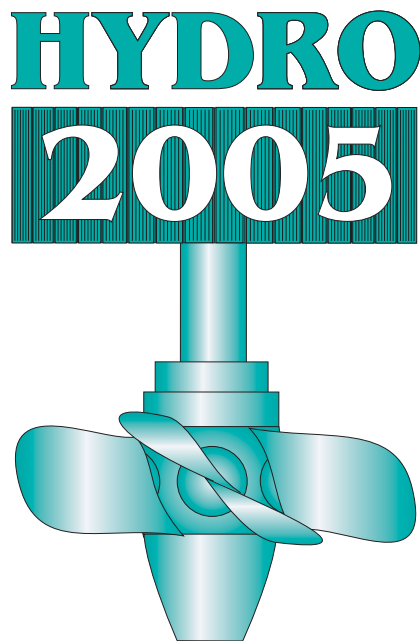


FINAL BULLETIN

# HYDRO 2005

## POLICY INTO PRACTICE

Villach, Austria  
17 to 20 October 2005



Hosted and organized by:

THE INTERNATIONAL JOURNAL ON  
**HYDROPOWER  
& DAMS** & **NETWORK**  
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- About 1.6 billion people have no access to an electricity supply, and more than 1 billion have no clean drinking water system.
- Installed capacity averages less than 300 kW per 1000 people in developing countries, and more than 2 MW in industrialized countries.
- Only a small proportion of technically feasible hydro potential has been exploited in Africa (<5%) and Asia (<13%).
- The areas of the world with the greatest hydro potential have the most urgent need to develop it.

In view of these statistics, policy-makers, governmental agencies and major financing institutions are strengthening their commitment to supporting hydropower and dam projects, particularly in the developing world.

All those involved in planning, designing, financing, building, maintaining, operating and refurbishing water resources development schemes share a common responsibility today to address the remaining challenges and accelerate hydropower development.

**Constructive discussions in Villach will help to put policy into practice**



Supporting Organizations:



## HOSTED AND ORGANIZED BY:

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**HYDRO 2005: Policy into Practice** is the twelfth international event in the current series to be organized by *Hydropower & Dams* (Aqua-Media International) and NetWork Events Ltd (a specialist in international event management). The management teams of these two organizations have worked together on hydropower conferences for 20 years.

Previous events in the current series have taken place in: Budapest (1994); Barcelona (1995); Lausanne (1996); Portorož (1997); Aix en Provence (1998); Gmunden (1999); Bern (2000); Riva del Garda (2001); Kiris (2002); Dubrovnik (2003); and Porto (2004).

*Hydropower & Dams* is a professional journal disseminating information worldwide on technical, financial, economic, environmental and social aspects of water resources development, and working to promote the development of carefully planned hydropower plants. The journal and its associated conferences together provide a strong medium for project planners, owners, financiers, designers, consultants and suppliers, as well as the main water- and energy-related professional associations, to exchange ideas and reach constructive conclusions to help further world hydro development.

Subscribers to *Hydropower & Dams* are eligible for a discount on the early registration fee. For subscription details, e-mail Maria Flintan at: subs@hydropower-dams.com

**All correspondence relating to HYDRO 2005 should be addressed to: Mrs Margaret Bourke, HYDRO 2005 - Aqua-Media International, Suite 34, Westmead House, 123 Westmead Road, Sutton, Surrey SM1 4JH, UK. (e-mail: hydro2005@hydropower-dams.com)**

**Completed registration forms should be sent to: Mrs Linda Wells, NetWork Events Ltd, The Old Manor House, Compton, West Sussex PO18 9EX, UK.**

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**HYDRO 2005: Policy into Practice, 17-20 October 2005**

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# PROGRAMME OVERVIEW

<p><b>SUNDAY 16 OCTOBER</b> Set up and Registration</p> <p>12.00 Exhibition set-up at the Villach Congress Centre</p> <p>16.00 Conference Registration</p> <p>19.00 Meeting of Chairmen</p> <p>19.45 Reception for Chairmen and Speakers <i>Villach Congress Center</i></p>	<p><b>MONDAY 17 OCTOBER</b> Technical Sessions</p> <p>08.30 Opening Ceremony (Plenary)</p> <p>09.30 Session 1 Developing World Hydro Resources <i>Josef-Resch-Saal</i></p> <p>09.45 Session 2 Hydraulic Machinery 1 <i>Gottfried-von-Einem-Saal</i></p> <p>LUNCH</p> <p>14.00 Session 3 Finance <i>Josef-Resch-Saal</i></p> <p>14.00 Session 4 Hydraulic Machinery 2 <i>Gottfried-von-Einem-Saal</i></p> <p>14.00 Session 5 Safety and Risk Assessment <i>Kleiner Saal</i></p> <p>Evening: Concert at Ossiach and Welcome Reception hosted by <i>Hydropower &amp; Dams + NetWork Events</i></p>	<p><b>TUESDAY 18 OCTOBER</b> Technical Sessions</p> <p>09.00 Session 6 Maximizing the Benefits of Hydro <i>Josef-Resch-Saal</i></p> <p>09.00 Session 7 Civil Works: Materials and Cost Savings <i>Gottfried-von-Einem-Saal</i></p> <p>09.00 Session 8 Longevity of Hydro and Upgrading <i>Kleiner Saal</i></p> <p>LUNCH</p> <p>14.00 Session 9 Partnerships and Power Trading <i>Josef-Resch-Saal</i></p> <p>14.00 Session 10 Optimizing System Operation <i>Gottfried-von-Einem-Saal</i></p> <p>14.00 Session 12 IEA - Hydropower Good Practices <i>Kleiner Saal</i></p> <p>17.15 NT2 Roundtable <i>Josef-Resch-Saal</i></p> <p>16.30 Session 11 Operation and Maintenance <i>Gottfried-von-Einem-Saal</i></p> <p>17.15 ESHA Workshop <i>Kleiner Saal</i></p> <p>Evening free for private parties</p>
<p><b>WEDNESDAY 19 OCTOBER</b> Technical Sessions</p> <p>09.00 Session 13 Environment <i>Josef-Resch-Saal</i></p> <p>09.00 Session 14 Small Hydro - Europe <i>Gottfried-von-Einem Saal</i></p> <p>09.00 Session 15 Sediment <i>Kleiner Saal</i></p> <p>LUNCH</p> <p>14.00 Session 16 Social Aspects <i>Josef-Resch-Saal</i></p> <p>14.00 Session 17 Small Hydro - World <i>Gottfried-von-Einem-Saal</i></p> <p>14.00 Session 18 Pumped Storage <i>Kleiner Saal</i></p> <p>Evening: Conference Dinner at Schloss Porcia, Spittal, hosted by VERBUND, VERBUND - Austrian Hydro Power and Verbundplan</p>	<p><b>THURSDAY 20 OCTOBER</b> Technical Sessions / Excursions</p> <p>08.30 Session 19 Challenging sites <i>Josef-Resch-Saal</i></p> <p>09.00 Session 20 Electrical Equipment <i>Gottfried-von-Einem-Saal</i></p> <p>09.00 Session 21 Aesthetics <i>Kleiner Saal</i></p> <p>LUNCH</p> <p>Technical Excursions (choice of three)</p> <ul style="list-style-type: none"> <li>• Rosegg-St. Jakob run-of-river plant</li> <li>• Kölnbrein arch dam</li> <li>• Feistritzbach earth- and rockfill dam</li> </ul>	<p><b>FRIDAY 21 OCTOBER</b> Study Tours begin</p> <p>Departure for Study Tours (21-23 October)</p> <p>1. Austria</p> <ul style="list-style-type: none"> <li>• Visits to the Malta, Reisseck and Fragant powerplants</li> <li>• Grossglockner and Kaprun powerplant</li> <li>• Tour ends in Salzburg on Sunday</li> </ul> <p>2. Slovenia/Italy</p> <ul style="list-style-type: none"> <li>• Visits to the Moste, Plave and Doblar plants</li> <li>• Sightseeing in Kobarid, Bled and Ljubljana</li> <li>• Return to Villach via Italy on Sunday</li> </ul>

# TECHNICAL PROGRAMME SESSIONS

## MONDAY 17 OCTOBER – MORNING

(Plenary Session followed by 2 parallel technical sessions)

### Opening Ceremony (Plenary)

Welcome to HYDRO 2005: Alison Bartle, *Hydropower & Dams*  
Musical interludes by the Brass Band of KELAG, Villach

### Opening Addresses:

**H. Schröfelbauer, CEO, Verbund - Austrian Hydro Power**  
**G. Berger, Head of Engineering and Production, KELAG**  
**C.B. Viotti, President, ICOLD**  
**Prof G. Heigerth, President, ATCOLD**  
**J-P. Rigg, IEA Hydropower Implementing Agreement**  
**Prof Dr G. Schiller, Austrian National Committee, WEC**  
**Prof B. Pelikan, President, ESHA**  
**Prof Dr E. Mosonyi, Hon President, IHA**

### Session 1: Developing World Hydro Resources Policy into Practice

**Co-Chairmen: C.B. Viotti, President, ICOLD, Brazil;**  
**A. Nombre, Vice-President, ICOLD, Burkina Faso**

#### Africa

- The role of dams and hydro to improve living conditions of the people. The case of Burkina Faso – *A. Nombre, Vice President, ICOLD, Burkina Faso*
- The Uganda Power Sector: experiences with privatisation and expansions of hydropower generation capacity – *S. Tickidri-Togboa, Director, Uganda Electricity Corporation, Uganda*
- The role of dams and hydropower development in Ethiopia – *M. Abebe, Ministry of Water Resources, Ethiopia*
- Hydropower development in Gabon – *E. Ngoubou, Ministère des Mines et de L'Énergie du Gabon, Gabon; G. Malenge and P. Brun, EDF-CIH, France; O. Crepon, ISL, France*
- Hydropower in Ghana's power generation mix: current situation, legislative environment and prospects for the future – *Hon. K. Ampofo, Member of Select Committee on Mines and Energy, Parliament of Ghana*
- Hydro potential and development plans in Nigeria – *I. Ekpo, Ministry of Water Resources (Secretary of NICOLD), Nigeria*

#### Latin America

- Overview of hydro development in Latin America, with special reference to Brazil – *C.B. Viotti, President, ICOLD, Brazil*

#### Asia

- Hydropower development programme in China – *Lin Chuxue, Chinese National Committee on Large Dams and TGP Corp, China*
- India's 50 000 MW hydropower initiative – *T. Sankaralingam, National Thermal Power Corporation\*, India*
- The current and future role of hydro in Bhutan – *C. Rinzin, Bhutan Power Corporation*
- Hydropower in Vietnam: potential, challenges and opportunities – *Nguyen Hong Ha, Son La Management Board; Dao Hung, Son La HPP, Vietnam*
- New market model and hydroelectric projects in Turkey – *A. Tutus, DSI, Turkey*

[\*Presenter to be confirmed]

### Session 2: Hydraulic Machinery 1 Research, Modelling and Testing

**Chairman: Prof F. Avellan, EPFL-LMH, Switzerland and Chairman of Machinery Division, IAHR**

- Approach to multiple transient analyses and portfolio risk assessment – *P.R. Thackray, PB Power, Australia*
- De-aeration of air-water flows in tailwater channels of Pelton turbines – Special application of pumped-storage schemes – *D. Mayr and A. Arch, Graz Technical University, Austria*
- Unsteady analysis of a Pelton runner with flow and mechanical simulations – *E. Parkinson, C. Neury, H. Garcin and T. Weiss, VA TECH Hydro, Switzerland*
- On the flow interchanges between the jet and the bucket of Pelton turbines – *Zh. Zhang and J. Müller, Oberhasli Hydroelectric Power Company (KW0), Switzerland*

- CFD prediction of unsteady wicket gate – runner interaction in Francis turbines: A new standard hydraulic design procedure – *B. Nennemann and T.C. Vu, GE Energy, Canada; M. Farhat, EPFL, Switzerland*
- Dynamic behaviour of high head Francis turbines – *A. Coutu, GE Energy, Canada; H. Aunemo, GE Energy, Norway; B. Badding and O. Velagandula, GE Global Research Center, USA*
- Rotor stator interaction in pump turbines – numerical prediction and experiment – *M. Keller, P Dörfler, M. Sallaberger and M. Sick, VA HYDRO Hydro, Switzerland*
- Recent developments and new challenges in the use of computational fluid dynamics at Hydro-Québec – *S. Houde and A-M. Giroux, Hydro-Québec, Canada*

## MONDAY 17 OCTOBER – AFTERNOON

(3 parallel sessions)

### Session 3: Financial and Economic Aspects Investing in hydro; Quantifying benefits; Risk management; Carbon finance

**Chair: J. Plummer, South Asia Energy and Infrastructure Unit, The World Bank**

- Multilateral Development Bank's role in mobilizing funds for large hydropower development projects – *Woochong Um, Asian Development Bank, Philippines*
- EU-ACP Partnership Cotonu Agreement: Investment facility and loans from EIB's own resources for the financing of hydro projects – *R. van Zonneveld, European Investment Bank, Luxembourg*
- Showing all benefits on the balance sheet (a key to improving financial performance of sustainable hydro projects) – *J-M. Devernay, EDF, France*
- Sustainable financing: the basic requirements – *C.R. Head, Consultant, UK*
- More than just electricity: marketing the benefits of hydropower – *T. Weller, TÜV Industrie Service GmbH, Germany*
- Observations on hydropower development and risk allocation – *P.J. Rae, PJR Consulting, Inc., USA*
- An analysis of key risks associated with hydropower development – *J. Laing, S. Whisker and E. Delgado, Mott MacDonald Limited, UK*
- Consideration of reduced import dependency in the economic evaluation of hydropower projects – *M. Horn and S.M. Palt, Fichtner GmbH & Co. KG, Germany*
- Conventional versus comprehensive models to cover all risk insurance for hydro powerplants (local and international perspectives) – *M. Saadat Fard and H. Hashemi, Farab Co., Iran*
- Carbon finance: a sweetener but not a honey pot - *J. Plummer, The World Bank*
- Carbon trading: what it means for hydropower – *P. Softe, Senior Advisor, EcoSecurities Group Ltd, UK*
- HPP Poechos 1 – The first Peruvian project to sell carbon credits according to the Kyoto protocol – *B. Zdravkovic, Sindicato Energetico S.A., Peru*

### Session 4: Hydraulic Machinery 2 Design innovation; Improving efficiency; Environmental aspects

**Chairman: Dr H. Keck, VA TECH Hydro, Switzerland**

- Absolute flow measurement in short intake large Kaplan turbines: results of comparative flow measurements at the Lower Granite powerhouse – *R.J. Wittinger, Army Corps of Engineers, USA*
- Optimization of intake flow conditions for compact axial turbines: current trends and future perspectives in hydraulic modelling – *M. Villeneuve and G.K. Holder, Lasalle Consulting Group, Canada; E. Parkinson, VA TECH Hydro Ltd, Switzerland*
- Interaction of leakage flow with the main runner-outflow in a Francis turbine – *E. Casartelli, D. Cimmino, and T. Staubli, HTA Lucerne, Switzerland; C. Gentner, VA TECH Hydro AG, Switzerland*
- Modern technologies application for manufacturing Pelton turbine runners – *J. Vesely, M. Mikulasek and P. Vesely, CKD Blansko Engineering a.s., Czech Republic*

# TECHNICAL PROGRAMME SESSIONS

- Design aspects of refurbished Kaplan turbines for the Medvode hydro plant in Slovenia – *S. Cizelj, Damir Dolenc and A. Bergant, Litostraj E.I. d.o.o., Slovenia*
- The world's largest tidal power plant – *H. Schmid, M. Schneeberger and H Jagersberger, VA TECH Hydro, Austria*
- Recent developments in the design of fish friendly turbines – *J. O'Nians and D. Upadhyay, IT Power, UK; O. Paish, Derwent Hydro Developments Ltd, UK; A. Turnpenny, Jacobs Babbie Aquatic, UK*
- Time to put policy into practice: Environmental protection is important for everyone – *P. Lämmle, Panolin AG, Switzerland*
- Behaviour of big bearings: polymer-coated bearings in comparison to Babbitt bearings – *A. Fuerst, Alstom Generator Business, Switzerland*

## Session 5: Safety and Risk Assessment Assessing and mitigating risk; Learning from incidents and failures; Flood prediction and management

**Chairman: Dr H. Kreuzer, Colenco Power Engineering Ltd, Switzerland**

- European data base for dam incidents and failures – *H. Kreuzer, Colenco Power Eng. Ltd., Switzerland*
- NW-IALAD – Network integrity assessment of large concrete dams – *R. Gaisbauer, Verbund-AHP, Austria*
- Extreme floods and debris – *J. Rundqvist, ISAB Dammar & Kraft, Sweden*
- New methods for a strategic management of multipurpose water management systems with reservoirs – *I. Satrapa, M. Horsky, M. Zukal and R. Tyl, Czech Technical University, Czech Republic*
- A new approach to dam monitoring in Algeria – *A. Berraki and H Ferhat, Agence Nationale des Barrages, Algeria; M Ayoub, EDF-CIH, France*
- Flood control in hydro generation division – *A.M. Pinto, CPPE, Portugal*
- Development of a flood management system: Ubol Ratana dam, Thailand – *A. Meethom, Electricity Generating Authority of Thailand*
- Hydropower systems in flow forecasting using ANN - *O. Bozorg Haddad, Iran University of Science and Technology, Iran; S. Alimohammadi, Moshanir Power Engineering, Iran*
- A new model for real-time flood management by preventive operations on multiple hydropower schemes – *F. Jordan, J-L Boillat, J. Dubois and A.J. Schleiss, EPFL, Switzerland*

## TUESDAY 18 OCTOBER - MORNING

(3 parallel sessions)

### Session 6: Maximizing the Benefits of Hydro Multipurpose schemes; Indirect benefits; Synergy with other renewables.

**Co-Chairmen: Prof Dr E. Mosonyi, Emeritus Professor, University of Karlsruhe, Germany and Hon. President, IHA;**

**G. Wedam, Executive Director, Grenzkraftwerke GmbH, Austria**

- Keynote: Powerplants and recreation, a synergy to increase public appreciation and the image of hydropower - *Prof Dr E. Mosonyi, Emeritus Professor, University of Karlsruhe, Germany*
- The role of multipurpose hydro powerplants in maximising the benefits of hydropower – *H. Krisch, Verbundplan GmbH, Austria*
- Multipurpose hydropower project in Brazil: an economic evaluation of navigation benefits – *B. Andreia and F. Elton, COPPE/URFJ, Brazil; A. de Padua Bemfica Guimaraes, H. Goulart Junior and N. Pereira de Ruiz, Furnas Centrais Eléctricas S.A., Brazil*
- Delivering the sustainable Three Gorges Project – *C. Lin, China Three Gorges Project Corporation, China*
- Pumped storage as an integrator of wind energy in the electrical grid – *M. Sick and A. Schwab, VA TECH Hydro, Switzerland*
- Evaluation of externalities for hydropower use – *B. Kohler, University of Stuttgart, Germany; S. Heimerl, EnBW Kraftwerke AG, Germany*
- The human and environmental benefits of developing the Danube between Bratislava and Budapest – short summary – *M. Liska, Slovak National Committee of Large Dams, Slovak Republic*

- The growing importance of Kelag's water power facilities in Carinthia over more than 100 years – *G. Berger and F. Neuschitzer, KELAG, Austria*
- Poatina re-regulation storage – *D. Gerke, Hydro Tasmania Consulting, Australia*

### Session 7: Civil Works Cost savings; Materials for dams; Innovation

**Chairman: F. Lempérière, Hydro Co-op, France**

- Keynote: RCC dam developments and achievements worldwide – *M. Dunstan, MD&A, UK*
- Keynote: Review of the use of asphaltic concrete linings – *H. Kuhlmann, Technical University of Aachen, Germany*
- Keynote: Geomembranes: a well proven waterproofing system for hydraulic structures – *A.M. Scuerdo and G.L. Vaschetti, CARPI, Switzerland*
- Bedding bond in RCC dam construction – *S. Barony and A.M. Ali, University of Alfateh, Libya; J. Rouis, University of Sfax, Tunisia*
- Determination and calculations of heat generation and distribution at the Jahgin RCC dam – *S.A. Azimfar and S.M. Azimfar, Pey Rizan-e Mihon Co, Iran*
- Recording and surveillance of ageing asphaltic concrete linings by metric 3D imaging – *F. Neuschitzer, Kelag, Austria; K. Klima, TU Graz, Austria; A. Gaich, 3G Software & Measurement GmbH, Austria*
- GRP pipe systems in hydropower and penstock applications – *A. Rinderhofer, Hobas Engineering GmbH, Austria*
- New solutions for river control during dam construction – *F. Lempérière, Hydro Co-op, France; C. Bessièrre, Ingerop, France*
- Two ideas to regain the power otherwise lost in run-of-river schemes with elevated powerhouses – *S. Carlsen, Carlsen Power Electronics, Denmark*
- New Naga Hammadi barrage and powerplant, Egypt: a unique way to enable construction of a powerplant in the river Nile – *R. Kleina and S. Balian, Bauer Spezialtiefbau GmbH, Germany; A. Wahby, Bauer, Egypt*

### Session 8: Longevity of Hydropower Plants Upgrading and plant life extension

**Co-Chairmen: J. Arthur, Director, Mott MacDonald, UK;**

**F. Coelho da Rocha e Silva, Hidroeletrica de Cahora Bassa, Mozambique**

#### Civil works

- Trevellyn power station upgrade and modernization project – *G. Stojmirovic, Hydro Tasmania Consulting, Australia*
- The compromise between reducing costs and longevity in dam engineering. The case of Cahora Bassa dam – *F. Coelho da Rocha e Silva, H.S. Silva and E.F. Carvalho, HCB, Mozambique*
- Physical and numerical optimization of the spillway for the Spüllersee dams rehabilitation project – *T. Meile, J. Dubois and J. Boillat, EPFL, Switzerland; J-L Amberg, Lombardi Engineering Ltd, Switzerland*
- Kölnbrein dam: performance since the remedial works – *P. Oberhuber, Verbund-AHP, Austria*
- Incident of water leakage in the high pressure drop shafts at Sungai Piah hydroelectric project, Malaysia – *C.F. Kun and H. Singh Taggar, Tenaga Nasional Berhad, Malaysia*
- Covao do Ferro dam rehabilitation – *J.A. Amaral and J.L. Machado do Vale, Tecnasol FGE; J. Mora Ramos, LNEC; Ribeiro da Silva, INAG; A. Quintela, Tetraplano; A. Sa da Costa, Enersis; Portugal*

#### Machinery

- The efficiency of optimization loops for refurbishment – *F. Debeissat, B. Wykrota-Cvintal, D. Bazin and F. Mazzouji, Alstom Power Hydro, France*
- Water resources development and energy production at Kisköre hydro plant: refurbishment to improve the use of hydraulic potential – *K. Lakatos, University of Miskolc, Hungary*
- Continuing hydromechanical rehabilitation work on the Drin river powerplants in Albania – *J.H. Gummer, Hydro Consult, Australia; H. Obermoser, Colenco Power Engineering Ltd, Switzerland*
- Modernization of the turbines of IHE Mascarenhas de Moraes – *F.A.B. Resende, Furnas Centrais Eletricas S.A., Brazil*
- 16 Spherical valves for three pumped-storage power stations in China – *R. Pavillet, Alstom Power Hydro, France.*

# TECHNICAL PROGRAMME SESSIONS

## TUESDAY 18 OCTOBER – AFTERNOON

(4 sessions: 3 parallel, 2 consecutive; Roundtable and Workshop)

### Session 9: International Collaboration Partnerships and power trading

Chair: **C.V.J. Varma, President AESIEAP, Secretary-General CPU, India**

- Multiple benefits of Nam Theun 2 project for Laos and Thailand – *B. Tribollet, Nam Theun 2 Power Company, Thailand/Laos*
- Power trading opportunities between India and Nepal – *J. Karmacharya, Nepal Electricity Authority, Nepal*
- Benefits of bi-lateral trading in hydropower – *B. Tamang, Dept. of Energy, Ministry of Trade and Industry, Royal Government of Bhutan*
- The role of PEAC in the development of the African electricity market – *B. Kapandji Kalala, PEAC, Rep. of Congo*
- Impacts of hydropower development on integrated generation and transmission planning in southeast Europe – *B. Trouille, MWH, USA*
- Madeira hydroelectric complex – regional integration and environmental sustainability – *M.M. Rogar, M.A. Arantes Porto, C. Castanho Junior, J.R. Castro de Almeida, D. Chiarelli Fonseca, M. do Carmo Reis Cavalcanti, Furnas Centrais Electricas S/A, Brazil; J. Bonifacio Pinto Jr., Construtora Norberto Odebrecht S/A, Brazil*
- Reversible hydropower trading in the electricity market – optimal management of seasonal pumping – *S. Vilela, H. Azevedo and M.N. Tavares, Rede Electrica Nacional, S.A., Portugal*

### Session 10: Planning and Optimizing System Operation

Chairman: **J.C. Teixeira Freitas, EDP Group, Portugal**

- Effect of reservoir operation studies and inflow data on project feasibility – *M.E. Günindi, Dolsar Engineering Limited, Turkey; A.M. Yanmaz, Middle East Technical University, Turkey*
- Optimal reservoir use of a multipurpose run-of-river powerplant for hydro peaking mitigation – *P. Heller, A.J. Schleiss and E. Bollaert, EPFL, Switzerland*
- Benefits in optimizing hydro plant operations while meeting sophisticated environmental requirements – *A. Robitaille and L. Audette, Synexus Global, Canada*
- Electric system optimization – *J.C. Mazzoleini, Voith Siemens Hydro Power Generation Ltda, Brazil*
- TSS (Training simulation system) – *J. Lim and D. Shin, Korea Water Resources Corporation, Korea*
- Experience and best practices from Companhia Paranaense de Energia – *COPEL - E.J. Marcolin and J.F. Kalinowski, COPEL, Brazil*

### Session 11: Powerplant Maintenance and Control Systems

Chairman: **J. Gummer, Hydro Consult Pty Ltd, Australia**

- Predictive maintenance of hydropower generating equipment – a key issue for refurbishment strategy – *D. Sorin and T. Sorin, UCM Resita S.A., Romania*
- Permanently installed vibration and air gap monitoring system at the Djerdap 1 hydroelectric power station – *P. Surland and M. Hastings, Brüel & Kjaer Vibro, Denmark; D. Radojevic, RMS d.o.o., Romania*
- Lochaber pressure pipeline integrity assessment – *D. Ransom, Mott MacDonald, UK*
- Hydraulic division's experience in hydro plant maintenance – *P. da Costa e Silva, CPPE, Portugal*
- Video and audio digital transmission platform integrated with plant control system of hydraulic powerplants (Shiva system) – *P. Soto Torres, Soluziona, Spain*
- Joint frequency and voltage control for Karun 3 hydroelectric plant – *R. Banirazi Motlagh, Iran Water & Power Resources Development Company, Iran*
- Automated maintenance management system for hydropower stations in remote areas - an Indian perspective – *P.C. Jose and D. Nath, NHPC, India*

### Session 12: IEA Workshop on Good Practices

Chairman: **T. Morimoto, Operating Agent of IEA, Annex-8**

Introduction of IEA/Annex-8 'Hydropower Good Practices'  
Outline of collection of hydropower Good Practice Reports (GPRs) -

*Dr. Y. Miyanaga, Central Research Institute of Electric Power Industry, Japan.*

### GPRs on mitigation against biophysical impacts

- Ecosystem conservation
- Ecological flow
- Fish migration
- Water quality

### GPRs on mitigation against socio-economic impacts

- Resettlement
- Health risk due to mercury
- Landscape

### GPRs on benefits arising from hydropower development

- Power generation
- Dam function
- Regional industries

Discussion and summary – *T. Morimoto, Operating Agent, Annex 8*

## TUESDAY 18 OCTOBER – LATE AFTERNOON

### ROUNDTABLE

#### Financing Nam Theun 2 – The experience and the lessons

Chairman: **C.R. Head, Consultant, UK**

The \$1.2 billion NT2 hydro project is the largest hydro IPP to reach closure to date. It is a pioneering project in terms of its size and complexity, and also its financing package, which has involved many parties, each with their own perspective. It has been a long and costly struggle to bring the project together, and while it represents a great achievement, there is perhaps a need to review the process, to establish what lessons can be learned for the future.

Those participating in the Roundtable discussions will include:

*B. Tribollet, CEO of the Nam Theun 2 Power Company  
Somboune Manolom, Director of NTPC and CEO of Lao Holding State Enterprise (LHSE)  
Thanin Bumrungsap, Alternate Director of NTPC and Vice President, Italian-Thai Public Co Ltd  
A. Palmieri, The World Bank  
Woochong Um, Asian Development Bank  
R. van Zonneveld, European Investment Bank  
S. Sparkes, Norplan Multiconsult, Norway/Laos*

### WORKSHOP

#### Small hydropower, a solution for sustainable development

Chair: **C. Lins, Secretary-General, ESHA, Belgium**

In developing countries, the economic growth and the increase in energy needs are driving factors for renewable energy development. Small hydropower is a highly suitable option for meeting the electrification demand in these countries. The European Small Hydropower Association Workshop will analyse the current situation of SHP on an international level, the advantages of SHP for rural electrification and the factors that will allow the European industry to participate in the market development of SHP in these countries.

## WEDNESDAY 19 OCTOBER – MORNING

(3 parallel sessions)

### Session 13: Environmental Aspects of Hydro Development

Chair: **Dr E. Monosowski, Environmental Consultant, (formerly World Bank Latin American and Caribbean Department)**

- Influence of water quality on GHG emissions from reservoirs – *A. Tremblay, Hydro-Québec, Canada*
- A global policy framework and sustainability for renewables – *Hon. P. Rae, Renewable Energy Generators, Australia*
- Quantified criteria for hydropower sustainability – *R. Lafitte and G. De Cesare, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland*
- Bakhtyari hydropower dam and its environmental aspects – *A.H. Izad-Doustdar, IWPC, Iran*

# TECHNICAL PROGRAMME SESSIONS

- Small hydros are good, huge hydros could be excellent – *M.A.P. Lefevre, H. Covolan, R. Krauskopf Neto, E.C. Sbardolini and L. Dalmi Marenda, Itaipu Binacional, Brazil.*
- The restoration of Lake Fidler in southwest Tasmania, Australia – *M. Howland and A. Scanlon, Hydro Tasmania, Australia*
- Requirements for the environmental assessment of new river water abstraction sites – *C. Comoglio, Politecnico di Torino, Italy; E. Pini Prato, Universita Degli Studi di Firenze, Italy; W. Mattalia, Regione Piemonte, Italy*
- Riversmart – a decision support system for ecological assessment of impacts and measures on rivers – *M. Egger and K. Angermann, Inst. of Ecology and Environmental Management, Austria; H. Mader, J. Dox, I. Niederbichler, and J Häupler, Inst. for Water Management, Hydrology and Hydraulic Engineering, Austria; M. Schneider and F. Kerle, Schneider & Jorde Ecological Engineering, Germany; A. Eisner, Insti. of Hydraulic Engineering, Germany; S. Schmutz and S. Muhar, University of Natural Resources and Applied Life Sciences, Austria*
- En route with water particles in fishways – how to explain flow structure in a pool-type fishway? – *S. Heimerl, EnBW Kraftwerke AG, Germany; M. Hagmeyer and B. Kohler, University Stuttgart, Germany*

## Session 14: Small Hydropower Development 1 A European perspective

**Chairman: Prof B. Pelikan, President, European Small Hydropower Association, Austria/Belgium**

- Overview of small hydropower in new EU member States and candidate countries – *P. Punys, Lithuanian Hydropower Association*
- Small hydro power concept lower Austria – a regional approach to the identification of economically and environmentally sustainable schemes – *W. Widmann and S. Thonhauser, ILF Beratende Ingenieure ZT GesmbH, Austria; C. Moritz, ARGE Limnologie, Austria*
- How to define terms within the EU Water Framework Directive – *B. Pelikan, University of Natural Resources and Applied Life Sciences Vienna, Austria*
- When policy is questionably put in practice – misleading application of desktop formulae for reserved flow calculation: an Italian case study – *L. Papetti, Studio Frosio, Italy*
- Successful implementation of small hydropower in an urban environment - case studies of Leoben and Nussdorf – *H. Harreiter, A. Krampf and H. Schimpf, Verbund – Austrian Hydropower AG, Austria*
- The flow must go on.... – *K. Hanson, Hydroplan, UK*
- Laboratory development of small low-head axial turbines: a key for new and future refurbished hydropower plants in developed countries as well as in emerging countries – *A. Choulot, R. Chenal and V. Denis, MHyLab, Switzerland*
- The Smokovo small hydroelectric project – *J. Thanopoulos, Public Power Corporation S.A., Greece.*

## Session 15: Sediment Management R&D and case studies; Experience from Africa, Asia and Europe

**Chairman: S. Alam, Consultant, France**

- Reservoir sediment handling in arid and semi-arid climate areas: Cases of small dams at Yekeze river basin, North Ethiopia – *K. Belete, Norwegian University of Science and Technology (NTNU), Norway*
- Some consideration about reservoir sedimentation: a case study – *S. Shauri, University of Dar es Salaam, Tanzania; P. Boeriu, UNESCO-IHE Delft, The Netherlands*
- Alternatives for sediment management at Dez HEPP – *H. Samadi-Boroujeni, Shahrekord University, Iran; F. Izadjoo, Khuzestan Water and Power Authority, Iran; R.R. Steele, Acres International Ltd, Canada*
- Low level sluice spillways for run-of-river hydropower developments in the Himalayas – *S.B. Lalit, V.K. Verma, D.P. Goyal and R.N. Khazanchi, Tala Hydroelectric Project Authority, Bhutan*
- Sustainable management of Alpine reservoirs – a transeuropean cooperation project – *G. De Cesare, Ecole Polytechnique Federal*

*de Lausanne (EPFL), Switzerland; H. Knoblauch, Graz University of Technology (TU Graz), Austria; S. Hartmann, University of the German Armed Forces (UniBwM), Germany*

- Drau river hydropower plant Rosegg-St. Jakob – Innovative solutions for operating the powerplant for 30 years even under extraordinary conditions – *H.A. Steiner and K. Kreutler, Verbund – Austrian Hydro Power AG, Austria*
- Revitalisation of Slovenian rivers below the dams with setting environmental flow – *N. Smolar-Zvanut and D. Vrhovsek, Limnos, Water Ecology Group, Slovenia*
- Hydraulic model research of the intake of the Avče pumped-storage plant – *P. Rodic, Institute for Hydraulic Research, Slovenia; A Rejec, Soske elektrarne Nova Gorica, Slovenia*
- New economical methods of managing hydropower systems in critical situations (repeated floods) – *R. Victorita, University Polytechnica of Bucharest, Romania*
- Sediment monitoring at the Khimti hydro plant in Nepal – *T.P. Phuyal, Hydro Lab, Nepal*
- Monitoring suspended sediments for prevention of turbine erosion – *Y.C. Agrawal, Sequoia Scientific Inc*

## WEDNESDAY 19 OCTOBER – AFTERNOON (3 parallel sessions)

### Session 16: Social Aspects of Hydro Development Timely consultations; Good practice and Safeguard policies; Case studies

**Chairman: Dr. S. Sparkes, Multiconsult, Norway/Laos.**

- MDB requirements with respect to social and environmental safeguards (practical aspects of NT2 on this issue) – *M. Huddleston, Asian Development Bank, The Philippines*
- Lessons learnt from NT2 consultation process – *S. Sparkes, Multiconsult, Norway/Laos.*
- Rights, Risks and Responsibilities: How do we get the process right? – *Daryl Fields, Water Resources Management Group, The World Bank, USA*
- Realizing best intentions into effective practice: A new approach to current safeguard management policy – *P.S. Power and C. Usubiaga, Hobbs International, Canada*
- The emerging paradigm of sustainable hydropower development – *S.K.Chaturvedi and P. Choubey, National Hydroelectric Power Corporation Ltd, India*
- Communications and public acceptance: Case of the 231 MW Chamera project Stage III in India – *O.P. Thakur and S.K. Sharma, National Hydroelectric Power Corporation Ltd, India*
- First nation participation and benefit sharing, on the Wuskwatim generating station project – *J. Primrose, Chief Nisichawayashik Cree Nation, Canada; J.W. Markowsky, Manitoba Hydro, Canada*
- The Upper Seti storage hydroelectric project: environmental, social and economic aspects – *V.B. Singh, Nepal Electricity Authority, Nepal*
- Parbati hydroelectric project, stage II: Step towards sustainable development and social responsibility – *M.M. Madaan and J. Punidhan, National Hydroelectric Power Corporation, India*

### Session 17: International Small Hydro Development Experience from Africa, Asia, Australasia, Latin America

**Chairman: Prof Tong Jiandong, Director, IN-SHP, China**

- Hydropower development in Africa by African NGOs – *B-L. Tondo, ENERCA, Central African Republic; F. Isambert, ISL, France.*
- Challenges of rural energy development: the Malian perspective – *S. Akuopha, Niger Sahel Energie, Mali*
- Lessons from recent small hydropower schemes – *B. Leyland, Consultant, New Zealand*
- Stimulating the market for pico hydro in Ecuador – *S. Taylor, M. Fuentes, J. Green and K. Rai, IT Power, UK*
- Mini- and micro-hydro development in Russia: the last years of experience – *I. Blyashko, INSET, Russian Federation*
- State of the art of hydrokinetic energy Brazil – *G. Tiago Filho, Federal University of Itajuba, Brazil*

# TECHNICAL PROGRAMME SESSIONS

- Geographic information system application to site selection of small hydropower projects in Thailand – *T. Chaisomphob, Thammasat University, Thailand*
- Feasibility of a hydropower plant implementation at Dez diversion dams site – *M.R. Nazarzadeh and E. Mohammadian, Dezab Consulting Eng., Iran*
- Selection of design discharge for small hydropower development: private profit or public interest? – *S.M. Palt and M. Horn, Fichtner GmbH & Co KG, Germany*
- Physical modelling of headworks – *S.B. Thapa, Hydro Lab Pvt. Ltd., Nepal*
- Standardization of civil engineering works for small hydropower plants and development of an optimization tool – *M. Andaroodi, A. Schleiss, J-L Boillat and E. Bollaert, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland*
- Hydromatrix – The experience of implementing several plants for low-head hydropower – *H. Schmid and M. Schneeberger, VA TECH Hydro GmbH & Co., Austria*
- State of the art of small hydro turbine versus large turbines – *H. Brekke, Consultant, Norway*

## Session 18: Pumped-storage Development Worldwide potential and plans

**Co-Chairmen:** **A. Bergeret, Secretary-General ICOLD, France;**  
**F. Louis, Head of International Business Development, EDF, France**

### Potential and case studies

- The development of pumped-storage hydropower in Iran – *N. Nemati and E. Bozorgzadeh, IWPC, Iran*
- Pumped storage proposal for the Acheloos river diversion to Thessaly – *G.A. Kalauzi, Greece*
- Possibilities for pumped storage development in the electric power system of Belarus – *A.N. Alferovich, Russia*
- The benefits of the Tauernmoos pumped storage hydropower project for the Austrian Railway Company (OBB) – *R. Fritzer, ILF-Beratende Ingenieure, Austria*
- The power plant Kops II – Basic conditions and construction – *E. Pürer, Vorarlberger Illwerke AG, Austria*

### R&D and case studies

- Hydraulic studies for a complex double-stage pumped-storage plant – *B. Charvoz, P. Huvet, O. Perillat, P. Grillot and V. Winckler, EDF-CIH, France*
- Prediction and improvement of draft tube flow instability in a high head pump-turbine – *J. Yahara and T. Aki, Shikoku Electric Power Co. Inc., Japan; K. Miyagawa and T. Sano, Mitsubishi Heavy Industries Ltd, Japan*
- The three-chamber surge tank, new concept for the downstream conduit of pumped-storage schemes – *G. Heigerth, D. Mayr and M. Larcher, Graz Technical University, Austria*
- Pumped-storage powerplants. Alstom's long experience and technological innovation – *A. Schwery and E. Fass, Alstom, Switzerland; A. Mirzaian, Alstom Power Conversion, France; J-M. Henry, Alstom, France*
- Control strategies for variable speed machines – design and optimization criteria – *E. Kopf, Voith Siemens Hydro, Germany; S. Brausewetter, Power Generation GmbH & Co. KG, Germany*
- New design of butterfly valves for modern pump-storage power plants – *G. Penninger, Voith Siemens Hydro Power Generation GmbH & Co. KG, Austria; H. Benigni, Technical University of Graz, Austria*

## THURSDAY 20 OCTOBER – MORNING

(3 parallel sessions)

### Session 19: Civil Works 2 Challenging site conditions

**Chairman:** **M. Verma, Executive Director, CCL, India**

- Challenges and innovations in river diversion and dam construction for the 2000 MW Subansiri lower hydro project in India – *B. Das, Enrinco India PVT Ltd, India*
- Reconstruction of Bekme dam, the biggest in Iraq – *H.A. Hawramany, Ministry of Industry and Electricity, Iraq*

- Construction of large underground caverns – some key aspects and case studies – *N. Raghavan, Larsen & Toubro Limited, India*
- Rudbar-e-Lorestan dam and hydro plant: challenging seismic conditions – *H. Samari, A.F. Mojtahedi, M. Soroush and A. Heidari, Iran Water & Power Resources Development Co, Iran*
- Challenging sites: getting logistics and infrastructure right first time and avoiding false economies – *T. Read, Director, TMI Associates, UK*
- Construction of the first cut-off wall by a low headroom cutter inside a dam tunnel in China – *W.G. Brunner, Bauer Maschinen GmbH, Germany; A. Bi and W. Chang, Bauer Technologies Taiwan Ltd; and D. Zong, China Water Group, China*
- Grouting programme in underwater conditions – example of a karstified rock mass – *B. Rezaei, General Mechanic Co., Iran; A. Saat Saz, Mahab Ghodss Consulting Engineers, Iran*
- Stilling basin at Vatnsfell dam, Iceland – Problem of water cascade and its solution – *J. Yang, Vattenfall Utveckling AB, Sweden*

## Session 20: Electrical Equipment

**Chairman:** **B. Leyland, Hydro Consultant, New Zealand**

- Impact of the scope of hydro generator refurbishment on the possibility of optimizing electric parameters and operating range – *K. Celic-Baran and R. Bordukala, Končar, Croatia*
- Challenges in the design of large hydro generators: electromagnetic and ventilation aspects and the experience in the modernization of Bath County PSP – *T. Hildinger, E.J. Faria and A.C. Meyer, Voith Siemens Hydro Power Generation, Brazil*
- Importance of on-line monitoring systems for hydro generators and results for the Masjed-Soleyman and Karkheh projects, Iran – *J. Savage, VibroSystem Inc, Canada; A. Kiani, IWPC, Iran*
- Important considerations for specifying new hydro generator stator windings or rewinds – *T.E. Goodeve, G.C. Stone and I. Culbert, Iris Power Engineering, Canada*
- Integrated control system for hydro powerplants – *G. Canestri, Compagnia Valdostana delle Acque – CVA SpA, Italy; L. Milani, Elettromar Srl, Italy*
- Optimized and fully automated operation concepts for hydro powerplant units – *M. Meusburger and T. Harbort, VA TECH SAT GmbH, Austria*
- Refurbishment solutions for various field pole problems – *B. Moore, National Electric Coil, USA*

## Session 21: Aesthetics and Energy

**Chairman:** **Prof M. Jakob, University of Geneva, Switzerland**

- Keynote: What is the aesthetics of energy, and why it matters – *Prof M. Jakob, University of Geneva, Switzerland*
- Architecture, landscape and energy – *Prof O. Selvavolfa, Milan Polytechnic, Italy*
- Aesthetic aspects for hydro power projects – *N. Raghavan, Larsen & Toubro Limited, India*
- The architectural lighting of the Tarnita-Cluj dam – *P. Ungureanu, Hydropower-Cluj, Romania*
- Alpine architecture, and the aesthetics of energy in Italy – *Prof S. Pace, Turin Polytechnic, Italy*
- Panel discussion led by Prof Jakob

## Closing Session

**Conclusions and Recommendations from HYDRO 2005 Sessions**

**PREVIEW OF HYDRO 2006, Porto Carras, Greece**

- Overview of Greek hydropower – *G.A. Babalis, Public Power Corporation, Greece*

**Closing Addresses**

**Departure after lunch for Technical Excursions (choice of three).**

# HALF-DAY TECHNICAL EXCURSIONS

## THREE OPTIONS FOR TECHNICAL EXCURSIONS

On the afternoon of Thursday 20 October, a choice of three Technical Excursions will be offered, giving the opportunity for all participants to choose from a range of different types of project:

- The low head 80 MW Rosegg-St. Jakob hydro plant on the Drau river, near Villach, where interesting measures have been taken for sedimentation management and flood protection.
- The Kölnbrein concrete arch dam, which underwent major remedial work in the late 1980s, to reinforce the base of the structure, and the associated Malta pumped-storage project.

- The 85 m-high Feistritzbach earth- and rockfill dam, which has a central vertical asphalt concrete core, and a 50 MW hydropower plant. It was completed in 1990.

All trips will depart after lunch (following the closing session of the conference) and will return to Villach in the evening. Technical briefings will be given at each site, as well as a guided tour of the facilities, and refreshments will be served. Travel will be by luxury coach, and the excursions will also provide an opportunity to enjoy the landscape of southern Austria.



Rosegg-St. Jakob plant



Kölnbrein dam



Feistritzbach dam

# ACCOMPANYING PERSONS' PROGRAMME

## ACCOMPANYING PERSONS

### Monday 17 October: Carinthian castles and lakes

*Departure from Villach in the morning.* The group will travel via the Ossiacher Lake and Landskron Castle, through Feldkirchen to Gurk. There will be a possibility to visit the Cathedral of Gurk, as well as the Hochosterwitz castle, one of the most famous castles of the Middle Ages built high on a hilltop. The return journey will be via the 15th Century Maria Saal church (where the remains of a Roman sculpture of a horse-drawn carriage has been found and preserved), Klagenfurt and the scenic Wörther and Faaker lakes.

Travel will be by luxury coach. Lunch will be included in the excursion and the arrival back at Villach will be at about 15.00 hrs.

### Tuesday 18 October: Venice, Italy

*Early morning departure from Villach.* (NB: Passports will be required). The group will travel via Tarvis, Udine and Palmanova to Punta Sabbioni near Jesolo, Venice. Participants will then travel by chartered boat to the famous St Marks Square in the heart of Venice.

There will be a guided tour around Venice, visiting the most important sights. The guide will take the group to a typical restaurant for lunch. After that there will be free time for additional sightseeing or shopping. At 15.00 hrs, the boat will depart back to Punta Sabbioni, from where the group will leave by coach for Villach. Arrival at Villach will be at approximately 19.00 hrs.

The tour includes travel by luxury coach, the boat trip to Venice and back, an English speaking guide throughout the day, and lunch in Venice.

### Wednesday 20 October: Mozart City - Salzburg

*Departure from Villach in the morning.* Travel on the Tauern highway to Salzburg. A guide will show participants around the most important highlights of Salzburg city. This will include a walk in the historical 'Getreide Gasse' and the ancient Linzergasse, a visit to Mozart's House, and a chance to see the Collegiate Church and the hilltop castle, with some time for shopping or a visit to an art gallery. Return to Villach in the mid-afternoon, to arrive at about 17.30 hrs.

The tour includes travel by luxury coach, an English speaking guide and tour, including lunch, in Salzburg.



Landskron castle,  
Villach



Hochosterwitz castle



Venice



Mozart's Geburtshaus



Salzburg

# STUDY TOURS



Kölnbrein reservoir



Reisseck

## HYDRO 2005 STUDY TOURS

There will be a choice of two post-conference Study Tours. One will visit some of the most important major dams and storage projects in Austria, north of Villach, and the other will take participants to hydro schemes on the Sava and Soča rivers in Slovenia, and will travel back into Austria via a scenic wine-growing region of Italy.

### TOUR 1 - AUSTRIA

#### Friday 21 October

The group will leave Villach after breakfast and travel through the scenic town of Spittal to visit the Malta hydropower plant in Rottau, and Reisseck in Kolbnitz, part of the same complex, owned by Verbund.

The Malta development exploits the hydro potential of the eastern part of the Hohe Tauern mountain range in three stages (upper, main and lower). The whole group of powerplants has a combined generating capacity of 891 MW, and a pump capacity of 406 MW. With the output of downstream powerplants on the Drau river, the total production totals about 1350 GWh/year. The upper stage reservoir is formed by the Kölnbrein arch dam, where important remedial work was carried out in 1988 to reinforce the base of the structure.

After a briefing and tour, the group will continue to Innerfragant for lunch. After lunch participants will visit the Fragant hydropower plant owned by the Carinthian utility KELAG. After a tour of the site and a technical briefing, the group will travel on to Heiligenblut for an overnight stay.

#### Saturday 22 October

After breakfast the group will depart for 'Grossglockner Hochalpenstrasse' (weather permitting), the beginning of the famous panoramic route, ascending to el. 2500 m.

There will be a brief visit to the Möll double curvature arch and Margaritze arched gravity dams. The group will continue to Kaprun or Zell am See for lunch. After lunch, participants will visit the Kaprun upper stage powerplant, which is part of the Glockner/Kaprun pumped-storage development. This powerplant has a capacity of 112 MW and produces 166 GWh/year in the generating mode, using water pumped from the Wasserfallboden reservoir up to the Mooserboden lake.

After a briefing and tour, the group will travel on to Salzburg, the birthplace of Mozart, for dinner and an overnight stay.

#### Sunday 23 October

The tour will end with a morning city tour, providing an opportunity to see some of the most important sites in Salzburg, and will end with a transfer to Salzburg airport if required.



Margaritze dam



Kaprun



Moste



Ljubljana

### TOUR 2 - SLOVENIA / ITALY

This tour has been organized in collaboration with the Slovenian Committee on Large Dams.

#### Friday 21 October

The group will leave Villach after breakfast and travel to the Moste powerplant on the Sava river, Slovenia, where a refurbishment scheme is currently under way. The powerplant is surrounded by a beautiful landscape. After a briefing and tour, the participants will travel on to Radovljica for lunch in the medieval part of the town. The group will then continue to the town of Bled (a picturesque small island in an alpine lake), known as the pearl of the Alpine region, for a short sightseeing tour, before travelling on to Ljubljana for dinner and an overnight stay.

#### Saturday 22 October

After breakfast the group will travel to the Soča river, to visit the Plave and Doblar hydropower plants, which have recently been updated and refurbished. There will be a briefing and short tour of the facilities. The group will then continue to Kobarid for lunch at the Restaurant Topli Val. The participants will then visit the famous museum which exhibits information about the events that took place on the Isonzo Front in World War I. The Kobarid museum was awarded the European Museum Prize in 1993. This will be followed by dinner and an overnight stay in Kobarid.

#### Sunday 23 October

There will be some time for sightseeing in the morning before leaving for the journey back to Villach. The journey will take participants into Italy, through some scenic wine-growing regions. Arrival in Villach will be by late morning followed by a transfer to Klagenfurt airport.

The prices for the tours include accommodation in three or four star hotels, private bus transportation, lunches on Friday and Saturday, all sightseeing tours mentioned in the programme, and a group transfer to the airport. The tours are based on a minimum of 20 participants, travelling together.



Plave



Doblar



# HYDRO 2005: Policy into Practice

## Congress Center Villach, Austria ~ 17-20 October 2005

### REGISTRATION FORM

(Deadline for early booking discount: 15 August 2005)

This registration form is a self-billing order form, which should be sent to NetWork Events Ltd with your payment for all items booked on the form. By completing this form you are agreeing to the Booking Conditions within this brochure. Fees are payable in UK Pounds Sterling (GBP). Each conference/exhibition participant should complete a separate form.

PLEASE COMPLETE THE FORM IN CAPITAL LETTERS, AND ENCLOSE A PORTRAIT PHOTOGRAPH TO BE USED ON A PHOTOBOARD AT THE CONFERENCE

Title (Mr/Ms/Mrs/Dr/Prof/etc):	Given name:	Family name:
Name <u>as it should appear on your badge</u> :		
Job title:		
Organization:		
Organization's postal address (inc. zip/post code and country):		
Tel (inc. country code):		Fax (inc. country code):
Email address:		Web site:
Data Protection: I do not wish my email address to be passed to any third party <input type="checkbox"/> I do not wish any contact details to be passed to a third party <input type="checkbox"/>		

FEES	Until 15 Aug 05	From 16 Aug 05	Total GBP
<b>FULL PARTICIPANT FEE:</b> Includes attendance of conference and exhibition; pack containing all documentation; morning and afternoon refreshments; lunches during the conference; social programme	GBP 650	GBP 715	
<b>REDUCED PARTICIPANT FEE:</b> For subscribers to <i>Hydropower &amp; Dams</i> H&D Subscription No: ..... (or specify below if ordering a subscription now)  I would like to order a new personal subscription to <i>H&amp;D</i> and take advantage of the reduced registration fee for HYDRO 2005 (please tick box) <input type="checkbox"/>	600	715	
<b>SPEAKER FEE:</b> Includes all facilities described above for Full Participants, plus additional reception on 16 October. NB: This fee applies to <u>one</u> person per paper (main author or presenter)	395	395	
<b>FIRST EXHIBITOR FEE:</b> (One full participant fee is included with exhibition booking)  Stand No: .....	Free of charge		
<b>SECOND EXHIBITOR FEE:</b> (Covers attendance of conference sessions, CD of conference papers, evening social programme and lunches)  Stand No: .....	475		
<b>EXHIBITOR ASSISTANT FEE:</b> (Includes exhibition attendance, lunches, refreshments and evening social programme, but not attendance of the conference sessions)	275		
<b>ACCOMPANYING PERSON FEE:</b> (For family members or friends not attending the conference) the fee includes three excursions with lunch, and the evening social events). NB: Accompanying persons who do not register by completing this section are not able to attend lunches or social events.  Name to appear on badge (inc. title Mrs/Miss/Mr/Dr/etc): .....	275		

#### DIETARY REQUIREMENTS

Participant :                      Vegetarian meals required                       Other dietary requirements (please specify) .....

Accompanying Person:                      Vegetarian meals required                       Other dietary requirements (please specify) .....

**PLEASE TOTAL THE COSTS ON THIS PAGE AND CARRY THEM OVER TO THE SECOND PAGE**

**SUB-TOTAL OF FEES CARRIED OVER FROM PREVIOUS PAGE****GBP****ACCOMMODATION** *(Please refer to Booking Conditions in this brochure)*

Accommodation has been reserved in and around Villach. For those hotels on the outskirts of the town (more distant from the Congress Centre) we are organizing daily bus transfers to and from the Congress Centre, and for the evening social events on 17 and 19 October (price included in fees). NB: If you book your own accommodation, no transfers can be provided.

**SOLE USE BEDROOM WITH PRIVATE BATHROOM**

(for one person)

Please tick requirement

- 4 Star Superior standard room **GBP 89 per night**
- 4 Star Superior economy room **GBP 74 per night**
- 4 Star standard room **GBP 69 per night**
- 4 Star economy room **GBP 59 per night**
- 3 Star standard room **GBP 59 per night**
- 3 Star economy room **GBP 35 per night**

**TWIN OR DOUBLE BEDDED ROOM WITH PRIVATE BATHROOM**

(for two persons)

Please tick requirement

- 4 Star Superior standard room **GBP 118 per room per night**
- 4 Star superior room **GBP 109 per room per night**
- 4 Star standard room **GBP 97 per room per night**
- 4 Star economy room **GBP 76 per room per night**
- 3 Star standard room **GBP 79 per room per night**
- 3 Star economy room **GBP 63 per room per night**

(Green denotes hotel type, black denotes room type)

Preference:  Twin beds  Double bed *(cannot be guaranteed)*

Check-in date: ..... October Check-out date: ..... October Total number of nights: .....

Special requests (eg, non-smoking room): .....

Name of partner for twin occupancy .....

*(If you wish to share a room with another delegate, then you must both request the arrangement, and both send registration forms to NetWork Events Ltd at the same time. Only one person should make the payment for the hotel.)***TECHNICAL EXCURSIONS - Choice of 3 on afternoon of Thursday 20 October for all participants****GBP**

Excursion 1: Rosegg-St-Jakob run-of-river plant. Returns Villach approx. 17.30 hrs

Cost per person **GBP 25** × no. of persons

Excursion 2: Kölnbrein arch dam. Returns Villach approx. 19.30 hrs

Cost per person **GBP 35** × no. of persons

Excursion 3: Feistritzbach earth- and rockfill dam. Returns Villach approx. 19.30 hrs

Cost per person **GBP 35** × no. of persons**POST-CONFERENCE STUDY TOURS (Choice of 2 study tours, departing Villach on the morning of Friday 21 October)****GBP**

(Tour price includes transportation by coach, accommodation in three or four star hotels, meals, sightseeing and guides)

Study Tour 1 - Austria

 Single room **GBP 370** Sharing twin room **GBP 330** (per person)

(Ends in Salzburg at 13.00 hrs on Sunday 23 October)

Study Tour 2 - Slovenia/Italy

 Single room **GBP 385** Sharing twin room **GBP 360** (per person)

(Ends in Villach at 13.00 hrs on Sunday 23 October. Optional transfer to Klagenfurt Airport available to arrive by 14.00 hrs)

Please give homeward flight details: Date Flight No: From: To: Departure time:.

**TOTAL PAYMENT FOR FEES - CONFERENCE, HOTEL, TOURS (include total from first page)****GBP**

(Please ensure that this box is completed, so that your registration can be confirmed)

Please quote your company VAT / Mwst / TVA / ALV / IVA / BTW / MOMS number:

**SOCIAL EVENTS** (Included in the Registration Fee)I/we will attend *(please tick boxes as applicable)*

Participant

Accompanying Person

Monday 17 October - Welcome Reception and Concert at Ossiach Church

Yes Yes 

Wednesday 19 October - Conference Dinner hosted by Verbund at Schloss Porcia

Yes Yes **PAYMENT** Payment can only be made in GB Pounds (UK Pounds Sterling) in the following ways:✓ Enclose a bank draft or cheque drawn on a UK bank, payable to **NetWork Events Ltd**. Payment enclosed for: GBP.....

✓ Credit Card: I hereby authorise you to debit my card with the total value of the events and services booked by me on this form.

PLEASE NOTE: Your card statement will read 'Debited by NetWork Events Ltd', and not by HYDRO 2005.

✓ I wish to pay by:  Visa  Mastercard  Eurocard  JCB  UK Maestro Start date..... Issue No.....(We regret that **AMEX and Diners are not accepted**)

CVC No: (on back of card).....

Name of cardholder:	Card expiry date:	Card number:
Address for which card issued:		Cardholder's signature:

✓ I confirm that payment will follow by bank transfer. (Please quote **HYDRO2005** and **name of attendee**, and ensure that all bank charges are paid.)

**Barclays Bank plc, Portsmouth Guildhall Walk, Hampshire, PO6 3DH, UK. Account name: NetWork Events Ltd Account No.: 60293903**  
**Sort Code: 20-69-34 Swift Code: BARCGB22 IBAN GB91 BARC2069 3460 2939 03**

**NetWork Events Ltd, The Old Manor House, Compton, West Sussex, PO18 9EX, United Kingdom**

**Tel: + 44 (0)23 9263 1331 Fax: +44 (0)23 9263 1797 E-mail: Hydro2005@networkevents.ltd.uk**

**Online registration: [www.networkevents.ltd.uk/events/hydro2005](http://www.networkevents.ltd.uk/events/hydro2005)**

**Payment must be received by NetWork Events by Monday 15 August to qualify for reduced registration fees**

# BOOKING CONDITIONS

The Conference **HYDRO 2005: Policy into Practice** is organized jointly by *The International Journal on Hydropower & Dams* and **NetWork Events Ltd.**

## Registration and Payment

The total fees for conference registration, accompanying persons' programme, accommodation, technical excursion and study tour (if applicable) should be calculated and totalled in the 'Total GBP' column on the second page of the registration form.

Payment can be by cheque (drawn on a UK bank) or a bank draft, made payable to NetWork Events Ltd, by bank transfer or by credit card. Once your booking form is received, you are liable for full payment or cancellation fees.

- If you are paying by cheque or bank draft, the registration form should be mailed to NetWork Events Ltd, together with your payment.
- If you are paying by bank transfer, the form can be faxed to NetWork Events Ltd (please attach a copy of the bank transfer instruction). All bank charges must be paid by you.
- If you are paying by credit card, we can accept Visa, Mastercard, Eurocard, JCB, Delta or UK Maestro (we regret that we do not accept payment by American Express or Diners Card).

You can also register on-line at [www.networkevents.ltd.uk/events/hydro2005](http://www.networkevents.ltd.uk/events/hydro2005). A letter and invoice showing confirmed reservations and the total cost will be mailed to you with your hotel details.

## Accommodation

The conference organizers have reserved accommodation at a number of hotels in Villach, ranging from good quality 3 Star economy hotels to 4 Star Superior. Please indicate on the registration form the type of hotel and room you require: single occupancy (one person) or double-occupancy (two persons) and your check-in and check-out dates. Hotels will be allocated on the basis of category requested, and your confirmation will show the hotel name and details. All payments for accommodation booked by the HYDRO 2005 Secretariat must be paid in advance to NetWork Events Ltd. Please read the cancellation terms set out below.

## Conference and Accommodation Prices

The conference and study tours are subject to minimum numbers as follows: the conference, 120 paying participants; the study tour, technical excursion

and accompanying persons' programme, 20 paying participants. In the unlikely event that fewer than the minimum number of participants make reservations for any component of the conference (including the study tours), the organizers reserve the right to cancel that component and to refund the price, or alter the content (within reason) and/or the price payable for that component.

## Cancellations

Participants wishing to cancel reservations must inform NetWork Events Ltd in writing by fax or e-mail. Cancellation charges will be payable as shown in the Table below. Substitution of delegates after a reservation has been made is acceptable at any time, and no extra fee is payable.

## Liability/Insurance

All reservations made by the organisers in respect of services provided by hotels, and companies providing transport, are made by the organisers as agent, not as principal. The organisers accept no responsibility for death, injury, loss or accident, delay arising from any act or default of any person, or any other matter arising in connection with such services or transport. The organizers make no warranty in this connection. All services provided are subject to local laws.

The organizers cannot accept responsibility for loss or damage to personal property; delegates and exhibitors are therefore strongly advised to take out adequate personal insurance to cover such risks.

The organizers reserve the right to amend any part of the conference programme or arrangements if necessary. In the very unlikely event that it is necessary to cancel any of the conference arrangements, an appropriate refund will be made and thereafter the liability of the organizers will cease.

## Passport and visa requirements for Austria

It is the responsibility of all conference participants to check their own passport and visa requirements. Austria is a member of the European Union and a signatory to the 1995 Schengen Agreement.

Please note, if you are intending to travel to other countries within Europe, or are participating on the Study Tour visiting Slovenia and Italy, you may require a visa for these other countries, and you may also need a multiple entry visa for Austria. If you require an official letter of invitation from the organizers to facilitate your visa application, please let us know at the time of registering. More information about visa requirements for Austria can be found at the website: [www.bmaa.gv.at/](http://www.bmaa.gv.at/)

Date cancellation received	On or before 15 August 2005	From 16 August to 16 September 2005	On or after 17 September 2004
All registration fees	10% of fee is forfeited	50% of fee is forfeited	No refund
Study tours and technical excursion	10% of fee is forfeited	No refund unless place can be resold	No refund
Hotel accommodation	One night's accommodation charge is forfeited	No refund of the accommodation as charged in the confirmation invoice, unless the organizers are able to resell the accommodation, whereupon there will be a cancellation charge of the cost of one night's accommodation per room booked	

## HYDRO 2005 REGISTRATION DISCOUNT FOR H&D SUBSCRIBERS

Reduced registration fees for HYDRO 2005 are available for subscribers to Hydropower & Dams

For details of subscribing to *H&D*, contact Maria Flintan: [subs@hydropower-dams.com](mailto:subs@hydropower-dams.com)

If you do not already hold a personal subscription to the journal, you may order one at the same time as booking for the conference, and benefit from the £50 discount on the early booking fee.

## HYDRO 2005 CONTACT DETAILS

For enquiries concerning registration and accommodation, contact:

**Mrs Linda Wells**, NetWork Events Ltd, The Old Manor House, Compton, West Sussex PO18 9EX, UK

**Tel: +44 (0)23 9263 1331 Fax: + 44 (0)23 9263 1797**

**Email: [hydro2005@networkevents.ltd.uk](mailto:hydro2005@networkevents.ltd.uk)**

NB: Registration forms and payment should be sent to NetWork Events Ltd.

**On-line registration at: [www.networkevents.ltd.uk/events/hydro2005](http://www.networkevents.ltd.uk/events/hydro2005)**

For further details of the programme, please contact:

**Mrs Margaret Bourke**, Hydropower & Dams, Westmead House, 123 Westmead Road, Sutton, Surrey SM1 4JH, UK.

**Tel: + 44 (0)20 8643 5133 Fax: + 44 (0)20 8643 8200**

**Email: [hydro2005@hydropower-dams.com](mailto:hydro2005@hydropower-dams.com)**

**Website: [www.hydropower-dams.com](http://www.hydropower-dams.com)**