



ETIP HYDROPOWER

Unifying the voices of hydropower in Europe

Prof. Dr. Anton SCHLEISS
Scientific Coordinator
ICOLD-EPFL

SVC Hydropower R&D days 2025
March 18, 2025
Uppsala



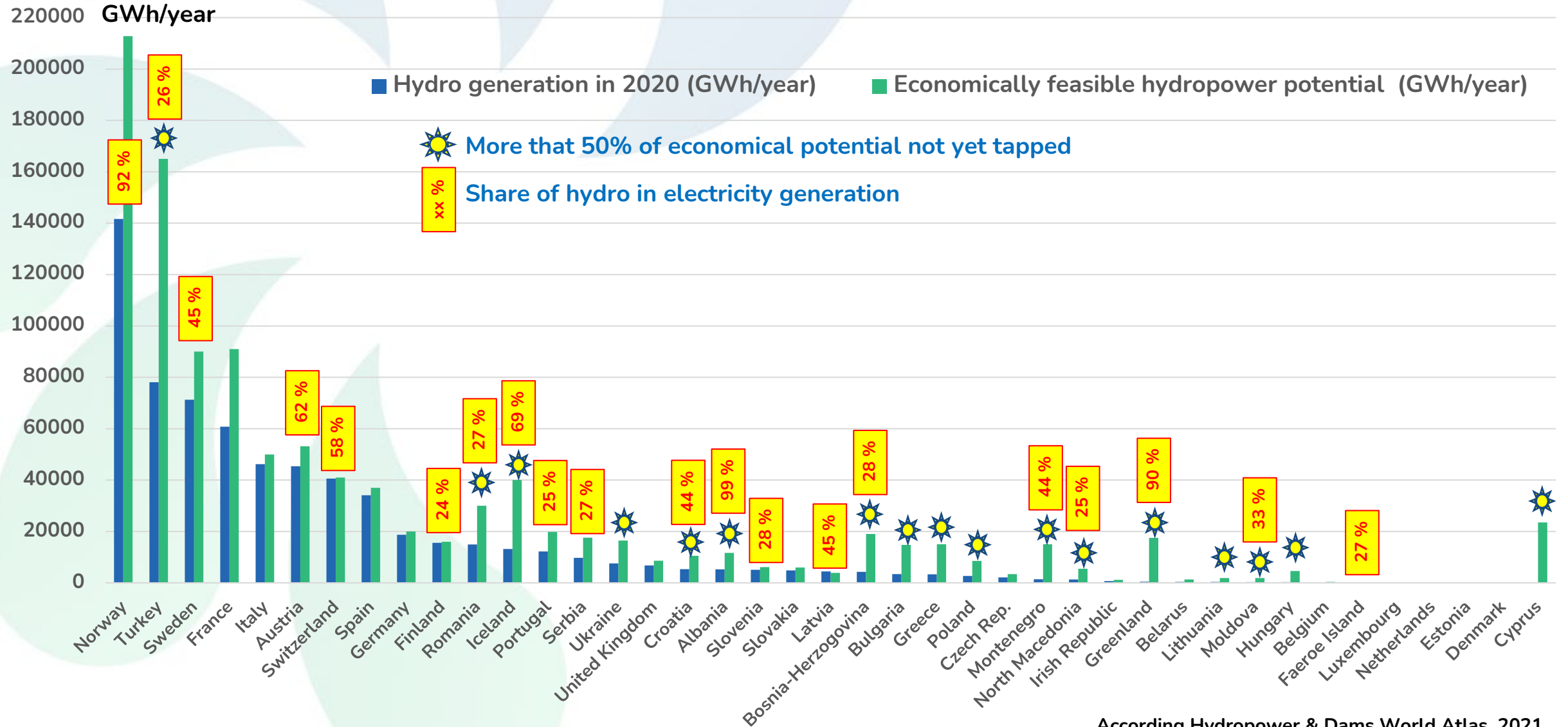
Funded by
the European Union

www.etip-hydropower.eu

Energy crises and role of hydropower

- The energy crisis after the start of the war in Ukraine revealed the important and vital role of hydropower in Europe to ensure a safe and supply of electricity
- Storage and pumped-storage hydropower will be the most vital to avoid blackouts in Europe the next severe and critical winters with “Dunkelflaute” in case of gas supply problems
- There is a renaissance of hydropower in Europe: 9000 MW to 12'000 MW are under planning

Generation and Potential of Hydropower in Europe



Situation of Hydropower in Europe

Installed capacity in MW under construction since 2005 without Turkey



According Hydropower & Dams World Atlas 2024

Hydropower : a more than ever vital role to secure and decarbonize the electric system in Europe

Hydropower vital roles and values :

- 1) 1st renewable energy in the World and Europe
- 2) One of lowest CO₂-eq emission factor
- 3) Best energy Pay Back ratio by far (EROEI factor)
- 4) Excellent flexibility to meet (i) demand peak or (ii) store energy/pump water when demand is low
- 5) Sovereign energy, creating jobs and financial resources in remote areas (taxes, concession fees)
- 6) Affordable and stable price of energy
- 7) Strong contribution of multi-purpose reservoirs to ... :
 - Flood control, Water supply, Irrigation and Drought management, Tourism and Water Sports, Navigation and fluvial transportation ...



Grand Maison upper reservoir and PSH plant
– 1,800 MW (France) © EDF

Increasing biodiversity with rehabilitation and retrofitting of hydropower

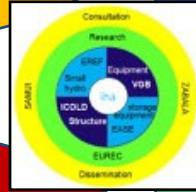
- All hydropower in Europe undergo severe **Environmental Impact Assessment** with early involvement of all stakeholders
- **Confirmed mitigation measures for fish migration are available and implemented**
- Flow regime, river morphology and sediment dynamics are restored as best systematically
- **Innovative sedimentation management methods have been developed and are applied**
- With compensation measures biodiversity is increased with rehabilitation and retrofitting projects; new biotopes and riparian plains are created



Ruppoldingen run-of-river power plant on Aar River in Switzerland

The outcomes of the Forum Hydropower Europe as a basis for ETIP HYDROPOWER

**R&I
Priorities**



Barriers

RIA

Recommendations

18 Research Themes – 80 topics

SIR

Steps to new hydro deployment

11 Strategic Direction – 40 Detailed Actions



Hydropower Europe Outcomes



Objectives of ETIP HYDROPOWER project

- **ETIP HYDROPOWER Consortium** – Horizon Europe project 2022-2025 (Grant Agreement No. 101075620) providing secretariat to the newly established ETIP-Hydropower
- **Project partners:**



- ETIP HYDROPOWER will enhance and disseminate the RIA and SIR taking into consideration the future needs of the sector and the R&I targets and the emerging policy priorities.
- ETIP HYDROPOWER will consolidate the strong network of the HYDROPOWER EUROPE Forum into a sustainable organization which helps to unify the voices of hydropower in Europe

ETIP Hydropower : an industry-driven vehicle to boost Research & Innovation for Hydropower

Objectives of ETIP Hydropower :

- Define priorities of R&I needs for the Hydropower sector
- Help build a vision of the European Commission on the role of Hydropower in a future secure and clean energy system
- Create a platform for partnerships among all stakeholders in the Hydropower sector : response to EC call for projects, ...

Support from the European Commission is essential

Supporting the SET Plan / Net Zero Industry Act is also essential

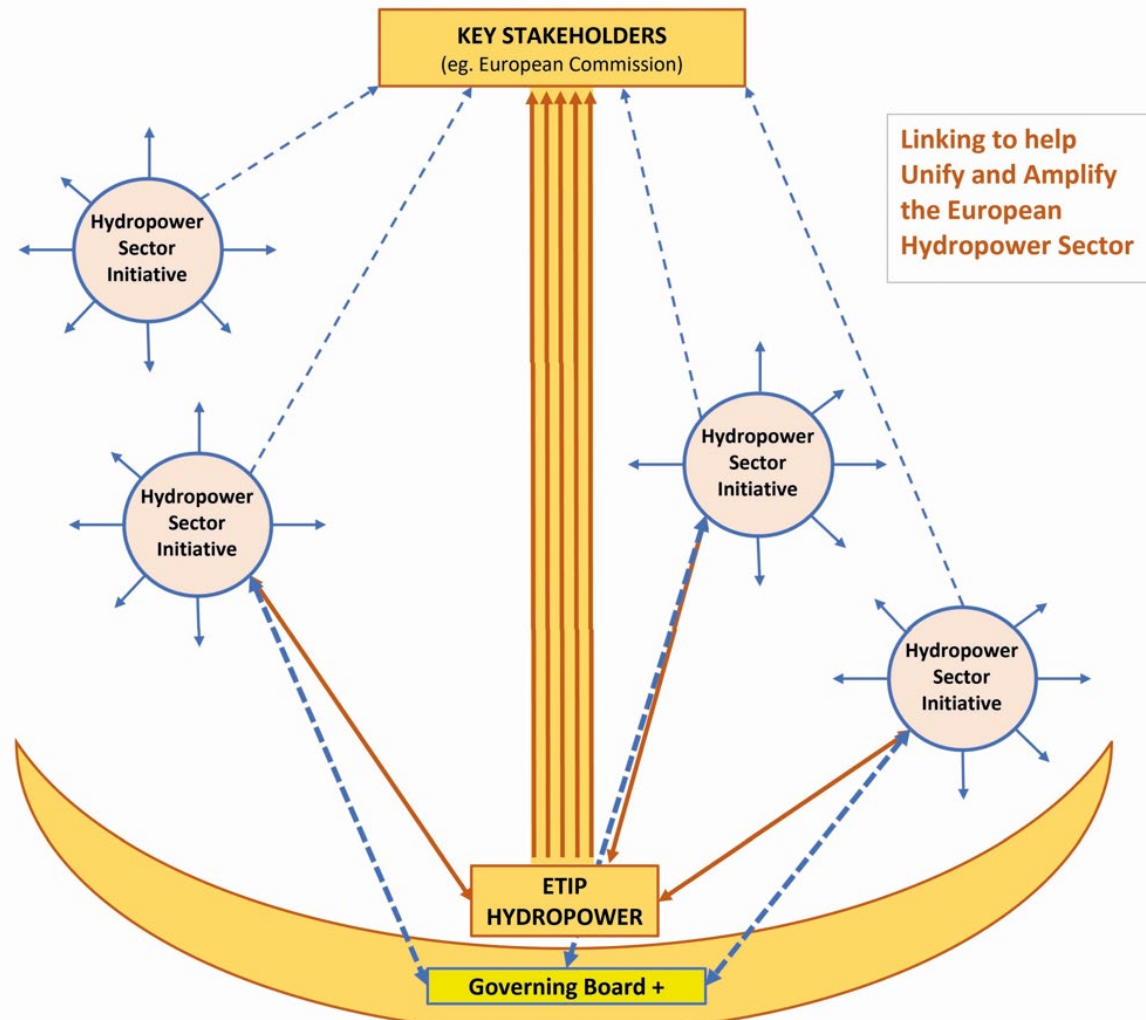
Coordination with our strategic partners is also essential, beyond those already involved in the ETIP : European Hydropower Alliance, EURELECTRIC, other ETIP's,

...



Frades II PSH plant
– 780 MW (Portugal) © EDP

The intended role is to help unify & amplify...



A key role for the ETIP HYDROPOWER is to help **unify** the hydropower sector in Europe, presenting a **single voice on key issues**.

This function does not duplicate the role of existing groups and associations – it **enhances**.

We are working with the **Hydropower Alliance** to confirm complementary roles

ETIP HYDROPOWER under action

- An operational structure in place – the Secretariat
- An industry-driven Governance in place, with all stakeholder sectors
- A widely-open Scientific Advisory Board: 26 members
 - Chairperson:
 - Denis Aelbrecht - Electricite de France (EDF) - Hydro Engineering Center (France)
 - Co-chairs:
 - Antonella Frigerio - Ricerca sul Sistema Energetico - RSE S.p.A. (Italy)
 - Peter Stettner - Andritz Hydro GmbH (Austria)
- Practical products : HERI platform



ETIP HYDROPOWER under action

➤ Working Groups:

4 working groups are active since early summer 2024:

1. Hydropower role for flexibility & storage
2. Hydropower and biodiversity
3. Hydropower and climate change
4. Promotion, dissemination and uptake of past and current European R&I projects

First expected results:

Position papers in April 2025

UNIFYING THE VOICES
OF HYDROPOWER

Participate in the ETIP HYDROPOWER Working Groups

The ETIP HYDROPOWER Working Groups gather experts from different hydropower sectors and stakeholder groups to focus on R&I priorities and strategic actions identified in the Research and Innovation Agenda (RIA) and Strategic Industry Roadmap (SIR).

The working groups will undertake activities such as:

- Drafting of white papers with key messages to increase decision-maker and public awareness.
- Identifying, prioritizing and updating specific hydropower research & innovation needs.
- Drafting technical statements.
- Helping to facilitate strategic actions of the ETIP HYDROPOWER.

The ETIP HYDROPOWER Governing Board proposes to implement four initial working groups:

1. Hydropower role for flexibility and storage.
2. Hydropower and biodiversity.
3. Hydropower and climate change (adaptation and mitigation).
4. Promotion, dissemination and uptake of past and current European R&I projects.

To participate in any of these working groups, simply send an email to secretariat@etip-hydropower.eu



WWW.ETIP-HYDROPOWER.EU



Funded by
the European Union

WG-A: Overview on past and current European R&I projects for hydropower – Follow up and Results Dissemination

General Scope

- Follow-up the Horizon projects related to hydropower
- Inform regularly with a newsletter on the progress of these projects
- Motivate and facilitate the organization of Special sessions at conferences with hydropower as a topic on the outcomes of these projects. A first session moderated by ETIP HYDROPOWER could be during HYDRO 2025 in Tessaloniki in Greece.
- Create a discussion forum among these projects with short webinars (21.5.24 / 18.9.24 / 6.12.24 / 26.02.2025,)

ETIP Secretariat: ICOLD

Confirmed Members: ~20

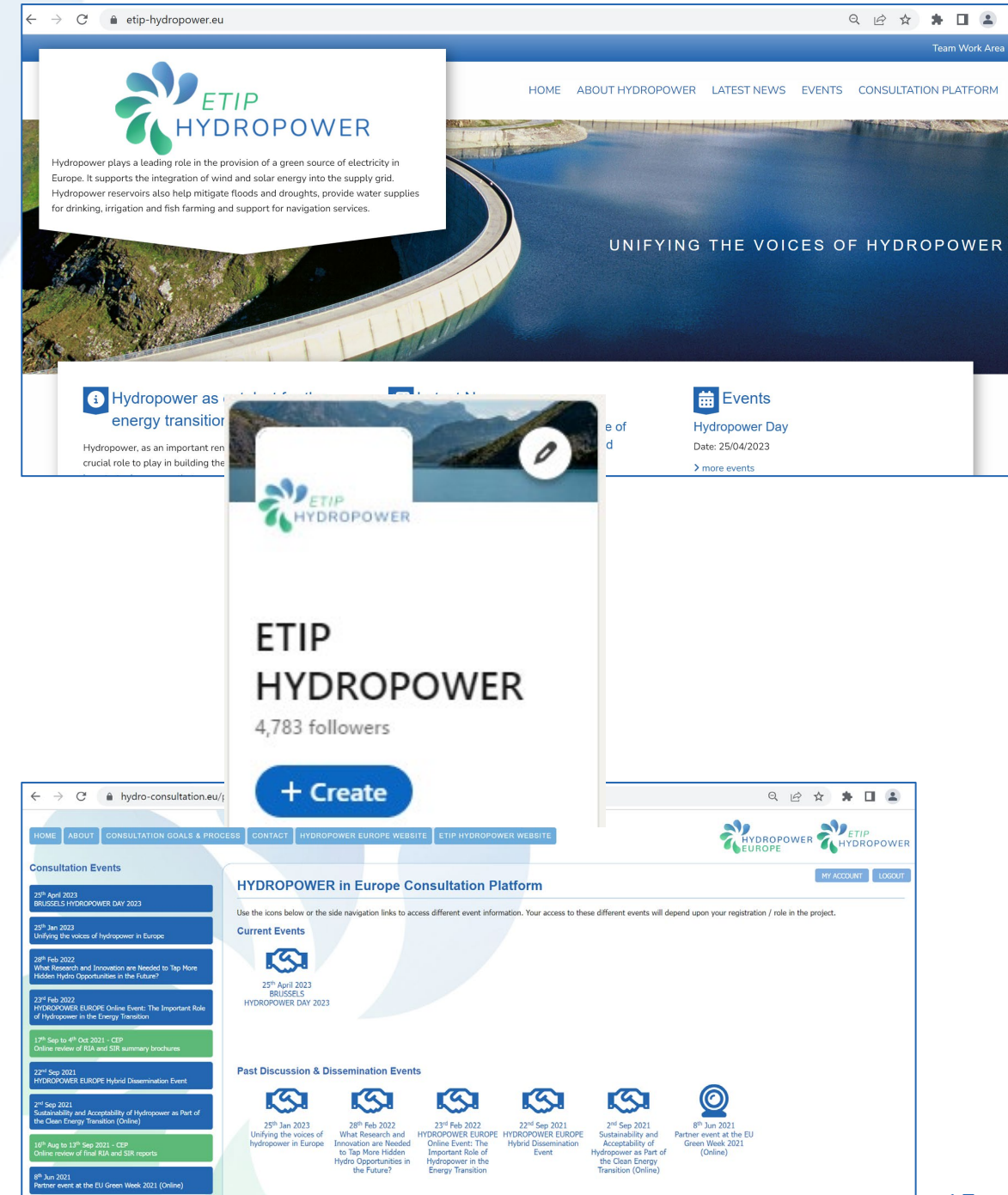
WG-A

Chair:	Emanuele Quaranta, JRC, Italy
Co Chairs:	Stevcho Mitovski, University Ss C&M, Macedonia Lias Zafeiropoulos, Ubitech Energy, Belgium

In conclusion:

A reminder that

- We provide information via our website at www.etip-hydropower.eu
- We have active social media accounts such as LinkedIn:
- We undertake consultation and communication events via our consultation platform at <https://hydro-consultation.eu/>
 - (currently >970 consultees registered...)



The image displays three screenshots related to ETIP Hydropower:

- Top Screenshot:** The ETIP HYDROPOWER website homepage. It features the logo, navigation links (HOME, ABOUT HYDROPOWER, LATEST NEWS, EVENTS, CONSULTATION PLATFORM), and a main banner with the text "UNIFYING THE VOICES OF HYDROPOWER". A sidebar on the right lists "Events" including "Hydropower Day" on 25/04/2023.
- Middle Screenshot:** A LinkedIn profile for ETIP HYDROPOWER, showing 4,783 followers and a "Create" button.
- Bottom Screenshot:** The "hydro-consultation.eu/" website. It lists "Consultation Events" such as "25th April 2023 BRUSSELS HYDROPOWER DAY 2023" and "23rd Feb 2022 HYDROPOWER EUROPE Online Event: The Important Role of Hydropower in the Energy Transition". It also features a "HYDROPOWER in Europe Consultation Platform" section with "Current Events" and "Past Discussion & Dissemination Events".

BRUSSELS HYDROPOWER DAY

8 APRIL 2025 | Le Bouche à Oreille

Contribution of hydropower flexibility and storage in the safe energy transition in partnership with environment under climate change

**SEE YOU ALL AT THE
HYDROPOWER DAY**

ORGANIZED BY





**Thank you for your
attention**



Funded by
the European Union

www.etip-hydropower.eu