STEMAN ENGINEERING SOLUTIONS (SES)

Bringing Skills and Creativity Together

Corporate Profile 2025

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Executive Summary

Steman Engineering Solutions (SES) is a Nairobi-based engineering firm delivering commercial-grade solar energy, water heating, water pumping, and EV charging solutions across Kenya.

We specialise in end-to-end project delivery — from site assessment, system design and procurement through to installation, commissioning and long-term maintenance. SES serves a wide range of clients and sectors and is capable of delivering projects of any capacity — from small residential systems to multi-megawatt industrial installations. Our competitive strengths include a strong technical team, local presence and responsiveness, partnerships with leading component manufacturers, flexible financing models (CAPEX, lease, and PPA), and preventative maintenance contracts that maximise system uptime.

Vision & Mission

Vision: To be a leading provider of sustainable energy solutions in Kenya and East Africa, enabling businesses and communities to thrive through reliable, affordable, and clean power.

Mission: To design and deliver high-quality renewable energy, water heating and pumping systems and EV infrastructure that reduce operating costs, increase resilience, and support a sustainable future.

Market Segments

The company focuses on five core market segments:

- Residential
- Commercial
- Water Heating
- Water Pumping
- EV Charging

Each segment has been developed with specific system types, typical configurations, and measurable business benefits. Below we expand on each segment with recommended system types, sizing guidance, ROI expectations, and sample use-cases.

Residential Systems

System Types: Off-grid and Hybrid systems for homes, residential apartments and gated estates. These setups typically include rooftop PV arrays, hybrid inverters, and battery banks sized for backup and load shifting. Typical Configurations: - Small homes: 3–6 kWp with 5–10 kWh battery for essential loads. –

Larger houses/estates: 6–20 kWp with 10–40 kWh battery banks to provide multi-day autonomy where required.

Benefits & ROI: Residential systems reduce household electricity bills, provide resilience during outages, and increase property value. Payback typically ranges from 3–6 years depending on tariff and usage patterns. Maintenance & Support: Scheduled preventive maintenance, remote monitoring and rapid response service agreements ensure long-term performance.

Commercial Systems

System Types: Hybrid systems with backup storage and grid-tied systems for exporting where net- metering is available. Target clients include industries, schools, hotels, hospitals, supermarkets, offices and farms. SES also supplies solar-powered cookstoves for institutional kitchens such as schools. Typical Configurations: - Small commercial: 20–100KWP with battery solutions for peak shaving.

- Large commercial/industrial: 100 kWp to multi-MWp installations with centralized inverters and BEMS integration. Benefits & ROI: These installations reduce operational costs, provide price stability against escalation of utility tariffs and can achieve payback in less than 8years for large systems when demand reduction is implemented.. Maintenance: Preventive maintenance, performance guarantees and energy audits are provided.

Water Heating Solutions

System Types: Solar water heaters (flat plate and evacuated tube), AC heat pumps (which can be solarized via PV or hybrid controllers), and industrial water boilers. Use-cases include homes, hotels, industries, Airbnbs, swimming pools and recreational facilities. Benefits & Performance: Solar water heating can reduce water heating costs by up to 60–80% depending on climate and system design. Heat pumps provide high CoP (coefficient of performance) and are effective when paired with PV generation to lower operational costs.

Typical Sizing: Residential solar heaters (100–300L systems), hotel and pool-scale systems (1,000L+), and bespoke industrial boilers sized by thermal duty.

Water Pumping Solutions

System Types: Solar-powered borehole pumps, river pumps, and underground tank pumping systems using DC or AC submersible pumps with MPPT controllers. These solutions are suitable for homes, farms, industries, hospitals and hotels. Benefits: Solar pumping eliminates or reduces diesel generator dependency, lowers operational costs, and provides consistent water supply for irrigation, livestock and process uses. Typical payback is 2–6 years when replacing diesel-run pumps.

Sizing guidance: Pump selection is based on required flow rate (m3/day), total dynamic head (m) and daily hours of operation. SES provides site surveys and yield estimates.

EV Charging Systems

Scope: Supply, installation and maintenance of EV charging equipment for residential, commercial and public facilities. SES supports AC and DC chargers, smart load management, and can integrate charging points with on-site PV generation and battery storage. Benefits: Enables clients to offer EV services to staff and customers, positions businesses for future transport electrification, and can be an additional revenue stream for commercial properties.

Technical Capabilities & Service Offering

SES Energies provides end-to-end project lifecycle services: 1. Assessment & Design: Site surveys, energy audits, system sizing, CAD layouts, single-line diagrams and ROI analysis. 2. 3.

Installation: Civil and electrical works, mounting, cabling, protection and commissioning. 4. Operations & Maintenance: Remote monitoring, preventive maintenance, spare parts provisioning, and emergency response. We partner with reputable brands and maintain stock of critical spare parts to ensure
fast service turnaround.

Core Brands & Partners:

ROI & Performance Analysis

The following chart illustrates typical payback periods (years) across key market segments. These are indicative averages and will be refined per project during site assessment.

Estimated ROI for Various Sustainable Systems

System Type	Typical Capacity/ Scale	Estimated Installation Cost	Annual Savings / Benefits	ROI (10-Year Estimate)
Residential Off-Grid Solar	1 -12 kW	KSh 120 000— KSh 1,500,000	KSh 80,000 – KSh 200,000	2 - 3 years
Solar Water Heater (Domastic)	100–300 L/day	KSh 40.000 – KSh 150,000	KSh 150.000 – KSh 350,000	1 – 3 years
Borehole (Salar Powered Fump)	1 hp–40 hp pump system	KSh 110.000 – KSh 5,000,000	KSh 500,000– KSh 1,200.000	3 – 6 years
Industrial / Commercial Solar System	12 kW –over 20 MW	KSh 1.200,000– KSh 200.000,000	KSh 1,000,000 – KSh 70,000,000	5-8 years

System Capacity Examples and Typical Applications:

System Size (kW)	Typical Application	Typical Battery Size (kWh)
1-3	Small homes / Airbnb	2.56-10
5-12	Large homes / Estates / Apartments/ offices	10-40
10-30	Commercial buildings /Hospitals/ Hotels / Schools/Cold rooms	50-200
30Kw-20Mw	Industrial / Processing	Relative to case

Management Team

Meet the core leadership team at Steman Engineering Solutions:

Photo	Name	Role	Contact
	Stephen Maina	CEO and Technical Director	0798 173 974
	Alice Gitangu	General Manager	0746523284

Hellen Gathoni	Commercial Head	0723824998

Commercial & Financial Models

SES Energies offers flexible commercial models to suit client needs: - CAPEX purchase with maintenance contract - Leasing arrangements - Power Purchase Agreements (PPA) for off-balance sheet projects Our proposals include detailed ROI calculations, cashflow analysis, and sensitivity testing for tariff changes. We also assist clients with sourcing financing and grant opportunities where applicable.

Operations & Maintenance (O&M)

O&M Services include remote monitoring, preventive maintenance visits, corrective repairs, and spare parts management. We offer tiered SLAs with guaranteed response times and performance warranties.

Long-term service contracts help customers maximize energy yield and system life.

Contact & Next Steps

To engage SES for a project, request a site assessment and receive a tailored proposal with ROI analysis and financing options. Our Business Sales team will prepare a technical brief, site drawings, and commercial terms on confirmation.

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