ISSUE 3 2026

HYDROPOWER DATA, SECTOR HIGHLIGHTS, AND OUR UPCOMING EVENTS

HYDRO WIND UP
HYDROPOWER INSIGHTS FROM PREFORMED WINDINGS- ISSUE 3

WELCOME

Welcome to the third edition of "Hydro Wind Up," our newsletter dedicated to the hydropower industry.
At Preformed Windings (PFW), hydropower isn't just a sector we support; it's at the heart of what we do. For over 55 years, we've been designing and manufacturing precision-engineered high-voltage coils and bars that deliver reliability, safety, and efficiency for operators across the world.

Our mission remains rooted in our three guiding principles:

- Quality – With ultra-low partial discharge (PD) manufacturing processes and in-house HV testing facilities, we guarantee the highest standards of performance.
- Partnerships – We collaborate closely with OEMs, utilities, and operators to create bespoke winding solutions tailored to their needs.
- Service – From design and R&D through to delivery and aftercare, we pride ourselves on being responsive, transparent, and dependable.

This month, we bring you a mix of technical insights, global hydropower news, team highlights, and industry events that continue to shape our work.

PREFORMED WINDINGS
OBSESSED WITH QUALITY

PARTNERSHIPS, QUALITY & SERVICE

Quality: Our patent-pending ultra-low Partial Discharge (PD) manufacturing processes and in-house high-voltage testing ensure coils of the highest durability, safety, and performance.

Partnerships: We collaborate closely with OEMs, utilities, and service providers across the nuclear sector to engineer tailored high-voltage solutions for critical applications.

Service: From R&D and technical design through to scaled production, we deliver a responsive, consultative approach, providing exceptional support to our nuclear clients worldwide.

PREFORMED WINDINGS
OBSESSED WITH QUALITY

TECHNICAL & INDUSTRY INSIGHT – HYDROPOWER IN 2026

The start of 2026 reinforces hydropower's critical position as the backbone of renewable-heavy energy systems.

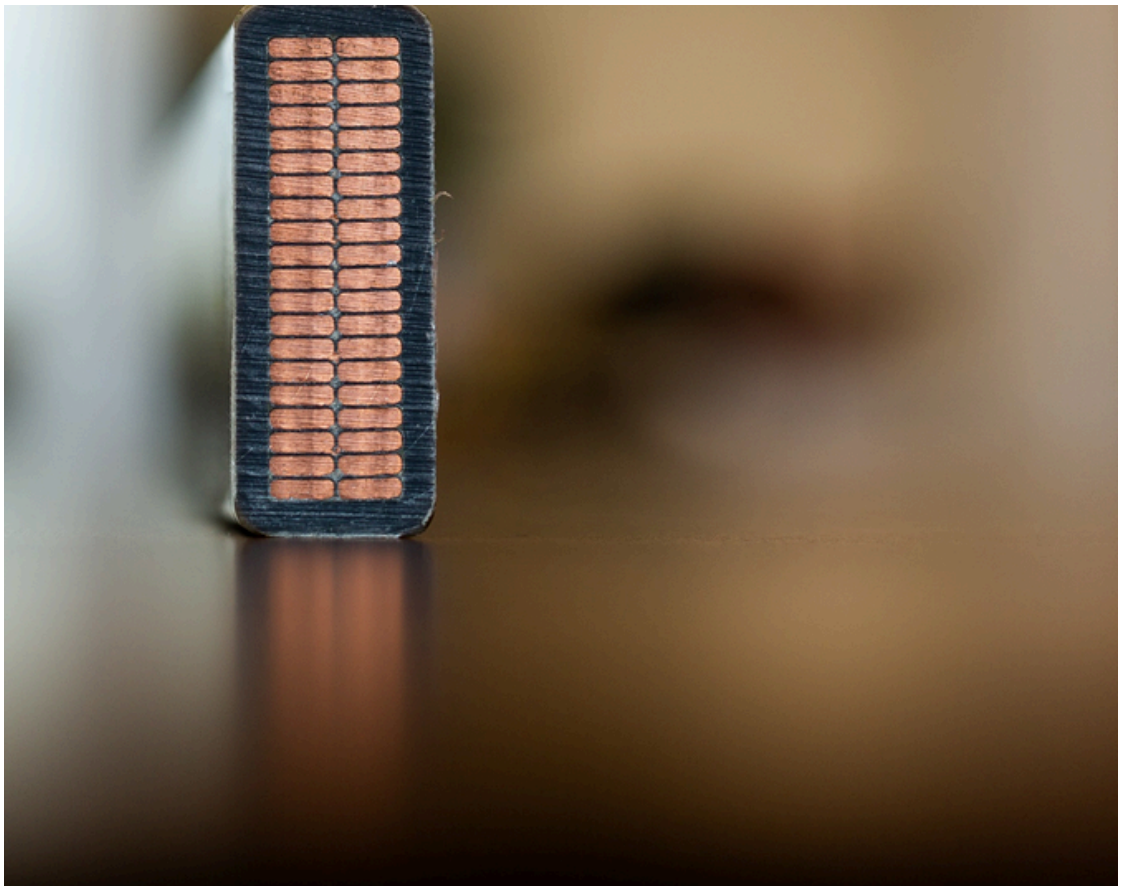
Key themes shaping the sector:

Accelerated Fleet Modernisation – Ageing generators across Europe and North America continue undergoing insulation upgrades, rewinds, and efficiency improvements.

Partial Discharge Mitigation – Insulation performance remains central to improving reliability and extending generator lifespan.

Predictive Maintenance Expansion – Digital diagnostics and condition-based monitoring are becoming standard across hydro fleets.

Hydro as Grid Stabiliser – Hydropower, particularly pumped storage, continues enabling renewable balancing and grid resilience.



PFW TECHNICAL ENGAGEMENT – OUR FIRST LIVE TECHNICAL WEBINAR

At the start of 2026, Preformed Windings successfully delivered our first live technical webinar, bringing together professionals from across the global hydropower and high-voltage community.

The session focused on insulation performance, partial discharge behaviour, and long-term reliability in modern generator winding systems — combining practical engineering insight with real-world operational experience from our technical team.

This milestone represents an important step in expanding how Preformed Windings shares knowledge, supports the industry, and strengthens technical collaboration through transparency and open dialogue.

Following this success, we will continue expanding our Technical Webinar Series throughout 2026, focusing on insulation performance, generator modernisation, and reliability engineering.

US Army Corps of Engineers®

GLOBAL HYDROPOWER INSIGHTS & PROJECT HIGHLIGHTS – JANUARY 2026

EUROPE & UK – MODERNISATION & GRID STABILITY

Hydropower across Europe continues shifting toward refurbishment, life extension, and flexible grid support.

- Dinorwig Pumped Storage, UK

One of Europe's most important fast-response grid balancing assets, Dinorwig continues undergoing staged refurbishment and generator upgrades to maintain rapid start capability and long-term reliability. Modernisation includes generator inspection, insulation upgrades, and control system improvements to support renewable grid stability.

- Nant de Drance, Switzerland

This large, pumped storage facility continues operational optimisation, improving efficiency and response time to stabilise renewable-heavy European grids. Focus areas include performance tuning, monitoring systems, and long-term reliability of rotating equipment.

- Kambar-Ata-1 (International Collaboration)

A major hydro infrastructure project progressing toward delivery later this decade. The scheme is expected to significantly strengthen regional energy stability and cross-border grid cooperation.

Across Europe, insulation performance and generator life extension remain dominant technical priorities.

REST OF THE WORLD HIGHLIGHTS

NORTH AMERICA – LIFE EXTENSION & DIGITALISATION

North America continues prioritising modernisation of large legacy hydro fleets.

- Grand Coulee Dam Modernisation

One of the largest hydroelectric plants in the world continues phased generator upgrades, focusing on insulation renewal, improved efficiency, and extended operational lifespan. The program reflects a broader trend of life-extension rather than new dam construction.

- Hoover Dam Generator Refurbishment

Ongoing upgrades aim to enhance reliability, modernise insulation systems, and maintain long-term performance of this critical infrastructure asset.

- U.S. Army Corps Hydro Fleet Programs

Extensive modernisation programs across multiple hydro stations are focused on insulation performance, generator rewinds, and digital monitoring — ensuring reliability of key national infrastructure.

Predictive maintenance and digital asset monitoring continue to drive operational improvements.

ASIA – EXPANSION & MEGA PROJECTS

Asia remains the world's most active hydropower development region.

- Yarlung Zangbo / Medog Project, China

One of the most ambitious hydro developments globally, progressing toward extremely large generation capacity. The project highlights the continued importance of hydro in large-scale energy planning and renewable balancing.

- Azad Pattan Hydropower Project, Pakistan

A 700 MW run-of-river project progressing toward completion, supporting regional power stability and infrastructure growth.

- AI-Driven Hydro Optimisation

Across Asia, utilities are increasingly using AI and predictive modelling to optimise hydro scheduling, improve efficiency, and support grid balancing.

Hydropower remains central to long-term energy security strategies across the region.

REST OF THE WORLD HIGHLIGHTS

AFRICA – GROWTH & STRATEGIC INFRASTRUCTURE

Hydropower development continues expanding across Africa.

- Mphanda Nkuwa Dam, Mozambique

A flagship 1,500 MW project progressing toward delivery, expected to play a major role in regional power supply and infrastructure development.

- Grand Ethiopian Renaissance Dam (GERD)

Continued commissioning and operational scaling are strengthening generation capacity and improving long-term grid stability across East Africa.

Hydropower remains a cornerstone of electrification and long-term infrastructure development.

LATIN AMERICA – CLIMATE RESILIENCE & MODERNISATION

Latin American operators continue focusing on reliability and climate resilience.

- Itaipu Binacional Modernisation

One of the world's largest hydroelectric facilities continues undergoing phased modernisation to extend lifespan, improve efficiency, and maintain long-term operational reliability.

- Brazil Hydro Fleet Refurbishment Programs

Utilities continue investing in insulation upgrades, generator rewinds, and performance improvements to extend plant life and improve reliability.

Across the region, asset life extension and insulation performance remain key priorities.

PREFORMED WINDINGS
OBSESSED WITH QUALITY

PFW UPDATE – PARTNERSHIPS IN ACTION

Preformed Windings continues supporting hydro operators worldwide through:

- Generator rewind and modernisation projects
- Insulation performance and PD reduction solutions
- Reliability improvements for critical infrastructure
- Technical collaboration and long-term partnership development

Our mission remains delivering **precision, reliability, and performance through engineering excellence and trusted partnerships.**

LOOKING AHEAD – HYDROPOWER THROUGH 2026

Key sector priorities for the year ahead:

- Generator life extension and insulation reliability
- Predictive maintenance and digital monitoring
- Renewable integration and grid stability
- Sustainable infrastructure performance

Preformed Windings remains committed to supporting the hydropower sector through innovation, technical leadership, and global collaboration.

At Preformed Windings, we believe:

“We Can with Hydro, We Can’t Without You.”

Through innovation, collaboration, and engineering expertise, we are proud to support the global hydropower community in delivering reliable and sustainable energy for the future

PREFORMED WINDINGS
OBSESSED WITH QUALITY

MEET THE TEAM

GHASSAN BARGHOUTH – CHIEF COMMERCIAL OFFICER

Ghassan brings 25+ years of global leadership in energy and low-carbon technologies. He is focused on driving growth, innovation, and forming partnerships focusing on clean energy transition.

STUART WHITFIELD – BUSINESS IMPROVEMENT LEADER

A highly respected figure in the industry, Stuart is the go-to person for operational expertise. He ensures smooth operations, efficiency, and continuous improvement across our manufacturing and project pipelines.

HOLLY JOHNSON – PARTNERSHIP DEVELOPMENT MANAGER

Holly is dedicated to building strong customer partnerships and delivering tailored solutions. With a people-first approach, she ensures clients receive the highest level of support to achieve long-term success.

MEET THE TEAM

ANDY SMALL– PARTNERSHIP DEVELOPMENT MANAGER

Andy has experience in the oil & gas, nuclear, defence, aerospace, and automotive sectors, working in sales and project management. Graduating from Northumbria University with a degree in Mechanical Design Engineering and a foundation in Subsea Engineering.

IF YOU'D LIKE TO ORGANISE A CALL WITH ANY OF THE TEAM – BOOK NOW:

sales@preformedwindings.com
+44 (0) 114 248 4391
preformedwindings.com