Making hydropower less impactful

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www.fithydro.eu

Lessons learnt from FIThydro

Main objectives of FIThydro

- Assessing response and resilience of fish populations at HPPs including species protection
- Improving fish mitigation strategies at HPPs
- Enhancing methods to cope with EU obligation
- Identifying bottlenecks and deriving cost-efficient mitigation strategies at HPPs
- Risk based DSS for planning commissioning and operating

Lessons learnt

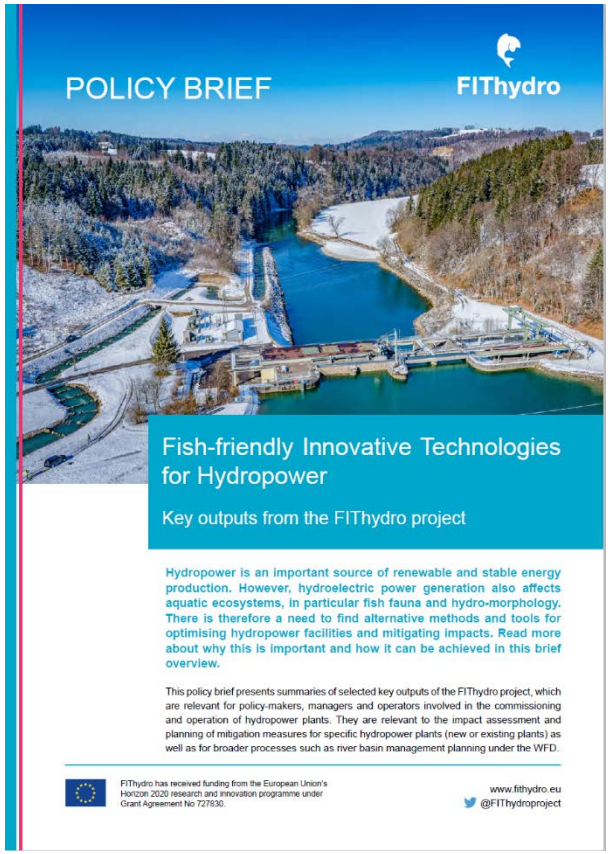
There are hundreds of measures to mitigate the effect of HPPs on fish, but:

- We still have very limited knowledge about behaviour and reactions of fish to HPPs
- Differentiated and transdisciplinary viewpoints are required to find appropriate solutions
- However: Mitigation strategies and methods in general can be improved but require a site specific approach

Main outcomes of FIThydro for stakeholders

To condense knowledge for stakeholders FIThydro provides:

- The FIThydro wiki
- A risk based Decision Support System
- An innovative Fish Population Hazard Index
- A Cumulative Impact Assessment tool
- Innovative Solutions, Methods, Tools and Devices


POLICY BRIEF

FIThydro

Fish-friendly Innovative Technologies for Hydropower

Key outputs from the FIThydro project

Hydropower is an important source of renewable and stable energy production. However, hydroelectric power generation also affects aquatic ecosystems, in particular fish fauna and hydro-morphology. There is therefore a need to find alternative methods and tools for optimising hydropower facilities and mitigating impacts. Read more about why this is important and how it can be achieved in this brief overview.

This policy brief presents summaries of selected key outputs of the FIThydro project, which are relevant for policy-makers, managers and operators involved in the commissioning and operation of hydropower plants. They are relevant to the impact assessment and planning of mitigation measures for specific hydropower plants (new or existing plants) as well as for broader processes such as river basin management planning under the WFD.

FIThydro has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 727830.

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Overview over key project outputs: FIThydro Policy Brief

The practical approach with 16 Test Cases

FIThydro findings substantially result from fieldwork at Test Sites

- We identified challenges and bottlenecks of the sites
- We developed innovative SMTDs in the Lab
- We tested existing and novel innovative SMTDs in the field
- We summarized practical experience with SMTDs in a Report of all 16 Test Cases

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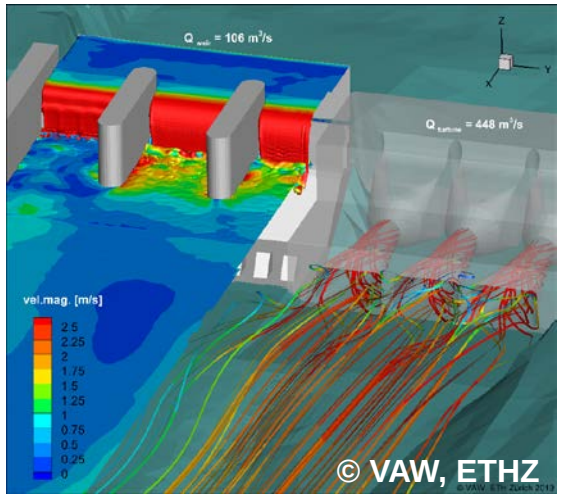

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The innovations in FIThydro

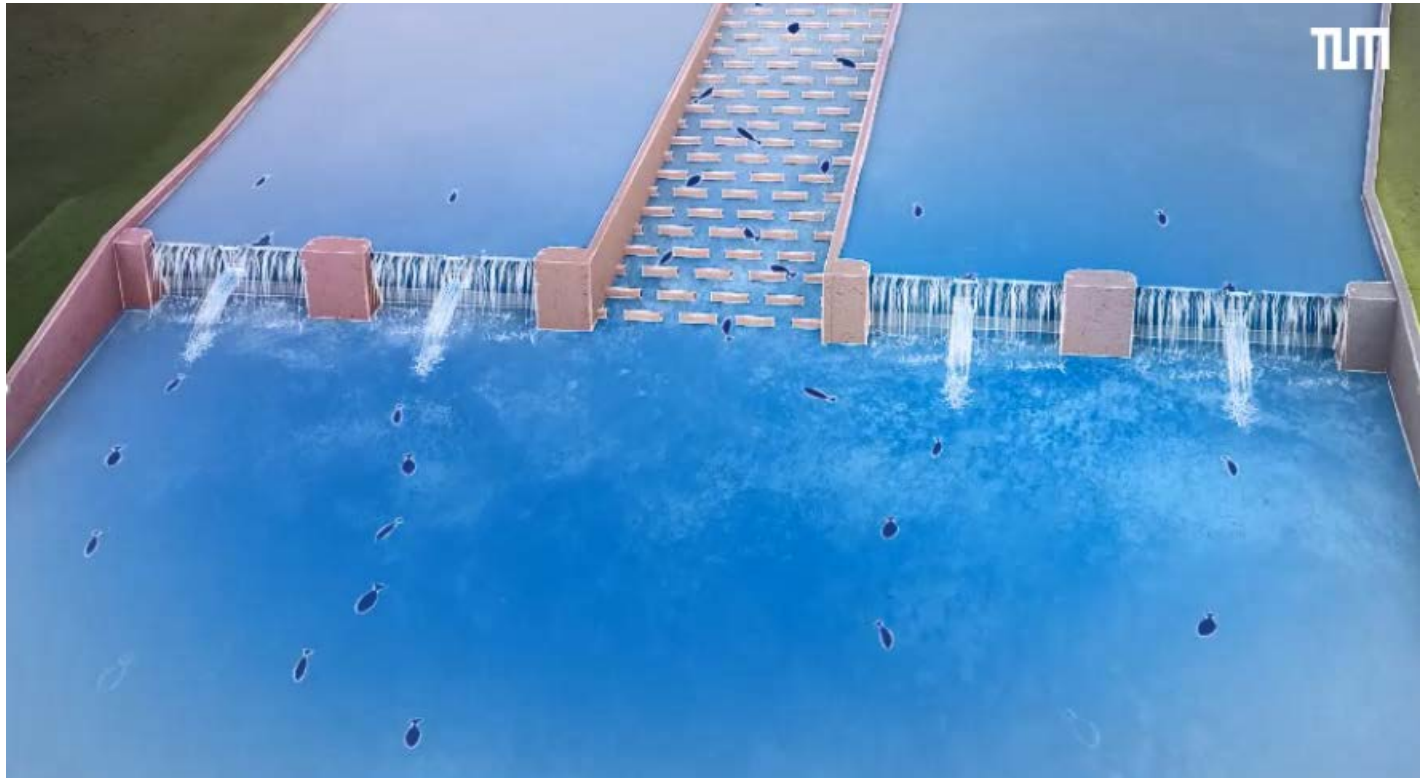
FIThydro has raised TRLs of several innovative SMTDs:

- The Curved-Bar Racks
- Induced Drift Application
- Turbine fish mortality modelling using BioPA
- 3D sensor-less fish tracking systems (optical and ultrasound)
- Agent-based model in CASIMIR
- Hydropeaking Impact Assessment
- Artificial Lateral Line Probe
- Barotrauma Detection system

An outlook - or a personal vision

For future HPPs I wish:

- Design and operation of HPPs follow the needs of fish and nature
- Natures dynamics must be reflected in operation of HPPs
- New innovative devices allow to “see” fish and react in operation of the HPP
- HPPs are continuous in both directions for fish and sediments
- Let it flow!



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THANK YOU

LET IT FLOW

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