International Conference and Exhibition

**HYDRO 2024**

Secure technology for turbulent times

Messe Congress Graz (MCG), Austria
18 to 20 November 2024

Organized by: 

Local partners: 

Supporting organizations include:

Industry sponsors include:

Regular updates will be posted on our website and published in *Hydropower & Dams*

Email: Hydro2024@hydropower-dams.com

www.hydropower-dams.com
AUSTRIA WELCOMES HYDRO 2024
Austria has a long hydropower heritage, and more than half (about 60 per cent) of the country’s electricity comes from hydro. There is nearly 15 GW of hydro capacity in operation, and Austria is Europe’s most active country for pumped storage, with four new pumped-storage plants under construction, including Limberg III which will be visited on one of the post-Conference tours. Several more pumped-storage projects are planned, including Kaunertal (1015 MW) in the Tyrol, and Ebensee (170 MW) in Upper Austria.

Construction of small and medium-scale run-of-river schemes is meanwhile continuing, and Verbund is also focusing on upgrading and repowering existing plants, as well as testing new storage technologies.

GRAZ AS HOST CITY
Graz, the capital of Styria, Austria, is the largest city in the province, which is a green and heavily forested region on the eastern edge of the Alps. It is located in the Graz Basin, surrounded by mountains and hills to the north, east and west.

At the heart of its old town is Hauptplatz, the medieval main square. The narrow surrounding streets blend Renaissance and baroque architecture. A funicular leads up Schlossberg, and the Uhrturm, a centuries-old clock tower.

Across the River Mur, the futuristic Kunsthaus Graz exhibits contemporary art (all these will be visited during the excursion on Sunday 17 November).

Graz is a vibrant university town. Many experts from the world-renowned TU Graz are frequent contributors to the HYDRO conference programmes each year, and will have much to present this time, including a possible visit to the hydraulic laboratory at the University on the evening of Tuesday 19 November.

THE EVENT FORMAT
The conference aims to bring together around 1200 international delegates from at least 75 countries to discuss all topical aspects of hydropower, dam engineering and pumped-storage development. Speakers will address potential and prospects, challenges of the energy transition, new technology, safety and risk, project finance and environmental issues, in 30 technical sessions.

Messe Congress Graz (MCG) is a modern, state-of-the-art conference and exhibition centre in the middle of town, within walking distance of most of the selected conference hotels.

A major technical exhibition will be held alongside the conference, and there will be plenty of networking opportunities for exhibitors to make new contacts among the delegates from all parts of the world.

TRAVELLING TO AND AROUND GRAZ
Graz airport connects with 11 countries, as well as many Austrian cities, including the capital Vienna (flying time of 1 hour), and Munich, Germany. For those flying in to the major international airport in Vienna, there are two convenient options to reach Graz:

Inter-city train: There are regular train services from Vienna Airport to Graz, which take approximately 3 hours. The journey is scenic, providing views of picturesque landscapes.

Approximate price: € 40

Bus: Another option is to take a Flixbus. This service is convenient and economical, providing a good alternative for those who prefer road travel.

https://www.flixbus.co.uk/bus-routes/vienna-graz
Approximate price: € 25

Local transport in Graz: HYDRO 2024 delegates will be entitled to purchase discounted local transport tickets (€10, which is about 30 per cent of the regular price) via the registration site.
Pre-Conference Events on Sunday 17 November

• Workshop on fish protection at hydropower plants
  Led by Prof Markus Aufleger, University of Innsbruck, Austria
  This half-day workshop will address technical measures to improve fish protection and ensure safe fish passage from the area upstream of hydropower plants to the area downstream. Various typical intake situations at hydropower plants will be discussed, highlighting the different available technical solutions, their advantages, and disadvantages.
  The workshop will target hydropower plant operators, engineering firms, and regulatory authorities. It will also include contributions from developers and researchers in the field.

• Seminar on pumped storage
  Led by Dr Miroslav Marenc, IHE-Delft, Netherlands, and Anton Schleiss, Emeritus Professor, EPFL, Switzerland
  As more intermittent renewable sources of energy come on line, the role and benefits of pumped storage are becoming increasingly important worldwide. Around 40 countries now have pumped-storage schemes under construction or planned, and there are varying degrees of experience worldwide. While pump-turbine technology is advancing rapidly, innovative approaches are also being adopted for project layouts and civil works, such as the repurposing of disused mines, a pilot scheme for underground pumped hydro, and the use of seawater, for example. Experts will present talks and encourage discussion on all these topics during this full-day event.

• Seminar on building information modelling (BIM)
  Led by international consultants and software specialists
  Applications of BIM now encompass numerous aspects of hydro plant planning, site investigations, design, construction, operation, maintenance, safety and lifecycle management. To maximise knowledge and understanding of the role this technology will play in advancing hydro developments of the future, this seminar will comprise lectures and interactive panel discussions on key industry topics. Knowledge-sharing among international experts will be encouraged, on the successes and challenges of implementing BIM.

• Training workshop on small hydro
  Led by Vincent Denis, MyHyLab, Switzerland and Pierre Duffon, Andritz Hydro, France
  The full day Small Hydro Workshop will see some changes this year. While the objective of providing the technical bases for the evaluation and realization of small hydro plants remains the same, new presenters from the industry and of the consulting worlds will extend the field of applications to small pumped storage, to the hybridization of energy production with other renewable and intermittent sources plus batteries, and to the stabilization of small networks. A reminder of the basics of hydraulics and its classic applications, illustrated with numerous examples, will lead participants towards applications complementary to the sole production of energy. Participation will be encouraged with some group exercises.
**HALF-DAY CITY EXCURSION WITH LUNCH**

To provide an opportunity for all international participants to have a chance to learn about the rich history and vibrant culture of Graz, as usual we have organized a city excursion, which will be on Sunday 17 November.

There will be time to register for the conference before joining the tour at 11.00 hrs, and participants can be back in good time for any evening meetings or activities.

This will begin with a guided walking tour (or coach tour in the event of bad weather), and a chance to view the traditional architecture of the old town, and to visit to the famous Schlossberg (castle). Graz has been awarded UNESCO World Heritage status. Many historical buildings have been meticulously renovated, to make them accessible to the public. There will be a coffee stop at the Murinsel restaurant (on the river), and lunch will be taken together.

The afternoon will conclude with entrance to the modern Kunsthaus Graz, known locally as the ‘friendly alien’ because of its appearance, see below, which is in stark contrast to its traditional surroundings. Its design and construction was part of the 2003 European Capital of Culture celebrations.

Delegates may opt to leave the tour there, and spend time at leisure viewing the paintings, or return as a group to the Congress Centre.

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**CONFERENCE PROGRAMME OVERVIEW**

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<th>Monday 18 November</th>
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<td>Opening Plenary Session</td>
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<td>Session 10: Africa: Potential and plans</td>
<td>Session 22: IEA work programmes</td>
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<td>Welcome to the Conference and Opening Addresses</td>
<td>Welcome to the Conference and Opening Addresses</td>
<td>Session 11: Artificial intelligence - I</td>
<td>Session 23: Fish protection</td>
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<td>(Aqua~Media, ICOLD, IEA, Verbund, ATCOLD,...)</td>
<td>(Aqua~Media, ICOLD, IEA, Verbund, ATCOLD,...)</td>
<td>Session 12: Safety of dams and hydro plants</td>
<td>Session 24: Operation, maintenance, upgrades</td>
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<td>Small Hydro Workshop</td>
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<td>Departure of cultural excursion in Graz with lunch</td>
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<td>BIM Seminar</td>
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<td><strong>Session 16: Pumped storage - II</strong></td>
<td><strong>Closing Plenary Session</strong></td>
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<td>Meeting of Chairpersons</td>
<td>Meeting of Chairpersons</td>
<td>Session 17: The EU iAMP initiative (hydropower digitization)</td>
<td>Key outcomes from the sessions</td>
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<td><strong>19.45 hrs</strong></td>
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<td>Session 18: Spillways, gates and valves</td>
<td>Welcome to HYDRO 2025 and ICOLD 2025</td>
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<td>Briefing for Chairpersons and Speakers (Room 15, MCG)</td>
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<td><strong>20.15 hrs</strong></td>
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<td><strong>Session 19: Pumped storage - III</strong></td>
<td>HYDRO 2024 Closing Dinner</td>
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<td>Reception for Chairpersons and Speakers (Seifenfabrik, a historical building in Graz, formerly a soap factory)</td>
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<td>Session 20: Climate, hydrology and floods</td>
<td>Messe Congress Graz (transformed from its daytime use!)</td>
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<td><strong>22.15 hrs</strong></td>
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<td>Session 21: Tunnels and underground caverns</td>
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Session 1: FPV and hybrid projects

Chairpersons: Luc Deroo, ISL, France; Dr K. Laksiri, CEB, Sri Lanka

- An economic model for revenues of the joint operations of Génissiat hydro plant and a battery - G. Boucher and F. Grand Perret, SuperGrid, France; V. Piron and B. Graff, CNEF, France
- Designing a floating solar powerplant: Analysing historical reservoir data for safe mooring and site selection - R. Suarez Barrera, Multiconsult, UK
- Evaluation of a hybrid PSP, PV and BESS system concept - Dr S. Kadam and T. Eiper, Andritz Hydro GmbH, Austria
- Solar-hydro hybrid optimisation studies to improve dry season generation in Liberia - B. Hakin, T. C. Yaney, Liberia Electricity Corporation Project Implementation Unit (PIU), Liberia; S. Lacava, Artea Group, France; M. Lacev, WestGen Consult, UK
- Real application on a pumped storage plant of a static frequency converter and BESS - D. Etxebarrieta, Ingeteam, Spain

Session 2: Hydraulic machinery - I

Chairperson: Prof Cécile Munch-Alligné, HES/SO, Switzerland

- A comparative analysis of the vibration behaviour of tilt-pad and spring-pad bearings in hydropower turbines - S. Kandukuri, V. Shambhag and R. Schlanbusch, NOKRE Norwegian Research Centre AS; Grande Olimstad, Å Energii AS, Norway
- Coupling monitoring of vibrations and dynamic efforts in hydro turbine operating rings for sustainability and performance of hydroelectricity - J. Cavalier, A. Araracz, F. Hars, O. Mousseff and P. Maruzewski, ED Hyrdo, France
- Non-intrusive monitoring of erosive cavitation - C. Badina, O. Ernst, P. Maruzewski, EDT/G, France; C. Ioana, GPSA LAB; R. Fortes-Patela, LEGI, France
- Customized design optimization of a Francis turbine with massive erosion damage: Development of a high-load and part-load runner - J. Schiffer and H. Jaberg, Jaberg & Partner GmbH; H. Benigni, University of Technology Graz, Austria; R. Pirschl and I. Giersseh, Kochendorfer Hydro, Germany
- GrVision monitoring and quantifying the cavitation level in hydroelectric plant components - O. Pacot, P. Roduit, D. Wannier, and C. Munch-Alligné, HES-SO Valais/Wallis, Switzerland; S. Stojanovic-Roth and L. Mayencourt Hydro Exploitation SA, Switzerland; S. Cosandey, HES-SO Valais/Wallis and Hydro Exploitation, Switzerland
- Towards enhanced hydropower efficiency: Embly-based analysis of flow losses in the Asomata powerplant’s Francis unit - Dr. I.E. Ohiemi and A. McNabola, Trinity College Dublin, Ireland
- Enhancing hydropower efficiency and safety: Lessons from global projects - R.D. Aftab and T. Pendrey, Stantec, UK; R. Israelsen, Stantec, USA

Session 3: Civil engineering design and upgrades

Chairperson: Michael Rogers, Stantec, USA and Hon President, ICOLD

- Mitigating the Champagne effect: A novel intake structure design for advanced-CAES energy storage in Australia - Robert Klay, I. Moro-Robles and R. Fritzler, IF El Consulting Engineers Austria GmbH; D. Brown and A. McGillis, HYDROSTOR, Canada
- The Masinga dam heightening project on the Tana river, Kenya - M.-L. Petitpaine, S. Shaiak and X. Mayou, ISL, France; S. Epicum, Université de Liège, Belgium; W. Ochieng, KenGen PLC, Kenya
- Increasing storage capacity at the Sans Souci dam in Mauritius - F. Del Rey, Hydroplus, France; S. Mazarid, ISL, France
- Automatic tailwater regulation for increasing head in low to medium head hydropower plants - E. Mazzocchi and S. Sayah, Lombardi Consultants, Switzerland; M.R. Camarena, Hydro PowerPlus International, Canada
- Special concrete for highly corroded areas in hydraulic structures - D. Niepmann, Imerys Murg GmbH, Germany; A. Abouelela, Imerys, France; C. Dowds, Imerys, UK

Session 4: Panel - Financing hydropower development

Chairperson: Luciano Canale, European Investment Bank, Luxembourg

- Challenges in financing hydropower: The EIB lending approach - L. Canale, EIB, Luxembourg
- A panel discussion will follow on the financing of both greenfield schemes and upgrades. The focus will be on innovative financing approaches. The panel of speakers will represent key players in hydropower financing, including public and private lenders, industrial sponsors, transaction advisors, corporate financiers, and experts in financial security (risk guarantees).

Session 5: Hydraulic machinery II

Chairperson: Daniel Paschini, EDF, Peru

- Experimental lab investigation of hydroabrasion damage in a Pelton turbine bucket-base - F. Fahimi, T. Staubli, E. Casartelli, Lucerne University of Applied Sciences and Arts, Switzerland
- Stegenwald hydropower plant: A classical vertical Kaplan turbine with concrete half spiral in horizontal arrangement with straight draft tube - H. Benigni, TU Graz; J. Schiffer, Jaberg & Partner GmbH; G. Penninger and H. Badura, Verund Hydro Power GmbH; C. Witt and M. Pühninger, Global Hydro Energy GmbH, Austria
- Innovative applications of hydro turbines in existing infrastructures: Bridging sustainable energy solutions with advanced material technology - F. Altendorfer and S. Gugler, Gugler Water Turbines GmbH, Austria
- Augmenting hydropower digitalization with optimum sensors for turbine condition monitoring - B. Paudel and A. McNabola, Trinity College Dublin, Ireland; B. Maheshwari and M. Crespo Chacon, Easy Hydro Solutions Ltd, Ireland
- Innovative PID governor upgrade for reaching SFC regulation stability at the Alpaslan plant - D. Dolenc, B. Yilmaz, F. Koc and M. Demir, Türkiye Elektromekanik Sanayi A.S., (Temsa), Türkiye; J. Schiffer, Jaberg & Partner GmbH; H. Benigni, TU Graz, Austria
- Revolutionizing low-head hydropower: The promise of turbulent vortex turbines - S.A. Legesse, W.J. Buydens, and L. Berben, Turbulent Hydro NV, Belgium; M.A. Marence, IHE-Delft, The Netherlands
- Hydraulic imbalance and blade crack detection in a 32 MW horizontal Francis turbine supported by ISO 13373 - E. Lima, T. Kleis, R. Matos, E. Ancini, T. Matsuo and M. Nishikata, AQTech Power Prognostics, Brazil

Session 6: Panel - Financing hydropower development

Chairperson: Dr Gerald Zenz, TU Graz, Austria, and President, ATCOLD

- Applications of geomechanics in the heightening of dams - G. Vaschetti, V. Verdel, and M. Scarella - Carpi Tech, Switzerland
- Forming on the limits - J. Haas, Doka GmbH, Austria
- Diaphragm walls, both as seepage barrier and for protection of the spillway at Montegrande dam (Dominican Republic) - M. Ballsworth, J. Sobring, Bauer Spezialtiefbau GmbH, Germany; B. Luz, Bauer Foundations Corp., USA
- InSAR: Monitoring individual dams and clusters of reservoirs: The cases of Leval (Italy) and Fragant valley (Austria) - S.R. Preece, TRE Altamira, Italy
- SITCOM: a tool for predicting the behaviour of hydraulic structures - J-B Guaus, and M. Scarella - Carpi Tech, Switzerland

Session 7: Contractual and legal aspects

Chairperson: Peter J. Rae, Consultant, Canada

- Future trends in hydropower project structuring, the relative merits of different contractual arrangements, and legal aspects, will be among the topics to be addressed by international experts in the profession. Presentations will include:
**CONFERENCE SESSIONS**

- Risk management and mitigation for IPPs in long-term hydropower construction projects under the BOO model - A. López Ortiz and J. Ahmad, Mayer Brown International LLP, UK
- Legal and institutional aspects for hydropower development in Nepal - G.P. Kayastha, Chilime Engineering and Services Co Ltd; S.P. Shrestha, Laxmi Shrestha & Co (Pvt) Ltd, Nepal
- (Other papers to be announced shortly)

**Session 8: Pumped storage - 1**

**Chairperson: Josef Mayrhuber, Verbund, Austria**

- The Limberg III project in Austria - T. Etzer, Verbund; H. Eichiner, AFRY; P. Ganeider, ARGE PZW Limberg III, Austria
- Loch Kemp storage, a new 600 MW pumped storage hydro on the shores of Loch Ness, Scotland - T. Clegg, Fichtner, UK; B. Stabel, Fichtner, Germany
- Feasibility study and business model for the Mujib pumped-storage scheme in Jordan - R. Fritzler and J. Bliem, ILF Consulting Engineers Austria GmbH, Austria; L. Qoaider, H. Sa‘deh, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Jordan
- Enabling pumped storage at an existing 60 MW power station in Spain - C. Herrera Prada, Iberdrola Renovables, Spain; B. Nennemann, Andritz Hydro Canada Inc, Canada
- Extension of the Kruonis pumped-storage plant - B.M. Wilczek, Fichtner GmbH & Co KG; E. Martinaitis, AB Ignitis Gambyt, Lithuania
- Pumped-storage solutions for small hydropower - M. Schober, Gugler Water Turbines GmbH, Austria
- Application of digital governors in reversible hydro plants: Challenges faced in the field - C. Bühler, S. Pellegrini; A. Alves Jr, and M.A. Ferreira, Reivax S/A, Switzerland

**Session 9: Sustainable dams**

**Co-Chairs: Dr Malcom Dunstan, MD&A, UK; and Marco Conrad, AFRY, Switzerland**

ICOLD’s Technical Committee T (Prospective and new challenges for dams and reservoirs in the 21 Century) has been tasked to develop an initiative focused on ‘sustainable dams’. This work integrates inputs and coordination with other relevant Technical Committees of ICOLD including the ongoing work of Technical Committee D (Concrete dams). One of the goals is to draw the attention of dam engineers to the analysis and assessment of the sustainability of dams in their full life cycle, taking into consideration the three basic domains: environmental, social and economic. This session, led by members of the various Technical Committees and by selected external experts, will report on key findings identified so far and ongoing plans for further work ahead.

**Tuesday 19 November - Morning**

**Session 10: Africa**

**Co-Chairs: Michael Abebe, Consultant, Ethiopia; F. Coelho da Rocha e Silva, REN, Mozambique**

The session will provide a discussion and update on the potential, plans, and current schemes underway throughout the African continent, including Ethiopia, Uganda, Nigeria, Mozambique, Cameroon, Liberia and others. All presentations will be announced shortly, and will include:
- Overview of Ethiopia’s current developments and plans - M. Abebe, Consultant, Ethiopia
- Optimisation study for the development of the hydroelectric potential of the Sanaga basin in Cameroon - Dr T. Nsonga, A. Simplice Tova, G. Sipezou Simo, J. Chamberlain Mbagwa, Electricity Development Corporation (EDC), Cameroon; A. De Bonvill, DSL Ingénierie, France
- Assessment of the generation deficit of Cameroon’s power sector: Contribution from additional hydro or solar capacity - J. Kenfack, SolarHydrowatt Sarl; L. Djoumessi Sonhafoua, ENED and A. Boubu Dumarou, ARSEL, Cameroon

**Session 11: The roles of artificial intelligence - BIM**

**Chairperson: Pravin Karki, World Bank**

- Integrated BIM design for the construction phase at the Limberg III pumped-storage plant in Austria - M. Lang, Tractebel Engineering GmbH, Germany
- BIM for the future: The case of Snowy 2.0 - N. Kostraby, Snowy Hydro Ltd, Australia
- BIM Power of data: The real added value - S. Oettinghaus, Tractebel Engineering GmbH, Germany
- BIM, and BIM in hydropower: From a revolutionary tool to every-day use - C. Lowton, D. Viera, J. Stephen Riley, M. Leite Ribeiro, Gruner Stucky Ltd, Switzerland
- Leveraging BIM for the upper reservoir at the Hattang pumped-storage plant - A. Bauer, F. Moosbrgger, S. Krstic-Peric, C. Seidl and M. Smesnick, AFRY, Austria

**Session 12: Dam safety**

**Chairperson: Michel Lino, President of ICOLD and ISL, France**

- The Mtkvari hydropower project in Georgia: Dam safety upgrade of a project under execution - M. Akhat, S. Micheloud, G. Negrinelli, M.P. Bieri, L. Gaillard, and T. Kopadze, Gruner Stucky SA, Switzerland
- Dam safety management at Bakun hydro plant in Sarawak, Malaysia - Ting Yew Wong, Jonathan Tong Kung Yew, Sarawak Energy Berhad, Malaysia
- Instrumentation of the Kayaburi hydro plant for safety evaluation - Bhak Rabbamrung, Sippawut Tavanaranun and Dr M. Rauder, CK Power Public Company Ltd, Thailand
- Advancing dam and powerplant safety - T. Deprez and M. Simis, Ecosoost, UAE and UK
- Improving underwater dam safety through waterproofing and strengthening of masonry and concrete dam - R. Pandey and Soumyadip Pramanik, Dynasore Concrete Treatment Pvt Ltd, India
- Dam monitoring and dispatch centre for hydro power plants on the Drin river in Albania - K. Vidojak and B. Pavlovic, Koncar Engineering Ltd., Croatia; F. Bundo, Korporata Elektroenergjitike Shqiptare “Elektroenergji Shqiptare”, Albania

**Session 13: Cross border and regional projects**

**Chairperson: Jean-Michel Deverny, Consultant, France**

An increasing number of transboundary schemes, especially in Asia and Africa, are bringing huge economic benefits to countries, as well as boosting regional development based on the use of clean renewable energy. Presentations from several parts of the world will look at complexities which may arise, success stories which result from cross-border schemes, and dam safety issues.

- ICOLD’s contribution to transboundary dam safety management - M. Lino, President, ICOLD, and ISL, France
- Harnessing Nepal’s hydropower potential: A catalyst for cross-border energy collaboration in South Asia - A. Nepal, USAID Urja Nepal Program, Nepal
- Benefits of the Angololo cross-border multipurpose scheme (Uganda/Kenya) - (presenter to be announced), NELSAP/NBI, Ethiopia

**Session 14: The roles of artificial intelligence - digital twins**

**Chairperson: (to be announced)**

- Advances in deep learning for fluid mechanics for predicting complex water flow phenomena in water structures - M. Takač, M. Muzelak, M. Ružička and F. Adjализi, DimensionLab s.r.o, Slovakia; P. Breza, RFB s.r.o, Slovakia; B. Kršák, Technical University of Košice, Slovakia
- Developing an advanced machine learning framework for predictive maintenance in hydropower plants: Targeting mechanical equipment failures - B. Maheshwari and M. Crespo Chacon, Easy Hydro Solutions Ltd; B. Paudel and A. McNabola, Trinity College Dublin, Ireland
- Novel digital twin framework for determining design flows for dam safety - K. Foster, DHI AB, Sweden
CONFERENCE SESSIONS

Session 21: Tunnels and tunnelling
Co-Chairs: Dean Brox, Consultant, Canada; H. Irfan Aker, Dolsar Engineering, Turkey

- Optimization of underground powerhouse (caverns) for pumped-storage projects - J. Mayrhuber, G. Penninger, E. Wagner, C. Rieder and K. Zikulning, Verbund Hydro Power GmbH, Austria
- Behaviour and the development of potential failure modes for existing hydro electric rock tunnels constructed in seismically active regions - A. I. Bayliess, Stantec, Canada
- Coupled transient stress-seepage analysis of shotcrete-lined hydrotechnical tunnel - M. Maurice, H.E. Delft, The Netherlands
- Key principles for the planning, design, construction, operations, and inspection of hydropower tunnels: 2024 update from lessons learned in the industry - D. Brox, Dean Brox Consulting Ltd, Canada
- The plugging of Ituango’s right diversion tunnel: An innovative solution for an unprecedented problem - N. A. Londoño, G. J. Lacouture, Integral SA, Colombia

Wednesday 20 November - Morning

Session 22: IEA session
Co-Chairs: Alex Becktitt, Hydro Tasmania and Interim Chair, IEA Hydro; and Klaus Jorde, ExCo Secretary, IEA Hydro

The session will include an update on current IEA Hydro activities, and priorities in the current work programme. After an overview of IEA’s perspective on global hydropower prospects, there will be presentations on some of the specific tasks of IEA working groups, for example on various environmental topics, the development of large catchment areas, and innovative approaches to hydro developments and upgrades. Details of the speakers and presentation titles will be announced shortly. Contributions will include input from Norway and China.

Session 23: Fish protection
Chairperson: Dr Markus Auflerger, University of Innsbruck, Austria

- Fish protection and guidance at hydropower intakes with novel curved bar rack-bypass systems: lessons learnt from two Swiss curved bar experiments - I. Albayrak, D. F. Vetach, R. Boes, VAW, ETH Zurich, Switzerland; C. Leuch, Hunziker, Zarn and Partner AG, Arau, Switzerland
- How to model the transport of total dissolved gas downstream of hydropower outlets - S. Sabil, M. Caroll, H. Sundt, SINTEF Energy Research; M. Szobó-Mészáros, Budapest University of Technology and Economics, Hungary
- Comparative study of fish passage conditions via test rig experiments: Propeller versus double-regulated Kaplan turbines - P. Romero-Gomez, R. Peyreder, Andritz Hydro GmbH, Austria; and Z.D. Deng, Pacific Northwest Nat. Laboratory, USA
- Innovative electric fish barriers: concepts and examples of application - B. Brinkmeier, HyFish GmbH, Austria; and Prof M. Auflerger, University of Innsbruck, Austria
- Meeting results and operational experience of the new fish pass ‘Fishcon lock’ - B. Mayrhofer, Fishcon GmbH, Austria
- Innovative design of stilling basins downstream of dams and hydropower outlets considering fish protection - S. Malek, Bechtel, Australia; V. Fioratto, Formerly, University of Trieste, Italy

Session 24: Operation, maintenance and upgrades
Co-Chairs: Laurent Mouvet, Consultant, Switzerland Dr Herfried Harreiter, Verbund, Austria

- Obturation solutions for dry works on underwater installations - M. Leon, Hydrakar, France
- Oneflow: a condition monitoring system for hydropower plant equipment based on vibration, acoustics, and AI - E. Lima, T. Kleis, R. Matos, Emerson Ancini, T. Matsuo and Marcos Nishio, AQTech Power Prognostics, Brazil
- Underwater works and saturation diving are a real, proven and effective method for the maintenance, rehabilitation and securing of dams and hydro power electric plants - D. Caldérén Villelaq, V. van Oosterhout, A. Van der Pennen, A. Arrubla, J. Rodriguez and N. Van Rooyen, DCN Diving, Colombia
- Increasing perception of ROV’s with optical sensors for dam inspection applications - R. Giles, Voyis Imaging, Canada
- Digitalisation of existing hydropower plants for predictive maintenance and improved efficiency, life-time and cost-effectiveness - M. Janiszewicz and A. McNabola, Trinity College Dublin, Ireland
- Implementation of optimal load distribution system at the Santo Antônio hydropower plant: Development and results - B. Maciel Machado, R. Pereira Gosmann, L. Augusto Weiss, Reivax Automação e Controle S.A, Brazil; B. H. Brito, Britto, Instituto Federal de Tocantins, Brazil
- Monitoring 4.0: Vibration behaviour of our hydraulic turbines: from IOT measurement to maintenance decisions - M. Souilliart, M. Hars, M. Kuczkwiaik and M. Sys, EDF, France
- Hydraulic and operational design aspects of the rehabilitation of Gabi HPP in the Swiss Alps - M. Wickenhäuser, WSP | BG Consulting Engineers, Switzerland; A. Winkler, Global Hydro Energy, Austria; E. Dufey, Alpiq, Switzerland

- - - Coffee Break in Exhibition Hall - - -

Session 25: Penstocks
Chairperson: Helmut Obermoser, AFRY, Switzerland

- Analysis and modelling of pressure pulsations in the inlet piping of Montézuc hydropower plant - G. Pavin, Institut National des Sciences Appliquées (INSA) France; B. Lecomte, EDF, France
- Constructing the Odorigawa power station - K. Tanikawa, S. Ono, J. Sugimori and M. Kaneko, The Kansai Electric Power Co Inc (KEPCo), Japan; K. Yonezawa, Central Research Institute of Electric Power Industry, Japan
- Digitalization and internal inspection of penstocks by autonomous flying robots - A. Suárez Carrio, F. Espada Moreno, Iberdrola Renovables, Spain
- Liner design and construction of vertical shafts in hydropower plants - H. Wannenmacher, M. Entfellner, Implenia AG, Austria
- Penstock resonance caused by RSI pressure pulsations on Francis turbines: A case study in a revamped plant - P. Caretti, S. Cartapani and L. Papetti Frosio, Crossflow™ to accurate measurements of liquid flow - D. Zobin, Daystar Technologies Inc. and Advanced Measurement and Analysis (AMAG) Inc, Canada
- Monitoring results and operational experience of the new fish pass ‘Fishcon lock’ - B. Mayrhofer, Fishcon GmbH, Austria
- Innovative design of stilling basins downstream of dams and hydropower outlets considering fish protection - S. Malek, Bechtel, Australia; V. Fioratto, Formerly, University of Trieste, Italy

- Innovative electric fish barriers: concepts and examples of application - B. Brinkmeier, HyFish GmbH, Austria; and Prof M. Auflerger, University of Innsbruck, Austria
- Monitoring results and operational experience of the new fish pass ‘Fishcon lock’ - B. Mayrhofer, Fishcon GmbH, Austria
- Meeting results and operational experience of the new fish pass ‘Fishcon lock’ - B. Mayrhofer, Fishcon GmbH, Austria
- Innovative design of stilling basins downstream of dams and hydropower outlets considering fish protection - S. Malek, Bechtel, Australia; V. Fioratto, Formerly, University of Trieste, Italy
Enhancing hydro generator monitoring systems with machine learning

Comparing Scenario Fan Simulation (SFS) and aggregated stochastic dynamic solving rotor dynamic stability issues on a 88.5 MVA vertical hydro generator

Development of scaling approaches for hydro generator cooling flow

Sediment management at Plan d’Aval dam (French Alpes): RETEX clearing of hydraulic Pelton unit

Investment opportunities in small hydropower projects in Uganda

The integration of methane gas collectors into the continuous sediment transport: A possibility to avoid the release of greenhouse gases during the de-sedimentation of impounded waters

Session 26: Sedimentation management
Chairperson: Prof T. Sumi, Japan

- Design development and optimization for sediment management through spillway low level outlets at the Kayaburi plant - P. Mahamai, W. Nedawang, R. Razdan and C. Boomkaokaew, CK Power Public Company Ltd, Thailand
- Development of a low-cost, localized, and long-life fixed-point observation system of sediment height around gates using SBEs for the safe operation of dam gates - T. Koshita and T. Sumi, Disaster Prevention Research Institute, Kyoto University, Japan
- Integrating satellite data and discharge modelling for lifetime assessment of reservoirs with sedimentation - E. von Trentini and K. Schenk, EOMAP GmbH & Co KG, Germany
- Measurement of sedimentation processes with autonomous underwater vehicles (AUV): Pilot application in an Alpine reservoir - F.M. Evers, ETH Zurich (VAW), Switzerland; A. Carrera Vinas, Subdron GmbH, Austria
- Operating experience of removing sediment with deliberate transit through hydraulic Pelton unit - P.Y. Couzon, T. Bedrune, E. Valette, EDF-CH, France; L. Michel, EDF DTG, France
- Sediment management at Plan d’Aval dam (French Alpes): RETEX clearing of sediments in front of the bottom gate before dredging dilution across the turbines, using the Nessie robot - R. Gaillard, Watertreks; S. Caffo, EDF-CH, France
- Sediment monitoring system - R. Bachmann and R. Wimmer, Rittmeyer AG, Switzerland
- The integration of methane gas collectors into the continuous sediment transport: A possibility to avoid the release of greenhouse gases during the de-sedimentation of impounded waters - L. Gehrmann, Hülskens Sediments GmbH, Germany

Session 27: Electrical engineering I
Chairperson: Dr Ralf Bucher, H & MV Engineering, Germany

- Development of scaling approaches for hydro generator cooling flow - D. Noelle, V. Hildebrand and H. Pfifer, TU Dresden, Germany; B. Diebel and T. Dauch, Voith Hydro Holding GmbH & Co KG, Germany
- Solving rotor dynamic stability issues on a 88.5 MVA vertical hydro generator - P. Bonacić, B. Fabro, and D. Kraljević, Končar, Croatia
- Comparing Scenario Fan Simulation (SFS) and aggregated stochastic dynamic programming (SDP) models for local medium-term hydropower scheduling - V. Fjeldstad, Ø. Haugland, G. Klæboe and V. Aubin, Norwegian University of Science and Technology (NTNU), Norway
- Enhancing hydro generator monitoring systems with machine learning methods for early fault detection - H. Foroozan and O. Dreskovic, Veski d.o.o.; B. Filipovic-Grcic, University of Zagreb; I. Krnić and N. Majljić, Dubrovnik HPP, Croatia
- Stator earth faults in hydro generators: Analysis, detection, and mitigation strategies - M.G. Gokhale, N.K. Singh and P. Kumar, NHPC Ltd, India
- Hydro generator root cause analysis based on vibration and air gap monitoring data - O. Dreskovic, O. Husnjak, E. Horec and D. Bajić, Veski d.o.o., Croatia

- - - Lunch Break in Exhibition Hall - - -

Session 28: Small hydro and marine energy
Co-Chairs: Vincent Denis, Mhylab, Switzerland; and Pierre Duflon, Andritz Hydro, France

- Adding flexibility to medium head small hydropower plants: First realization of a double-regulated diagonal (Deriaz) turbine based on a systemized hydraulic profile - V. Denis and A. Bullani, Mhylab, Switzerland
- Small hydro reliability enhancement using wireless sensor and multi-source data analytics - F. Ravet, D. Nkoulok and Y. Jacquot, Gradens SA, Switzerland; C. Morier, N. André, SEFA SA, Switzerland
- Investment opportunities in small hydropower projects in Uganda - D.M. Nabutsabi, Hydro Power Association of Uganda, Uganda
- Tidal range energy: Opportunities and challenges in the UK - K. Gilmartin, BHA, UK

Session 29: Environmental and social aspects
Chairperson: Prof Bernhard Pelikan, Consultant, Austria

- Hydropower in the EU: Water and energy storage, industrial innovation and economic benefits - E. Quaranta, European Commission Research Centre, Italy
- Assessing water quality and phytoplankton distribution in the Mekong river before and after the implementation of the Kayaburi hydropower plant - Chanuppahm Klinklab and Rattee Tanattivivapan, Kayaburi Power Co Ltd; Thanasak Poomchavej, M.E. Raeder and Virawan Sambutsiri, CK Power Public Company Ltd, Thailand
- Cethana pumped storage carbon footprint assessment - B. Houdant and V. Chunadet, EDF, France; J. Myrtle, Hydro Tasmania, Australia
- Environmental sustainability of the area around an upper pond of a seawater pumped storage plant: A case study in Japan - M. Kashiwayanagi and T. Tobase - Electric Power Development Co Ltd, (J-POWER), Japan
- Optimizing operation schedules with strict environmental regulations for a network of hydropower plants - Y. Blum and S. Drewes, The Mathworks, Germany; J. Reis and L. Zögernitz, TIWAG, Austria
- Social responsibility and debris at your dam: How dams can hold the key in curving plastic pollution in the worlds waterways - J. McCully and P. Rolls, Worthington Products Inc, USA
- Delivering enduring benefits to impacted communities: Queensland Hydro’s benefit-sharing framework for large scale pumped-storage projects - C. Evans, Queensland Hydro, Australia

Session 30: Electrical engineering II
Chairperson: (to be announced)

- SECREAS: A secondary regulation capacity market simulator model - V. Torrado Menides, F. Brito and M. J. Tavares, EDG Gestão de Produção de Energia, SA, Portugal
- Increasing hydropower flexibility in the grid with a focus on India’s energy transition - S. Adhikari, S.K. Mishra and J. Pani, NHPI, India
- Multivariable analysis of hydropower plant - B. Våland, P.-T. Selbo Storki and T. Ellestad, Norconsult Norge AS, Norway
- Optimal hydro planning and automatic generation control in the generation centre - West Croatia - Krešimir Vrdoljak, Bruno Pavlovic, Končar Engineering Ltd, Croatia; Kristian Vidmar, Mihaela Stipetic, HEP Proizvodnja Ltd, Croatia
- Pumped storage powerplants with variable speed units: Designing the electrical protection system - M. Pairsits and S. Vasilić, Andritz Hydro GmbH, Austria

- - - Coffee Break in Exhibition Hall - - -

Closing Plenary Session

- Session summaries and conference outcomes
- Future Aqua-Media and ICDL events
- Close of the Conference
A major Technical Exhibition will run alongside the HYDRO 2024 Conference, showcasing the latest developments in the hydro, dam, and related renewable energy sectors, as well as the activities of professional associations, and the services of specialist consultants, contractors and equipment suppliers.

All lunch and refreshment breaks will take place in the exhibition hall, below the conference rooms. There will be a networking party after the conference sessions on Tuesday 19 November to provide an additional opportunity for meetings between exhibitors and the international delegates.

Exhibition stands are available in units of 6 m², and custom-built units can be arranged. If you would like to book a place, we recommend that you contact our Sales & Marketing team as soon as possible to reserve your preferred position; spaces are selling fast.

Stand out from your competitors and book a sponsorship package for HYDRO 2024. Contact our Sales & Marketing team for more information.

To reserve one of the remaining exhibition stands, or book a sponsorship package please contact:
Mr Richard Henley, Mrs Melanie Ganz or Mrs Tanita Chondrunaiko-Kemp
Tel: +44 20 8773 7252/ 7251/ 7250 • Email: Sales@hydropower-dams.com
www.hydropower-dams.com/hydro-2024

Exhibition stand pricing:

- 3 × 2 m (6 m²) = €3600
- Reserved
- Catering points
ACCOMPANYING PERSONS' EXCURSIONS

As usual, a three-day package of cultural and touristic excursions is being planned for accompanying persons (family members and partners) joining delegates at HYDRO 2024. The length of each trip will not exceed six hours. Among the sites provisionally planned for the three trips are:

Monday 18 November
- A visit to Stift Rein (a monastery, founded in 1129), with a chance to learn about handicrafts of Cistercian Monks.
- Lunch in central Graz.
- Visit to Museum der Geschichte, which is dedicated to preserving and showcasing the history of Graz and its surrounding regions.

Tuesday 19 November
- Visit to Lipizzaner Stud Piber, with a guided tour of the breeding, training and retirement home of the famous Lipizzaner white horses of the Spanish Riding School. This is a UNESCO natural cultural heritage site.
- Lunch in regional local restaurant.
- Guided tour of the colourful St Barbara Church.

Wednesday 20 November
- An exclusive tour of the well known Graz Opera House.
- The group will then take a cable car up to the Aiola restaurant, to have lunch and enjoy spectacular views across the mountains; they will be treated to a tasting of Styria's regional speciality: pumpkin seed oil.

Accompanying persons are also welcome to join the evening social programme.

EVENING SOCIAL PROGRAMME

- On Sunday 17 November, a dinner for Chairpersons and Speakers will be held at the Seifenfabrik, a historical industrial building in Graz, following meetings and briefings at MCG.
- On the evening of Monday 18 November, the Welcome Reception, generously sponsored by Andritz, will be held in the Stefananien Saal and Beethoven foyer of a historical building, full of character.
- Our usual networking party will be held on Tuesday 19 November, in the Exhibition Hall of MCG.
- The HYDRO 2024 Farewell Dinner will take place in a (totally transformed) room at MCG.

The various social events will enable hydropower discussions to continue, accompanied by some culinary specialities of Styria, and musical entertainment.
STUDY TOURS

Austria, with its extensive experience of large and small hydropower and pumped-storage development, and with around 60 per cent of its electricity coming from hydropower, has a number of recently commissioned projects, plans for many more, and is Europe’s most active country for pumped storage, with four major projects under construction.

The opportunity to visit a variety of dams and powerplants will be offered on the three post-Conference study tours. The first tour can be taken as a one- or two-day trip, and the other will be a three-day trip, with a highlight being a visit to the site of the major Limberg III pumped-storage project, currently under construction.

Tour A: One or two days

A1: For those with limited time to spare after the conference, we have arranged for several small and micro hydro sites to be visited within Graz, one of which is to be commissioned this year. This will also form the first day of a two-day trip. Those continuing for the second day will travel on for an overnight stay in Klagenfurt, with a stop on the way at the St George Abbey, on Längerssee.

A2: After breakfast there will be a tour around the city of Klagenfurt, the capital of Corinthia. There will then be a technical visit to the Feistritz-Ludmannsdorf run-of-river plant, one of a cascade of 10 plants on the Drava river in Carinthia. Since 2007, all 10 plants in this group, between Spittal and the Slovenian border, have been managed together by the Drava central control room.

At Feistritz-Ludmannsdorf, two Kaplan units generate an average annual output of 351 GWh. Of special interest at this scheme is the fish migration system, and various ecological measures which have been taken.

The tour is scheduled to return to Graz by 16.00 hrs.

Tour B: Three days

The first visit will be to the 210 MW Wallsee-Mitterkirchen plant on the Danube, where a project has been underway by Verbund to upgrade the efficiency by replacement and upgrading of machinery. Output has increased by about 12 GWh/year.

A 17 MW open-field solar installation supplements generation at the site. To support the grid frequency, a ‘Blue Battery’ has up to 10 MW of spare capacity available, from the production from the Wallsee-Mitterkirchen hydro plant.

A new PV facility at Wallsee-Mitterkirchen, which covers an area of 3 ha, has a maximum capacity of 1.7 MW, with enough annual production to supply about 600 households.

The group will then travel on to Salzburg for an overnight stay. Next morning there will be an opportunity to tour the stunning city of Salzburg, including its castle, and a boat trip on the Traunsee may be possible, before the next technical visit. This will be to the 14.5 MW Stegenwald run-of-river scheme, under construction on the Salzach river. The overnight stay will be at Zell am See.

On the third day, delegates will visit Verbund’s 480 MW Limberg III pumped-storage scheme, part of the Glockner-Kaprun power complex. The power cavern is being built into the mountain next to the existing powerplants of the ‘Kaprun Upper Stage’ (Limberg 1 and 2) and will be connected to the existing Mooserboden and Wasserfallboden reservoirs with a headrace tunnel. Limberg III will be equipped with two 240 MW variable speed pump-turbines, and is due for completion next year. The tour will also include a visit to Limberg II. NB: Places on this tour are limited to 25 persons.

Around midday, the group will begin the journey back to Graz, stopping en route for lunch. Arrival back in Graz is planned to be by 18.00 hrs.
ACCOMMODATION IN GRAZ
Accommodation has been reserved in some selected hotels in Graz, for the main nights of the conference. There are hotels in various budget categories, and many are within walking distance of MCG. More details and rates are available at the HYDRO 2024 registration site, now open, and accommodation should be reserved at the time of registration.
Shown here, as examples, are the Wiesler, Plaza Inn, Ibis, Weitzer, Best Western Plaza, Mariahilf and Aurgarten hotels. All offer free WiFi, and breakfast will be included within the room rates arranged.

CONTACT DETAILS
For enquiries concerning registration and accommodation, please contact:

HYDRO 2024 Secretariat, Event Management Services (EMS)
EMS-hydro2024@ems-ltd.org
Tel: +44 1225 258013

For enquiries about the programme, please contact: Maria Flintan/Alison Bartle, Hydropower & Dams
PO Box 285, Wallington, Surrey SM6 6AN, UK
Email: Hydro2024@hydropower-dams.com

For the latest information and online registration, visit:

www.hydropower-dams.com/hydro-2024
BOOKING CONDITIONS

The Conference HYDRO 2024 - Secure technology for turbulent times, is being organized by The International Journal on Hydropower & Dams with Event Management Services (EMS), UK.

On-line Registration
You can register on-line via the Hydropower & Dams website at: www.hydropower-dams.com

This is a secure site. Registrations are handled by EMS on behalf of Aqua~Media. You will receive an acknowledgement of registration on completion of this process; however, this is not a confirmation (until payment is received).

Pre-registration is required, and we encourage all delegates to register on-line; the registration site provides more information about the event. In the unlikely event of any difficulties using this system, please contact EMS (see contact details below).

Distribution of conference documents and badges
The registration desk will be open from 08.00 hrs on Sunday 17 November 2024, at the Messe Congress Graz (MCG) and delegate bags can be collected from that time up until 19.00 hrs. Those taking part in pre-Conference Workshops and Seminars are advised to register and collect their bags and badges as early as possible, and those going on the city excursion should register by 10.00 hrs.

Payment
Payment for all services (fees, hotels, tours) must be made in Euros (£) and received in advance of the Conference. Payment is possible by the following methods:
• On-line by Visa or Mastercard; or,
• By bank transfer (see details on the registration form).
All fees paid by credit card will be charged in Euros (£).

Accommodation
Beware of scam accommodation bureaux who operate falsely claiming to represent HYDRO 2024. We recommend that you do not pass credit card details to them. Descriptions of all hotels, and their locations, are given on the registration site. Accommodation should be booked and paid for at the same time as payment of the registration fees.

Disclaimer
Best endeavours will be made to present the programme as printed. The HYDRO 2024 organizers and their agents reserve the right to alter arrangements, timetable, plans or other items relating directly or indirectly to HYDRO 2024 for any cause beyond its reasonable control.

Cancellations
The post-Conference Tours are subject to minimum numbers. Tour places are subject to availability on a first-come-first-served basis. Please note, Tour B is limited to 25 place, as numbers of visitors to the Limberg III site need to be limited. Full payment for tours must be received at the time of registration to guarantee bookings.

As soon as a registration is confirmed, a number of expenses are incurred by the organizers; therefore the cancellation conditions below apply.

<table>
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<tr>
<th>Date cancellation received</th>
<th>Registration for the Conference</th>
<th>Technical Excursions (Study Tours)</th>
<th>Accommodation</th>
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<tr>
<td>From 16 September to 27 October 2024</td>
<td>50% of fee will be forfeited</td>
<td>No refund unless place can be resold</td>
<td>No refund unless place can be resold</td>
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<td>On or after 28 October 2024</td>
<td>No refund</td>
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A reduced registration fee is available for speakers, current subscribers to Hydropower & Dams, and those taking a new subscription.

See booking information on the next page for details.
Online HYDRO 2024 registration is via the website: www.hydropower-dams.com
The system is simple to use, but in the event of any difficulties, please contact EMS.
Email: EMS-hydro2024@ems-ltd.org ~ Tel: +44 1225 258 013
Prices for each delegate category and conference activity are given below.

EARLY DELEGATE FEE (to 20 September): Includes attendance of the Conference and Exhibition; documentation; conference papers, downloadable from a link; morning and afternoon refreshments; lunches during the Conference; full social programme in the evenings
€1390

FULL DELEGATE FEE (from 21 September): Includes everything described above
€1490

REDUCED DELEGATE FEE: For existing subscribers to Hydropower & Dams.
€1320 From 21 Sep: €1420

FEE INCLUDING NEW SUBSCRIPTION TO H&D: (6 issues from No. 6, 2024 + Atlas + Maps)
(This represents a saving of about 35 per cent on the normal H&D subscription rate).
€1530 From 21 Sep: €1630

SPEAKER FEE: Includes everything described above for Full Delegates, plus an additional reception on Sunday 17 November. NB: This fee applies to one person per paper (main author or presenter).
€665

FIRST EXHIBITOR FEE: (One full participant registration is included with exhibition booking).
€0

SECOND + THIRD EXHIBITOR FEE: (Fee per person for up to two additional exhibitors).
(Includes all benefits available to full delegates).
€895

SMALL HYDRO WORKSHOP: (Full day on Sunday 17 November)
€150

BIM SEMINAR: (Full day on Sunday 17 November)
€150

PUMPED STORAGE WORKSHOP: (Full day on Sunday 17 November)
€150

FISH PROTECTION:
€75

ACCOMPANYING PERSON FEE: (For family members, partners or friends not colleagues attending the Conference or Exhibition). The fee includes the excursions on each day with lunch, and evening social events.
€450

HALF DAY EXCURSION: (Sightseeing around Graz, including the castle and art gallery, with lunch included)
€125

STUDY TOURS:
Tour A1: 1 day tour - Small and micro hydro plants within Graz
€120

Tour A2: 2 day tour - As above and on to Feistritz-Ludmansdorf (Drava river cascade) €445 (single occupancy) €390 (per person - double occupancy)

Tour B: 3 day tour - Wallsee Mitterkirchen, Stegenwald, and Limberg III €985 (single occupancy) €825 (per person - double occupancy)

OPTIONAL DONATION TO THE AMI HYDROPOWER FOUNDATION: As in past years, there is an opportunity when registering online to make a donation to the AMI Hydropower Foundation. This is a charitable foundation, set up by Aqua-Media and governed by a board of International Trustees. It exists to facilitate the participation of delegates from the less developed countries at the annual Hydro Conferences.

DIETARY REQUIREMENTS: These should be specified on the online registration system (for example: vegetarian, vegan, gluten free, kosher, halal...)

VISA REQUIREMENTS: Please let us know if you need an invitation letter to support a visa application for travel to Austria.

NB: Attendance of the Welcome Reception and Farewell Dinner are included within the registration fees for all participants. However, we request a nominal contribution of €15 per event, to encourage a firm commitment to participate. This is important to enable us to assess numbers for catering, and avoid food wastage.