Newsletter

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ETN Global is a non-profit association bringing together the entire value chain of the gas turbine technology community. Through cooperative efforts and by initiating common activities and projects, ETN Global encourages and facilitates information exchange and cooperation to accelerate research, development, demonstration, and deployment of safe, secure and affordable carbon-neutral energy solutions.

IN THIS ISSUE

Christer Björkqvist
Managing Director,
ETN Global

From user insight to action and delivery

As we publish the final Quarterly Newsletter of 2025, it is clear that the year has been both intense and highly impactful for the ETN Global community.

For many years, ETN Global has highlighted the critical role of dispatchable thermal generation in enabling a secure and credible energy transition, together with the unique flexibility of gas turbines to adapt to evolving market needs. Today's strong resurgence in gas turbine demand confirms that this message is translating into market reality. This positive momentum, however, comes with a degree of "positive pain", as supply-chain and manufacturing bottlenecks increasingly affect delivery timelines, technology choices and investment decisions. In this environment, coordination and collaboration across the turbomachinery community are more important than ever.

Key milestones in the past quarter, and in 2025 more broadly, included our High-Level User Meetings in Houston and Brussels and ETN Global's 12th International Gas Turbine Conference (IGTC) in Brussels. IGTC once again confirmed its role as a leading international platform for strategic dialogue, grounded in user insights and technical exchange. This issue provides guidance on how to access the HLUM report, IGTC proceedings and technical papers, as well as recent webinars, highlighting key market developments and priorities for collaboration.

The stronger policy focus on security of supply is leading to a more balanced approach to the energy trilemma and a clearer recognition of the role of gas turbines in providing secure and dispatchable power, which is very encouraging.

The next critical step is to ensure that the promising solutions presented at IGTC progress towards full-scale demonstration. Doing so will allow the community to demonstrate cost-effective net-zero pathways and reinforce turbomachinery as a long-term destination technology, without the risk of stranded assets for today's investments.

At the same time, rising demand for dispatchable capacity underscores the urgent need to extend the lifetime of existing assets. Through our engine-specific user groups, Working Groups and targeted R&D and policy engagement, ETN Global continues to translate user priorities into concrete action, addressing ageing fleets, supply-chain constraints and evolving operating profiles. This user-driven approach is illustrated in this issue through our interview with Woodward, demonstrating how direct engagement within ETN Global can influence lifecycle decisions and improve long-term asset support.

Looking ahead, a key event not to be missed is ETN Global's 22nd Annual General Meeting & Workshop in Malmö in March 2026, including a site visit to Öresundsverket, featuring the world's first gas turbines operating on HVO (Hydrotreated Vegetable Oil). The AGM & Workshop will provide a unique opportunity to align on user-defined priorities, review progress and shape collaborative activities, R&D projects and advocacy for the year ahead.

On behalf of the Board and the ETN Global office, I thank all members for your active engagement throughout 2025. We look forward to continuing this collaboration in 2026.

I wish you a relaxing holiday season and a healthy and successful New Year.

ETN Global's 22nd Annual General Meeting & Workshop

ETN Global's 22nd Annual General Meeting & Workshop, will take place on 23-25 March 2026 at Clarion Hotel Malmö Live in Malmö, Sweden, co-hosted by Uniper. ETN Global members are invited to save the date, make travel plans and book their accommodation.

Event at a glance

ETN Global's Annual General Meeting (AGM) and Workshop is a 2,5-day Member event that brings together representatives from the entire turbomachinery community, including users, OEMs, suppliers, service providers, research institutes and universities.

Alongside updates on ETN Global's annual achievements, announcement of the new Board (for 2026-2028) and finalisation of plans for 2026, the event offers plenty opportunities for meaningful technical and strategic discussions. Participants will also have the opportunity to actively contribute to shaping ETN Global's future priorities and activities.

A key highlight of the event will be a site visit to Öresundsverket, organised by our co-host Uniper. Participants will have the opportunity to explore this modern power plant, which was recently returned to operation after being mothballed for eight years and to gain exclusive insight into the world's first gas turbines operating on HVO (Hydrotreated Vegetable Oil).

Figure 1: Öresundsverket. Copyright: Uniper

Programme

- **23 March (15:00-17:30 CET)**: site visit to Öresundsverket & a glance at the world's first gas turbines operating on HVO, organised by Uniper
- **24 March (10:30-18:15)**: AGM & interactive sessions with focused technical discussions
- **25 March (08:30-15:00)**: Workshop with parallel sessions.

Exhibition opportunities

Our AGM & Workshop offers a unique opportunity to showcase your latest technology developments, solutions and services to a senior, high-level audience from across the energy & turbomachinery community. Exhibiting at the event is not only a chance to demonstrate technical capabilities but also to strengthen existing relationship, build future partnerships and explore new business opportunities in an open and collaborating setting.

We are pleased to confirm Uniper as the co-host of the event, reflecting strong user engagement and industry support.

Confirmed sponsors and exhibitors include:

MD&A

Mjørud

WOODWARD

Additional exhibition opportunities remain available for ETN Global members. Confirm your exhibition stand now to maximise interaction with participants throughout the event. Please find the Exhibition package with all the necessary details here (login required). Please fill-in the form and send it to Viktorija Charbagi at ETN Global office.

For more details on the programme, sponsorship opportunities and accommodation, visit AGM & Workshop event webpage. ■

New members

Since our last quarterly newsletter, the following new members have joined ETN Global, and we extend them a warm welcome:

Ghana

Early Power Limited owns and operates the Bridge Power Station, a 200MW combined cycle power plant located in the Tema, Ghana. The station supplies power to the Electricity Company of Ghana under a 20-year Power Purchase Agreement.

South Korea

Doosan Enerbility is a global leader in the power and energy sector, providing a comprehensive range of solutions for a sustainable future. The company's business encompasses traditional power plant equipment and services for nuclear and thermal plants, alongside EPC (Engineering, Procurement, and Construction) for power and water infrastructure. Additionally, Doosan Enerbility is actively focusing on new energy solutions, including gas turbines, wind power, Small Modular Reactors (SMRs), and hydrogen energy.

US

Conax Technologies has over 70 years of experience in designing and manufacturing temperature sensors, compression seal fittings, and cable harness assemblies. The company offers comprehensive solutions, ranging from standard products to custom designs, which are applied across diverse energy industries, including gas and steam turbines, HRSGs (Heat Recovery Steam Generators), waste energy cogeneration, hydroelectric, nuclear, solar power, and fuel cells.

Calpine is a leading American power generation company and the nation's largest generator of electricity from natural gas and geothermal resources.

Based in Houston, Texas, the company operates a fleet of 79 power plants with a total capacity of approximately 27,000 megawatts. Calpine is committed to low-carbon energy solutions, owning "The Geysers" (the world's largest geothermal field) and investing heavily in carbon capture and battery storage technologies.

Germany

TÜV SÜD Industrie Service provides engineering, inspection, and testing services for industry, real estate, and infrastructure. Their expert assessments ensure the safety, profitability, and sustainability of plants, installations, and buildings. Their primary goals are establishing compliance, minimising risks, and improving market access across the entire lifecycle of assets.

UK

Rochem Fyrewash has provided gas turbine and process compressor cleaning technology since 1978, utilising decades of experience to help customers increase productivity and drive down costs. The company supplies comprehensive solutions, including powerful FYREWASH® specialist cleaning chemicals, precision-designed cleaning nozzles, and reliable wash skids (static or mobile), all designed to maintain gas turbines at peak efficiency while meeting global standards.

Interconnector owns and operates a gas pipeline between the UK and Belgium, providing 20 bcm/yr of UK export capacity and 25.5 bcm/year of UK import capacity; a pipeline, which is an important part of the energy supply chain providing economic benefits and promoting security of supply. The operation is located over three sites – commercially in London, and physically from gas terminals at Bacton in the UK, and Zeebrugge in Belgium. The company is part of the Fluxys Group and SNAM. ■

Listening to the users: how ETN Global user group dialogue is shaping Woodward's lifecycle decisions

Figure 2: Matthijs Koreman, Manager – Asset Services Europe Woodward Netherlands

An interview with Woodward's Manager – Asset Services Europe, Matthijs Koreman

Woodward recently decided to extend support for the GS6/GS16 valve platforms, following feedback from end-users. Can you walk us through what prompted this reconsideration following your participation in ETN Global's LM2500 User Group Meeting in Aberdeen?

Maybe a bit of background first. The LM2500 User Group committee invited Woodward to host a round-table discussion during the event, focusing on the future support strategy for Gas Turbine valves currently installed in the field. Woodward has faced challenges with long-term availability of parts and with the development of the newer GS40 and GS50 valves, we initially considered shortening the support horizon for the older GS6/GS16 units to encourage and support migration. While the obsolescence of the GS6 and GS16 platforms has not been postponed, with the last buy still scheduled for September 2027.

The round table discussion was very open and honest. The clear and consistent message from the end-users was that they felt pushed into a migration path they had not been informed about, that the migration presented technical challenges and that the obsolescence timeline did not align with the operational horizon of their assets. receiving such unified feedback from the user community is rare and extremely valuable.

Using this feedback, we worked internally with our product management team and agreed to extend the support period in a way that better reflects operational requirements and the operational horizon. As a result, Woodward will continue to provide repair and overhaul support for GS6/GS16 units until 2037.

How did engaging directly with operators through a neutral, collaborative platform like ETN Global shape your understanding of customer needs compared to more traditional customer interactions?

It was genuinely eye opening! Since Woodward has only recently re-engaged directly with end-users, a platform like ETN Global is exactly what we need. The way ETN Global encourages the end-users to participate and share challenges openly and honestly enhances this experience even more! Traditionally, we tried to stay in contact with OEMs and end-users, but with the lack of a neutral platform or a structured approach. ETN Global gives us a structured and neutral way to collect their feedback, verify it with the group and use it as input for decisions that directly influence the operation of the asset.

What surprised me most, in a positive way, is how collaborative the end-users are. From the outside, you might expect competitiveness to limit information sharing, but within the ETN Global's user groups there is a genuine willingness to share experience and learn from each other.

What value does Woodward see in participating not only in user groups but in the broader ETN Global community and its activities?

Since joining ETN Global, Woodward has participated in every event, and we have genuinely enjoyed every single one of them! The Working Groups are highly engaging platforms where our engineers can contribute their expertise, while the events offer excellent opportunities for networking and informal discussions.

Woodward has a strong tradition of contributing to collaborative standards development and future industry directions, API is a great example. We hope that we can support the community by sharing our knowledge and at the same time aligning our product development with the outcomes of these Working Groups and to solve the challenges discussed in the ETN Global community.

Based on your strengthened engagement with ETN Global, how do you see this collaboration influencing your future product development, innovation pathways, or lifecycle strategies?

Woodward is indeed investing significantly in our relationship and engagement with ETN Global, and we really appreciate the way ETN Global has actively been involving us in numerous activities since! We continue to see a lot of value in this collaboration and after every event or meeting, we come back with more knowledge or different insights.

We are currently exploring the option whether our NPI team (New Product Introduction) can include feedback from the ETN Global platforms during the design phase. To support this we have introduced a Product Marketing team that has been tasked with identifying customer issues and translate these into issues for the NPI team. It's still early days but having them participating in the ETN Global activities is already a great step forward!

From the direct end-user perspective, the feedback we receive helps us align our solutions and plan and refine our approach that enables us to support the end-users in the best way.

Looking ahead, do you see opportunities for co-creating solutions with end-users, for example in advanced control system upgrades, fuel flexibility enhancements, or lifecycle extension strategies?

Absolutely! There are many opportunities although we need to be selective about where we invest and what we bring to the market. Our first objective is to inform the end-users on the

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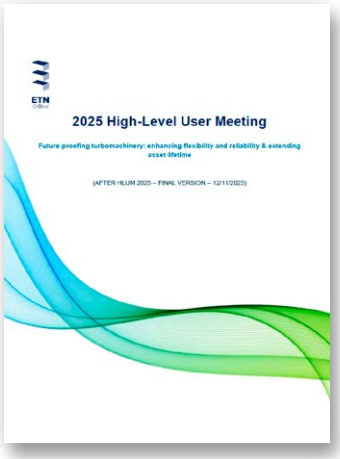
importance of technical capability and background of products like a control system. This will help them to develop technical specifications for upgrades that align with the best added value for their processes and systems.

The second step is to present & develop tangible solutions together. This is inherently a collaborative process between Woodward and the end-user. We have our standard solutions and experience from 1000+ assets worldwide, while operational expertise lays with the end-user. Combining these is probably the challenge I enjoy most.

Finally, what message would you like to share with the broader ETN Global community as you strengthen your involvement going into 2026?

I'd like to start with a thank you! Woodward hasn't been part of this community for a long time, and the way we have been welcomed and included since joining has been excellent! It genuinely motivates the team to join the events, be part the Working Groups and involve themselves in the discussions. What I want to share with the community is simple: keep sharing your challenges, opportunities and even your out of the box ideas. We love being part of the solution and are looking forward to having our team involved in as many as possible. ■

ETN Global High-Level User Meetings 2025: key outcomes and shared priorities



In October 2025, ETN Global convened two High-Level User Meetings (HLUMs): a regional meeting focused on the Americas was held in Houston, US, on 6 October, hosted by Cheniere Energy, followed by the international HLUM in Brussels, Belgium, on 13 October.

ETN Global's 2025 High-Level User Meetings brought together senior gas turbine end-users from utilities, energy companies, and industry to discuss the most pressing operational challenges facing the sector and to define shared priorities for the years ahead. This dialogue is supported by continuous exchanges throughout the year amongst ETN Global's user groups:

- SGT-A35
- LM-25000
- Frame 5, 6B, 7E & 9E

The discussions across both meetings converged on three key barriers that are currently limiting operational resilience and long-term planning for gas turbine operators:

- **Spare parts availability and turnaround time**

  End-users highlighted persistent supply chain fragility and extended lead times as a major constraint on operational flexibility and outage planning. Participants emphasised the need for stronger collaboration across the value chain, including greater transparency, improved forecasting, and expanded repair and refurbishment capacity.

- **Uncertain policy and regulatory frameworks**

  Participants consistently raised concerns about fragmented and rapidly changing regulations affecting hydrogen, carbon capture, and flexible thermal assets. The meetings underlined the importance of stable, long-term, and fuel-agnostic policy frameworks that provide clarity for investment decisions and enable the deployment of low-carbon solutions.

- **Ageing fleets under changing operating conditions**

  Many gas turbines designed for baseload operation are now required to operate more flexibly, with increased cycling and ramping. End-users reported that this shift accelerates wear and reduces maintenance predictability, highlighting the need for updated maintenance methodologies, on-site inspection capabilities, hybrid system solutions, and more flexible contractual approaches.

A common message across regions and sectors

Across both HLUM meetings, a consistent message emerged: these challenges are systemic and interconnected. Addressing them effectively will require collective action, including shared data, transparent communication, and closer cooperation across the entire gas turbine value chain, from operators and service providers to OEMs, policymakers, and regulators.

The outcomes of the two HLUM meetings have been consolidated by ETN Global into the HLUM 2025 Executive Report, which captures the end-user perspective and outlines priority areas for continued collaboration and engagement aimed at strengthening flexibility, reliability, and long-term resilience in the gas turbine sector.

To download the full ETN Global's 2025 HLUM report, visit the following page (login required) ■

Highlights from ETN Global's 12th International Gas Turbine Conference

Figure 3: ETN Global's 12th IGTC attendees

ETN Global's 12th International Gas Turbine Conference (IGTC) "Advancing turbomachinery innovations and strategies for net-zero pathways" successfully took place on 14-15 October 2025 at Tangla Hotel in Brussels, Belgium, attracting over 200 participants from across the global turbomachinery and energy community, including users, manufacturers, suppliers, researchers and policymakers.

Once again, IGTC confirmed its role as a key international platform for strategic dialogue, technical exchange and user-driven insights on the future of turbomachinery in the energy transition and in a net-zero energy system.

Event at a glace

- 200+ participants from across the global energy & turbomachinery value chain.
- 5 keynote sessions addressing strategy, policy and market developments.
- 6 technical sessions, featuring 20 peer-reviewed technical papers.
- Strong representation from users, OEMs, suppliers, researchers and policymakers.

All presentations from the 12th IGTC are available for attendees only on this webpage (login required). ETN Members who have not attended the conference will gain access to the proceedings by mid-April 2026. The rest of our subscribers will gain access on 14 October 2026.

The technical papers have been published as Volume 663 (2025) on the open access platform E3S Web of Conferences by EDP Sciences and are accessible at this link.

Keynote sessions - setting the strategic direction

The keynote sessions addressed the big-picture questions defining the future of turbomachinery with a strong focus on the importance of a balanced approach on the energy trilemma: security, affordability and sustainability. High-level speakers from across the value chain, including users, OEMs, policymakers, and energy analysts, explored how technology, markets and policy must evolve together to deliver a successful net-zero transition.

- **Keynote session 1: Realigning policy and markets to tackle the energy trilemma in a changing world:**
  - Speakers:
    - Dennis Hesseling, International Energy Agency
    - Ruud Kempener, European Commission
    - Toshinori Watanabe, The University of Tokyo
  - Chair: Christer Björkqvist, Managing Director, ETN Global
  - Moderator: Junior Isles, Editor-in-Chief, The Energy Industry Times
- **Keynote session 2: User priorities for a secure and net-zero energy future**
  - Panel speakers:
    - Jappe Hoeben, Senior Rotating Engineer, RWE
    - Jens Walter, Senior Expert for Gas Turbine Technology, BASF
    - Dominique Orhon, Turbomachinery Specialist, TotalEnergies
  - Chair: Andy Williams, Senior Fellow, Chromalloy / ETN Global Board Member

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  - Moderator: Mick Conway, Business Development Manager, RWG (Repair & Overhauls)

- **Keynote session 3: OEM roadmaps & technology development - delivering on the energy trilemma:**
  - Speakers:
    - Federico Bonzani, Chief Technology Officer, Ansaldo Energia
    - Chris Pin Harry, Vice President of Technology for Industrial & Energy Technology, Baker Hughes
    - Aad den Elzen, Vice President Power Generation & Strategic Growth, Solar Turbines
    - Dino Pezzella, EU Sales Director, Mitsubishi Power
    - Tobias Wintz, Vice President Global Service Operations, Siemens Energy
  - Chair: Christer Björkqvist, Managing Director, ETN Global
  - Moderator: Rene Vijgen, Senior Technical Manager, ETN Global
- **Keynote session 4: Global gas turbine markets - regional pathways, shared challenges:**
  - Speakers:
    - André Bosschaart, Head of Analytics, Montel
    - Peter Stuttaford, CEO, Thomassen Energy / ETN Global Board Member
  - Chair: Bobby Noble, Senior Programme manager – Gas Turbine R&D, EPRI
  - Moderator: Tom Kavanagh, Plant Manager, Uniper / ETN Global Project Board Member
- **Keynote session 5: Delivering the transition - integration, optimisation & risk control**
  - Speakers:
    - Sarah Kimpton, Vice-President, DNV
    - Klaus Brun, Global Director, Research & Development, Ebara Elliott Energy Company
    - Jan Ochmann, Project Manager Sales, Hydrogen and Synthesis Gas Plants / HSB, Linde
  - Chair: Stefan Geisse, Global Segment Leader - Power Generation, Scor
  - Moderator: Simon Balmer, Uniper / ETN Global President

Technical sessions – from concepts to deployment

The technical sessions showcased concrete progress made towards net-zero solutions, combining operational experiences, pilot projects and applied research that address real-world challenges faced by operators.

Participants received detailed technical presentations offering insights into how advanced turbomachinery can contribute to more flexible, efficient, and low-emission energy systems.

- **Technical session 1**: Progressing hydrogen-readiness - international field experience
- **Technical session 2**: Advancing CO_2 technologies - capture and storage technologies, and power cycles
- **Technical session 3**: Alternative fuels-powered turbines - ready to deploy solutions for decarbonisation
- **Technical session 4**: Enhancing flexibility in operations - design, control and retrofit solutions
- **Technical session 5**: Understanding hydrogen combustion-impact on performance, safety and emissions
- **Technical session 6**: Enabling next-gen turbomachinery - advanced techniques for component design

Key takeaways

Discussions throughout the conference reinforced several key messages:

- Gas turbines remain critical in delivering secure and dispatchable power in the energy transition and in a net-zero system.
- Existing assets will require upgrades and life extensions alongside deployment of new solutions to support net-zero objectives.
- Supply-chain constraints and long lead times remain a key industry challenge.
- Supportive, technology-neutral policy frameworks are critical to enable the required investments in dispatchable decarbonisation ready solutions and asset-upgrades.
- Collaboration across the value chain is indispensable for accelerating progress.
- Growing opportunities in regions such as the Middle East and Africa were also highlighted, alongside the need for stable long-term energy strategies and market mechanisms that value flexibility and dispatchability.

Sponsors

12th IGTC was generously sponsored by:

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Acknowledgments

ETN Global extends its gratitude to the Conference Advisory Board, speakers and sponsors that enabled us to deliver a strong and well-balanced programme.

Proceedings of the 12th IGTC are available for attendees only on this webpage (login required). ETN Members who have not attended the conference will gain access to the proceedings by mid-April 2026. The rest of our subscribers will gain access on 14 October 2026.

20 peer-reviewed Technical papers have been published as Volume 663 (2025) on the open access platform E3S Web of Conferences by EDP Sciences and are accessible at this link. ■

5th European Micro Gas Turbine Forum

Figure 4: Ward de Paepe from UMONS, delivering an opening session "Unpacking micro gas turbine technology"

Following 12th IGTC, the 5th European Micro Gas Turbine (EMGTF) took place at the same venue on 15-16 October 2025. Co-organised by ETN Global, Brunel University and the University of Seville, the event invited the participants to discuss the current state and future direction of micro gas turbine (MGT) technology.

Event at a glace

Across two days, participants reviewed recent technical developments, innovative applications and real-world use cases, alongside the key barriers still limiting wider deployment. These include the high cost of critical components, limited economies of scale and uneven regulatory and certification frameworks across Europe.

At the same time, the forum highlighted growing opportunities for MGTs:

- A **revival of Combined Heat and Power** (CHP) applications, as industries and municipalities seek efficient, decentralised energy solutions.
- A growing focus on **energy security and competitiveness**, with MGTs positioned as a resilient option that can support local generation and grid stability.
- Rising **energy demand from data centres**, which require reliable and flexible power solutions — a sector where micro gas turbines could play a valuable role.
- Expanding interest in **renewable fuels**, including hydrogen and sustainable liquid fuels, which aligns well with the inherent fuel flexibility of modern MGT systems.

Key takeaways

The outcomes of the forum are captured in ETN Global's White Paper: *Micro Gas Turbines: Challenges and Opportunities, which provides a structured overview of the technology, market trends, barriers and opportunities*. The report also outlines recommendations for stronger collaboration across the value chain and the need for clearer strategic direction to support market uptake.

Together, the forum discussions and the White Paper underline that, while challenges remain, micro gas turbines can play a practical and complementary role in delivering flexible, fuel-efficient and resilient energy solutions as Europe moves towards a more decentralised and low-carbon energy system.

Sponsors

The 5th EMGTF was kindly sponsored by:

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ETN Global's White Paper *Micro Gas Turbines: Challenges and Opportunities*, capturing key takeaways form 5th EMGTF is available for download here. ■

ETN Global's active involvement in ENLIT Europe 2025

Figure 5: Session "Shaping the Future - Introduction to careers in energy" speakers and attendees

ENLIT Europe 2025 was held on 18–20 November 2025 at the Bilbao Exhibition Centre in Bilbao, Spain. ETN Global supported the event as an industry partner and was actively involved in several sessions during the event.

ETN Global participated at two separate Technical Hub sessions at ENLIT Europe 2025:

18 November

- **Decarbonisation Hub: Session (10:00-12:45): Shaping the Future - Introduction to careers in energy**

  This session, led by Giuseppe Tilloca, Technical Lead at ETN Global, introduced students and young professionals to the wide range of career paths within the energy sector through presentations and panel discussions by distinguished guests in their respective fields:

  - Guillermo Rivas Munar, Head of Talent Acquisition, Iberdrola
  - Prof Rubén Abbas, Prof. Titular de Universidad
  - Giulio Grassi, Director at Sesta Lab
  - Ainara Bidaurratzaga, Deputy General Manager, Merytronic
  - Josu Etxebarria, Chief Operations Officer, Edinor – Distributed Generation
  - Nathan Ott, Chief Polisher, GC Index
  - Peru Valdés, Advisor at the Department of Economic Promotion, Bizkaia Council

  After the session the student had an opportunity to visit the expo and network with potential future employers.

- **Generation Innovation Hub: Session (13:30-15:00): The GT Bridge for Dispatchable Flexible Generation**

  In this session Giuseppe Tilloca delivered an engaging presentation titled *"Overcoming Hurdles in Turbomachinery Solutions for Sustainable and Resilient Power Generation"* highlighted the following:

  - The **evolving global gas turbine market**, including strong growth forecasts driven by increasing demand for reliable and flexible power.
  - **Regional differences in energy system drivers**, from Europe's decarbonisation needs and ageing fleets to rising electricity demand in North America and emerging economies.
  - Key **challenges faced by operators**, including supply chain pressures, operational unpredictability, and regulatory uncertainty.
  - **How ETN Global is addressing these hurdles**, through collaborative working groups, data-driven initiatives, technical innovation, and global partnerships to strengthen the role of turbomachinery in the energy transition, but also in the net-zero society.

  The session was chaired Andreas Glatzer, Managing Director, IE Intelligente Energie-Systeme, also featuring contributions from the following industry leaders:

  - Jeffrey Benoit, Vice-President - Clean Energy Solutions, PSM - a Hanwha Company
  - Hemmat Safwat, Director, Energy Development Services
  - Alan Cortizo, VP, Europe, Mitsubishi Power

For more information about ENLIT 2025, visit the event webpage. ■

ETN Global reveals 2026 event programme and sponsorship opportunities

ETN Global is pleased to present its 2026 events programme, offering a unique platform to exchange expertise, engage with key industry stakeholders, and strengthen brand visibility within the global energy and turbomachinery community.

2026 events' overview

- **Frame 5, 6B, 7E & 9E User Group Meeting***
  17–19 February 2026 | Ludwigshafen, Germany
  Hosted by BASF
- **Annual General Meeting & Workshop****
  23–25 March 2026 | Malmö, Sweden
  Hosted by Uniper
- **LM2500 User Group Meeting***
  9–11 June 2026 | Stavanger, Norway
  Hosted by AkerBP
- **High-Level User Meeting***
  12 October 2026 | Siena, Italy
- **October Workshop****
  12–14 October 2026 | Siena, Italy
  Hosted by Sesta Lab
- **SGT-A35 User Group Meeting***
  November 2026 | Date and location to be confirmed

Each event features **tailored sponsorship and exhibition opportunities**, including targeted branding, speaking slots, exhibition space, and high-quality networking designed to maximise your impact and engagement with the ETN Global community.

* Members & non-members, by invitation only
** Members-only

(Exact participation conditions apply per event)

Why sponsor or exhibit at ETN Global events in 2026

Partnering with ETN Global offers clear and tangible benefits:

- Strengthens your organisation's visibility within the energy & turbomachinery sectors
- Allows you to showcase innovative solutions to a highly targeted expert and decision-making audience
- Builds meaningful relationships with users, OEMs, suppliers and service providers

We look forward to collaborating with you throughout 2026 and to make these events a continued success.

To download the full **2026 Events Overview**, including participation details and fees, please visit this ETN Global's webpage. ■

ETN Global's President and Managing Director look back on a productive 2025 and set priorities for 2026

In their annual message, ETN Global President Simon Balmer (Uniper) and Managing Director Christer Björkqvist, reflect on a year of strong progress for ETN Global community and outline priorities for 2026.

During 2025, ETN Global continued to strengthen its role as a collaborative platform, bringing together 152 organisations from 24 countries across the energy value chain. Active engagement led to 18 Working Group initiatives, eight ongoing projects and several technical publications, including:

- A report based on the outcomes of the Laser Powder Bed Fusion (LPBF) Machine Evaluation Initiative
- The Executive Report of the High-Level User Meeting (HLUM) 2025 (login required)
- The Position Paper on Micro Gas Turbines: Challenges and Opportunities

Notable industry-funded projects included multi-year initiatives addressing hydrogen safety in gas turbine enclosures and the development of high-temperature alloys for additive manufacturing of turbine components.

ETN Global also increased its engagement with policymakers, contributing to various policy initiatives, with the following key contributions:

- Update of the European Commission's Strategic Energy Technology Plan
- Revision of the Gas Quality Standards (EN 16726), and
- Presentation of the White Paper, *"The Critical Role of Dispatchable Power Generation for a Sustainable and Secure Energy Transition"*, to the European Commission and the International Energy Agency.

Key events in 2025 included the Annual General Meeting (AGM) & Workshop in Bergen, hosted by Equinor, LM-2500 User Group Meeting in Aberdeen with users representing more than 500 LM2500 engines and the bi-annual flagship event, the 12th International Gas Turbine Conference (IGTC) in Brussels.

The AGM included site visits to Northern Lights Project and Technology Centre Mongstad, as well as the launch of the new CCUS Working Group, while the 12th IGTC saw over 200 delegates from across 25 countries, highlighting latest technology innovations, showcasing the market dynamics as well as policy perspectives through keynotes and 20 peer-reviewed technical papers.

These achievements reflect our members' shared commitment to collaboration. Together, we are ensuring that carbon-neutral energy solutions remain secure, cost-effective, and reliable throughout the energy transition and beyond.

The focus for 2026 will be on implementing priority actions from user meetings, advancing R&D recommendations, progressing activities across the Working Groups as well as government- and industry-funded projects, and continuing with the webinar series on Supercritical CO_2, profitability of thermal assets and carbon capture and storage.

To download the full annual letter from ETN Global's President and Managing Director, visit the following page (login required). ■

ETN Global to moderate a decarbonisation panel at GPPS Forum 2026

GPPS Energy & Aviation Forum 2026 titled "Geopolitical Changes & Evolving Priorities: Challenges, opportunities and focus for power and propulsion" will take place on 14-15 January in Zurich, Switzerland. The event brings together leaders from industry, academia, policy, and finance, offering a valuable platform for insight and collaboration.

About Global Power and Propulsion Society (GPPS)

GPPS is a volunteer-led global community of professionals who share a common interest in energy, particularly in power generation and aeronautical propulsion. Its mission is to foster an environment that enables meaningful interaction among stakeholders from the business, scientific, technological, and policy sectors, supporting the transformation of our societal infrastructure.

To advance this mission, the society provides a neutral forum for professionals to meet, exchange knowledge, and publish their latest ideas and results across all aspects of power and propulsion. In an era marked by globalisation, rapid technological shifts, and the ongoing energy transition, such open dialogue has become more critical than ever.

GPPS Forum 2026

This year's forum will explore how the global dynamics, including heightened uncertainty and growing demands for competitiveness, resilience, and sovereignty, are influencing existing net-zero strategies and reshaping the strategic landscape for the power and propulsion community.

ETN Global's involvement

ETN Global's Managing Director Christer Björkqvist will moderate a key session titled *"Turbomachinery for Decarbonisation"* on 15 January from 12:00-13:20 (CET). The panel will bring together leading industry experts:

- Federico Bonzani (Ansaldo Energia)
- Christopher Johnston (PSM)
- Khawar Syed (Crosstown H2R)

The discussion will explore how turbomachinery technologies can support the transition to cleaner, more efficient energy systems. Topics will include pathways for reducing emissions, the role of fuel flexibility and how advancements in gas turbine design can contribute to meeting long-term climate and energy security goals.

If you are attending GPPS Forum 2026, join us at the session and feel free to send a message to Christer Björkqvist to connect.

For more information, registration and the agenda, visit the GPPS Forum 2026 website. ■

Interview with ASTERIx-CAESar project partners: Fritz Zaversky (CENER) and Ricardo Conceição (IMDEA Energy)

Figure 6: Ricardo Conceição (IMDEA Energy)

Figure 7: Fritz Zaversky (CENER)

Which type of solar receiver does the ASTERIx-CAESar project develop?

Fritz: The ASTERIx-CAESar project develops a volumetric air solar receiver that is designed to heat ambient air to high temperature (up to about 800 °C). The working principle is very simple and can be compared to a hairdryer. A highly porous ceramic material is heated by concentrated solar radiation. The concentration of the sunlight is reached by focusing many mirrors on a very small spot, the location of the receiver aperture. At the same time, the heated ceramic material is cooled by ambient air that is forced through the fine pores of the material (see Figure 8a below). In this way, the ambient air is heated to very high temperatures. The ASTERIx-CAESar project applies ceramic foam as solar absorber material (developed by Fraunhofer IKTS) and a highly resistant ceramic composite material (developed by Walter Pritzkow Spezialkeramik) as absorber holding and air flow guiding element (a so-called "cup" as shown in Figure 9b and Figure 10c below). The ASTERIx-CAESar receiver can be up-scaled in a simple manner and is suitable for renewable heat supply up to about 800 °C, from kW to MW scale. The application ranges from process heat supply to power generation.

What is the objective of the experimental campaign at the solar tower at IMDEA in Madrid?

Fritz: The objective is to test the solar receiver module with an aperture area of 25 x 25 cm (see Figure 10c) under high fluxes at a thermal power between 20 and 50 kW. The aim is to characterize its performance and to anticipate ceramic absorber lifetime. At high temperature, oxidation resistance is an important parameter, and we need to test the receiver during sufficient operating hours at small scale, before building a larger unit.

What is the solar facility at IMDEA and how does it operate?

Ricardo: The solar facility at IMDEA, Figure 11d, named Very High Concentration Solar Tower (VHCST), is a unique facility offering a testing environment for components and devices under extremely high solar fluxes. It features a customized heliostat field which employs the latest advancements in small-sized heliostats and a tower with a reduced optical height of 18 meters to minimize visual impact. The heliostat field, with a capacity of 250 kWth and a reflective surface area of 500 m², consists of 169 small heliostats (1.9 m x 1.6 m). When all heliostats are aligned, it achieves a specified flux above 2500 kW/m² for at least 50 kW with an aperture of 16 cm, and a peak flux of 3000 kW/m². The solar field is easily operated through a dedicated SCADA system.

What are the difficulties encountered at the experimental test facility?

Ricardo: In general, the adaptation of the solar tower facility to allocate the test bench with the solar receiver and designing a suitable experiment to ensure stable operation, are the most important challenges we faced in this experimentation. Thus, the VHCST has been adapted to the experimental requirements of ASTERIx-CAESar and enlarged its operation capabilities and flexibility. Additionally, a new 100 kW cooling system able to reject the thermal heat in the ASTERIx-CAESar receiver testing was installed. Specific works were made to ensure the proper integration of the solar receiver into the thermal shielding of the solar tower. Regarding the experimentation, the greatest difficulty is surely the solar field control to maintain a homogenous flux distribution onto the receiver aperture along the experiments. Indeed, this issue is part of the research activities addressed in our work package.

What are the next development steps?

Fritz: The next step will be the design and manufacturing of a larger receiver with a thermal power between 300 and 400 kW. These tests will be performed at an experimental facility in the south of Spain (CIEMAT-PSA). The testing is foreseen to start at the end of 2026. In parallel, the upscaling of the receiver design is being addressed, finding the most cost-effective solution for MW-scale high-temperature heat supply.

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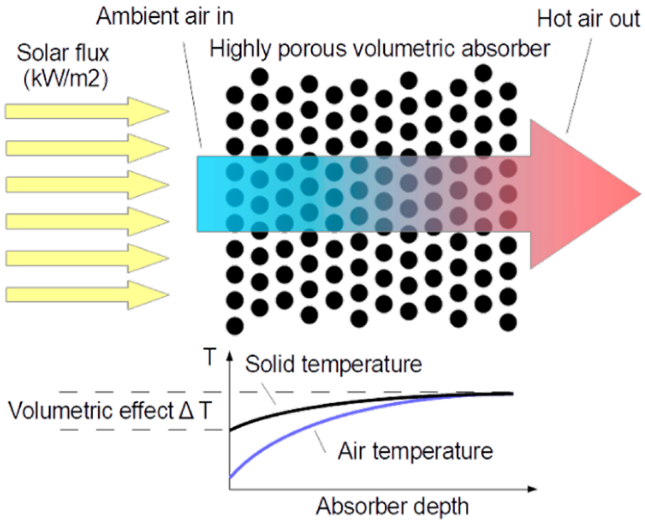

Figure 8a

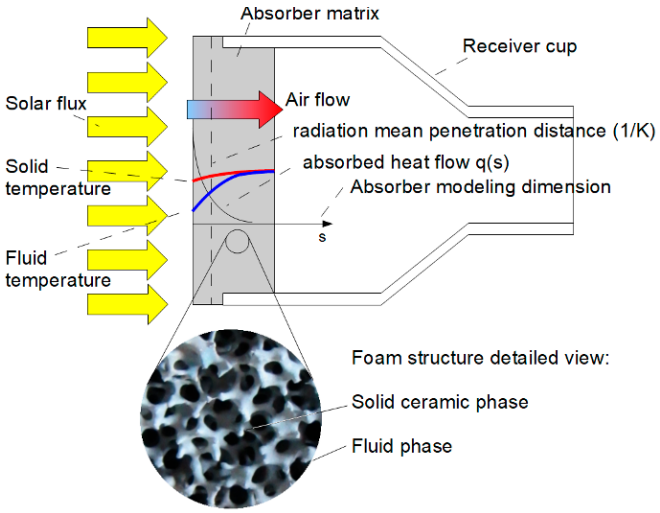

Figure 9b

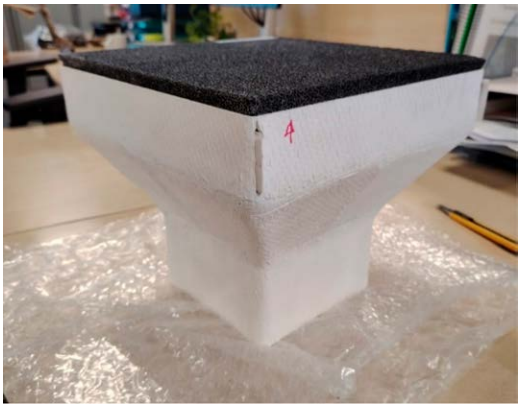

Figure 10c

Figure 11d

This project has received funding from the European Commission – Horizon Europe programme under grant agreement No 101122231.

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This project has also received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI).

Learn more about the project and receive updates on:
https://asterix-caesar.eu

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ETN Global contributing to Implementation Plans for SET Plan Action 6 on Energy Efficiency in Industry

ETN Global has been actively contributing to the European Union's efforts to enhance energy efficiency and promote sustainable energy sourcing in industry through our involvement in the revision of the Strategic Energy Technology (SET) Plan Implementation Plans for Sustainable and Efficient Energy Use in Industry (SET Ind-EU).

Together with EUTurbines, ETN Global serves as Activity Leader for "Heat and Cold", one of the focus areas under SET Ind-EU. The aim of this activity is to align Implementation Plans with the current EU policy framework by evaluating ongoing activities, updating objectives, and introducing new priorities.

The "Heat and Cold" activity addresses crucial challenges such as thermal energy upgrades, waste heat to power and waste heat recovery, waste and renewable heat to cold generation, and polygeneration. These solutions are vital for reducing energy consumption, cutting emissions, and enabling carbon-neutral industrial processes.

ETN Global and EUTurbines are currently working on a draft, which will outline updated targets, barriers, and pathways for technology development. ■

ETN Global to strengthen gas user representation in EN 16726 "Gas infrastructure – quality of gas-group H" standard development

ETN Global is stepping up to represent the perspective of gas users in the ongoing revision of EN 16726: Gas Infrastructure – Quality of Gas – Group H, a European standard developed under CEN (European Committee for Standardization).

The CEN/TC 234 Working Group 11 is currently considering the inclusion of a maximum rate of change of (RoC) of Wobbe index (WI) for any supplied gas in the standard EN 16726. It is a difficult task to define an acceptable RoC since both the magnitude of the change and the timescale over which it takes place, are very important in determining whether an adverse consequence may occur.

To address this ETN Global has developed an approach where an appropriate RoC limit is defined, based on the known limitations of gas turbine combustion systems. It has been noted that the allowable RoC will vary significantly across gas turbine types and may even vary greatly within a fleet of the same nominal gas turbine design. Therefore, the approach has been to provide a sensible, but conservative, approximation of where the limit is likely to be in practice ensuring that the operational realities and technical challenges faced by end-users are fully considered.

The documented approach, derived from recent technical exchanges between gas turbine users and Original Equipment Manufacturers, now serve as a formal position on the issue.

Stuart James from Uniper Technologies Limited will represent ETN Global in WG11, bringing forward the ETN Global's consolidated view in shaping the standard.

With this initiative, ETN Global aims to ensure that critical industry perspectives are included in European standardisation processes. ■

ETN Global's upcoming meetings and events

Preliminary list of meetings/events*	Date	Location
Frame 5, 6B, 7E & 9E User Group Meeting	17-19 February 2026	Ludwigshafen, Germany, hosted by BASF
Annual General Meeting & Workshop	23-25 March 2026	Malmö, Sweden, co-hosted by Uniper
LM2500 User Group Meeting	9-11 June 2026	Stavanger, Norway, hosted by Aker BP
High-Level User Meeting	12 October 2026	Siena, Italy
October Workshop	12-14 October 2026	Siena, Italy, hosted by Sesta Lab
SGT-A35 User Group Meeting	November (exact date TBC)	TBC

* *For the full list of ETN Global-led & other international 2026 meetings & events, visit our event page on the website.*

ETN Global Team

Christer Björkqvist
Managing Director

Rene Vijgen
Senior Technical Manager

Viktorija Charbagi
Communications Manager

Jitka Špolcová
Project Officer

Nicolò Cairo
Project Officer

Giuseppe Tilocca
Technical Lead

Jayne Koki
Financial and Administrative Officer

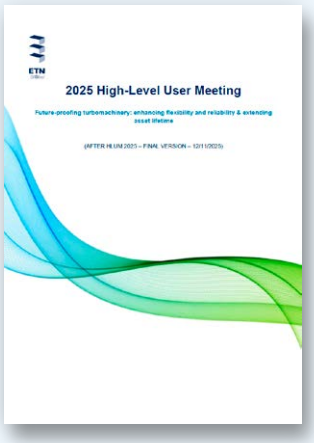
Antonio Escamilla Perejon
Client Relationship Manager

ETN Global at a glance

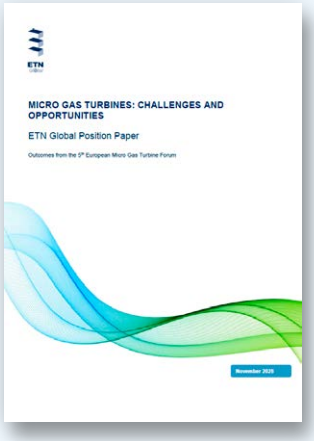
Download our latest publications:

Laser Powder Bed Fusion (LPBF) Machine Evaluation Initiative

Executive Report of the High-Level User Meeting (HLUM) 2025



Micro Gas Turbines: Challenges and Opportunities



Contact details

ETN Global a.i.s.b.l.
Chaussée de Charleroi 146-148/20
1060 Brussels, Belgium
Tel: +32 (0)2 646 15 77
info@etn.global
www.etn.global