

Seminar:

Water as energy storage for better integration of renewables

Thursday 4th Sep, 14.00 – 17.30 Room T4

Background:

The increasing share of renewable energy from wind and photovoltaic power world-wide raises new challenges to energy systems. One major challenge relates to the variability of wind and solar energy, and the potential imbalance between power production and electricity demand. This imbalance will require increased need for energy storage.

Hydropower with reservoirs is the only energy storage in wide commercial use. Hydropower reservoirs and pumped hydro are used for storing energy at multiple time horizons, ranging from minutes up to several years, while at the same time serving crucial societal needs like water supply, flood control and various ecosystem services.



Summary:

The seminar will focus on how we can better use water resources and storage to improve the integration of renewables, taking stakeholder interests and environmental impacts into consideration. There will be three introductory presentations, followed by reactions from a multi-stakeholder panel and a facilitated discussion with the audience.

Who should attend:

Water managers, representatives of governments, hydropower and water industry, NGO's and academia

Audience participants will have the opportunity to join the panel discussion



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international hydropower association



Programme:

Part I: Different perspectives on water as energy storage

- 14:00 Introduction to seminar
[Atle Harby, CEDREN](#)
- 14:05 The role of Hydropower in delivering energy services while considering other water needs
[Richard Taylor, IHA](#)
- 14:20 Water for energy storage supports the integration of solar and wind power
[Atle Harby, CEDREN](#)
- 14:35 Water storage: serving various uses calls for a nexus approach
[Reza Ardakanian and Stephan Huelsmann, UNU-FLORES](#)
- 14:50 Interaction between speakers and seminar participants
- Questions for the participants prepared by the seminar speakers
 - Questions for the speakers and discussion
- 15:15 Coffee Break, including selection of panelists from audience

Part II: Case studies and panel discussion

- 15:45 The island El Hierro, Spain: 100 per cent renewable energy by integrating wind and solar energy with pumped hydro on a small scale. [Alex Trembath, IHA](#)
- 16:00 Integration of wind and hydro power in Ethiopia: Large opportunities for a developing country.
[Tolawak Gurmessa Amenu and Ånund Killingtveit, Norwegian University of Science and Technology](#)
- 16:15 Water and Energy Services from Dams in the Zambezi River Basin (Mozambique): challenges and opportunities. [Boaventura Chongo Cuamba, Eduardo Mondlane University, Mozambique.](#)
- 16:30 Panel discussion moderated by [Richard Taylor, IHA.](#)
- Convening organisations
 - Presenters of case studies
 - Three persons from interested seminar participants
- 17:20 Wrap-up and conclusions, presented by UNU-FLORES
- 17:30 Closing of Seminar

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