



Guide to financing municipal energy transitions in South Africa

June 2026

UK PACT

This report was developed as part of the Just Municipal Embedded Generation Project. JMEG is funded by UK PACT (Partnering for Accelerated Climate Transitions), which is a flagship programme under the UK's International Climate Finance (ICF) portfolio. JMEG is implemented by ICLEI Africa, in partnership with the Development Bank of Southern Africa.



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Project information

About the Just Municipal Embedded Generation project

This report is produced through the Just Municipal Embedded Generation (JMEG) project, which is a UK PACT (Partnering for Accelerated Climate Transitions) funded project. JMEG is implemented by ICLEI Africa in partnership with the Development Bank of Southern Africa (DBSA), with technical support from Africa International Advisors (AIA), working alongside six South African municipalities to prepare embedded generation projects.

JMEG is the second phase of the Alternative Financing for Municipal Embedded Generation (AFMEG) project, which was implemented between 2021 and 2022.

JMEG focuses on supporting municipalities in South Africa with assessing the feasibility of the options available for diversifying their energy mix and integrating solar. This includes the preparation of technical pre-feasibility studies, grid impact assessments, modelling the financial implications of different ownership models, assessing the legal and regulatory implications, and structuring the transaction. Additionally, the project has a strong capacity-building component to equip municipal officials with the knowledge and tools necessary to navigate a sector in rapid transition.

About the UK PACT programme

UK PACT-funded projects in South Africa aim to drive South Africa's just transition to a low-carbon economy by building capacity, advancing policy, and financing climate-related projects. It focuses on skills development, institutional strengthening, and scalable solutions to accelerate climate action.

About ICLEI - Local Governments for Sustainability

ICLEI is a global network of more than 2,500 local and regional governments committed to sustainable urban development. Active in over 125 countries, ICLEI influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development.

About the Development Bank of Southern Africa (DBSA)

The DBSA is a government-owned development finance institution with the mandate to promote economic growth as well as regional integration for sustainable development projects and programmes across the African continent.

This report is part of a broader JMEG knowledge series.

Related reports include:

- ICLEI Africa (2026). Localising the just energy transition (JET) through municipalities: Guidance for South African municipalities. Just Municipal Embedded Generation (JMEG) project. ICLEI Africa and DBSA.
- ICLEI Africa (2025). [Financing and ownership models for municipal embedded generation: Guidance for South African municipalities](#). Just Municipal Embedded Generation (JMEG) project. ICLEI Africa and DBSA.
- ICLEI Africa (2025). [Navigating the regulatory landscape for early-stage embedded generation projects: Guidance for South African municipalities](#). Just Municipal Embedded Generation (JMEG) project. ICLEI Africa and DBSA.

Acknowledgements

The analytical work for this report was developed by ICLEI, with many thanks to team members: Dr Michael Boulle, Rabia Parker, Palesa Base, Sadie Wiseman, and Erin Hampton.

The JMEG project team expresses appreciation to representatives from the six participating South African municipalities: Matzikama, King Sabata Dalindyebo, Walter Sisulu, Greater Tzaneen, Ephraim Mogale and Cape Agulhas.

The team also thanks AIA and DBSA colleagues for their invaluable contributions, support, and feedback through the project: Davies Tsikayi (AIA), Paayal Kanjee Govind (AIA), Karabo Mashabane (AIA), Magamane Ledwaba (AIA), Rhulani Khosa (DBSA), Muhammed Sayed (DBSA), Olympus Manthata (DBSA), Fa Mulumba (DBSA) and Khwathelani Bologo (DBSA).

JMEG is funded by UK PACT which is a flagship programme under the UK's International Climate Finance (ICF) portfolio. The programme is jointly governed and funded by the Foreign, Commonwealth and Development Office (FCDO) and the Department for Energy Security and Net Zero (DESNZ).

Recommended citation

ICLEI Africa (2026). Guide to financing municipal energy transitions in South Africa. Just Municipal Embedded Generation (JMEG) project. ICLEI Africa and DBSA.



Executive summary

Municipalities in South Africa are operating within an electricity system that is undergoing a major transition. This transformation is being driven by the changing techno-economics of energy, regulatory change, and the need to expand generation capacity, reduce costs, accelerate decarbonisation, and improve energy security. As a result, new forms of electricity supply are emerging: utility-scale renewables, distributed generation, and new trading arrangements. At the same time, municipalities are required to operate and maintain their distribution infrastructure more effectively, as the performance of these assets directly affects their financial position, their ability to access investment, and their ability to enable new forms of power generation.

This transition has serious implications for how municipal electricity infrastructure is financed. As electricity markets evolve, municipal revenue models are changing, particularly as electricity sales become less predictable and new supply arrangements emerge. These shifts affect municipalities' ability to enter into long-term agreements, structure bankable projects, and attract private investment. The condition of municipal distribution infrastructure and the performance of municipalities also play a critical role in determining project feasibility, as they influence grid access, revenue certainty, and overall project viability. Understanding how these factors interact is essential for municipalities seeking to develop and finance electricity infrastructure projects. Municipalities are also expected to play a growing role in enabling and securing electricity supply within their jurisdictions and providing cost-effective electricity to their communities. This includes engaging with independent power producers (IPPs), facilitating distributed and embedded generation, and navigating new market arrangements such as wheeling, aggregation, and trading. However, many municipalities face challenges in understanding how to respond to these changes.

This guide is designed to support municipalities in navigating the transition. It brings together key elements of the evolving electricity sector, including regulatory reform, market developments, institutional roles, and financing considerations. It explains how these shape the development of municipal electricity projects that are capable of accessing finance.

The guide helps translate sector changes so municipalities can understand the roles they can play, the work required to become credible and attractive partners for financiers, the actors they need to work with, and the conditions needed to get projects financed and implemented. It also highlights the key considerations that underpin project viability, including technical readiness, institutional coordination, and financial structuring.

With this guide, we aim to contribute to the larger national project of equipping municipalities to steer place-based, local just energy transitions.

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Abbreviations

AFMEG	Alternative Financing for Municipal Embedded Generation
DBSA	Development Bank of Southern Africa
ERAA	Electricity Regulation Amendment Act
IDP	Integrated Development Plan
IPP	Independent Power Producer
JMEG	Just Municipal Embedded Generation
MFMA	Municipal Finance Management Act
MSA	Municipal Systems Act
NERSA	National Energy Regulator of South Africa
NTCSA	National Transmission Company of South Africa
PPA	Power Purchase Agreement
PPP	Public Private Partnership
PV	Photovoltaic
SAWEM	South African Wholesale Electricity Market
SSEG	Small-scale embedded generation
UK PACT	United Kingdom Partnering for Accelerated Climate Transitions

Disclaimer

The report is intended to provide municipalities with information and analysis to support decision-making. It does not constitute legal, financial, or procurement advice, and municipalities are encouraged to seek expert support where appropriate for model implementation.



1

Purpose of the report

This guide positions municipalities in South Africa within a rapidly evolving electricity sector and explores how municipalities can best respond.

It highlights the imperative for municipalities to diversify their roles in the sector and reform their electricity businesses to unlock emerging opportunities and mitigate risks. Municipalities stand at an inflection point, and this guide is designed to help them navigate it. Rather than providing a wish list of funding opportunities and financiers (which is not adequate for the magnitude of the task at hand), the aim is to translate these changes and their implications into a relatable guide that municipalities can utilise on their local just energy transition (JET) journeys.

It highlights the work municipalities must do to take a project from concept to implementation, access finance, and become credible, attractive partners for funders and financiers seeking to shape this unfolding transition. The intention is to equip municipalities to prepare for, navigate, and steer local just energy transitions in this changing landscape, so that they can benefit their communities.



The background of the cover features a photograph of several high-voltage electrical pylons and power lines stretching across the sky. The scene is captured during sunset or sunrise, with a warm, orange glow from the sun low on the horizon. The image is partially obscured by large, diagonal geometric shapes in dark blue, red, and white.

2

The evolving electricity landscape and municipal realities

South Africa's electricity sector is undergoing significant structural change, driven by the sustained fall in price of renewable energy and storage technologies, domestic regulatory changes, and the need to expand generation capacity, improve energy security, accelerate decarbonisation, and establish a competitive, multi-participant market. As the national electricity landscape shifts from a vertically integrated utility model toward a competitive, multi-seller, multi-buyer market, the financial

and operational dynamics of municipal electricity distribution are fundamentally changing. Understanding these national-level market shifts and their impact on local municipal electricity businesses is essential for identifying how municipalities will engage with new infrastructure delivery models, new market participants, and evolving approaches to funding and implementing electricity projects.



2.1 The emerging electricity market in South Africa

At the heart of South Africa's electricity reform is the transition towards a liberalised and competitive market in which multiple generators, private developers, and large electricity consumers play an increasingly important role in the electricity sector. Historically, the sector operated through Eskom's vertically integrated monopoly as the state-owned utility (OECD, 2025). Driving the reforms is the Electricity Regulation Amendment Act (ERAA) of 2024. The Act breaks up the monopoly through unbundling generation and transmission, and introducing a multi-market model; establishes the National Transmission Company of South Africa^[1] (NTCSA) as an independent transmission system operator (TSO); enables open access and competitive trading; mandates an updated regulatory oversight role for National Energy Regulator of South Africa (NERSA); and streamlines licensing to encourage private investment (Eberhard, 2026; Republic of South Africa, 2024).

At the core of this reform is the South African Wholesale Electricity Market (SAWEM), a hybrid market system that will allow buyers and sellers to enter private trading agreements, while coordinating transactions through a central market platform (Ahlfeldt, 2026; Eberhard, 2026; Republic of South Africa, 2024). SAWEM will ensure that trading is based on a System Marginal Price (SMP)^[2]. The reform process coincides with a rapid increase in private generation, particularly from renewable energy sources, growing from 1.2 GW in 2021 to 6.1 GW by 2024 (OECD, 2025; Tsikayi and Govind, 2025).

The removal of licensing thresholds for embedded generation has enabled consumers to build generation capacity by registering only with the relevant distributor and the regulator, without needing to apply for a license, thereby significantly accelerating investment in distributed energy (NERSA, 2026; OECD, 2025).

At the same time, wheeling arrangements allow electricity to be generated in one location and delivered to customers elsewhere using existing transmission and distribution networks (C40 Cities, 2025). This has accelerated the participation of IPPs, traders, and large electricity consumers in the electricity market, while also creating new approaches to electricity procurement and infrastructure development.

These reforms are fundamentally changing the tenets on which the traditional municipal electricity business was built, particularly the role of municipalities as protected local resellers of electricity within a largely centralised system.

[1] The NTCSA is responsible for managing the transmission network and enabling non-discriminatory access to the grid, allowing multiple generators, including Eskom, independent power producers (IPPs), and, potentially, municipalities, to participate in electricity supply (Frack and Serrano, 2025).

[2] A continuously updating national price for electricity based on currently supply and demand, rather than a fixed, state-determined tariff (NECOM, 2024; OECD, 2025)



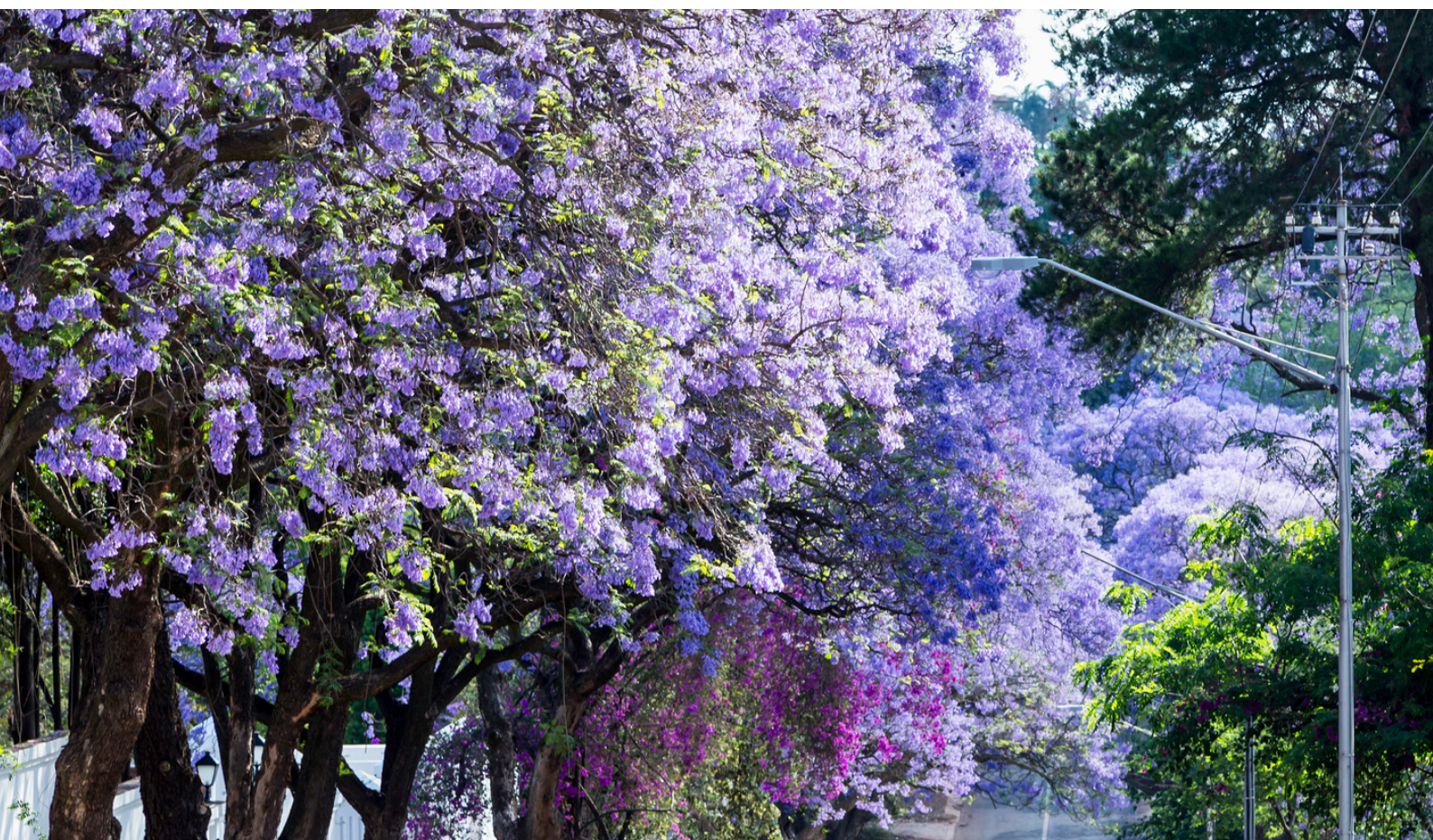
2.2 The municipal electricity business under pressure

These changes have significant implications for municipalities, which remain central to South Africa's electricity distribution system. As licensed electricity distributors, municipalities manage infrastructure responsible for distributing 40 per cent of the country's total electricity, serving end-users including households, businesses, industrial zones, and public facilities (Meridian Economics, 2024; OECD, 2025). This makes municipalities a critical interface between the national electricity system and local economies. Historically, municipalities purchased bulk electricity from Eskom and resold it to consumers (Botha, 2024; OECD, 2025). These electricity sales have traditionally underpinned municipal financial viability, providing the necessary revenue to maintain local distribution infrastructure while cross-subsidising electricity for low-income households and other essential services (Botha, 2024; Statistics South Africa, 2023; Thenga, 2026).

However, this traditional resale model has come under increasing pressure. Rising Eskom bulk tariffs, growing municipal debt owed to Eskom, poor municipal financial and governance performance, lack of maintenance, and

the financial and operational impacts of prolonged load shedding have weakened the financial position of many municipal electricity businesses (Botha, 2024; Eberhard, 2026; Yelland and Vermeulen, 2026). At the same time, the growth of embedded and private generation is increasingly changing electricity consumption patterns within municipal distribution systems, particularly among commercial and industrial customers seeking greater price certainty and supply reliability (Meridian Economics, 2024). This trend is reducing electricity sales to some of the municipality's largest customers.

For municipalities to attract investment into new electricity infrastructure projects, issues such as revenue stability, contractual clarity, regulatory certainty, and institutional credibility become increasingly important as projects move toward procurement and financing processes (National Treasury, 2022; World Bank, 2018). In parallel, the poor state of municipal distribution infrastructure poses a major risk and constraint to connecting new generation projects, facilitating wheeling arrangements, and supporting more complex electricity transactions in a liberalising market environment.





2.3 Implications of SAWEM for municipal electricity businesses

The reform of the electricity sector is also changing the role municipalities are mandated to play within the electricity system. The ERAA mandates a clear separation between distribution and the buying and selling of electricity (EIUG, 2024; OECD, 2025; Republic of South Africa, 2024). Under this new framework, the final stage of electricity reticulation is narrowed to systems operating at or below 11 kV, effectively limiting municipal authority over medium and higher-voltage infrastructure and opening those networks to a broader set of market actors (C40 Cities, 2025; Tsikayi and Govind, 2025). Municipalities are now required to provide non-discriminatory open access to their distribution networks above 11 kV, meaning that they can no longer restrict third-party generators if technical standards are met (Frack and Serrano, 2025; Republic of South Africa, 2024; Tsikayi and Govind, 2025).

While not yet fully operational and subject to a phased rollout over the coming three years, SAWEM's planned framework for trading electricity will eventually allow large industrial customers within municipal boundaries to bypass the municipality to purchase power directly from private generators and traders (Ahlfeldt et al., 2025; Eberhard, 2026). As market access and functionality develop progressively, municipalities can choose among three pathways: remaining a bulk purchaser at set tariffs through vesting contracts; becoming a "wholesale market participant" that procures electricity directly from the market; or trading electricity through the TSO's trading platform (NTCSA, 2026; Republic of South Africa, 2024; Tsikayi and Govind, 2025). While the latter offers potential cost savings, it also exposes municipalities to market price volatility and requires prudent credit requirements, financial liquidity, and daily settlement cycles (Yelland and Vermeulen, 2026). The initial transitional period will last up to five years. During this time, the market platform and its rules will be finalised, municipalities can focus on vesting contracts, and system stability can be maintained, all while preparing for full market operation (Republic of South Africa, 2024).

Despite these complexities, the liberalisation of the market also presents opportunities for municipalities. The reforms empower municipalities to use their grid as an asset to earn service-linked income through use-of-system (UoS) charges. They also present opportunities to diversify their supply sources by purchasing directly from IPPs and traders, potentially lowering local governments' procurement costs and improving local energy security. In addition, municipalities now have the option to become generators themselves or to manage demand-side response programmes that enhance grid stability and increase revenue (Republic of South Africa, 2024).

By embracing these new roles, whether as a facilitator of wheeling, a generator of renewable power, or a host for private investment, municipalities can transition from a position of structural risk to one of active market participation, ensuring municipalities and their communities benefit from the unfolding transition. Just as the transition will take time, so too will it take time for municipalities to prepare for these changes and diversify their roles, particularly given the regulatory framework that currently prescribes how municipalities may operate. It is important to note that not all municipalities are, or will be, in a state to become wholesale market participants by the end of the transitional phase. Those municipalities will continue to procure power through the central purchasing agency (Republic of South Africa, 2024).



3

Redefining municipal roles in an evolving electricity sector

As South Africa's electricity sector evolves, municipalities will continue to play an important role in ensuring a reliable electricity supply and enabling energy investment within their jurisdictions. While the emergence of new market participants is changing how electricity is generated and traded, municipalities remain central actors in managing distribution infrastructure, ensuring a reliable electricity supply, cross-subsidising electricity for low-income households, and facilitating energy projects.

To operate successfully in a liberalised electricity market, municipalities will need to adapt their traditional business

model. As distributed generation and wheeling become more prevalent, they will be incentivised to position themselves as network service providers (NSPs). In this role, the municipality functions as a neutral platform host, managing the infrastructure that facilitates energy transactions between third parties. A municipality needs to establish a foundation of technical and institutional readiness before it can realistically consider complex wheeling arrangements, unlock small-scale embedded generation (SSEG), or embark on generation projects, whether through IPPs, own-build, or public-private partnerships (PPPs).



3.1 Municipal readiness for their evolving participation in the electricity sector

While many municipalities aspire to own large-scale generation assets or to procure power from an IPP to diversify their electricity supply, ensuring the necessary foundations are in place before advancing to complex generation projects is imperative.

Many municipalities currently lack the essential baseline network data, such as feeder load flows, fault levels, and protection settings, required to manage a modern grid. An electricity master plan (EMP) provides a diagnostic of the distribution system, identifying asset ratings and spatial demand profiles, as well as a roadmap for future investment decisions. Without this data, it is not possible to conduct a utility-grade grid impact assessment (GIA), which is a requirement for any new generation connection. The GIA determines whether the existing network can safely accommodate additional power and identifies necessary upgrades. By prioritising the EMP and GIA, a municipality can provide the technical oversight that private investors, financiers, or municipalities themselves require to commit capital.

A cost of supply (CoS) study is a mandatory regulatory requirement that enables a municipality to establish cost-reflective pricing and provides the necessary evidence to unbundle tariffs. This helps to ensure that fixed network, energy, and service costs are clearly identified and equitably recovered from all customers. This is essential for creating transparent and sustainable pricing models for embedded generation and wheeling, which will be covered in greater detail in Section 3.3.

Finally, the grid's physical infrastructure should be modernised to support these new delivery models. Not only do municipalities need to invest in upgrading ageing infrastructure and addressing the maintenance backlog, but this modernisation process also necessitates a move toward advanced metering infrastructure (AMI) and bi-directional, time-of-use (ToU) metering. Traditional billing systems are often ill-equipped to handle the complex data requirements of multi-buyer, multi-seller markets. Modernised metering enables accurate tracking of energy injected into and evacuated from the grid, which is essential for revenue protection and transparent reconciliation.

Combining technical readiness with improved institutional capacity, specifically the alignment of technical, financial, and legal departments, prepares municipalities to function as credible hosts for the rapid growth of decentralised energy and lays the foundations for becoming a bankable and credible partner in South Africa's evolving electricity sector.



3.1.1 Outsourcing distribution through a concession model

While the elements of technical and institutional readiness discussed in the previous section allow for municipal self-management, many local governments face severe fiscal and operational constraints that make immediate internal implementation difficult. In cases where a municipality is grappling with high technical and non-technical losses, low revenue collection, a poorly maintained grid, a compounding debt crisis, or a chronic lack of specialised engineering capacity, outsourcing the distribution function through a concession or agency model is a viable alternative (Creamer, n.d.; Gupta et al., 2025; OECD, 2025). This approach involves a structured partnership in which an external entity, such as a private party or a state-owned utility, assumes responsibility for the operation, maintenance, and revenue collection of the distribution business, while the municipality receives a concession fee (Gupta et al., 2025). These models are designed as temporary or long-term interventions to transform a distressed distribution network into a functional, billable platform that can eventually participate in the broader electricity market.

Crucial for the municipality is understanding how outsourcing will impact its revenue so it can prepare for this change. Although the concession fee associated with the model will likely be lower than the direct retail revenue the municipality is foregoing, this loss is offset by the reduction in operational liabilities for the municipality, as well as a guaranteed income stream that is not subject to the same collection risks associated with a system under financial distress (Auditor-General South Africa, 2024; Creamer, n.d.; Slabbert, 2025).

Distribution agreements between public and private parties that extend beyond three years may trigger the Municipal Finance Management Act (MFMA), Section 33, or Section 120 (PPPs) (Republic of South Africa, 2005, 2004). These require public engagement and national oversight, making thorough public consultation and robust engagement with National and Provincial Treasuries essential (Republic of South Africa, 2005, 2004). Additionally, an experienced internal municipal team will need to manage the contract, monitor performance, and hold the private partner accountable for service delivery standards.

Box 1: Eskom's Distribution Agency Agreements (DAAs)

A prominent example of this outsourcing model in South Africa is Eskom's Distribution Agency Agreements (DAAs). They were developed to support municipalities struggling with service delivery and escalating arrear debt. The National Cabinet and National Treasury have endorsed the implementation of five-year DAAs for 14 municipalities across Mpumalanga, the Free State, the North West, and the Eastern Cape, the first of which was signed in 2023 (Creamer, 2025a). These municipalities represent approximately 58 per cent of the total municipal arrear debt owed to Eskom (Creamer, 2025b).

For the period agreed upon in the DAA, Eskom takes over the billing and collection functions, and electricity revenues are ring-fenced to ensure bulk supply obligations are met (Creamer, 2025b). During this time, Eskom assists in upgrading metering and billing systems, aiming to leave the municipality in a stronger technical position at the end of the period (Creamer, 2025b; Eskom, 2026). National Treasury facilitates the process by disbursing grants, such as the free basic electricity allowance, directly through the agency framework to ensure continuity of service (Creamer, 2025b).

While these agreements require the ring-fencing of revenue, they serve as a rapid, temporary intervention to stabilise local distribution licenses and restore the financial health of the municipal electricity business. Once in a stronger position, municipalities are expected to resume this function.



3.2 Municipalities as intermediaries in creating an enabling environment

In an increasingly liberalised energy market, a shift toward a facilitation-oriented approach becomes important if a municipality is to attract private capital into its jurisdiction. By doing so, local governments can utilise the private sector's balance sheet to meet local energy needs, shifting the burden of capital expenditure while maintaining oversight and ensuring that energy developments align with local public interests (Botha, 2024; PCC, 2024).

Once a municipality has completed its EMP and GIA, the focus can move toward active implementation. This requires a high degree of internal alignment between departments, including electrical, finance, community services, and local economic development departments, to support the specific projects identified as technically feasible in the master plan (C40 Cities, 2025; Tsikayi and Govind, 2025). Proactive facilitation ensures that technical studies serve as the basis for a streamlined investment environment that provides developers with the clarity needed to commit resources (C40 Cities, 2025; Frack and Serrano, 2025).

From a financing perspective, the municipality's primary contribution to project bankability lies in reducing project development risk (Thenga, 2026; Vazi, 2025). By providing clear pathways for land access and streamlining local permitting and planning approvals, the municipality directly lowers the risks associated with a project (C40 Cities, 2025; OECD, 2025; Vazi, 2025). In the context of project finance, lower development risks make a municipality or project a more attractive investment destination, thereby lowering interest rates and, as a result, producing more competitive tariffs for end-users (Braeckman et al., 2020; Ilkova, 2026). When a municipality acts as an efficient facilitator, it reduces the bureaucratic friction that often leads to project delays or cancellations, thereby increasing the jurisdiction's attractiveness to IPPs and institutional investors (Braeckman et al., 2020; C40 Cities, 2025; OECD, 2025).

Successful stakeholder coordination is also crucial for bankability (C40 Cities, 2025; Frack and Serrano, 2025). By acting as a central point of contact for industries, businesses, and local communities, municipalities can facilitate the aggregation of demand (C40 Cities, 2025; Eberhard, 2026; OECD, 2025). This coordination is particularly important for medium-sized projects that may be too large for a single business but too small to attract utility-scale financing on their own. By grouping these interests, the municipality helps create a project scale that is attractive to commercial banks and development finance institutions, ensuring that local energy initiatives can access a wider variety of funding structures at more affordable rates (C40 Cities, 2025; Frack and Serrano, 2025; OECD, 2025; Okanlomo, 2025).

Creating an enabling environment for energy investment is a prerequisite for municipalities' more advanced participation in the electricity market, such as through managing embedded generation, SSEG, or wheeling, discussed in Section 3.3. By ensuring land access, streamlining local approvals, and coordinating stakeholders, municipalities create the physical and contractual infrastructure necessary to support third-party transactions. In doing so, they position themselves as critical intermediaries in an evolving electricity sector seeking maximum developmental impact.





3.3 Municipalities as NSPs

In the evolving electricity sector, municipalities have an important role to play as NSPs, including enabling network activities such as private embedded generation, SSEG, and third-party wheeling. As these contribute directly to the liberalised electricity market, they can and should be prioritised in the short- to medium-term by

municipalities that lack the financial and governance muscle to pursue embedded generation or direct energy trading. Each function is unpacked in the subsections that follow, after an introductory discussion on electricity tariffs.



3.3.1 Establishing cost-reflective, unbundled tariffs

This section focuses on electricity tariff determination through municipal finance and electricity business lenses and can be read alongside the Localising the just energy transition (JET) through municipalities: Guidance for South African municipalities report to explore how the topic intersects with efforts to advance local just transitions.

The role of electricity tariffs has evolved alongside the liberalisation of the electricity sector in South Africa. Tariffs need to allow municipalities to recover costs and generate revenue as well as enable the integration of decentralised energy resources and market transactions, described in Sections 3.3.2 and 3.3.3. Fulfilling these roles effectively requires modernised tariff approaches and structures, supported by relevant, up-to-date municipal policies, frameworks, and grid technology.

As defined by NERSA, a tariff is a combination of charges designed to recover the costs of both measured and unmeasured quantities, where measured quantities refer to consumption and capacity, and unmeasured quantities include services such as administration (NERSA, 2025a). Unbundling tariffs refers to their separation into distinct components:

- network charges (per kVA) to cover fixed costs, capital costs, operations and maintenance, ancillary services, and the recovery of distribution losses;
- energy charges (per kWh) to cover variable electricity consumption;
- service and administration charges (per customer) to account for metering, billing, reconciliation, data management, and other related services; and
- appropriate contributions to cover approved levies and surcharges.

Tariff unbundling at the distribution level is important to ensure that network users pay in proportion to the services they use and to the expenses the municipality incurs in serving them, regardless of how much electricity they consume. This ensures that municipalities can recover costs associated with providing access to and use of the distribution network, thus continuing to maintain and improve the grid in a financially sustainable manner. Importantly, the CoS study provides municipalities with an accurate and cost-reflective foundation for determining different charges and obtaining NERSA's approval thereof. This promotes transparency and fairness, as different users contribute their proportional "fair share" (towards, for example, grid maintenance). It also sends accurate price signals to users to understand what they are being charged for.

From unbundled tariffs, UoS charges are established to attribute costs to the different users of the distribution network. With properly unbundled tariffs, UoS charges are paid by all entities connected to the municipal grid (including regular municipal customers, embedded generation and SSEG customers, and generators and consumers involved in wheeling).



3.3.2 Enabling embedded generation

Shifts in legislation around embedded generation – electricity that connects directly to the local distribution grid – now require municipalities to provide open, non-discriminatory network access, as discussed (SALGA, 2023). As a result of these policy shifts and the declining cost of solar photovoltaic (PV) technology, the embedded generation sector is rapidly expanding, reaching an estimated 2,383 MW in 2023 (four per cent of total generation capacity) (SALGA, 2023). At this time, 67 municipalities have established formal application processes, and 43 have approved embedded generation tariffs (SALGA, 2023).

The rapid expansion of embedded generation presents both financial opportunities and revenue risks for municipalities. As private investment in solar PV grows, municipalities have more incentive to act as central market facilitators. Doing so effectively relies heavily on the financial and institutional readiness discussed in previous sections.

A primary financial challenge for this generation is the threat to municipal revenue. Under traditional volumetric tariffs, consumers who install their own generation capacity lower their electricity consumption during high-margin midday periods but still rely on the municipal grid for peak-hour capacity at the beginning and end of the day (Oliver, 2021). To mitigate this revenue erosion and protect the cross-subsidies required to fund pro-poor mandates, municipalities can implement cost-reflective, unbundled tariffs that include fixed service and capacity charges (Oliver, 2021; SEA, 2021).

With accurate tariffs in place, municipalities can shift from defensive regulation to active procurement. Through net

billing and feed-in schemes, municipalities can buy excess capacity from consumers at rates approved by NERSA that are lower than the cost of bulk purchases from Eskom, which generates savings for the municipality (SALGA, 2023; SEA, 2023). Models such as the City of Cape Town’s “Cash for Power” programme directly pay consumers with installed generation capacity for excess generation, which incentivises larger systems to feed surplus energy back into the local grid (GreenCape, 2024). Executing these financial transactions successfully requires AMI and bi-directional meters to ensure accurate billing and reconciliation (SEA, 2021).

Beyond facilitating private generation, municipalities can invest in small-scale, behind-the-meter solar systems on their own infrastructure. These installations serve as energy-efficiency measures that directly reduce municipal operating costs (Oliver, 2021; Republic of South Africa, 2023). Compared to large-scale, own-build projects (discussed in Section 3.4), municipal SSEG requires lower capital investment and carries less financial risk (SALGA, 2023; SEA, 2023). Funding for these municipal projects is also increasingly accessible through internal budget allocations or national grants. For example, the Energy Efficiency and Demand Side Management (EEDSM) grant prioritises projects that demonstrate energy-efficient technologies, short payback periods, and local job creation (Republic of South Africa, 2023).

Managing embedded generation and municipal buy-back programmes is one of the easier steps for municipalities transitioning to modernised energy markets. It builds the essential institutional capacity, billing system upgrades, and customer engagement frameworks necessary for executing more complex market transactions, such as the third-party wheeling arrangements discussed next (SEA, 2021).





3.3.3 Conventional wheeling

As wheeling is one of the fastest-growing areas of the electricity sector transition, it poses a growing risk to municipalities that are not prepared for it. It is also allowable for a municipality itself to be the buyer of wheeled energy, but this is not the focus of this report.

Wheeling principles and obligations

In their role as NSPs, municipalities are obliged to allow access to and use of the municipal distribution network (above 11 kV) via third-party wheeling. Facilitation of this is linked to the implementation of NERSA-approved charges, as outlined in the approved and gazetted Regulatory Rules on Network Charges for Third-Party Wheeling of Energy (NERSA, 2025b). A core principle of the NERSA rules is that of non-discriminatory access. That is, all potential and existing customers should be subject to the same methodology and logic when charged for wheeling.

When processing wheeling applications, the municipality is also responsible for ensuring that new connections and wheeling arrangements are compatible with maintaining the existing grid's functionality and reliability.

The financial flows of wheeling

It is municipalities' prerogative to ensure that the impact of wheeling on electricity revenue is as neutral as possible by properly implementing relevant charges. This requires adequate preparation, with appropriate tariffs in place and the necessary systems and policies for implementation. When a customer on the municipal grid enters into a third-party wheeling agreement, they will buy less bulk electricity from the municipality. However, the municipality, as NSP, is entitled to recover costs associated with the availability and use of the network by applying cost-reflective charges based on network utilisation. The table below lists the charges that should be raised by the municipality, and to whom. Additional useful detail and context specificity can be found in the NERSA rules for wheeling (NERSA, 2025b) and energy trading (NERSA, 2025a).



Table 1: Municipal wheeling-related charges

Charge levied by municipality	Description	Recipient of charge
UoS charge, supply-side	Inclusive of: • Network charges • Losses charges • Ancillary service charges • Service and administration charges	All generators connected to the municipal grid
UoS charge, demand-side	Inclusive of: • Network charges • Losses charges • Ancillary service charges • Service and administration charges • Contribution to subsidies and surcharges* *Subsidies and surcharges should be based on municipal frameworks/ policies and applied equitably to all customers, regardless of wheeling.	All customers connected to the municipal grid
Additional service and administration charge for wheeling	The additional fee specifically for managing wheeling data, validation and billing services must be cost-reflective.	Wheeling customers on the municipal grid
Connection charges	New connections to the municipal grid must be applied for and will incur an upfront connection charge to account for electrical infrastructure costs. This may include any grid strengthening that the municipality has to undertake to enable the new connection.	New generators and customers connecting to the municipal grid

Essentially, wheeling customers are still obligated to pay the NSP basic charges, service charges, fixed network charges, and approved demand charges. Section 3.3.1 above states that municipal UoS charges apply to all customers and generators connected to the municipal grid, irrespective of whether wheeling is taking place. Note that all tariffs and calculation methodologies must comply with the Grid Codes (NERSA, 2022) and the Electricity Pricing Policy (as and when updated) (DMRE, 2022) and be approved by NERSA.

It is recommended that municipalities quantify the effect of wheeling on their electricity revenue. This depends specifically on how many municipal customers switch to purchasing wheeled power from a third party, and which customers do so. Forecasts or scenarios can be created based on predictions, possibilities, and knowledge of existing customers' electricity demand.

Municipal preparedness for wheeling

To facilitate wheeling, municipalities need to have:

- UoS charges developed, both to ensure fairness (non-discriminatory access) and to recover sufficient costs and revenue,
- a high degree of control and visibility over the electricity distribution network to accurately update the CoS and unbundle tariffs,
- ToU tariffs, along with appropriately adjusted electricity billing and reconciliation systems, and
- adequately modernised grid and smart metering systems.

Significant resources are needed to fulfil the above, in both financial and human terms (internal capacity and capabilities). Municipalities are encouraged to seek technical assistance and make use of the wealth of publicly accessible guidance.

Standardised, regulatory-compliant tools and templates related to wheeling are available on the Municipal Resource Portal, including templates for wheeling policies, UoS agreements, connection agreements, and electricity supply agreement amendments. COGTA's Wheeling Framework for Municipalities is also a valuable resource, including guidelines spanning municipal processes for wheeling approval and implementation (COGTA, 2025).



3.3.4 Tokenised energy settlement

Enerset by Meridian Economics is piloting tokenised energy settlement (TES), a new financial model that enables end customers to buy green power from generators and traders (Future Cities Africa and Meridian Economics, 2026). Like conventional wheeling, TES has no bearing on how power flows through the grid and is purely a financial reconciliation system. TES and conventional wheeling are not mutually exclusive; the two are complementary systems. Due to its ease of implementation, TES can unlock a greater volume of renewable energy on the grid and reduce grid defection, protecting the municipality's customer base and revenue.

The principle of TES, for an IPP (generator) and customer (buyer) both connected to the municipal grid, is as follows:

- The IPP injects energy into the municipal grid at the point of connection.
- The municipality issues an Electricity Credit Token (ECT) with a financial value equal to the avoided cost of purchasing Eskom electricity (energy charge component only) at the time of injection.
- The IPP and the customer have a Token Purchase Agreement (TPA) in place, and the customer buys the ECT at the agreed TPA tariff. The customer's savings are based on the difference between the TPA and municipal tariffs, with the TPA tariff being lower.
- The customer consumes electricity supplied by the grid as normal.
- The municipality sends the customer their municipal electricity bill as normal, for all the electricity they have consumed, priced at the normal municipal tariffs.

- The customer settles their municipal bill in full using the ECT and any additional cash required.

Importantly, the municipal-customer relationship remains unchanged, and the customer remains solely the municipality's. The regulations governing conventional wheeling are not triggered, and no new UoS agreements or tariffs are needed. The municipal bill to customers remains unchanged, meaning that TES is revenue-neutral for the municipality. To enable TES, a municipality would need to obtain council approval and integrate the settlement system to issue ECTs.

Compared with municipal IPP procurement and own generation, TES allows green power to flow through the distribution network for use by municipal customers, but it does not require any municipal procurement. It thus does not trigger any MFMA or MSA requirements, nor supply chain management processes.

For a municipality, TES is simpler to adopt than conventional wheeling, IPP procurement, or own generation, as it has fewer setup and operational requirements. It is more accessible to a wider variety of generators and traders, as well as a greater range of customers, including prepaid and smaller customers. It is also particularly attractive to customers who can benefit from credible and traceable green attributes (for carbon accounting, for example).



3.4 Municipal electricity procurement and off-take

As the electricity sector evolves, municipalities are increasingly sourcing electricity from a wider range of suppliers, rather than relying solely on bulk purchases from Eskom. This includes direct procurement from IPPs, purchases through licensed electricity traders, and aggregation models that combine demand across multiple customers (NERSA, 2025a; Republic of South Africa, 2024).

- **Electricity buyer:** buying electricity as a commodity from a supplier
- **Off-taker:** committing to purchase the output of a specific project through a contractual arrangement
- **Distributor/reseller:** delivering electricity through the municipal network to end-users

In this evolving market, municipalities may act either as electricity buyers or as off-takers.

While an electricity buyer purchases power from a supplier or market participant, an off-taker commits to purchasing electricity from a specific generation project through a long-term contractual arrangement, typically a power purchase agreement (PPA), providing the revenue certainty required to support project financing (EIB, 2023).

This role is particularly important for renewable energy projects developed by IPPs. The ability of these projects to attract investment depends largely on the presence of a creditworthy off-taker and a contractual framework that provides predictable revenues over the project's life (World Bank, 2018). Municipalities are often well-suited to play this role due to their existing customer base, ability to aggregate electricity demand, and established standing within local electricity markets. This enables municipalities to support the development of new generation capacity without necessarily financing projects on their own balance sheets.

In a typical IPP project, the generation asset is financed by the private developer using a combination of equity from project sponsors and debt from commercial banks, development finance institutions (DFIs), or other lenders (EIB, 2023; World Bank, 2018). While municipalities may

not finance the generation asset directly, they may still incur project-related costs, depending on the arrangement's structure. These can include transaction advisory support, technical studies, procurement processes, metering and billing systems, network upgrades, wheeling administration, or other infrastructure investments required to facilitate project implementation. Municipalities, therefore, need to consider both the direct and indirect financial implications of acting as an electricity buyer or off-taker when evaluating procurement options.

Before entering into long-term procurement arrangements, municipalities should consider how the proposed purchase aligns with their broader electricity business, including future demand projections, tariff structures, network capacity, revenue implications, and their ability to manage long-term contractual commitments. Long-term PPAs are subject to municipal finance and procurement requirements and require coordination across technical, financial, legal, and governance functions within the municipality (National Treasury, 2022).

The role a municipality can play as an electricity buyer, or off-taker, will vary depending on its financial position, revenue performance, demand profile, and institutional capacity. Some municipalities may be well-positioned to enter into long-term PPAs directly with IPPs. However, the requirements for a bankable off-taker are stringent, and most municipalities in South Africa struggle to meet them. In such cases, alternative procurement arrangements involving traders, aggregators, or other market intermediaries are more appropriate and feasible. Understanding these constraints and opportunities is important in identifying procurement approaches that are both commercially viable and aligned with the municipality's broader objectives.



3.5 Municipal own generation

Under the current legislation, municipalities may own, finance, and operate grid-tied electricity generation facilities, referred to as own generation. Information and guidance regarding the legal framework for municipal own generation can be found at the following:

- MFMA Circular No. 118, Legal Framework for Procurement of New Generation Energy Capacity by Municipalities and Municipal Entities (National Treasury, 2022). Refer to Scenario 4 presented in the Summary Report, which corresponds to Annexure D of the Circular.
- UK PACT: Municipal Own-Use Generation Facility Legal Landscape Report prepared for Sustainable Energy Africa (Pinsent Masons Africa, 2025).

In addition, the Public Procurement Framework for the Municipal Procurement of Renewable Energy Assets (SEA, 2025) is a valuable resource for municipalities starting to explore own generation. It includes guidance on assessing and building municipal readiness for such a project, undertaking the required feasibility assessment, and procuring contractors. Links are provided in the framework to access detailed procurement guidelines and contract templates for project implementation.

The core attraction for municipalities of undertaking an own generation project lies in reducing bulk electricity purchases from Eskom through a source of cheaper and greener renewable energy and enhanced security of

supply. The electricity may be used for self-consumption and/ or resale to municipal customers in its role as a utility. A municipality is required by law to pass on electricity cost savings to customers and may therefore be able to protect customers against annual Eskom tariff hikes. The size of the savings will depend on the scale of the generation facility relative to electricity demand. Energy security and load-shedding mitigation are additional benefits achievable through the integration of energy storage systems, such as batteries or pumped hydropower.

Comparing own generation to municipal IPP procurement and off-take presents both benefits and drawbacks. Own generation arguably allows for a greater degree of municipal control whilst requiring more human resources and skills within the municipality. IPP procurement places the financial burden of upfront expenditure on a private party rather than the municipality, but may result in a higher energy unit price (or “project tariff”) to account for financing conditions (private-sector debt and equity returns). Considerations for both models are available in the report [Financing and ownership models for municipal embedded generation: Guidance for South African municipalities](#) (ICLEI Africa, 2025).

The ability of a municipality to pursue this model is governed largely by the strength of its financial and governance standing. It is also dependent on the volume of finance required, specifically the upfront capital expenditure and annual operating expenditure, both of which correspond to the size of the facility.



The following are options and case studies for financing municipal own generation projects:



Grants from provincial and/ or national government

This is often the most affordable source of capital as it does not require repayment. Examples include funding from the Department of Electricity and Energy (DEE), Provincial Treasury infrastructure support programmes, or future climate and just transition funding facilities. The Western Cape Government provided a substantial grant to assist with the development and building of a combined solar PV and Battery Energy Storage System (BESS) facility in Hessequa Local Municipality. The case study is presented in Financing and ownership models for embedded generation (ICLEI Africa, 2025). This option may become available to other municipalities that can demonstrate strong internal capacity to manage a generation facility.



Industry partnerships and corporate-supported infrastructure

Under this approach, private sector entities fund or co-fund infrastructure that is subsequently transferred to municipal ownership. The motivation to finance is linked to corporate social investment (CSI), social and labour plans (SLPs), community development commitments, and shared infrastructure needs. For example, a mining house may be interested in funding a pilot or smaller-sized embedded generation facility as part of their SLP. In such a case, the mine could manage development and construction and fund the capital expenditure before handing the facility over to the municipality for continued operations and maintenance. The municipality would make suitable land available and would own the asset long-term. Key considerations here are the socio-economic impact of the project and how it would satisfy the mining company's SLP obligations.



Municipal borrowing (loan finance)

Municipalities can borrow funds to finance generation projects and repay the debt over time from electricity revenues or cost savings generated by the project. Potential lenders include DFIs, commercial banks, infrastructure funds, and climate finance facilities. Accessing the quantum of finance required for own generation projects, especially larger-scale projects, comes with stringent requirements around municipal creditworthiness and foundational readiness. The City of Cape Town has financed a 7 MW solar PV facility on its own balance sheet, using debt finance. The related case study, Municipal pioneering in utility own-build renewable energy generation (GreenCape, 2026), is a useful resource.



Municipal cash reserves and internal funding

Projects can be financed using internally available funds or accumulated cash reserves. However, municipalities are required to maintain sufficient cash reserves to support operations, meet financial obligations, and manage unforeseen risks. As a result, only municipalities with strong financial positions and adequate reserves are generally able to pursue this approach. Examples include using accumulated electricity reserves, operating surpluses, or infrastructure replacement funds to finance a municipal solar PV project.



4

Institutional relationships and stakeholder dynamics

Municipal energy projects, like all infrastructure projects, require coordination across multiple actors, including developers, financiers, regulators, and network operators. In both public and private contexts, projects must align technical feasibility, financial viability, and long-term socio-economic impact to move forward (World Bank, 2018).

Where municipal projects differ is in the institutional and regulatory environment in which this coordination takes place. Municipalities must navigate public finance regulations, governance requirements, and stakeholder engagement processes alongside technical and commercial considerations. Municipal regulatory frameworks, including the MFMA and Municipal Systems Act (MSA), shape how projects are approved, procured,

contracted, and financed, while broader fiscal conditions within local government determine available finance options and implementation timelines (Republic of South Africa, 2004).

Importantly, these institutional processes do not only serve administrative functions. They help manage fiscal risk, strengthen revenue certainty, ensure regulatory compliance, and secure social and political buy-in, all of which influence project bankability and the willingness of external actors to participate in long-term infrastructure projects (World Bank, 2018). In practice, successful project development depends not only on the quality of the infrastructure opportunity itself, but on how effectively these processes are tailored towards municipal contexts and coordinated across stakeholders.



4.1 Internal municipal coordination and capability

The development of municipal electricity projects depends first on internal coordination within the municipality. While infrastructure projects involve multiple external actors, the ability to engage effectively with these stakeholders is shaped by how well technical, financial, legal, and governance functions are aligned internally.

In practice, municipal energy projects require input from multiple internal functions, including electricity, finance, community services, and supply chain management. In many municipalities, these responsibilities are institutionally separated between operational service delivery departments and central corporate functions. As a result, technical, financial, regulatory, and procurement considerations are often addressed at different stages of project development rather than together.

The development of financeable electricity projects requires municipalities to strengthen internal capabilities in areas such as:

- power system and grid planning;
- land-use management and planning;
- financial modelling and tariff analysis;
- legal and contractual structuring;
- procurement and project management; and
- stakeholder engagement and coordination across departments.

These capabilities increasingly shape how municipalities engage with external counterparties throughout project development. However, many of the skills required to structure and implement financeable electricity projects sit outside the traditional operational functions of municipal electricity departments. This creates a mismatch between the operational focus of municipal electricity functions and the broader institutional capabilities needed to advance complex infrastructure transactions (Republic of South Africa, 2024).

Part of this work is to communicate a municipality's value proposition convincingly, demonstrating why it is a credible and capable project partner. Elements of this include: ownership of the distribution grid; control over billing, metering, and data; existing relationships with customers; approval authority, which can accelerate progress; and holding land for projects. The ability to communicate such a value proposition can help shift the perception of municipalities from sources of risk to valuable partners in preparing, de-risking, and implementing projects.



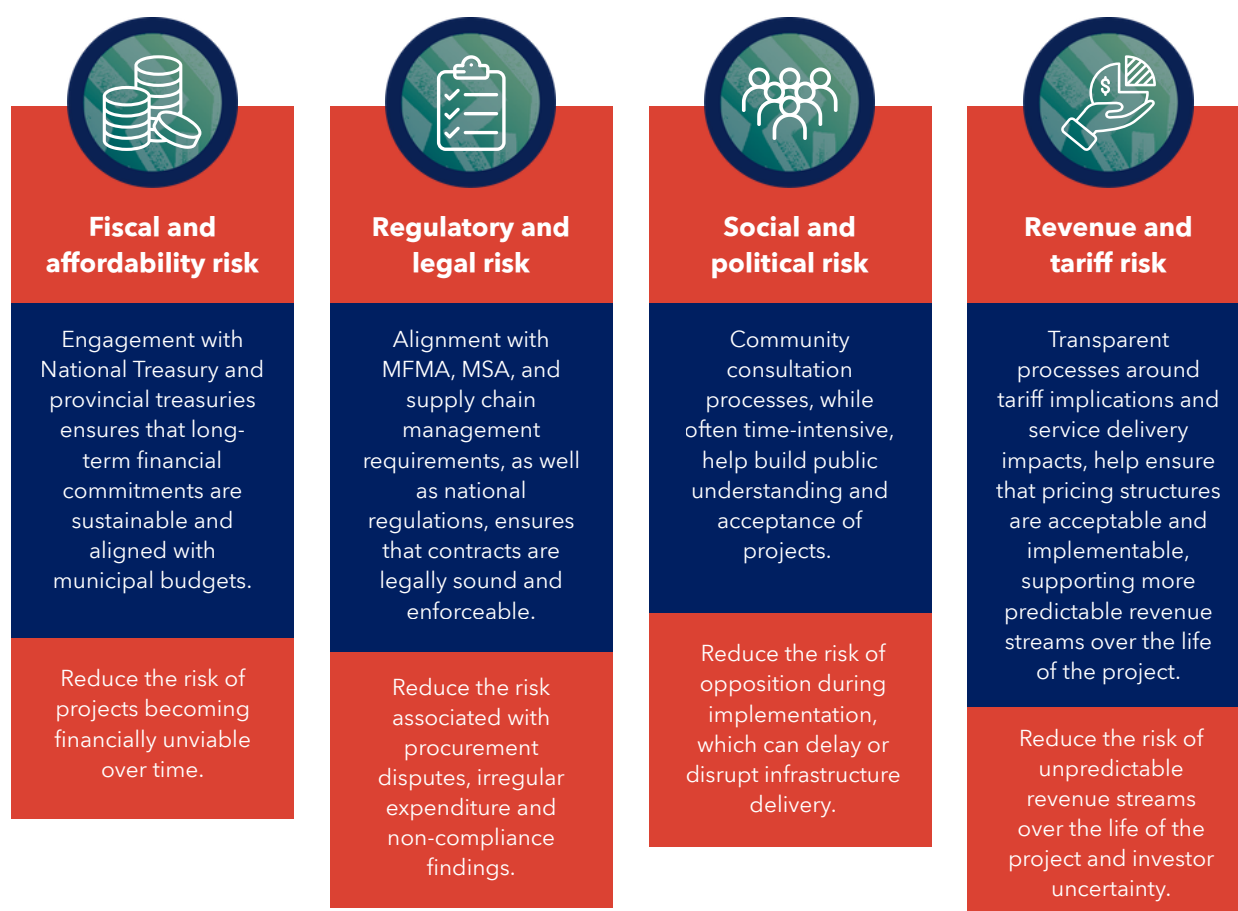
4.2 Public institutions, approvals and accountability

Municipal electricity projects are subject to a range of public finance and governance requirements that ensure affordability, transparency, and accountability. Where projects involve long-term financial commitments, such as PPAs, municipalities must engage in several regulatory steps, including compliance with Section 33 of the MFMA. This requires public disclosure, stakeholder consultation, and engagement with National Treasury and provincial treasuries (National Treasury, 2022; Republic of South Africa, 2004) – more detail can be found in the IPP procurement guidelines report developed under the

UKPACT project and the corresponding regulatory step-by-step guidance developed under the JMEG project.

These processes are designed to assess whether projects are affordable, represent value for money, and appropriately manage fiscal risks over the long term (National Treasury, 2024a). Public participation is also a constitutional requirement, ensuring that communities are informed and able to comment on decisions that affect service delivery and tariffs (Republic of South Africa, 1996).

From a project and financing perspective, these institutional engagements play a critical role in mitigating key risks:



These processes are important for both public and private stakeholders. While they may extend project timelines, they contribute to stronger project foundations by ensuring that financial, legal, and social risks are identified and addressed early, making the municipality play a key derisking role in project development.



4.3 Eskom, grid access, and network coordination

The ability to develop and finance energy projects depends on access to the electricity grid. In South Africa, this involves coordination between Eskom (as the operator of the transmission network) and municipalities (which manage local distribution systems). The establishment of the NTCSA is intended to support more open and non-discriminatory access to the grid as the market evolves (Department of Public Enterprises et al., 2024).

For municipalities, engagement with Eskom is often necessary to assess whether existing grid infrastructure can accommodate new generation projects and to determine which network upgrades, connection processes, or technical studies may be required before projects can proceed. Depending on the project's structure, this may include GIAs, connection agreements, wheeling arrangements, or UoS agreements associated with the transmission or distribution network (National Treasury, 2022; University of Pretoria and Partners, 2024).

Grid access is a fundamental requirement for the development and financing of energy projects. Uncertainty around connection capacity, timelines, and costs can delay or prevent projects from reaching financial close. Municipal EMPs – including network development plans and single-line diagrams – can provide an important starting point for understanding existing network capacity and identifying potential constraints (Republic of South Africa, 2019). Early engagement with these planning tools, together with coordination between municipalities and Eskom where required, can help identify likely connection points, network limitations, and upgrade requirements before more detailed technical studies are undertaken.

In practice, renewable energy projects require a range of technical assessments to confirm grid capacity, connection requirements, and system compatibility. These are critical inputs into project design and financing and are discussed further in the regulatory step-by-step guidance developed under the JMEG project.





4.4 External counterparties in municipal electricity projects

Municipal electricity projects involve a range of external actors, each playing a distinct role in project development, financing, delivery, and operation. Often, they are grouped together as “the private sector”, but their roles, incentives, and points of engagement differ significantly across the project lifecycle.

Understanding these roles is important because municipal projects are developed within a regulated environment that requires a clear separation between planning, procurement, and contracting processes, as set out in the MFMA (Republic of South Africa, 2004).

External counterparties can broadly be understood in four groups:

Project originators and developers

These include independent power producers (IPPs) and developers who identify opportunities, assess feasibility, and structure projects. Engagement at this stage is typically exploratory and focused on understanding project potential and constraints.

Delivery partners

Engineering, procurement, and construction (EPC) contractors, equipment manufacturers (OEMs), and operations and maintenance providers are responsible for implementing and operating projects once they are contracted. Their involvement is generally linked to formal procurement processes.

Financing and investment actors

Commercial banks, development finance institutions, and investors provide capital for projects. Their participation depends on the structure of the project, the allocation of risks, and the credibility of contractual arrangements.

Off-takers and market participants

Large electricity users, traders, and aggregators may participate in projects as buyers of electricity, particularly in wheeling or market-based arrangements.

The way municipalities engage these actors depends on the role they are expected to play within the project. For example, privately financed generation projects may require formal procurement processes, long-term contractual arrangements, and Treasury approvals where municipalities enter multi-year obligations. By contrast, corporate participation in electricity procurement may occur outside formal processes through CSI, skills and enterprise development (SED), or SLP mechanisms. Similarly, wheeling arrangements, electricity trading, and market-based supply structures may require a combination of regulatory approvals, technical studies, bilateral negotiations, and network agreements before projects can proceed.

Engagement with these actors typically occurs at different stages of the project. Early interactions are often exploratory, supporting project definition and feasibility. As projects progress, engagement becomes more formalised through procurement and contracting processes, in line with public finance and governance requirements (Republic of South Africa, 2004). In practice, challenges often arise when the transition between early engagement and formal procurement is not clearly defined, leading to delays or the need to revisit earlier stages of the project.



4.5 The role of intermediaries

Municipal electricity projects are developed within a system that involves multiple actors, processes, and decision points. While each actor plays a defined role, no single institution is responsible for coordinating the full project lifecycle. As a result, a range of intermediary functions has emerged to support the alignment of technical, financial, regulatory, and stakeholder processes required to move projects forward.

While public sector processes play an important role in reducing risks, they can also introduce time and coordination challenges that are not always aligned with project development timelines. In practice, this can result in projects slowing down or shifting toward alternative pathways where roles, requirements, and timelines are clearer.

Addressing this challenge does not require removing these processes but improving how they are coordinated. This includes engaging key stakeholders early on, running technical, financial, and regulatory processes in parallel, and strengthening project preparation so that proposals are sufficiently developed before entering formal approval stages.

These coordination functions are typically supported by a range of intermediary actors, including development finance institutions, project preparation facilities, transaction advisors, technical consultants, and organisations that support municipal coordination and capacity (World Bank, 2018). While their mandates differ, they serve a common function: bridging gaps among project concept, structuring, and implementation.

In practice, these roles include:

- project preparation support, including feasibility assessments and early-stage project development;
- transaction support, such as structuring projects and supporting procurement processes;
- technical and regulatory coordination, helping align grid requirements, regulatory processes, and project design;
- stakeholder facilitation, supporting engagement across public institutions, municipalities, and private actors;
- knowledge translation, bridging differences in how technical, financial, and institutional requirements are understood; and
- relationship building, strengthening the understanding between different players and of each other's objectives, incentives, and expectations.

Experience from working with municipalities highlights how these coordination functions are often required to move projects forward in practice. Progress depends on how effectively different elements – including grid considerations, institutional requirements, and project structuring – are aligned and sequenced. In this way, intermediaries help reduce fragmentation, clarify project requirements, and enable projects to move from early-stage concepts to projects that can attract finance and reach implementation.





5

**Developing,
procuring,
and
financing
municipal
energy
projects**

Municipal energy projects become financeable through project preparation, structuring, procurement, and risk allocation. Before external actors can commit resources or financing, there must be sufficient clarity on the municipality's intended role, the project's technical viability, the regulatory and procurement pathway, and the revenue and contractual arrangements that will underpin implementation.

This section focuses on how projects move from an initial concept toward procurement, financing, and implementation. It highlights the key decisions, processes, and considerations that influence project viability and provides guidance on how municipalities can position projects for successful engagement with developers, financiers, and other implementation partners.



5.1 Aligning municipal objectives, roles and project structures

Municipalities operate within different contexts and may play a range of roles within South Africa's evolving electricity sector. The viability of projects, the available financing structures, and the role a municipality can realistically play are therefore influenced by local economic conditions, infrastructure characteristics, institutional capacity, and development priorities (Bouw et al., 2021; Geissler et al., 2024).

Project development is often most effective when it begins with a clear understanding of the problem the municipality seeks to solve, rather than with a predetermined technology or financing solution. For some municipalities, the priority may be to reduce electricity purchases costs or to strengthen energy security.

For others, it may be supporting local economic development, accommodating future growth, improving network performance, or adapting to changing customer demand. These priorities influence both the types of projects that are pursued and the role the municipality chooses to play in their implementation.

Understanding the local context is therefore a critical first step. Municipal EMPs, financial analyses, Integrated Development Plans (IDPs), local economic development strategies, and existing infrastructure plans can help municipalities identify opportunities, constraints, and potential project pathways before more detailed project preparation begins (Republic of South Africa, 2000).



5.2 Project preparation and internal readiness

Project preparation is the process of determining viability and reducing uncertainty around a project before significant time, resources, or financing are committed. It involves clarifying the technical, financial, regulatory, procurement, and institutional aspects of a project sufficiently for municipalities and external actors to understand what is being proposed, how it will be implemented, and what risks need to be managed.

Insights from working with a cohort of intermediate municipalities highlighted that many project challenges emerged not necessarily from the technical viability of projects themselves, but from uncertainty around issues such as grid availability, municipal procurement pathways, affordability considerations, land processes, internal mandates, and the sequencing of approvals. In several cases, technical, financial, and regulatory processes progressed separately, requiring assumptions or project structures to be revisited later in project development.

Key areas that often require early clarification include:**Municipal role and objectives**

Whether the municipality intends to act primarily as an off-taker, wheeling facilitator, generator, landlord, or infrastructure partner influences the procurement structure, contractual arrangements, financing approach, and regulatory requirements applicable to the project.

**Grid and network feasibility**

Grid capacity, connection requirements, wheeling arrangements, and network upgrade needs influence project sizing, costs, timelines, and implementation risk. These issues are often central considerations for developers, financiers, and network operators when assessing project feasibility.

**Affordability and revenue considerations**

Tariff implications, electricity sales assumptions, wheeling revenues, and long-term payment obligations are important considerations for both municipal decision-making and project bankability. External financiers and developers generally require confidence that revenue structures and payment arrangements will remain viable over the life of the project.

**Land access and permitting requirements**

Land ownership, servitudes, zoning, environmental approvals, and permitting processes affect project timelines and implementation certainty. Delays or uncertainty in these processes can significantly affect project development risk and financing timelines.

**Internal governance and approval processes**

Clarifying delegated authority, council approval requirements, Treasury engagement, and internal decision-making pathways is important for setting realistic timelines and reducing uncertainty during procurement and contracting processes.

**Procurement and contracting pathways**

Municipalities may need to determine early whether projects will require Requests for Information (RFI)^[3], Qualification (RFQ)^[4], or Proposal (RFP)^[5], as well as Section 33 processes, PPP structures, or other procurement and contractual arrangements under the MFMA and municipal SCM regulations (National Treasury, 2024b). These decisions influence how and when external actors can formally engage with the project.

[3] Request for Information: Used to gather information from the market and improve understanding of available solutions, delivery models, technologies, or supplier capabilities before a formal procurement process is undertaken.

[4] Request for Qualification: Used to assess the qualifications, experience, and capability of potential bidders and may be used to establish a shortlist before requesting detailed proposals.

[5] Request for Proposal: Used to invite detailed technical, commercial, and financial proposals for a specific project or service where the procuring institution has defined its requirements and wishes to evaluate competing solution.



5.3 Financing structures for municipal energy projects

The availability and structure of financing are key determinants of whether a project is ultimately implemented. While financing is often discussed as a single issue, municipal energy projects can be funded in several ways, each with distinct implications for municipal responsibilities, risk allocation, ownership, and implementation.

The financing structure adopted is closely linked to the role the municipality intends to play in the project.

Municipalities seeking to own and operate infrastructure may require a different financing approach than those acting primarily as electricity off-takers, network operators, landlords, or facilitators of private investment. Understanding these distinctions early can help municipalities identify realistic project pathways and avoid pursuing financing options that are not aligned with their intended role.

Table 2 provides a simplified overview of common financing structures used in municipal energy projects.

Table 2: Financing structures

Financing structure	Typical source of capital	Typical municipal role
Municipal own build	Municipal reserves, grants, or loans	Owner and operator
IPP/ project finance model	Private developer raises equity and debt	Off-taker
Build-own-operate-transfer (BOOT) or concession arrangements	Private sector financing	Off-taker or service recipient
Land lease or landlord model	Private sector finances project on municipal land	Landowner
Wheeling model	Private generator finances project	Network facilitator
Aggregated procurement model	Multiple buyers support financing	Off-taker/ aggregator

In municipal own-build projects, the municipality is responsible for financing, procuring, owning, and operating the infrastructure. Funding may come from municipal cash reserves, grant funding, or external borrowing. While this approach provides municipalities with greater control over infrastructure assets and future revenues, it also places financing, delivery, and operational risks on the municipality.

In contrast, projects developed through IPP, concession, or wheeling structures are typically financed by the private sector. In these cases, municipalities may not need to fund the infrastructure directly, but instead play a role as an

electricity off-taker, network operator, landowner, or facilitator. The project's ability to attract private investment often depends on factors such as the municipality's financial position, contractual arrangements, revenue model, and the broader regulatory environment.

In practice, financing is often provided through a combination of capital sources (see Table 3 below). Municipal projects may combine grants, municipal contributions, concessional finance, commercial debt, private equity, guarantees, or other forms of blended finance, depending on project requirements and risk profiles.

Table 3: Common sources of capital

Source	Typical use
Municipal cash reserves	Smaller projects, co-funding
National and provincial grants	Enabling infrastructure, studies, capital works
DFI loans	Large infrastructure projects
Commercial bank debt	Creditworthy municipalities or project companies
Private equity	Project development and IPPs
Infrastructure funds	Larger renewable energy projects
Climate finance facilities	Blended finance and concessional funding
Project preparation facilities	Early-stage studies and transaction support

For municipalities, the key consideration is often not simply where funding will come from, but which project structure is most appropriate for their objectives, and how different sources of capital can be blended to ensure the project is viable

Different financing structures allocate ownership, risks, responsibilities, and financing requirements differently, allowing municipalities to select an approach that best aligns with their objectives, capabilities, and financial position.



5.4 Market engagement and procurement pathways

A common challenge in municipal energy projects is aligning regulatory requirements with commercial realities. Municipalities are often required to demonstrate affordability, assess long-term financial implications, obtain internal approvals, and comply with legislative requirements before entering into long-term contractual arrangements. However, many of these assessments require information that only becomes available through engagement with the market.

Working with municipalities highlights that project development is rarely linear. Financial models, affordability assessments, procurement approaches, and project structures often need to be refined as new information becomes available from developers, financiers, technical advisors, network operators, and potential customers. In practice, municipalities frequently move between internal approvals, technical assessments, market engagement, and regulatory processes as projects become more clearly defined.

Market engagement can play an important role in reducing this uncertainty. Discussions with developers, financiers, technical advisors, network operators, large electricity customers, and other market participants can help municipalities better understand delivery models, commercial expectations, implementation risks, and the information requirements associated with project development and financing. Formal mechanisms such as RFIs, RFQs, RFPs, market sounding exercises, and industry engagements can support this process by enabling municipalities to test assumptions and refine project structures before making significant commitments.

Projects involving long-term PPAs may trigger Section 33 processes under the MFMA, while projects involving private participation in municipal service delivery functions may require Section 78 assessments under the MSA (Republic of South Africa, 2004). These processes often require municipalities to prepare financial assessments, affordability analyses, public participation processes, council approvals, and supporting documentation before contractual arrangements can be finalised. Consideration should therefore be given to how regulatory requirements, procurement processes, and market engagement activities are sequenced to avoid unnecessary delays or duplication of effort.

Rather than viewing market engagement, procurement, and regulatory compliance as separate activities, municipalities should seek to align these processes as projects evolve. This can help reduce duplication, improve decision-making, and ensure that projects are developed in a manner that is both commercially viable and regulatory compliant.



5.5 From procurement to financial close

Once a project structure has been identified and procurement processes have progressed, the focus shifts from project development to transaction development. At this stage, the objective is to establish whether a project is sufficiently developed, structured, and de-risked to attract investment and proceed to implementation (World Bank & Partners, 2017).

While financing requirements differ across projects, developers, lenders, investors, and other counterparties typically require clarity on several key issues before committing resources or capital. These include the project's revenue model, the identity and creditworthiness of the off-taker, the allocation of risks and responsibilities between parties, the status of regulatory approvals and permits, land access arrangements, network connection requirements, and the contractual framework that will govern project implementation (World Bank & Partners, 2017; Yescombe, 2014).

Many of these issues are addressed through the development and negotiation of project agreements. Depending on the project's structure, these may include PPAs, wheeling agreements, connection agreements, land lease agreements, implementation agreements, and operations and maintenance contracts. Together, these agreements establish how revenues will be generated, how risks will be allocated, and how the project will be delivered and operated over its lifetime.

Grid and network-related considerations also become increasingly important during this stage. Detailed GIAs, connection approvals, wheeling arrangements, and network upgrade requirements can significantly influence project costs, implementation timelines, and financing requirements. Uncertainty regarding network access or connection costs can affect both project viability and lender confidence, particularly where substantial infrastructure upgrades are required (NERSA, 2022; University of Pretoria and Partners, 2024).

DFIs, project preparation facilities, and transaction advisors can play an important role in supporting projects as they move toward investment readiness. These institutions often help bridge the gap between project concept and investment readiness by funding studies, supporting transaction structuring, and helping municipalities navigate complex approval and procurement processes. This support can be particularly

valuable where municipalities are undertaking unfamiliar transaction structures or engaging with multiple counterparties.

Financial close represents the point at which the financing required for a project has been secured, and the project is ready to proceed to construction or implementation (World Bank & Partners, 2017; Yescombe, 2014). Reaching financial close typically requires project counterparties to finalise key project agreements, secure the necessary permits and approvals, confirm land and network access arrangements, and demonstrate that the project's technical, commercial, regulatory, and financial risks have been appropriately managed.

The financial close is therefore an important milestone in project development, as it signals that a project has moved beyond planning and negotiation and is ready to proceed with construction and implementation. In practice, reaching financial close depends less on the availability of finance itself than on the extent to which project uncertainties have been resolved during the earlier stages of project development.





6 Conclusion

South Africa's electricity sector is undergoing a major transformation, positioning municipalities at a critical inflection point where the traditional resale model faces severe strain. To mitigate escalating structural risks and unlock emerging opportunities, local governments face an immediate imperative to reform their electricity businesses and diversify their roles in the sector. However, many municipalities are ill-equipped for this change.

This guide translates the complex set of shifts the sector is undergoing into the work that municipalities need to do to prepare for these changes, including: taking a project

from concept to implementation, accessing finance, and becoming credible and attractive partners for financiers. The guide underscores that true project bankability relies on internal readiness and on coordination of a diverse set of actors to navigate early-stage project risks and build long-term project viability.

Investing in the foundations and establishing readiness is a long-term project and requires patience from municipalities and financiers alike. But this work is essential if municipalities are going to successfully navigate this unfolding transition.





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This report is produced through the Just Municipal Embedded Generation project, funded by UK PACT (Partnering for Accelerated Climate Transitions), which is a flagship programme under the UK's International Climate Finance (ICF) portfolio.

Find out more about the Just Municipal Embedded Generation (JMEG) project



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