



Energy | Water |  
Construction

## DSS Africa – Company Profile

**DSS Africa (Pty) Ltd** is a South African engineering and infrastructure company delivering integrated solutions across **Energy, Water** and **Construction**. We combine advanced technologies, certified expertise and safety-driven execution to support South Africa's transition to resilient, sustainable infrastructure.

### 1. Energy Solutions

DSS Africa (Pty) Ltd is a South African engineering company delivering bankable, high-performance energy storage and clean-energy systems tailored for local conditions. We specialise in the importation, engineering, installation, commissioning, operations and maintenance of advanced energy storage technologies that support decarbonisation, resilience and long-term energy security.

#### Energy Storage Technologies

##### **CellCube® Vanadium Redox Flow Batteries (VRFB)**

CellCube® vanadium redox flow batteries provide durable, inherently safe, long-duration energy storage ideal for large-scale renewables, grids and microgrids. Key characteristics include:

- Long service life of 20–25+ years with no capacity fade and >15,000–20,000 full cycles under warranted regimes.
- High operational safety: non-flammable, non-explosive electrolyte; 100% depth of discharge.
- Overrating capability (charging up to 200% and discharging up to 150–200% of nominal power depending on configuration).
- Scalable modular architecture from hundreds of kWh to multi-MWh deployments and beyond.



### **GBT Containerised ESS**

GBT containerised lithium-based ESS integrate batteries, power conversion systems, EMS and safety systems into factory-built units suitable for grid-tied and islanded operation. Typical features:

- Rated energy blocks around 1.075–2.150 MWh per container with 400 V, 50/60 Hz grid interfaces.
- Integrated thermal management, fire suppression (FM200/NOVEC1230 options), and IP54/IP55 ingress protection.
- Flexible operating modes: peak shaving, valley filling, frequency regulation, emergency power and renewable integration.
- Standardised communication (RS485, TCP/IP, Modbus), remote monitoring and intelligent air cooling.



### **Wic-Power LiFePO<sub>4</sub> ESS (Residential, C&I, Utility)**

Wic-Power's LiFePO<sub>4</sub> range spans home energy storage to cabinet and containerised BESS for commercial and utility use:

- Residential HV and all-in-one ESS from ~5 kWh to ~40 kWh with advanced BMS, cloud monitoring and >6,000 cycles.
- Rack/wall systems (51.2 V, 100–200 Ah) compatible with leading inverter brands; modular up to ~76.8 kWh per stack.
- Outdoor cabinet (≈215 kWh) and containerised BESS (≈1.075 MWh) with IP55, built-in EMS, AC/DC interfaces and scalable to 100+ MWh.
- Multiple communications (RS485/CAN/Wi-Fi) and safety features (active fire protection, efficient thermal management).



## End-to-End Energy Services

DSS delivers complete project lifecycle services from concept to operations:

- Advisory, feasibility and techno-economic modelling (including microgrid and renewable integration studies).
- System design and engineering (BMS/EMS integration, grid code compliance, protections and SCADA).
- Importation, logistics and local warehousing for faster time-to-energisation.
- Turnkey EPC: site works, electrical/mechanical installation, commissioning and acceptance testing.
- Operations and maintenance: preventive and corrective maintenance, OEM-approved spares and 24/7 monitoring.
- Performance management with availability and capacity guarantees where applicable.

## **Energy Storage as a Service (ESS-aaS)**

DSS offers Energy Storage as a Managed Service to lower barriers to adoption and de-risk performance. We design, deploy and operate the asset while customers pay a predictable service fee aligned to outcomes.

- Flexible commercial structures (OPEX-based, availability-linked or usage-based payments).
- Defined SLAs with uptime, response and performance KPIs.
- End-to-end asset management: remote monitoring, maintenance, spares and upgrades.
- Option to integrate on-site renewables and EV charging under a unified service.

## **Energy Applications**

Our solutions address the needs of:

- Utilities & Grid Operators: frequency regulation, capacity markets, peak shaving, grid stability and T&D upgrade deferral.
- Renewable Developers & IPPs: co-located storage for solar/wind, renewable baseload, curtailment reduction and PPA optimisation.
- Commercial & Industrial (C&I): manufacturing, data centres, cold storage, logistics, telecoms, retail and campuses seeking demand charge reduction and resilience.
- Mining & Remote Operations: hybrid microgrids, diesel displacement and 24/7 reliable off-grid power.
- Municipalities & Public Infrastructure: water and wastewater plants, hospitals, public facilities and community microgrids.
- Residential & Estates: backup power, self-consumption optimisation and EV charging support.

## **Benefits of Partnering with DSS**

- Bankable Technology: globally proven products with extensive operational track record and certifications.
- Safety First: non-flammable flow batteries (VRFB) and intrinsically safe LiFePO<sub>4</sub> systems with advanced protection.
- Total Cost Advantage: long lifetimes, high cycle counts and optimised O&M reduce levelised cost of storage.

- Local Presence: South African support for engineering, spares and maintenance with faster response times.
- Scalability: modular architectures from kWh to multi-MWh to grow with your needs.
- Data & Control: integrated EMS/SCADA, standard protocols and cloud monitoring for transparency and optimisation.

## 2. Water Infrastructure & Environmental Systems

DSS Africa supports critical water and wastewater infrastructure through engineering, construction and safety-driven project execution. Our teams work across municipal, industrial and remote environments where reliability, compliance and operational continuity are essential.

### Water-Related Capabilities

- Construction and reinforcement of **water retention systems** and reservoirs.
- Engineering and installation of **high-voltage networks** supporting water infrastructure.
- Development and maintenance of **wastewater treatment facilities**.
- Waterproofing, sealing and fire-stopping systems that protect water-related structures.
- Safety planning, inspection and risk management for water and wastewater projects.
- Support for **community microgrids** powering water infrastructure.

### Approach to Water Projects

- Safety-centric planning aligned with South African regulations.
- Confidential handling of sensitive infrastructure.
- Integration of energy storage and renewable systems for resilient water operations.
- Multidisciplinary teams experienced in high-risk, controlled environments.
- Proven delivery on projects exceeding R200 million.

## 3. Construction, Civil Engineering & Safety Services

DSS Africa delivers specialised construction, civil engineering and safety services through strategic partnerships and in-house expertise. Our teams operate across industrial, commercial and infrastructure environments where precision, safety and reliability are non-negotiable.

### Construction & Civil Engineering

- Structural and civil works for buildings and infrastructure.
- Carbon Fibre Reinforcement (CFRP) for concrete structures.
- Specialised construction solutions for complex or high-risk environments.
- Rope access services for inspection, maintenance and construction at height.
- Waterproofing, sealing and fire-stopping systems for structural integrity.

## **Safety & Compliance Services**

Certified Safety Officers provide:

- Construction Health & Safety Management Systems.
- Risk identification, assessment and mitigation.
- Contractor compliance monitoring and proactive safety culture development.
- Coordination between clients, contractors and stakeholders.
- Preventive risk management aligned with “Zero Harm” principles.
- Training for work at height and fall protection.
- Supply, inspection and certification of fall-protection equipment.

## **Why DSS for Construction & Safety**

- Experience in high-risk industrial and infrastructure environments.
- Strict confidentiality for sensitive projects.
- Internationally aligned safety standards.
- Integrated engineering, construction and safety capabilities.

## **Sustainability & Compliance**

DSS supports South Africa’s energy transition and infrastructure resilience through:

- Zero-emission energy storage systems.
- High recyclability and circular-economy principles.
- Reusable vanadium electrolyte and safe  $\text{LiFePO}_4$  chemistries.
- Compliance with international standards and South African grid requirements.

## **Contact**

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