

HYDROPOWER DATA, SECTOR HIGHLIGHTS, AND OUR UPCOMING EVENTS

HYDRO WIND UP HYDROPOWER INSIGHTS FROM PREFORMED WINDINGS- ISSUE 2

WELCOME

Welcome to the second 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:

- Partnerships – We collaborate closely with OEMs, utilities, and operators to create bespoke winding solutions tailored to their needs.
- Quality – With ultra-low partial discharge (PD) manufacturing processes and in-house HV testing facilities, we guarantee the highest standards of performance.
- 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.



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.

LATEST INSIGHTS PREFORMED WINDINGS



Clean Currents 2025: Driving Innovation in Water Power

The Preformed Windings team was proud to attend Clean Currents 2025 in Pittsburgh, an event often described as the “Super Bowl of Water Power.”

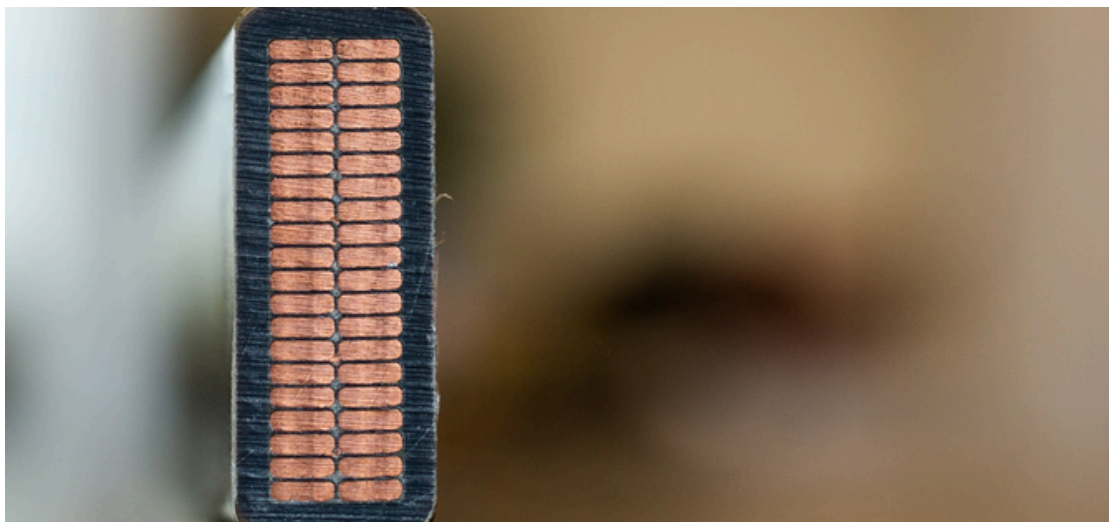
Hosted by the National Hydropower Association, this year’s conference brought together leading voices from across the hydropower industry for three days of collaboration, innovation, and forward-thinking discussion.

Our team was delighted to welcome so many visitors to Booth 817, where we had the opportunity to engage in valuable conversations about the future of hydropower and share insights with professionals who share our passion for renewable energy.

A particular highlight was the chance to showcase our latest UltraLowPD Ed bar range, engineered to deliver even greater performance and reliability in generator coils. This innovation reflects our ongoing commitment to advancing electromechanical excellence within the renewable energy sector.

We extend our sincere thanks to the National Hydropower Association, the event organizers, and everyone who took the time to meet with us throughout the week. Your ideas, expertise, and enthusiasm continue to drive progress in this vital industry.

As we look ahead, we’re excited to keep the momentum going — continuing the conversations, collaborations, and innovations that will power the next generation of sustainable energy.





WHITE PAPER LAUNCH - COMPARISON OF NEW AND OLD HIGH VOLTAGE DIAMOND COIL ELECTRICAL INSULATION PERFORMANCE FOR HYDRO ELECTRIC GENERATORS

Our CTO, Arwyn Thomas, and his technical team have been instrumental in forging key strategic partnerships across the hydropower industry — including a significant collaboration with the U.S. Army Corps of Engineers. Together, we are proud to launch our latest white paper: “Comparison of New and Old High Voltage Diamond Coil Electrical Insulation Performance for Hydro Electric Generators.”

This benchmark study is already influencing industry best practices, driving advancements in coil design, and helping shape the future of hydropower standards. The result? Windings that last longer, perform better, and deliver proven reliability — even in the most demanding applications and aging infrastructure.

Arwyn recently presented this white paper at the IEEE EIC 2025 Conference in Texas (8–12 June 2025). If you would like a copy or to discuss the findings, please don't hesitate to reach.



COMMITTED TO EUROPE'S CLEAN ENERGY FUTURE: SUPPORTING THE PARIS PLEDGE



Preformed Windings is proud to stand alongside our industry partners in supporting The Paris Pledge — a collective commitment to making pumped storage hydropower a cornerstone of Europe's secure, renewable energy future.

Announced as part of the International Hydropower Association (IHA) Forum on Pumped Storage Hydropower, the Paris Pledge has brought together over 60 leading organisations united by a shared vision: to recognise and advance the vital role of pumped storage in enabling a resilient, low-carbon energy system.

Pumped storage hydropower is uniquely positioned to balance the intermittency of renewable energy sources such as wind and solar, providing the flexibility and stability required to maintain reliable power systems as Europe transitions to net-zero.

At Preformed Windings, we are committed to driving innovation that supports this transition. By delivering high-performance solutions for generator coils and electromechanical systems, we aim to strengthen the reliability and efficiency of critical renewable energy infrastructure across the continent.

We are honoured to lend our support to this important initiative and to collaborate with partners across the hydropower sector in powering a cleaner, more sustainable future for Europe.

 Learn more about the Paris Pledge:
<https://lnkd.in/eSMj36i3>



GLOBAL HYDROPOWER INSIGHTS – NOVEMBER 2025



EUROPE & UK

- Kambar-Ata-1 (Kyrgyzstan) – Although in Central Asia, this project is closely tied to European investment and grid cooperation. With 1,860 MW capacity planned, it's one of the most significant hydro builds in the region, due ~2028.
- Pumped Storage Momentum – Europe continues to invest in large-scale PSH to balance renewables. 56 PSH projects are currently under construction worldwide, many with EU backing.
- Climate Variability – In the UK, output fell 40% in early 2025 due to drought, while Southern Europe saw hydropower critical in restoring power during the Iberian blackout.

REST OF THE WORLD HIGHLIGHTS

USA & CANADA

- Google-Brookfield Renewable Deal – \$3B agreement for up to 3 GW of U.S. hydropower over 20 years, the largest corporate hydro PPA in history.
- Policy Boost – U.S. hydropower tax credits extended to 2036, providing long-term certainty.
- Digitalisation & Predictive Maintenance – U.S. utilities are investing heavily in sensor-driven O&M frameworks to improve fleet efficiency and cut costs.
- Generation Outlook – U.S. hydropower expected to rise 7.5% in 2025, though still affected by lingering drought.

ASIA

- Medog / Yarlung Zangbo Hydropower Project (China) – Work has officially begun on this mega project, expected to reach 60 GW capacity and generate ~300 billion kWh annually by 2033 – more than triple Three Gorges.
- China's Expansion – Added 14.4 GW of new hydro capacity in 2024, surpassing its 2030 pumped storage target early.
- Azad Pattan HPP (Pakistan) – A 700 MW run-of-river scheme on the Jhelum River, scheduled for completion in 2026.
- AI & Deep Reinforcement Learning – Chinese and regional utilities are experimenting with DRL to optimise cascaded hydro scheduling and trading.

AFRICA

- Mphanda Nkuwa Dam (Mozambique) – A flagship 1,500 MW project, targeted for 2031, part of Africa's largest hydro development pipeline.
- Growth Surge – Africa added 4.5 GW of new capacity in 2024, doubling previous years' additions.
- Micro / Cascade Pumped Storage – New research is exploring how small-scale PSH could support local grids across Africa, where conventional pumped storage is less feasible.

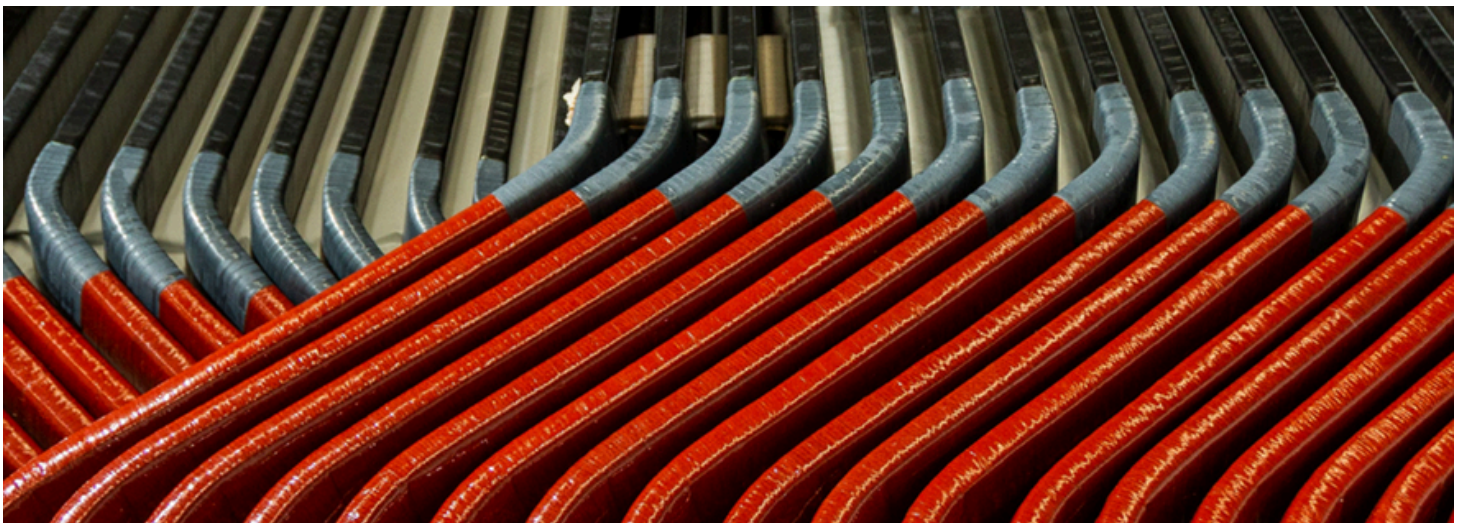
LATIN AMERICA

- Climate Risk – The IEA warns hydropower generation could fall by 10% or more in the coming years due to prolonged drought conditions.
- Modernisation Focus – Operators are prioritising asset life extension over new builds, investing in upgraded turbines, insulation systems, and monitoring technology.

GLOBAL TRENDS

GLOBAL TRENDS

- 1,075 GW in Pipeline – The World Hydropower Outlook (2025) highlights 24.6 GW added in 2024 and over 1,075 GW in the global pipeline, including 600 GW of pumped storage.
- Digitalisation & Predictive O&M – Predictive maintenance using advanced sensors, AI, and data analytics is becoming a universal priority.
- Sustainability & Debate – Large dam projects like Medog are driving geopolitical and environmental discussions about hydropower's role in the net-zero transition.





PREFORMED WINDINGS: RAISING THE BAR

We're excited to unveil our **new range of Low Partial Discharge (Low PD) High Voltage Bars**.

At **Preformed Windings**, innovation drives everything we do. ⚡

This year, we've enhanced our **Low PD Bar manufacturing** by introducing a **new bend radius tooling process**, developed using advanced 3D printing technology. This step forward allows us to:

- ✓ Achieve greater precision and repeatability
- ✓ Improve manufacturing efficiency
- ✓ Guarantee the highest quality in every Low PD Bar we produce

By combining advanced tooling with modern processes, we are not only keeping pace with technology — we're setting **new standards** in motor and generator winding manufacturing.

We're proud to unveil our **new range of Ultra-Low Partial Discharge (Low PD) High Voltage Bars**. Why is this important?

Partial discharge (PD) is one of the leading causes of insulation failure in large machines, often resulting in costly unplanned downtime and major repairs. Our Low PD HV Bars are designed to address this challenge head-on:

- ⚡ **Ultra-low PD levels** for extended generator life
- 🔧 **Precision-engineered insulation systems** for maximum reliability
- 🌐 **In-house HV testing** for consistent performance assurance

Behind every bar is the expertise of our **dedicated technical team**, who continue to refine each step of the process with care and attention to detail. For critical infrastructure, reliability isn't optional — and our Low PD technology ensures operators can run with confidence.



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.



SHAUN ELSEY – PARTNERSHIP DEVELOPMENT MANAGER

Shaun is focused on delivering the highest levels of quality and reliability across our products and processes. He works closely with partners to align technical excellence with customer needs.



JIM GLUNT – BUSINESS DEVELOPMENT MANAGER

Based in the U.S., Jim leads our North American growth strategy, building strong relationships with utilities, OEMs, and partners to expand Preformed Windings' presence in the region.

MEET THE TEAM



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.



ANDY EATON – PARTNERSHIP DEVELOPMENT MANAGER

Passionate about hydropower as a sustainable energy source, Andy brings 25+ years of sales and business development experience across global markets. He is committed to creating lasting value through trusted partnerships.



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:



UPCOMING EVENTS - WHERE TO MEET US



Driving Change in Hydropower: Yildiz Balcioglu in the Women in Hydropower Mentorship Programme.

At Preformed Windings, we are proud to support initiatives that advance diversity, leadership, and innovation within the hydropower sector. This year, our QHSE Manager, Yildiz Balcioglu, MBA, has been making a significant impact globally through her participation in the Women in Hydropower Mentorship Programme.

The programme, led by the International Hydropower Association (IHA), connects 171 participants across 41 countries to foster professional growth, knowledge-sharing, and gender diversity within the industry. Through her involvement, Yildiz is helping to inspire and support the next generation of leaders in hydropower while sharing her expertise on project management and operational excellence.

Pumped by a passion for sustainable energy and a commitment to a more inclusive industry, Yildiz represents Preformed Windings on the global stage — helping to shape a future where hydropower continues to drive clean, reliable, and renewable energy across the world. 🌍

We are proud to see our people contributing to initiatives that strengthen the hydropower community and support innovation in the transition to a renewable-powered energy system.

[🔗](#) Learn more about the Women in Hydropower Mentorship Programme

UPCOMING EVENTS - WHERE TO MEET US

- Read our feature in International Waterpower & Dam Construction



- If you're attending any of these events, we'd love to meet you in person and/or if we can discuss a partnership – QR Code for Sales Team



At Preformed Windings, we believe:

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

Whether through innovative new products like our Low PD HV Bars, research-led insights, or our expanding team presence worldwide, we're committed to powering the hydropower transition with precision and reliability.