



Engineered Cooling Solutions for Global Markets





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About us

NEXT COOLING GROUP is a global leader in cutting edge cooling technologies, comprising three main entities, **NEXT Cooling, IWC, and ASCTI**. With operations in Switzerland, South Africa, Australia, and India, the group delivers cooling towers, air-cooled condensers, and comprehensive aftermarket services worldwide.

The group is united by a shared vision of excellence, growth, and a commitment to delivering advanced cooling solutions to multiple industries including power generation, oil and gas, chemical, mining & minerals.

Our combined capabilities provide a competitive edge by capitalising on a diverse portfolio of world-class projects, and open new opportunities to market our air cooled condensers, cooling towers, bulk air coolers and solution & slurry cooling towers in global markets.

With a well-established global presence, the group brings decades of expertise and a strong reputation for delivering advanced, reliable cooling towers and air cooled condensers.

At the heart of NEXT's success is its remarkable team of professionals, including R&D experts who work closely with academia to further enhance our extensive product range.

By combining engineering excellence, proven expertise and regional leadership, NEXT is poised to set a new global standard of innovation and performance in the cooling industry.



We offer cooling solutions to the following industries

- / Power Generation
- / Oil & Gas
- / Petrochemical
- / Chemical/Fertiliser
- / WTE / Biomass
- / Mining
- / Steel & Aluminium
- / Food & Beverage
- / HVAC and Refrigeration

About IWC Industrial

IWC Industrial is subsidiary company of NEXT Cooling and specialises in factory built, package cooling towers and heat exchangers for a variety of industries.

The cooling tower range includes small EWK cooling towers which are simple plug and play towers suitable for small to medium size applications such as distilleries, dry cleaners and wineries. The FM range of cooling towers is a range of multi-fanned factory assembled cooling towers manufactured in a robust, durable, and compact glass reinforced polyester casing. This range of cooling towers provides high cooling capacity units that are easily transported, installed, and maintained and are ideal for larger processing facilities or remote locations.

We offer a range of plate heat exchangers for numerous applications. We also offer spares and gaskets for most brands of exchangers.

At a glance...

Relentless Innovation

Ongoing R&D keeps us at the cutting edge, with strong ties to Stellenbosch University

Certified

ISO9001:2015, ISO45001:2018 and ISO14001:2015

Advanced Engineering

Proprietary thermal design & selection tools to calculate cooling tower and ACC performance

NEXT Group

A powerhouse brand with a legacy dating back to 1896

Unmatched Talent

Highly skilled team with over 100 years of combined experience

Strategic Global Presence

Offices in Switzerland, South Africa, Australia, India

Proven EPC Capability

A global record of successful turnkey projects

Capabilities

We provide the following expertise:



Design and engineer to all internationally recognized standards, specifications and codes



Manufacture



Installation



Maintenance

Engineering and Project Management Services:

- / Detailed project engineering and project management
- / Thermal design of cooling towers and air-cooled condensers
- / Mechanical design
- / Electrical & Control
- / Civil & Structural
- / Hydraulic flow calculations and flow simulations/modelling
- / Finite Element Analysis
- / Stress Analysis (Piping)
- / 3D modelling & detailing of plants, equipment and piping isometrics
- / EPC Projects

Products and Services

Products

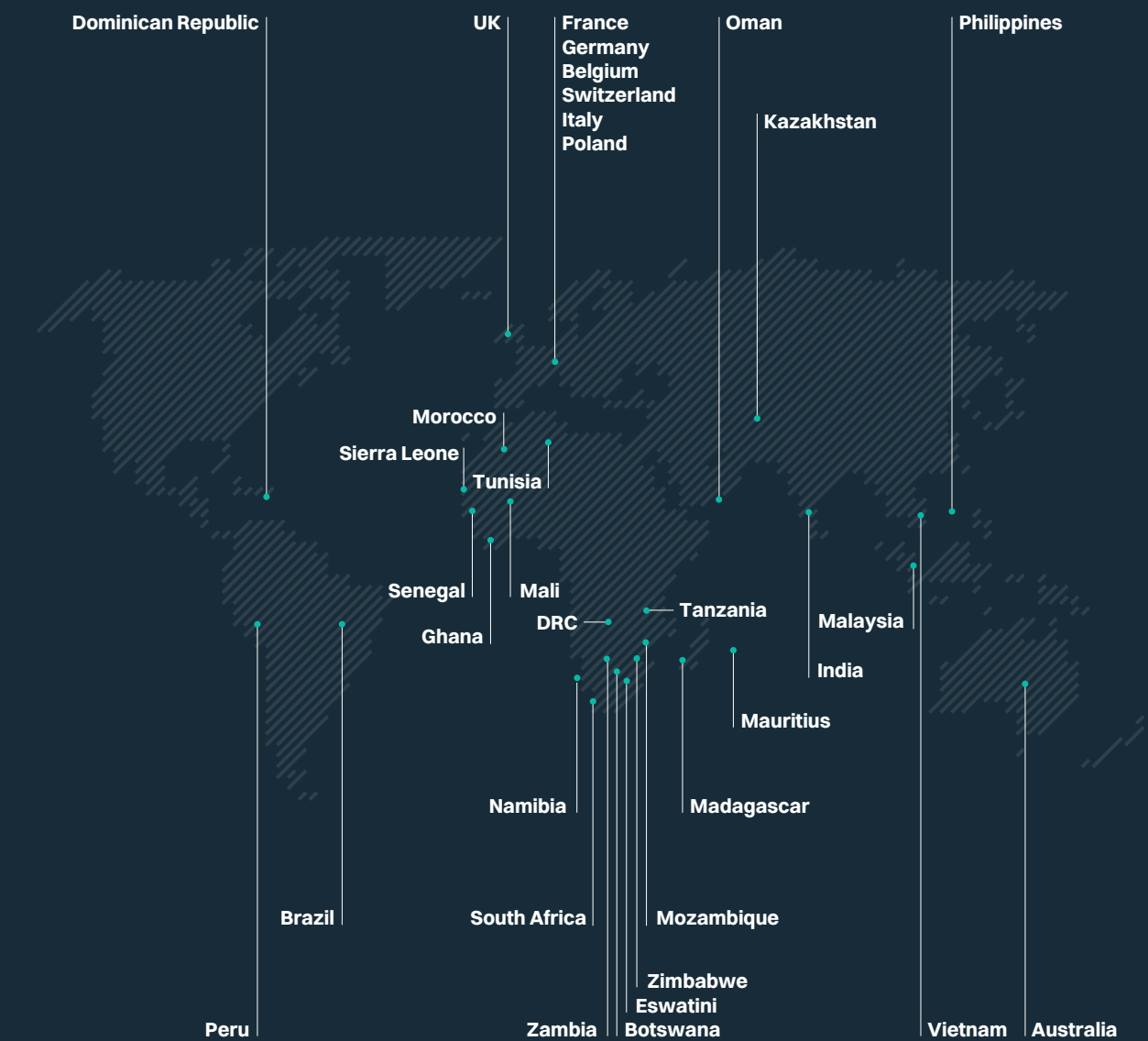
- / Large field erected mechanical draught cooling towers of all types and materials of construction
- / Air Cooled Condensers (Induced & Forced Draft)
- / Bulk Air Coolers
- / Aftermarket service including spares for cooling towers and ACC

Services

- / Construction management and supervision
- / Erection of plant and equipment
- / Refurbishment and upgrading of cooling towers and cooling systems
- / Commissioning and acceptance testing
- / Testing and thermal evaluations (Cooling Towers) and ACC's
- / Complete demolition and installation services
- / Access and maintenance platforms to suit local standards and specifications.

Geographic Regions

The NEXT Group have delivered projects located in the following regions:



Air-Cooled Condensers

As a recognised leader in advanced cooling technologies, NEXT proudly offers a high-performance portfolio of Air-Cooled Condensers (ACCs) to clients across the globe. Our ACC solutions are meticulously engineered to minimise environmental impact by reducing, noise, water usage and lowering carbon emissions.

Each ACC undergoes rigorous evaluation by our experienced engineering team to ensure optimal component integration and system-wide efficiency. This approach underpins long-term reliability and consistent operational performance.

NEXT specialises in Single Tube Row Air-Cooled Condensers, renowned for their efficiency, dependability, and environmentally conscious design. Engineered for superior thermal performance, energy savings, and low maintenance, our systems are ideally suited for a wide range of applications.

A-Frame Design

Our A-frame Air-Cooled Condensers feature a distinctive triangular structure that maximises heat dissipation while conserving space. This design enables direct condensation of steam turbine exhaust within the coils, eliminating the need for an intermediate surface condenser and returning condensate directly to the boiler, without water loss.

Constructed for structural integrity and durability, NEXT's A-frame ACCs are ideal for outdoor installations in diverse industrial and power generation environments.

Single Tube Row Configuration

NEXT's Single Row Air-Cooled Condensers utilise a streamlined layout with finned tubes to maximise heat transfer efficiency within a compact footprint. Compared to multi-row systems, our single-row configuration offers:

- / Reduced structural and bundle weight
- / Lower operational noise
- / Cost-effective installation and maintenance

These advantages contribute to dependable, energy-efficient cooling, making our ACC's an excellent choice for modern energy and industrial facilities.

Sustainable Benefits

Our Air-Cooled Condensers deliver significant environmental advantages:

- / **Water Conservation:** ACC's eliminate the need for water in cooling processes, preserving local water resources.
- / **Energy and Chemical Efficiency:** Operating independently of water systems, ACC's reduce energy consumption associated with water pumping and eliminate the need for chemical water treatment.
- / **Lower Noise Emissions:** Quieter than traditional water-cooled systems, ACC's support a more peaceful operational environment.
- / **Design Flexibility:** Free from the constraints of nearby water sources, ACC's offer greater flexibility in plant layout and site selection.

Cooling Towers

Our cooling tower range includes both Mechanical and Natural Draft Cooling Towers. Our engineers tailor component combinations to deliver cost-effective systems that meet performance requirements. We offer cooling towers constructed from concrete, pultruded composites, wood, and steel, depending on project needs.

Mechanical Draft Cooling Towers

Our mechanical draft cooling towers are designed to efficiently cool hot water across various industries, including power generation, oil and gas, chemical processing, steel production, and food manufacturing.

These towers are classified as induced or forced draft, based on fan positioning, and as counterflow or crossflow, based on fill arrangement.

Constructed from pultruded GRP (Glass Reinforced Polyester), our towers are ideal for long-term use in corrosive environments. Designed to CTI STD-137 and CTI STD-152 standards, they offer exceptional durability and performance. Engineered to withstand extreme temperatures and water conditions, our towers ensure reliable thermal exchange in a cost-effective manner.

Hybrid Cooling Systems

Hybrid cooling systems integrate wet evaporative cooling with dry heat exchangers to reduce visible plume emissions and comply with environmental regulations.

NEXT's hybrid solutions optimise energy and water usage while maintaining high cooling efficiency and minimising visual impact.

Plume Abatement

Our hybrid systems combine air-cooled and water-cooled technologies to effectively reduce visible plume emissions. By dynamically switching between evaporative, dry, or hybrid modes, our systems ensure environmental compliance and operational efficiency.

Advantages of Hybrid Cooling Solutions

Energy Efficiency

Hybrid systems adapt to ambient conditions, using air cooling during cooler periods and water cooling during peak heat, thereby maximising energy efficiency.

Enhanced Reliability

The dual-mode capability provides operational redundancy, allowing seamless transitions during maintenance or equipment failure, ensuring continuous cooling and minimising downtime.

Bulk Air Cooling Towers

Deep-level mining presents the challenge of maintaining safe working conditions, with virgin rock temperatures often exceeding 60°C. To address this, underground operations deploy some of the world's largest ventilation and cooling systems, incorporating technologies such as evaporative condensers, mechanical refrigeration, pre-cooling towers, and bulk air coolers.

With over 30 years of experience, NEXT has led the development of cooling technologies for the mining sector. Our recent projects include installations for some of the world's deepest mining operations.

Slurry & Solution Cooling Towers

Our engineers have developed a field-erected cooling tower specifically designed for slurries and highly abrasive or corrosive solutions.

Key features include:

- / Forced draught fans
- / Removable spray lances, accessible from external walkways
- / Fill-less design, ideal for applications prone to internal fouling

Drift eliminators are assembled into easily removable pads and can be equipped with an automatic CIP (Cleaning in Place) system. Drift losses are minimised to as low as 0.002% of the recirculating flow rate. These towers can be constructed in various materials to suit environmental or project-specific requirements.

Natural Draft Cooling Towers

NEXT specialises in the design and supply of Natural Draft Cooling Towers, particularly suited for large-scale thermal and nuclear power facilities where substantial volumes of heated water require cooling.

Thanks to their hyperbolic structure, these towers utilise the natural upward movement of air to cool water without the need for mechanical fans, significantly reducing operational costs. Where spatial constraints exist, performance can be enhanced through the integration of auxiliary fans.

Constructed from cast-in-situ concrete, our towers are engineered for longevity, even in the most demanding environments. Our extensive global portfolio spans multiple industries and geographies.

Cooling Tower Materials of Construction

FRP (Fibre Reinforced Polyester)

Our FRP Cooling Towers are built using pultruded profiles made from fibre-reinforced polyester, offering excellent corrosion resistance and structural strength.

Frame structures are spaced between 1.8 and 2.4 metres and delivered pre-cut and pre-drilled for efficient on-site assembly. The lightweight nature of FRP reduces foundation loads and simplifies handling.

Standard features include:

- / **Casing:** Corrugated FRP panels for external cladding, partition walls, and louvers
- / **Water Distribution:** FRP main header with lateral PVC pipes

NEXT prioritises ease of maintenance, with designs that enhance accessibility and streamline servicing activities.

Concrete

Our Concrete Cooling Towers are engineered for environments with harsh water conditions that may compromise FRP. These towers provide robust structural integrity and are ideal for areas with high wind loads or seismic activity.

Wood

Our Wooden Cooling Towers offer a traditional yet effective solution to cooling water in industrial applications. Constructed from natural timber, these towers deliver efficient thermal performance while harmonising aesthetically with their surroundings.

Special Design Considerations

Recognising that each facility presents unique operational challenges, we provide bespoke cooling solutions tailored to specific site requirements.

Noise Management

Effective noise control is critical in cooling tower installations, influencing both operational efficiency and regulatory compliance. Noise may originate from mechanical components, such as fans, or from water impact.

NEXT conducts comprehensive acoustic assessments early in the design phase to evaluate alternative mitigation strategies.

Our solutions include:

✓ **Impact Attenuation in the Water Basin**

Floating surfaces are installed to dampen the sound of falling water in the basin.

✓ **Inlet and Outlet Silencers**

These devices reduce noise from air intake and exhaust flows.

✓ **Low-Noise Fans**

Specially designed blades minimise sound emissions while maintaining airflow efficiency.

✓ **Soundproof Enclosures**

Soundproof boxes are used to contain and reduce motor-generated noise.

Cold Climate Adaptations

For operations in sub-zero environments, we offer advanced solutions to prevent freezing and ensure uninterrupted performance:

- ✓ Bypass systems
- ✓ De-icing systems with warm water spray at air inlets
- ✓ Heat tracing
- ✓ Insulated and heated lubrication systems
- ✓ Use of cold-resistant materials

Marine Environment Solutions

Seawater cooling applications demand materials that withstand high salinity and corrosion. NEXT designs and supplies systems using corrosion-resistant alloys and protective coatings, ensuring durability and reliability in marine conditions.

Aftermarket Services

NEXT sets the global benchmark for refurbishment and aftermarket solutions, encompassing the installation of fill media, drift eliminators, spray systems, nozzles, and fan mechanical components.

Our commitment extends well beyond initial system commissioning. We provide comprehensive post-installation support, including spare parts supply, system adjustments, and ongoing maintenance services. To ensure optimal performance and reliability, we develop customised maintenance strategies supported by real-time remote monitoring of mechanical systems and operational processes.

For clients seeking a fully outsourced solution, we offer Long-Term Service Agreements (LTSA), which include complete maintenance and service management, complemented by our state-of-the-art Remote Inspection System.

Our aftermarket capabilities include:

- ✓ Replacement and modernisation of key components (fills, drift eliminators, nozzles)
- ✓ Maintenance and upgrades of fans and gearboxes
- ✓ Coil re-bundling services
- ✓ Servicing of vacuum units and hybrid cooling tower systems
- ✓ Installation of noise reduction equipment
- ✓ Anti-legionella system design and implementation

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