PRESIDENTIAL
CLIMATE COMMISSION
TOWARDS A JUST TRANSITION

PCC Synthesis Report on The State of Readiness for the JET in Municipalities

About this report

This report evaluates the state of readiness of ten South African municipalities in their journey toward the Just Energy Transition (JET). The analysis is rooted in the objectives of achieving a low-carbon, climate-resilient economy while ensuring social equity and inclusivity. The report synthesizes insights from diverse socio-economic and infrastructural contexts, reflecting the challenges and opportunities faced by municipalities in integrating renewable energy, diversifying economic activities, and modernizing infrastructure.

Through a comprehensive situational and gap analysis, the report highlights barriers such as financial constraints, governance inefficiencies, and capacity deficits. It also provides actionable recommendations to enhance readiness for the JET, aligning local actions with national climate objectives. The insights are intended to guide policymakers, municipal managers, and stakeholders in supporting a just and inclusive transition for all South Africans.

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- The Presidential Climate Commission Secretariat
- South African Local Government Association (SALGA)
- The Development Bank of Southern Africa (DBSA)
- The Cities Support Programme (CSP)
- C40 Cities
- The Government Technical Advisory Council (GTAC)
- The Just Energy Transition Investment Plan (JET-IP) Project Management Unit (PMU)
- The Department of Cooperative Governance and Traditional Affairs (COGTA)

- The Global Energy Alliance for People and Planet (GEAPP)

This collaborative effort reflects the collective commitment of South Africa's stakeholders to ensuring an equitable and sustainable energy transition. We are grateful for the ongoing contributions and support from all partners involved in this critical initiative.

Contents

1 Executive Summary

This report evaluates the state of readiness of ten South African municipalities in their journey toward the Just Energy Transition (JET), a critical initiative aligned with South Africa's commitment to achieving a low-carbon, climate-resilient economy while prioritizing social equity and inclusivity. Under the guidance of the Presidential Climate Commission (PCC), this transition involves transforming energy systems to reduce reliance on coal, create economic opportunities, and protect vulnerable communities.

The ten municipalities assessed are: City of Cape Town Metropolitan Municipality, City of Johannesburg Metropolitan Municipality, eThekwini Metropolitan Municipality, Nelson Mandela Bay Metropolitan Municipality, eMalahleni Local Municipality, Govan Mbeki Local Municipality, Polokwane Local Municipality, Matlosana Municipality, Tswelopele Municipality, and Hantam Municipality. These municipalities were selected to reflect diverse socio-economic and infrastructural contexts, ranging from large metros to smaller local municipalities.

National JET objectives include reducing greenhouse gas emissions, integrating renewable energy, creating equitable economic opportunities, and building resilience against climate change. The municipalities' performance against these objectives varies widely:

- **Large metros are leading the way:** Cities like Cape Town, Johannesburg, and eThekwini have developed comprehensive climate action plans, renewable energy targets, and initiatives such as integrating small-scale embedded generation (SSEG) and promoting energy efficiency. Cape Town, for example, aims to derive 35% of its energy from renewables by 2028 and achieve carbon neutrality by 2050.
- **Smaller municipalities struggle with capacity constraints:** Municipalities such as Hantam, Matlosana, and Tswelopele face significant challenges, including aging infrastructure, limited financial resources, and a lack of JET-specific strategic plans beyond basic Integrated Development Plans (IDPs).

Key Insights and Trends:

- **Infrastructure gaps and aging assets:** Aging energy infrastructure, including substations and distribution networks, is a common challenge, especially for smaller municipalities. This hinders their ability to integrate renewable energy and modernize their grids.
- **Financial health as a barrier:** Many municipalities are heavily reliant on Eskom for electricity supply, with limited financial capacity to invest in renewable energy initiatives. Cities like eMalahleni and Govan Mbeki are particularly burdened by debt to Eskom and struggle with revenue generation.

- **Energy losses and distribution challenges:** High rates of electricity losses—both technical and non-technical—are prevalent, exacerbating financial strain and reducing operational efficiency. For example, Matlosana experiences distribution losses of up to 38%.
- **Innovative practices and leadership from metros:** Leading metros, such as Johannesburg and Cape Town, demonstrate promising practices in renewable energy procurement, SSEG integration, and energy diversification. These metros are better aligned with national JET objectives and offer models that could be adapted by other municipalities.
- **Socio-economic focus:** Efforts to ensure the transition is inclusive and equitable vary. Some municipalities have job creation and upskilling programs, while others struggle with basic service delivery and cannot focus extensively on JET-related social initiatives.

The report emphasizes the need for targeted interventions to address identified gaps, including enhancing revenue management, diversifying funding sources, upgrading aging infrastructure, and building municipal capacity for JET implementation. A collaborative, multi-stakeholder approach is critical to achieving national JET objectives and ensuring that all municipalities, regardless of size, can contribute meaningfully to South Africa's energy transition.

2 The socioeconomic context of municipalities

South African municipalities are foundational to the country's governance and service delivery framework. Tasked with providing basic services such as electricity, water, sanitation, and waste management, municipalities are at the forefront of improving the quality of life for millions of citizens. Their constitutional mandate, articulated in Section 152 of the Constitution, charges them with ensuring sustainable service delivery, fostering social and economic development, creating a safe and healthy environment, and encouraging public participation in governance. Despite this ambitious vision, municipalities operate in a challenging socioeconomic landscape marked by stark inequalities, financial constraints, and service delivery backlogs.

Municipalities are intricately linked to the other spheres of government—national and provincial—under South Africa's cooperative governance framework. National policies, such as the National Development Plan (NDP) and Integrated Resource Plan (IRP), provide strategic direction for municipal activities. These policies aim to align local government efforts with national priorities, particularly in areas like renewable energy integration, climate resilience, and economic transformation. Provincial governments, meanwhile, play a supporting role, offering oversight and technical assistance to ensure municipalities meet their objectives. However, these relationships are often strained by limited resources, competing priorities, and capacity gaps.

One of the most pressing challenges facing municipalities is their escalating debt to Eskom, which reached R78 billion by mid-2024. This debt crisis has become a significant barrier to financial sustainability and service delivery. Municipalities struggle with low revenue collection rates, compounded by non-payment cultures in many communities and high technical and non-technical electricity losses. Cost-reflective tariffs, which could alleviate financial pressures, remain politically and socially sensitive, given South Africa's high levels of unemployment and poverty. The Eskom Debt Relief Programme, introduced in 2023, offers some respite by writing off arrears contingent on improved municipal performance. Yet, persistent inefficiencies and governance issues threaten the program's success.

The regulatory environment governing municipalities aims to provide a robust framework for accountability, efficiency, and transparency. Key legislation, including the Municipal Finance Management Act (MFMA) and the Electricity Regulation Act (ERA), governs financial management, procurement processes, and electricity distribution. Integrated Development Plans (IDPs), required under the Municipal Systems Act, serve as strategic tools for aligning municipal activities with broader developmental goals. Despite these regulatory frameworks, non-compliance remains a widespread issue, as highlighted by the Auditor General's findings.

The Auditor General’s reports consistently paint a grim picture of the state of municipalities. Widespread financial mismanagement, poor audit outcomes, and inadequate infrastructure investment are recurring themes. In the 2022/23 financial year, only 16% of municipalities achieved clean audits, while irregular, unauthorized, and wasteful expenditures reached alarming levels. These systemic weaknesses not only undermine public trust but also limit municipalities' ability to deliver essential services and support economic development.

Amid these challenges, municipalities remain pivotal to addressing South Africa’s socioeconomic inequalities and driving the transition to a more sustainable future. Urban centres like Johannesburg and Cape Town have made strides in integrating renewable energy and improving service delivery, while smaller, rural municipalities struggle with limited resources and outdated infrastructure. Bridging this urban-rural divide is crucial to achieving equitable development. Opportunities lie in leveraging public-private partnerships, enhancing revenue collection systems, and building capacity within local governments.

municipalities are central to South Africa’s developmental ambitions, but they operate in a complex and often constrained environment. Their ability to meet their constitutional mandate hinges on addressing systemic governance issues, improving financial sustainability, and fostering collaboration across government spheres. A focus on resilience, accountability, and innovation will be critical as municipalities navigate their role in service delivery, economic growth, and climate resilience.

3 Introduction

3.1 Background

The Just Energy Transition (JET) in South Africa is guided by a commitment to transitioning toward a low-carbon, climate-resilient economy, and society, while prioritizing social equity and inclusivity. The Presidential Climate Commission (PCC) was established in December 2020 to support and oversee the delivery of this transition. Rooted in agreements from the 2018 Presidential Jobs Summit, the PCC's role emphasizes advising on climate change responses, ensuring that South Africa meets its emissions reduction targets, and facilitating the transition to a greener economy. As a strategic initiative, JET aims to transform South Africa’s energy sector, currently heavily reliant on coal, while addressing socio-economic impacts on vulnerable communities and workers.

The JET concept goes beyond reducing greenhouse gas emissions; it focuses on creating equitable economic opportunities, protecting vulnerable groups, and driving systemic transformation at both national and sub-national levels. The PCC plays a critical role in shaping policy, building consensus, and guiding municipalities in the energy transition.

3.2 Purpose of the programme

The Municipal JET Support Programme is designed to assist municipalities in navigating the complexities of the energy transition. It emphasizes the development of city-level JET plans, which require functional distribution grids, renewable energy integration, equitable access to energy services, and financially sustainable service delivery models. These plans are vital to ensuring municipalities can accommodate increasing renewable energy penetration while supporting economic resilience and inclusivity for communities.

The programme’s purpose aligns with South Africa's commitment to the goals of the Paris Agreement and is driven by the need to mitigate transition risks, enhance economic resilience, and establish innovative solutions for sustainable development.

3.3 Overview of the Presidential Climate Commission’s role

The Presidential Climate Commission (PCC) is an independent, multistakeholder body established by President Cyril Ramaphosa in December 2020. Its primary purpose is to oversee and facilitate a just and equitable transition towards a low-emissions and climate-resilient economy in South Africa.

The PCC's role encompasses several key functions:

- **Advising on climate change responses**: The PCC provides guidance to ensure that South Africa's climate change strategies effectively lead to a low-carbon and climate-resilient economy and society.
- **Monitoring and evaluating progress**: It assesses the country's advancement towards emission reduction and adaptation goals, ensuring alignment with national and international commitments.
- **Facilitating stakeholder engagement**: The commission engages with a wide range of stakeholders, including all spheres of government, business, labour, academia, communities, and civil society, to build consensus and drive collective action on climate initiatives.
- **Developing frameworks and policies**: The PCC has developed frameworks such as the Just Transition Framework, which serves as a planning tool outlining actions and outcomes for achieving a just transition in South Africa.

Through these efforts, the PCC plays a critical role in informing, enabling, and building consensus regarding an effective climate change response in South Africa, ensuring that the transition to a low-carbon economy is inclusive and equitable.

4 Methodologies

4.1 Description of the methodologies used for situational and gap analysis

To effectively assess the readiness and capabilities of municipalities for the Just Energy Transition (JET), it was essential to employ a multifaceted approach that could capture the diverse and complex challenges faced by different regions. This report uses two distinct methodologies to evaluate and support municipalities, each designed to highlight unique aspects of their transition pathways.

The rationale for utilising two methodologies lies in the wide-ranging socio-economic, financial, and technical contexts in which South African municipalities operate. Large metropolitan areas with extensive resources and infrastructure needs differ significantly from smaller municipalities facing acute capacity constraints. By leveraging two methodologies, the analysis ensures a comprehensive understanding of both overarching trends and specific localised challenges. This approach allows for nuanced insights into the current state, readiness levels, and gaps in energy planning and infrastructure, while also enabling tailored recommendations and interventions suited to the diverse municipal profiles.

Methodology 1 emphasises situational analysis and gap identification, focusing on the baseline status and alignment of municipal strategies with JET objectives. It provides an in-depth view of technical, financial, and organizational capabilities, shedding light on areas requiring targeted support.

Methodology 2 takes a broader, strategic view by analysing the municipal context within South Africa’s energy landscape and the policy and regulatory environment that frames the transition. This method aims

to capture the readiness of municipalities for energy generation, market transitioning, and financial sustainability, with a focus on long-term goals and alignment with national and international commitments.

By employing these two methodologies, the report balances the immediate operational needs with long-term strategic planning, ensuring that municipalities can effectively navigate their path to a just and inclusive energy future. This dual-method approach strengthens the ability to identify context-specific solutions and develop actionable plans that support sustainable growth and climate resilience across South Africa's diverse municipal landscape.

4.1.1 Methodology 1

This methodology outlines the approach used to assess the current energy context, infrastructure, and strategic alignment within a municipality to inform the development of the JET Plan. The methodology integrates data collection, stakeholder engagement, and in-depth analysis across several dimensions. Figure 1 Needs & Situational- and Gap Analysis Methodology Overview, illustrates key steps undertaken during both the needs and situational analysis and the following gap analysis.

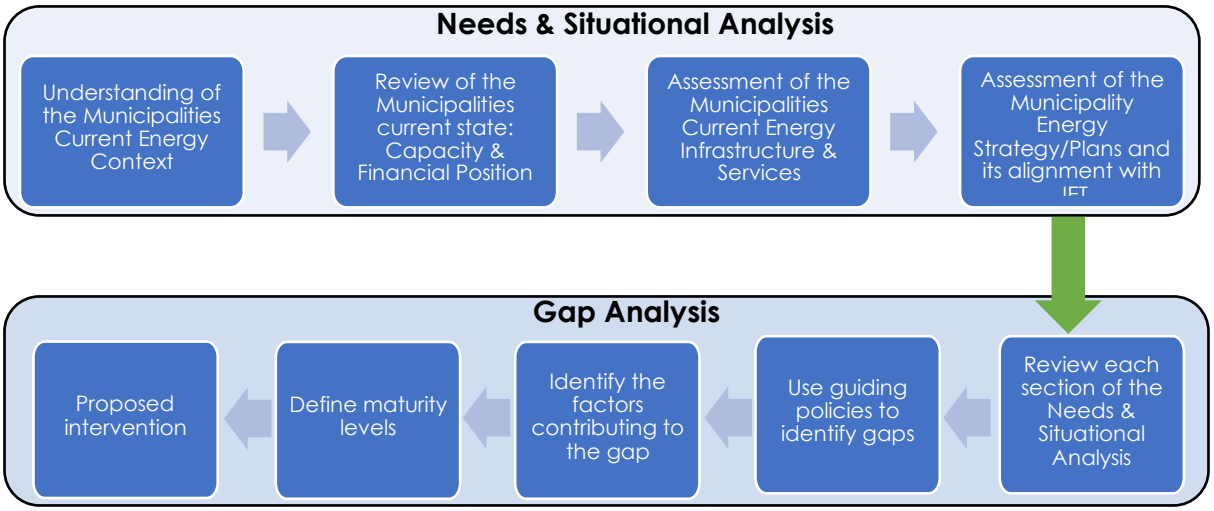


Figure 1: Needs & Situational- and Gap Analysis Methodology Overview

4.1.1.1 Situational Analysis

The situational analysis is structured to evaluate the following core areas:

4.1.1.1.1 Understanding of the municipalities' current energy context

The project team, with support from municipal representatives, assessed the municipalities' energy profiles and socio-economic conditions. Key data points included:

- Sectoral Emissions Contribution

The municipalities were analysed as a carbon contributor by identifying primary sectors responsible for greenhouse gas emissions, such as stationary energy, transport and waste management.

- Energy Sources and Dependency

The municipalities primary energy sources were documented, revealing a high dependency on non-renewable sources, particularly for electricity. A review of energy data highlighted the minimal presence of renewables like solar energy, highlighting the need for diversifying energy sources to align with JET objectives.

- Services Accessibility and Energy Poverty

The accessibility of energy services was evaluated, focusing on underserved and informal settlement areas. This highlighted areas where energy poverty persists, such as regions still dependent on paraffin and candles.

4.1.1.1.2 Review of Municipality's Current State: Capacity and Financial Position

Assessing the municipality's capacity and financial position helped determine the resources available for JET initiatives, highlighting potential constraints and opportunities for leveraging existing financial structures.

The five municipality's financial sustainability was evaluated with a focus on its reliance on electricity sales, which constitutes the largest portion of its revenue. A financial analysis reviewed the impact of tariff increases, the projected revenue growth from electricity, and the dependence on external suppliers, particularly Eskom. This assessment identified potential risks related to affordability, customer retention, and the long-term sustainability of relying heavily on electricity sales as a primary revenue source.

A detailed review of each of the municipality's expenditure was conducted, especially around bulk electricity purchases, which represent a significant part of the budget. The state of energy assets, including aging infrastructure like substations and transformers, was documented. This analysis revealed both technical and financial challenges, indicating a need for significant capital investment in asset renewal and grid maintenance to meet JET objectives.

4.1.1.1.3 Assessment of Municipality's Current Energy Infrastructure and Services

The current state of each of the five municipality's energy infrastructure and services was evaluated to identify areas requiring immediate upgrades or investment. This included a technical review of the infrastructure, current energy loss rates, and the potential for integrating renewable energy. The analysis of electricity losses, including technical and non-technical losses, identified inefficiencies in distribution. Non-technical losses, attributed to theft and billing inaccuracies, represented a substantial financial loss and operational challenge.

4.1.1.1.4 Assessment of Municipality's Energy Strategy/Plans and Alignment with JET Objectives

The alignment of each of the municipality's existing strategies with JET objectives was evaluated by examining policy documents, strategic plans, and operational frameworks to ensure cohesive planning for the transition. Integrated Development Plan (IDP), Sustainable Energy Strategy, Climate Action Plan, and other strategic documents were reviewed to assess their alignment with JET objectives. The review identified both supportive frameworks and gaps in the current strategy that need to be addressed for a smooth transition. Alignment with national and municipal climate goals, including emissions reduction and renewable adoption targets, was documented to guide future strategy development.

Ongoing and planned energy projects were evaluated to identify contributions towards renewable energy adoption and infrastructure modernisation. Strategies were analysed for their relevance to JET goals, specifically their targets for renewable integration, demand-side management, and efficiency improvements.

4.1.1.2 Gap Analysis

The Gap Analysis follows the Needs and Situational Analysis process, identifying gaps between the municipalities needs, current conditions, state of works, and desired state. The Gap Analysis process takes the list of Situational Analysis aspects where shortcomings exist, then states the guiding policies that help to define the existing gap, whereafter it describes the factors contributing to the gap with the maturity level for each factor. Lastly, the gap analysis proposes an intervention to resolve the identified gap. The gaps and proposed interventions should be evaluated in a workshop environment to ensure that the benefit of respective stakeholder perspectives is obtained in establishing interventions. This will also increase buy-in for the municipal-level JET-plan.

4.1.1.2.1 Gap Analysis Framework

The Gap Analysis Framework is designed to systematically identify and address the gaps that exist between the current conditions of each of the municipality's energy service and its desired future state. The process followed in compiling the Gap Analysis Framework is explained in this section.

4.1.1.2.2 Situational Analysis Review

Each situational aspect centred around activities, capabilities, competencies, and organisational culture necessary to meet the desired performance standards and JET Implementation Plan objectives are reviewed. The situational aspects evaluated in the Gap Analysis include:

- Climate target performance: Analyses the municipality's current efforts and progress towards municipal and national climate-related targets. These are typically observed in the municipality's IDP and energy-related documents.

- Energy context: Assesses the overall energy landscape within the municipality which includes the availability, reliability and quality of energy supply. This also involves examining the energy mix and infrastructure.
- Municipal team capability: Evaluates the skills, competencies and organisational capability of the municipal team/department responsible for the energy services. This includes an assessment of current staffing levels, skills gaps in renewable energy technologies, and power outages.
- Financial status/budget: Reviews the financial health of the municipality in relation to its energy initiatives. This includes budget allocation for energy projects, funding availability, collection rates, etc.
- Infrastructure state: Evaluates the current state of the municipality's infrastructure, focusing on its capacity, reliability and readiness for future demand. This evaluation covers the condition of the current assets, maintenance practice, capacity and demand.
- JET output indicators: Measures municipal performance against key performance indicators related to the Just Energy Transition Implementation Plan.

The situational analysis provides an understanding of the current conditions and capabilities of each municipality, highlighting strengths, weaknesses, opportunities, and threats. This identifies the situational aspects where gaps exist so that these gaps may be analysed.

4.1.1.2.3 Guiding Policies

The guiding policies serve as the foundation for identifying and bridging the gaps within each situational aspect of the municipalities. The policies direct the strategies and actions necessary to achieve the desired performance standards. The guiding policies for each of the situational aspects are described as follows:

- Climate target performance: Policies to ensure compliance with national and municipal climate commitments.
- Energy context: Policies aimed at improving energy efficiency, integrating renewable energy sources, and ensuring reliable energy supply to meet current and future demand.
- Municipal team capability: Policies aimed at enhancing the skills, knowledge and capacity of the municipal team to effectively implement, manage and monitor interventions.
- Financial status/budget: Financial policies that ensure sustainable budgeting, allocation of funds for critical projects and efficient financial management practices.
- Infrastructure state: Policies aimed at assessing the infrastructure condition, ensuring regular maintenance, and prioritising investments in modernising and expanding the energy infrastructure.
- JET IP Municipal Level output indicators: guidelines that establish clear metrics and benchmarks for monitoring and evaluating progress towards JET targets.

The difference between the current conditions and the guiding policy is the defined gap that should be resolved. Once a gap has been identified, the factors contributing to the existence of the gap are listed.

4.1.1.2.4 Contributing Factors

The factors that contribute to the gap are described by categories commonly used in root cause analysis processes and results chain input and activity elements. Contributing factors in root cause analyses are arranged according to what is termed as business categories such as materials, machines, methods, environment, measurements, and employees. In results chain conventions, inputs of information, organisation, funding, and assets are used in combination with activities of planning, operation, maintenance, management, and project execution have been adopted to represent the contributing factors. In this Gap Analysis Framework, the gap analysis uses the following categories: information, organisation/execution, funding and assets.

Error! Reference source not found. illustrates how the contributing factors are derived from the root c ause analysis business categories and from inputs and activities defined in accordance with the result chain convention. The resulting list of four contributing factors are assigned descriptions in Figure 3.

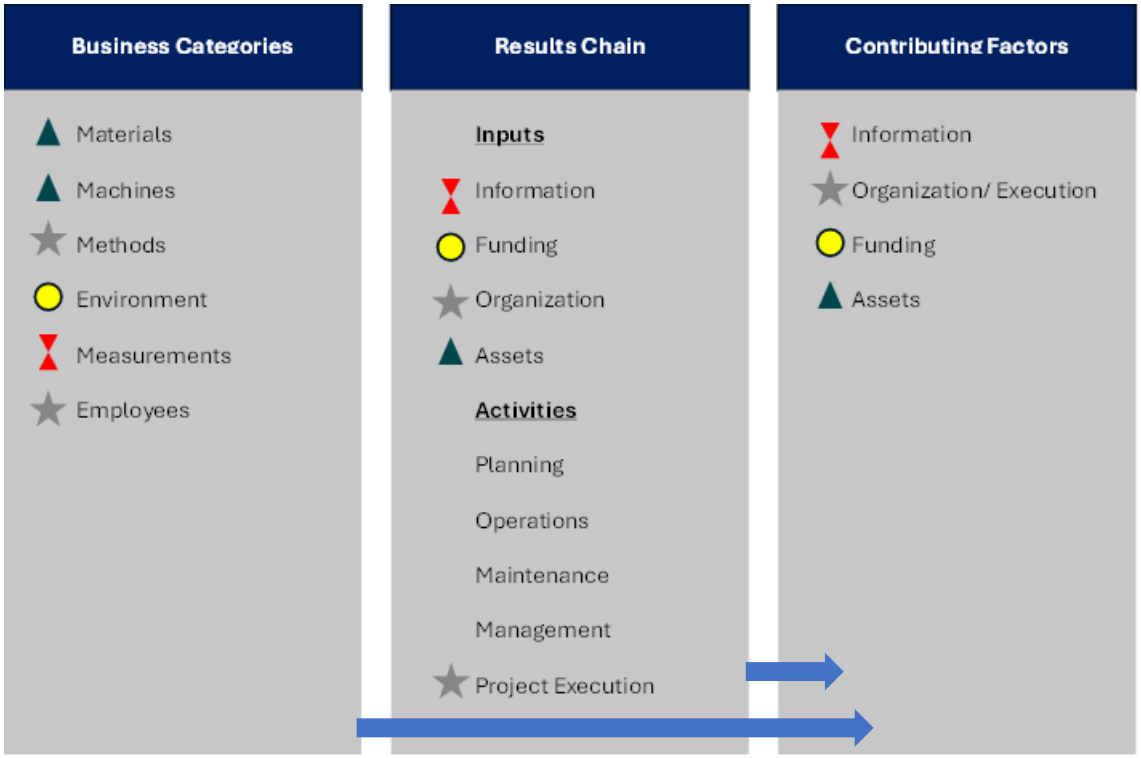


Figure 2 Formulation of contributing factors from root cause analysis and results chain categorisations

Figure 3: Contributing factors

Contributing Factor	Description
•Information	This factor includes the collection, recording and analysis of data and information that is required for informed decision-making. Focuses on data accuracy and data availability enabling effective planning. Includes the information related to planning outcomes.
•Organisation/Execution	This factor entails human resources and organisational structures and resources, effective planning and performance management. Includes alignment with strategic goals and efficient processes. Includes the planning, operations, maintenance, management, and project execution activities performed by personnel.
•Funding	Focuses on securing and managing financial resources to support organisational activities and strategic goals. Includes budget planning, cost control and access to capital growth and sustainability.
•Assets	Focuses on the management and utilisation of physical and intangible resources necessary for operations. Includes maintaining and renewal of infrastructure, technological capability and efficient use of assets.

4.1.1.2.5 Maturity Hierarchy

The maturity factors represent the status of business categories, which are currently insufficiently developed and that hence are causing the gap. The maturity level for each situational aspect is gauged using a maturity hierarchy to determine if each situational aspect is at a basic capability level, stability and security level, operational efficiency level or innovation and growth level. This assessment helps determine the current capability and readiness of the municipality in various domains. The table below outlines the four maturity levels and respective focus areas.

Figure 4: Maturity Hierarchy

	Maturity Level	Description
1	**Basic Capability**	Ensure basic supply and services, basic infrastructure maintenance, essential technical staff, basic tools and resources.
2	**Stability and Security**	Consistent and reliable achievement of measures in operation and resource utilisation. Consistent performance to reduce losses, ensure regular maintenance, provide initial staff training, and develop consistent basic maintenance policies.

3	**Operational Efficiency**	Focus on efficiency improvements in operations and resource utilisation. Advanced staff training, project management improvement, enhanced customer service and community engagement.
4	**Innovation and Growth**	Illustrate the development and implementation of innovative solutions in operations and resource utilisation. Illustrate a deepening and expansion of the municipality's ability to respond to the environment and maintain performance at lower levels despite a larger variety of disturbances. It reflects growth in the municipality's ability to apply themselves and maintain performance according to the criteria of the lower levels, despite an increase in the range of challenges.

By assessing each situational aspect and evaluating the maturity level of each contributing factor, the Gap Analysis Framework can identify specific areas that require development and propose relevant interventions. The table describes how the contributing factors are evaluated to establish maturity.

Figure 5: Maturity Hierarchy applied to Contributing Factors

Factor	Basic Capability	Stability and Security	Operational Efficiency	Innovation and Growth
Information	Limited data collection and basic record-keeping	Regular data collection with secure storage and basic analysis	Comprehensive data management system with real-time monitoring and detailed reporting	Advanced data analytics, predictive modelling, and data-driven decision-making
Organisation/ Execution	Fragmented organisational structure with minimal coordination	Defined roles and responsibilities with standard operating procedures	Streamlined organisational processes with cross-functional collaboration	Agile and innovative organisational culture with continuous improvement initiatives
Funding	Inconsistent	Stable and	Diversified	Strategic

Factor	Basic Capability	Stability and Security	Operational Efficiency	Innovation and Growth
	funding sources, primarily reliant on external aid	predictable funding with allocated budgets for essential services and maintenance Cost-reflective tariff structures	funding streams with proactive financial management and risk mitigation	investments in innovative projects and sustainable funding mechanisms
Assets	Basic asset inventory with frequent breakdowns and limited maintenance	Standardised asset management practices with regular maintenance schedules	Optimised asset utilisation with preventive maintenance and lifecycle management	Smart asset management with IoT integration, predictive maintenance, and upgrades

4.1.1.2.6 Proposed Intervention

This outlines the necessary actions to address gaps in (1) climate target performance, (2) energy context, (3) skills and capabilities, and (4) affordability to support the municipality in achieving its desired state and the JET objectives. These proposed interventions can be categorised as follows:

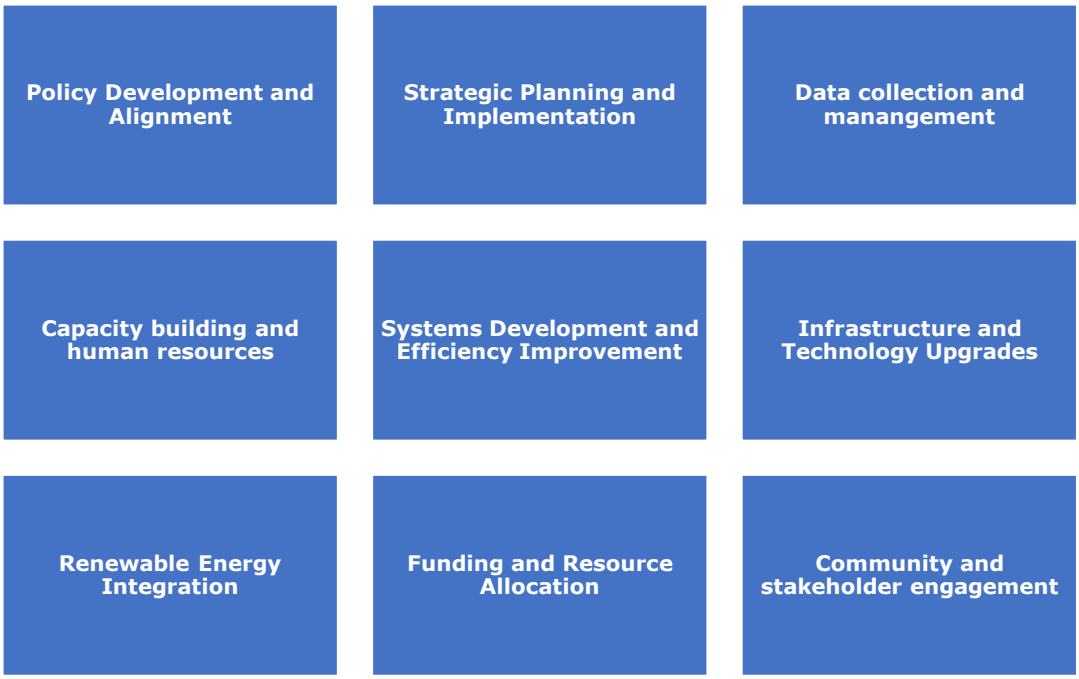


Figure 6: Categories of Proposed Interventions

The proposed interventions provide a reorganisation from the situation-based organisation to an intervention-based organisation. The situational analysis and gap analysis is both organised by looking at the situation and the shortcomings/challenges therein and identifying interventions that may address the situation and the gaps. Once the interventions for the full context of the municipality have been identified, the interventions are grouped into similar themes to ensure that similar interventions are combined. The reason why similar interventions may be proposed multiple times is that the same intervention may be applicable as response to multiple gaps.

Once interventions are listed and grouped, these interventions can be prioritised to determine which would provide the municipality with the maximum impact while also considering the urgency with which the intervention is required and the municipality's readiness to implement it. The multi-criteria analysis process used for prioritisation of interventions is described in Section 3.1.1.3.

4.1.2 Methodology 2

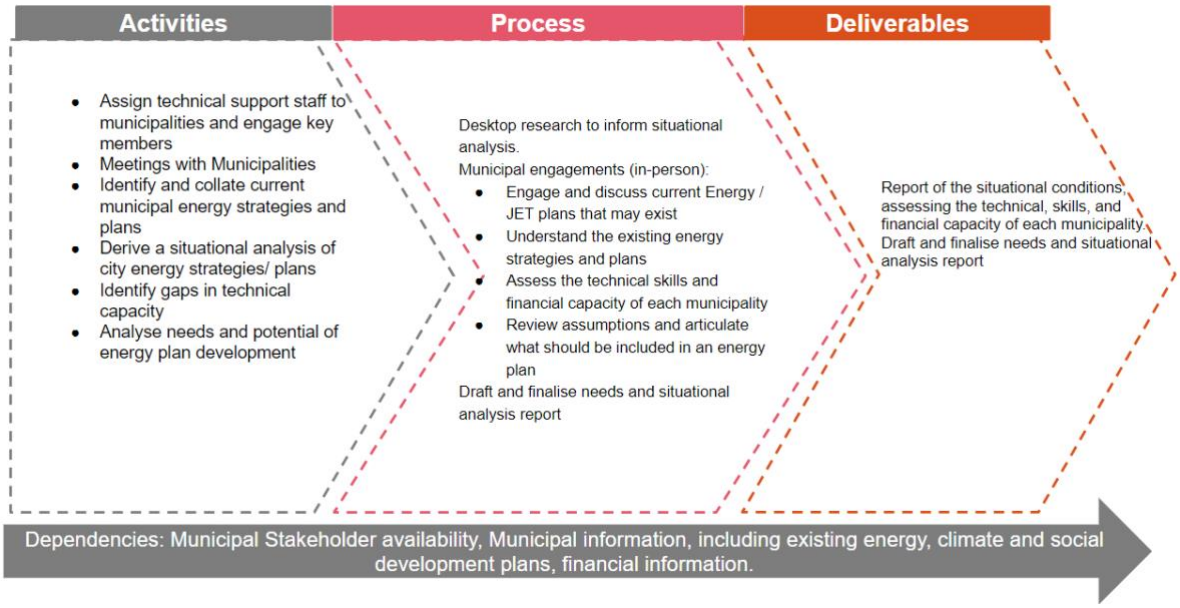
The purpose of the Situational Analysis report is to outline the status and challenges faced by municipalities as part of their just energy transition planning.

The objectives of this report include the following:

1. To outline the regulatory and policy landscape which municipalities must navigate as part of their constitutional mandate to provide electricity reticulation within the context of the just energy transition.

2. To outline the status of just energy transition planning for the following municipalities:
    a. City of Cape Town Metropolitan municipality
    b. eMalahleni Local municipality
    c. eThekwini Metropolitan municipality
    d. Govan Mbeki Local municipality
    e. Polokwane Local Municipality
3. To outline the challenges and needs faced by municipalities and potential interventions to be considered to address these needs and challenges. These challenges and potential interventions informed Just Energy Transition plans for each of the municipalities mentioned above.

To develop the situational analysis of the municipalities' current state of energy planning and strategic approach, a two-pronged approach was applied where we first conducted desktop research to establish the level to which the respective municipalities have adopted energy related plans. Secondly, we conducted in-person interviews with the relevant stakeholders within the municipalities to test the desktop research and to obtain further information to create a more comprehensive overview of the status quo. The diagram below outlines the process followed as part of the situational analysis:



The municipal in-person interviews had a structured approach whereby we outlined the presentations outlining our research undertaken as part of the desktop analysis. The assessment criteria above touch on multiple departments within a municipality. As such, we focussed on stakeholders listed below to gain a better understanding of the information obtained as part of the desktop analysis:

- Department heads/directors of energy/electricity
- Department/directors of strategy
- Directors and deputy directors of climate change/sustainability
- CFO and key financial planning personnel within the municipality

- Municipal Managers of each municipality.
- Social development leads for each municipality.

4.2 Criteria for assessing municipalities (technical, skills, financial)

Municipalities are evaluated by identifying their positive capabilities, after which a comparison is conducted to ascertain gaps relative to established benchmarks, norms, and standards, including NERSA requirements, the JET Implementation Plan, Electricity and Energy Department targets, MFMA Circular 71 norms, and Section 2.2 of the Electricity Pricing Policy (1998).

The situational aspects under review are thoroughly detailed in the situational analysis. These criteria are comprehensively listed in Appendix 2, providing data specific to each municipality.

Existing gaps are defined through a structured analysis of contributing factors. Each factor is identified based on its impact on the municipalities' ability to meet JET objectives and is categorized to inform the development of targeted interventions aimed at closing these gaps.

The criteria set out below was used under methodology 2 to assess the JET planning within each of the municipalities. For consistency, the same criteria were then applied to identify gaps and development recommendations set out in the Just Energy Transition Plans:

Criteria	Relevance to JET	What was be assessed
Energy security	JET IP 2023-2027 calculates that around 6 GW of new renewable electricity capacity needs to be added to the grid each year over this period, in addition to gas/storage capacity. Municipal generation and support for small-scale embedded generation (SSEG) installations (generally combining solar PV and battery systems) in residential and commercial properties is a key enabler in meeting these national ambitions.	The municipality's plans to increase generation and embedded generation capacities are researched, looking at their generation targets, energy mix and technologies of focus.

Transmission/distribution ambitions	Building electricity grid capacity and stability is a prerequisite for the energy transition. Continued growth in small-scale and utility-scale embedded generation will only be viable if distribution grids are appropriately upgraded and maintained. About half of all distribution grids are currently owned and maintained by the 165 licensed municipalities - highlighting the role of municipalities in this development.	Municipal plans to increase grid capacity and build out distribution infrastructure are looked at, taking into account their existing and planned generation and technologies.
Job creation and social development	New skills are required for the envisioned energy sector and transition to such. It is necessary for municipalities to develop plans focussing on skills development for the JET, for without doing so, skills formation remains individualised, fragmented, sporadic, and lacking sustainability or longevity. Consideration also needs to be given to the preservation of jobs and redefining roles to ensure individuals' relevance so that no one gets left behind.	The plans regarding a just energy transition, upskilling/reskilling and job creation in the energy sector are investigated, looking at how the municipality plans to ensure future employment of workers currently in roles in carbon intensive areas that will become obsolete. Also looked at are the plans to develop skills, skills anticipatory systems and processes that support future labour force needs to enable the achievement of the municipality's generation ambitions.
Climate change mitigation	Municipalities have a key role in meeting South Africa's Nationally Determined Contribution (NDC) targets and long-term decarbonisation objectives. These efforts are necessary to limit the effects of climate	Research is done to determine the municipality's climate change targets, plans and considerations of renewable energy in such. This included

	change on those who are most vulnerable such as women, children, the unemployed and those living in informal settlements.	the municipality's net zero ambitions, carbon monitoring capacities and carbon reduction interventions.
Market transitioning and trading	The Electricity Regulation Amendment (ERA) Bill supports the restructuring of Eskom and the establishment of a competitive market for electricity. This will enable significantly larger investment in new generation capacity outside of long-term bilateral Power Purchase Agreements (PPAs).	The municipality's considerations of electricity trading and municipal role in wholesale trading are looked at, to develop an understanding of the municipality's readiness for the market transition and scope for renewable energy and trading in such.
Wheeling and cost of supply studies	The development and approval of a wheeling framework, as well as appropriate systems to enable wheeling of electricity at municipal level, are essential enablers for electricity generators, electricity traders, and consumers.	The wheeling arrangements and frameworks in place are researched providing an indication of the infrastructure needed and scope for renewable energy trading from IPPs.
Current energy team capacity	Municipal electrical businesses contend with major technical capacity, financial resources and governance stability problems that will critically affect how they are able to respond to the JET opportunity. Technical skills are in short supply in general. Some of the skills needed to pursue municipal electricity procurement and generation opportunities require competencies that municipalities have not previously needed to negotiate power purchase agreements or structure bids for IPPs. A coordinated and integrated plan is needed to support skills development, utilisation, and anticipation for the JET.	The team composition, structure and skills are considered in relation to what is required to implement its energy transition plans.

Financial standing	An increase in embedded generation results in a decrease of municipal electricity purchased, impacting the municipality's revenue and ability to implement JET plans. A key stipulation in the New Generation Regulations for procurement of electricity by municipalities is that only municipalities in good financial standing will be eligible for ministerial approval to start a process to procure power. In view of the poor financial standing of most municipalities, only a small resulting pool of the better administered and more capable municipalities remains. Rising electricity prices and declining power sales margins will exacerbate the pressure on poorly performing municipalities that are incapable of participating in municipal power procurement and generation solutions. Municipal financial standing determines the extent to which municipalities can provide affordable tariffs and access financing mechanisms for the installation of embedded generation by businesses and residents.	Municipal finances, creditworthiness and debt to Eskom are investigated to determine to what extent the municipality can access finance in order to fund energy infrastructure deployment.

The following financial indicators were assessed as part of the financial standing analysis mentioned above:

Term	Definition	National Treasury recommendation
Capital to total expenditure ratio	This is the amount of capital expenditure as a percentage of total expenditure (capital plus operating expenditure). This indicates prioritisation of	10-20%

	expenditure towards future capacity in terms of municipal services versus current operations.	
Net operating surplus margin	This ratio assesses the extent to which the municipality generates operating surpluses. According to National Treasury, municipalities should at least recover operational costs. A ratio which is greater than 0% (i.e. a surplus) will also assist to contribute towards its capital funding requirements. A ratio below 0% implies that the municipality is operating at a deficit and measures must be implemented to address this situation to ensure sustainable service delivery.	Greater than 0%
Repairs and maintenance ratio	The Ratio measures the level of repairs and maintenance to ensure adequate maintenance to prevent breakdowns and interruptions to service delivery. Repairs and maintenance of municipal assets is required to ensure the continued provision of services. This indicator is measured as Repairs and Maintenance as a % of Property, Plants and Equipment and Investment Property (Carrying Value).	8%
Cash/cost coverage ratio	Indicates the Municipality's ability to meet at least its monthly fixed operating commitments from cash and short-term investment without collecting any additional revenue during that month. The ratio is adjusted for unspent conditional grants as the cash is not available for normal municipal day-to-day operational expenditure but rather reserved for grant related expenditure. A municipality should have enough cash on hand from month to month so that it can pay salaries, suppliers, etc.	1-3 months
Current ratio	The current ratio is used to assess a municipality's ability to pay back its current (short-term) liabilities with its current (short-term) assets.	1.5-2: 1
Creditor period	The creditor payment period indicates the average	Below 30 days

	number of days taken for creditors to be paid. National Treasury recommends that this be below 30 days.	
Debtors' collection rate	This examines the level of payments from businesses and households for service charges and property rates to the municipality. It measures increases or decreases in debtors relative to annual billed revenue. In addition, in order to determine the real collection rate, bad debts written-off are taken into consideration.	95% or above

5 Municipal Situational Analysis

5.1 Overview of the ten municipalities

The ten municipalities that were selected for the project are listed in Figure . These municipalities were selected to be representative of small, medium, and metropolitan sized municipalities and such that all provinces were represented. Two municipalities from Mpumalanga were selected due to the pivotal relationship between the coal-based economies in this province and JET.

Figure 7 Municipalities selected for the MJS Project

Municipality	Methodology	Province	Population
City of Cape Town Metropolitan Municipality	2	Western Cape	4.9 million
City of Johannesburg Metropolitan Municipality	1	Gauteng	5.4 million
eMalahleni Municipality	2	Mpumalanga	456 000
eThekwini Metropolitan Municipality	2	Kwazulu-Natal	3.3 million
Govan Mbeki Municipality	2	Mpumalanga	340 000
Hantam Municipality	1	Northern Cape	21 500
Matlosana Municipality	1	North West	400 000
Nelson Mandela Bay Metropolitan Municipality	1	Eastern Cape	1.2 million
Polokwane Municipality	2	Limpopo	494 000
Tswelopele Municipality	1	Free State	57 000

The paragraphs below provide an overview of each municipality. Further information on the municipalities that were assessed using Methodology 1 are available in Appendix 2.

City of Johannesburg Metropolitan Municipality is the largest municipality in South Africa. It has a population of approximately 5.4 million residents and consume approximately 9 718 GWh of electricity per year of which approximately 83% is supplied by Eskom. The stationary energy sector is the largest GHG emissions contributor at 54% followed by a 35% contribution by the transport sector. The City has a Climate Action Plan (2021), an Alternative Energy Mix Plan (2022) and a Sustainable Energy Strategy (2023) that informs its readiness for JET. CoJ has initiatives such as such as short-term procurement of up to 100 MW from independent power producers (IPPs), enhancing small-scale embedded generation (SSEG) capacity with a tariff structure for installations up to 1 MW, and exploring solar photovoltaic (PV), battery energy storage, and waste-to-energy projects to meet its energy diversification goals by 2035.

Nelson Mandela Bay Metropolitan Municipality has a population of approximately 1.2 million residents and consume approximately 3 300 GWh of electricity per year of which approximately 88% is supplied by Eskom. The stationary energy sector is the largest GHG emissions contributor at 75% followed by a 21% contribution by the transport sector. The City has developed a Climate Change and Green Economy Action Plan (2015), Renewable Energy Guidelines (2021), and a Sustainable Energy Plan (2022) that informs its readiness for JET. Key initiatives include enabling SSEG systems of up to 1 MW through supportive tariff structures, introducing energy efficiency measures, and implementing renewable energy procurement targets to reduce reliance on Eskom by 30% by 2030.

The municipality also focuses on infrastructure upgrades, addressing its maintenance backlog, and modernising its distribution network to integrate renewable energy sources and support electric vehicle adoption. Current challenges include significant electricity losses (23.65%), aged infrastructure requiring substantial investment, and limited revenue collection efficiency.

NMBMM's strategic alignment with national JET objectives includes achieving 25% renewable energy adoption by 2025, diversifying its energy mix, and promoting energy access for all. The municipality is actively fostering socio-economic benefits by growing its green economy.

Matlosana Municipality has a population of approximately 400 000 residents and consume approximately 21.6 GWh of electricity per year, all of which is supplied by Eskom (apart from SSEGs). The municipality does not have GHG emissions data available. The municipality has not developed any JET related plans and strategies apart from the content included in their IDP.

The municipalities challenges include high distribution losses (approximately 38%), aged and vandalised infrastructure and limited funding for infrastructure upgrades. Efforts to mitigate these challenges include drafting an Electricity Network System Losses Management Strategy and initiating infrastructure upgrades such as replacing faulty meters, installing smart meters for large power users, and securing critical substations.

Tswelopele Municipality has a population of approximately 57 000 residents and consume approximately 21.6 GWh of electricity per year, all of which is supplied by Eskom (apart from SSEGs). The municipality does not have GHG emissions data available. The municipality has not developed any JET related plans and strategies apart from the content included in their IDP.

Tswelopele has made progress in reducing electricity distribution losses to 8.3%, saving approximately R3 million annually through initiatives like relocating smart meters and enforcing anti-tampering measures. However, the municipality faces challenges with aging infrastructure, frequent outages, and

limited adoption of demand-side management technologies such as smart meters and LED lighting. Current projects include upgrading electrical networks in Bultfontein and Hoopstad and implementing energy efficiency initiatives funded by national grants like the Integrated National Electrification Programme (INEP).

Hantam Municipality has a population of approximately 21 500 residents and consume approximately 14 GWh of electricity per year, all of which is supplied by Eskom (apart from SSEGs). The municipality does not have GHG emissions data available. The municipality has not developed any JET related plans and strategies apart from the content included in their IDP.

Key challenges for the municipality include electricity losses (13.77%), outdated and deteriorating infrastructure, and limited metering coverage. The municipality has identified the need to modernise its distribution network, upgrade transformers, and implement demand-side management measures such as smart meters and energy-efficient lighting.

The ***City of Cape Town Metropolitan Municipality*** is actively pursuing a transition to renewable energy sources. Central to this strategy is the acquisition of 650 MW from various sources, including small-scale embedded generation, city-owned generation, and independent power producers (IPPs). To facilitate this shift, the city is implementing several initiatives such as an online SSEG application process, on-site power generation, and the refurbishment of the Steenbras Hydro Pumped Storage Scheme. Additionally, the city is considering a R1.2-billion solar PV and battery storage project to further mitigate load-shedding. These efforts are part of the broader 2050 Energy Strategy, which includes enhancing the resilience of the power supply and exploring new energy storage solutions to support the distribution system.

In the realm of job creation, the CoCT is focusing on empowering residents and supporting the energy services sector, while also addressing energy poverty and the need for sustainable electricity supply to support economic growth. The city's long-term goal of carbon neutrality by 2050 hinges on reducing electricity consumption through energy efficiency initiatives and collaborative stakeholder action to transition to a low-carbon lifestyle.

The ***eThekwini Metropolitan Municipality*** has set ambitious energy targets to transition to renewable energy, aiming for 100% of municipal electricity purchases and 70% of private electricity demand to be supplied by renewables by 2050. To achieve these goals, the municipality is developing a range of initiatives, including a pilot for alternative energy in informal settlements, procurement of 850 MW from

natural gas or LNG, and the establishment of a Municipal Independent Power Producer Procurement Programme (MIPPP) for solar PV.

In terms of transmission and distribution, eThekwini plans to modernise the grid with smart technologies and create an environment conducive to energy wheeling by 2030. Job creation is a key aspect of the municipality's just energy transition, with training programs for renewable energy jobs and potential job creation through renewable projects. Climate change mitigation is addressed through the Durban Climate Change Strategy, aiming for carbon neutrality by 2050 and the introduction of green building incentives. The municipality is also exploring electric buses and a regional hydrogen strategy but faces challenges in departmental coordination and securing funding for initiatives.

eMalahleni Local Municipality is actively pursuing renewable energy generation to mitigate energy supply constraints, primarily through solar photovoltaic small scale embedded generation (SSEG) systems. The municipality has established a policy framework for SSEG, covering application, commissioning, and metering processes, applicable to systems up to 1 MVA.

The municipality's economic reliance on coal mining necessitates a just energy transition, with job creation and social upliftment at the forefront. eMalahleni's Climate Change Response Strategy aims to integrate climate change mitigation into local sector plans, although clear targets are yet to be established. The municipality is working in coordination with national and provincial initiatives to manage this transition, focusing on job creation in renewable energy sectors and climate change mitigation. However, the municipality's financial standing is precarious, with consistent operating deficits, low capital expenditure, and liquidity challenges, which severely limit its ability to invest in necessary infrastructure upgrades and energy transition projects.

Govan Mbeki Local Municipality is currently reliant on Eskom for its entire energy supply but has ambitions to diversify through purchasing from Independent Power Producers (IPPs) and investing in renewable energy. The municipality's strategic goals include integrating natural gas, solar, and wind energy into its supply mix to reduce dependence on coal, but implementation has been slow due to lack of policies, clear targets, and funding. Additionally, the municipality faces significant challenges with its transmission and distribution infrastructure, including high electricity losses, aging infrastructure, and insufficient maintenance.

The municipality's financial standing is a critical concern, with a declining liquidity ratio, increasing operating deficits, and prolonged creditor days, making it difficult to secure funding for capital investments. Job creation and social upliftment efforts are critical as the municipality faces significant risks from job losses due to the energy transition.

The ***City of Polokwane*** is addressing energy supply constraints and infrastructure needs due to its growing population. The city's Integrated Development Plan (IDP) for 2024/25 emphasises the urgency of developing new electricity capacity programs. To supplement energy supply, the city has incentivized Small-Scale Embedded Generation (SSEG) and is pursuing the construction of a 90 MW solar farm under a public-private partnership. Additionally, the city is piloting a power bank linked to the solar farm to enable differential tariffs and alleviate consumer costs. Other initiatives include a landfill gas to electricity plant, a biogas plant at the wastewater treatment works, and providing solar light systems to households without electricity.

5.2 Key findings from situational analyses (summarise context of each municipality)

The key observations and findings are structured according to the situational aspects that were reviewed per methodology 1 and listed in 3.1.1. The analysis of the financial situation is provided in Sections 5.3.1, 5.3.2, and 5.3.3 below.

The major situational aspects are:

- Municipal energy context
- JET alignment with municipal strategic objectives
- Socio-economic profile
- Current energy infrastructure and services
- Identification and analysis of available budget
- Municipality's commitment and capacity
- Energy challenges
- Specification of outputs
- Municipality Just Energy Transition definition and scope

Figure states key findings per municipality for each of the situational aspects.

Figure 8 Key findings per municipality

Situational Aspect	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
Municipal energy context	21Mt_CO_{2e}	5.23 Mt_CO_{2e}	No GHG data	No GHG data	No GHG data

Situational Aspect	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
JET alignment with municipal strategic objectives	2021: Climate Action Plan (CAP) 2022: City Power's Alternative Energy Mix (AEM) 2023: Sustainable Energy Strategy (SES)	2015: Climate Change and Green Economy Action Plan 2021: Renewable Energy Guidelines 2022: Sustainable Energy Plan (2030)	Only IDP information.	Only IDP information.	Only IDP information.
Socio-economic profile					
Population	5 428 964	1 190 496	398 676	56 896	21 578
Electricity access (households)	78%	97%	93%	95%	79%
Current energy infrastructure and services					
Notified Maximum Demand (MVA)	700 MVA	660 MVA	190 MVA	19 MVA	14.1 MVA
State of infrastructure	Aging, under-maintained.	Aging, under-maintained.	Aging, under-maintained.	Aging, high maintenance spend	Aging, high maintenance spend
Losses (as % of supply)	±29.6%	±23.6%	±38%	±9.2%	±13.8%
Identificatio	Refer to	Refer to	Refer to	Refer to	Refer to

Situational Aspect	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
n and analysis of available budget	analysis in 4.3.1.	analysis in 4.3.1.	analysis in 4.3.1.	analysis in 4.3.1.	analysis in 4.3.1.
Municipality's commitment and capacity	Staff vacancy 8.5%	High vacancy rate.1 staff member per 850 connection (norm is 1 staff member per 333 connections)	Staff vacancy 4%	Staff vacancy 0%	Staff vacancy 50%
Energy challenges	• Electrification backlog in formal and informal settlements is R1bn and R4.4bn respectively. • Existing infrastructure backlog is R 34.3 billion • Limited capacity • 37% SCADA coverage of substations	• Imbalance in grid distribution, significant disparities in load distribution between central and suburban areas. • Frequent power outages	• High level of vandalism and theft at substations • Limited funding to maintain and upgrade infrastructure • Frequent power outages	• Limited funding to maintain and upgrade infrastructure • Frequent power outages	• Limited funding to maintain and upgrade infrastructure • Frequent power outages

The figure below presents a high-level overview of common findings across the five municipalities evaluated using Methodology 1. This overview highlights a trend, typically between metros and local municipalities, that may be found when conducting situational analysis for municipalities.

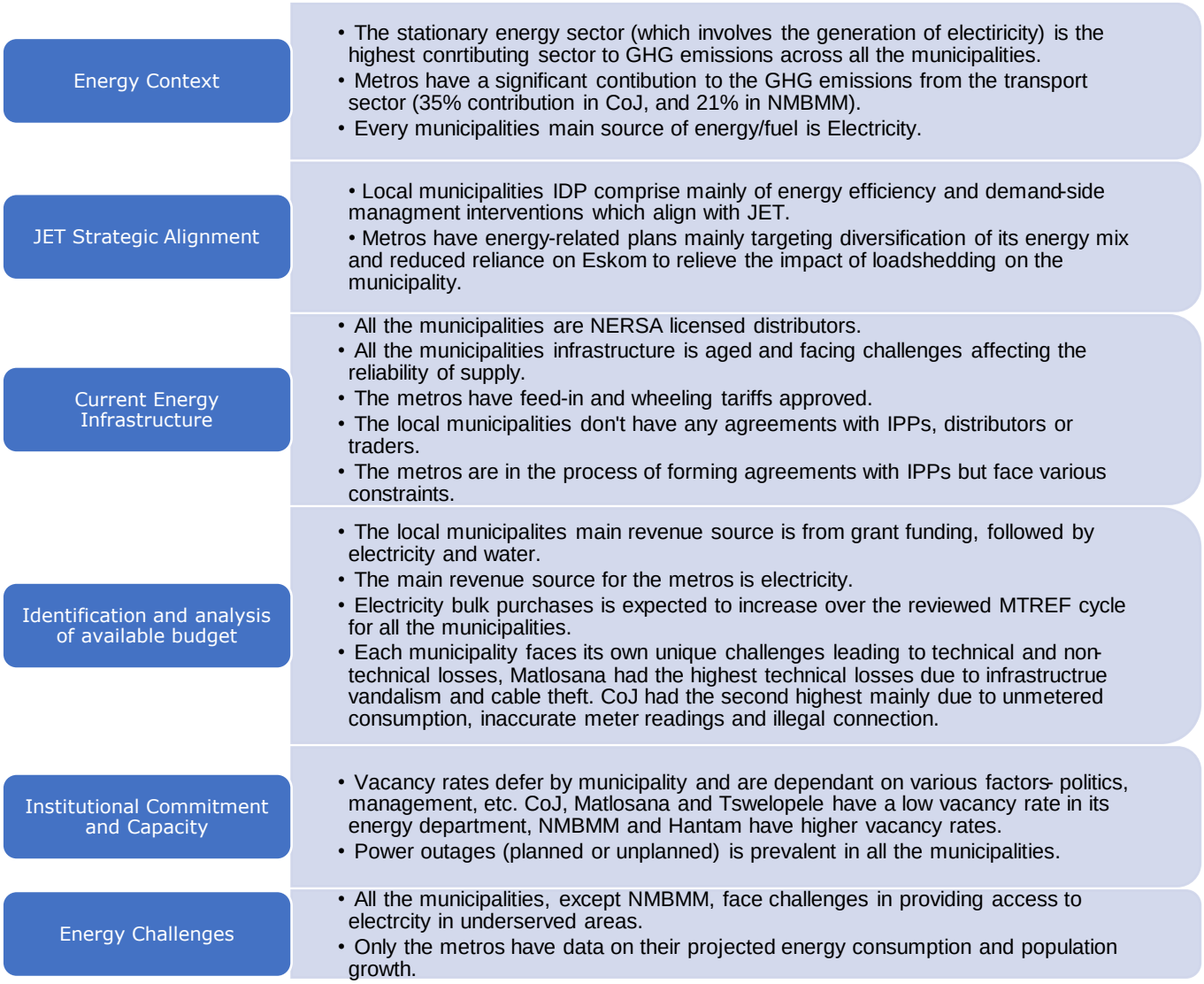


Figure 9 Key findings from situational analyses using Methodology 1

The following table represents key findings from the situational analyses of five municipalities using Methodology 2

- City of Cape Town Metropolitan municipality

Energy security	• Increase renewable electricity supply to 35% by 2028.

	● Harness 650 MW from various sources, including small-scale generation and IPPs. ● Expand energy storage programs and optimize existing schemes. ● Consider a R1.2-billion solar PV and battery storage project. ● Legislative challenges in energy procurement.
Transmission and distribution ambitions	● Plans to improve grid access and management of distributed energy resources, restructure electricity tariffs. ● Focusing on detailed energy planning using accurate data sets ● Faces challenges in modernising its grid, such as resourcing issues in projects like the Digital Twin GIS model. ● Established a Distribution System Operator (DSO) but needs to address operational technology integration and secure necessary funding.
Job creation and social upliftment	● Believes that by providing sustainable and reliable electricity, it can indirectly contribute to job creation by supporting an economic system with consistent energy access. ● Faces significant funding challenges, particularly in its energy poverty program, which struggles to provide electricity supply due to limitations in the Urban Settlement Development Grant (USDG).
Climate Change Mitigation	● Increase renewable electricity supply to 35% by 2028. ● Harness 650 MW from various sources, including small-scale generation and IPPs. ● Expand energy storage programs and optimize existing schemes. ● Consider a R1.2-billion solar PV and battery storage project. ● Legislative challenges in energy procurement.
Energy market transition and trading	● Increase renewable electricity supply to 35% by 2028. ● Harness 650 MW from various sources, including small-scale generation and IPPs. ● Expand energy storage programs and optimize existing schemes. ● Consider a R1.2-billion solar PV and battery storage project. ● Legislative challenges in energy procurement.

Wheeling and cost of supply	● Implement wheeling within 5 years as part of the 2050 Energy Strategy. ● Progress in planning for the Wheeling and Trading program.
Current energy team capacity	● The City faces a capacity and skills constraint in relation to the establishment of the Distribution System Operator. ● The City has expressed concerns regarding succession planning.
Financial standing	● Long-term issuer rating stands at Ba3 and its short-term issuer rating at Not Prime, with a stable outlook ● Continuously received unqualified audit reports during the last three years ● The City is able to secure external borrowings to fund capital infrastructure.

- eThekwini Metropolitan municipality

Energy security	● Target 100% renewable electricity by 2050, with interim goals of 10% by 2025 and 40% by 2030. ● Supply 70% of Durban's private electricity demand with local renewables by 2050, reducing overall consumption by 40%. ● Procure natural gas and LNG, develop Richards Bay CCGT Power Plant. ● MIPPP for 200 MW of solar PV, with 100 MW in the pipeline.
Transmission and distribution ambitions	● Revised transmission network plan delayed from 2023. ● Deploy smart grid technologies, integrate ADMS with DMS. ● Develop gas distribution network for industrial demand. ● Install smart meters for over 700,000 customers.
Job creation and social upliftment	● Train 6,000 young people for renewable sector jobs with KZN Education Development Trust and Renewable Energy Institute. ● Provide rural communities with electricity to enhance job opportunities.
Climate Change Mitigation	● Carbon neutral by 2050 per Durban Climate Change Strategy 2022. ● Use GHGEI for mitigation planning. ● Reduce electricity consumption by 40% by 2050.

	● Transform municipal infrastructure to net-zero, reduce industrial emissions by 70%, improve building energy efficiency. ● Expand electric bus network, reduce private car trips by 50% by 2050. ● Launch regional hydrogen strategy for future hydrogen economy.
Energy market transition and trading	● A proposed programme is to design and implement residential, commercial, and industrial embedded generation tariffs. ● Investigate options to purchase electricity from PowerX ● An assessment of how the municipality participates in the electricity trading market still needs to be conducted
Wheeling and cost of supply	● Set a goal to create an enabling environment for energy wheeling, however to date there has been no wheeling framework in place.
Current energy team capacity	● The eThekwini Energy Office (EO) is part of the Treasury Cluster under the Finance, Pensions, and Major Projects Unit. ● It focuses on renewable energy, energy efficiency, and climate change mitigation. ● They are also utilising training programs offered by SALGA and GIZ to upskill staff and support the transition to renewable energy and energy efficiency. ● The need for better coordination and institutionalisation of plans and policies was emphasised.
Financial standing	● The Metro faces challenges to obtain and provide the guarantees required by banks and institutions when procuring power generation solutions. Operational vs costs - eThekwini views electricity expenditure as a cost that should be supported by national grants. However, National Treasury views electricity related costs as operational expenditure and is only willing to provide funding for capital expenditure.

- eMalahleni Local municipality

Energy security	● There is a policy for metering and tariffs for SSEG, but it is unclear how far feeding energy back into the grid is incentivised / works.

	● About 20% of households lack access to electricity. ● The municipality has no formalized energy procurement plans or renewable energy targets aimed at addressing energy security in the municipality.
Transmission and distribution ambitions	● 80% of its 120 substations deemed unsafe ● Nearly 50% distribution losses and substantial debt to Eskom. ● In June 2023, it began a smart meter installation program. ● The municipality's energy strategy aims to build a resilient electricity network, requiring over R43 million for infrastructure upgrades to support new renewable generation capacity.
Job creation and social upliftment	● Coal mining is a major economic driver in eMalahleni, contributing 44% to the local economy and 26% to formal employment. ● The eMalahleni Energy Strategy and Action Plan focuses on youth skills development in energy performance and solar installation. ● Additionally, the province is working on managing the just transition, informed by national assessments and resilience plans and provincial plans.
Climate Change Mitigation	● The eMalahleni Local Municipality's Climate Change Response Strategy integrates climate change response. Although no specific climate targets are set, the strategy includes measures to control vehicle emissions and outlines various adaptation and mitigation projects to foster a low-carbon economy. ● A climate change champion coordinates these efforts, with sector-specific coordinators being appointed to assist.
Energy market transition and trading	● No data is available on how the municipality is currently considering the various methods of electricity trading.
Wheeling and cost of supply studies	● It is not clear how the municipality is planning to wheel electrons from the Independent Power Producers.
Current energy team capacity	● The municipality has a technical services department which ensures that basic services are provided to their communities.

	● There is no clear team structure, and competency which makes it difficult to assess the capability of the team to implement energy transition plans.
Financial standing	● Qualified audits in FY21, FY22, and FY23. ● Owed Eskom R7.4bn in 2023; entered Eskom debt relief programme. ● Spent under R0.5 per resident on capital expenditure, lowest among five municipalities. ● High risk of not meeting short-term obligations due to poor liquidity management.

- Govan Mbeki Local municipality

Energy security	● 160MW energy demand, entirely reliant on Eskom. ● Mines and industrial customers directly supplied by Eskom. ● IDP 2022-2027 aims to phase in renewable energy and natura; gas from Sasol-Mozambique pipeline for Gas to Power Project
Transmission and distribution ambitions	● Ageing infrastructure, ghost vending, illegal and un-metered connections; 74% electricity losses in 2022. ● Collaboration with stakeholders to upgrade and modernize the electricity network has reduced losses and improved reliability. ● No clear targets for expanding distribution lines.
Job creation and social upliftment	● Outreach on job losses and opportunities; insufficient communication on alternative energy prospects. ● 2024 Local Economic Development Strategy focuses on diversifying the economy. ● Projects include Industrial Technological Park and AgriPark for smallholder farmers.
Climate Change Mitigation	● First in Mpumalanga to create a Climate Change Response Plan and GHG inventory. ● Most activities not implemented; no climate change champion; GHG inventory update lacks funding. ● Financial constraints have postponed climate change activities.
Energy market transition and trading	● No data is available on how the municipality is currently considering the various methods of electricity trading.

Wheeling and cost of supply studies	● No wheeling framework and/or cost of supply study exist for Govan Mbeki Local Municipality.
Current energy team capacity	● Energy and Mechanical Department which is responsible for energy services, mechanics and facilities management, water and sanitation, roads and stormwater maintenance. ● No clear team structure or competency assessment for energy transition plans. ● Unclear JET mandate across various departments.
Financial standing	● No credit rating. ● Financial indicators worsened from FY21 to FY23; liquidity management below recommended levels; creditor payment period far above 30 days (1444 days on average). ● Qualified audit reports with findings in FY21, FY22, and FY23; flagged irregular wasteful expenditure. ● Owed Eskom R3.7 billion in 2023; entered Eskom debt relief programme.

- Polokwane Local Municipality

Energy security	● The IDP 2024/25 calls for new programs to ensure sufficient electricity. ● The City aims for 20% of electricity demand from rooftop PV by 2030 through SSEG incentives. ● A 90 MW solar farm is in development, with land secured and an environmental impact assessment done. ● Additional projects include a small-scale power bank pilot, a 1.7 MW landfill gas plant, and a 0.3 MW biogas plant.
Transmission and distribution ambitions	● 11% electricity loss due to various issues. ● The IDP 2024/25 includes new substations, 66kV lines, and smart meter replacements costing over R180 million. ● Monitoring losses is challenging due to insufficient check meters and unlinked asset management.
Job creation and social upliftment	● The City trains locals through the solar geyser program. ● No city-wide communication on job risks in coal industries or alternative job programs.

	● Potential for more collaboration with tertiary institutions on renewable energy.
Climate Change Mitigation	● Electricity (34%) is the main energy source, contributing 71% to carbon emissions. ● Funding from GiZ secured for a climate change response plan. ● Plans to replace electric water pumps with solar pumps and increase greywater use.
Energy market transition and trading	● No data is available on how Polokwane is currently considering the various methods of electricity trading.
Wheeling and cost of supply studies	● There is no wheeling framework or cost of supply study available for the City of Polokwane.
Current energy team capacity	● The Energy Services Department handles distribution but lacks a mandate for energy efficiency and renewable energy, with limited staff and skills. ● No dedicated unit or champion for the energy strategy.
Financial standing	● Liquidity and debtor management are improving but not at recommended levels. Polokwane lacks a credit rating and external borrowing capacity.

5.3 Discussion of Situational Aspects and Contributing Factors

The municipalities' situation was considered by arranging the available information into the situational aspects described in Section 4.2. The assessment of each situational aspect was further articulated by considering the impact that the following factors had:

- availability of information
- organisational and executive capacity and capability within the municipality
- state of assets
- availability of funding.

These contributing factors are further applied in the Gap Analysis methodology to establish the gaps related to each situational aspect.

The impact of the contributing factors is discussed in the fand their interrelation with an emphasis on the financial health and performance of municipalities is discussed below.

5.3.1 Snapshot of Financial Health & Performance of the municipalities

The table below represents a weighted average of key measurements used to evaluate the current Financial Health of the municipalities within the control group. The various line items were weighted based on various input variables that were comparable between the different municipalities. In some instances, a simple ranking was applied whilst in others the score was expressed relative to other datapoints as a simple ranking did not adequately represent the differences in the dataset. The scoring was done from 1 – 5, with a higher score representing a more dire situation.

For each of the measures, the following was considered:

- Liquidity Shortages – Going Concern, Debtor and Creditor days, % of next year's budget spent
- Debt % written off – Debt recovery write off %
- Collection Rates – % Electricity collection rates
- High Losses – % Technical and Non-Technical Electricity Losses
- Distressed Municipality – Has the municipality been classified as distressed
- Eskom Debt Relief Program – Has the municipality been included in the Eskom Debt Relief Program
- Financial Management – External Credit Rating, Most Recent Audit result, Material Irregularities Identified & Action taken

Description	Weight	Tswelopele	Hantam	Matlosana	NMBMM	CoJ
Final Score		**41.5%**	**67.0%**	**19.1%**	**64.4%**	**65.8%**
Liquidity Shortages	10	4.88	2.38	4.13	2.00	1.63
Debt % written off	5	2.50	3.00	5.00	2.50	3.50
Collection Rates	4	3.50	3.00	4.50	2.00	1.50
High Losses	4	1.00	1.50	5.00	3.00	4.00
Distressed Municipality	3	3.00	3.00	3.00	3.00	1.00
Eskom Debt Relief Program Participant	5	3.00	1.00	3.00	1.00	1.00
Financial Management	8	2.20	1.80	3.00	2.80	2.90

Most of the measures taken were derived from data collected from the Auditor General's most recent (2022/23) Financial Report as this provided a central repository of all municipalities for comparative purposes.

On a high level, the following observations could be made:

- Matlosana scored the lowest in almost all the metrics.

- Hantam scored the highest in the control group. A portion of this can be attributed to the relative size of the municipality although it scored quite well in various components.
- Given the relative size of the different municipalities, CoJ and NMBMM did quite well although CoJ's High losses and Financial Management remains a concern.

Description	UOM	Tswelopele	Hantam	Matlosana	NMBMM	CoJ
Going Concern uncertainty	**Years**	**Yes - 5**	**Yes - 2**	**Yes - 5**	**No**	**No**
Creditor Days	Days	412	106	586	110	262
Debt recovery write off %	%	70%	81%	94%	72%	88%
Debtors Days	Days	171	87	43	122	43
% Next Year budget spent	%	50%	10%	50%	10%	10%
Financial Reporting		**Poor**	**Poor**	**Poor**	**Poor**	**Poor**
Most Recent Audit		Unqualified	Unqualified	Unqualified	Unqualified	Unqualified
Audit Result Trend		Regressed	Regressed	Same	Improve	Same
Material Irregularities		**0**	**0**	**4**	**7**	**8**
- Appropriate Action Taken					6	5
- Resolved					1	3
- Recommendations				3		
- Appropriate action not taken				1		
Compliance - Movement	Rm	**-8**	**-15**	**-567**	**112**	**1 943**
Unauthorised	Rm	-23	-4	200	65	1 300
Fruitless & Wasteful	Rm	3	-1	233	46	-57
Irregular	Rm	12	-10	-1 000	0	700
% Change from Prev Year	%	**-7.19%**	**-98.87%**	**-6.67%**	**15.81%**	**16.91%**
Unauthorised	%	-70.75%	-100.00%	4.65%	733.71%	30.95%
Fruitless & Wasteful	%	113.64%	-100.00%	117.46%	6.82%	-11.71%
Irregular	%	15.52%	-98.27%	-25.00%	0.50%	10.29%
% of Total Revenue	**%**	**-2.73%**	**-7.53%**	**-14.64%**	**0.60%**	**3.07%**
Credit Rating		None	Ba3	None	A1.za Stable	A+/A1
Rating Status				Withdrawn	Improved	Mixed

Unfunded budget submitted		Yes		Yes		

The following should be noted:

- **Going Concern Uncertainty** – Municipalities must assess their financial position at year-end using criteria included in the accounting standards. They do this by analysing their financial information and doing calculations to determine whether their revenue is more than their spending (in other words, if they made a profit), they have more assets than liabilities, there is enough money in the bank to pay their debt, and they expect to have enough funds in future to cover what it will cost to deliver services. If, based on this assessment, they have serious concerns about their ability to perform their functions and honour their financial and performance commitments with the funds they have (or can get), they must disclose this in their financial statements. Three of the municipalities have expressed a concern in this regard for a number of years (5 years & 2 years).
- **Audit Result –** All municipalities achieved the same Audit result > Unqualified with findings which is the 2nd highest result that can be achieved short of a Unqualified Report with no findings (Clean Audit Report).
- **Material** Irregularities – are usually items picked up that would result in a material financial loss for the municipality if not addressed adequately.
- **Compliance** – Relates to Unauthorised, Fruitless & Wasteful as well as Irregular expenditure expressed in Rand terms, percentage change from previous year as well as % of Total Revenue.

For completeness, the summary findings of the Auditor General's most recent audit reports for the municipalities within this group has been added as an annexure to this document which gives additional information regarding the current financial health of the municipalities in the control group.

5.3.2 Municipal Electricity Supply & Distribution

The table below gives a high-level overview of each municipality's electricity and distribution profitability.

Municipal Electricity Supply and Distribution (R/kWh)						
Year	**2022/2023**	**AFS**	**2022/23**	**2022/23**	**2022/23**	**2022/23**
Municipality	**Tswelopele**		**Hantam**	**Matlosana**	**NMBMM**	**CoJ**
1) Selling Price	1.75	2.34	2.54	2.95	1.91	2.45
2) Cost of Sales - Purchase price	1.86	1.86	1.78	1.81	1.40	1.40
Gross Profit	-0.11	0.48	0.76	1.14	0.51	1.05
3) Indirect Costs - Distribution & Other	1.37	1.37	0.34	0.50	0.28	0.81

Operating Profit before Losses	**-1.48**	**-0.89**	**0.42**	**0.64**	**0.23**	**0.24**
Technical & Non-Technical Losses	-0.16	-0.21	-0.35	-1.15	-0.45	-0.73
Nett Operating Profit/Loss	**-1.64**	**-1.10**	**0.07**	**-0.52**	**-0.22**	**-0.49**
Total Cost of Electricity to end user (2+3)	3.23	3.23	2.12	2.31	1.68	2.21
Units Purchased (kWh '000 000)	21.63	21.63	13.95	601.38	3 302.63	9 988.90
Revenue Collection Rates	Low	Low	??	37%	79%	91%
% Breakdown						
1) Selling Price	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
2) Cost of Sales - Purchase price	106.29 %	79.49%	70.08%	61.36%	73.30%	57.14%
Gross Profit	-6.29%	20.51%	29.92%	38.64%	26.70%	42.86%
3) Indirect Costs - Distribution & Other	78.29%	58.55%	13.39%	17.10%	14.66%	33.06%
Operating Profit before Losses	**-84.57%**	**-38.03%**	**16.54%**	**21.54%**	**12.04%**	**9.80%**
Technical & Non-Technical Losses	-9.17%	-9.17%	-13.77%	-39.09%	-23.56%	-29.80%
Technical Losses *Non-Technical Losses*	*1.15%* *8.00%*	*1.15%* *8.00%*	*??* *??*	*11.00%* *28.09%*	*6.70%* *16.95%*	*9.09%* *20.91%*
Nett Operating Profit/Loss	**-93.74%**	**-47.20%**	**2.77%**	**-17.55%**	**-11.52%**	**-20.00%**
Total Cost of Electricity to end user (2+3)	184.57 %	138.03 %	83.46%	78.46%	87.96%	90.20%
Eskom Debt (Rm)	**110**	**110**		**1 500**		**3 400**
Electricity Infrastructure Backlog (Rm)	85	85	15	33	885	34 300
Electricity Maintenance next 3 years (Rm 3yrs)	13	13	1.5	314		

A high-level analysis of the information received from NERSA (D Forms information) paints a grim picture with regard to the various municipalities' ability to run the sale and distribution of electricity on a sustainable basis. Although a healthy margin is charged on the sale of bulk electricity purchases, every municipality's (with the exception of Hantam Municipality) current sale and distribution of electricity is run at a loss after factoring in distribution, other charges as well as Technical and Non-Technical losses.

The following common challenges were identified between the various municipalities:

Non-Technical Losses comprising of:

- Theft and illegal meter bypassing,

- Deliberate meter tampering and de-calibration,
- Faulty equipment including damaged meters and transformers,
- Billing inaccuracies, and
- Unmetered supply to customers.

It is concerning that this amount has seen a steady increase over the years and all indications are that this trend will continue compared to the prescribed norms for electricity losses of ±10%.

Debt Impairment – Debt impairment constituted a significant expense in all of the municipalities within the control group. Although the impairment of electricity debt did show improvement in some of the municipalities, impairment of debt remained a significant cost surpassing even bulk service purchase cost in some municipalities.

Distressed Municipality – Three of the municipalities have been classified as a distressed municipality which is defined as a local government that is facing severe financial, operational, or administrative challenges, often leading to an inability to provide basic services to its residents (Thorne, 2024). While there have been improvements in specific financial metrics in some of the municipalities (NMBMM), these Municipalities continue to be classified as distressed due to high unemployment rates and revenue collection issues.

Eskom's Debt Relief Programme – Although 3 of the municipalities have been included in Eskom's Debt Relief program that will see a third of its debt being written off over a 3-year period, one of the conditions requires monthly payment of their electricity accounts which is likely to place additional strain on the municipality's cash reserves and exacerbate the liquidity challenges already faced by the municipality. If the municipality fails to meet its obligations towards Eskom, it can lead to serious legal consequences, including direct payments from local businesses and industries, bypassing the municipality altogether.

Load shedding – The impact of load shedding should be considered as it influences the relationship between maintenance costs, bulk purchases and revenue.

Aging Infrastructure: All the municipalities are facing aging infrastructure that exacerbate the non-technical losses with significant capital as well as maintenance backlogs that need to be addressed as a matter of urgency over the short to medium term. The municipalities are facing significant distribution losses in both water and electricity, largely due to aging infrastructure and illegal connections. This not only affects revenue but also impacts service delivery quality.

Managing & Enhancing Revenue Collection – Municipalities face challenges in managing revenue collection and financial oversight due to a lack of **advanced systems for accurate data management.** There are limited tools in place to track, collect, and audit revenues, which leads to inefficiencies in the overall revenue collection process. This impacts the financial sustainability of the municipality's energy services.

5.3.3 Sources & Diversification of Funding

Throughout this document, the diversification of funding sources has been referenced, matching the appropriate possible funding source to each specific intervention identified. As a starting point though, it seems appropriate to gain an understanding of each municipality's current funding structure (Grant vs Own revenue) as well as ascertain what type of grants (Equitable share vs Other Grants) are being utilised within each entity. The AGSA's website details the results of the Municipalities for the most recent financial year (2022/23) which is contained in the table below:

Overall Financial Health 2022/23	**UOM**	**Tswelopele**	**Hantam**	**Matlosana**	**NMBMM**	**CoJ**
Total Revenue	**Rm**	**293**	**200**	**3 870**	**18 600**	**63 200**
Portion Grant	Rm	174	112	667	3 030	9 700
Equitable Share	Rm	91	31	545	1 290	6 280
Additional Grants	Rm	82	81	122	1 740	3 420
% Grant	%	59%	56%	17%	16%	15%
Equitable Share	%	53%	28%	82%	43%	65%
Additional Grants	%	47%	72%	18%	57%	35%

The following observations can be made:

- The smaller municipalities are a lot more dependent on grants than the larger metros, deriving more than half of their funds from grants as opposed to own funds.
- For most metro's additional grants constitute more than 50% of total grants. This possibly presents an opportunity for Matlosana and CoJ who are below this threshold and spells danger for Hantam who has a disproportionately high (72%) portion attributable to additional grants.
- Compared to its peers, Matlosana has comparatively low additional grants which could possibly be an easily accessible source of funding

As already mentioned, the ranking of the municipalities' internal priorities in the table below shows that CoJ is not focussing on this even though it could have a significant impact on addressing its funding requirements.

6 Gap Analysis

6.1 Overview of identified gaps

The gap analysis in the Municipal Just Energy Transition (JET) support initiative is critical in understanding the discrepancies between the current state of municipalities and their desired future state as it pertains to energy transition goals. This section outlines key gaps identified across several core dimensions, including technical capacity, financial capability, organizational structure, and policy alignment, which impede the effective realization of JET objectives at the municipal level.

Technical Capacity Gaps

- **Aging Infrastructure**: Many municipalities face significant challenges due to aging and poorly maintained energy infrastructure, such as substations, transformers, and distribution grids. This inhibits the adoption and integration of new renewable technologies and impairs energy efficiency.
- **Limited Renewable Energy Integration**: Municipalities often rely heavily on non-renewable energy sources, and their energy generation and distribution networks are not adequately prepared for incorporating renewable sources like solar or wind energy.
- **Lack of Skilled Personnel**: The shortage of technical expertise, particularly in managing and maintaining renewable energy projects, negotiating power purchase agreements, and implementing modern grid technologies, limits the municipalities' ability to effectively drive JET projects.

Financial Capability Gaps

- **Liquidity Constraints and Budget Deficits**: Several municipalities struggle with liquidity issues, insufficient revenue collection, and high levels of debt. This financial instability impacts their ability to invest in necessary infrastructure upgrades and energy transition initiatives.
- **Unfunded Budgets**: There is a prevalent challenge of unfunded budgets being submitted by municipalities, which leads to unrealistic revenue projections, poor budget management, and ultimately, a lack of resources to implement JET plans.
- **Non-Cost-Reflective Tariffs**: The sale of electricity at non-cost-reflective tariffs results in revenue losses, making it difficult for municipalities to maintain and improve their energy infrastructure.

Organizational and Strategic Gaps

- **Fragmented Planning and Coordination**: There is often limited coordination across municipal departments responsible for energy transition, leading to fragmented planning and inefficiencies.
- **Insufficient Institutional Capacity**: Many municipalities lack a dedicated team or effective governance structure to manage JET-related projects, resulting in delays, lack of ownership, and ineffective implementation.
- **Limited Stakeholder Engagement**: Inadequate engagement with key stakeholders, including the private sector, community groups, and technical experts, limits the development of inclusive and sustainable JET solutions.

Policy and Regulatory Gaps

- **Misalignment with National JET Objectives**: Some municipal strategies are misaligned with the broader national JET goals, creating policy inconsistencies and missed opportunities for leveraging national support programs.
- **Regulatory Barriers**: Complex regulations and inconsistent application of policy frameworks often hinder municipalities' ability to procure energy from independent power producers (IPPs) and implement embedded generation projects.
- **Lack of Incentive Structures**: Absence of well-designed incentive structures to encourage private sector investment in renewable energy projects at the municipal level creates additional financial hurdles.

Socio-Economic and Community Engagement Gaps

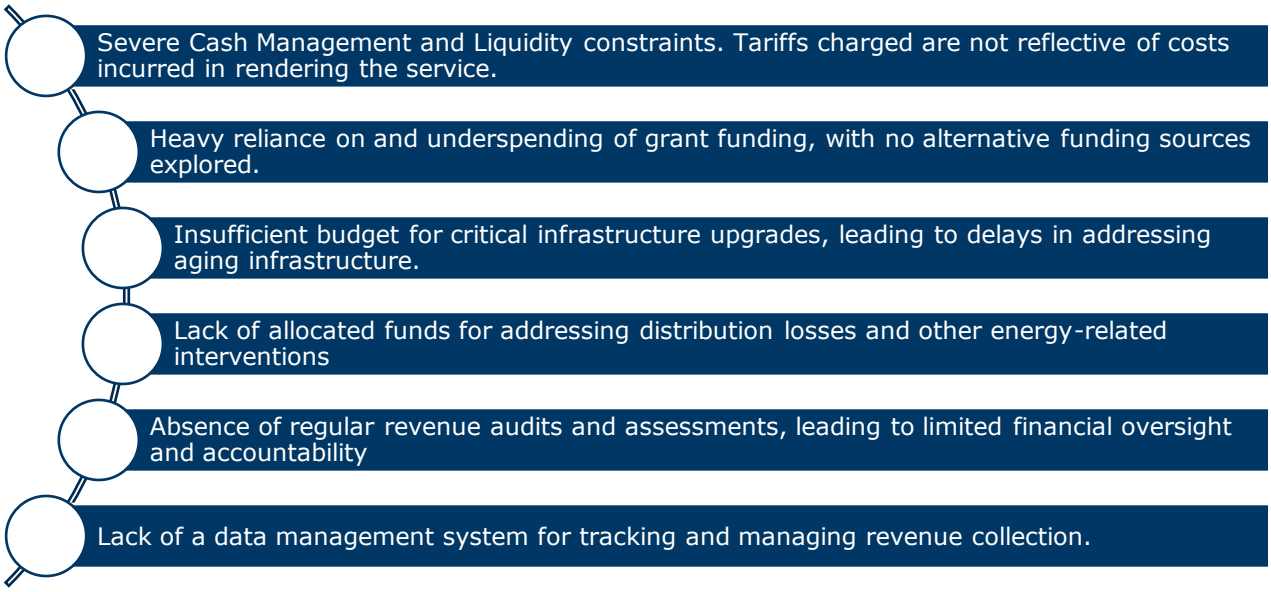
- **Energy Poverty**: Many underserved and informal settlement areas remain reliant on outdated, inefficient, and often unsafe energy sources. This highlights a pressing need for targeted interventions to ensure equitable access to modern energy services.
- **Social Inclusion and Job Creation**: There is a gap in strategies to ensure that communities, particularly those affected by the transition from coal-based economies, are included and supported through reskilling and job creation programs.
- **Community Awareness and Buy-In**: The lack of effective community engagement and public awareness campaigns results in low buy-in and support for energy transition projects, which can lead to resistance and project delays.

6.1.1 Financial Viewpoint Gap Analysis of Methodology 1

The following gaps were identified out of a financial viewpoint:

All the municipalities face liquidity constraints to a certain extent. In 2 of the municipalities, short term liquidity and cash management was identified as a pre-requisite before any other intervention could be successfully implemented. The following common gaps were identified in the various municipalities:

Most municipalities, to some extent faced the following risks that needed to be addressed:



- Unfunded budgets were submitted by 2 of the municipalities.
- Tariffs are not cost-reflective as most municipalities showed a loss in the sale of electricity.
- Poor debtors' collection rate as no municipality complied with the 90% requirement of treasury.
- Breaches in the financial control environment.
- Failure to implement cost containment measures.
- Lack of adequate consequence management to contravention of policies.
- No adherence to policies, especially SCM policies.

Further analysis of the above risks revealed:

- **Funded Budgets** – Unrealistic Revenue estimates, poor revenue collection rates compared to budget, poor expenditure management, forecasted cash flow surpluses insufficient to cover outstanding creditor balances from prior financial periods (This was applicable to at least 2 of the municipalities who submitted unfunded budgets).
- **Cost Containment** – Failure to implement cost containment measures. Limited monitoring strategies and controls in place to ensure policy is adhered to. Although improvement was observed in Compliance Management (Unauthorised, Fruitless & Wasteful and Irregular expenditure), the overall amount increased in the 2 biggest municipalities (NMBMM R110m, CoJ R1.9bn).
- **Cash Flow Management** – Consequence management for misappropriation of funds, adoption of cash flow management and investment framework per section 13 of MFMA, Bank reconciliation

of all municipal bank accounts monthly. Two of the municipality's had already spent 50% of next year's budget on operational expenses.

- **Trading Debtors and collections** – A significant amount of cash is tied up with customer debtors (43 – 171 debtor days vs 30 days norm). Implement/enforce the credit control and debt collection policy (70% - 94% of debtors to be impaired). Review debtors' book and prioritise debt collection.
- **Creditor Management** – Some Municipalities are not presently generating sufficient revenue & cash to cover monthly expenses, incurring interest on unpaid accounts resulting in fruitless and wasteful expenditure. (Creditors payment period 106 - 586 days).
- **Cash-backed Conditional Grants (CG)** – Ensure that all grants are 100% cash backed and spent in full – Some municipalities underspent their conditional grants which subsequently had to be returned to treasury.

For a few of the municipalities, a Financial Recovery Plan has been developed and implemented in an effort to stabilise the relevant entity's finances. The issues addressed & interventions identified were found to be faced by most municipalities and is worth mentioning in this regard:

<u>Revenue enhancement strategies:</u>

- Implementation of **credit control mechanisms** to improve revenue collection, particularly focusing on non-payment of municipal services. This includes public awareness campaigns to encourage residents to pay for services rendered.
- Putting in place a **funding plan** to manage long-standing debts, aiming to stabilise the municipalities' financial position.

<u>Infrastructure Development:</u>

- Recognising the ageing infrastructure, the plan emphasises the need for expanding and maintaining critical infrastructure to support local economic development and improve service delivery.
- Initiatives are underway to attract external investors, which is crucial for funding infrastructure projects and stimulating local economic growth.

<u>Community Engagement:</u>

- The recovery plan stresses the importance of public participation in decision-making processes to ensure that community needs are prioritized. This engagement is vital for fostering trust and cooperation between the municipality and its residents.

<u>Financial Monitoring and Reporting:</u>

- The municipality conducts regular audits and monitors its financial performance closely.
- Implement the Consequence Management Framework.
- Train and empower Presiding Officers and Prosecutors.

<u>Employment and Skills Development:</u>

To combat high unemployment rates, especially among youth, the municipality is developing programs aimed at enhancing skills and creating job opportunities within the community.

6.1.2 Gap Analysis for Group 1

Figure 10 Gap Analysis for Group 1 Municipalities highlights specific areas of deficiency within each municipality, categorized by situational aspect. These gaps illustrate the challenges municipalities face, such as lack of policies incentivizing greenhouse gas (GHG) mitigation, insufficient funding for renewable energy projects, and limited stakeholder engagement in energy transition strategies. Through this structured gap identification, actionable insights can be drawn for targeted intervention

Figure 10 Gap Analysis for Group 1 Municipalities

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
Municipal Strategic Alignment with JET						
1	Municipal Strategic Alignment with JET and National Objectives	• Lack of policies that incentivise GHG mitigation • Lack of budget planning/allocation for RE projects.	• Lack of policies to accelerate energy transition. • Lack of policies that incentivise GHG mitigation	• No policies & plans to guide energy transition • Minimal alignment with JET Objectives and IDP. • No policies that incentivise GHG mitigation	• No policies & plans to guide energy transition • Minimal alignment with JET Objectives and IDP. • Lack of policies that incentivise GHG mitigation	• No policies & plans to guide energy transition • Minimal alignment with JET Objectives and IDP • Lack of policies that incentivise GHG mitigation

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
2	Municipal Specific Strategies	• Lack of budget allocation for RE projects. • Not on track to achieving 2035 energy mix • Climate Action Plan based on outdated GHG emissions data.	• No monitoring framework to monitor progress of CC&GEAP. • Lack of clear timelines in CC&GEAP • Plans don't adequately address social equity.	• No energy-related strategies/plans • Limited programs for energy efficiency. • High dependency on Eskom	• No energy-related strategies/plans • Limited programs for energy efficiency. • High dependency on Eskom.	• No energy-related strategies/plans • Limited programs for energy efficiency. • High dependency on Eskom.
Energy Context						
1	Carbon Contribution	• GHG emissions data is outdated (from 2016).	• GHG emissions data is outdated (from 2012).	• No GHG emissions data available	• No GHG emissions data available	• No GHG emissions data available

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
3	Electricity Supply	• 22% of households do not have access to electricity.	• 2.7% households do not have access to electricity. • 26% of registered indigent households do not receive FBE.	• 7% of households do not have access to electricity. • 36% of registered indigent households do not receive FBE.	• 5% of households do not have access to electricity. • More households receive FBE than registered indigent households	• 21% of households do not have access to electricity. • Over-reliance on Eskom.
3	Renewable Energy Sources	• High reliance on Eskom • The current energy infrastructure is not adequately equipped to integrate RE sources into the grid.	• High reliance on Eskom • 86% energy is provided by Eskom. • Lack of institutional commitment towards achieving targets.	• High reliance on Eskom • Lack of long-term strategic plans for energy transition	• High reliance on Eskom • Lack of long-term strategic plans for energy transition	• High reliance on Eskom • Lack of long-term strategic plans for energy transition

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
Current energy infrastructure and services						
1	SSEG registrations		• Half of the SSEG systems are connected illegally			
Municipal team capability						
1	Planned Maintenance	• 53.35% of the planned maintenance is outstanding	• 31.1% of all planned maintenance outstanding			
2	Power Outages (Initiated by Municipality)	• Power outages in 2022/23 from the previous FY increased by 2% in HV lines, 19% in MV lines and 6% in LV lines.		• Power outages durations exceeded NERSA standards	• Power outages durations exceeded NERSA standards	• Power outages durations exceeded NERSA standards

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
3	Power Outages (Initiated by Eskom)			• Power outages durations exceeded NERSA standards	• Data for interruptions initiated by Eskom has not been reported on.	• Power outages durations exceeded NERSA standards
4	Energy department performance	• Achieved 57.14% of its Service Level Standard KPI's.	• High vacancy rate (62% vacancy rate).	• Did not achieve targets, gaps of 31%, 20%, and delays in both existing infrastructure and new network installations.	• Department doesn't have staff in place to implement JET-related projects.	• 50% vacancy rate impacting network maintenance and upgrades.
5	Skills gap in RE technologies			• Limited expertise in managing RE projects.	• Limited expertise in managing RE projects.	• Limited expertise in managing RE projects

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
Financial status/budget						
1	Energy services revenue collection	• Collection rate is at 92%, below norm of 95%.	• Debt collection rate 2023/24 is 79% • Bad debt impairment cost in 2021/22 is R 46 million, in 2022/23 is R 111 million, by 144%	• Bad debt impairment in 2021/22 is R16million, in 2022/23 is R 316 billion. Increase of 1909% ·Collection rate is 47%	• Data not available	• Data not available
2	Cost of Supply/Electricity Pricing	• City Power is operating at a 9% deficit vs 0-15% Norm	• Electricity price is not cost reflective, municipality making a loss of 22cents/kWh purchased.	• Electricity price is not cost reflective, municipality making a loss of 41cents/kWh purchased.		

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
3	Funding Sources	• The funding mix has limited diversification.		• Current funding is limited to EEDSM, INEP and MIG grant.	• Current funding is limited to INEP and MIG grant.	• Current funding is limited to EEDSM, INEP and MIG grant.
5	Asset renewal Rate	• Capital costs to total operating expenditure (4.5%) is below the norm 6-8%				
6	Liquidity	• Current ratio is 0.26, below the norm (1.5 - 2.1)	• Norm 1, municipality 2023/24 is 0,90. Gap is 0,10	• Norm 1, municipality 2023/24 is 0,10		
7	Repairs and maintenance		• Norm>8%, municipality in 2022/23 is 2,% and 2023/24 is 4%, projected 2024/25 is 4%.	• Norm >8%, municipality in 2022/23 is 2,20% and 2023/24 is 7,20%, projected 2024/25 is 6,6%.		

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
8	Profitability			• Norm 10-20%, municipality operating at a deficit of 31,56%		
9	Capital expenditure to total expenditure			• Norm 10-20%, municipality in 2023/24 spend is 4,34%,		
10	Current ratio			• Norm 1,5-2,1, municipality 2023/24 is 0,70.		

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
11	Eskom Debt	• Eskom owed nearly R5bn with additional R1.4bn due end Nov 2024..		• Eskom 1.2 billion debt ·2021/22 paid R 58million in debt interest ·No record of payment in 2022/23, Debt climbed to R1.5bn. • Part of National Treasury Debt Relief but failing to meet all the criteria.	• Eskom R110m debt owed. • Part of National Treasury Debt Relief but failing to meet all the criteria.	
Infrastructure state						

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
1	Technical and Non-technical-losses	• 30%-12% = 18% distribution losses.	• 23.65%-12% = 11.65% Non-technical and technical loss • Technical losses - 6.7%, are high due to aging	• 38%-12% = 26% Non-technical and technical loss ·Technical losses - 11%, Non-Technical losses - 16%,		• 13.77%-12% = 1.77%
2	Maintenance Backlog	• Preventative maintenance practices are insufficient.	• Maintenance backlog budget is R 490 million			
3	Aging Infrastructure	• Most of the infrastructure is outdated and reached its lifespan.	• Most of the infrastructure is outdated and reached its lifespan.	• Most of the infrastructure is outdated and reached its lifespan.	• Most of the infrastructure is outdated and reached its lifespan.	• Most of the infrastructure is outdated and reached its lifespan.

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
4	Saturated Infrastructure	• The municipality has insufficient distribution grid capacity to accommodate the integration of renewable energy solutions	• Grid imbalance, in the central areas of NMBMM is heavily loaded, with a peak load of 280 MVA. Surburban areas grid is significantly underutilised.	• Jouberton sub station (2 x 20MVA) and Klerksdorp substation (4 x 10 MVA) are running at maximum capacity		• Insufficient transmission capacity.
5	Faults/Power Outages		• Significant increase in number of faults	• Frequent faults		
JET Output Impact Indicators Adapted from the JET-Implementation Plan Chapter 10 Municipalities						

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
1	Municipal Council established	• The municipality has established a Climate Action Forum to provide strategic guidance related to climate action goals, however, no formalised council for JET.	• Municipality established energy committee. However, energy advisor stated that a dedicated sustainable energy department is required.	• Municipality does not have a forum established for JET implementation	• Municipality does not have a forum established for JET implementation	• Municipality does not have a forum established for JET implementation
2	JET Workstreams operating according to a mandate	• No JET Workstreams	• No JET Workstreams	• No JET Workstreams	• No JET Workstreams	• No JET Workstreams

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
3	JET Workstreams develop a stakeholder engagement model that includes communities	• The municipality has a five-step stakeholder framework for the AEM strategy	• NMBMM currently has a stakeholder engagement framework; however, it does not include the objectives of the JET	• No stakeholder engagement model	No stakeholder engagement mod	• No stakeholder engagement mod
4	Clarity on delivery of and funding for capability development programmes	• City Power estimates that R26 billion is needed to refurbish and stabilize electricity supply in the City of Joburg.		• No energy transition plans	• No energy transition plans	• No energy transition plans

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
5	Municipality has a relevant and detailed capability development plan	• JET for City Power document identifies key training and development focus areas for JET but lack actionable plans to enhance capabilities.		• No capability development plans available	• No capability development plans available	• No capability development plans available
6	Financing requirements for infrastructure investments for the period to 2027 are met	• City Power estimates that R26 billion is needed to refurbish and stabilize electricity supply in the City of Joburg. SES (2023) approximates that R43bn is potentially needed for AEM projects (AEM 2022).	• Municipality funding received from PPPSG, EEDSM,EEBIP, KfW, GIZ and USAID, however funding allocated to maintenance is below NERSA standards.	• Lack of required upgrade and maintenance budget available and municipality relies on grants for funding	• Lack of required upgrade and maintenance budget available and municipality relies on grants for funding	• Lack of required upgrade and maintenance budget available and municipality relies on grants for funding

No	Gap description (per situational aspect)	CoJ	NMBMM	Matlosana	Tswelopele	Hantam
7	Municipality coordinates planning for increasing the share of renewables in their energy mix	• Municipality has future demand energy mix , however, energy mix targets have not been achieved to date.	• NMBMM has renewable energy mix up to 2025/26. Long term energy mix strategy up to 2050 required.	• No future demand projections available and lack of strategy for energy mix	• No future demand projections available and lack of strategy for energy mix	• No future demand projections available and lack of strategy for energy mix
8	Revenue & electricity pricing model JET inclusive			• Lack of business model inclusive of energy transition.	• Lack of business model inclusive of energy transition.	• Lack of business model inclusive of energy transition.

6.2 Comparison of municipalities based on readiness scores and maturity levels

The gaps identified in the situational aspects as described in Section 5.1 were evaluated in a quantified manner through scoring the municipality to determine a municipal maturity level for each situational aspect. For each gap, an assessment would be made to express the maturity exhibited by the municipality for the contributing factors (information, organisation/execution, assets, funding) as basic capability (1), stability and control (2), operational efficiency (3), growth and innovation (4). The municipality's maturity for the situational aspect would be calculated as the average of the maturity scores calculated for the contributing factors. The maturity score for each contributing factor of the situational aspect would in turn be calculated as the average of the scores that this contributing factor obtained for the gaps identified in the situational aspect. This scoring process is illustrated in Figure 13 below for one situational aspect that has three gaps identified in it.

The result of this scoring process is a spider diagram that shows the municipality's maturity in the six situational aspects based. Figure 11 and Figure 12 show the spider diagrams derived for all five municipalities that were evaluated using methodology 1. The solid line in the colour representing the municipality indicates that maximum maturity while the dashed lines represent the average and minimum maturity calculated for each situational aspect.

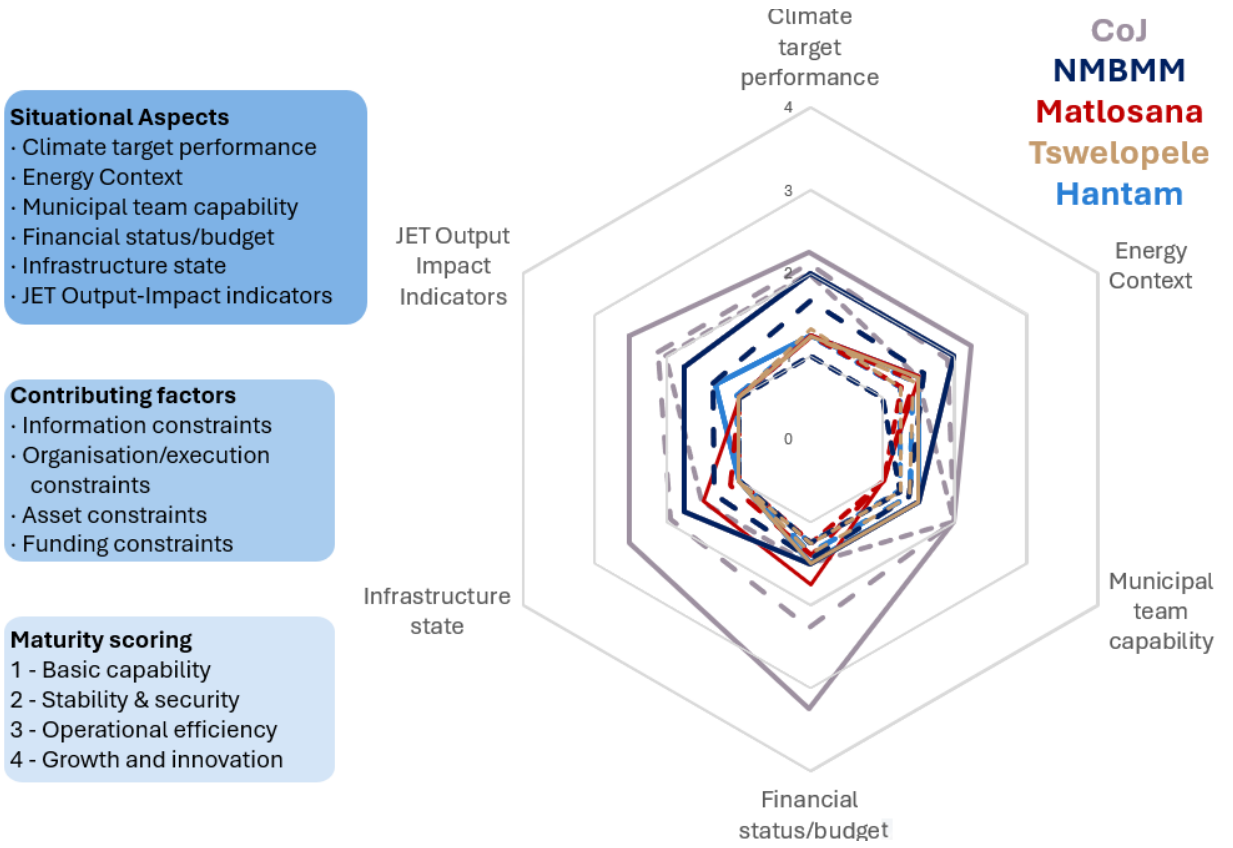


Figure 11 Maturity scoring for methodology 1 municipalities

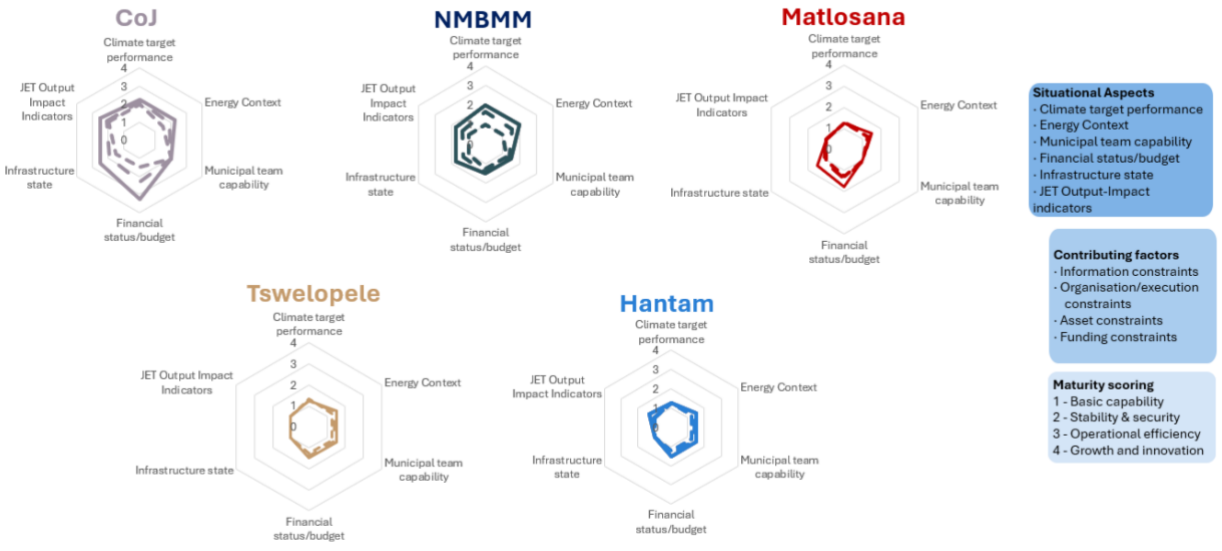


Figure 12 Maturity scoring for methodology 1 municipalities (separated)

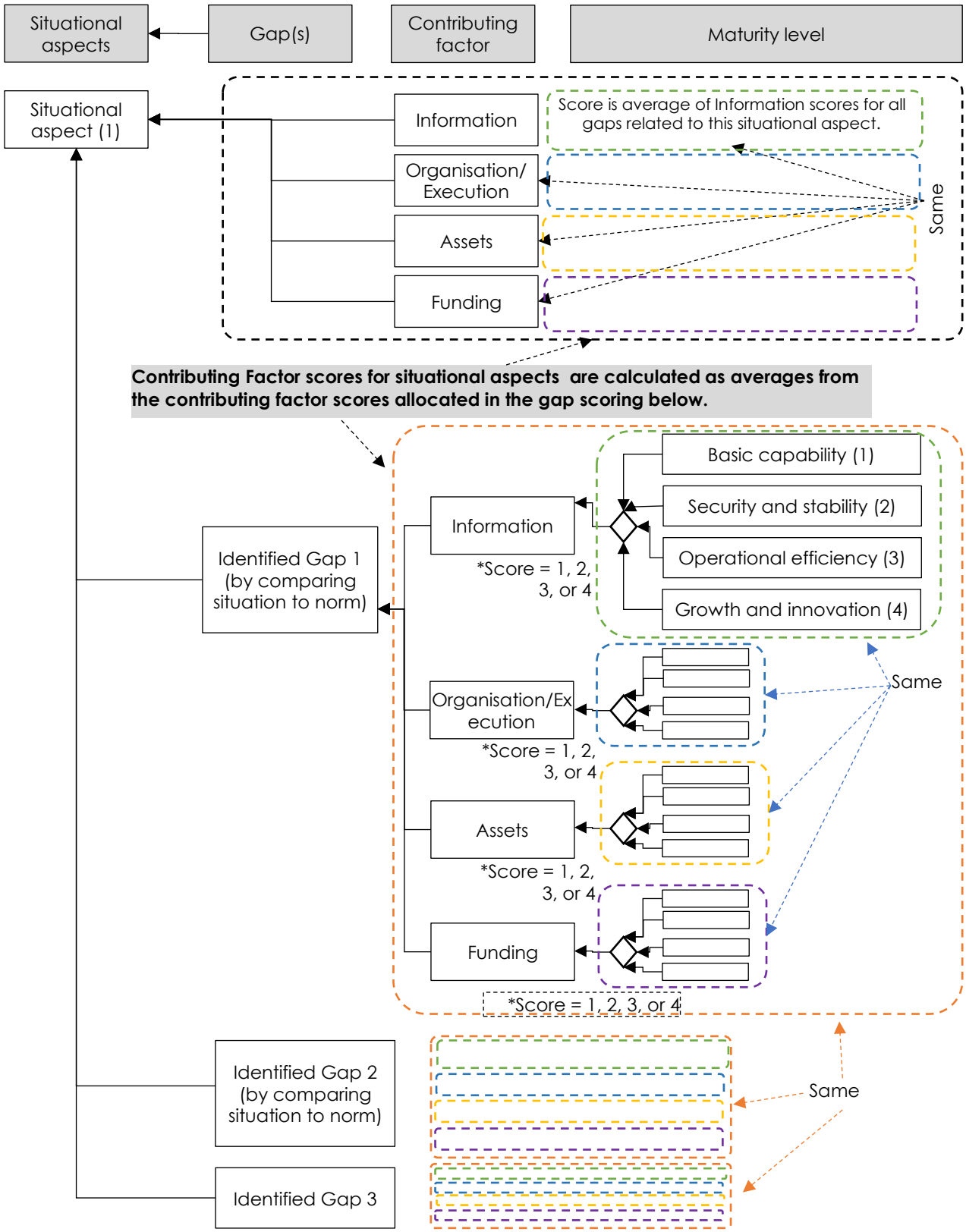


Figure 13 Calculation of maturity score for contributing factors

A comparative state of readiness based on the assessment criteria outlined in the methodology 2 is outlined in the table below.

Figure 144 Maturity scoring for methodology 2 municipalities (separated)

	1. Energy Security (Rating (/5)	2. Transmission / Distribution (Rating (/5)	3. Job Creation & Social Upliftment (Rating (/5)	4. Climate Change Mitigation (Rating (/5)	5. Energy Market Transition & Trading (Rating (/5)	6. Wheeling (Rating (/5)	7. Current Energy Team Capacity(Rating (/5)	8. Financial Standing (Rating (/5)	Total (40)
City of Cape Town	4 | Practitioner	4 | Practitioner	3 | Foundation	4 | Practitioner	4 | Practitioner	4 | Practitioner	4 | Practitioner	5 | Expert	**32**
eThekwini	3 | Foundation	3 | Foundation	2 | Pre-Foundation	3 | Foundation	3 | Foundation	2 | Pre - Foundation	3 | Foundation	3 | Foundation	**22**
Emalahleni	3 | Foundation	2 | Pre-Foundation	3 | Foundation	3 | Foundation	1 | Elementary	2 | Pre-Foundation	3 | Foundation	2 | Pre-Foundation	**19**

Polokwane	3 | Foundation	3 | Foundation	3 | Foundation	3 | Foundation	1 | Elementary	1 | Elementary	2 | Pre-Foundation	2 | Pre-Foundation	**18**
Govan Mbeki	3 | Foundation	2 | Pre-Foundation	1 | Elementary	3 | Foundation	1 | Elementary	1 | Elementary	2 | Pre-Foundation	2 | Pre-Foundation	**15**

6.3 Insights into the common challenges faced by municipalities

The following section highlights the common challenges encountered by municipalities. Figure 15 summarises these recurring issues, structured by key situational aspects such as climate target performance, energy context, infrastructure, financial health, and municipal team capability.

This analysis reveals widespread challenges, including a lack of policies supporting energy transition, limited renewable energy strategies, insufficient funding sources, and aging infrastructure. The Gap Analysis Table in the previous section highlights these critical areas, while the municipality maturity spider diagram visualizes the collective maturity levels, illustrating the municipalities' readiness to meet JET standards across situational aspects.

Figure 15: Common challenges faced by municipalities

No	Gap description (per situational aspect)	Common Challenges
Climate Target Performance		
1	Municipal Strategic Alignment with JET and National Objectives	• No policies and plans to guide energy transition (common across all the municipalities). • The IDPs of smaller municipalities show minimal alignment with JET Objectives, whereas larger municipalities do have RE related projects in the IDP, however, funding is typically not allocated for these projects • Lack of policies that incentivise GHG mitigation and encourage sustainable energy initiatives in the municipality. (common across all the municipalities).
2	Municipal Specific Strategies	• Smaller municipalities don't typically don’t have RE energy-related documents. • The larger municipalities with strategies/plans typically lack evaluation and monitoring mechanisms to monitor performance of targets in plans/strategies. And, the

No	Gap description (per situational aspect)	Common Challenges
		budget for the projects are not included in the plans/strategies. • Limited programs for energy efficiency. • High dependency on Eskom.
3	Municipal Progress on JET	• Most municipalities have not formally introduced JET into their municipalities. Smaller municipalities are typically not aware of the JET initiative.
Energy Context		
1	Carbon Contribution	• Larger municipalities typically have outdated GHG emissions data, whereas smaller municipalities don't have GHG emissions data, general emissions data is typically available for the province.
3	Electricity Supply	• Households lack access to electricity. • Not all registered indigent households receive FBE. • Reduced reliability of supply due to reliance on Eskom for power supply.
3	Renewable Energy Sources	• All the municipalities are reliant on Eskom for its electricity supply. The larger municipalities typically have a more diverse energy mix, although at a low percentage. • Smaller municipalities don't have any long-term plans for an energy transition. • Larger municipalities with targets typically lack funding and/or institutional commitment to achieve targets.
Current energy infrastructure and services		
1	SSEG registrations	• Although not quantified for all the municipalities, it has been mentioned during engagements with the

No	Gap description (per situational aspect)	Common Challenges
		municipalities that illegally connected SSEGs is an ongoing challenge.
Municipal team capability		
1	Planned Maintenance	• CoJ and NMBMM struggle to address all scheduled maintenance contributing to the increase in maintenance backlog.
2	Power Outages (Initiated by Municipality)	• Power outages initiated by the municipality exceeds the NERSA minimum allowable standard largely due to the maintenance work required to address the faults as a result of the aging infrastructure.
4	Energy department performance	• The performance of the energy department differs per municipality irrespective of the size. The performance is dependent on various factors, management, politics, etc. However, a common thread among the municipalities, is that the municipalities may have sufficient staff to run daily operations but none for JET-related projects. • All the municipalities, in certain aspects, fail to reach baseline requirements for service level standards.
7	Skills gap in RE technologies	• The local municipalities don't have any renewable energy projects and limited energy efficiency initiatives, consequently, there are no expertise in planning, implementing and managing renewable energy projects.
Financial status/budget		
1	Energy services revenue collection	• With exception of Hantam, all the municipalities in the control group are running at a loss after factoring in Distribution and Losses

No	Gap description (per situational aspect)	Common Challenges
2	Cost of Supply/Electricity Pricing	• The cost of Supply/Electricity does not seem to be reflective of the cost incurred in providing the service.
3	Budget Analysis	• The Auditor General has rated each of the municipalities in the control group's financial reporting as poor. Tswelopele as well as Matlosana has submitted unfunded budgets.
4	Funding Sources	• Smaller municipalities are a lot more dependent on grants than larger metros, deriving more than half of their funds from grants.
11	Eskom Debt	• Tswelopele and Matlosana are currently part of Eskom's Debt relief program with owing R110m and R1.5bn respectively. CoJ currently owe Eskom about R3.4bn, were recently forced to make a payment of R1bn whilst the balance remains disputed in the courts. On Friday, 5 November it was reported that Eskom has served CoJ with a notice of intention to interrupt power supply at certain pre-determined times of the day citing that the municipality owes more than R5bn in unpaid accounts and a further R1.4bn which is due and payable by the end of November.
Infrastructure state		
1	Technical and Non-technical-losses	• Technical losses are typically high due to the aging and saturated infrastructure. • Non-technical losses typically form the higher percentage of the distribution loss owing largely due to unmetered

No	Gap description (per situational aspect)	Common Challenges
		consumption, meter tampering, cable theft, and illegal connections.
2	Maintenance Backlog	• Metros have a larger distribution network to maintain, a higher maintenance requirement largely due to the aging infrastructure and insufficient budget to address the maintenance backlog. • Local municipalities do have a high maintenance requirement but are more able to address the maintenance requirements. • All the municipalities appear to take on a preventative maintenance strategy, addressing maintenance demand ad hoc.
3	Ageing Infrastructure	• A common thread across the different municipalities is the aging infrastructure leading to more frequent power outages above the NERSA minimum standard. The focus on maintaining the ageing infrastructure requires significant municipal resources (funding, manpower, and material)
4	Saturated Infrastructure	• Insufficient transmission and//or distribution grid capacity. • Substations operating near maximum capacity. • Limited focus on modernising grid. • No data on projected population growth and future energy demand.
JET Output Impact Indicators Adapted from the JET-Implementation Plan Chapter 10 Municipalities		
1	Municipal Council established	• The metropolitans have some sort of climate action forum or committee, but a council specifically for JET has not been established yet.

No	Gap description (per situational aspect)	Common Challenges
		• The local municipalities don't have any energy committee or JET council.
2	JET Workstreams operating according to a mandate	• Workstreams to implement the goals of the JET Implementation Plan has not been established in any of the municipalities
3	JET Workstreams develop a stakeholder engagement model that includes communities	• Metros have a stakeholder engagement model/framework, however, it does not fully integrate community engagements. • The local municipalities don't have a stakeholder engagement model.
4	Clarity on delivery of and funding for capability development programmes	• There doesn't appear to be any capability plans in place to enable the energy transition.
5	Municipality has a relevant and detailed capability development plan	• No capability development plans available
6	Financing requirements for infrastructure investments for the period to 2027 are met	• High dependency on grant funding • Lack of diverse funding sources.
7	Municipality coordinates planning for	• Local municipalities have no future demand projections available and lack of strategies for diversifying energy mix.

No	Gap description (per situational aspect)	Common Challenges
	increasing the share of renewables in their energy mix	
8	Municipal revenue and electricity pricing model that is compatible with the goals of the JET	• No renewable energy business model targeting the diversification of the energy portfolio.

7 Municipal JET plans

7.1 Summary of municipal-level JET plans

This section provides an executive summary of the municipal JET plan, the detailed JET plans are available in the respective reports of each municipality. Following the gap analysis, the interventions were identified. These interventions were ranked and prioritised through a four-stage process. Initially, they were grouped based on common objectives and outputs to avoid duplication and ensure comprehensive gap resolution. The groups were aligned with JET components, such as basic energy services, grid modernization, renewable energy integration, and environmental impact mitigation. Using a Multi-Criteria Analysis (MCA) adapted from the CIDMS framework, interventions were assessed for their impact, implementation difficulty, and alignment with municipal priorities. Criteria included environmental sustainability, cost versus revenue, social impact, and readiness for implementation. The MCA results were combined with assessments of urgency and municipal readiness to produce final prioritization scores, which ranked interventions on a matrix for short-, medium-, or long-term execution. High-readiness, impactful interventions were prioritized for immediate action, while those requiring additional resources were scheduled for future implementation. The figure below shows the priotisation matrix JET interventions of the group 1 municipalities (CoJ, NMBMM, Hantam, Tswelopele, CoM and Hantam).

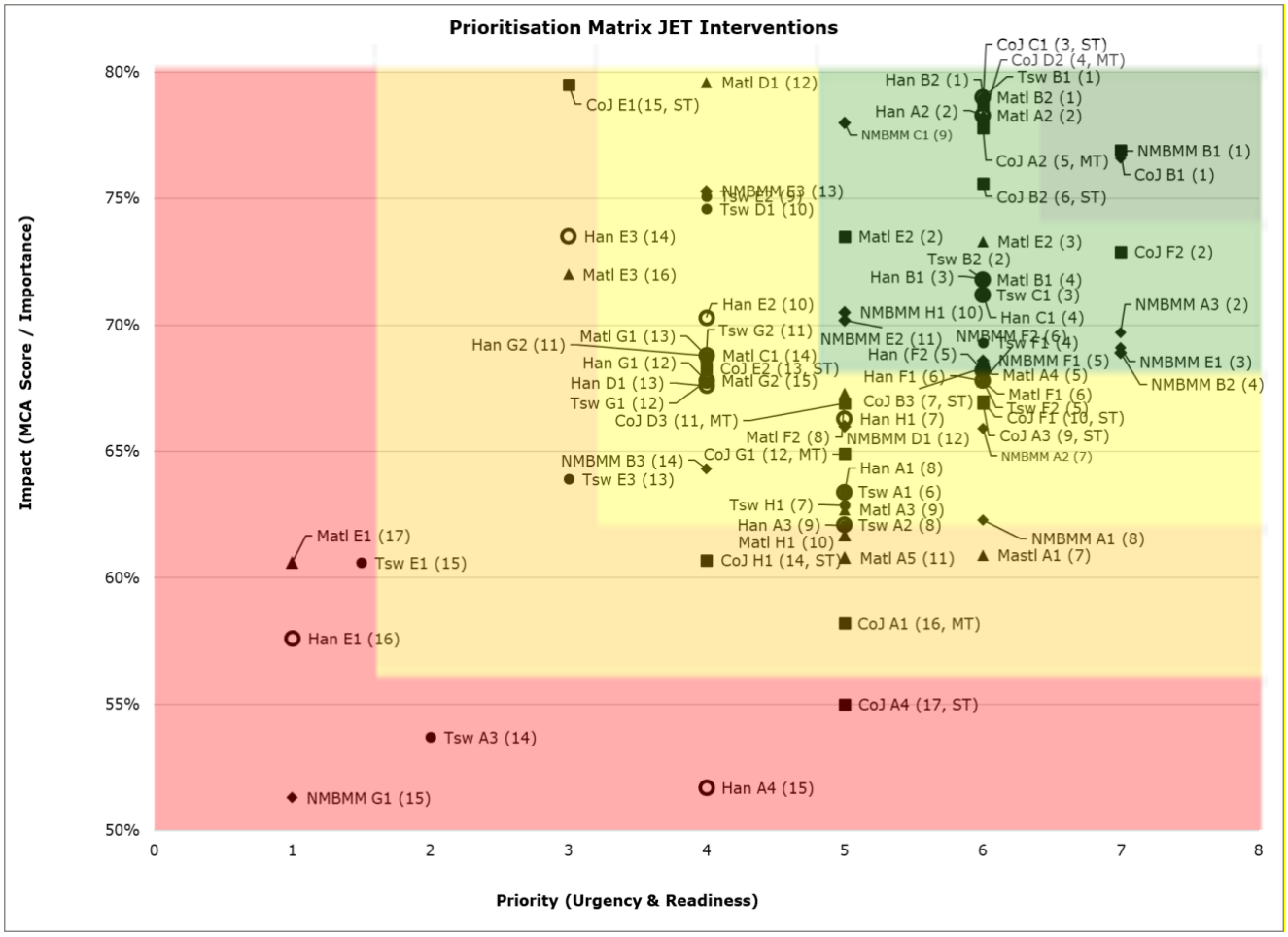


Figure 15: Group 1 Municipalities Prioritisation Matrix JET Interventions

The table below outlines the prioritisation of key interventions across five municipalities, grouped under the JET Implementation categories such as Basic Energy Services Requirements, Municipal JET Implementation, and Grid Modernisation. Each intervention is assigned an ID and a priority level, reflecting its strategic importance within the respective municipality's energy transition framework.

Figure 16: Group 1 Municipality's Grouped Intervention Priority

Intervention Grouping	CoJ		NMBMM		Matlosana		Tswelopele		Hantam	
	ID	Priority	ID	Priority	ID	Priority	ID	Priority	ID	Priority
BASIC ENERGY SERVICES REQUIREMENTS										
Infrastructure maintenance, upgrades, and asset renewal	A1	16	A2	7	A1	7	A1	6	A1	8
Energy reliability	A2	5			A3	9	A2	8	A3	9
Reducing energy losses and improving system efficiency	A3	10	A1	8	A4	5	A3	14	A4	15

Intervention Grouping	CoJ		NMBMM		Matlosana		Tswelopele		Hantam	
Optimising service delivery	A4	17			A5	11				
Workforce development and capability building for energy infrastructure management			A3	2	A2	2			A2	2
MUNICIPAL JET IMPLEMENTATION										
Policy & regulation development	B1	1	B2	4	B1	4	B1	1	B1	3
Institutional capacity building and governance for JET initiatives	B2	6	B1	1	B2	1	B2	2	B2	1
Workforce development and capacity building for energy infrastructure management	B3	7								
Performance monitoring tool			B3	14						
ENERGY ACCESS AND EQUITY										
Enhancing electricity access and equity	C1	3	C1	9	C1	14	C1	3	C1	4
GRID MODERNISATION AND SMART TECHNOLOGY										
Energy efficiency practices	D1	8								
Infrastructure modernisation and smart technologies	D2	4	D1	12	D1	12	D1	10	D1	13
Smart grid technology	D3	11								
RENEWABLE ENERGY INTEGRATION										
Energy transition and future demand planning	E1	15	E1	3	E2	3	E2	9	E2	10
Accelerating Small Scale Embedded Generation			E2	11						
RE inclusive Business Model	E2	13	E3	13	A3	16	E3	13	E3	14
Collaboration with IPPs					E1	17	E1	15	E1	16
FUNDING AND FINANCIAL MECHANISMS										
Securing and diversifying funding	F1	9	F2	6	F1	6	F2	5	F1	6
Enhancing revenue management and financial oversight	F2	2	F1	5	F2	8	F1	4	F2	5
ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACT MITIGATION										
GHG emission inventory	G1	12	G1	15	G1	13	G1	12	G2	11
Develop climate action plan					G2	15	G2	11	G1	12
STAKEHOLDER ENGAGEMENT AND COLLABORATION										
Stakeholder engagement	H1	14	H1	10	H1	10	H1	7	H1	7

The following section provides a description of each intervention:

7.1.1 Group A Basic Energy Services Requirements

Municipal Basic Services Argument	
Status Quo	The municipalities face challenges such as aging infrastructure, energy losses, and frequent power outages, limiting its ability to deliver reliable energy services. Limited workforce capacity further constrains the municipality's ability to maintain and upgrade its infrastructure effectively.
Why this is a Problem	Aging infrastructure and limited workforce capacity impact the municipality's ability to deliver stable electrical services, resulting in energy losses and service disruptions. The high rate of unfulfilled maintenance contributes to frequent outages, affecting service reliability. This impacts the municipality's compliance with NERSA standards and weakens public trust in its ability to provide consistent energy.
Solution	Invest in workforce development and capacity building for energy infrastructure management. This includes hiring additional technical staff and providing specialised training for energy audits and infrastructure maintenance. Implementing and expanding SCADA system coverage and employ advanced data analytics tools to accurately track and report electricity losses, ensuring timely maintenance and system efficiency. Prioritise upgrading aging substations, transformers, and distribution lines to reduce outages and enhance service reliability. Develop and implement energy loss strategy, launch whistleblower programme that enable illegal theft connection report and provides education tips on electricity safety tips.

Group A: Basic Service Requirement Interventions Strategies

Intervention Grouping	Intervention Group Description
Infrastructure maintenance, upgrades, and asset renewal	These interventions are centred around addressing critical weaknesses in the municipality's energy infrastructure. This will include upgrading outdated systems, improving monitoring and developing a budget for asset renewal.

Intervention Grouping	Intervention Group Description
Energy reliability	Works on ensuring energy reliability, addressing potential risks to energy supply and improving system resilience.
Reducing energy losses and improving system efficiency	Focuses on reducing energy losses across the system and improving overall efficiency in energy distribution and consumption.
Optimising service delivery	Focuses on improving service delivery by ensuring the allocation of adequate resources, including funding, staffing, and materials
Workforce development and capacity building for energy infrastructure management	Focuses on building a skilled workforce that can support the municipality's energy infrastructure management and upgrades. This includes increasing the staff capacity by recruiting and training skilled personnel to fill to high vacancy rate to build a capable workforce that can handle maintenance upgrades.

7.1.2 Group B: Municipal JET Implementation

Municipal JET Implementation	Argument
Status Quo	The metropolitan municipalities have strategic plans to diversify its energy sources. CoJ has the Alternative Energy Mix and Sustainable Energy Strategy. NMBMM has the Climate Change and Green Economy Action Plan and Sustainable Energy Plan 2030. The local municipalities lack policies and regulations to support an energy transition and do not have the capacity or capability to develop them. Local municipality's Integrated Development Plan's (IDP) lacks renewable energy targets, and energy efficiency initiatives are limited to streetlight LED replacements and SMART meters.
Why this is a Problem	Absence of local policies incentivising greenhouse gas reduction limits progress towards sustainable energy. National policies like carbon pricing lack local implementation support. Limited capacity and absence of dedicated structures impact the municipality's ability to implement and manage JET projects, limiting effectiveness in energy transition efforts and alignment with long-term sustainability goals.
Solution	Strengthen its regulatory framework to align with JET objectives. Incorporate JET-related Key Performance Indicators (KPIs) into the IDP. Establish a dedicated workstream with cross-departmental stakeholders to

Municipal JET Implementation Argument	
	manage JET projects and foster collaboration. Develop and fund renewable energy initiatives, emphasizing social equity and unified strategy execution.

Group B: JET Plan implementation intervention strategies

Intervention Grouping	Intervention Group Description
Policy & regulation development	These interventions are centred around developing a policy and regulatory environment that will enable and guide the energy transition. Focusing on developing JET aligned policies and regulations.
Institutional capacity building and governance for JET initiatives	Intervention involves establishing a workstream to execute JET. The intervention focuses on enhancing institutional capacity and governance structures to effectively manage and implement JET initiatives at various administrative levels.
RE inclusive Business Model	This intervention is centred around developing a hybrid business model which considers energy efficiency initiatives.

7.1.3 Group C: Energy Access and Equity Interventions

Energy Access and Equity Strategy Argument	
Status Quo	Energy poverty remains a significant issue in all the municipalities, where a substantial portion of the population lacks reliable electricity access.
Why this is a Problem	Limited access to reliable electricity exacerbates social and economic inequalities, preventing communities from benefiting from modern energy services and

Energy Access and Equity Strategy Argument	
	solutions. All households in each municipality should have access to reliable, affordable electricity, with special attention given to underserved and indigent households.
Solution	Expand electricity infrastructure. Improve Free Basic Electricity access. Implement a centralised data management system to track and manage electricity distribution.

Group C: Enhancing electricity intervention strategy

Intervention Grouping	Intervention Group Description
Group C1: Enhancing electricity access and equity	Aims to enhance electricity access and promote energy equity, focusing on underserved households and communities.

7.1.4 Group D: Grid Modernisation and Smart Technologies Intervention

Grid Modernisation and Smart Technologies Strategy Argument	
Status Quo	All the municipal's grid infrastructure is outdated, leading to frequent outages and a reliance on inefficient manual systems. With a significant portion of the grid exceeding its intended service life, and many transformers have surpassed their 50-year useful lifespan. The municipalities current infrastructure does not support the integration of renewable energy sources, and only limited areas. Only City of Johannesburg has real-time grid monitoring technologies like Supervisory Control and Data Acquisition in 37% of their substations.
Why this is a Problem	The outdated infrastructure results in significant energy losses and frequent outages, which limit the municipality's ability to provide reliable electricity services. This also impacts the integration of renewable energy into the grid, as the current system cannot manage the additional capacity required for renewable sources.
Solution	Grid modernisation through infrastructure upgrades, real-time monitoring systems like Supervisory Control and Data Acquisition, and the deployment of smart technologies to enhance system efficiency and optimise energy distribution.

Group D: Grid Modernisation and Smart Technologies Intervention Strategy

Intervention Grouping	Intervention Group Description
Group D: Infrastructure modernisation and smart technologies	This intervention targets modernising the municipality's distribution infrastructure and integrating smart technologies into the network to enable the supply reliability of the grid, and to enable the integration of renewable energy solutions to the grid.

7.1.5 Group E: Renewable Energy Integration

Energy Access and Equity Strategy Argument	
Status Quo	All the municipalities energy supply remains heavily reliant on Eskom. CoJ has the most diverse energy mix, energy portfolio consists of supply from Eskom (83%) as well as other entities, including the Kelvin Power Station (11.5%) and IPPs at 4.5%. NMBMM has small portion of renewable energy is that is sourced from PowerX and embedded generation but lacks scalable integration frameworks constrains significant renewable energy growth. The local municipalities lack diverse energy mix. Additionally, the municipalities lack the relevant regulations to facilitate the integration of renewable energy to the grid. And the local municipality's tariff structure doesn't support net-billing and the feed-in of power into the grid from local generation sources. Furthermore, the municipalities face financial constraints that limit its ability to procure power from Independent Power Producers (IPPs), distributors, traders or develop its own energy generation facilities.
Why this is a Problem	Despite the metropolitan municipality's having alternative energy sources, the high dependency on Eskom constrains the municipality's ability to control energy costs, improve energy security, and meet carbon reduction targets. Expanding the role of renewable energy in this mix is critical for long-term sustainability and for reducing the municipality's reliance on non-renewable, carbon-intensive energy.
Solution	Expand renewable energy infrastructure by developing an integration strategy, strengthening partnerships with Independent Power Producer, and advancing policy frameworks to support renewable energy growth. Develop a strategic framework for renewable energy integration that includes

Energy Access and Equity Strategy Argument	
	net-billing, feed-in tariffs, collaboration with Independent Power Producers, and grid modernisation to support diversified energy sources for the local municipalities.

Group E: Renewable Energy Integration Intervention Strategies

Intervention Grouping	Intervention Group Description
Energy transition and future demand planning	Conducts strategic planning for the transition to renewable energy and anticipates future energy demand to ensure a smooth shift in energy systems.
Optimising transmission and distribution grid capacity	Enhances the reliability and efficiency of the transmission and distribution network by implementing upgrades, monitoring grid performance, and addressing capacity constraints to support increased energy demands and renewable integration.
Accelerating Small Scale Embedded Generation	Supports the adoption and integration of small-scale embedded generation by encouraging investment, simplifying regulatory frameworks, and providing guidance to accelerate the uptake of decentralized renewable energy systems
Energy efficiency practices	Focuses on promoting energy-efficient behaviours among residents and businesses through various initiatives.

7.1.6 Group F: Funding and Financing Mechanisms

The funding and financing mechanisms status quo of the municipalities is detailed in the Snapshot of Financial Health and Performance section. Below are the intervention strategies. Each municipality's JET plan outlines the funding options available for exploration under each specific intervention.

Group F: Funding and Financing Mechanisms Intervention Strategies:

Intervention Grouping	Intervention Group Description
Enhancing revenue management and financial oversight	Enhances revenue management and financial oversight within the energy sector to ensure sustainable financial practices and project execution.

Intervention Grouping	Intervention Group Description
Securing and diversifying funding	Aims to secure and diversify funding sources for energy infrastructure and sustainability projects, ensuring long-term financial viability.

7.1.7 Group G: Environmental and Socio-Economic Impact Mitigation Intervention

Environmental Mitigation Strategy Argument	
Status Quo	The metropolitans have outdated GHG emission inventory. The local municipalities have no track record of GHG emission inventory and lack a formal framework for environmental management in energy projects. The local municipality's do not have a Climate Action Plan.
Why this is a Problem	The absence of an environmental framework and a Climate Action Plan results in missed opportunities to reduce carbon emissions, manage waste effectively, and implement renewable energy initiatives
Solution	Promote renewable energy sources, develop/update a greenhouse gas emissions inventory and a climate action plan.

Group G: Environmental and Socio-economic Impact Mitigation Intervention Strategies

Intervention Grouping	Intervention Group Description
GHG emission inventory	Develop / Update GHG emission inventory to monitor and report emissions, supporting accountability and progress toward emission reduction targets.
Develop climate action plan	Responsible for developing and implementing a climate action plan that includes specific targets for reducing greenhouse gas emissions, improving energy efficiency and increasing use of renewable energy.

7.1.8 Group H: Stakeholder Engagement Intervention

Energy Access and Equity Strategy Argument	
Status Quo	The municipalities lack a structured, comprehensive framework for stakeholder engagement, leading to fragmented interactions. Engagement efforts have primarily focused on technical stakeholders within energy production, with limited inclusion of community groups, particularly vulnerable

Energy Access and Equity Strategy Argument	
	communities affected by energy transitions. Feedback mechanisms are informal, reducing transparency and accountability.
Why this is a Problem	The lack of a formal stakeholder engagement framework limits the municipality's ability to address the diverse needs and concerns of affected communities. This weakens the effectiveness of energy transition efforts, undermines inclusivity, and reduces trust in decision-making processes.
Solution	Develop an inclusive stakeholder engagement model, establish mechanisms for regular feedback from technical and community stakeholders. Build capacity for stakeholder engagement by providing training for municipal staff on relationship management and allocate resources to develop and sustain engagement activities. Implement a user-friendly digital portal for feedback and project updates.

Group H: Stakeholder Engagement Intervention Strategy

Intervention Grouping	Intervention Group Description
Stakeholder engagement	Engages with stakeholders to gather input, ensure alignment of interests, and foster collaboration across different sectors in support of JET initiatives.

7.2 Discussion on alignment with national JET objectives

The Just Energy Transition (JET) strategy in South Africa seeks to reduce greenhouse gas emissions, integrate renewable energy, create equitable socio-economic opportunities, and enhance resilience against climate change impacts. This report evaluates the alignment of selected municipalities with these objectives, highlighting both progress and challenges in the transition to a low-carbon, climate-resilient economy.

<u>Leadership from metropolitan municipalities</u>

City of Cape Town, Johannesburg, and eThekwini Metropolitan Municipalities have taken proactive steps to align their strategies with JET objectives. These cities have integrated comprehensive Climate Action Plans, renewable energy targets, and initiatives to diversify energy sources. For example, Cape Town's 2050 Energy Strategy aims to source 35% of its energy from

renewables by 2028 and achieve carbon neutrality by 2050. Johannesburg is actively promoting small-scale embedded generation (SSEG) with supportive tariff structures and initiatives for solar and waste-to-energy projects. eThekwini has committed to sourcing 100% of its municipal electricity from renewables by 2050, with interim targets to increase local generation and reduce dependence on Eskom. These efforts reflect strong alignment with national decarbonization targets and the promotion of energy security.

Capacity Constraints in Smaller Municipalities:

Smaller municipalities, such as Hantam, Tswelopele, and Matlosana, face significant challenges in aligning with national JET objectives. These municipalities often lack dedicated JET strategies, with their plans mostly confined to Integrated Development Plans (IDPs) that are not specific to energy transition goals. Limited financial resources, aging infrastructure, and inadequate technical capacity impede their ability to pursue renewable energy projects and diversify energy sources. For example, Hantam and Matlosana municipalities struggle with high electricity losses due to outdated and poorly maintained infrastructure, further complicating their ability to reduce emissions and integrate renewable solutions.

Socio-Economic Equity and Inclusivity:

A critical component of the JET objectives is ensuring socio-economic equity, particularly in terms of job creation, upskilling, and protecting vulnerable communities from the adverse effects of the energy transition. Municipalities such as eMalahleni and Govan Mbeki are particularly impacted due to their heavy reliance on coal-based industries. While their economic dependency on coal poses significant risks, these municipalities have begun exploring renewable energy projects and skills development initiatives for affected workers. Larger metros demonstrate better integration of socio-economic equity measures into their JET strategies. For example, Cape Town's initiatives to engage residents in energy decision-making and promote green job creation align closely with the national goals for inclusive and equitable transition.

Integration of Renewable Energy and Grid Modernization:

A key pillar of the national JET objectives is increasing the penetration of renewable energy and modernizing distribution grids. Nelson Mandela Bay and Cape Town have made progress in enabling small-scale embedded generation (SSEG) through supportive policies and infrastructure upgrades. However, grid capacity and aging infrastructure remain persistent challenges across

smaller municipalities. eThekwini and Johannesburg have focused on grid modernisation and integrating smart technologies to enhance distribution and energy efficiency. This effort aligns with national goals to improve grid resilience, reduce energy losses, and accommodate growing renewable capacity.

Climate Mitigation and Carbon Reduction Efforts:

Municipal efforts to align with climate change mitigation goals vary significantly. Cape Town and eThekwini have articulated clear plans to achieve carbon neutrality by 2050, with targeted interventions to reduce greenhouse gas emissions. Conversely, smaller municipalities often lack dedicated climate action plans, limiting their ability to meaningfully contribute to national climate targets.

The varying degrees of alignment with national JET objectives highlight the disparities in capacity, resources, and strategy implementation across South African municipalities. While large metros demonstrate strong alignment and serve as models for innovative approaches, smaller municipalities require targeted support, capacity-building, and financial interventions to bridge the gap. Achieving national JET objectives will necessitate a coordinated effort, with tailored interventions that address specific municipal contexts, enhance resilience, and ensure a just, inclusive transition for all communities.

8 Insights and Generalisations

7.1 General observations on state of readiness

Disparity in Readiness Across Municipality Sizes: Larger metropolitan municipalities, such as the City of Johannesburg and eThekwini, are relatively better prepared for JET implementation compared to smaller municipalities like Hantam and Tswelopele. The metros typically possess climate action plans, diverse energy strategies, and more institutional resources for aligning with JET goals. Smaller municipalities, however, often lack structured energy transition plans, relying instead on general Integrated Development Plans (IDPs) with minimal JET-specific interventions.

Infrastructure Challenges and Aging Assets: A common challenge among municipalities is outdated and aging infrastructure. This leads to frequent power outages, technical losses, and inefficiencies in energy distribution. Larger metros have high maintenance requirements due to

extensive distribution networks, but many lack sufficient budgets to address the maintenance backlog effectively. Smaller municipalities face similar issues but are generally more capable of addressing immediate maintenance needs due to smaller networks.

Financial Constraints and Dependence on Grants: Smaller municipalities are heavily reliant on grant funding for operational and capital expenditures, with more than half of their budgets often sourced from grants. In contrast, larger metros, though better positioned to diversify their funding streams, still face significant financial pressures, including liquidity challenges and high debt levels with Eskom. Municipalities with unfunded budgets and non-cost-reflective electricity tariffs struggle to generate the necessary revenue to support their JET initiatives.

Limited Renewable Energy Integration: All the assessed municipalities remain heavily dependent on Eskom for their electricity supply. While some larger municipalities have taken steps toward diversifying their energy mix by promoting small-scale embedded generation (SSEG) and renewable energy projects, progress is often hampered by funding limitations, regulatory complexities, and insufficient institutional commitment.

Capability and Skills Gaps: Most municipalities lack sufficient expertise in planning, implementing, and managing renewable energy projects. This skills gap extends to the broader management of JET initiatives, where municipal teams may have sufficient staffing for daily operations but not for JET-specific projects. Training and capacity-building initiatives are essential to bridge this gap.

Stakeholder Engagement Deficits: Engagement frameworks in municipalities are fragmented, with limited inclusion of community groups, particularly those most vulnerable to energy transitions. This lack of structured stakeholder engagement reduces the effectiveness and inclusivity of JET efforts.

Strategic and Policy Gaps: Smaller municipalities often lack comprehensive policies and plans that support the energy transition, resulting in minimal alignment with JET objectives. Larger metros with more developed strategies frequently encounter issues with monitoring, evaluation, and funding allocation, which limits their ability to meet established targets.

Further interventions that are centred around securing the necessary financial resources are noted below:

- Develop a financial strategy within the IDP that aligns with the JET funding opportunities.

- Explore diverse funding options to better implement and reach targets set out in the city's strategic documents.
- Foster collaboration between the public and private sectors, creating incentives for private investment in renewable energy, such as tax breaks.
- Detail funding requirements and identify available funding mechanisms in line with the JET-IP for the projects listed as being part of the city's JET efforts.
- Secure funding through public-private partnerships or government grants to invest in renewable energy projects and accelerate the electrification of unserved areas.
- Explore diverse funding sources to enable the implementation of renewable energy projects.
- Allocate appropriate funds towards the upgrade of the existing infrastructure to support renewable energy solutions.
- Explore additional funding sources, including public-private partnerships and grants, and innovative financing solutions for the utilisation of excess demand required but not used to increase capital allocation for critical infrastructure projects.
- Actively pursue grant opportunities. In particular, the R500m grant fund donated by China for renewable energy projects should be investigated. (Business Tech, 2023)
- Promote and establish more PPPs to diversify funding sources and leverage private sector expertise and resources.
- Develop a strategic financial plan that aligns capital expenditure with long-term asset renewal requirements, ensuring sustainable infrastructure investment.
- Increase the allocation of funds specifically for maintenance activities, ensuring that critical infrastructure receives the necessary attention to prevent failures.

Not all of these can be implemented concurrently, and some will prioritise themselves over others, but these will have the impact of allowing for the inclusion of combined interventions, that will result in cumulative benefits for the various municipalities as well as achieving the JET goals.

Public-Private Partnership (PPP)

Throughout this document, numerous references have been made regarding PPP as a potential funding source. A bit more context in this regard seems appropriate along with practical examples, as well as the various forms in which this mechanism could possibly be employed in the various municipalities.

Public-Private Partnerships (PPPs) can take various forms, each designed to meet specific needs and circumstances in infrastructure and service delivery. The primary types of PPP arrangements are:

- Design-Build-Finance-Operate-Maintain (DBFOM) – In this model, the private sector is responsible for designing, building, financing, operating, and maintaining a project. This comprehensive approach allows for integrated management throughout the project lifecycle.
- Build-Operate-Transfer (BOT) – The private partner builds an infrastructure project, operates it for a specified period to recover its investment, and then transfers ownership back to the public sector.
- Build-Transfer-Operate (BTO) – Similar to BOT, but in this case, the ownership is transferred to the public sector immediately after construction, while the private partner operates it for a specified duration.
- Concessions – The private partner is granted the right to operate a public asset and collect revenues from users for a defined period. The public sector retains ownership of the asset.
- Management Contracts - The public sector retains ownership of an asset while contracting a private entity to manage its operations. The private party is paid a fee for its management services.
- Lease Contracts – The private partner leases an asset from the public sector and is responsible for its operation and maintenance in exchange for a fee or a share of revenues.
- Joint Ventures – A partnership where both public and private sectors share equity in a new entity created to undertake specific projects or services.
- Hybrid Arrangements – These combine elements from different types of PPPs to address unique project requirements or risks.
- Greenfield vs Brownfield Projects
    - **Greenfield Projects**: Involve new developments on undeveloped land.
    - **Brownfield Projects**: Involve upgrading or managing existing infrastructure.

8.1.1.1 Mechanisms for Financing Energy Investments

The JET plans include a detailed table outlining potential funding mechanism. This table presents a collection funding mechanisms currently available to local governments for financing energy efficiency (EE) and renewable energy (RE) investments. Some of these financing mechanisms may result in a revenue loss for local government through reduced electricity sales. The tables below the presents sources of funding available for the JET interventions.

8.1.1.2 Sources of Funding

Financing Source[1]	Eligible Applicants	Finance Mechanism	Technology	Project Type	Complexity
International Funding					
1. Green Climate Fund (GCF)	Accredited entities	Grants, loans, equity, guarantees	Mitigation, Adaptation, Crosscutting	Micro, Small, Medium and large scale projects	High, requires applicants to be accredited which includes meeting strict fiduciary and environmental standards.
2. Global Environmental Fund (GEF)	Government agencies, Civil society organisations, Private sector companies, Research institutions	Grants and leveraging Co-financing	Biodiversity, Chemicals and waste, Climate Change, Forests, International water, Land degradation	Full-sized projects, Medium sized projects, Enabling Activities, Program	Medium, requires co-financing
3. GEF-Small Grants Programme (SGP)	Community-based, Non-Governmental Organisations	Grant	Mitigation, Energy, Energy efficiency, Low carbon, Renewable energy, Transport	Small Projects (Max USD 50,000)	Low, focuses on small projects and no co-financing requirements
4. Mitigation Action Facility (formally known as the NAMA Facility)	National Government	Loans, Grants, Equity, Guarantee		Demonstration, Projects ready for commercialisation	Medium, although co financing not required proof of project readiness adds complexity
5. Energy and Environment Partnership (EEPF) Fund	Companies + startups, Non-profit + social enterprises, Research institutes	Early-stage grants, repayable grants, co-financing	Renewable Energy, Energy Efficiency	Feasibility study, Demonstration, Pilot, Replication, scale-up	Medium, supports early-stage projects, which requires a feasibility study.

[1] Pending information availability, this table can be expanded by adding information for application timelines and durations for
each funding mechanism as well as application success ratio.

Financing Source[1]	Eligible Applicants	Finance Mechanism	Technology	Project Type	Complexity
6. Facility for the Investment in Renewable Small Transactions (FIRST)	Small and Medium-size projects	Loans	Renewable Energy	Small to medium-sized RE projects	Medium, loan mechanisms require strong financial planning and repayment structures.
7. African Development Bank (AFDB)	Government agencies, private sector companies	Loans, equity investments, technical assistance	Energy sector technologies, including solar	Large-scale energy projects	High, provides funding and technical assistance for large scale projects, requires project proposals and compliance with AfDB financial requirements
8. Africa Finance Corporation (AFC)	Government agencies, private sector companies	Loans, equity investments	Energy, infrastructure, heavy industries, natural resources	Large-scale infrastructure and energy projects	High, provides funding for large infrastructure. Requires extensive project preparation, including legal, technical and financial assessments
9. World Bank	National and local governments, SOEs	Loans, concessional loans	Renewable energy, energy security	Large-scale energy transition projects	High, Offers financing in concessional terms at zero or very low interest levels with maturities of between 30-40 years, including 5 – 10 year grace period
10. Climate Investment Funds (CIF)	National and local governments, SOEs	Concessional funds	Renewable energy, coal plant decommissioning	Large-scale energy transition projects	High, provides competitive financing but applicants must align with climate finance strategic goals
11. African Climate Fund (ACF)	National and local governments, SOEs	Grants, concessional loans	Climate resilience, renewable energy	Climate adaptation and mitigation projects	Medium, provides grants and concessional loans for climate resilience and renewable energy Applicants need to demonstrate project impact.

Financing Source[1]	Eligible Applicants	Finance Mechanism	Technology	Project Type	Complexity
Domestic Funding					
1. Green Fund	Small to Medium-sized companies, large corporates. Municipalities, state-owned enterprises and higher education institutions	Recoverable and non-recoverable grants, Loans and Equity	Green Cities Towns, Low Carbon Economy, Environmental and Natural Resource Management	Projects from early research and development stage to project expansion	Medium, Supports a wide range of projects from R&D.
2. Municipal Energy Efficiency and Demand Side Management (EEDSM)	Municipalities	Grants	Energy-efficient technologies ranging from traffic and street lighting to energy efficiency in buildings and water service infrastructure	Energy Efficiency: Traffic lights, street lighting, building lights, HVAC, energy efficiency water infrastructure and wastewater treatment	Low, specifically designed for municipalities, funds energy-efficient technologies to reduce energy consumption and operational costs
3. ESCO Financing model	Entire public sector	Project Design and Implementation Funding	Energy Efficiency and Small Renewable Energy Projects	Energy Efficiency	Medium, applicants must follow performance based contracts and monitoring requirements
4. DBSA funding	Entire public sector	• Project preparation funds • Debt, mezzanine finance • Limited and non-resource lending	Various technologies, including low-carbon technologies	From project preparation to implementation	High, provides funding for preparation and implementation stage Requires comprehensive project plan.
5. Industrial Development Corporation (IDC) funding	Entire public sector	• Debt • Equity • Quasi-equity Guarantees	Various technologies, including	All stages	Medium, provides a wide variety of financial products

Financing Source[1]	Eligible Applicants	Finance Mechanism	Technology	Project Type	Complexity
		• Trade Finance • Bridging finance • Venture capital			
6. **Integrated National Electrification Programme (INEP)**	Municipalities, state-owned enterprises	• Grants • Capital Funding	Electrification, renewable energy infrastructure	Electrification of households, grid expansion, infrastructure development	Low, promotes energy access. Grant is straightforward for municipalities
7. **Municipal Pooled Financing (MPF**)	Multiple municipalities	• Joint borrowing of funds	Various infrastructure technologies	Large-scale infrastructure projects	High, MPF gives the municipalities another option and thus more power and flexibility in its general financial management Members implement rules and put pressure on each other to improve their credit-worthiness because each one profits from the other's improvement
8. **Public-Private Partnerships (PPPs)**	Municipalities, private sector entities	• Private sector investment	Various technologies, including infrastructure	Infrastructure projects	High, requires long term contracts and includes operational, technical and financial risks.
9. **Donations and Sponsorships**	Municipalities	• Donations, sponsorships	Various	Projects supported by private entities or NGOs	Low, non-repayable funds from private entities or NGOs.
10. **Own Revenue Generation (Property Rates, Service Charges, Fines, and Penalties)**	Municipalities	• Revenue collection	N/A	General municipal budget	Low, provides direct revenue streams for municipalities Scale of funding is limited.

Financing Source[1]	Eligible Applicants	Finance Mechanism	Technology	Project Type	Complexity
11. Global Energy Alliance for People and Planet (GEAPP)	Municipalities	• blended finance and flexible capital solutions	Various	Infrastructure projects, upstream, public capacity building	High, provides funding for preparation and implementation stage Requires comprehensive project plan.
12. DMTN programme (to be established)	NMBMM	• Bonds • Notes	Tailored per specific need/project	Green projects that are financially viable	Ranges from plain vanilla to highly complex exotic derivatives.
13. Urban Settlements Development Grant	Metropolitan Municipalities	• Grants	Metropolitan capital infrastructure	Metropolitan capital infrastructure	High, provides funding for preparation and implementation stage Requires comprehensive project plan.

8.1.1.3 Funding source per intervention

Intervention Grouping	Potential Funding Mechanism
Group A: Basic Energy Services Requirements	
Reducing energy losses and improving system efficiency	SGP and National Treasury Green Fund
Infrastructure maintenance, upgrades, and asset renewal	INEP, IUDG, USDG and DMTN
Workforce development and capacity building for energy infrastructure management	GCF, GEF, National Treasury's Green Funds and ACF through PCC
Group B: Municipal JET Implementation	
Institutional capacity building and governance for JET initiatives	EEDSM, ACF through PCC and National Treasury's Green Fund
Policy & regulation development	National Treasury's Green Fund
Performance Monitoring Tool	GCF, GEF and National Treasury's Green Fund
Group C: Energy Access and Equity	
Enhancing electricity access and equity	INEP

Intervention Grouping	Potential Funding Mechanism
Group D: Grid Modernisation and Smart Technology	
Infrastructure modernisation and smart technologies	GCF, GEF, DBSA, PPP, IUDG, USDG and DMTN
Group E: Renewable Energy Integration	
Optimising transmission and distribution grid	GCF, World Bank, AfDB, AFC, CIF, Green Fund, INEP, PPPs and MPF
Accelerating Small Scale Embedded Generation	GCF, GEF, SGP, Mitigation Action Facility, EEP Fund, FIRST, AfDB, World Bank, EEDSM, IDC ESCO Financing model
Energy transition and future demand planning	EEDSM, ACF through PCC and National Treasury's Green Fund
Group F: Funding and Financial Mechanisms	
Enhancing revenue management and financial oversight	National Treasury's Green Fund
Securing and diversifying funding	EEDSM, PPP, ACF through PCC and National Treasury's Green Fund, Private Finance and DMTN
Group G: Environmental and Socio-economic Impact Mitigation	
GHG emission inventory	SGP and National Treasury Green Fund
Group H: Stakeholder Engagement and Collaboration	
Stakeholder engagement	SGP and National Treasury Green Fund

8.2 Insights into best practices and innovative approaches

8.2.1 Innovation and Programmatic Funding

Extensive efforts have been dedicated to mapping the funding landscape and exploring various mechanisms available to local municipalities for financing energy efficiency (EE), renewable energy (RE), and other just transition projects. Despite the numerous funding sources identified, few provide a comprehensive solution, as each is constrained by specific mandates. On both the project and lender sides, similar challenges persist, as each funding option is limited to specific uses. There also seems to be limited coordination to centralise these various mechanisms under a single, common theme.

Recognising these challenges, the Presidential Climate Committee (PCC) published its Recommendations Report for a Just Transition Financing Mechanism (JTFM). The report aims to address financial barriers, mobilise funds effectively, and ensure that projects focused on community empowerment, alternative livelihoods, economic diversification, and skills development are adequately structured and financed.

However, financing these projects presents unique challenges that traditional financial structures do not address. Multiple market failures hinder the scaling and mobilisation of just transition financing:

- **Lack of Common Definitions and Metrics:** Without standardised metrics, it's difficult to integrate just transition objectives into project development and investment strategies. Traditional economic models fail to account for the sustainability costs associated with transition projects.
- **Complex Risk Profiles:** Many just transition projects involve new or greater risks, making traditional financial institutions hesitant to invest. The small size of these projects increases transaction costs, further reducing their attractiveness to investors.
- **Investment Mismatch:** Just transition projects often require patient, long-term capital, which conflicts with the shorter investment horizons typical in the finance sector.

It is evident that several critical functions must be established to address these challenges and create an effective just transition financing ecosystem. Immediate actions should include:

- **Project Preparation Facility**: This facility would support projects from ideation to implementation, including capacity building at the local government level to develop a credible project pipeline.
- **Phased Approach:** The PCC suggests that the just transition funding ecosystem should evolve in phases to ensure systematic and sustainable progress.

The launch of JET Funding Platform, which will handle project preparation and matching functions in line with the JET IP, has been a crucial first step in the establishment of a just transition financing ecosystem. The PCC will monitor progress and apply lessons for broader implementation.

Further recommendations from the PCC emphasise support for small, medium, and micro-sized enterprises (SMMEs). The use of grants and concessional finance within the JETP package should explore ways to promote SMME development.

Additionally, the PCC recommends that National Treasury conduct a comprehensive fiscal review from a just transition perspective, evaluating whether industrial, social, and labour market policies align with the pace of decarbonisation and adaptation investments.

Over the next three years, the functions mentioned above should be institutionalised within national development finance institutions (DFIs), leveraging existing capabilities within institutions like the Industrial Development Corporation, National Empowerment Fund, and Development Bank of Southern Africa. This would complement the work of the recently formed DFI CEOs Forum, which coordinates and integrates relevant functions within their domains.

In the next three to five years, the goal is to establish a robust Just Transition Financing Mechanism (JTFM) as a centrally coordinated institution, responsible for mobilising funding, capitalising projects, and developing innovative financing structures to support a wide range of just transition initiatives.

8.2.1.1 Applicability to the various municipalities

The evolving approach to financing EE and RE projects presents an opportunity for the various municipalities to access funds more effectively. In the smaller municipalities, there is a clear need for capacity building whilst the two larger municipalities should consider the establishment (NMBMM) or expansion of (CoJ) the DMTN programme. Alternatively, (for other municipalities) there is a clear need for integration of other forms of finance. In this regard, two potential structures could be leveraged in addition to its notes program to better access funding:

Budget Facility for Infrastructure (BFI)

The BFI provides a blended finance solution that can be tailored to specific needs. Blended finance is increasingly used in developing economies to attract private-sector investment by reducing risk through public or philanthropic capital. The intent is to utilise the framework principles (blended finance) contained within the BFI as the threshold for BFI interventions for Projects is R1bn and Programmes is R3bn respectively, implying that some interventions may not have adequate scale to qualify in this regard.

- **Funding Allocation:** R24 billion has recently been allocated to the Infrastructure Fund for blended finance projects, with a broader commitment of R100 billion over the next decade. This allocation will support projects like student accommodation and social housing.
- **Project Requirements:** Projects must demonstrate readiness for implementation, have a clear financial structure, and align with national priorities. They should also have a significant economic impact.
- **Strategic Use of Funds:** The BFI emphasises using limited public funds strategically to mobilise broader financing sources, ensuring government resources are used to attract private investment without distorting the market.

Strategic Integrated Projects (SIPs)

Municipal Climate-Financed Programs, implemented as Strategic Integrated Projects (SIPs), are vital for enabling municipalities to implement climate action strategies. These programs use various financial mechanisms to support urban sustainability initiatives, addressing both mitigation and adaptation needs.

- **Access to Climate Finance**: Municipalities often face challenges in accessing climate finance. Programmes like SIPs create frameworks that allow municipalities to tap into public, private, and international funding sources.
- **Project Preparation and Capacity Building**: Many municipalities lack the capacity to develop bankable projects. Initiatives like the City Climate Finance Gap Fund provide technical assistance to help cities prepare projects that are ready for investment.
- **Innovative Financing Solutions**: Blended finance models that combine public and private investments help mitigate risks and enhance project viability. Mechanisms like climate adaptation bonds or municipal debt swaps allow cities to restructure debt in exchange for low-carbon investment commitments.
- **Stakeholder Engagement**: Engaging local stakeholders, including businesses and communities, ensures that projects align with local priorities and are more effective and sustainable.
- **Regulatory Frameworks**: National governments play a crucial role by establishing regulatory frameworks that encourage private sector investment in urban sustainability projects.

SIPs can significantly contribute to sustainable urban development and resilience against climate change by leveraging blended finance, enhancing project readiness, and fostering collaboration.

Municipal challenges

Although the above-mentioned frameworks (BFIs and SIPs) combined with a possible DMTN programme or other funding structures would be ideal structures to address the various municipalities' numerous challenges, the Municipalities' financial situation remains fragile, limited by low debtor collection rates, high debt levels and high unemployment rates. There is a fine balance needed as larger municipality's relative size gives them access to the proposed above-mentioned structures while its current financial position limits the utilisation thereof. Certain municipalities credit rating may assist them in accessing additional capital markets at reduced rates. For the weak preforming municipalities with material liquidity constrains, debt funding would simply not be a viable source altogether given their current risk profile and doubt in remaining a going concern.

Although efforts to enhance operating performance in some municipalities are acknowledged, for the vast majority of municipalities, achieving meaningful improvements could be difficult given the continued pressure on household incomes and the worsening state of infrastructure. Without clear signs of progress, the operational outlook may further deteriorate. Key areas requiring attention include:

1. Overall collection rates are below 90%, coupled with significant increase in receivables which strain liquidity.
2. Reduced capital expenditure on infrastructure and maintenance.
3. Increasing creditor payments per the Eskom Debt Relief program for some municipalities that requires prompt payment of all bulk purchases within 30 days as well as strict repayment conditions for historical debt.
4. Further challenges in governance and political stability

Proposed Solution

Given the recommendations of the JTFM, a need for greater cooperation between the various funding structures currently being proposed and NMBMM's finance department would be needed.

In essence, the following would be required:

- Grouping of interventions, to be evaluated and managed as a whole rather than individually.
    - Certain SIPs could be established on a regional, programmatic basis rather than an individual municipality basis.
- Non-revenue assets (for example water saving projects/cleanup projects) should be managed centrally across various municipalities as the lack of payback/financial

justification will in many instances shelf these projects indefinitely.

- Larger infrastructure projects that fall beyond the capability of the municipality (infrastructure backlog) call for intervention on a national rather than a local level.
- A specific programme would be needed for certain interventions, to ensure
    - sufficient access to funds
    - required expertise to implement intervention is available
    - critical mass can be achieved to justify transaction and implementation costs.
- We would propose that the mechanism used for this would be in the form of a new conditional grant that includes elements of:
    - normal capital grants
    - special project grants
    - interest-free loans
    - blended finance
    - concessional loans
    - full grant
    - bonds and notes

  Depending on the intervention, any combination of the above elements could potentially be utilised, alternatively, there could potentially be crowding in from existing conditional grants that have aligned outcomes or funding into existing grant mechanisms.

7.3 Analysis of trends emerging across municipalities

The situational and gap analyses of the ten selected municipalities reveal a set of common trends and disparities in their readiness to implement the Just Energy Transition (JET). These trends are shaped by factors such as infrastructure condition, financial health, energy strategies, and capacity for innovation. The following key trends emerged:

Divergence in Energy Strategy Implementation:

Larger municipalities, such as Cape Town, Johannesburg, and eThekwini, demonstrate relatively advanced strategies for renewable energy integration and climate action planning. These municipalities often have established policies, targets, and diversified energy initiatives, although their implementation is hampered by challenges like funding constraints and legislative complexities.

Smaller municipalities, including Hantam, Tswelopele, and Matlosana, typically exhibit less progress toward JET goals due to limited resources, reliance on Integrated Development

Plans (IDPs) that lack specificity for JET alignment, and an absence of dedicated renewable energy projects.

Aging and Under-Maintained Infrastructure:

A pervasive trend across municipalities is aging energy infrastructure that leads to frequent outages and high rates of technical and non-technical losses. The inability to maintain and upgrade these systems limits the potential for integrating renewable energy sources and achieving grid stability.
Smaller municipalities often focus on reactive maintenance due to limited resources, whereas larger metros with complex distribution networks face extensive maintenance backlogs and constrained budgets.

Dependence on Eskom for Energy Supply:

Most municipalities remain heavily dependent on Eskom for their electricity supply, with minimal diversification of their energy mix. While some larger metros have begun exploring independent power producer (IPP) arrangements and small-scale embedded generation (SSEG) projects, regulatory hurdles and funding limitations persist.
Smaller municipalities frequently lack the capacity or funding to explore alternatives and remain solely reliant on Eskom's centralized supply.

Financial Constraints and Grant Dependency:

A common theme is financial instability across municipalities, with smaller ones particularly reliant on grants for operational and capital expenditures. This dependency limits their ability to pursue innovative energy transition projects independently.
Larger metros are slightly better positioned to generate own revenue, but liquidity challenges, high debt burdens (e.g., to Eskom), and non-cost-reflective tariffs undermine their long-term financial viability.

Socio-Economic and Capacity Gaps:

Municipal capacity to plan and implement JET initiatives varies widely. Larger metros often possess the technical expertise to design strategic initiatives but lack adequate resources for execution. In contrast, smaller municipalities suffer from limited staffing and a lack of specific expertise in renewable energy and JET-related initiatives.
Socio-economic disparities, such as energy poverty and limited-service access in informal settlements, further complicate efforts to equitably implement JET strategies.

Limited Stakeholder and Community Engagement:

Metros generally have structured stakeholder engagement models, albeit with room for improvement in community inclusivity. Smaller municipalities, however, lack comprehensive frameworks for engaging local stakeholders and vulnerable groups, hindering socially equitable energy transitions.

Barriers to Innovation and Energy Modernization:

While larger municipalities display some level of innovation through grid modernization and renewable projects, the pace of technological adoption is constrained by outdated legislation, high capital costs, and bureaucratic delays.
Smaller municipalities lag in adopting modern technologies and integrating renewable solutions due to limited technical capacity and the lack of tailored strategic planning.

The trends highlight a complex landscape where larger metros show promise in leading JET initiatives but face significant hurdles in scaling and sustainability. Meanwhile, smaller municipalities require comprehensive support, including capacity building, innovative financing, and enhanced coordination to bridge the gaps and achieve meaningful alignment with JET goals.

9 Recommendations

9.1 High-level recommendations for enhancing JET readiness in municipalities

To accelerate the Just Energy Transition (JET) readiness across South African municipalities, a focused strategy that builds on setting up sustainable basic services, enhancing policy frameworks and team capacity, and implementing impactful projects tailored to municipal readiness is essential. The following high-level recommendations serve as a first step toward this goal. It should be noted that the Presidential Climate Commission (PCC) will develop a comprehensive recommendations report based on this work, which will provide further detail and targeted interventions.

Address Aging Infrastructure: Prioritise the renewal and modernization of essential energy infrastructure, including substations, distribution networks, and energy systems, to ensure reliability, reduce outages, and facilitate renewable energy integration. Incorporating modern technologies, such as Supervisory Control and Data Acquisition (SCADA) systems, will enhance operational efficiency and energy resilience.

Energy Loss Reduction: Develop and implement strategies to minimize both technical and non-technical energy losses, thereby improving overall system efficiency and revenue generation capacity.

Expand Access to Energy: Address energy poverty and expand equitable access to energy services by improving infrastructure in underserved communities and providing affordable energy solutions, such as Free Basic Electricity for indigent households.

Strengthen Policy Frameworks: Develop and embed JET-related policies and regulatory frameworks tailored to the specific needs of each municipality, including Key Performance Indicators (KPIs) that align with national JET objectives and integrate into municipal Integrated Development Plans (IDPs).

Capacity Building and Skills Development: Equip municipal staff with the skills and expertise required to manage renewable energy projects and effectively implement JET initiatives. Establish dedicated JET-focused workstreams within municipalities to ensure cross-departmental collaboration and streamlined execution of projects.

Community Engagement: Foster meaningful engagement with local communities, businesses, and other stakeholders to ensure inclusive decision-making and buy-in for JET projects. Empower vulnerable groups with skills development and job creation programs to support the socio-economic goals of the JET transition.

Targeted Project Implementation: Prioritize the rollout of projects with high potential impact based on each municipality's specific readiness and capacity. Focus on initiatives that can generate immediate benefits, such as small-scale embedded generation (SSEG) projects, renewable energy adoption for municipal buildings, and grid modernization programs tailored to local needs and capabilities.

Innovative Funding Solutions: Leverage public-private partnerships, explore blended finance mechanisms, and utilize grant funding to ensure the financial sustainability of high-impact JET projects. Strengthen municipal revenue management systems to support long-term project financing.

Monitoring and Evaluation: Develop robust frameworks for monitoring and evaluating the success of implemented projects, ensuring they align with broader climate action goals and national JET objectives. Use data-driven insights to refine and expand successful initiatives.

10 Conclusion

10.1 Financial Viewpoint

Based on the current financial position and the scoring achieved, the following proposed interventions should be considered in each of the municipalities.

PROPOSED INTERVENTIONS	UOM	Tswelopele	Hantam	Matlosana	NMBMM	CoJ
Short Term liquidity & Cash management	Urgency	1	3	1	3	3
Reduce Losses	Urgency			1	2	1
Debt Management - Shorten Debtor Days	Urgency	1	2		1	
Creditor Management - Shorten Cre Days	Urgency	2	4	1	4	3
Data management		To Improve	To Improve	To Improve	To Improve	To Improve
Diversification funding - DMTN					Establish	Expand
Diversification funding - Additional Grants		To Explore	To Explore	To Explore	To Explore	To Explore

1. Short Term Liquidity & Cash Management is a pre-requisite for both Tswelopele and Matlosana municipalities before any other interventions can be considered.
2. Reducing Technical and Non-Technical losses should be a priority for both CoJ as well as Matlosana. Matlosana has implemented a program to address Losses over the next 3 years totalling over R50m (R7m Technical & R44.6m Non-Technical).
3. Debt Management should be prioritised for both NMBMM & Twelopele (122 & 171 days) as well as Hantam (87 days) to focus on reducing debtor days to more acceptable levels.
4. All municipalities currently have creditor days above 100 days with Matlosana (586 days) and Tswelopele (412 days) of particular concern. This measure is skewed by the outstanding Eskom debt but does point to liquidity challenges in this regard.
5. Data Management & Enhancing of existing reporting systems were identified as an area that could be enhanced and impact materially on the operations of the various municipalities.
6. For Diversification of Funding, the DMTN program has been run successful for CoJ

and identified as their main source of funding, contemplating the raising of R2.5bn per year for the next 3 years. Given NMBMM's comparative credit rating, it is worthwhile to consider a similar type program within this Metro as a potential funding source.

7. Diversification of funding:
    a. Traditional financing methods match qualifying projects with the appropriate funding mechanisms based on specific mandates.
    b. National-level strategic intervention has shown the need for a Just Transition Financing Mechanism (JTFM), which will align efforts across all government levels and relevant stakeholders over the next five years.
    c. For most municipalities, two potential approaches could be adopted:
        i. Create a bespoke blended financing solution combining grants, concessional debt, and commercial loans, akin to BFI principles, but adapted for the scale of projects contemplated in larger municipalities and blended with an existing/ to be established DMTN programme.
        ii. Adopting Municipal Climate-Financed Programs as Strategic Integrated Projects (SIPs), which provide a framework for structuring and managing qualifying projects effectively.
    d. Given the various sizes of the municipalities in the control group, some projects could be managed internally with alignment to the activities of a central body such as the Just Transition Financing Mechanism (JTFM). Utilising a conditional grant framework in conjunction with a potential DMTN programme or other appropriate funding mechanisms, various elements ranging from different grant structures (traditional & project specific), diverse loans (interest-free, blended finance & concessional) or a combination thereof could be utilised. Depending on the type of intervention, it might be feasible to crowd in the specific intervention into existing grants that have aligned outcomes or alternatively funding into existing grant mechanisms.

10.2 Importance of JET support programme

The Just Energy Transition (JET) Support Programme plays a pivotal role in supporting South African municipalities as they transition to a low-carbon, climate-resilient future. This programme is vital in equipping municipalities with the necessary resources, strategies, and guidance to align with national JET objectives, which focus on reducing greenhouse gas emissions, integrating renewable energy, and promoting equitable socio-economic development. The importance of the JET Support Programme can be highlighted through several key aspects:

Bridging Capacity Gaps: Many municipalities, particularly smaller ones, lack the technical, financial, and human resource capacities required to implement effective JET strategies. The support programme must focus on capacity building, training municipal staff, and enhancing institutional frameworks to drive the energy transition.

Supporting Financial Resilience: Municipalities face significant financial constraints, with many reliant on Eskom for energy supply and struggling with liquidity issues. The JET Support Programme must provide critical guidance in diversifying funding sources, developing sustainable revenue models, and leveraging public-private partnerships to finance JET-related projects. This ensures that municipalities can invest in renewable energy and infrastructure modernization.

Facilitating Policy Alignment and Strategic Planning: The programme should assist municipalities in developing JET-aligned policies, embedding Key Performance Indicators (KPIs) into Integrated Development Plans (IDPs), and creating tailored JET plans that address local needs. This strategic alignment helps municipalities contribute effectively to national and international climate goals.

Promoting Inclusive Stakeholder Engagement: The energy transition must be inclusive, addressing the needs of vulnerable and underserved communities. The JET Support Programme must emphasize the importance of stakeholder engagement frameworks, fostering collaboration between municipalities, communities, and various stakeholders to ensure broad-based support and participation.

Enabling High-Impact Project Implementation: By identifying and prioritizing high-impact projects, the programme should empower municipalities to roll out initiatives that demonstrate tangible benefits, such as small-scale embedded generation projects, grid modernisation, and energy efficiency improvements. Tailoring these projects to each municipality's readiness and context maximizes their impact and sets a precedent for scalable, successful JET interventions.

Building Economic Resilience: Transitioning away from carbon-intensive industries has socio-economic implications, particularly for municipalities with economies dependent on coal and heavy industry. The JET Support Programme must facilitate economic diversification strategies, job creation initiatives, and skills development programmes to mitigate the potential negative impacts of the transition and promote economic resilience.

10.3 Final thoughts on way forward for municipalities in the context of JET

As South African municipalities embark on their journey toward achieving the goals of the Just Energy Transition (JET), it is crucial to adopt a forward-looking and inclusive approach that balances environmental, social, and economic imperatives. The complexities and challenges faced by municipalities, ranging from capacity constraints to financial hurdles, necessitate a multifaceted strategy built around resilience, collaboration, and innovation. The following key considerations encapsulate the path forward:

1. **Strengthening Institutional Capacity and Governance Structures**: Municipalities must establish dedicated JET workstreams and enhance institutional frameworks to ensure effective coordination and management of JET initiatives. Integrating JET-related Key Performance Indicators (KPIs) into municipal Integrated Development Plans (IDPs) and fostering cross-departmental collaboration will enable holistic planning and execution.
2. **Targeted Investment in Infrastructure Modernization**: Upgrading aging energy infrastructure and integrating modern technologies such as smart grids and renewable energy systems are critical steps. These investments will enhance energy reliability, reduce losses, and facilitate the integration of renewables, ultimately building resilient municipal energy systems capable of meeting JET goals.
3. **Securing and Diversifying Funding**: Access to sustainable and diverse funding sources, including public-private partnerships, concessional loans, and grants, is imperative. Developing strategic financial plans that align municipal capital expenditures with long-term JET objectives will enhance financial resilience and the ability to fund critical initiatives.
4. **Ensuring Inclusive and Equitable Transition**: JET must be inclusive and prioritise the needs of vulnerable communities. Municipalities should implement targeted community engagement models that foster collaboration and empower affected groups. Expanding access to affordable and reliable electricity, enhancing Free Basic Electricity services, and creating socio-economic opportunities are essential for a just transition.
5. **Prioritising High-Impact, Readiness-Specific Projects**: Municipalities should focus on initiatives aligned with their specific readiness and capacity. High-impact projects, such as small-scale embedded generation (SSEG) and energy efficiency improvements, offer the potential for immediate and tangible benefits, setting a strong precedent for scalable JET actions.

6. **Embracing Data-Driven Planning and Monitoring**: Establishing robust frameworks for data collection, monitoring, and evaluation is critical. Municipalities must track progress against defined JET targets, adapt strategies based on data-driven insights, and ensure transparency and accountability in decision-making.

The road ahead for municipalities in the context of JET is challenging yet promising. By addressing capacity gaps, leveraging diverse funding opportunities, engaging stakeholders inclusively, and prioritising tailored projects, municipalities can build a resilient and sustainable energy future. This transition will contribute to South Africa's broader climate goals and foster socio-economic transformation at the local level. Continued support, collaboration, and strategic planning will be key to achieving a just, inclusive, and effective energy transition for all.