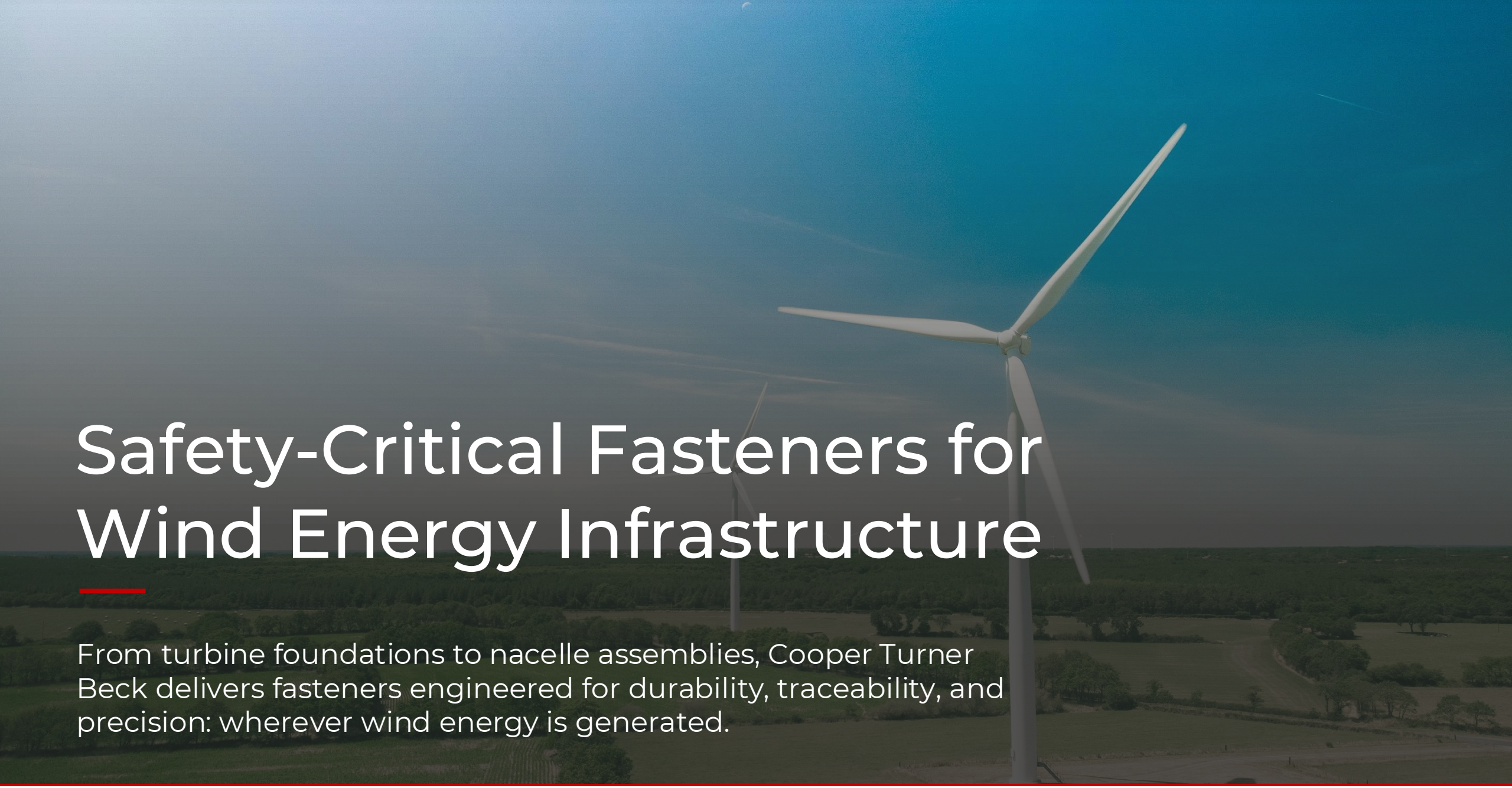


Safety-Critical Fasteners for Wind Energy Infrastructure

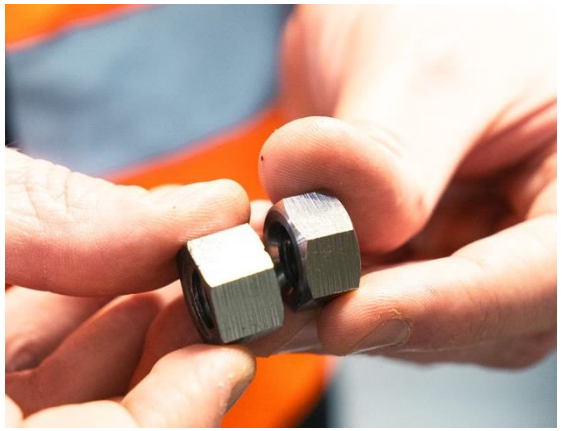
From turbine foundations to nacelle assemblies, Cooper Turner Beck delivers fasteners engineered for durability, traceability, and precision: wherever wind energy is generated.

Dependable

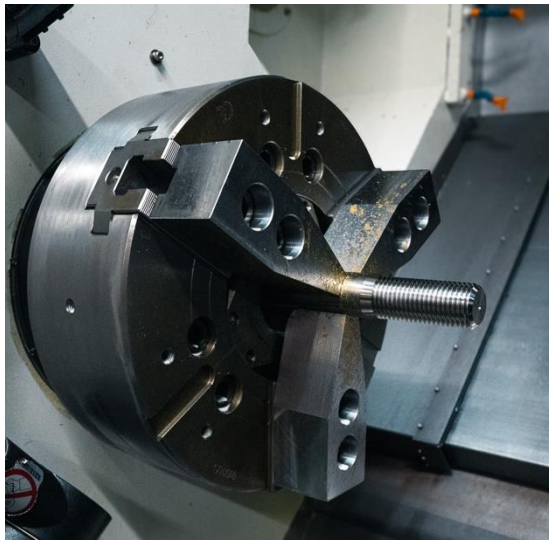
Adaptable

Sustainable

The Cooper Turner Beck Group's mission is to lead the industry in delivering innovative, safety-critical fastening solutions that drive the globe towards a more resilient and more sustainable future.



Global Leaders in Safety-Critical Fastening



A Trusted Global Partner: The Unified Strength of CTB

Company

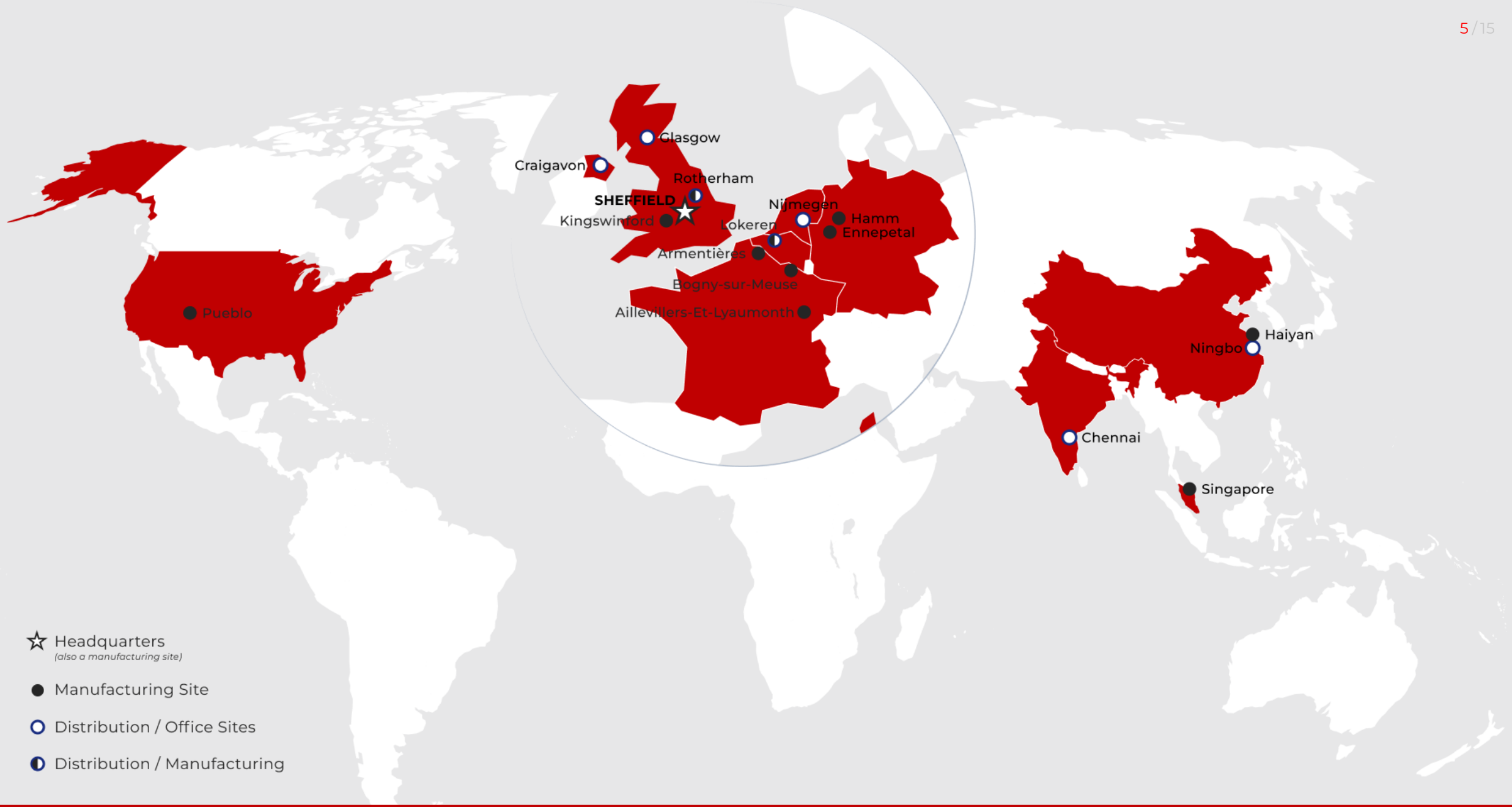
- 12 Manufacturing sites
- 1,100 employees worldwide
- Est. 1869 in the UK

Markets

- A global reputation for quality, service and product innovation
- Across Energy, Construction and Heavy Industry sectors
- Manufacturing & Distribution across EMEA & Asia Pacific

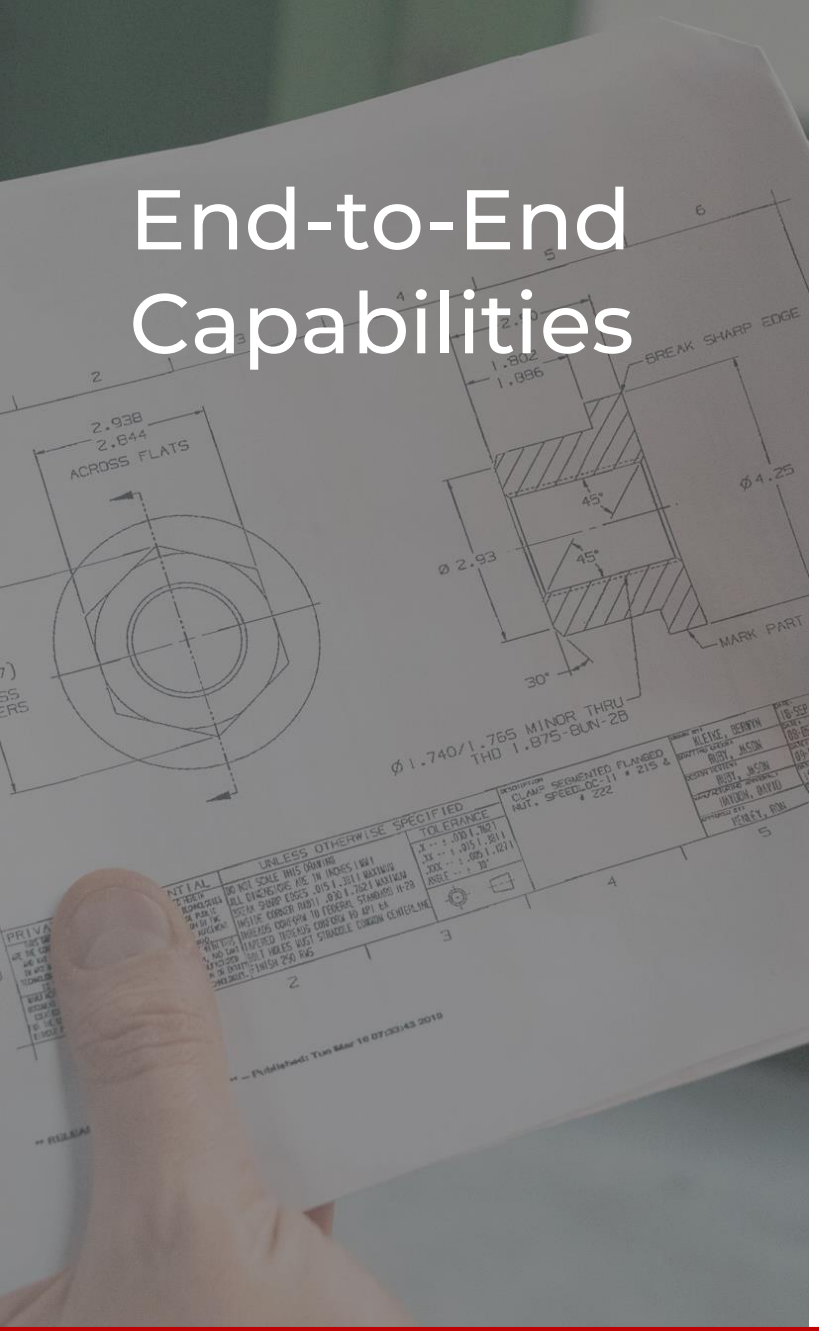
Growth

- 2,200 customers
- 20,000+ products
- >$200m Group Turnover


Glasgow
Craigavon
Rotherham
SHEFFIELD
Kingswinford
Nijmegen
Hamm
Lokeren
Ennepetal
Armentières
Bogny-sur-Meuse
Aillevillers-Et-Lyaumonth
Pueblo
Haiyan
Ningbo
Chennai
Singapore
Headquarters
(also a manufacturing site)
Manufacturing Site
Distribution / Office Sites
Distribution / Manufacturing

Industries Our Group Serves

Energy & Renewables	Construction & Infrastructure	Heavy Industries & Power
Siemens Energy	Network Rail	Cat
GE	Balfour Beauty	JCB
Vestas	Severfield	Siemens
Total		



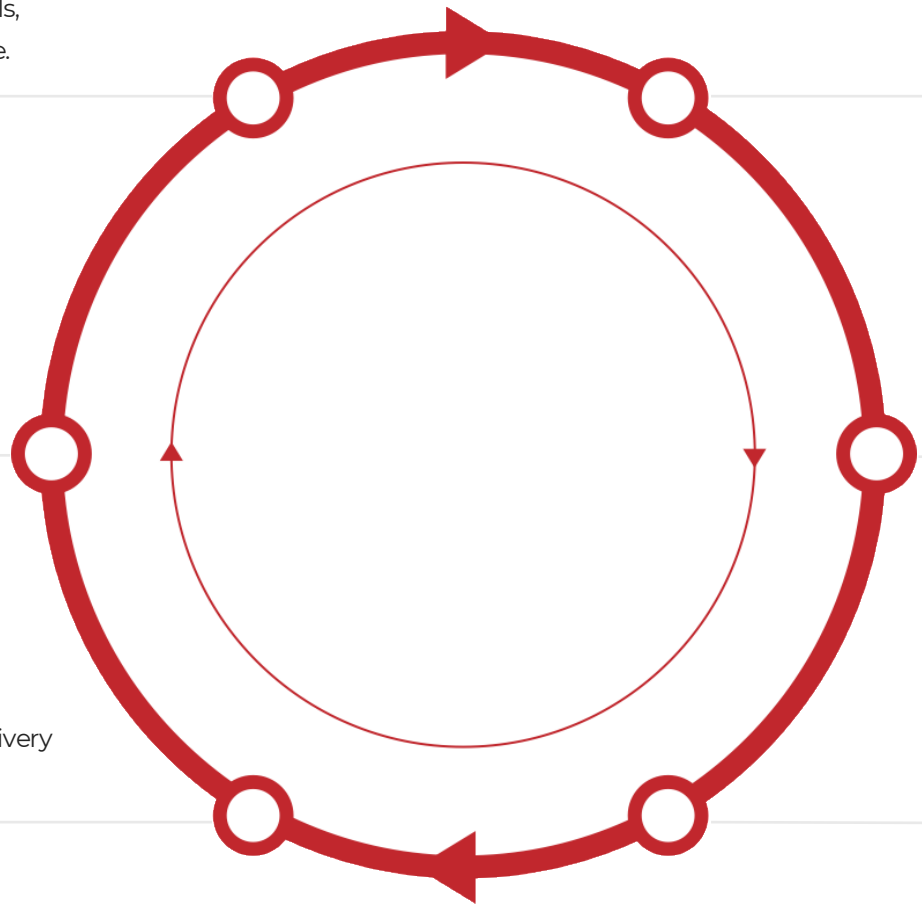
End-to-End Capabilities

Consultancy

Expert guidance to refine designs, select materials, and ensure compliance.

Prototyping

Rapid prototypes bring concepts to life for performance validation.



Distribution

A global network delivering on time, every time.

Testing

ISO-certified testing guarantees safety, strength, and durability.

Storage

Strategic warehouses ensure just-in-time delivery and product integrity.

Manufacturing

Precision machining and automation for complex, high-quality fasteners.

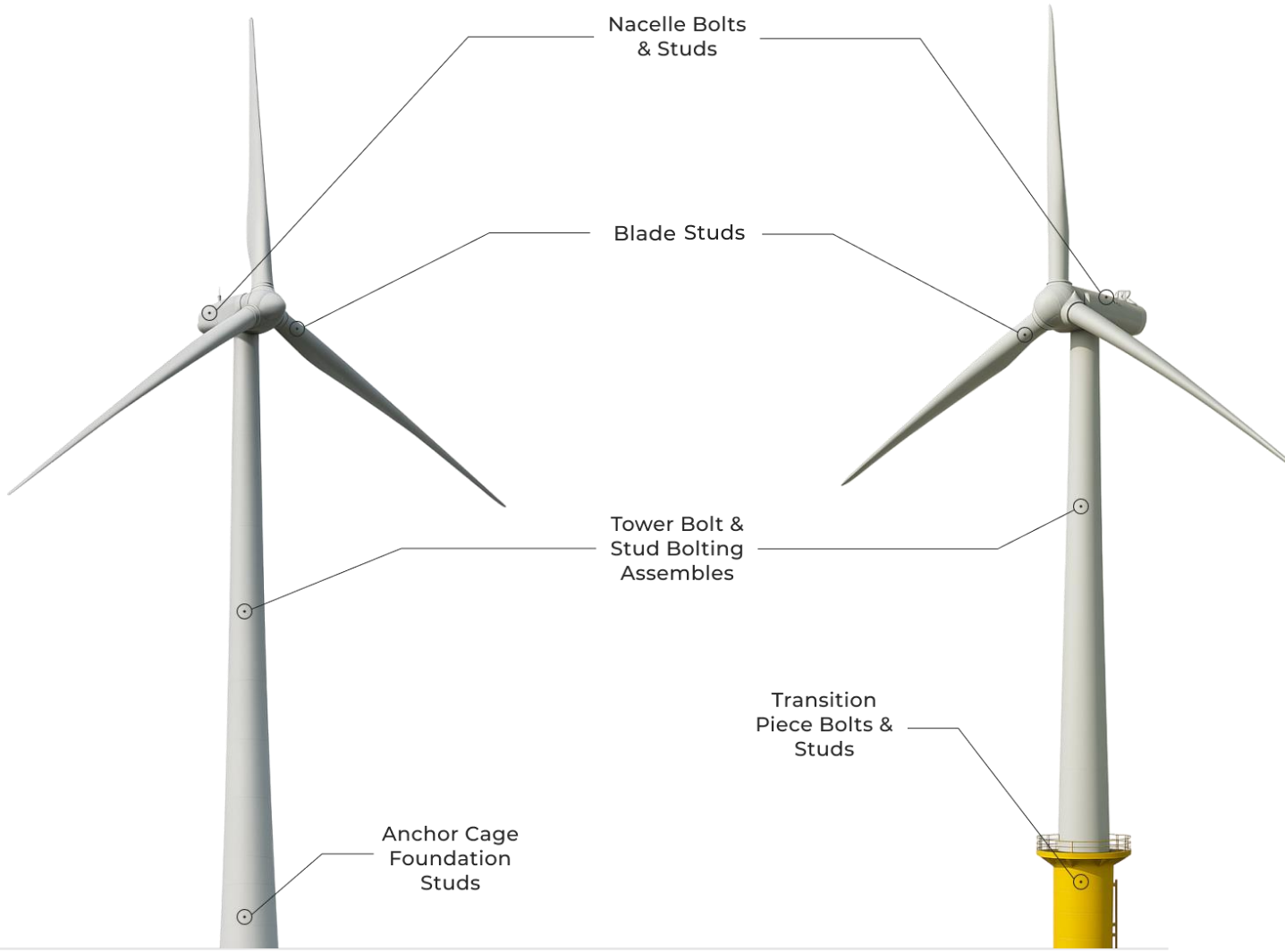
Safety-Critical Fasteners for Wind Energy Infrastructure

Complete Capability for Wind Energy Fasteners

From turbine foundations to nacelle assemblies, Cooper Turner Beck delivers fasteners engineered for durability, traceability, and precision: wherever wind energy is generated.

Our product range covers the complete lifecycle of wind projects, supporting both onshore and offshore applications providing fully integrated capability — forging, machining, coating, and testing — for every fastener used in wind turbine construction.

From TÜV-approved tower bolts to DIBt-certified offshore assemblies, our products combine engineering precision with proven environmental and quality performance. Each process is traceable, each component certified, and every connection built to withstand the world's most demanding conditions.



Product Range at a Glance

Application	Product Range	Specification	Typical Grades	Key Features
Foundation Studs	Studs, anchor bolts, nuts	EN 14399-4 / ISO 898 / ASTM A615/722	8.8 / 10.9	Fatigue-resistant assemblies
Tower Assembly	HV bolts and preloaded sets	EN14399 / ASTM A490M / Stud A554	10.9	Controlled preload and tensile strength for structural integrity
Nacelle & Gearbox	Hex bolts, studs	ISO 4014 / 4017 Custom design	8.8 / 10.9 / 12.9	Precision machining and controlled tolerances
Blade Studs	Studs and bespoke fixings	Custom design	10.9	Corrosion-resistant coatings for long-term reliability
Offshore Transition Pieces	Large-diameter assemblies M36–M80	M72-M100 Diameter assemblies	10.9	Certified for safety-critical use under DIBt approval Fatigue-resistant assemblies for monopiles and transition pieces

Foundation Stud Assemblies

Precision Anchor Studs for Tower Foundations

Our fully automated lines manufacture the high-tensile anchor studs that secure wind turbine towers to their foundations.

Each stud is manufactured from certified alloy steel and machined to exacting tolerances for parallelism and thread accuracy.

Integrated finishing lines apply metal-spray or galvanised coatings to resist corrosion, while automated colour-coding ensures batch traceability.

Debonding sleeves are fitted in-line to allow uniform stressing once the anchors are cast into concrete. Fabricated one-piece cradles are produced to customer drawings for accurate site installation.

Our Fastening Solutions:

- Anchor studs M24 – M64, property classes 8.8 / 10.9
- Metal-spray or hot-dip-galvanised protection systems
- Heat-shrink / rigid plastic debonding sleeves fitted in-line
- Colour-coded batches with tensioning data supplied
- Bespoke cradle fabrication to client specification

Full Specifications & Features:

Material:
- High tensile steel

Diameter Range:
- Metric: M24 (1”) to M64 (2.5”)
- Imperial: 0.75” to 2.50”

Strength Classes:
- Metric: Up to Grade 10.9 & 150
- Imperial: ASTM-A615 Grade 75, 90, 100 & ASTM-A722 Grade 150

Length Capabilities:
- Up to 5m (European manufacturing)
- Up to 7m (Asian manufacturing)
- Up to 25’ (North American manufacturing)

Standards & Compliance:
- Manufactured to ISO and ASTM standards to meet global market requirements
- Full test certification provided with every batch

Corrosion Protection Options:
- Galvanizing & Sherardizing

Additional Features:
- Studs can be fitted with heat shrink or rigid plastic debonding sleeves for uniform stress distribution after casting into concrete foundations
- Tensioning equipment and loading information available upon request

Custom fabricated one-piece cradles available to customer specifications.

Tower Assembly Fasteners

Controlled Preload for Structural Tower Integrity

Our forming and thread-rolling lines manufacture high-strength HV bolt assemblies designed for the flange-jointed construction of wind turbine towers.

Each component is produced and tested under controlled preload conditions to guarantee consistent clamping force and long-term fatigue resistance under cyclic load.

For standard flange-jointed tower designs, CTB holds full TÜV Nord approval for the manufacture and supply of EN 14399-4 products in hot-dip galvanised finish in accordance with ISO 10684.

We also supply ASTM A490M bolts, ASTM A563M 10S nuts, and ASTM F436M washers, available with zinc-flake coatings to ISO 10683.
Our in-house lubrication processes provide precise friction control of nuts, ensuring reliable torque–tension performance at installation.
For alternative tower configurations such as lattice designs, special fastener assemblies can be engineered to meet customer-specific geometries and load requirements.

Our Fastening Solutions:

- TÜV Nord–approved HV assemblies to EN 14399-4 / EN 15048-1
- M16 – M80 diameter range, property classes 8.8 / 10.9
- Finishes: Hot-dip galvanised (ISO 10684) or zinc-flake (ISO 10683)
- In-house lubrication for friction control and consistent preload
- Custom assemblies available for lattice or hybrid tower designs

Full Specifications & Features:

Material:
- High tensile steel

Diameter Range:
- Metric: M24 (1”) to M80 (3")
- Imperial: 0.75” to 2.50”

Strength Classes:
- Metric: Up to Grade 10.9
- ASTM-A490

Standards & Compliance:
- Manufactured to ISO and ASTM standards to meet global market requirements
- Full test certification provided with every batch

Corrosion Protection Options:
- Galvanising
- Sherardising
- Zinc Flake Coating (providing minimum 1440 hours corrosion resistance)

Custom-fabricated one-piece cradles are available to customer specifications.

Nacelle & Gearbox Bolting

High-Tolerance Fasteners for Rotating Assemblies

Within the nacelle, dimensional accuracy and fatigue strength are critical. CTB manufactures bolts, studs, and cap screws for gearbox housings, main-shaft connections, and generator frames, machined to precise tolerances on multi-axis CNC turning and milling centres. Fasteners are produced from quenched-and-tempered alloy steels in grades 8.8, 10.9, and 12.9, and supplied with surface finishes such as phosphate, zinc-nickel, or Zinc Flake to resist corrosion and lubricate under load.

All products are tested in accordance with ISO 898-1 and supplied with 3.1 certification and full dimensional inspection records.

Our Fastening Solutions:

- Bolts and studs to ISO 4014 / 4017 / DIN 931–933
- Grades 8.8 / 10.9 / 12.9
- CNC-machined to tight tolerances
- Coatings in accordance with ISO 10683 or ISO 10684 standards to meet corrosion-resistance and torque-control requirements (Phosphate, Zn-Ni, Zinc Flake)
- Supplied with full mechanical test and inspection data

Full Specifications & Features:

Standard Bolt & Stud Range:
- ISO 4014 Bolts: Diameters from M16 to M72
- ISO 4017 Setscrews: Property classes 8.8, 10.9, and 12.9

Custom manufacturing available to meet special requirements.

Custom & Special Fasteners:
- Machined studs designed to customer specifications
- Special studs available in diameters M16 to M100
- Strength classes 8.8 and 10.9

Corrosion Protection & Friction Control:
In-house Zinc Flake Plating for:
- Optimised coefficient of friction
- Enhanced corrosion resistance

Blade Studs

High-Integrity Studs for Blade and Pitch Connections

CTB manufactures blade-to-hub fasteners designed to perform under extreme cyclic loading. Studs are produced in grades 10.9 and 12.9, precision-machined and thread-rolled to optimise fatigue strength and load distribution at the blade root.

Advanced coating systems - including Zn-Ni, Zinc Flake, or Xylan - provide corrosion protection and controlled friction coefficients to ensure accurate torque–tension behaviour. Each batch undergoes mechanical and non-destructive testing, with data supplied to customer-specific test plans.

Our Fastening Solutions:

- Bespoke studs M20–M48, property classes 10.9 / 12.9
- Coatings in accordance with ISO 10683 / ISO 10684
- Fatigue-tested to customer load profiles
- Supplied with full 3.1 certification and NDT reports
- Custom designs to OEM geometry and torque specification

Full Specifications & Features:

Product Capabilities:
- Custom & Standard Studs
- Fully machined, customer-specific designs
- Manufactured using state-of-the-art CNC machinery

Size Range:
- Diameters from M20 to M64

Strength Classes:
- Property class 8.8, 10.9 and 12.9

Custom specifications available upon request.

Corrosion Protection & Friction Control:
In-house Zinc Flake Plating to optimise:
- Coefficient of friction
- Corrosion resistance

Offshore Transition Piece Bolting

Certified Strength for Offshore Foundations

Our large-diameter offerings include up to M100 preloaded assemblies for offshore transition pieces and substructures. Fasteners are produced from quenched, tempered, and ultrasonically tested steels for full internal integrity.

CTB achieved DIBt Ü certification for large-diameter fasteners in just nine months — confirming compliance with DASt 021 (2013-09) and enabling supply to major offshore wind and infrastructure projects.

Our Fastening Solutions:

- Large-diameter assemblies M72–M100
- Certified to DIBt Ü / DASt 021 (2013-09) & DNV-SE-0441, DNV-ST-0361, DNV-ST-0126
- Quenched, tempered, and ultrasonically tested steels
- ISO 9001 / 14001 / 17025-controlled manufacture
- CBAM-compliant product-level carbon data

Full Specifications & Features:

Product Capabilities:
- Bolting & Studding Assemblies up to M100
- Manufactured in compliance with DAST Directive Standard

HV Bolting Assemblies:
- Nominal Size: M72

Application in accordance with:
- DIN 18800-1
- DIN 18800-7

Core Certifications

TÜV Nord Approval – Manufacture and supply of EN 14399-4 structural bolting assemblies

DASt 021 (Germany) — Steel Construction Certification

DIBt Ü Certification — Large-diameter fasteners for structural and offshore applications

API Q1, 20E & 20F — Energy sector standards for fastener manufacturing

ISO 9001 — Quality Management

ISO 14001 — Environmental Management

ISO 45001 — Occupational Health & Safety

ISO/IEC 17025 — Testing & Calibration Laboratories

EN 14399-1 / EN 15048-1 — Preloaded and Non-Preloaded Structural Bolting Assemblies

DNV - Type & Component Certification

Additional Standards and Compliance Highlights

- CBAM-ready data systems with accurate, product-level carbon declarations
- UN Global Compact Participant — Public reporting on environmental, labour, and governance principles
- 1,100+ supplier due diligence checks completed in 2024, strengthening ethical sourcing and supply-chain transparency
- Zero enforcement actions for the third consecutive year

Certifications

Our teams have a proactive approach to ensure we meet and exceed the highest global and regional standards.

TPG Administered by PRI

Deutsches Institut für Bautechnik DIBt

NHSS 3 national highway sector schemes

APQP 4 Wind Company Member 2020

RISQS Verified

afaq ISO 19443 Nucléaire AFNOR CERTIFICATION

IQNet 20E - 0098 20F - 0048

TÜVRheinland CERTIFIED Management System AD 2000-HP 0 ISO 3834:2006 www.tuv.com ID 9105079374

cofrac ESSAIS

RCC-M

UKAS TESTING

CE TÜV NORD

Latest Developments

Latest ESG Report

Reporting on key developments and latest metrics in sustainability, governance, and social responsibility.

DIBt Certification

Verifies our large-diameter fasteners meet top safety and reliability standards.

OWGP Partnership

Driving innovation in offshore fastening for the UK's wind energy future.

Cooper Turner Beck

Thank You

Partner with us for precision, reliability,
and performance in wind energy fastening solutions.

Proven strength. Certified quality.

Let’s discuss how our wind turbine fastening capabilities can support your next project.

sales@cooperandturner.co.uk

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