HYDROPOWER EUROPE

POWERING EUROPE IN A SUSTAINABLE WAY

Nordic Workshop

Luleå University of Technology, Sweden

28 – 29 August 2019

The HYDROPOWER EUROPE Forum is supported by a project that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 826010

REGIONAL CONSULTATION WORKSHOPS

The **HYDROPOWER EUROPE** initiative is built on the ambition to achieve a Research and Innovation Agenda and a Strategic Industry Roadmap for the hydropower sector, based on the synthesis of technical fora and transparent public debates through a forum that gathers all relevant stakeholders of the hydropower sector.

The project is holding three Regional Workshops – Nordic, Alpine, Mediterranean – to facilitate the exchanges and the public debate within the initiative.

The **HYDROPOWER EUROPE** Nordic Workshop is supported by:

Luleå University of Technology

Agenda

28 August 2019

12:30 - 13:00	**Registrations**
13:00 - 13:05	**Opening Remarks** **Staffan Lundström**, Professor, Lulea University of Technology
13:05 - 13:20	**HYDROPOWER EUROPE: Powering Europe in a Sustainable Way** ***Presentation of the Project*** **Jean-Jacques Fry**, President European Club (EURCOLD), International Commission on Large Dams
13:20 – 13:35	**How to Build the Research & Innovation Agenda and Strategic Industry Roadmap for the Hydropower Sector** ***Presentation of the Consultation Process*** **Patrick Clerens**, Secretary General, EASE – The European Association for Storage of Energy
13:35 – 13:50	**A Policy Framework that Fosters Research and Innovation for Hydropower in Europe** **Thomas Schleker**, Project Officer, Directorate-General for Research and Innovation, European Commission
13:50 – 14:20	**Views of Swedish High-level Officials** ***Towards a Renewable Energy System - Swedish Perspective on Hydropower and Dams*** **Maria Bartsch**, Dam Safety Officer, Svenska Kraftnät ***New Legislation and Strategic Plan for Environmental Measures in Hydropower*** **Johan Kling**, Senior Strategist, Swedish Agency for Marine and Water Management
14:20 – 14:40	**Q&A**
14:40 – 15:00	**Coffee Break**
15:00 – 15:50	**Perspectives and Case Studies for Hydropower: Regional Outlook in Nordic Countries** **Moderator: Jan-Olov Aidanpää**, Professor, Lulea University of Technology ***Benefits and Challenges for Nordic Hydropower in a European Perspective*** **Fredrik Engström**, Director Business Control and Asset Management, Vattenfall Vattenkraft

	Mappings, Policy and Strategy: The Role of Hydro for the Future **Hege Brende**, Executive Director, HydroCen, Norwegian Research Centre for Hydropower Technology ***What is Next for Hydropower in the Baltic States?*** **Egidijus Kasiulis**, Head of Laboratory of Aquatic Ecosystems, Vytautas Magnus University
15:50 – 16:10	**Q&A**
16:10 – 16:40	**Coffee Break**
16:40 – 17:30	**Perspectives and Case Studies for Hydropower: Regional Outlook in Nordic Countries** **Moderator**: **Staffan Lundström**, Professor, Lulea University of Technology ***Data Driven Planning of Effective Environmental Measures – CASE VUOKSI*** **Heini Auvinen**, Environmental Expert, Fortum ***Hydropower in Poland – Looking Forward for a New Stimulus*** **Janusz Steller**, President, Polish Hydropower Association ***Norwegian Large Hydropower Contributing to European Targets*** **Jan Petter Haugli**, Vice-President for Electro & Mechanical Disciplines, Statkraft
17:30 – 17:50	**Q&A**
17:50 – 18:00	**Closing Remarks** **Jean-Jacques Fry**, President European Club (EURCOLD), International Commission on Large Dams
18:00 – 18:10	**Introduction to Laboratory Visit** **Michel Cervantes**, Professor, Luleå University of Technology
18:10 – 19:00	**Laboratory Visit**
19:00	**Social Drink**

29 August 2019

8:30 – 9:00	**Registrations**
9:00 – 9:05	**Opening Remarks** **Patrick Clerens**, Secretary General, EASE – The European Association for Storage of Energy
9:05 – 9:20	**Structure and Elements of the Research and Innovation Agenda** **Mathis Rogner,** Senior Analyst, IHA – International Hydropower Association
9:20 – 9:30	**Q&A**
9:30 – 10:30	**Debating the Research and Innovation Agenda** Participants, divided into focus groups, will have the possibility to discuss strengths, weaknesses, opportunities and threats around specific issues that the Hydropower sector has to face in Europe. The discussion will be focused on several statements covering the following topics: • Increase of hydro storage (volume, new reservoirs) to enable security and flexibility of the energy systemPumped hydro storage: a tool to enable security and flexibility of the energy system • Projects of new pumped storage plants to enable security and flexibility of the energy systemPossible contribution of small hydropower and hydro marine energy solutions • Uprating and optimisation of existing hydropower plantsInnovative design, multi-purpose projects and social acceptance • Small hydropower potential • Climate change impact on hydropower infrastructures and generation • Hydro marine energy solutions • Environmentally friendly solutions and social acceptance • Hydropower role in mitigating global warming effects
10:30 – 11:00	**Coffee Break**
11:00 – 12:00	**Presentation of Focus Group Results** **Moderator: Patrick Clerens**, Secretary General, EASE – The European Association for Storage of Energy One representative for each focus group will present the outcome of the discussion and the key needs for the development of a Research and Innovation Agenda for Hydropower. The presentations will be followed by Q&A.

12:00 – 13:00	**Lunch**
	Opening Statement
13.00 – 13.05	**Mario Bacchiesl**, Head of Renewables and Distributed Generation, VGB PowerTech E.V
	Structure and Elements of the Strategic Industry Roadmap
13:05 – 13:20	**Jean-Jacques Fry**, President European Club (EURCOLD), International Commission on Large Dams
13:20 – 13:30	**Q&A**
13:30 – 14:30	**Debating the Strategic Industry Roadmap** Participants, divided into focus groups, will have the possibility to discuss strengths, weaknesses, opportunities and threats that the Hydropower sector has to face in Europe. The discussion will be focused on several statements covering the following topics: • Potential development and research needs • Challenge of hydropower large scale deployment • Sustainability and auxiliary services: flood protection, navigation, water supply, irrigation… • Environmentally friendly solutions: a future business case for hydro? • Hydropower: a safe long-term investment with high economic return under liberalized and undistorted market conditions
14:30 – 15:00	**Coffee Break**
15:00 – 16:00	**Presentation of Focus Group Results** **Moderator: Mario Bacchiesl**, Head of Renewables and Distributed Generation, VGB PowerTech E.V One representative for each focus group will present the outcome of the discussion and the key needs for the development of a Strategic Industry Roadmap for Hydropower. The presentations will be followed by Q&A.
	Closing Remarks
16:00 – 16:10	**Jean-Jacques Fry**, President European Club (EURCOLD), International Commission on Large Dams

SPEAKERS

Egidijus Kasiulis
Vytautas Magnus University

PhD, graduated in 2015 in environmental engineering from Aleksandras Stulginskis University (now Vytautas Magnus University Agriculture Academy) in Lithuania. Since 2016, **Egidijus Kasiulis** is junior research fellow at the Institute of Water Resources Engineering. Main research interests – conventional hydropower and hydrokinetic (ocean waves, river flow) are energy conversion and their environmental impact. He is an author and co-author of 30+ scientific publications. He is the Head of Laboratory of Aquatic Ecosystems at Vytautas Magnus University.

Patrick Clerens
EASE – The European Association for Storage of Energy

Patrick Clerens studied Law at the University of Saarbrücken and at the University of Mainz. Since 1996, he has worked as a consultant for a private company specialising in European Affairs in Brussels. In his capacity as Brussels Representative of different European associations, he has been involved in the climate and energy field since 2003.

He has managed the European Association for Storage of Energy (EASE) office in Brussels as Secretary General since its establishment in September 2011. Since then, EASE has grown from the initial 13 founding members to more than 40.

Maria Bartsch
Svenska Kraftnät

Consulting engineer, doctoral student and now for 10 years her main field of expertise is dam safety. **Maria Bartsch** is working for Svenska kraftnät**,** the authority responsible for ensuring that Sweden's transmission system for electricity is safe, environmentally sound and cost-effective – today and in the future. Svenska kraftnät is also the national authority for electricity preparedness and dam safety. Altogether 25 years of experience as Maria is a civil engineer with a PhD degree in hydraulics from the Royal Institute of technology in Stockholm. She is the president of SwedCOLD and a former vice president of ICOLD (2007-2010).

Heini Auvinen
Fortum Hydro

Heini Auvinen, M.Sc.Eng.(Water Resources Engineering), has over 10 years of experience working with environmental aspects of hydro power. Special focus on ecohydraulic modelling and spatial analysis related to environmental impacts. Currently, she is an environmental Specialist at Fortum Hydro.

Fredrik Engström
Vattenfall

Director of Business Control and Asset Management at Vattenfall's Nordic Hydropower Unit. He is also responsible for coordinating the Hydro R&D efforts within Vattenfall as well as the chairman of the Energiforsk hydropower council and the Swedish Hydropower Center board. **Fredrik Engström** has a PhD from the Luleå University of Technology in Fluid Mechanics and is currently an adjunct professor there. He has been in the hydropower business for 10+ years in different positions.

Hege Brende
Norwegian Research Centre for Hydropower Technology, HydroCen

Executive Director of Norwegian Research Centre for Hydropower Technology, HydroCen. **Hege Brende** is also Coordinator for Joint Programme Hydropower in the European Energy Research Alliance, EERA. The project portfolio and its associated network in HydroCen and EERA is currently the largest international task force on hydropower and collaborates closely with industry and research stakeholders in Norway, Europe and globally.
Brende has held positions for leadership in business, research, innovation and renewable energy for more than 20 years. Hege has served the board and management of large research programs on renewable energy and hydropower in Statkraft, NINA, NTNU, ICH and EERA.

Mario Bachhiesl
VGB PowerTech e.V

Head of the department "Renewables and Distributed Generation" at VGB PowerTech e.V. (VGB) with focus on hydropower, wind energy and biomass.
Mario Bachhiesl has professional experiences in the field of hydropower and among the main responsibilities are: the development of a profit centre hydropower, the planning and construction as well as the operation of hydropower plants and the management of hydropower companies. He initiated and coordinated feasibility studies and international research projects.

Janusz Steller
Polish Hydropower Association (TEW) Board

Janusz Steller, PhD, graduated in 1977 in Theoretical Physics from the Faculty of Mathematics, Physics and Chemistry of the University of Gdansk in Poland. Since then, Janusz has been a co-worker of the Institute of Fluid-Flow Machinery, Polish Academy of Sciences (IMP PAN), which granted him a PhD degree in technical sciences in 1984. Currently, he is chief specialist in the IMP PAN Centre for Hydrodynamics and chairman of the Polish Hydropower Association (TEW) Board. He has done several analytical studies on hydropower development and is author or co-author of almost 150 printed papers and conference contributions. He is also the Chairman of the Organising Committee of the annual Polish Hydropower Conferences.

Mathis Rogner
International Hydropower Association

Senior Analyst in the International Hydropower Association. His work focuses predominately on building and sharing knowledge on hydropower's role in future clean energy systems, especially with respect to enabling future growth of wind and solar resource into power grids. He also coordinates IHA's work on the development of the G-res Tool, which estimates of site-specific greenhouse gas emissions from reservoirs.
Originally a chemist, **Mathis Rogner** has a Master's degree in environmental policy from the Imperial College in London. Before joining IHA in 2014, Mathis worked for the International Institute for Applied Systems Analysis in Austria, where he focused on global energy systems and Panel on Climate Change and IPCC AR5 reports.

Jean Jacques Fry
EDF

Jean-Jacques Fry is the geotechnician and embankment dam expert for J-J Fry Consulting. He began his career as a United Nations development programme consultant, after which he joined EDF as senior dam expert. He founded J-J FRY Consulting after the European Commission accepted the 'Hydropower-Europe' project. He is responsible for working to facilitate the project's achievement along with Anton Schleiss. Jean Jacques is the current President of the European Club of ICOLD.

Staffan Lundström
Luleå University of Technology

Chair Professor at the Division of Fluid and Experimental Mechanics at the Luleå University of Technology. **Staffan Lundström** has done research on fluid mechanics and flows in porous media in particular, for nearly 30 years. He has applied his knowledge to a number of areas including hydropower (waterways, internal erosion in embankment and on environmental issues). He has major roles within the Swedish Hydropower Centre and EERA JP Hydropower, and is involved in several Hydropower projects. Since 2000, he has been the main contributor to the increased number of researchers and PhD-students, the excellent laboratory, the large numerical resources and the profile directed towards industrial and environmental flows.

Jan Petter Haugli
Statkraft Energi

Jan Petter Haugli, VP of Technologies in Statkraft Energi AS. MSc in Electro Technical Systems, at present heading Technologies department in the business area Production. Jan Petter is responsible for technical specifications for hydro mechanical and electrotechnical components. Area of responsibility also contains principles for maintenance, condition and risk assessment for the components mentioned. The Technology department also provides general support to operations and projects. He is heading the hydro power competence group in Statkraft's Corporate R&D Program.

Johan Kling
Swedish Agency for Marine and Water management

Strategist at the Director General's office at the Swedish Agency for Marine and Water management. In addition to strategic work, **Johan Kling** is manager for the agency programme on Hydropower and environment. The programme revises legislation related to Water framework directive (WFD), national guidelines in respect to WFD and hydropower, but also to the national plan for mitigation measures in Hydropower. It is a joint project with the Energy agency and Svenska Kraftnät, the TCO.
He has obtained a PhD in Earth sciences with emphasis on geomorphological processes. Johan was previously Head of Department within DHI Sweden, working mainly with hydrological, hydraulic and geomorphological modelling, partly within the hydropower sector.

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Partners

CIGB ICOLD

EASE
European Association for Storage of Energy

EREF
EUROPEAN RENEWABLE ENERGIES FEDERATION

EUREC

iha
international hydropower association

Samui

VGB POWERTECH

zabala
innovation consulting