portfolio (detailed description)</b>	What assets are being considered?	(scope), function, history, quantity, interface/s, criticality, value etc
<b>Life Cycle (LC) Management Considerations</b>	What does the asset need to consider throughout each life cycle phase?	standards, regulations, risks and opportunities, resourcing, technical specs etc across all LC phases - design, procurement/acquisition, operations, maintenance, refurb/upgrade, disposal/replacement/re-purpose
<b>Required Performance</b>	How is the asset expected to perform?	tabularise (where possible) against requirements, align to AM objectives, demand analysis
<b>Current Performance</b>	How is the asset performing?	under/over performance
<b>Performance Gap</b>	How (and why) does current performance differ to performance requirement?	design, procurement/acquisition, operations, maintenance, refurb/upgrade, disposal/replacement/re-purpose
<b>Risks &amp; Opportunities</b>	What are the current, emerging and potential legacy risks and opportunities presenting for this asset?	(specific) asset risk & opportunity register (w/ annualised cost), consider activities not pursued/completed from previous work plan
<b>Recommended Actions</b>	What costed actions are necessary for the asset to meet current and future performance requirements?	consider performance gap, LC management, risks and opportunities, non-asset solutions, functional plans etc and prioritise (incl. short/med/long term) with assessment of risk if go/no-go, data requirements
<b>Resource Requirements</b>	What resources are required to implement the Recommended Actions?	financial, competent practitioners with role clarity, internal vs external, equipment and plant, strategic spares etc

By recognising the different requirements within a strategically orientated document compared to a tactically orientated document, the role of a SAMP in guiding AMP content becomes clearer and more directly purposeful, better connecting to other corporate level requirements that align to and potentially inform the AM approach.

Table 4 - Recommended SAMP Content

SAMP Table of Contents	Question	Inclusions / Considerations
Organisational Context	What is the context of the organisation?	internal / external issues, stakeholder needs, high level corporate plans, other organisational management systems, culture
AM Objectives	What are the objectives of the organisations approach to AM?	AM policy alignment, hierarchical objectives derived from corporate plan, how assets contribute to achievement of objectives, how AM fundamentals (value, assurance, alignment, leadership and adaptability) are defined, levels of service, drivers
Asset Portfolio (high-level description)	What assets compose the asset portfolio?	capability, performance, challenges, risks and opportunities, future demand etc
AM Framework	What is the approach to AM?	processes, assumptions, parameters (e.g. growth / discount rate etc), life cycle vs functional, systems, documentation, interfaces, co-ordination, control etc
Decision Making	What criteria is used to make AM decisions, incl. for prioritisation?	stakeholders and their expectations, drivers, objectives, AM policy, performance metrics, cost, risks, opportunities, AM fundamentals etc
Capabilities	What capabilities / competencies are required by the organisation to deliver the AM strategy now and into the future?	human, technology, leadership, financial, contractual, information
AM Support	What AM system elements can support a more efficient AM approach?	governance, roles and responsibilities, continual improvement, authorities, document management
AMP Development	What is the relationship of the SAMP to the AMP?	scope, guidance, content, challenges, limitations etc

Note: ISO 55002 recognises that the content expected of a SAMP and AMP can be captured within a single document. The recommended SAMP content therefore does not require a separate document, noting scalability concerns for smaller EDBs or potentially for those EDBs that take strategic direction concurrently from other business documents. If combining SAMP and AMP content into one document, effort should be made to delineate strategic and tactical content into clearly defined sections, whereby strategic elements need not be updated as frequently as tactical elements (for consideration with regards to how often such should be disclosed).

### 3.3. Reviewing how the needs and expectations of stakeholders is included in asset planning.

Attachment A describes the mandatory disclosure requirements with respect to AMPs, which includes the following two sections that reference stakeholders

## 3.6

*A description of stakeholder interests (owners, consumers etc) which identifies important stakeholders and indicates-*

- 3.6.1 how the interests of stakeholders are identified;*
- 3.6.2 what these interests are;*
- 3.6.3 how these interests are accommodated in asset management practices; and*
- 3.6.4 how conflicting interests are managed.*

## 8.

*The AMP must describe the basis on which the target level for each performance indicator was determined. Justification for target levels of service includes consumer expectations or demands, legislative, regulatory, and other stakeholders' requirements or considerations. The AMP should demonstrate how stakeholder needs were ascertained and translated into service level targets<sup>2</sup>.*

ISO55001 clause 4.2 Understanding the needs and expectations of stakeholders describes the following

## 4.2

*The organisation shall determine*

- » the stakeholders that are relevant to the asset management system;*
- » the requirements and expectations of these stakeholders with respect to asset management;*
- » the criteria for asset management decision making;*
- » the stakeholder requirements for recording financial and non-financial information relevant to asset management, and for reporting on it both internally and externally<sup>3</sup>.*

<sup>2</sup> Commerce Commission New Zealand. 2023. Electricity Distribution Information Disclosure Determination 2012. ISBN: 978-1-991085-23-8.

<sup>3</sup> International Organisation for Standardisation. 2014. Asset management – Management systems – Requirements (ISO Standard No. 55001:2014, clause 4.2).

Similarities between requirements within the Determination and those within ISO 55001 are as follows

1. stakeholders will be identified, and
2. stakeholder interests / requirements / expectations / needs will be determined.

In addition to these similarities, ISO 55001 seeks to understand how stakeholders influence decision making criteria and their requirements for recording financial and non-financial information. The Determination on the other hand seeks to identify the relative importance of identified stakeholders, the process for identifying stakeholders' interests and incorporating them within AM practices and translated into service level targets. The differences identified between the Determination and ISO55001 ultimately lead to similar outcomes, whereby it is expected that the stakeholder has opportunity to influence decision making / service level targets.

As a whole, the EDB AMPs typically addressed requirements, whereby they identified

- » relevant stakeholders,
- » what their interests are (therefore largely covering for needs and expectations),
- » how they've contributed to asset planning via the development of business drivers and/or objectives and/or service level targets, and
- » how conflicting interests are addressed, which is mostly through the prioritisation of drivers and/or objectives.

The text used throughout most AMPs to explain the approach to stakeholder engagement would benefit from being more descriptive of the engagement process, highlighting how stakeholders were engaged and characteristics of the information exchange, including intended outcomes.

## Suggested Content (condensed example)

At Company XYZ, five main stakeholder groups have been identified. Stakeholder groups A and B were heavily engaged during development / update of the AMP via multiple facilitated workshops to identify and prioritise matters that included ... Stakeholder group C meanwhile participated in an optional survey and follow-up presentation session that played-back common survey result themes. These themes included ... Stakeholder groups D and E were randomly contacted via phone to confirm relevance and alignment of the findings from stakeholder groups A, B and C, whereby no additional matters or themes were identified.

The matters and themes Identified throughout the stakeholder engagement process were considered alongside and helped inform existing asset management drivers and objectives, as well as being captured as external issues for consideration within the decision-making frameworks embedded within the Asset Management Plan.

Having confirmed with respective stakeholder groups their preferred outcomes in response to the matters and themes identified, quarterly performance reports will review the achievement of stakeholder outcomes and consider required amendments to the program to ensure satisfactory achievement of ...

Future stakeholder engagement will ideally consider ...



Alternatively, consistency of approach across EDBs for stakeholder engagement via a guideline document would likely benefit regulatory assessment (periodic monitoring) and ultimately continued improvement.

## Example

The Australian Energy Regulator (AER) produced the Better Resets Handbook (Dec-21) “to encourage networks to better engage and have consumer preferences drive the development of regulatory proposals”. Whilst AER acknowledge the challenges confronted by consumers in identifying expectations, “by encouraging network businesses to improve their consumer engagement, consumers will be central to the regulatory determination process. This will allow consumers to have a greater influence over the development of regulatory proposals by network businesses and, more importantly, ensure network businesses deliver outcomes valued by consumers.”

The Better Results Handbook wasn’t prescriptive but nonetheless provided clear expectations on consumer engagement throughout Section 3 with several case studies exemplifying the approach.

### 3.4. Asset planning risk and criticality assessments.

*ISO 31000:2018 Risk management – Guidelines* (hereafter referred to as **ISO 31000**) is the international risk management standard that provides principles, a framework and a process for managing risk. ISO 31000 is extensively referenced throughout the suite of AMPs highlighting that standardised risk management is a well-entrenched practice, a process that is perceivably captured within a separately documented corporate risk management framework orientated document for most EDBs (although several AMPs describe the risk

management approach applied to the asset portfolio in providing the full AM picture). ISO 31000 alignment supports the ISO 55001 clause 5.1 requirement that “*the approach used for managing risk in asset management is aligned with the organisations approach for managing risk*”, whereby processes are established for the identification, assessment, treatment and monitoring of risks and opportunities. It is also required that AM related risks are considered in the corporate approach to contingency planning.



Asset criticality is discussed as a concept within ISO 55002 but without any firm guidance on how it should be established. It is noted that most EDBs reference asset criticality, albeit many acknowledge that as a decision-making parameter asset criticality is yet to be established and/or integrated. The Electricity Engineers Association (**EEA**) Asset Criticality Guide (2019) is widely referenced as the direction or approach that many EDBs will pursue or are pursuing to better inform their AM decisions.

Whilst the approach to defining asset criticality can vary in accordance with business requirements (i.e. no single standardised approach), it is acknowledged that asset criticality most closely aligns to Consequence of Failure (**CoF**) of the asset. As an additional input to AM decision making frameworks, asset criticality has for some EDBs been tabularised with asset health indices to provide a matrix approach to the decision-making input, whereby asset health is most closely aligned to Probability of Failure (**PoF**) of the asset. Like for asset criticality, EEA has published an Asset Health Indicator Guide (2019) that some EDBs have referenced. With the matrix identifying as an approach to determining asset risk, hence acknowledging the matrix axes are PoF and CoF as per a corporate risk matrix, the alignment of this AM risk approach to that of the corporate risk approach should prove amenable for all EDBs.

Many EDBs still apply a qualitative approach to asset criticality / health / risk. The next obvious maturity step is a quantitative approach whereby the overall cost of failure is multiplied by the likelihood of failure to determine an annualised risk cost. The annualised risk cost can be applied across the asset portfolio to determine any number of approaches, whereby asset types, regions, age profiles etc can be comparatively analysed to determine an investment program that best mitigates the overall annualised risk cost. Such maturity is evident in the DNO

Common Network Asset Indices Methodology (Apr-21)<sup>4</sup>, developed by a working group consisting of all six main EDBs from Great Britain and endorsed by the industry regulator (Ofgem). The DNO methodology introduces quantitative asset indices for consistency of application for PoF and CoF in better justifying financial decisions. Whilst PoF and CoF are typically multiplied for an asset health index / risk that is capable of ranking assets, quantification of PoF or CoF alone will improve decision making and justification.

Like other industries, risk is easily applied as a decision-making input (often the lead parameter, in concert with performance and cost). The constant challenge posed by ISO 55001 then becomes how to incorporate opportunities within the same framework. As previously discussed, opportunities can be described as positive risk, whereby 'the effect of uncertainty on objectives' is positively influenced in allowing the business to benefit from their realisation. The posture of an organisation in determining risks improves when also considering opportunities. There are any number of instances where the PoF x CoF matrix, when overlaid with other decision-making inputs (e.g. proximity to geographic location), can help to realise benefits (Example: economy of scale when further reducing fleet risk by improving asset health for assets adjacent to those of higher criticality that would otherwise have been considered of suitable condition to not warrant any action being taken, i.e. opportunistic rehabilitation).

Whilst it is acknowledged that the EEA approach to asset criticality and asset health indicators will support improved AM outcomes, notably if combined across a matrix approach (other combinations with different performance metrics may provide improved outcomes), the overall 'value' benefit achieved by asset planning risk and criticality assessments should also consider how opportunities are incorporated.

<sup>4</sup> Working Group comprising representatives from all six GB DNO Groups and NIE Networks, v2.1 April

2021. DNO Common Network Asset Indices Methodology.

### 3.5. Asset management performance metrics being utilised by EDBs.

In accordance with ISO 55001 clause 9.1 (Performance evaluation – Monitoring, measurement, analysis, and evaluation), *the organisation shall evaluate and report on*



The asset performance



The asset management performance, including financial and non-financial performance



The effectiveness of the asset management system

The metrics utilised by EDBs relate to both asset performance and AM performance (whereby the delineation between the two is often not well understood or articulated). Importantly, these metrics not only inform AM practitioners where to focus improvement efforts, but also keep customers and interested stakeholders informed, which is a requirement of ISO 55001.

Asset / AM performance metrics have traditionally been lag indicators focussing on maintenance, which recognises the origins of 'life cycle' AM as being born out of maintenance (which was once considered the foremost life cycle phase) and post event data (i.e. initial metrics only used post event data, hence were

barely leading). Mean Time Between Failures (**MTBF**), Mean Time To Failure (**MTTF**), Availability, Reliability, Utilisation, Planned vs Unplanned Work Ratio, Overall Equipment Effectiveness (**OEE**), Schedule Compliance etc are all metrics that relate to activity in the Operations & Maintenance (**O&M**) life cycle/s. Whilst these metrics are still relevant in most industries, they are also legacy from the industries that were originally at the forefront of AM maturity, e.g. aviation, mining, heavy manufacturing etc. Lead indicators that are more predictive of events have evolved with AM maturity, whereby a blend of lead and lag indicators is typically preferable for overall performance reporting.



### Traditional asset / AM performance metrics within the electricity industry such as

» System Average Interruption Frequency Index (SAIFI)

» System Average Interruption Duration Index (SAIDI)

» Customer Average Interruption Duration Index (CAIDI)

» Faults/100km

» Load Factor

» Load Ratio

» Capacity and Utilisation

» Interruptions and Disruptions etc

are network performance orientated to support standardised customer reporting in relation to agreed service levels, whilst also informing AM practitioners what may be required during the development of reactive strategies to address identified performance issues. These electricity-orientated metrics aren't too dissimilar to the traditional maintenance metrics previously highlighted, however they do tend to be more orientated towards lagging indicators.

AMPs have mostly included the electricity orientated metrics (which includes responsiveness to required Schedules), often in relation to how they address objectives, which typically involve safety (public and workplace), customer experience, service / network / asset performance, environmental and cost efficiency.

AMPs have barely included performance metrics beyond these, or those otherwise being reported via the Information Disclosure Schedules. Numerous AMPs however have incorporated asset health-oriented indices, as described in the EEA Asset Health Indicator Guide, which involve the aggregation of any number of metrics (i.e. data sets), such as asset age, life expectancy, observed / monitored condition, environmental conditions at location, asset performance deterioration etc. Like the EEA Guide, the aforementioned British '*Distribution Network Operator Common Network Asset Indices Methodology*' has also been referenced by some EDBs as providing preferred guidance on how to better support their decision-making frameworks, including what data sets can be included within an asset health index.

Leading indicators for performance evaluation, as opposed to lagging indicators, are more prevalent in the AM performance metrics rather than asset performance metrics. Leading indicators forewarn of potential impact to objectives, strategies, service levels etc being achieved. Examples of leading indicators include

<p>%</p> <p>Maintenance activity finalised as per schedule</p>	<p>%</p> <p>Maintenance activity requiring re-work (i.e. work not conducted satisfactorily first time)</p>	<p>%</p> <p>Safety equipment utilisation compliance (i.e. safety equipment not being used effectively)</p>	
<p>%</p> <p>Customer first response (i.e. customer enquiry satisfactorily responded to at first attempt)</p>	<p>%</p> <p>Satisfied / motivated employees (i.e. employees are happy at work)</p>	<p>%</p> <p>Process efficiency (i.e. time wastage is not impacting output)</p>	<p>%</p> <p>Project gating to schedule (i.e. project approvals occur as per plans)</p>

The greatest challenge confronted by EDBs regarding performance metrics is the availability and quality of relevant data sets, that are accurate, complete, reliable, relevant, and timely. Whilst it is recommended EDBs seek greater balance between leading and lagging AM indicators, particularly the interaction between the two (i.e. a leading indicator typically highlights whether a lagging indicator is likely to be achieved), the cost of data accessibility needs to be considered for any new metrics being sought.

### 3.6. Identify and review AMP performance metrics.

The intent of an AMP performance metric is to highlight the success or otherwise of the processes and intended outcomes embedded within the AMP. Noting current AMP content is largely that of what is otherwise identified more broadly for an AMS, ISO 55002 (clause 9.1.2.3) describes the following performance metrics for the AMS, notably in reference to what is otherwise achieved during management review (ISO 55001 clause 9.3)

- » *the effectiveness of the organisations achievement of its asset management policy, strategies and objectives;*
- » *changes in internal and external issues and risk profile relevant to the asset management system;*
- » *the efficiency with which the organisations asset management policy, strategies and objectives are met;*
- » *the performance of activities outsourced to external providers;*
- » *measures to monitor non-conformities;*
- » *the effectiveness of corrective actions to the management system, including actions from previous reviews;*
- » *compliance with the internal audit plan and closure rate of audit actions.*



## A synopsis of these seven suggested requirements highlights the need to

- » be effective and efficient when seeking to achieve the strategies / objectives identified in higher order documentation,
- » monitor internal and external issues that may influence AM outcomes,
- » monitor outsourced activities that may influence AM outcomes,
- » keep abreast of inputs to and outputs from continuous improvement actions.

Whilst most AMPs didn't directly acknowledge these requirements, they did nonetheless align to their high-level documented guidance (i.e. business objectives / strategies, AM policy / objectives etc) and subsequent achievement thereof, albeit less so for assessing how effective and efficient such compliance was. Monitoring of internal and external issues and continuous improvement actions were similarly a common acknowledgement throughout most AMPs.

Some AMPs included reference to AMMAT in driving overall improvement to intended AMP outcomes. The significant benefit of this approach is the self-benchmarking opportunity consistent assessment offers, whereby comparison to previous results cyclically identifies target areas for improvements. The potential downside to such is self-assessment, noting potential bias in scoring.

The intention for performance management is to drive overall improvement (i.e. the "Check"

phase within the Plan-Do-Check-Act cycle) rather than being exclusively compliance orientated. Noting this, additional metrics to be considered for improvement of the AMP / AMS ideally focus on the lagging indicator of employee satisfaction, whereby associated leading indicators include AM competence, defined roles, documented process etc. These types of metrics support business culture, a key tenet of successful AM businesses, whereby employees want to work, want to succeed and want to improve.

Noting the compliance aspect associated with AMP content, many AMPs include an appendix that confirms where each requirement from the Determination is satisfied. Whilst the reference appendix alone is not considered a performance metric, it points towards the identification of regulatory compliance when assessed, thus confirming whether the AMP satisfies requirements.

### 3.7. Review the effectiveness of AMMAT (Schedule 14).

The Asset Management Maturity Assessment Tool (**AMMAT**) is based upon the Institute of Asset Management (**IAM**) PAS 55 Assessment Methodology (**PAM**) that was first developed in 2009. AMMAT consists of 31 questions, which were lifted from the 121 questions contained within the IAM PAM (that has been superseded twice since 2009 with SAM and SAM+, mostly in relation to ISO 55001 alignment, noting that PAM was in response to PAS 55).

In its current format, AMMAT addresses 17 of 22 ISO 55001 clauses (most of which are in relative terms). The clauses that are not included relate to

- » Development of an AMS
- » Confirmation of AMS scope
- » Awareness
- » Change management
- » Management review.

The three clauses relating to the AMS and management review (a, b and e) are loosely addressed by Section 3.14 (ii) of the Determination, whereby “*an overview of asset management documentation, controls and review processes*” is required. Section 3.15 of the Determination relates to communication, which roughly covers for awareness (c). Change management (ISO 55001 clause 8.2) has not

been addressed suitably within the Determination, despite a key outcome of information disclosure is for the Commission to track changes over each regulatory period, i.e. change needs to be controlled internally.

As an unverified self-assessment, the AMMAT is effective for self-comparison. Numerous EDBs use regular AMMAT updates to comparatively assess progress on improvement initiatives, whereby each self-assessment update can lead towards the generation of an improvement program of works. Progressive improvement with regards to the 31 questions likely has favourable outcomes for the AM maturity of respective EDBs, however full appraisal of the PAM (or SAM / SAM+) 121 questions would provide greater benefit to the AM maturity of each EDB. It is noted that the Commission’s adoption of the 31 questions is intended to streamline the maturity assessment and thus the regulatory burden imposed on EDBs, who realistically should fulfil AM obligations to suit business needs rather than regulatory requirements.

AMMAT has the potential to be used as a benchmarking tool across EDBs. Noting that AMMAT is effectively a light version of PAM, a more detailed suite of maturity questions beyond that currently captured within AMMAT would benefit any benchmarking outcomes. As a benchmarking tool, any industry exercise would require scrutiny by an impartial assessor / verifier to validate and cross-reference the self-assessments. Such impartial verification potentially improves outcomes for many EDBs even if benchmarking is not pursued, acknowledging that self-assessments are typically biased in favour of higher scores.

### 3.8. Recommendations (on areas to improve the Commission's information disclosures).

Information disclosures identified within the Determination include the AMP and suite of Schedules (34 in total = 15 financial, 12 asset / network, 1 AM maturity self-assessment, 6 supporting notes). By their very nature, information disclosures are intended to provide interested stakeholders assurance that the activities of the EDB are at a level of performance commensurate with expectations and corresponding service levels represent best value (which is typically referenced against electricity supply charges that the customers pay). Such assurance is not only afforded by response to Determination requirements but can also be found by aligning to ISO 55001, to which the following recommendations allude in pursuit of greater efficiencies.

The existing AMP format is invariably a documented representation of how AM is conducted within EDBs, which is not the intent of the AMP document from an ISO 55001 perspective. By separately documenting AM strategy, processes and providing clearer representation of the AMS / AM Framework, a more purposeful AMP would prevail.

Clarity of purpose for the AMP, i.e. regulatory driven or business driven, should realise efficiencies for EDBs. A tactically orientated AMP would likely better align to most EDB business environments, although such change would require a strategically orientated document as guidance, e.g. a SAMP (ISO 55001 clause 4.4).

#### IMPROVEMENT 1

AMP content should exclusively focus on tactical aspects of how the assets support achievement of business objectives, as per Table 3.

#### IMPROVEMENT 2

A SAMP or Asset Management Strategy, as per Table 4, will provide clear strategic direction for what an AMP is endeavouring to achieve. Much of the AMS-orientated content in the existing AMP format can be transferred to the proposed SAMP content.

Note: from a scalability perspective, ISO 55002 recognises that the content expected of a SAMP and AMP can be captured within a single document. The recommended SAMP content therefore does not require a separate document, noting scalability concerns for smaller EDBs or potentially for those EDBs that take strategic direction concurrently from other business documents.

### IMPROVEMENT 3

The most significant gaps between ISO 55001 and current Determination AMP content include (1) opportunities, (2) competence and (3) performance reporting. These three aspects should be clearly addressed in future disclosures to ensure ISO 55001 alignment.

Opportunities (ISO 55001 cl. 6.1) – Risk Management planning ideally consider opportunities alongside risks.

Competence (ISO 55001 cl. 7.2) – employee satisfaction, a key leading indicator for overall company / AM performance, is often reflective of an active competence management framework, whereby EDBs are investing in their most important resource.

Performance Reporting (ISO 55002 cl. 9) – defined expectations for how, when, where and to whom reporting will be received clarifies for all stakeholders any requirements and expectations sought.

Whilst performance reporting has been identified as a gap, the performance metrics being utilised can also be improved. Section 3.5 of this report identified the preferred balancing of performance indicators, whereby both lead and lag indicators are ideally used. Performance monitoring is intended to paint the best picture possible for AM practitioners to provide thorough insights for decision making, whilst also providing stakeholders with the information they seek.

### IMPROVEMENT 4

Balance the KPIs currently being reported to a preferred blend of leading and lag indicators.

Presuming there are multiple stakeholders interested in the Information Disclosure Schedules, it is not clear who the different stakeholder groups are, how they're engaged, what information they're interested in nor the frequency with which they would like to receive such information (achieving such would support alignment to ISO 55001 clause 7.4). Tailoring of AM documentation in consideration of primary stakeholders can aid delivery of key messages amongst what is currently a mass of information.

### IMPROVEMENT 5

EDBs and/or the Commission should document stakeholder needs, expectations, requirements and engagements with respect to the data / information from submitted Information Disclosure Schedules. Such is ideally captured in the SAMP / Asset Management Strategy (in accordance with ISO 55001 cl. 4.2), which may lead to amendment to how data / information is captured in better serving key stakeholders.

Continuous improvement (ISO 55001 clause 10.3) ideally focusses upon processes as they can be metricised against numerous parameters (e.g. time, resource level, cost etc) to highlight improvement. Documented processes better support the internal audit program (ISO 55001 clause 9.2), which in turn supports clearer internal reporting (ISO 55001 clause 9.1), notably for management review (ISO 55001 clause 9.3). With clearer representation of the AM processes, the AMS is more easily defined and scoped (ISO 55001 clause 4.3 and 4.4).

## IMPROVEMENT 6

To better support continuous improvement endeavours, AM processes that constitute the AMS should be clearly documented. Note: The level to which processes are documented will be dictated by the maturity and resource availability of the EDB.

Understanding that information disclosures are on an annual cycle, some information perceivably doesn't require updating at such frequency (notably for multi-year projections). It is assumed that changes within some existing asset / network Information Disclosure Schedules (including AMMAT) are rarely of material significance to require annual updating. It is acknowledged that monitoring of such likely happens at least annually within respective EDBs, however external reporting is deemed of minimal value add. Whilst the value provided by these Schedules is not being questioned, their frequency of disclosure should be reviewed and preferably aligned to changes that are of greater materiality.

## IMPROVEMENT 7

Review the submission timeframes for Information Disclosure Schedules to confirm value add, with the intent to better support EDBs focus on business rather than regulatory requirements.

Schedule 14, AMMAT, represents an unverified self-assessment of asset management maturity, the results of which drive improvement activity within many EDBs. The themes from most ISO 55001 clauses are loosely considered with the current AMMAT format, however change management is not. The subjective nature of self-assessment potentially leads to outcomes that are self-fulfilling rather than being a true reflection of maturity status. Whilst annual assessment of asset management maturity provides benefit to EDBs, facilitated comparison of maturity between EDBs will provide a truer understanding and appreciation of their maturity in comparison to peers within a relatively controlled environment.



## IMPROVEMENT 8

The AMMAT question set should include a question on the approach to and governance of change management.

## IMPROVEMENT 9

AM maturity uplift would likely result from an independent third party (i.e. asset management consultant) comparatively reviewing the AMPs to ensure consistency of assessment (between EDMs) and provide a benchmarking opportunity.

### 3.9. Development roadmap for improving & analysis of AMPs, with the aim to improve level of assurance from AMPs.

Noting the Improvements identified in the Recommendations section above, the following implementation order is suggested to optimise resources in maximising the benefits realised. Improvements 5 and 7 are deemed quick wins, are not related, and can be pursued concurrently. Improvements 1 and 2 are structural in nature, are related hence will occur concurrently and should only require a 're-ordering' of existing information. Improvement 6 is a significant undertaking but will underpin most if not all future improvements. Improvements 4 and 9 are separate undertakings that can occur concurrently as they relate to 'already received' information and 'to be received' information. Improvements 3 and 8 both relate to better alignment of the Determination to ISO 55001 and whilst not related, will benefit from being addressed concurrently.

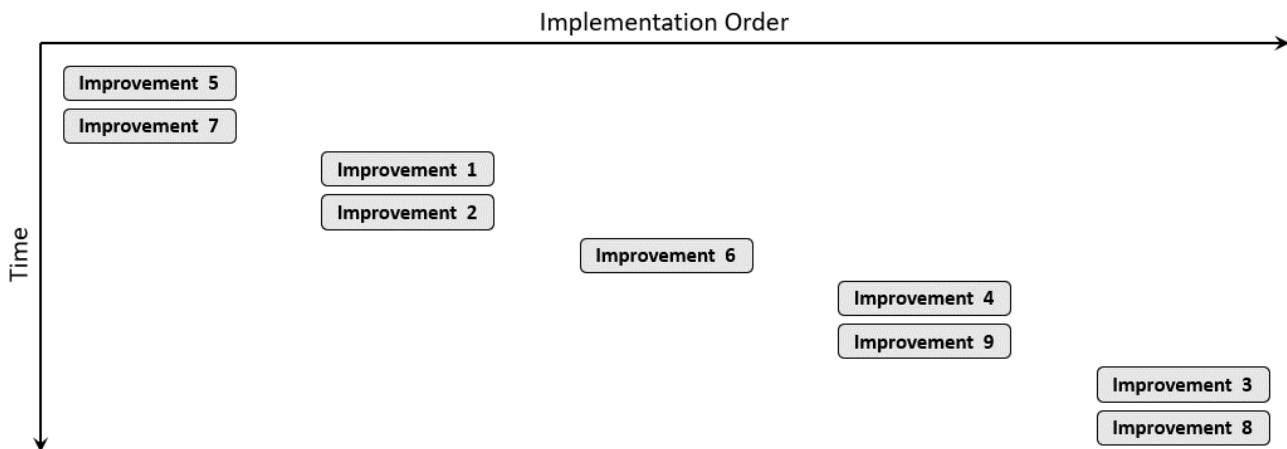


Figure 1: Improvements Implementation Order

### 3.10. Spotlighting EDBs with good electricity industry practice

The following EDB spotlights on good electricity industry practice, which were evident from the suite of AMPs reviewed, are provided in the context of the questions posed throughout this report relating to performance metrics, asset planning risk and criticality assessments, and stakeholder involvement in asset planning.



By providing the following spotlights, it should be noted that some AMPs documented an explanation of a methodology, whilst others merely referenced an approach without providing any specific application detail other than the results thereof. The following examples therefore reflect AMPs that provided the necessary detail or structuring warranting their spotlighting. It was evident that those with ISO 55001 certification, including those aligned but not certified, had much stronger asset management approaches (and therefore AMPs).

This process is not intended to suggest one approach is better than another, as EDBs should

do what is right for their context, stakeholders, resources, maturity, capability etc. There is no right or wrong with all of the processes assessed throughout the suite of AMPs. The following spotlights have merely been flagged to recognise a unique and/or well-structured approach that others may consider pursuing in full or part. Asset management practitioners often speak of the journey, whereby spotlighting good electricity industry practice helps to identify slightly different pathways for the journey to occur, thus contributing to the overall improvement outcomes that are continuously realised along the journey.

## PERFORMANCE MANAGEMENT

***Buller Networks provides a logically stepped approach to performance management by outlining a process, information sources, targets (service levels) and performance appraisal.***

Performance Monitoring Approach (Figure 13, pg 29) highlights, via a process-orientated representation, how consumer and regulatory requirements are met. Performance Management Documentation (Table 13, pg 39) highlights the various documents that inform performance measuring activities, which cascades into Section 3 Service Levels that provides targets and commentary on how each service level was developed. Section 8.2 Performance Against Targets (pg 124) rounds out performance management by discussing the achievement of targets and any trend observations.

***Counties Energy presented their performance assessment clearly throughout their AMP.***

Using SAIFI and SAIDI as the example, targets (Service Levels) were clearly defined in Section 4.5 (Tables 4-3, 4-4, 4-5 and 4-6, Figures 4-6 and 4-7) with commentary referencing analysis thereof in a subsequent section of the document. Section 6.1 documents the philosophy for managing planned and unplanned outages, whilst Section 6.2 documents the strategy for both. Section 6.3 unpacks what constitutes an event (Table 6-1) and tabularises historical data (Tables 6-2, 6-3, 6-4, 6-5 and 6-6) whilst Section 6.4 analyses the most recent annual data (Tables 6-7, 6-8, 6-9, 6-10, 6-11 and 6-12) for the categories identified in Table 6-1. Section 6.5 reviews major events that had a significant contribution to the results throughout Section 6.4, whilst Sections 6.6, 6.7 and 6.8 each identify improvements in reflecting upon the performance metrics. This approach highlights alignment to the Plan-Do-Check-Act method.

***Unison Networks detail their Service Levels in Section 3 in response to nine (Strategic) Asset Management Objectives (AMO)***

documented in Section 2. Section 3 opens with a Purpose statement, clarifying what is to be monitored and measured, to what frequency and method, and how analysis and evaluation will occur. Section 3.4 provides the measurement/s, performance target/s, justification and historic performance for each AMO. Section 8.4 (Service Level Performance) compares performance against the service levels defined in Section 3 and discusses any variances.

***WEL Networks has established performance objectives in four key areas; safety, customer experience, cost efficiency and asset performance, which reflect outcomes sought by stakeholders and are directly linked to the business plan, strategic plan and in support of the corporate vision.***

Section 5 details each objective and provides further detail for sub-objectives, each informing lead and lag indicators. Initiatives are discussed in response to performance outcomes.

## ASSET RISK AND CRITICALITY

***Orion uses an asset criticality and health matrix to help justify interventions.***

The graphical matrix representations in Section 6 that compares current state to a 10-year do nothing and 10-year targeted intervention outcome clearly highlights how criticality is used to inform activity that reduces asset risk.

***Transpower uses annualised risk costs to inform investment decisions,***

also using asset criticality across five dimensions (service performance, public safety, workplace safety, environmental and direct cost).

***Unison Networks documented a comprehensive AMS Risk Assessment and Risk Treatment Process***

(Figure 7-8) that captures how a risk is identified, analysed, evaluated and treated / monitored. The process highlights the interaction of key risk management activities, which includes asset criticality ranking, asset health reporting, project investment analysis, project works delivery, work scheduling and continual improvement.

## STAKEHOLDER MANAGEMENT

### ***Alpine Energy identify Customer Experience as a strategic pillar,***

which is driving a customer and stakeholder engagement program. Feedback from customers has been captured within five main themes (Customer Service, Health & Safety, Our Work Plans, Preparing for the Future and Sustainability), with each theme identifying a number of improvement responses.

### ***Orion outlined a process for identifying stakeholder interests (Figure 2.14.2) as well as for how customers influenced AMP development (Figure 2.11.1).***

Stakeholder interests have been clearly articulated (Figure 2.14.1) whilst Section 4 is dedicated to customer, notably Turning Listening Into Action (Section 4.4).

### ***The Power Company clearly identifies Stakeholder Interests (Table 8), how these interests are identified (Table 9) and how the interests are accommodated***

(Table 10) across their five objectives of Safety, Viability, Pricing, Supply Quality and Compliance, which are prioritised (in this order) when managing conflicting stakeholder interests.

### ***Vector has implemented a Customer Engagement Framework (Figure 4-4) that supports their Customer Centricity approach***

(Figure 4-1). This has assisted Vector to identify many improvement opportunities.