Municipal Embedded Generation

The Just Municipal Embedded Generation Project (JMEG): Exploring Alternative Financing for Embedded Generation in Municipalities

April 2025

Agenda

1. **Introduction**
2. **Overview of Embedded Generation and Energy Policy in South Africa**
3. **Project preparation and financing**
4. **GEDSI and Just Transition**
5. **Relating to the municipal context**

1

Introduction

Session objectives

The aim of this session is to ensure we are aligned on what this project entails and how it relates to your work.

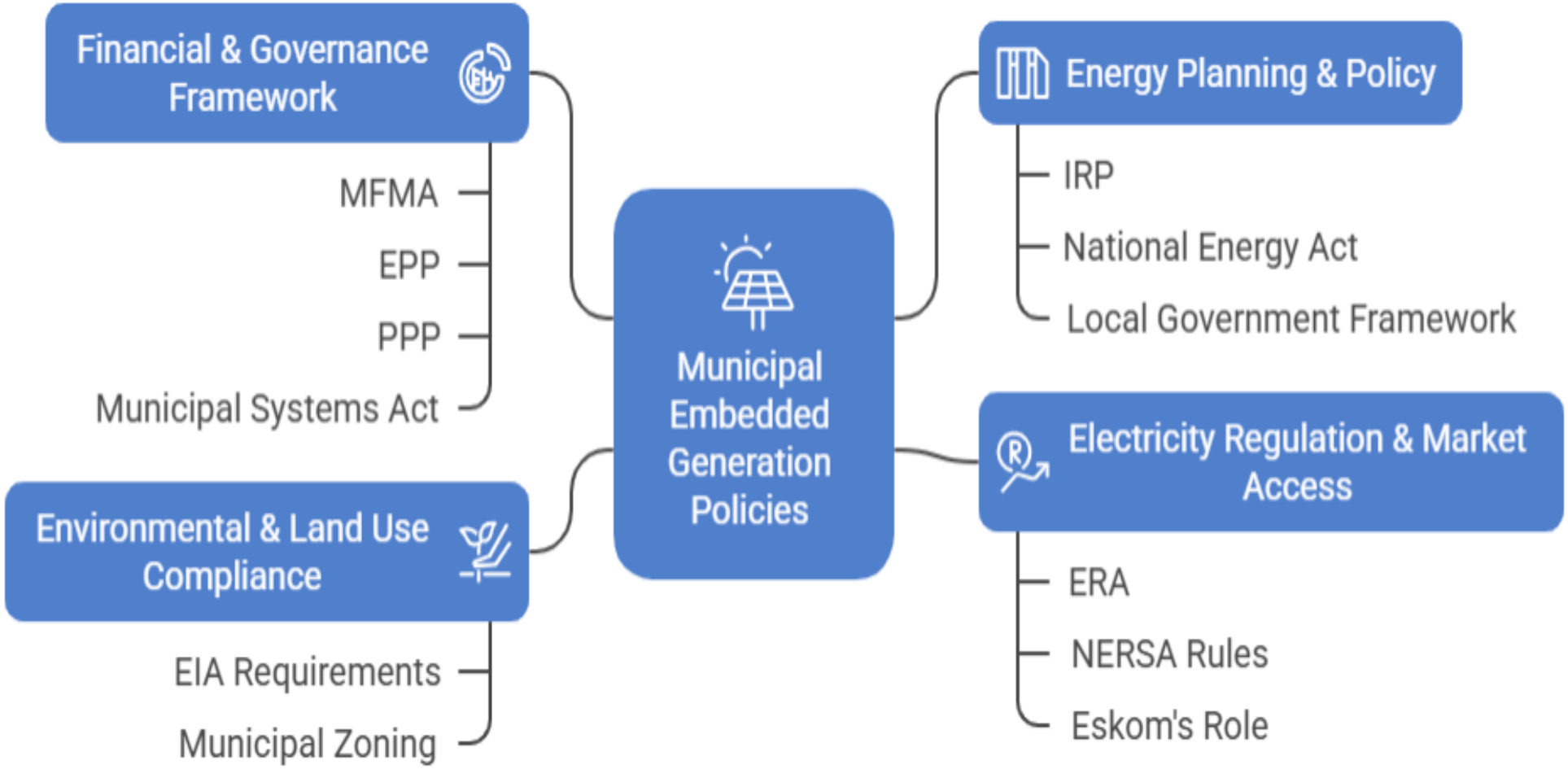
- This session is the first step in a larger capacity-building process.
- Future workshops will support the development of project applications to DBSA's project preparation facility, which includes several key documents.
- The municipal embedded generation landscape is complex, and we are working together to navigate challenges and opportunities.
- Each municipality has unique needs, requiring tailored approaches within standard frameworks.

We will cover key concepts in embedded generation, project preparation, financing and ownership models, and discuss the next steps for municipalities in this project process.

2

Overview of Embedded Generation & Energy Policy in the South African Context

Regulatory and Governance



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Key Policies impacting the ability to introduce EG

Municipal Structures Act (1998)

- Established municipalities' responsibility for electricity distribution
- Created framework for municipal service delivery including energy

Municipal Finance Management Act (MFMA) (2003)

- Governs how municipalities implement infrastructure projects.
- Restricts municipalities from taking on unsustainable debt or risk exposure for energy projects.
- Defines requirements for **long-term contracts** (e.g. PPAs)

Electricity Regulation Act (ERA) (2006)

- Defines municipal powers and responsibilities in generation and distribution
- Sets licensing and registration requirements
- Initially limited municipalities' ability to procure from independent power producers

Reform & Enabling Phase

SALGA Energy Decarbonization Summit (2018)

- Formalised municipal commitment to clean energy
- Created platforms for knowledge sharing on embedded generation projects

Eskom Restructuring (2019)

- Unbundling of generation, transmission, and distribution
- Created pathway for municipalities to diversify energy sources

Municipal Systems Amendment Act (2021)

- Streamlined procurement processes for municipalities
- Enhanced ability to enter into PPAs with independent power producers

ERA Amendments (2024)

- Simplified approvals for projects under 100MW
- Empowered municipalities to develop their own generation capacity
- Reduced regulatory barriers for municipal energy projects

2025 SONA

- Ring-fenced Municipal Utilities
  - Creation of professionally managed entities separate from municipal financeS
- Simplified PPP Approval Process
  - Fast-track approval for partnerships under R2 billion
  - Reduced bureaucratic hurdles for municipal energy projects

3

Project Preparation and Financing

By playing the key knowledge broker role, ICLEI Africa, links a variety of stakeholders needed, at step 2, to develop project pre-feasibility studies – such as:

Subnational entity

National government

Transaction advisor

Project owner

Funder

Technical experts

Financial experts

Knowledge broker

PPF funder

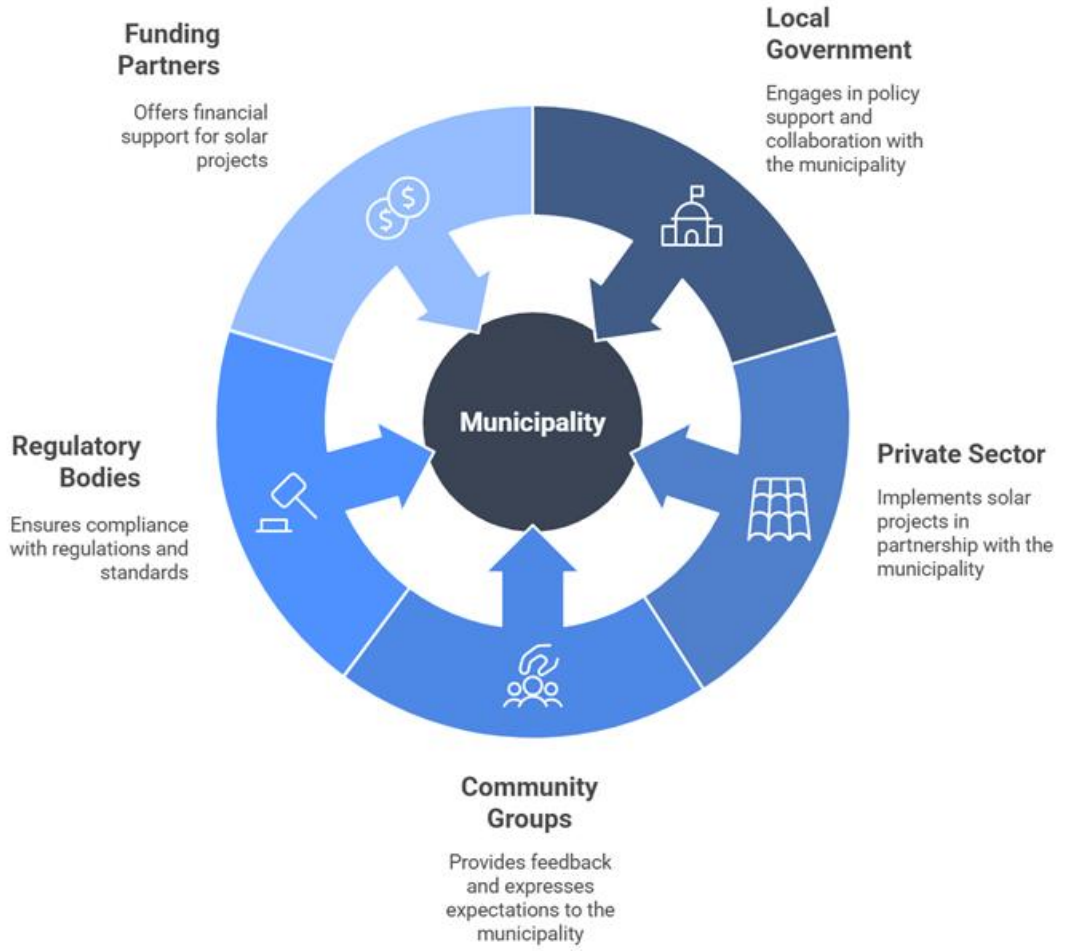
Private investor

Contractors

Off-takers/ beneficiaries

Multi-stakeholder Integration

- **Municipalities** are central stakeholders, contributing land, assets, and funding, with involvement levels varying by ownership or offtake models.
- **Private developers and IPPs** provide technical skills, capital, and operations, requiring clear contracts and ROI assurance.
- **Financial institutions** (banks, DFIs) offer debt and investment funding, expecting credit security and solid repayment terms.
- **Equipment suppliers** ensure the provision, maintenance, and warranty of technology used in projects.
- **Regulatory bodies**, including energy regulators and National Treasury, ensure legal and financial compliance, especially in PPP contexts.
- **Advisory stakeholders** like GTAC and specialist advisors support project structuring, offering technical, financial, and legal guidance.
- **Local communities and residents** are indirect but vital stakeholders, anticipating energy access and economic benefits, and their buy-in supports long-term success.



GEDSI and the just transition

Mainstreaming: Being deliberate in giving visibility and support to different groups of people, rather than assuming that all groups will benefit equally or neutrally from development interventions.

- **Integrate these elements into the planning, delivery and reporting of JMEG**

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Achieving a just transition for South Africa

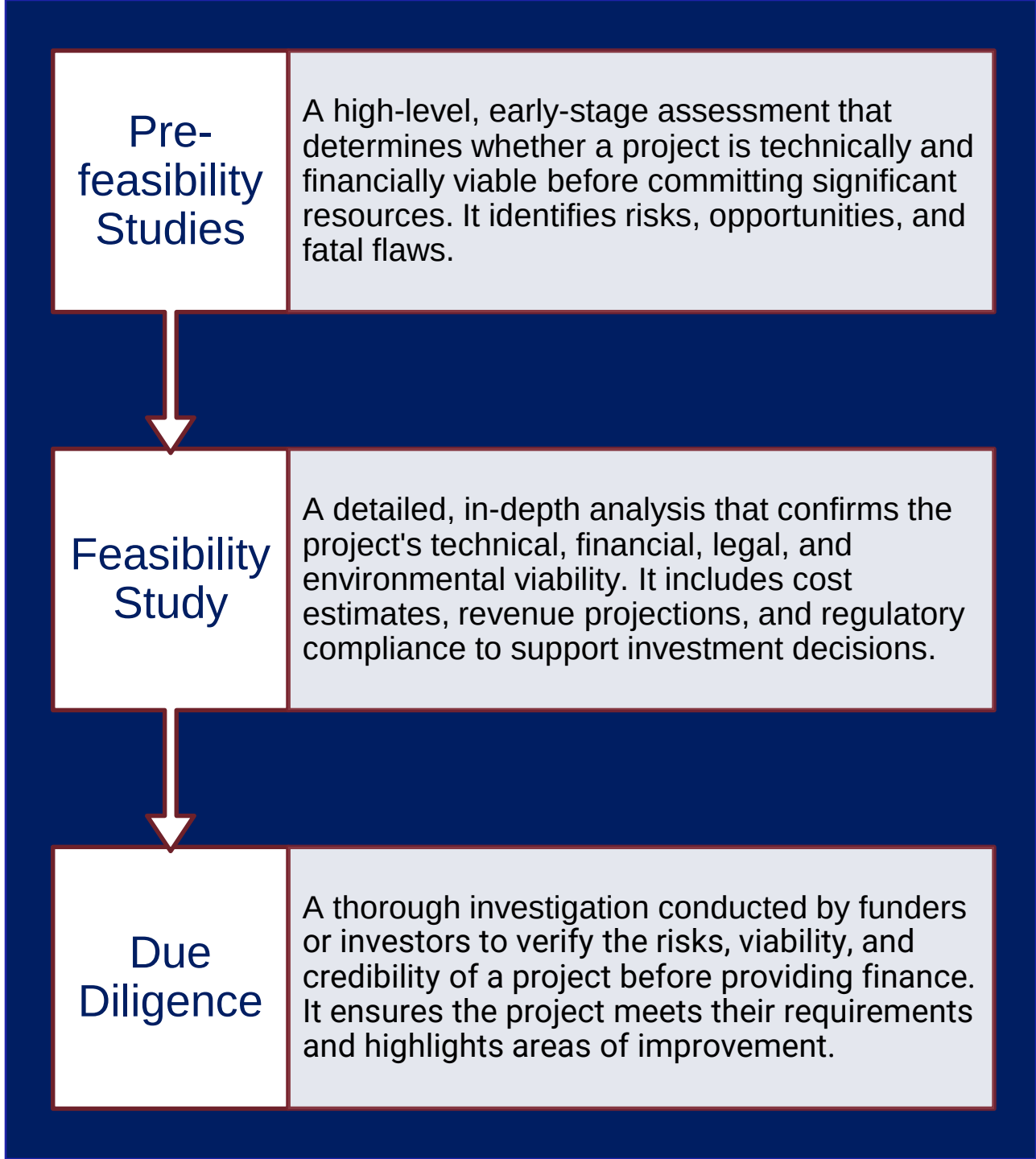
A just transition aims to achieve a quality life for all South Africans, in the context of increasing the ability to adapt to the adverse impacts of climate, fostering climate resilience, and reaching net-zero greenhouse gas emissions by 2050, in line with best available science.

A just transition contributes to the goals of decent work for all, social inclusion, and the eradication of poverty.

Just Transition Framework:
Presidential Climate Commission, 2022

Project Preparation

- The process of planning, designing, and developing a project to ensure it is technically, financially, environmentally, and socially viable before implementation.
- Includes conducting studies, engaging stakeholders, securing approvals, and preparing documentation to attract funding.
- It ensures projects are well structured to easily attract finance and supports entities with reducing costly delays during implementation



Financing and Ownership Models Framework

- Comprehensive analysis of potential ownership models
- Detailed overview of municipal transaction structures - prepare municipalities for an exploration of potential funding models
- Assessment of the municipal baseline to determine the most relevant financial and ownership structure for implementation
- Decision-making tools to help municipalities select most appropriate model
- Specific implementation guidance tailored to each ownership approach
- Key point: Not all embedded generation infrastructure financing models are equally viable for every municipality

Financing and Ownership Models

Municipal Owned and Operated (On Balance Sheet)

- **Structure:** Municipality fully finances, owns, and operates the solar facility.
- **Key Stakeholders:**
  - Municipality: Funds, risks, and benefits.
  - Equipment Suppliers: Provide tech and warranties.
  - Financial Institutions: Offer debt based on municipal credit.
- **Best For:** Financially strong municipalities with expertise.
- **Financing:** Debt appears on balance sheet
- **Municipal focus**
  - Funded on the balance sheet through the capital budget/ MIG
  - Funded using third party financing (PPP regulatory framework applies)
- **Benefits:** Full control over project design, implementation, and operation, no profit-sharing
- **Risk:** Full financial exposure, competes with other funding priorities, internal policy development

Financing and Ownership Models

Public Private Partnerships

BOT

Requires long-term commitment and eventual ownership

Concessional Model

Provides steady revenue with minimal involvement

Joint Venture

Government capital & governance required, shares risks/rewards and leverages private expertise

- PPPs involve collaboration between municipalities and private developers, sharing risks and rewards. Several forms of PPP exist, but they all require approval from National Treasury's PPP unit.
- The process is longer due to the need for transparency, financial sustainability and risk management (several procedural steps) - requires feasibility study, treasury approval, competitive bidding process, and financial modelling
- Ownership depends on PPP structure - requires risk-sharing models to be developed, public consultation and stakeholder engagement must proceed
- **Benefits:** Limited upfront capital requirement, Risk transfer to private sector during operational period, Capacity building opportunity before assuming operations
- **Risks:** Complex and lengthy procurement process, Reduced control during operational period

Requirements for Municipal PPP's

- Section 33 of the MFMA
- Needs and feasibility assessment - justify use of PPP, prepare feasibility study (value for money, technical viability etc)
- Council approval (for studies and procurement)
- Treasury approvals before issuing RfP
- Procurement process - competitive and transparent budding process (+ approval from treasury)
- PPP agreement finalising (detailing roles, risk allocation, payment mechanisms)
- Contract management plan - ongoing monitoring and compliance over contract term

Financing and Ownership Models

Limited Recourse (Off Balance Sheet)

- Under this model the municipality commits to procuring electricity from a privately owned solar facility, typically developed and operated by an Independent Power Producer (IPP).
- Funded through project finance, where banks lend to a Special Purpose Vehicle (SPV) on a limited recourse basis.lenders rely on the project's cash flows as collateral.
- The SPV (a separate legal entity) owns and operates the infrastructure, based on its ability to collect revenue
- Municipality commits to purchasing electricity from privately-owned solar facility (Power Purchase Agreement – municipality as offtaker)
- IPP procurement is faster but requires - creditworthiness assessments, financial and legal agreements, municipal tariffs need to be high enough to cover costs (compliance with section 33 of the MFMA required)
- E.g. Private Build Own Operate, Land/Lease
- **Benefits:** Debt is not recorded on the municipality's balance sheet, no municipal capital requirements, no operational priorities
- **Risks:** The private sector holds ownership, limited municipal control, reliance on private sector for critical infrastructure

Assessment (work with municipalities)

- Financial readiness, which assesses creditworthiness, revenue collection efficiency, and funding access
- Regulatory readiness, encompassing NERSA licensing requirements, municipal bylaws, and National Treasury guidelines for PPPs
- Technical and operational readiness, assessing project management expertise, grid integration knowledge, and maintenance capabilities
- Stakeholder readiness, which evaluates community support and private sector engagement potential

DBSA's Project Preparation Facility

- **Purpose:** Provide funding for the preparation of infrastructure projects to ensure they are bankable and attractive to investors.
- **Objective:** Create a robust pipeline of socio-economic infrastructure projects, feeding into established infrastructure investment programmes and reduce the risk (+ financing costs) related to infra projects
- **Technical Assistance**: Funding and expertise for feasibility studies, environmental assessments, and detailed project design.
- **Financial Structuring**: Support with cost estimates, and securing co-financiers or investors.
- **Legal and Transaction Advisory**: Guidance on contracts, regulatory compliance, and PPP structuring where applicable.
- **Institutional Support:** Helping municipalities and other public-sector entities build capacity and strengthen governance frameworks.
- **Stakeholder Engagement** – Ensuring that key parties (including communities and regulators) are part of the process from the outset.

What we will support with developing

Technical analysis

Used to determine the optimal project design and cost estimates of key components

Financial analysis

Developed using inputs from the technical analysis to determine the funding requirement for project implementation.

Impact analysis

Determines whether the project is able to meet social and environmental requirements

Financial Model

For more information, visit www.ukpact.co.uk

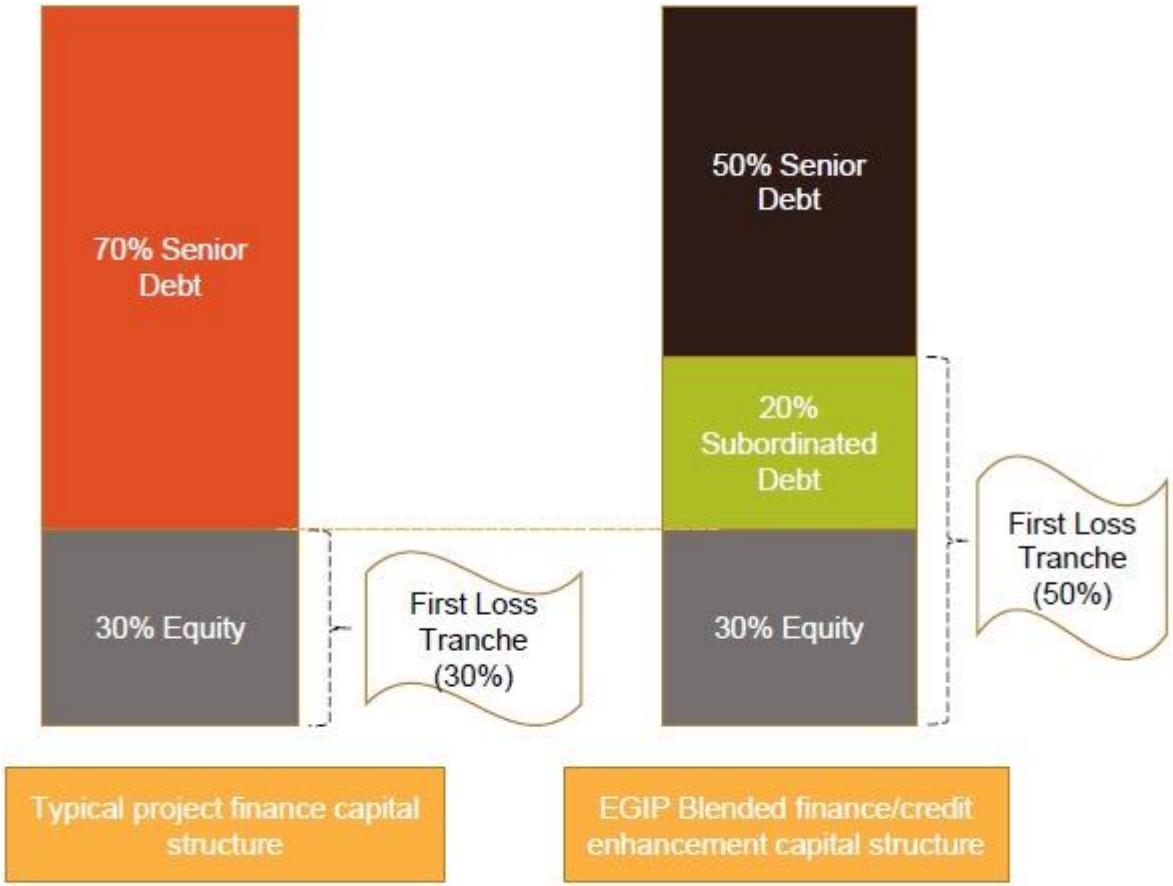
This includes..

- **Regulatory requirement:** Land use rights, zoning implications and compliance with MFMA; environmental and social fatal flaw analysis; permits required
- **Transactional structure:** assessing how the project will be implemented, assessing next steps based on the model selected, regulatory implications, management structure
- I**nstitutional assessment:** capacity needs based on the transaction structure
- **Commercial assessment:** revenue strategy (cost of supply, tariffs), customer base, revenue collection

Activity	Description
Site identification	•Has the site been identified? •What type of agreement is in place (lease or purchase)?
Conceptual design	•Technology option analysis •Financial impact as a result option analysis
Energy yield analysis	•High-level EYA •Plant losses estimates •Seasonal production estimates
Grid studies	•Evacuation assessment •Cost estimate for grid connection
EIA & ESIA	•Fatal flaw analysis •Identification of environmental and social considerations •Review of environmental framework and regulation in the particular country •Potential socio-economic impact
Permitting requests	•What are all the permits that will be required to proceed with the project
Off-taker (if IPP)	•Market overview •Who will be the off-taker? •Status of engagements with off-taker(s) •Is a PPA/MOU in place? •Or letter of interest
Tariff	•Anticipated electricity tariff •How does it compare to the market?
Financial model	•Preliminary financial model to determine the commercial viability of the project •What are the potential fatal flaws
Economic impact	•Benefits and costs of the projects from society's point of view •Expected number of employment opportunities that will be created during the construction and operational phases of the projects
Preliminary project structure	•What is the proposed financing strategy •Proposed transaction finance structure
Sponsor	•Team experience in developing such projects •Project company structure •Track records
Funding	•How much has been spent to date by the sponsor? •How much is required to further develop the project to financial close? •What are the outstanding activities to be carried out?

BLENDED FINANCE/FIRST LOSS MECHANISM

EGIP VS PROJECT FINANCE STRUCTURE



Key Features	Typical Project Finance Capital Structure	EGIP Blended Finance Capital Structure
Capital Structure	70% (senior debt): 30% (equity)	50% (senior debt): 20% (subordinated debt): 30% (equity)
First loss tranche (including equity)	30% to absorb losses ahead of senior debt	• 50% to absorb losses ahead of senior debt • Reduced Exposure At Default ("EAD") for senior debt
Additional Credit Enhancement Requirements	Government Guarantee and/or Parent Company Guarantee	None or significantly reduced levels of guarantees (due to higher debt service cover ratios and level of first loss)
DSCRs and Cash Flows Available for Debt Service (CFADS)	• Senior DSCRs-market related	• Robust senior DSCRs and CFADS due to lower senior debt gearing at 50%
Interest Rate	• Senior interest rate-market related	• Senior interest rate margin discounted due to robust CFADS, Senior DSCRs and the level of first level tranche • First loss tranche interest rate margin fully subordinated to senior debt tranche in the cash water fall and security
Additional project offerings	• N/A	• Incorporates concessional BBBEE funding for ownership of Black Industrialists and Local Community Trusts in embedded generation projects.

4

Relating to the municipal context

Municipal Directorates & Their Roles for This Project

Municipal Manager

Overall project performance management

Strategic planning integration with IDP

Risk management for the project

Communication coordination

Planning & Economic Development

Ensuring the project is aligned with development opportunities

Ensuring land use policies are adhered to and applied when selecting project land.

Support with collection of geographical data on selected site

Budget & Treasury

Budget implementation for the project

Revenue management related to generation assets

Supply chain management for project procurement

Engineering Services

Co-ordinate infrastructure projects

Technical implementation of electrical infrastructure

Project management for the implementation phase

Operation and maintenance of generation assets

Operations & Community Services

Strategic oversight and alignment with municipal development plans

Ensuring community consultation and public reporting on community involvement in the project

Project GEDSI officer

Fill out

Capacity needs and baseline assessment:
Type the URL into your browser OR scan the QR code with your phone

tinyurl.com/JMEGSurvey2

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DBSA’s Embedded Generation Investment Programme (EGIP)

Overview

- **Partners**: Development Bank of Southern Africa (DBSA) & Green Climate Fund (GCF)
- **Goal**: Promote renewable energy via solar PV (280 MW) and wind (50 MW) projects
- **Funding**: $200M total ($100M GCF + $100M DBSA) & $260M private investment

How It Works

- **Mechanism**: First-loss facilities & subordinated debt to de-risk projects
- **Eligible Projects**: 10-100 MW, private PPAs or municipal off-takers
- **Process**: Competitive selection, DBSA manages portfolio

Key Features

- **Purpose**: Support Independent Power Producers (IPPs) outside of government programs
- **Context**: Addresses Eskom challenges & stalled public programs
- **Climate Impact**: Avoid 700,000+ tons CO2/year & boosts Just Energy Transition goals
- **B-BBEE Focus**: $84M for community/SMME ownership