PROJECT BRIEF: MOMBASA INDUSTRIAL AREA SOLAR MICRO-GRID

Decarbonising and Stabilising Power Supply for Industrial Growth

Status: Concept / Pre-Feasibility | **Location:** Changamwe Industrial Area, Mombasa County | **Sponsor:** EDIC & Partners

THE OPPORTUNITY: ADDRESSING ENERGY COSTS AND RELIABILITY RISKS

Mombasa is Kenya's industrial hub, hosting manufacturing, logistics, and agro-processing activities critical to the coastal economy. However, firms in the Changamwe Industrial Area face persistent power instability, including grid surges, voltage dips, and frequent outages. This has forced widespread reliance on expensive and polluting diesel backup generators, driving up operating costs, damaging equipment, and increasing carbon emissions.

Unreliable and high-cost power has become a binding constraint to industrial competitiveness, expansion, and investment attraction in Mombasa, creating a clear case for dedicated, resilient energy infrastructure.

THE SOLUTION: A CAPTIVE SOLAR STORAGE MICRO-GRID

The project proposes the establishment of a shared, captive solar-plus-storage micro-grid serving a cluster of manufacturing clients in the Changamwe Industrial Area.

The system will combine solar photovoltaic generation with battery energy storage to deliver firm, reliable power, reducing dependence on the national grid and displacing diesel generation. Power will be supplied directly to industrial off-takers under long-term contractual arrangements, ensuring predictable costs and improved reliability.

The rollout will initially target anchor tenants with significant and stable energy loads to ensure commercial viability, before scaling to serve a wider cluster of industrial users.

PROJECT ECONOMICS & DELIVERY MODEL

- Estimated project size of **USD 5–10 million,** delivered through an **Energy Service Company (ESCO) model.**
- A private ESCO will finance, design, build, own, and operate the micro-grid, selling power to industrial off-takers under long-term Power Purchase Agreements or a lease-to-own structure.
- Power tariffs will be set below the effective cost of grid electricity combined with diesel backup, reducing the Levelized Cost of Energy for industrial users.
- Government support will focus on regulatory licensing and facilitation, with 100% of project capital mobilised through private equity and commercial debt, without sovereign guarantees.

DEVELOPMENT IMPACT

- **Industrial Competitiveness:** Reduces energy costs and stabilises power supply, lowering downtime and supporting productivity and growth for manufacturers.
- **Climate Impact:** Significantly reduces industrial carbon emissions by replacing diesel backup generation with renewable energy and storage.
- **Private Capital Mobilisation:** Catalyses private climate finance into critical industrial infrastructure through bankable, long-term PPAs.
- **Demonstration Effect:** Establishes a scalable and replicable industrial micro-grid model for other industrial zones in Mombasa and the wider coastal region.