Introduction to CEDREN HydroBalance

User Meeting 2017

By: Research Manager Michael M. Belsnes & WP-leaders
CEDREN HydroBalance: Facts

- **Budget:** ~25 MNOK, (~18 MNOK from NFR)
- **Duration:** 4 years, (From autumn 2013)
- **Research partners (11):**
  - SINTEF Energy Research, NTNU: Norwegian university of Science and Technology, NINA: Norwegian Institute for Nature Research, UIO: University of Oslo, University of Waterloo, ECN: Energy Research Centre of the Netherlands, University of Exeter, UMB: Norwegian University of Life Science, NIVA: Norwegian Institute for Water Research, Technical University of Madrid, University of architecture, Civil Eng. and Geodesy, Bulgaria, University of Aachen (E.ON)
- **Funding partners (10):**
CEDREN HydroBalance:

Objectives

The project will address key questions regarding use of hydropower flexibility and expansion of such flexibility including pump storage development between reservoirs.

The project will draw a picture of the future for hydropower flexibility towards 2050 and assess needs for flexibility, alternatives to hydropower and required transmission capacity. How can and should the hydropower sector respond to the power system development in Europe? The project will assess and suggest business models in a Norwegian-European perspective.

Use of hydropower flexibility must go hand in hand with environmental concerns and the project will in particular contribute with new knowledge about consequences of reservoir level changes.
Uncertain price picture

From user meeting 2016

Electricity, quarterly average market prices

Source: Forward prices from Nasdaq OMX and EEX as of January 2016

Nordic Power

From 2017-09-06
External drivers

EU Winter Package 2016
Renewable cost going down

Kriegers Flak project demonstrates rapidly falling costs for offshore wind

Vattenfall has won a tender to build the 600MW offshore Kriegers Flak project in Denmark for a new record price of €90.9/MWh.