



March 15th – 16th, 2022

CEATI 

Hydro Conference

The Past, Present and Future of
Hydropower

Event Overview

CEATI's 13th Annual Hydropower Conference will focus on understanding how previous incidents have shaped current practices in the industry and ensuring hydropower business success in future markets.

The event will feature presentations on the following themes:

1. The Past – Lessons Learned and the Changes that Resulted
 - Lessons learned from past incidents and implications today
 - Human factors at play
 - The influence of past incidents on design standards and current practices
2. The Present – Current Strategies
 - Aging infrastructure and risk factors
 - Decommissioning versus rehabilitation and life extension
 - Cost saving requirements for operation and maintenance
 - Current operational constraints and balancing the use of shared watersheds
3. The Future – Ensuring Success Moving Forward
 - Adapting assets to new operational constraints
 - Increasing value in hydro generation
 - Environmentally acceptable solutions
 - Integrating intermittent renewable energy

Who Should Attend?

- Electric Utilities and Dam Owners
- Consultants
- Equipment Manufacturers and Suppliers
- Research Facilities and Laboratories
- Academics

To register and for more information, visit <https://www.ceati.com/event/hydropower-conference>

This event is supported by the following member utilities:

Algonquin Power and Utilities	Hetch Hetchy Water and Power	Seattle City Light
Ameren Corporation	Hydro Tasmania	Seneca Generation
American Electric Power	Hydro-Quebec	Severn Trent Water Ltd
Avista Corporation	Idaho Power Company	SHEM Société Hydro Électrique du Midi
BC Hydro	Korea Hydro & Nuclear Power Co., Ltd	
	Landsvirkjun	Snohomish County P.U.D. #1
Bonneville Power Administration	Lewis County PUD	Snowy Hydro Limited
Brookfield Renewable Energy Partners	Los Angeles Department of Water and Power	Southern California Edison
Bui Power Authority		Southern Company
California Department of Water Resources	Louisville Gas & Electric and Kentucky Utilities (LG&E and KU)	SunWater
Centralia City Light	Manitoba Hydro	Tacoma Power
Chelan County Public Utility District	Merced Irrigation District	Tennessee Valley Authority (TVA)
CMS Energy	Mercury Energy	TransAlta Corporation
Columbia Power Corporation	Meridian Energy Ltd.	TrustPower Ltd.
Denver Water	Minnesota Power	Turlock Irrigation District
Douglas County PUD	Nalcor Energy	U.S. Army Corps of Engineers
Duke Energy	New Brunswick Power	U.S. Bureau of Reclamation
Eagle Creek Renewable Energy	New York Power Authority	U.S. Department of Energy
East Bay Municipal Utility District	Newfoundland and Labrador Hydro	Uganda Electricity Generation Company
Électricité de France (EDF)	Northern California Power Agency	Uniper
Electricity Supply Board (ESB)	Northwest Territories Power Corporation	Vattenfall AB
Energiforsk	NorthWestern Energy	WaterNSW
Energy Keepers Inc.	Nova Scotia Power Inc.	Yuba Water Agency
Entergy Services	Oglethorpe Power Corporation	Yukon Energy Corporation
Environment Agency	Ontario Power Generation	
Eugene Water and Electric Board	Pacific Gas and Electric Company	
Exelon	PacifiCorp	
Federal Emergency Management Agency (FEMA)	Placer County Water Agency	
Federal Energy Regulatory Commission (FERC)	Portland General Electric	
FirstLight Power Resources Services	Puget Sound Energy Inc.	
FortisBC Inc.	Rio Tinto Alcan	
Fortum	SA Water	
Genesis Energy	Sacramento Municipal Utility District	
Grand River Dam Authority (GRDA)	Salt River Project	
Grant County Public Utility District	SaskPower	

CEATI 13th Annual Hydropower Conference Spring 2022 – DAY 1

7:00-8:15 Breakfast

8:15-9:45 Welcome & Plenary – All tracks

Ambassador 1-4

8:15 **Opening Remarks** – Alex Johnston, Lizzie Smith, Catherine Rhea, CEATI

8:45 **Panel Discussion: The Past, Present, Future of Hydropower**
Brett Bickford, Chelan County PUD; Ty Ehrman, Grant County PUD; Jan Nimick, PG&E

9:45-10:30 Coffee Break

Session 1A–Dam Safety: Case-Studies

Ambassador 1-3

Session Chairs: Paul Lennemann, Tacoma Power

10:30 **Tiger Creek Afterbay Dam Low Level Outlet Gate Replacement Project**
Chirag Mehta, Black & Veatch
Josh Huff, PG&E
Trevor McGuckin, PG&E
Eng Sew Aw, PG&E

11:15 **Decommissioning or Rehabilitation Case Study**
Simon-Nicolas Roth, Hydro-Quebec
Andreane Gagnon, Hydro-Quebec

Session 1B–Plant Equipment: Case Studies

Ambassador 4

Session Chairs: Jim Calnon, USACE

10:30 **Bridge River U7/8 – Overload Capacity Study**
Pascal Weibel, Andritz
Sabrina Lin, BC Hydro

11:15 **The McNary Turbine Development Approach for Improvement in Fish Friendliness**
Kristopher Toussaint, GE
Jon Renholds, USACE
Robert Davidson, USACE

Session 1C–Operations & Planning: Hydrology

Ambassador 5-7

*Session Chairs: Ronda Strauch, SCL
Chuck Bach, CEATI*

10:30 **Approaches to Hydrologic Model Calibration: Past Practices vs a Data Driven Future**
Ann McManamon, BPA
Edwin Welles, Deltares

11:15 **Feasibility of Wetlands to Enhance Hydropower Production and Mitigate Flooding**
Kurt Kornelsen, OPG
Pascal Badiou, Ducks Unlimited

12:00-13:30 Networking Lunch

Session 1A–Dam Safety: Case-Studies

Ambassador 1-3

Session Chairs: Jason Clere, Brookfield

13:30 **Dickson Dam Spillway Gates Rehabilitation vs Replacement**
Rob McLachlan, KCB

14:15 **Beyond Emergency Action Plans: Leveraging Regulatory Requirements**
Jes Gearing, Gannett Fleming
Andrew Hagen, PG&E

Session 1B–Plant Equipment: Case Studies

Ambassador 4

Session Chairs: Ram Veeraraghavan, Tacoma Power

13:30 **Hydro-Battery Hybrids – A Case for Holistic Assessment of Hybrid Energy Systems**
Vishvas Chalisehar, USDOE

14:15 **Allatoona Dam Switchgear Fault Damage, Analysis and Repair**
Kirk Chen, USACE

Session 1C–Operations & Planning: Forecasting

Ambassador 5-7

*Session Chairs: Curt Jawdy, TVA
Ann McManamon, BPA*

13:30 **The Good, the Bad and the Flashy: Analyzing HydroForecast's Performance in the CEATI Forecast Rodeo**
Alden Keefe Sampson, Upstream Tech

14:15 **Year-Ahead Water Resource Forecasting for Major Western North America Watersheds**
Kenneth Westrick, Climatcis
Matt Stein, Salient Predictions

15:00-15:45 Coffee Break

15:45-17:00 Panel Session / Plenary – All tracks

Ambassador 1-4

Navigation Through Uncharted Waters – Mitigation of Extreme Events
John Yale, Chelan County PUD; Ronda Strauch, Seattle City Light; Jacob Davis, USACE

17:30-19:00 Networking Reception – Expo Hall

CEATI 13th Annual Hydropower Conference Spring 2022 – DAY 2

7:00-8:15 Breakfast

Session 2A–Dam Safety: Risk Ambassador 1-3

Session Chairs: Ian Hope, Severn Trent Water
Bruce Muller, CEATI

8:15 **Assessing the Vulnerability of a large Embankment Dam to Internal Erosion Through the Foundation**
Paul Slangen, Landsvirkjun

9:00 **Lessons Learned from Pilot SQRA for Don Pedro Dam**
Stacy Vorster, Gannett Fleming
Tim Payne, TID

Session 2B–Plant Equipment: Risk Ambassador 4

Session Chairs: Jean Pellerin, CEATI

8:15 **Methods and Outcomes of Quantitative Fitness-For-Service Evaluations**
Andrew Wodoslawsky, Black & Veatch

9:00 **Determination of the Fitness-for-Service of Linear Indications in Large Aging Steel Castings**
Jason Bischell, TVA
Blake Arellano, Qwest Integrity

Session 2C–Operations & Planning: Flexibility & Optimization Ambassador 5-7

Session Chairs: Bruno Benedetti, Brookfield
Don Ferko, OPG

8:15 **Cloud based Hydro Scheduling and Revenue Optimization**
Max Grand, Brookfield
Taha El-Mohtadi, Lixar

9:00 **Optimizing Flexible Spill Operations on the Columbia River for Bonneville Power Administration**
Mitch Clement, University of Colorado at Boulder

9:45-10:30 Coffee Break

Session 2A–Dam Safety: Risk Ambassador 1-3

Session Chairs: Matt Muto, SCE

10:30 **Understanding Dam Safety Risk of an Entire Portfolio of Dams**
Daniel Osmun, HDR

11:15 **Application of a CFD Model to Assess Hydraulic Forces Acting on a Bulkhead Submerged into Spillway Flow**
Andrew Weiss, KGS
Andi Bogdanovic, KGS

Session 2B–Plant Equipment: Risk Ambassador 4

Session Chairs: Jordan Fink, USACE

10:30 **Hydro Asset Lifecycle Management – lessons learned from modernizing our approach for tracking hydro equipment life at Avista**
Craig Bourassa, Avista

11:15 **Joint Control System with Optimal Load Dispatch**
Mark Smith, Reivax

Session 2C–Operations & Planning: Flexibility & Optimization Ambassador 5-7

Session Chairs: Marcel-Paul Raymond, CEATI

10:30 **Insuring Renewable Resource Availability – Hydrology**
Bruno Benedetti, Brookfield

11:15 **Pumped Storage – the 93-Year-Old Overnight Sensation**
David Culligan, HDR
Rick Miller, HDR
Eric Girardin, HDR

12:00-13:30 Networking Lunch

CEATI 13th Annual Hydropower Conference Spring 2022 – DAY 2

12:00-13:30 Networking Lunch

Session 3A–Dam Safety: Technology*Ambassador 1-3**Session Chairs: Jennifer Dodd, TVA*

13:30 **Case Study of Underwater Laser Scanner on Gate Slots for Preventative Maintenance**
 Dan Cousineau, ASI Marine
 Ray Alava, KCB
 Rob Beaumont, KCB

14:15 **Leveraging Multi-Layered Data Sets for Predictive Analytics A Case Study on an Arch Dam**
 Ryan Coppersmith, Niricson Software
 Joshua Fowler, Niricson Software
 Erin Gleason, Denver Water

Session 3B–Plant Equipment: Technology*Ambassador 4**Session Chairs: Craig Bourassa, Avista*

13:30 **Water Detection System for Oil Filled Kaplan Turbines**
 John Yale, Chelan County PUD

14:15 **Underwater Robotized Turbine Inspection Reduces Outage Cost, Risk and Duration**
 David Auger-Habel, GE

Session 3C–Operations & Planning : Machines & Technology*Ambassador 5-7**Session Chairs: Don Ferko, OPG
Chuck Bach, CEATI*

13:30 **Joining Reliability and Production Cost Modelling to Optimize Hydro Fleet Investment**
 Curt Jawdy, TVA

14:15 **Turbine Efficiency Measurement for Low Head Hydroelectric Units Using Acoustic Flow Method**
 Albert Mikhail, HPPE
 Marc Mantha, H2O Power

15:00-15:45 Coffee Break

15:45-17:00 Closing & Plenary – All tracks*Ambassador 1-4*

15:45 **Determining & Promoting the Value of Hydro Power**
 Kurt Kornelsen, OPG; Roger Raeburn & Brent Sullivan, PacifiCorp; John Etzel, USACE

16:45 **Closing Remarks – CEATI**

17:30-19:00 Women in Power – Networking Reception