

RevHydro: Leading the Transformation of Hydropower with Revolutionary Refurbishment Technologies



Brussels – The RevHydro project, funded by Horizon Europe under the HORIZON-CL5-2024-D3-01-07 programme, sets out to reimagine hydropower through sustainable refurbishments aimed at enhancing efficiency, reducing costs, and aligning with ecological principles. Coordinated by Luleå University of Technology (Sweden), with Michel Cervantes at the helm, the initiative unites ten institutions across Europe to develop groundbreaking hydropower technologies that can be implemented in existing facilities without significant hydraulic system modifications.

RevHydro focuses on four pioneering innovations designed to meet the evolving demands on hydropower plants:

1. **Runner Flow Control (RFC):** Extensions on the runner to improve flow structure and turbine life.
2. **Draft Tube Flow Control (DFC):** Systems to stabilize large flow structures extending the operating range.
3. **Intelligent Fish Barrier (I-Fish):** AI-based system to protect fish populations around hydropower plants.
4. **Circular Economy Integration Indicator (CEII):** Refurbishment methods that emphasize resource efficiency, life cycle assessments, and environmental sustainability.

RevHydro addresses the urgent need for sustainable and flexible hydropower solutions to align with Europe’s renewable energy goals. It tackles the adverse effects of climate change on hydropower operations by enabling turbines to handle variable load conditions efficiently and eco-consciously.

Key activities throughout RevHydro include:

- **Stakeholder engagement and knowledge sharing:** International and national events to connect industry stakeholders, researchers, and policymakers.
- **Capacity-building initiatives:** Development of training materials and resources to support knowledge transfer across the hydropower sector.
- **Innovative data and simulation models:** Application of high-tech modelling and simulations to improve hydropower efficiency and longevity.



“RevHydro aims to help set the stage for a greener, more adaptable hydropower future. This project will contribute to drive forward Europe’s renewable energy ambitions by enhancing hydropower sustainability and efficiency,”

Michel Chervantes, Project Coordinator from Luleå University of Technology.

The RevHydro consortium brings together expertise from multiple European institutions, including Luleå University of Technology (Sweden), Rescoll (France), ICPE (Romania), the University of Stuttgart (Germany), Dunarea de Jos University of Galati (Romania), Haute École Spécialisée de Suisse Occidentale (Switzerland), GE Hydro France (France), Électricité de France (France), IRCEM (Romania), and Compagnie Nationale du Rhône (France), to maximize the project’s technological impact and outreach.

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