


Energy Losses Management Programme


Establishing Appropriate Process Refinement and Resource Requirements to Ensure Sustainability in Curbing Energy Losses

SARPA Presentation

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Eskom Distribution

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Introduction

- Managing energy losses sustainably is a major challenge for many utilities, especially in developing countries due to:
  - Limited human and financial resources
  - Misaligned internal processes
  - Socio-political pressures
- In Eskom Distribution, energy losses escalated from approximately 4% to 6% between 2002 and 2006
- Eskom Distribution initiated the Energy Losses Programme (ELP) to address the increasing energy losses trend
- Resourcing for sustainability is focused on building capacities and competencies to create sustainability

Eskom Distribution Challenges in Managing Energy Losses

- Inadequate or limited focus on burning loss areas due a mismatch between available and required skills
  - Existing skills complement is geared to focus on a specific customer class e.g. residential and not necessarily industrial and commercial
- Conflicting priorities between departments
- The lack of independent quality assurance mechanisms
- Fragmented accountabilities when managing energy losses
- Massive financial resources required to manage losses

ELP Objectives to Ensure Sustainability

- Streamlining of business and value chain processes related to energy losses management
- Addressing organisational structural deficiencies
- Addressing human resource deficiencies and ensuring effective utilisation of all available resources
- Reassigning accountabilities and responsibilities where required
- Aligning relevant Key Performance Areas within the organisation

Eskom Distribution Energy Losses Management Strategy

Strategic Objective	***Arrest*** **the upward energy losses trend**	***Reduce*** **the trend to an acceptable level**	**Ensure *sustainability* at an acceptable level of energy losses**	
Actions	1 **Audit, measure and fix customer installations**	2 **Ring fence electrical networks to balance energy delivered**	3 **Implement tested technologies**	4 **Ensure sustainability**
Approach	▪ Use business intelligence to identify high loss customers ▪ Resource and prioritise customer audits ▪ Co-ordinate customer audits ▪ Measure results nationally	▪ Identify network based boundaries ▪ Install metering to measure energy flows ▪ Audit and clean data per measured area ▪ Balance energy inflows and outflows to determine anomalies	▪ Investigate all possible options to manage; reduce energy losses ▪ Pilot and test scalability of identified technologies ▪ Implement and measure benefits of tested technologies	▪ Streamlining of business and value chain processes ▪ Addressing organisational structural deficiencies ▪ Addressing human resource deficiencies ▪ Reassigning accountabilities and responsibilities where required ▪ Aligning relevant Key Performance Areas

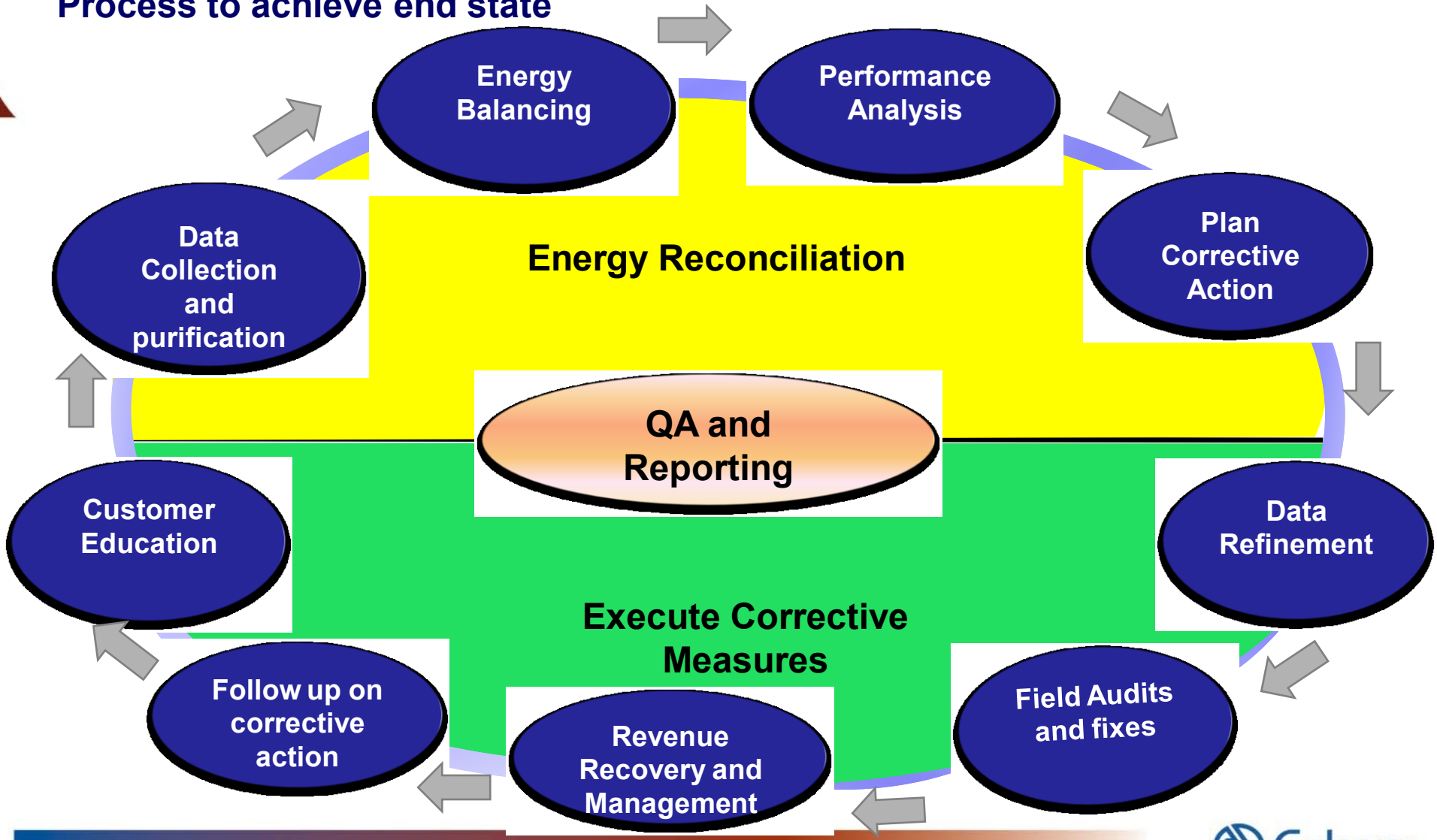
5 **Communicate and Educate Stakeholders**

Areas of Analysis

Value Chain Analysis	Resource and Organisational Design Analysis	Technology and Environment Analysis
•Review and understand the focus areas of each value chain •Identify the losses managements elements of each value chain •Understand the losses specific integration points of the value chains	•Research and align best practise approaches in effective losses management •Understand the current operating model •Determine deficiencies and additional requirements to align with best practises	•Perform external environmental scan •Research available technologies used in the management of losses
•Identify gaps in the process if any	•Develop and implement plans to address deficiencies while making necessary funds available to support the process	•Map the alignment between organisational requirements and available technologies
•Address and improve on areas on concern	•Review and confirm achievement of desired end state •Amend strategy if required	•Pilot and implement relevant technologies

Energy Losses Management Process

Process to achieve end state



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Energy Reconciliation

Primary Purpose	**To equip the business with the ability to determine accurately the level of losses which in turn would trigger corrective action**
Key Activities	Balancing energy at different levels of the electricity distribution network through the installation and commissioning of statistical metering
	Analyse consumption patterns of customers relative to the amount of energy consumed in that specific area
	Identify anomalies from energy balancing and consumption patterns analysis as a trigger for corrective actions
Results	**Comprehensive energy reconciliation will assist the organisation in identifying high energy loss areas and planning corrective measures**

Execute Corrective Measures

Primary Purpose	**To develop and implement comprehensive plans to target high loss areas**
Key Activities	■ Co-ordination of audits i.e. physical meter verifications, to determine meter tampers and curb meter tampers ■ Follow up on problems identified during audits, to ensure full benefits are achieved ■ Education of customers to encourage desired behaviour ■ Data correction and refinement ■ Recovery of revenue for compromised installations ■ Effective revenue management specifically in problem areas
Results	**Once corrective measures are instituted, the organisation has to ensure quality assurance and monitoring plans are put in place**

Quality Assurance and Reporting

Primary Purpose	**To ensure business compliance in reconciling energy and executing corrective actions** **To ensure visibility is created through proper reporting**
Key Activities	Ensuring accurate energy balancing through seamless availability of statistical metering information
	Confirming and validating problems identified as per predefined standards
	Increasing visibility through reporting of losses management activities
Results	**Ensures compliance**

Critical Contributors to Sustainable Losses Management

Key Learning	**It is crucial that each utility consider its unique environment and develop a losses management support system that best suit it**
Key Roles Required	■ A focused unit to manage energy losses ■ Clearly defined RACI's for the activities related to energy losses management ■ Alignment between energy losses management and the associated results ■ The ability to measure energy inflows and outflows within electrical networks in order to institute corrective actions if necessary ■ The use of data analysis techniques to identify high loss areas in order to priorities field work ■ Quality assurance of losses management activities ■ Creating awareness through internal and external stakeholder communications ■ An effective prosecution function

Critical Skills Required for Energy Losses Management

- Technical skills and competencies
  - Required for the physical audit of all metering categories
- Financial analysis and billing systems knowledge to identify and manage effective revenue recovery
- Project and contractor management skills and competencies to effectively manage outsourced work
  - Plan and execute audits
  - Data purification
- Legal and investigative skills to assist with the collection of evidence in order to achieve successful prosecution

Conclusion

- Setting direction and targets is key to achieving momentum and ensuring sustainability
  - A Scorecard
    - Priorities focus areas (KPA)
    - Monitors progress against set targets (KPI)
    - Measures contribution to the overall business performance
- Creating customer awareness and obtaining customer buy-in is critical to ensuring sustainability


Thank you


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