ASIA 2020: Update for attendees

The Aqua-Media team, along with our national and international supporting organisations, sincerely hope and are planning for ASIA 2020 to go ahead, with the rescheduled dates of 30 June to 2 July, in Kuala Lumpur, Malaysia.

Our optimism is based on the fact that the Covid-19 crisis already seems to be easing in Asia, with far fewer new cases being reported, although cases in some other parts of the world are still increasing.

A high proportion of ASIA 2020 participants have re-booked for our new dates and we have also received several new bookings in the past days. For those who are understandably undecided about what to do, we would like to announce the following updates:

- We will naturally monitor the world health situation closely, and if things deteriorate to the point where it seems we should not proceed with the conference, we will postpone again, to a significantly later date.
- We would like to reassure those who book/rebook now, that in the event of a deteriorating situation and a further postponement, we would reimburse registration fees and accommodation fees in full.
- Assuming the conference goes ahead, we plan to: adopt a ‘no handshake’ policy; ensure that no social events or tours take place in confined spaces to avoid crowding; distribute hand sanitizers in the delegate bags, and around the conference halls; and, for those who would feel more secure wearing a mask, we will distribute them to all. The Chinese National Committee on Large Dams will be supplying these, and this thoughtful and generous gesture is gratefully acknowledged.
- The Shangri-La hotel (the ASIA 2020 venue) has already assured us that they are taking extra measures to ensure first-class standards of hygiene at the venue. They have also assured us of the world-class health facilities, both at a clinic adjacent to the hotel and at excellent hospitals nearby. (Full details were circulated earlier.)
- Malaysia has taken major steps from an early stage to limit the impact of the novel Coronavirus at its borders, and has had a high degree of success.

After considering these points, it is for every individual to decide if they feel comfortable travelling to an international event, and to review this decision closer to the time. We encourage those who feel they may be vulnerable, for example, because of an existing health problem, not to take any risk.

If you are planning to participate in the conference programme, or had previously registered to attend, please keep in contact with us, as we will with you.

Meanwhile, we take this opportunity to express our sympathy and best wishes to all those in countries which have been affected by Covid-19. It is a reminder to all that our planet is increasingly vulnerable to new challenges, which we must work together to overcome. - Alison Bartle, Hydropower & Dams
Eighth International Conference and Exhibition on Water Resources and Renewable Energy Development in Asia

Shangri-La Hotel, Kuala Lumpur, Malaysia ~ 30 June to 2 July 2020

Organized by:

THE INTERNATIONAL JOURNAL ON HYDROPOWER & DAMS

Supporting Organizations include:
MISSION OF ASIA 2020

As with the previous conferences in this series, which took place in Bangkok, Danang, Kuching, Chiang Mai, Colombo, Vientiane and Danang (again), the emphasis will be on helping to turn renewable energy and water resources development policies into practice. By bringing together a multidisciplinary group of international experts, to focus on issues of specific relevance to Asia, we aim to stimulate new partnerships, and produce concrete outcomes from the sessions and workshops. All those engaged in promoting, planning, financing, developing, constructing, supplying or studying water resources and renewable energy schemes in Asia should attend.

WELCOME TO MALAYSIA

The Aqua-Media International team, with the support of the Malaysian Government, the Malaysian Committee on Large Dams, and the State Power utilities, welcomes the global water and energy community to the vibrant, multicultural city of Kuala Lumpur, Malaysia.

Peninsular Malaysia, as well as Sarawak and Sabah, have broad experience of large and small hydropower development and multipurpose dams. Study tours will visit some of the large cascade developments in Peninsular Malaysia. Hydropower supplies about 20 per cent of Malaysia's approximately 34 GW of installed generating capacity, with hydro supplying more than 20 TWh/year. The Government of Malaysia is strongly committed to increasing the share of renewable energy in the country's generation mix, with a target to add 4 GW of renewables across the thirteen states by 2030.

The country has about 104 large dams. The most recently completed in Peninsular Malaysia are the Puah dam for the 250 MW Hulu Terengganu hydro plant (completed in 2015), and Susu RCC dam for the 372 MW Ulu Jelai hydro plant (commissioned in 2016). The latest large scheme going ahead in Sarawak is the 188 m-high Baleh CFRD, following the completion of Bakun and Murum. Some of the most important schemes in Peninsular will be visited during post-Conference study tours.

KUALA LUMPUR

The host city is easily accessible from all parts of the world: Kuala Lumpur International Airport is one of the leading aviation hubs of Asia, with direct flights operating there by more than 70 airlines.

While being surrounded by lush rain forests not too far away, Kuala Lumpur, the capital city and cultural, financial and economic centre of Malaysia, is one of the fastest growing metropolitan regions of Southeast Asia. The city skyline is dominated by the gleaming Petronas twin towers, and numerous state-of-the-art office blocks and hotels. But some traditional Malay buildings and colonial-style architecture can also be found, as well as the colourful markets in the Bukit Bintang and Chinatown areas.

The Shangri-La hotel, in the heart of the city, will provide a comfortable and elegant setting for the conference.
**CONFERENCE SESSIONS**

The following pages show details of confirmed sessions and speakers. Additional speakers and panellists are being invited, and details of updates will be posted regularly on our website (www.hydropower-dams.com)

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**Tuesday 30 June ~ Morning**

**Opening Plenary Session**
- Welcome to ASIA 2020 and introduction to the programme – Alison Bartle, Director, Aqua-Media International Ltd, UK
- Opening addresses by:
  - Michael Rogers, President, ICOLD
  - Felix Reinders, President, ICG
  - Datin Prof Dr Laryiah Binti Mohd Sidek, President, MYCOLD
  - Dr Lois Fauchon, President, World Water Council
  - Niels Nielsen, IEA-Hydropower
  - Officers of TNB/UNITEN and Sarawak Energy

**Coffee break and official opening of the ASIA 2020 Exhibition**

**Plenary Session Part 2 – Keynote addresses will include**
- Dam safety experiences in my 40 year career in hydropower and dams – Michael Rogers, President, International Commission on Large Dams
- World Bank strategy and lessons learned for dam safety – Satoro Ueda, Lead Dam Specialist, The World Bank
- Future hydropower in the post-2020 world — Asit K. Biswas, Lee Kuan Yew School of Water Policy, Singapore

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**Tuesday 30 June ~ Afternoon**

**Session 1 - Change and complexity in hydropower finance: From MDBs and PPPs to bilateral debt**
Chair: Dr Judith Plummer Braekman, University of Cambridge, UK

The scale of finance needed for large-scale energy infrastructure projects is beyond the levels which can be provided by development finance alone. This, together with a perception that electricity projects can be self-funding where tariffs are cost-reflective has led to multilateral development banks assuming new roles to facilitate and provide guarantees for large hydropower projects. Increasingly, projects are being financed through public-private-partnership (PPP) arrangements, even in emerging economies, sometimes with support from financiers in a neighbouring country wishing to import electricity generated by the project. However, private financing packages are complex and can take a long time to reach financial closure leading to delays in development. Obtaining private finance for economically viable projects in emerging economies can also be challenging, because private sector investors are often not remunerated by governments for the economic and system benefits of a large hydropower dam.

Emerging economies are increasingly turning to so-called ‘coordinated bilateral finance’, from the export credit agencies in BRIC and other economies (such as China Exim Bank). High debt service and the lack of attention to social and environmental protection protocols are among the suggested challenges for emerging economies from this form of finance, but it can be quicker and simpler to arrange than MDB or commercial finance. The talks in this session will examine the risks and benefits associated with all forms of finance, with illustrative examples from sub-Saharan Africa and Southeast Asia.

**Session 2 - Environmental aspects of hydropower and dam development**
Chair: Dr Stephen Sparkes, Statkraft, Norway

- Assessment of the effectiveness of hydropower development on the Boleh hydroelectric project, Sarawak – Deebak Subramami, Law Ing Ngoung and Wong Tat King, Sarawak Energy Berhad, Malaysia
- Rural community-based water supply treatment by the Theun-Hinboun Hydropower Power Company in downstream relocation villages, Laos – Singphet Keothongnin and J. Millgate, Theun-Hinboun Power Company (THPC), Lao PDR

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**Session 3 - Planning tools**
Chair: Dr Kamal Laksiri, CEB, Sri Lanka

- Quick study of run-of-river potentials with SimPower software – D. Irwanto, Indonesia Hydro Consult, Indonesia; M. Beraciot, ISL Ingenierie, France
- Expansion of the system operations model for the Mahaweli river basin, Sri Lanka – J. Mäldinger, B. Freeman and B. Dibra, Tractebel Engineering GmbH, Germany
- Screening of potential hydropower sites in Philippines using GIS and global data resources – P. Thapa, P. Schäfer and S. Palt, Fichtner GmbH & Co. KG, Germany

**Session 4 - Contractual and legal issues**
(Chair to be confirmed)

- After the hydropower feasibility study: The technical steps to financial close – A. Noble, WSP Australia Pty Limited, Australia
- Legal, contractual and insurance issues for the hydropower development in Nepal – G.P. Kayastha, Chilmie Engineering and Services Company, Nepal
- Improving construction time and budget overrun risk management using Monte Carlo simulation – F-P. Megel, M. Wagner and M. Beider, ELF Consulting Engineers Ltd., Thailand
- Hula Terangenu hydroelectric project: The sequencing of Pumah dam construction and its contractual perspective – M.S. Bin Aliu Bakar, Tenaga Nasional Berhad, Malaysia
- Introduction to the guidance for the preparation of tender documents in the emerald book underground works: Managing time risk and cost – M. Smith, Matrics Consult Ltd, Rep of Korea

**Session 5 - Social benefits of hydropower and dams**
Chair: Dr Cecilia Tortajada, Institute of Water Policy at the Lee Kuan Yew School of Water Policy, Singapore

- Keynote: Social-related aspects of hydropower development within a framework of climate change – Dr Cecilia Tortajada, Institute of Water Policy at the Lee Kuan Yew School of Water Policy, Singapore
- Benefit sharing: Enablers, framing mitigation, conflict resolution and development goals – S. Dhillion, Enviro-Dev, Norway
- Benefit sharing in hydropower projects of Nepal for economic transformation – G. Thakur, NRW Infrastructure & Development Limited, Nepal
- Managing hydropower sustainability risks and opportunities through enhancement of social and environmental impact assessment: A corporate commitment – D.C. Yu Li, J.A.L. Blando, F.H. Pathi and N.K. Bujang, Sarawak Energy Berhad, Malaysia
- Difficulties in capturing and quantifying the benefits of hydropower plants – G. Dos Santos Cruz Rocha, M. Yasuo Kikuchi and M.A. Villarininha Gomes, Worley, Brazil

**Session 6 - River basin management and cascade developments**
Chair: Prof Bogdan Popa, University Politehnica of Bucharest, Romania

- Operation of run-of-river hydro plants: an example based on Xpcl and CRIN experience respectively on Mekong and Rhône rivers – C. Sampic and S. Panggachtarakul Saksokiat, Xayaburi Power Company Ltd, Lao PDR; B. Graff and S. Legrand, CRIN, France
- Joint and intelligent regulation of large-scale cascade reservoirs for integrated river basin management – Yan Huang, Qiang Zou, Lu Yi, Shan Xu and Xueqin Wang, Changjiang Institute of Survey, Planning, Design and Research, China
- Challenges of the development of independent hydropower projects as part of a cascade on the Arun river, Nepal – M. Heider and P. Schäfer, Fichtner GmbH & Co. KG, Germany; H.R. Singh, S. Dhuang and A. Shrethta, Department of Electricity Development (DOED), Nepal
- Downstream versus upstream: Why downstream often is the better solution – shown with the example of the Tahkot hydro plant development in Pakistan – R. Siebel, Tractebel Engineering GmbH, Germany; M.A. Shakti, Water and Power Development Authority (WAPDA), Pakistan
Session 7 - Development opportunities and challenges
in Asian countries
Chair: H.L. Aker, Dolsar Engineering, Turkey

- Lao Coordination and Monitoring Center (CMC): Achievement and the next steps
  — S. Tressat and B. Graf, CMI, Norway; J. Sridhar, Power China International Group Ltd, China
- Opening small hydropower opportunities in emerging markets such as Malaysia
  with digitalization — K.Y. Lam, Mott MacDonald, Malaysia; F. Currie, Mott MacDonald, Singapore
National overviews will then be presented on potential, development opportunities, and challenges in a number of Asian countries, including India, Nepal, Myanmar, Laos, Turkey, Iraq and others.

Session 8 - Civil engineering: Design and construction
Co-Chairs: M. Rogers, ICOLD President and Stantec, USA; Prof Xu Zeping, IHWIR/CHINCOLD, China

- Keynote: RCC dam developments over the past 20 years — Dr M.R.H. Dunstan, MDEA, UK
- An overview of RCC dam development in China — Chen Guanfu and Zhou Chunchou, Power China International Group Ltd, China
- Construction challenges of a high CFRD dam for the Nam Ngum 3 hydro plant — X. Ducos, G. Bacher, G. Oubry and F. Brunouset, Artelia Eau & Environnement, France; K. Phit-Asa, Electricité du Laos, Lao PDR
- Concrete faced rockfill dam (CFRD) construction at the 330 MW Krishangange hydroelectric project, India — S. Dave and S. Rathi, Hindustan Construction Company Ltd, India
- Design aspects of grid diaphragm walls under the circular buttress weir — M.M. Arslan, Doabar Engineering Inc Co, Turkey
- Design and construction of large dams on deep alluvial foundations — W. Salve, RCS Inc, Canada
- The design and construction of a new dam and hydro plant in Kurdistan, Iraq — H.A. Hawramany, Hydropower Consultant, Iraq
- Application of digital transformation to civil engineering field related to hydropower
  — M. Kawaguchi, M. Samiya, T. Araki and S. Hiji, Kansai Electric Power Company, Japan
- Start-up of the Nam Lek 1 run-of-river scheme, Laos, in a challenging environment — E. Mine and N. Bourcier de Carbon, Tractebel, France; P. Phumchawsun, GPSC, Thailand
- Repair, rehabilitation and retrofitting of concrete dams with cement based materials — J.S.R. Conde da Silva, National Laboratory for Civil Engineering, Portugal
- Geomembranes in pumped-storage schemes — G. Vaschetti and A. Scuro, Carpi Tech, Switzerland; J. Cowland, Carpi Tech, USA
- Lower Kaleköy dam: A tailor made composite dam structure — M. Smenick, H. Nowotny and M. Verdiana, Alstyr, Austria; D. Rohrheider and M. Steini, Alstyr, Switzerland

Session 9 - Achieving optimum performance
from ageing assets
Chair: Dr A. Müller, EPFL-LMH, Switzerland

The untapped energy and potential of ageing hydropower assets is normally much less costly to develop than new greenfield sites. This IEA Hydro session presents experience on ways to identify and develop this potential, as well as modernizing these assets to align with evolving requirements of the electricity system.

- Optimizing the operation of hydropower assets through reduced scale model testing — Dr A. Müller and Prof F. Avellan, EPFL-LMH, Switzerland
- Squeezing more ‘juice’ out of Scotland’s hydro — G. Black and Prof D. Williams, Learning Hydro, UK
- Refurbishment and modernization of SEB’s 35 year-old Batang Ai hydroelectric plant
  (speaker to be confirmed)
- Optimization and modernization of existing small hydro assets — J. Crowson, Gilbert Gilkes & Garden Ltd, UK

Reducing the risk of operational issues due to entrained air using CFD analysis
— T. Frerer and F.P. Magel, IFL Consulting Engineers (Asia) Ltd, Thailand

Study for the rehabilitation of the bottom outlet service and emergency gates for the de-sedimentation tunnel at the Shahid Abbaspour dam and powerplant — M. Ghaderi, Fanozzi Novin Niroo Co, Iran

66 MW hydro turbine start-up assistance — M. Peton, Baker Hughes, France; S. Drygin, Baker Hughes, Russia; K. Wannapun, Baker Hughes, Thailand; and Woon Kio Phong, Baker Hughes, Malaysia

DRIP: 223 dams to be rehabilitated in India - Lessons learnt — S. Giraud, Egis, France

Session 10 - O&M and refurbishment
Chair: D. Paschini, EDF, France

- Contracting out rehabilitation of hydroelectric plant — J.H. Gammer, Hydro-Consul Pty Ltd, Australia
- Major rehabilitation and upgrade of the Tektolguq hydro plant in the Kyrzg Republic
  Approach, challenges and benefits — O. Garasheil and H. Von Buren, Fichtner GmbH & Co. KG, Germany
- Challenges faced in the revival of the Singhrauli small hydro plant after flooding
  — N. Pant and S. Shivastava, NTPC Ltd, India

Session 11 - Climate change: Research and resilience
(Chair to be confirmed)

- Keynote: Water storage for managing extreme hydrological events caused by climate change
  — Prof Akit K. Biswas, Distinguished Visiting Professor, University of Glasgow, UK, and Chairman, Water Management International Pte Ltd, Singapore
- IEA Communic to national governments on ‘Climate change: Adaptation, resilience and
  valuation of hydropower services’ — N. Nielsen, IEA-Hydro; A. Harby, SINTEF, Norway;
  J. Damazio, CEPEL, Brazil
- Future safety of dams in a changing climate — Lariyah Mohd Sidek, Hidayat Bazi, J. Razzal,
  M. Marufuzzaman and M. Razaiman Yatih, Universiti Tenaga National, Malaysia; A.Z. Abdul
  Razal, M.R. Mohd Radzi and A. Talhi, Tenaga National Berhad, Malaysia
- The importance of hydropower generation in combating climate change in the
  Malaysian context — C.R. Donnelly, S. Bohn, M. McGeeslin and J. Groeneveld, Hatch Ltd, Canada
- The economics of climate change in the context of hydropower in Asia — S.D. Usher,
  Aqua-Media International Ltd, UK

Session 12 - Hydropower equipment
(Chair to be confirmed)

- Xayaburi hydropower project: Challenges encountered and overcome during the
  commissioning phase of the first run-of-river hydropower plant on the lower Mekong
  — A. Schirrmann and G. Judtmann, Afry, Switzerland; M. Razaiman Yatih, Universiti Tenaga
  National, Malaysia; D. Rothweiler and M. Steinl, Afry, Switzerland

Future safety of dams in a changing climate — L. Mohamed, H. Bazi, J. Razzal, M. Marufuzzaman
and M. Razaiman Yatih, Universiti Tenaga National, Malaysia; A.Z. Abdul Razal, M.R. Mohd
Radzi and A. Talhi, Tenaga National Berhad, Malaysia

Modelling and analysis of hydro-erosive erosion in Francis turbines at different operation
conditions — S. Sangal, M.K. Singh and R.P. Saini, Indian Institute of Technology, India

Multiple compact units: Detailed analysis — P. Dunon, Andritz Hydro SAS, France

Vaith’s StreamDiver® solution for decentralized low head hydropower plant operation
— A. Mehta, PT Vaith Hydro Indonesia; S. Reich, Vaith Hydro Holding GmbH & Co, Germany

Challenges of implementing reliable and accurate non-intrusive ultrasonic flow
measurement on penstocks at large-scale hydroelectric power plants — D. Funk, Flexim
GmbH, Germany

Advances in the design and construction of high head penstocks — G. Ichikawa and
K. Karakor, BBA Engineering Ltd, Canada

Session 13 - Tunnels and underground works
Chair: Dr D. Djarwadi, PT North Sumatera Hydro Energy, Indonesia

- Construction of power waterway for Nam Theun 1 hydropower project — A. Sorgenfrei
  and P. Hater, Alstyr, Switzerland; S. Martin, Alstyr, Thailand
- How CFD enables innovative designs to benefit investors — F.P. Magel and T. Frerer, IFL
  Consulting Engineers (Asia) Ltd, Thailand; K.H. Nagel and M. Boskovic, Latin Swiss Hydro
  GmbH, Germany
- Design of need-based lightweight concrete for cavity filling in underground caverns
  — S.K. Sharma, J. Buhl, J. Thakur and B. Kathar, HCC Ltd, India
- Construction of shaft powerhouse for the Nam Theun 1 hydropower project — S. Martin
  and P. Bollinger, Pöyry Energy Ltd., Thailand; C. Kreuzer, Pöyry Austria; D. Rothweiler and
  M. Steinl, Pöyry Switzerland Ltd., Switzerland

Session 14 - Cross-border and regional developments
(Chair to be confirmed)

This panel discussion will focus particularly on the collaboration between the Mekong
riparian countries in South East Asia, and the BBIN countries (Bhutan, Bangladesh, India,
and Nepal). Participants in the discussions will include Mr Palakum Chambanyong,
Hydropower Specialist at the Mekong River Commission, Laos; a senior representative of
the Lancang-Mekong Water Resources Cooperation Centre, Beijing; Doshi Chhewang Rinzin,
Director of Druk Green Power Corp, Bhutan; and, R.V. Shahi, former Power Secretary,
Government of India. (Additional speakers to be confirmed.)
Session 15 - New approaches to renewable energy systems
Chair: C.R. Donnelly, Hatch Ltd, Canada

- Techno-economic optimization of a floating solar hydropower hybrid plant using the Manto Carlo method — M.F. Silvente, F.P. Majal, F. Zimmermann, S. Dawyok and M. Wagner, IFL Consulting Engineers (Asia) Ltd, Thailand; J. Reinhardt, Reinhardt Hydro GmH, Germany
- Battery energy storage systems in hydro powerplants: The perfect match for the future? — I. Eper, J. Holl and S. Kadam, Andritz Hydro, Austria
- Using spilled water to generate green hydrogen — G. Dos santos Cruz Rocha, Worley, Brazil; P. Ebert, Worley Group, Australia
- Pumped hydropower storage and intermittent renewable generation: Lessons learned to guide the new approaches to renewable energy systems — E. Guillan, Mott MacDonald, Singapore; B. Minnich, Mott MacDonald Melbourne, Australia

Session 16 - Sedimentation management
Chair: Prof S. Kountous, Water Resources Research Centre, University of Kyoto, Japan

- Reservoir sediment mitigation plan towards hydropower sustainability — A.Z. Abdul Razzaq and M. Ashraf Ali, TNB Research Sdn Bhd, Malaysia; Prof Dr L. Mohd Sidek, UNITEN, Malaysia; Dr J.L. Alexander and M.R. Mohd Razali, Tenaga Nasional Berhad, Malaysia
- Quantitative evaluation of the downstream geomorphological impacts of a large hydro peaking hydropower plant in the Irrawaddy river basin, Myanmar — C. Jourdain, G. De Linieres, J.L. Ravelo, J.C. Carre and G. Prudent-Richard, Arakeli Eau & Environment, France
- Impact on reservoir sedimentation flushing and mean annual energy of Dasu (Stage-I), Potan and Thakot I with and without Diamer Basha dam project on Indus river — M. Amin, Z. Majed and S. Munawar, WAPDA, Pakistan
- Estimating storage capacity loss caused by sedimentation for hydra lakes in Sarawak, Malaysia — J. Janggu, S. Nadya and M. Hussain, Sarawak Energy Berhad, Malaysia
- Nessie® Robot, an innovative ecological and economical sediment dredging solution — S. Catto, EDF, France; R. Gaillard et F. Martinaire, Watertracks, France

Session 17 - Water resources management
(Chair: to be confirmed)

- Competition for water resources: Hydropower and food security issues — S. Sparkes, Statkraft AS, Norway
- Yeongjong Island Block Demonstration Plant construction plan for improving water efficiency — Kuk Heon Han, National Smart Water Grid Research Group, Republic of Korea; Kyung Tae Kim and Kapil Gnawali, Sungkyunkwan University, Republic of Korea
- Smart technology for integrated management of diversified water resources — Kapil Gnawali and Kyung Tae Kim, Sungkyunkwan University, Republic of Korea; KukHeon Han, Smart Water Grid Research Group, Republic of Korea
- Geological challenges encountered in the pressure tunnels at the Nam Ngum 3 and Nam Ngum 4 hydropower projects — J. Perello, Q. Borch, G. Oubry and F. Brousset, Artelia Eau & Environment, France

Session 19 - Small hydro
Co-Chairs: Prof David Williams and Gordon Black, Learning Hydro, UK

- Exploring small hydro potential in the less developed countries — K.P. Singh, Consultant, Austria
- Malaysia’s community-based hydropower experience — Hon A.B. Lesimbang, Malaysia
- Diversion weir for small hydro power projects: Selection and design — V.M. Das, M.K. Singh and S.K. Singal, Indian Institute of Technology, India
- Performance evaluation of a pipe runner based on commissioning test results — M. Nakai, S. Nakamura, T. Tsukamoto, Y. Yamato and K. Ono, Voith Fuji Hydro K.K., Japan
- Small hydropower units: Agents of change in northern areas of Pakistan— Y.A. Haanza, Reasrangeel, Pakistan
- Financial feasibility analysis and socioeconomic impact of Ledaguang micro powerplant in Bilir, East Java, Indonesia— E. Susilowati, A. Riyanto and G. Nuryohu, Jasa Tiara Energi, Indonesia

Session 20 - Dam safety
Chair: Dr A.K. Hughes, Dams and Reservoirs, UK

- Current dam safety management practice in Malaysia — A.M. Sabri, M. Razman, M. Zakyddin, S. Azahar, Z. Firdaws and E.M. Engku Ahmad Khalil Azhar, Department of Irrigation and Drainage, Malaysia
- Assessing the safety of the Kuang cape cement-bentonite cutoff wall — E. Tindo, C.R. Donnelly, Hatch Ltd, Canada; J. Arrango, EPM, Colombia; F.E. Restrepo Yépez, Integral, Colombia
- Structural health monitoring of ageing dams — M. Tatin, V. Lamour, Tien Dung Le and F. Michelin, Cementons, France
- Vertical gate design: Dam and powerplant safety in relation to flood management — D. Hassall, K. Koo and S. Sam, Norconsult, New Zealand
- Safety of dams against earthquakes: an Indonesian practice — Dr D. Djarwadi, NTU Sumatera Hydro Energy, Indonesia
- Development of 145-year and 10 000-year return period seismic hazard maps for the analysis and design of large dams in Peninsular Malaysia — M. Subair, I. Othman, M.K. Shuib and P.A. Sari, University of Malaya, Malaysia; M.R. Samsuri, Tenaga Nasional Berhad, Malaysia; Hendriyawan, Institut Teknologi, Bandung, Indonesia

Session 21 - Capacity building
(Chair: Dr Arun Kumar, IIT Roorkee, India)

- Technical transfer of operation and maintenance works for generating units on overseas hydropower project: A case study of San Roque power station in the Philippines — Y. Yamakawa, T. Nomura, H. Ueda and K. Aguro, Kansai Electric Power Company, Japan
- An analysis between learning needs and technical training solutions for the hydropower business — M. Henkes, V. Schröter, K. Pollack and S. Deininger, Voith Hydro GmbH & Co. KG, Germany; M.H. Mahammad, Voith Turbo Sdn Bhd, Malaysia

MYCOLD Training Workshop on Sedimentation
See Pre- and Post-Conference Events for details of four Training Workshops organized by MYCOLD. Two will take place before the conference, and one on Friday 13 March. Please note that there is a separate registration charge for the MYCOLD Workshops. Details are on the registration site.

Thursday 2 July ~ Morning

Session 18 - Construction challenges and natural hazards
Co-Chairs: Prof J. Reynolds, Consultant, UK; and P. Pradhan, BPC, Nepal

- Keynote: The benefits of integrated geohazard assessment for the hydropower sector — J. Reynolds, Reynolds International Ltd, UK
- Obstacles to dam design in the Himalayas — B. Pouw and T.C. Bhutta, Vidhyut Utapan Company Ltd, Nepal
- The Balisamora pumped-storage plant in the Manila area, Philippines: Complex volcanic environment results in geotechnical and constructive challenges — T. Dietler, Afry, Switzerland; J.E.F. Ullberg, Balsamra Hydrowor Corp., Philippines
- Challenges in execution of the Tehri pumped-storage project, Uttarakhand, India — S. Dave and B. Kumbhar, Hindustan Construction Company Ltd, India
- Alternatives for construction of complex tunnelling scheme at Dez dam for a new sediment flushing tunnel and the second underground powerhouse project — E. Daffler, Riley Consultants Co, New Zealand

Session 22 - Closing Plenary Session

- Session outcomes and recommendations
- Summaries of side events
- Conclusion of ASIA 2020
- Welcome to ICOLD’s 88th Annual Meeting, New Delhi, India
- Welcome to the 9th World Water Forum, Dakar, Senegal
- Welcome to HYDRO 2020, Strasbourg, France
- Welcome to AFRICA 2021, Uganda
Tuesday 30 June

KL Bird Park, Orchid Gardens and Tamarind Springs Restaurant

Kuala Lumpur Bird Park is a 20.9-acre aviary, located adjacent to the Lake Gardens within the so-called ‘green lung’ of Kuala Lumpur, Bukit Aman. The park houses more than 3000 birds, representing more than 200 species. About 90 per cent are local birds and others were imported from African and Asia-Pacific countries.

After the Bird Park visit, the group will go on to the Orchid Garden, together with the adjoining Hibiscus Garden. There will be a chance to take a walk among exotic tropical blooms in the landscaped gardens. The park has displays of both terrestrial and epiphytic orchids, which are only found in tropical climates.

Lunch will be served surrounded by the natural beauty of the jungle, at the famous Tamarind Springs restaurant, located on the fringe of the City, within the Ampang natural forest reserve. Tamarind Springs offers fine contemporary Indochinese cuisine and features elegant décor, based on traditional Malay houses, infused with elegant and rustic Asian furnishings. With its wooden decks and tropical vegetation, it gives the feel of being far from the city centre.

Wednesday 1 July

Batu Caves, Orang Asli Museum and Istana Negara

The Batu Caves, on the outskirts of Kuala Lumpur, are within a limestone hill dating back 400 million years, and feature a series of caves and cave temples, reached via 272 colourfully painted steps. The religious site has the world’s tallest statue of the Hindu deity Murugan and is one of the most important Hindu shrines outside India. After the Batu Caves visit, the group will visit the Orang Asli Museum to learn about the culture and traditions of the local Orang Asli tribe in Selangor. After lunch the group will have a chance to see the National Palace (home of the supreme head of state, Yang di-Pertuan Agong), and its magnificent gardens, protected by mounted horseguards. It is a splendid example of Malay and Islamic architecture.

Thursday 2 July

Cooking and Selangor pewter

The final excursion offers the opportunity for the group to enjoy the tastes of Malaysian cooking, learning about traditional Malaysian ingredients and cooking techniques, while preparing a selection of dishes, which will be enjoyed by the group for lunch.

After lunch, guests will take a trip to the ‘School of Hard Knocks’ where they will practice the craftsmanship of creating their own pewter dish, using the traditional tools of hammer, mallet and wooden mould. After creating a personal pewter dish souvenir, guests will tour the Pewter Factory, where the world famous brand of pewter is produced. The Pewter Museum is a fascinating visit.

ACCOMPANYING PERSONS’ PROGRAMME

A package of three cultural and touristic visits have been arranged for accompanying persons during the three days of the conference. Tours will not depart before 09:00 hrs and will return in good time for some relaxation and free time before the evening programme. The group will travel by luxury coach, and a guide will be with the group throughout the days. Accompanying persons are also invited to all evening events.
STUDY TOUR A
Sungai Perak
3 days, 2 nights (+ third night in KL)
The group will travel by luxury coach to
the west of the country, stopping for lunch
in Kuala Kangsar before continuing on to
the Belum Rainforest Resort, which is one
of Malaysia’s leading ecotourism resorts.
The jungle surrounding the accommoda-
tion remains as it has been for centuries.
This will be the base for the group for two
nights. After check-in, the group will have
a sunset cruise on Temenggor reservoir,
before heading back for dinner.
Next day, the first technical visit will be to
the third largest dam in Malaysia, Temenge-
gor, originally built for hydropower, but
now also a major fish breeding site. After
a technical briefing and tour of the main
features, the group will move on to visit
Chenderoh, the oldest dam and hydro
plant in the country, built in 1920 for the
Lower Perak, and considered the largest
industrial undertaking on Peninsular Ma-
laysia at the time. The main dam is at el.
50 m. The powerplant has an installed ca-
pacity of 40.5 MW, from five units. Finally,
the group will visit Kenering dam, which
has a 120 MW powerplant. Packed lunches
will be provided on this day. The day will
end with dinner and relaxation back at the
Belum Rainforest Resort.
On the morning of the third day, the group
will spend a couple of hours in the morn-
ing exploring Royal Belum park, visiting
the 60 salt licks around the area as well as
having an opportunity to see the rare raf-
flesia flower. An early lunch will be served
at the resort before the group checks out
and returns by coach to Kuala Lumpur.
Back in Kuala Lumpur guests will check
back into the Shangri-La and re-join the
Tour B group for a farewell dinner. The
tour will end after breakfast next morning.

STUDY TOUR B
Kenyir and Terengganu
3 days, 2 nights (+ third night in KL)
The group will travel by luxury coach to the
northeast of the country to Kuala Tereng-
ganu, stopping for lunch along the way be-
fore arriving at the Kenyir dam, for a
briefing and site visit. The dam is 150 m high
above its foundation, and has a crest length
of 800 m; the fill volume is 15.20 x 10^6 m^3.
After the visit, guests will check into the
4-star Primula beach resort in the heart of
Kuala Terengganu, overlooking the East
Coast. This will be the group’s base for two
nights.
On the second day, the next technical visit
will be to the Puah dam, an earthfill
structure which is a key element of the Hulu
Terengganu hydroelectric complex. Puah
dam was completed and handed over to
the owner (Tenaga Nasional Berhad) in De-
cember 2015. The associated powerplant
houses two 125 MW generating units. After
a briefing and a tour of the dam and
powerplant, the group will travel on to
Pengkalan Gawi for lunch, before taking a
relaxing boat trip on Kenyir Lake.
The third day will allow participants to enjoy
the local culture, starting with a visit to the
Kuala Terengganu drawbridge; this is the
first drawbridge to be built in Malaysia and
Southeast Asia, and was constructed by
Zelan Construction Sdn Bhd. The construction
of the bridge began in August 2014 and
was completed in mid-2019. After this visit,
the group will travel on to the Kenyir
Elephant Sanctuary which was built in
2012 on a 256 ha site, of which 90 per
cent has been left in its natural forest state,
to provide a home for the elephant or-
phans who live there. Lunch will be served
at a local restaurant and then the group
will depart to the airport for the flight back
to Kuala Lumpur. Guests will check into the
Shangri-La hotel and in the evening there
will be a farewell dinner together with Tour A
participants.
A major technical exhibition will run alongside the ASIA 2020 conference (30 June to 2 July), showcasing the latest developments in the water and 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 spacious exhibition halls, and there will be a networking party after the conference sessions on 1 July to provide an additional opportunity for meetings between exhibitors and international delegates. Exhibition stands are available in units of 6 m², and custom-built units can be arranged. Some favourable positions still remain; if you would like to book a place, we recommend that you contact the sales team as soon as possible (see details below).

Exhibition stands are available in units of 6 m², and custom-built units can be arranged. Some favourable positions still remain; if you would like to book a place, we recommend that you contact the sales team as soon as possible (see details below).

Single stands available: 3 x 2 m (6 m²) = US$ 3550

A number of sponsorship opportunities are available, such as conference bags, water coolers, coffee and lunch breaks, WiFi, and various social events. Full details can be obtained from our Sales & Marketing team, and are also available on our website.

Meanwhile, for further information or to reserve an exhibition stand, contact:

Dr Lukas Port, Mrs Maria Loredo or Mrs Melanie Ganz  •  Tel: + 44 20 8773 7250/7251/7252  •  Email: sales@hydropower-dams.com

www.hydropower-dams.com/asia-2020/exhibition-plan
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