EMERALD INDUSTRIAL CO., CFZE

FOR EPC CONTRACTORS, O&M PROVIDERS AND ASSET OWNERS

Keep Nigeria's power assets running

Transformers to 500 kV class, motors to 40 MW and battery storage, with a Calabar base to install, repair and support them in Nigeria.



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THE PROBLEM

Every failed transformer or motor now runs on costly diesel

50+ yrs

Age of much of Nigeria's transmission infrastructure, which the Minister of Power says is prone to frequent failures under heavy demand.

+86%

Rise in the average diesel price in one year, to ₦3,277 a litre in May 2026 (from ₦1,758 in May 2025).

$0.30

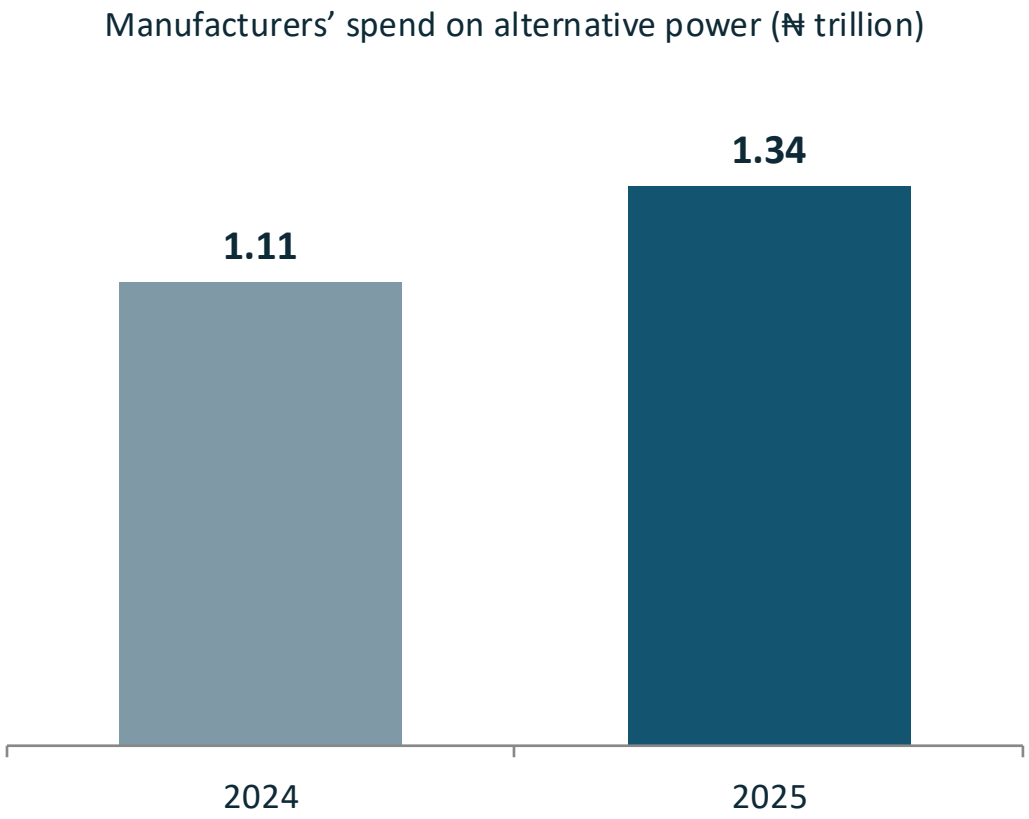
Average cost of one kWh from a diesel generator, and significantly higher in remote areas.



Sources: Minister of Power Adebayo Adelabu, via Transformer Technology (20 Aug 2025); National Bureau of Statistics, Diesel Price Watch May 2026, via Legit.ng and Channels TV (Jun 2026); Gold Standard, via AllAfrica (26 May 2026).

THE COST TO BUSINESS

₦1.34 trillion spent on self generated power in 2025



+21%

Rise in that spend in one year, from ₦1.11 trillion in 2024 (about $870 million in 2025).

82.5%

Share of Nigerian firms that report frequent power outages (World Bank survey of 1,043 firms, 2025).

2 in 5 days

National grid collapses on 23 and 27 January 2026.

Sources: Manufacturers Association of Nigeria data, via TechEconomy (9 Sep 2026); World Bank Enterprise Surveys, Nigeria 2025 (fieldwork Feb to Sep 2025), via Intelpoint; The ICIR (27 Jan 2026).

WHERE THE WORK IS

Funded programmes are creating grid work now

DISREP · World Bank · $500m

3.2 million meters and 15,000 km of distribution lines targeted. 731,034 meters installed by September 2026.

Presidential Power Initiative

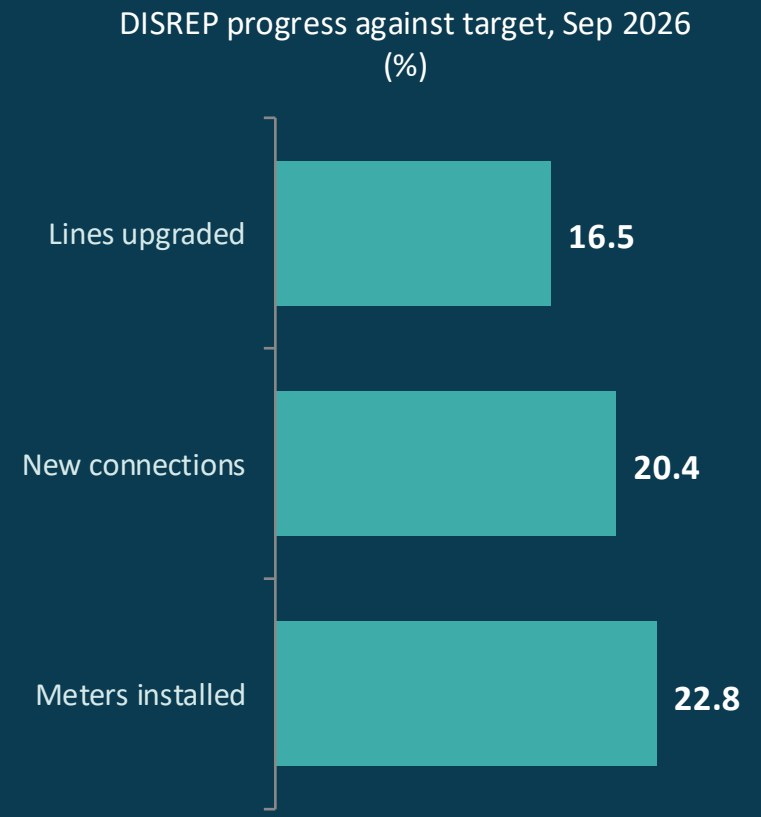
Batch 1: five substations, 986 MW, including the New Abeokuta 330/132 kV substation due December 2026.

DARES · World Bank · $750m

Plus $243m added in June 2026. 41.25 MW of renewable capacity enabled against a 465 MW target.

Metering gap · NERC

4.7 million of 12.75 million active customers were still unmetered in August 2026 (63.1% metered).



Sources: World Bank DISREP data to Sep 2026, via TechEconomy (13 Oct 2026); Federal Ministry of Information (22 Apr 2026); BusinessDay (12 Jun 2026); NERC metering factsheet, via The Whistler (15 Oct 2026).

WHO WE SERVE

Three partners, one need: equipment that keeps working



EPC contractors

Certified equipment on your programme, local installation and Nigerian content for your bid.

Slides 8 to 11



O&M providers

Spares, rewinds, testing and fast repair in Nigeria, without shipping machines abroad.

Slides 12 to 15



Asset owners

Higher uptime, lower energy cost and a warranty honoured here, not overseas.

Slides 16 to 18

The GE heritage, now on your doorstep



1

THE PLANT

GE built and ran our Calabar plant

Built in the Calabar Free Trade Zone for packaging and service of gas turbines, compressors and pumps, with training for Nigerian staff.



2

THE MOTORS · 2011 TO 2018

Wolong brought the brands together

ATB with Laurence Scott, Brook Crompton, Morley and Schorch (2011), SIR (2014), Nanyang Explosion Protection (2015), GE Industrial Motors (2018).



3

TODAY

Emerald brings both together

A 10,000 sqm heavy industrial facility in Calabar, now Emerald's base as authorised Wolong dealer for supply, repair and support.

Sources: Turbomachinery Magazine (25 Dec 2015); Wolong brand history (Wolong catalogue); CompressorTech2 and Yicai Global (2018); Emerald company profile.

WHAT WE SUPPLY

From the substation to the pump

Product	Rating	Where it fits
Distribution transformers	10 kV class to 0.4 kV, 30 to 1,600 kVA; 11 and 33 kV built to order	DisCo upgrades, plants
Power transformers	35 kV to 500 kV class; oil immersed	Substations, step up
Box substations	36.75 kV to 0.69, 0.8 or 1.14 kV; pre assembled	Mines, oil and gas, solar
HV and Ex motors	160 kW to 40 MW; 3 to 11 kV; 50 Hz; flameproof and pressurised	Pumps, compressors, fans
LV motors	IE3 to IE5 efficiency; flameproof options	Plant wide savings
Battery storage	Wolong ESS: 241 kWh cabinet to 5 MWh container	Solar hybrid, less diesel



Nigerian grid work: 330, 132 and 33 kV designs at 50 Hz are confirmed with Wolong for each tender.

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01

FOR EPC CONTRACTORS

Supply, install and stay

Equipment matched to your tender, Nigerian site teams, and support after you demobilise.



EMERALD INDUSTRIAL CO., CFZE

More than a supplier on your project

01

Specify

Ratings, certificates and datasheets matched to your tender.

02

Supply

Factory tested Wolong units, test reports and delivery to site.

03

Install

Emerald technicians lead, with manpower from the host community.

04

Commission

Testing, start up, NEMSA inspection support and handover.

05

Stay

Spares, warranty and repair in Nigeria after you demobilise.

Local content built in

Nigerian technicians, community hires and in country service add Nigerian content to your bid (slide 10).

Safety first on every site

Permit to work, isolation, proving dead and earthing before any work. No energisation without tests and sign off.

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NIGERIAN CONTENT

NERC’s Nigerian content targets your bid must meet

Item (distribution and works)	Minimum Nigerian content, 2024 onward
Supply and installation of lines and substation equipment	**100%**
Concrete, wood and steel poles	**100%**
Distribution meters	**100%**
Design engineering (man hours)	**100%**
Distribution transformers	**75%**
Distribution cables	**75%**
Automation installation and service works	**75%**

How Emerald adds Nigerian content

- Nigerian site teams install, test and commission
- EMR smart meters assembled and tested in Calabar
- Calabar workshop for service, repair and spares
- Training for your operators and host community hires

Imported Wolong equipment counts as foreign content. We state what is Nigerian in each offer.

Source: NERC, Regulations on National Content Development for the Power Sector, Schedules (targets for 2024 onward). Emerald meter assembly: Emerald product catalogue.

GRID SUPPLY AND INSTALLATION

EMERALD INDUSTRIAL CO., CFZE

One partner for transformers, lines, switchgear and site work

Transformers and substations

- Distribution: 11 or 33 kV to 0.415 kV
- Injection: 33/11 kV
- Pole mounted and ground mounted
- Compact substations

Lines, poles and cables

- Concrete, wood and steel poles
- AAC, AAAC and ACSR conductors
- 11 and 33 kV XLPE cables
- Insulators, stays and hardware

Switchgear and protection

- 11 and 33 kV ring main units
- Feeder pillars and LV boards
- Drop out fuses, surge arresters
- Earthing and EMR3000 meters

Installation services

- Survey, BOQ and route walk
- Erect, string, joint, terminate
- Insulation, continuity, earth tests
- As built records and handover

WORK PLANNED TO

NESIS | NEMSA inspection | NERC codes | IEC 60076 | IEC 60502 | IEC 60364

Standards: NERC NESIS Regulations; NEMSA Act 2015; NERC Distribution Code and Health and Safety Code; IEC 60076 (transformers), IEC 60502 (cables), IEC 60364 (installations).

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02

FOR O&M PROVIDERS

Repair here, faster

A Calabar workshop and Wolong factory backing, so failed machines are not shipped abroad.



FOR O&M PROVIDERS AND OWNERS

Repair it here, not in Europe or China

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- **Motor repair, rewinding and testing**
- **Bearing, coil and rotor balancing work**
- **Condition checks and service plans**
- **Spares held in Nigeria**
- **Emergency fault response**
- **Training for your operators**

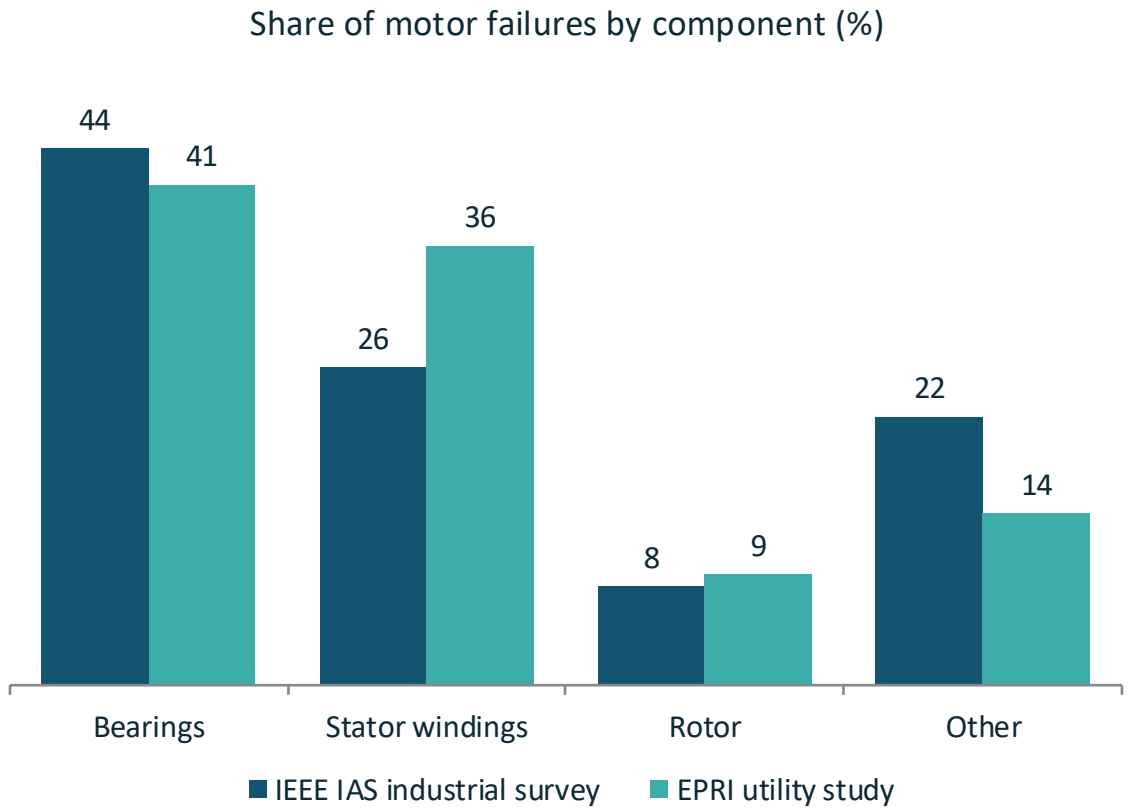


Backed by Wolong: factory parts, plus the iWOLONG expert system for fault warning and remaining life prediction.

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WHY MOTORS FAIL

Most failures start in bearings and windings



What we check, and what Wolong designs in

Bearings

We check: Vibration, bearing temperature, lubrication

Wolong HV: 2 bearing Pt100 sensors; 100,000 h bearing design life

Windings

We check: Insulation resistance, winding temperature

Wolong HV: 6 winding Pt100 sensors; epoxy anhydride insulation

Rotor

We check: Current and vibration signature

Wolong HV: Factory dynamic balancing, 0.05 to 20 t rotors

Sources: IEEE IAS motor reliability survey (1985) and EPRI EL-2678 (1982), as compiled by ReliaMag; Wolong YBXKK flameproof motor datasheet (Pt100 standard configuration, L10h design life, insulation).

REPAIR, REWIND OR REPLACE

A good rewind keeps the efficiency you paid for

EMERALD INDUSTRIAL CO., CFZE

INDEPENDENT TEST, 2020

0.1%

Average efficiency loss after good practice rewinds of 10 IE3 motors (30 to 75 kW). Results ranged from a 0.5% loss to a 0.3% gain.

Good practice means a recognised repair standard (ANSI/EASA AR100), not a quick rewind.

Repair or rewind when

- The motor is IE3 or better, or special
- The core and frame are sound
- A new unit has a long lead time

Replace or upgrade when

- The motor is IE1, IE2 or unknown
- It has failed more than once
- It runs long hours on diesel power

Plan ahead for critical machines

- Hold a spare or a rewind kit
- Trend vibration and temperature
- Agree a repair plan before failure

Our free survey (slide 20) applies this guide to each of your top 20 machines and prices every option in naira.

Source: EASA and AEMT, The Effect of Repair/Rewinding on Premium Efficiency/IE3 Motors, reported by EC&M (2 Jul 2020). Decision guide: Emerald service practice.

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03

FOR ASSET OWNERS

Uptime and lower energy cost

Motors and transformers built for heat, dust and coastal air, with a warranty honoured in Nigeria.



BUILT FOR SITE CONDITIONS

Wolong HV motors, specified for Nigerian plants

50 Hz	Standard supply frequency; 60 Hz on request
3 to 11 kV	Standard voltages; up to 13.8 kV on large motors
40 MW	Largest box type motor in the range
IP55	Standard enclosure; IP56 and IP65 on request
+40 °C	Standard ambient; down to -40 and up to +60 °C on request
C5-M	Coatings from C1 to C5-M for coastal and chemical sites
100,000 h	Rolling bearing design life (L10h)
+20%	Insulation life from epoxy anhydride insulation



Sources: Wolong Nanyang datasheets for YB3, YBXKK, YZYKK and YXKK series motors. Ratings vary by series; each offer states the exact data for your duty.

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WHAT EFFICIENCY IS WORTH

One motor upgrade, priced in naira

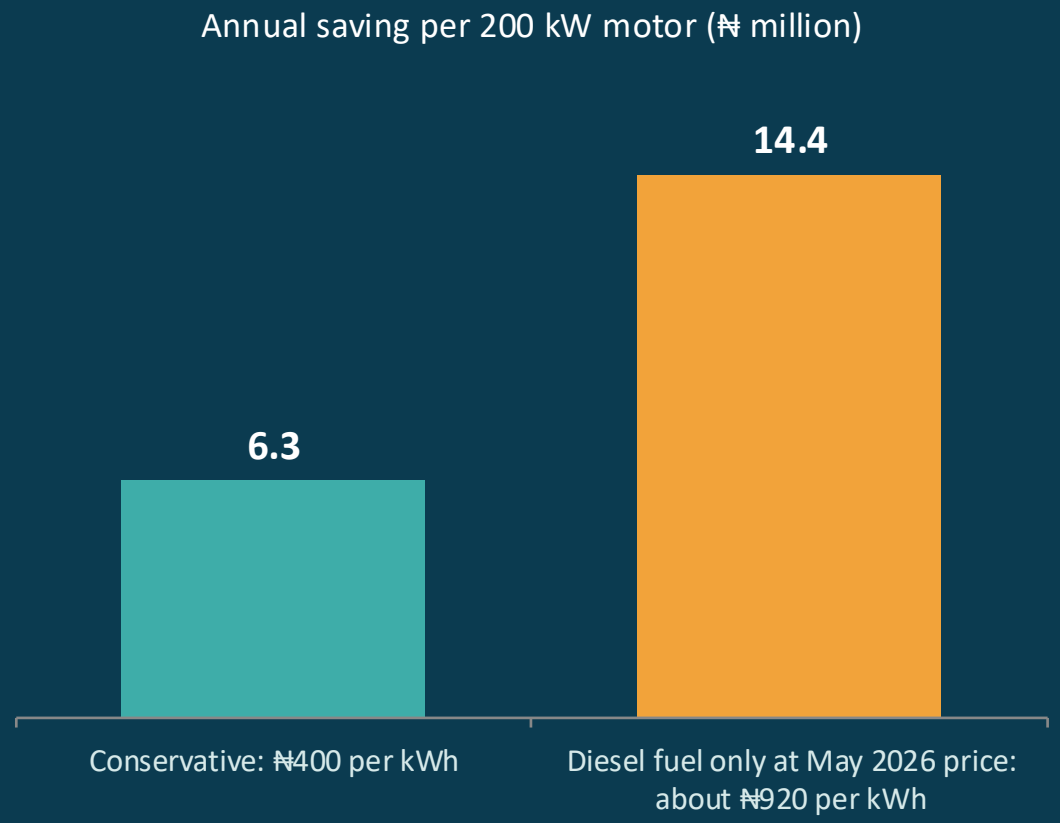
₦6.3 million

saved each year by upgrading one 200 kW motor from IE2 to IE4 when it runs on diesel power (conservative case)

How we got there

- IE2 at 95.1% to IE4 at 96.7% (IEC 60034-30-1, 200 kW, 4 pole)
- 75% average load, 6,000 run hours a year
- About 15,700 kWh saved a year
- At ₦400 per kWh (about $0.30 at ₦1,330 to $1)

Twenty such motors: about ₦125 million a year.



Illustrative; excludes equipment and installation cost. Efficiency: IEC 60034-30-1 minimums, via ABB technical note. Diesel: NBS, May 2026. Exchange rate: NFEM, Oct 2026. Fuel use assumed at 0.28 litres per kWh. A survey replaces these with your own figures.

PROOF

Built at scale, certified for hazardous sites

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25M kVA
Transformer capacity a year

15M kW
Motor and generator capacity a year (Nanyang)

40 MW
Largest HV motor

500 kV
Highest transformer voltage level

IECEx · ATEX · UL · CSA · SABS · KEMA · CE · ISO 9001 · ISO 14001 · ISO 45001

Wolong references

- Kyrgyzstan national grid: 250 MVA, 230 kV
- China: 250 MVA, 220 kV for a 500 MW solar project
- Ethiopia: 15 MVA, 33 kV for the Addis Ababa upgrade
- Wolong group: founded 1984, 18,000 staff, 39 plants

In Nigeria

Emerald EMR smart meters are assembled and tested at our Calabar plant, with NEMSA test certificates.

[Add one Emerald motor, transformer or repair job in Nigeria: client, scope, rating, year]

Sources: Wolong transformer catalogue (2023); Wolong Nanyang company introduction; Wolong YXKK 710 to 1120 datasheet; Emerald product catalogue (meters).

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OUR OFFER

A free survey of your top 20 machines

EMERALD INDUSTRIAL CO., CFZE



Risk ranking

Motors and transformers listed by age, condition and failure risk.

Savings in naira

Repair, rewind or replace: what each option saves you.

Price review

Send a comparable written quote; we respond with our best offer.

ON THE DAY WE CHECK

- Nameplate data
- Run hours
- Thermal scan
- Vibration check
- Visible condition

Up to 20 machines · one site day walk down · no cost, no obligation

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NEXT STEP

Book your site survey

Send your machine list

Tag, rating and age of your critical motors and transformers, or your BOQ for a grid job.

Agree a site day

We confirm the team, permits and access with your site lead.

Get your report

Risk ranking and savings in naira, or a supply and installation offer.

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Thank you

Enabling Africa's Industrial Capabilities

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