AXION
ENGINEERING SOLUTIONS

COMPANY PROFILE



ENGINEERING · INTEGRATION · OPERATIONS

ICT & Renewable Energy Engineering Solutions

Networks, data centres, cloud, enterprise systems, solar power and energy storage — designed, integrated and operated around the way each site works.

01
ICT & digital infrastructure

02
Renewable energy systems

03
Lifecycle delivery & support

Capabilities & services

Axion Engineering Solutions provides engineering, integration and operational support across ICT and renewable energy for businesses and public institutions. We connect infrastructure, applications and energy systems around the way each site operates.

PART 01 · COMPANY & ICT SOLUTIONS

03 **CEO message, mission & values**
Leadership, purpose and principles

04 **Leadership structure**
Executive roles and functional portfolios

05 **Data centres & systems**
Server rooms, compute, storage, virtualisation

06 **Network engineering**
Fibre, Wi-Fi, branches, VoIP and IP CCTV

07 **Cloud & cybersecurity**
Hosting, identity, protection and recovery

08 **Data engineering & private AI**
Pipelines, reporting, governance, private AI

09 **ERP systems & integration**
Modules, workflows, migration and adoption

10 **Managed IT & cloud operations**
Support, monitoring and service plans

PART 02 · RENEWABLE ENERGY & DELIVERY

11 **Digital solutions by sector**
Government, infrastructure and industry

12 **Renewable energy technologies**
Solar, wind, hydro, bio, geothermal, ocean

13 **Wind, small hydro & bioenergy**
Resource studies and technology selection

14 **Storage, microgrids & grid**
BESS, hybrid systems, protection, controls

15 **Renewable energy at every scale**
Buildings, agriculture, industry, utilities

16 **Solar public infrastructure**
Street lighting, traffic and public spaces

17 **Engineering & lifecycle services**
Design, commissioning and maintenance

18 **Contact**
Email, telephone and office address

HOW WE WORK

01
Agree
Requirements and acceptance criteria are agreed up front.

02
Design
The solution is engineered around site data and real needs.

03
Validate
It is tested and proven in the client environment.

04
Operate
We document exactly how it will be run and supported.

Message from the CEO

A practical commitment to engineering, dependable delivery and client partnership.



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At Axion Engineering Solutions, we bring technology and energy together to help organisations operate with confidence. Our work spans ICT and digital infrastructure, cloud and cybersecurity, enterprise systems, and renewable energy — from solar power and energy storage to integrated systems designed around each client's needs.

We begin by understanding your priorities, then develop practical solutions with clear scope, sound engineering and open communication. We value every client's trust and remain committed to dependable delivery and support throughout the project lifecycle.

Chief Executive Officer
Axion Engineering Solutions

MISSION

Design and integrate reliable digital infrastructure and renewable energy systems that help organisations operate securely and maintain critical services.

VISION

To be a trusted engineering partner for organisations in Sudan, helping them build resilient digital infrastructure and make better use of renewable energy.

OUR VALUES

01
Technical rigour
Design decisions based on site data, measurable requirements and documented tests.

02
Integrity
Scope, assumptions and responsibilities communicated clearly — issues raised early.

03
Safety & responsibility
Electrical safety, cybersecurity and operational risk considered from design through handover.

04
Client partnership
We design with the people who will operate the system and share the knowledge to support it.

Leadership structure

A clear executive structure: four portfolio leaders reporting to the CEO, with independent assurance for quality, health, safety, environment and risk.



EXECUTIVE LEADERSHIP

Four direct reports with defined portfolios and accountability.

FUNCTIONAL PORTFOLIOS

Engineering, delivery, growth and corporate functions aligned end to end.

INDEPENDENT ASSURANCE

Compliance and risk oversight reporting directly to the CEO.



05 ICT INFRASTRUCTURE

Data centres & systems infrastructure

Design, supply and integrate IT infrastructure for server rooms, on-premises data centres and hybrid environments — sized around workloads, availability requirements and expected growth.

01 Server rooms & rack infrastructure

Rack layouts, equipment placement, patching and cable routes — coordinated with the facility team on electrical capacity, backup power, cooling and environmental requirements.

02 Compute, storage & virtualisation

Servers and storage sized for processing, memory, capacity and I/O demand, on standalone or clustered platforms to match availability and growth requirements.

03 Migration & resilience

Workload dependencies mapped, cutover and rollback planned, single points of failure removed. Backup recovery and service failover tested separately where included.

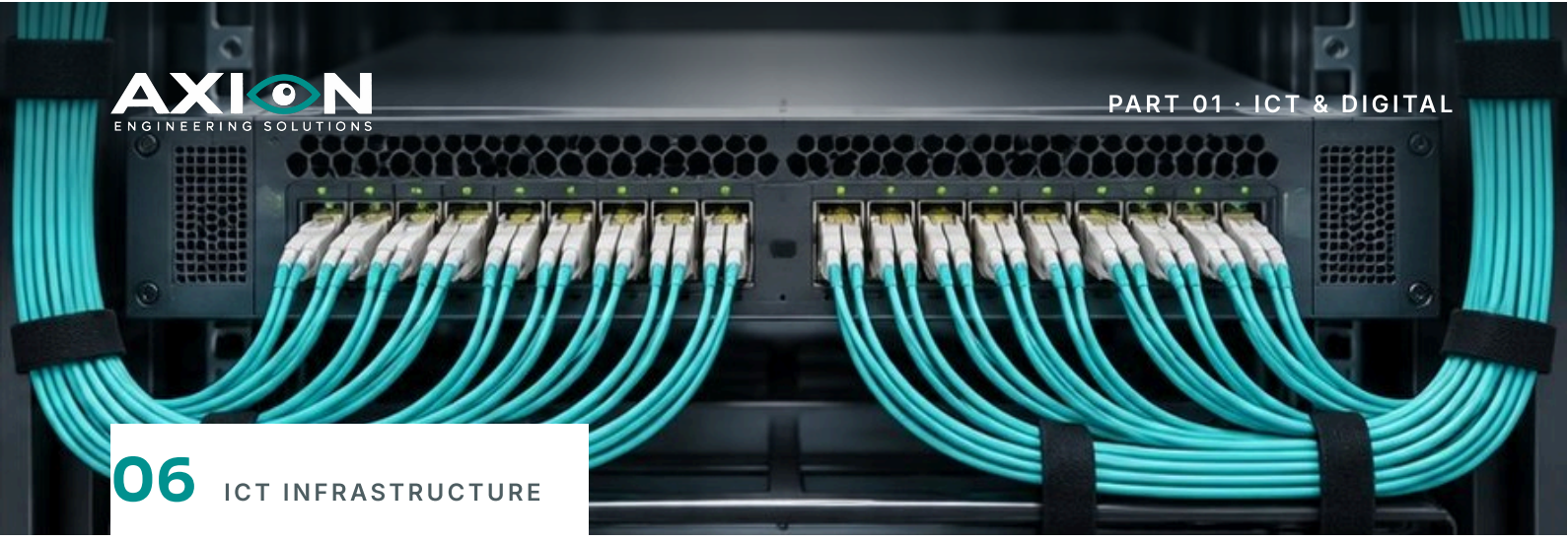
04 Monitoring & operations

Monitoring for server and storage health, capacity and environmental readings, with documented alerts, escalation, asset inventories and configuration records.

01 Racks & cabling — 02 Compute & storage — 03 Operations monitoring

TYPICAL DELIVERABLES

Rack layouts, capacity estimates, bill of materials, deployment and migration plans, test results and an operations handover.



06 ICT INFRASTRUCTURE

Network engineering

Connectivity designed around coverage, traffic demand and service continuity. We document how users, devices, applications and branches connect before any equipment is selected.

01 Physical network design

Fibre and copper pathways, rack layouts, termination, labelling and the materials needed for installation.

02 LAN & wireless design

Switching, routing, Wi-Fi coverage and network segments for staff, guests and connected devices.

03 Branch & campus connectivity

Fibre links, WAN or encrypted site-to-site connectivity, with routing and failover defined for agreed business services.

04 Testing & handover

Cabling and fibre tested against agreed limits, Wi-Fi coverage verified, routing and failover checked; as-built diagrams and test records delivered.

05 VoIP & IP telephony

IP phones and IP PBX integration — extensions, voice VLANs, Quality of Service and PoE budget, with call-quality testing where agreed.

06 IP video surveillance (CCTV)

Camera connectivity and recording sized for bandwidth, PoE and storage retention. Camera traffic segmented; viewing and export restricted.

01 Fibre, LAN & Wi-Fi — 02 Switching, VLANs & PoE — 03 Phones & cameras

TYPICAL DELIVERABLES

Network topology, equipment schedule, installation scope and acceptance test record.



07 CLOUD & SECURITY

Cloud engineering & cybersecurity

Public, private or hybrid cloud environments designed around workload requirements, access, data location and recovery — with responsibilities defined across customer, provider and operations team.

01 Cloud architecture & migration

Compute and storage sized, network boundaries defined and dependencies mapped. Migration waves, rollback and acceptance checks planned in advance.

02 Identity & access management

Single sign-on, multi-factor authentication, role-based access and account lifecycle controls for supported services.

03 Network & endpoint security

Network segments, firewall policies and endpoint controls, with agreed vulnerability scans, remediation ownership and incident escalation.

04 Backup & disaster recovery

Agreed recovery point and recovery time objectives (RPO / RTO), retention and backup isolation — with tested restores and, where in scope, full DR tests.

01 Cloud workloads — 02 Access & protection — 03 Backup & recovery

DATA SOVEREIGNTY

Processing, storage and backup locations, administrative access and external dependencies are agreed up front — and controls are verified against them.



08 DATA & AI

Data engineering & private AI

Make operational data usable across ERP, business applications, cloud services and field devices — with every metric traceable back to its originating record.

01 Data integration

Approved applications connected through APIs, scheduled imports or event feeds. Identifiers mapped; failed transfers detected, retried and reconciled.

02 Data models & quality

Shared data fields, validation rules and ownership defined. Duplicate records resolved; migrated and transformed data reconciled.

03 Analytics & reporting

Dashboards built around agreed operational measures, with defined refresh schedules, permissions and the source of every calculation.

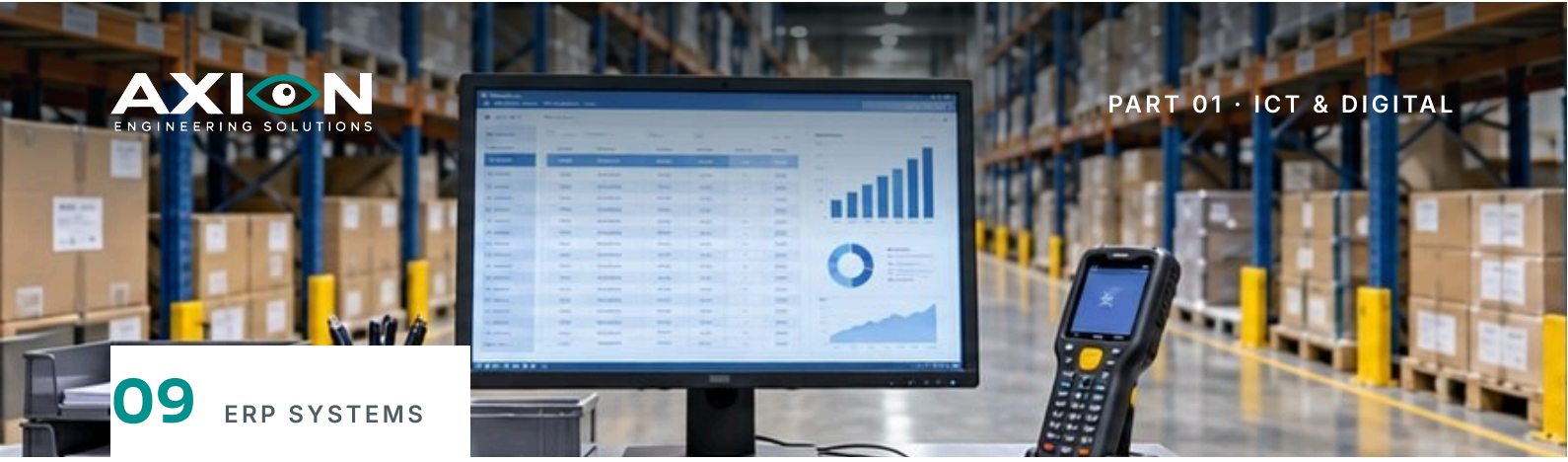
04 Private AI for enterprise operations

Private AI assistants on premises or in a private cloud for staff support, document search, summarisation and analysis — with enforced permissions, usage audits, accuracy tests and human approval for sensitive actions.

01 Approved sources — 02 Validation & storage — 03 Reports & private AI

TYPICAL DELIVERABLES

Data flow map, integration and validation rules, access matrix and tested reports.



09 ERP SYSTEMS

Enterprise resource planning

ERP modules selected and configured around your business processes, approval rules and reporting needs — and deployed in phases that match the operating model.

01 Finance & accounting

General ledger, payables, receivables, invoicing and financial reporting, with confirmed chart of accounts, approval rules and reconciliations.

02 Procurement & suppliers

Purchase requests, approvals, quotations, purchase orders and goods receipt, with order–receipt–invoice matching where applicable.

03 Sales, inventory & distribution

Quotations, sales orders, stock reservations, transfers and fulfilment — plus barcode, serial or batch tracking when required.

04 Manufacturing, assets & workforce

Production planning, bills of materials, work orders and quality checks; maintenance, HR and payroll modules where in scope.

05 Integration & reporting

Portals, payments, identity systems and dashboards connected; interfaces and ownership mapped; sensitive duties separated and audited.

06 Migration, testing & adoption

Master data and opening balances cleaned and reconciled, end-to-end workflows tested with users, staff trained and cutover planned.

01 Map & configure — 02 Migrate & reconcile — 03 Launch & support

IMPLEMENTATION

A phased path from process mapping and configuration, through data migration and reconciliation, to user testing, go-live and ongoing support.

SELECTED ERP PLATFORMS

odoo · SAP · ORACLE · Dynamics 365



10 MANAGED SERVICES

Managed IT & cloud operations

We operate agreed systems after deployment, with defined scope, hours, escalation contacts and response targets — so both teams know exactly how requests and incidents are handled.

01 Managed workplace

Support for users, devices, email and shared resources — account changes, onboarding, offboarding and licence reviews.

02 Cloud & infrastructure operations

Monitoring of agreed networks, servers and hosted services; configuration records, scheduled updates, incident and availability reports.

03 Managed security & recovery

Endpoint and identity controls reviewed, alerts triaged, backup failures tracked and restores tested on an agreed schedule.

04 Service reporting & improvement

Requests, recurring faults, capacity and risks reviewed; corrective actions and priorities agreed for renewals and upgrades.

05 Additional managed services

Cloud hosting, IP video or private AI operations, scoped around the covered sites, applications and reporting needs.

06 Commercial model

Onboarding quoted separately; recurring fees based on covered users, devices, workloads or sites, with licences and extras itemised.

01 Service requests — 02 Systems monitoring — 03 Service reporting

SERVICE AGREEMENT Scope, support hours, incident priorities, response and restoration targets by plan, exclusions and reporting frequency.



11 SECTOR SOLUTIONS

Digital solutions by sector

Networks, cloud platforms, applications and data combined to support a defined operating process. Each solution can start as a pilot with an agreed baseline, owner and measure of success.

01 Digital government

Service requests, records and approvals digitised for authorities and public institutions. A municipal pilot can measure time from complaint assignment to closure.

02 Smart infrastructure & agriculture

Approved sensors, gateways and operational data integrated. An irrigation pilot can track readings and alert delivery for one sector.

03 Smart factory & logistics

Production, quality, warehouse and dispatch data connected. Start with one production line or loading area and measure downtime or turnaround.

04 Health, education & enterprises

Existing systems linked to support workflows such as stock alerts, student services, maintenance requests and customer transactions.

01 Public services — 02 Smart infrastructure — 03 Industry & enterprise

PILOT SCOPE

Data sources, connectivity, integrations, roles and acceptance measures agreed before deployment — then expanded after reviewing pilot results.



12 RENEWABLE ENERGY

Renewable energy technologies

We design and integrate solar PV, storage and microgrids. For wind, hydropower, bioenergy, geothermal and ocean energy, we assess feasibility and define the specialist studies needed to progress.

01 Solar photovoltaic & solar thermal

Rooftop, carport, ground-mounted and floating PV; solar water heating, process heat and concentrated solar power where site and scale support them.

02 Wind power

Distributed, onshore and offshore options screened — resource measurements, siting, turbine selection, logistics and grid connection.

03 Hydropower

Micro and small hydro, run-of-river and larger schemes — hydrology, civil works, environmental flows and water use.

04 Biomass, biogas & biofuels

Feedstock supply and sustainability, conversion options, emissions controls and end uses for electricity, heat or fuel.

05 Geothermal & ocean energy

Geothermal power and direct heat, tidal and wave options screened, with the resource investigations needed before design defined.

01 Resource assessment — 02 Technology selection — 03 Concept design

FEASIBILITY OUTPUTS Viable options compared by expected yield, cost, environmental constraints, delivery risk and grid or site requirements.

EQUIPMENT BRANDS

LONGi LIFECYCLE QUALITY · AIKO · JinKO Solar · victron energy · 派能科技 PYLONTECH · TROJAN BATTERY COMPANY



13 RENEWABLE ENERGY

Wind, small hydro & bioenergy

Assess the resource, select the technology and define the studies needed to move from feasibility to design.

01 Wind turbines

Wind measurements planned and sites screened for access, terrain and environmental constraints. Power curves used to estimate annual generation and shortlist turbine ratings.

02 Small hydropower turbines

Seasonal flows and usable head assessed for run-of-river or existing water infrastructure; turbines compared, civil works and environmental flows identified.

03 Biogas & biomass

Feedstock quantity, quality and continuity assessed. Anaerobic digestion compared with solid-biomass conversion for electricity, process heat or CHP.

04 Grid & hybrid integration

Stand-alone and grid-connected operation compared; wind, hydro or bioenergy combined with solar PV and batteries, with metering, controls and interconnection studies.

05 Project development

Feasibility findings turned into specialist surveys, permits and design tasks, with engineering, procurement and implementation responsibilities agreed for each project.

01 Resource assessment — 02 Technology shortlist — 03 Integration studies

FEASIBILITY OUTPUTS Resource assumptions, technology comparison, preliminary energy yield, site constraints and a plan for specialist studies.



14 RENEWABLE ENERGY

Storage, microgrids & grid integration

Generation, storage and controls integrated around the site load profile, grid conditions and required operating modes.

01 Battery energy storage (BESS)

Power (kW) and usable energy (kWh) sized for backup, peak demand or renewable firming; conversion, battery management, thermal and fire-safety controls specified.

02 Hybrid systems & microgrids

Renewables, storage and existing standby generation combined in grid-connected, islanded or off-grid designs, with verified transfer and load prioritisation.

03 Grid interconnection & protection

Transformers, switchgear, metering, earthing and protection; power-flow, fault and power-quality studies coordinated with the utility.

04 Energy management & monitoring

EMS and SCADA for dispatch, metering, alarms and reporting — with segmented control networks, secure remote access and clear operating roles.

05 Long-duration storage & green hydrogen

Thermal storage, pumped storage or renewable hydrogen screened where operating duration, end use, site conditions and economics warrant further study.

01 Generation & storage — 02 Power & controls — 03 Metering & dispatch

INTEGRATION OUTPUTS

Single-line diagrams, protection and control philosophy, operating scenarios and an acceptance test plan.



15 RENEWABLE ENERGY

Renewable energy at every scale

System size and operating strategy matched to the customer — from individual facilities and remote sites to utility-scale projects.

01 Homes & small businesses

Rooftop PV, solar water heating and battery backup for selected loads — comparing self-consumption, backup and export options.

02 Commercial, industrial & critical facilities

Self-generation, peak-demand reduction and critical-load resilience for factories, campuses, hospitals, telecom sites and data centres.

03 Agriculture & water

Solar pumping, irrigation and water treatment, plus power for cold storage and processing — matched to seasonal demand.

04 Public services & remote communities

Power for schools, clinics and remote facilities; community mini-grids assessed for demand, distribution, metering and local maintenance.

05 Utilities & large developers

Utility-scale generation and storage, substations and grid connections — with delivery and offtake models compared and the studies needed for investment decisions defined.

01 Buildings & sites — 02 Communities & campuses — 03 Industry & utilities

SIZING INPUTS Load profile, critical loads, grid availability, resource data, site constraints and the client's operating priorities.

Solar public infrastructure

Solar-powered lighting, traffic systems and public-space services for connected and remote locations — engineered for local conditions and long, low-maintenance service.



01

Solar street lighting

LED lighting for roads, pathways, parking areas, campuses, parks and bus stops — PV modules, batteries, controllers and engineered poles.



02

Traffic signals & safety

Solar power for traffic signals, pedestrian beacons and illuminated warning signs, with detection, timing and remote monitoring where specified.



03

Public-space systems

PV bus shelters, parking canopies, public signage, emergency call points, CCTV poles and remote sensors for parks, junctions and off-grid sites.

ENGINEERING & DELIVERY CHECKS

System sizing

Local solar resource, load profile, operating hours, battery autonomy, shading and maintenance access.

Roadway coordination

Visibility, signal timing, pole and foundation loads, wind exposure, installation safety and road-authority requirements.

01 Assess resource — 02 Size & engineer — 03 Test & maintain



17 LIFECYCLE SERVICES

Engineering & lifecycle services

Support for renewable energy projects from the initial business case through commissioning and ongoing operations, with responsibilities agreed at every stage.

01 Feasibility & site assessment

Energy consumption, critical loads, outage history and site constraints reviewed; options compared by yield, backup runtime and lifecycle cost.

02 Engineering & procurement

System architecture, equipment ratings, protection and controls defined; drawings, specifications, compatibility and warranties reviewed.

03 Installation & commissioning

Installation scope, inspection points and acceptance criteria defined; protection, controls and transfer to backup operation verified.

04 Documented handover

As-built drawings, equipment records, test results, manuals and warranties — plus operator briefings on alarms and safe shutdown.

05 Operations & maintenance (O&M)

Generation, availability and battery health monitored; preventive maintenance, fault response and reporting agreed for assets in scope.

06 Performance review

Measured production and backup performance compared with baselines; deviations investigated and corrective actions or upgrades prioritised.

01 Feasibility & design — 02 Commissioning & handover — 03 Operations & maintenance

LIFECYCLE DELIVERABLES

Options assessment, design package, acceptance records, as-built drawings and an agreed maintenance and performance reporting plan.

AXION
ENGINEERING SOLUTIONS

CONTACT

Let’s talk about your next project.

From a single site assessment to a full ICT or energy programme, our team will help you define the scope and the right next step.

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