



# The important role of hydropower in the energy transition

## Introduction

**Prof. Dr. Anton J. Schleiss**

**Hon. President of the International Commission on Large Dams (ICOLD), Professor emeritus at Ecole Polytechnique fédérale de Lausanne (EPFL)**

**Coordinator of Hydropower Europe**

**HYDROPOWER EUROPE Forum Online Event  
February 23, 2022**



# Hydropower at the source of the development of Europe in the last century

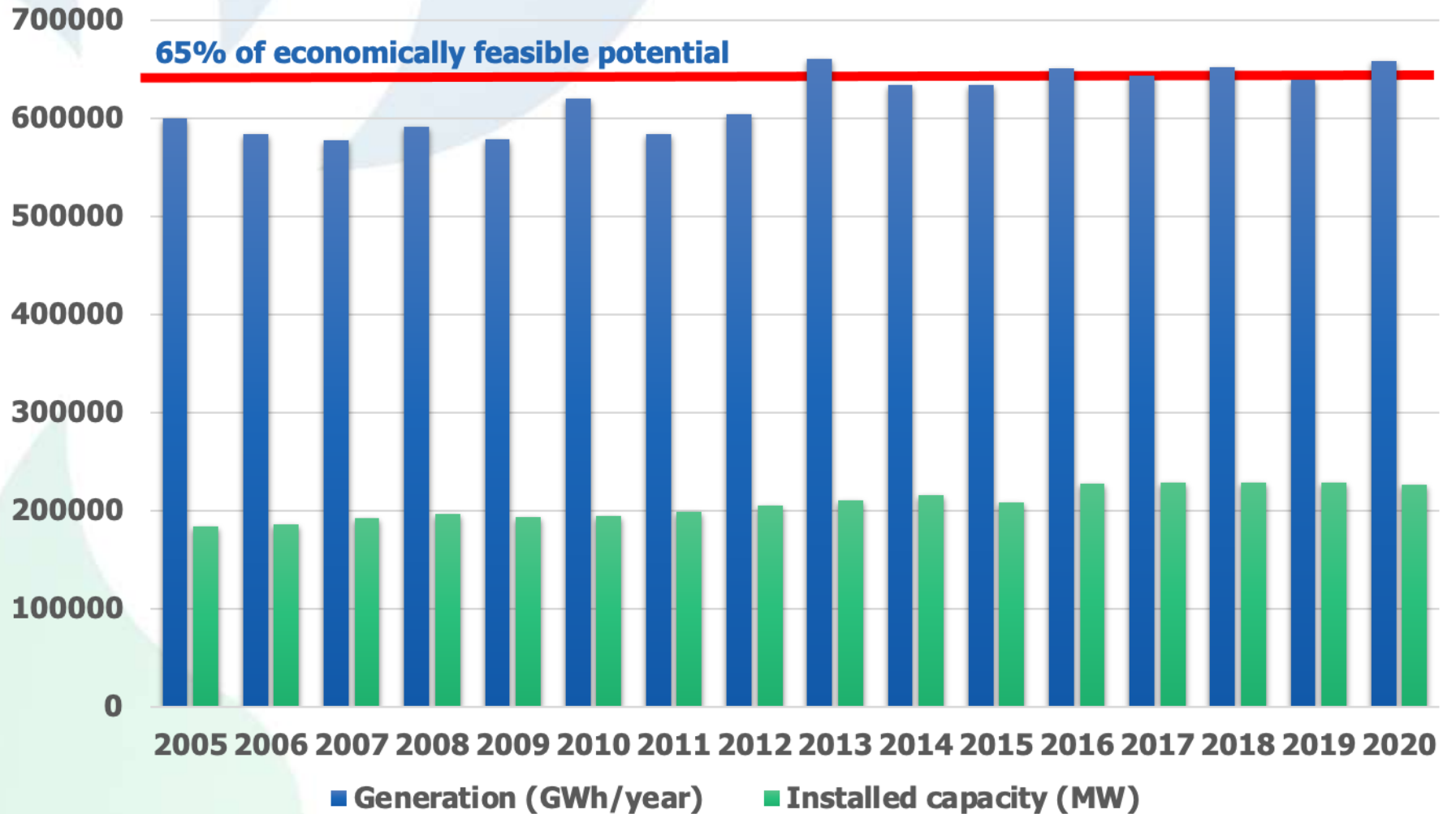
## Advantages of hydropower

- **Renewable energy with lowest CO<sub>2</sub>/kWh, excellent energy gain or pay back factor**
- **Excellent efficiency, production can be easily adapted to the demand (flexible peak energy)**
- **In-country energy creating jobs and financial resources in remote areas (taxes and concession fees)**
- **Improvement of infrastructures and touristic attractiveness**
- **Strong contribution to flood and drought protection**



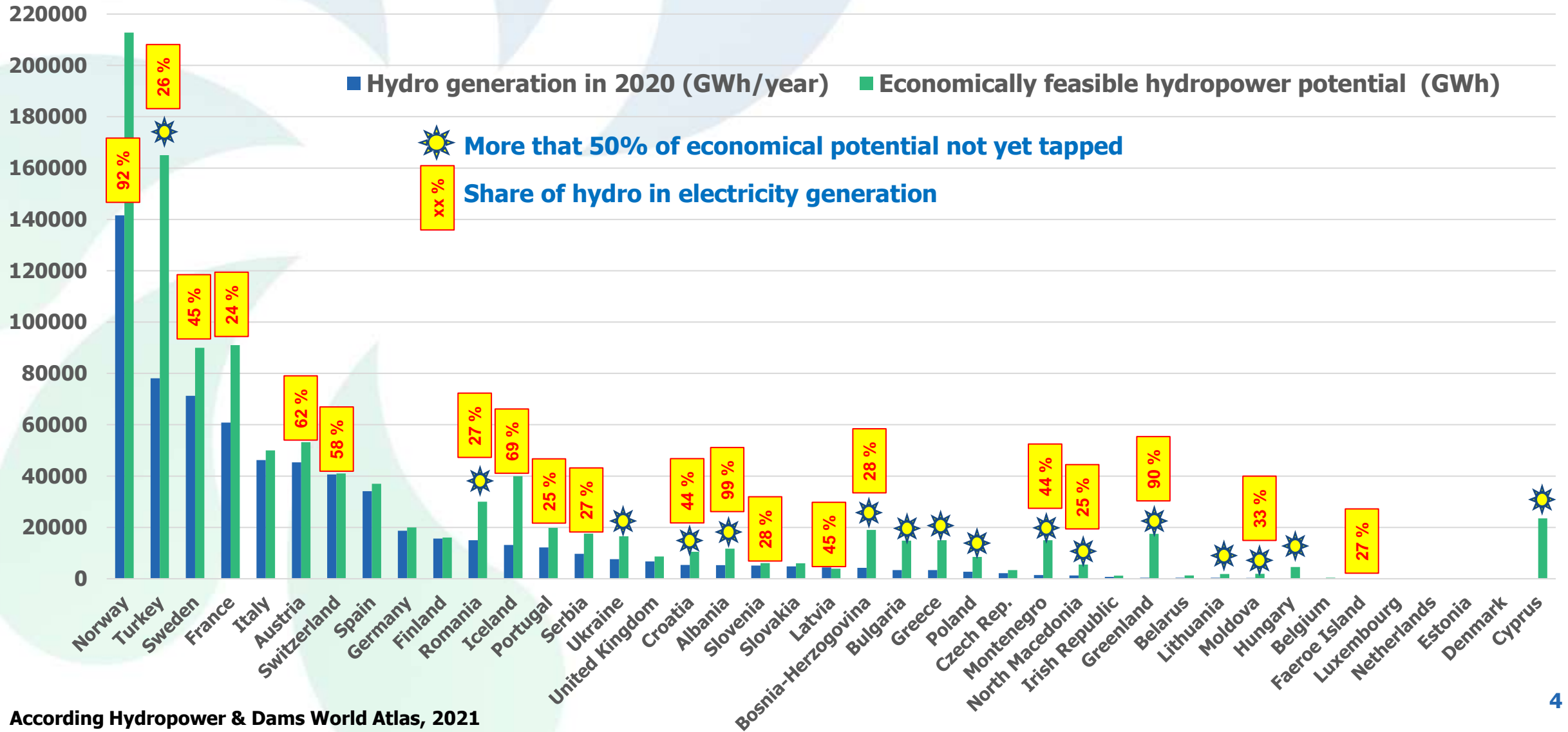
Thissavros Dam, Greece, 172 m

# Hydropower at the source of the development of Europe in the last century



Situation of  
Hydropower  
in Europe  
(with Turkey)

# Generation and Potential of Hydropower in Europe



According Hydropower & Dams World Atlas, 2021

# H2020 objectives for Hydropower: HYDROPOWER EUROPE Forum

➤ **ICOLD Leader**

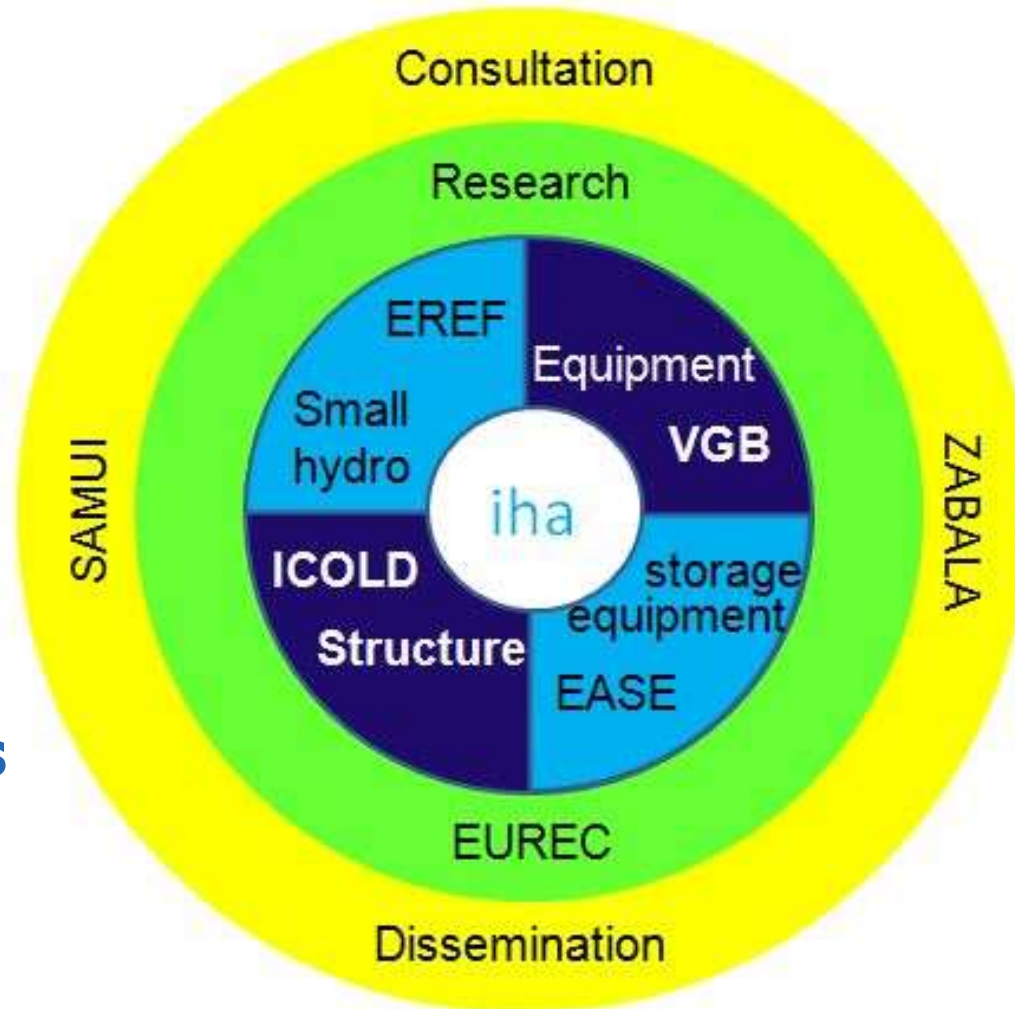


➤ **Coordinators:**

- Jean Jaques Fry
- Anton J. Schleiss

➤ **+ 7 core partners**

➤ **+ 5 third linked Parties**



**EASE** - European Association for Storage of Energy

**EREF** - European Renewable Energies Federation

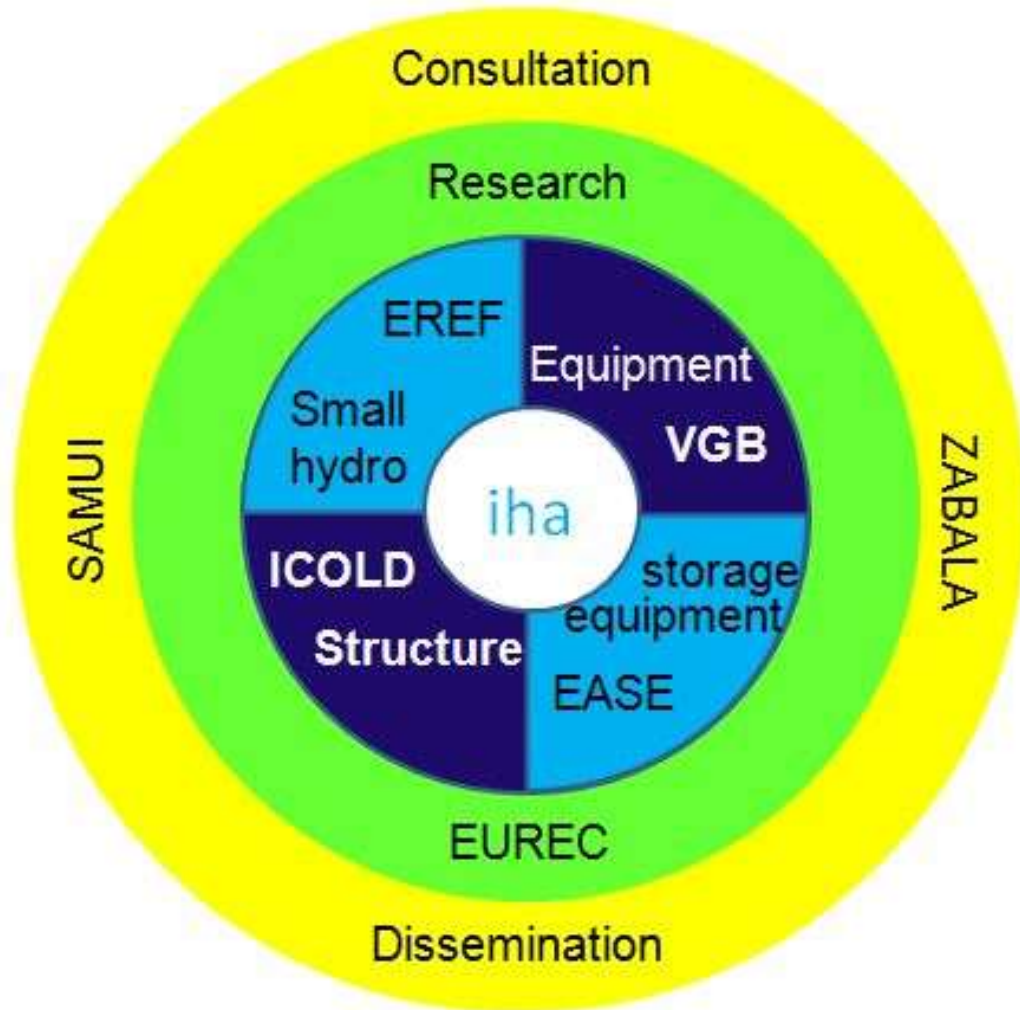
**EUREC** - Association of European Renewable Energy Research

**ICOLD** - International Commission on Large Dams

**IHA** – International Hydropower Association

**VGB** - International Technical Association for Generation and Storage of Power and Heat

# H2020 objectives for Hydropower: HYDROPOWER EUROPE Forum



The forum was producing a **Strategic Industrial Roadmap (SIR)** and a **Research and Innovation Agenda (RIA)** for the hydropower sector in Europe, targeting an **energy system with high flexibility and renewable share.**”

# Hydropower as a catalyst for the energy transition in Europe

## **VISION "HYDROPOWER EUROPE"**

- 1. Increasing hydropower production** through the implementation of new environmental friendly, multipurpose hydropower schemes and by using hidden potential in existing infrastructures.



Pinios Dam, Greece, 50 m

# Hydropower as a catalyst for the energy transition in Europe

## **VISION "Hydropower Europe"**

**2. Increasing the flexibility of generation from existing hydropower plants by adaptation and optimization of infrastructure and equipment combined with innovative solutions for the mitigation of environmental impacts.**



Moiry Dam, Switzerland, 148 m



# Hydropower as a catalyst for the energy transition in Europe

## **VISION "HYDROPOWER EUROPE"**

**3. Increasing storage** by the heightening of existing dams and the construction of new reservoirs, which have to ensure not only flexible energy supply, but which also support food and water supply and thus contribute to the Water-Energy-Food NEXUS and achievement of the Sustainable Development Goals of the United Nations.

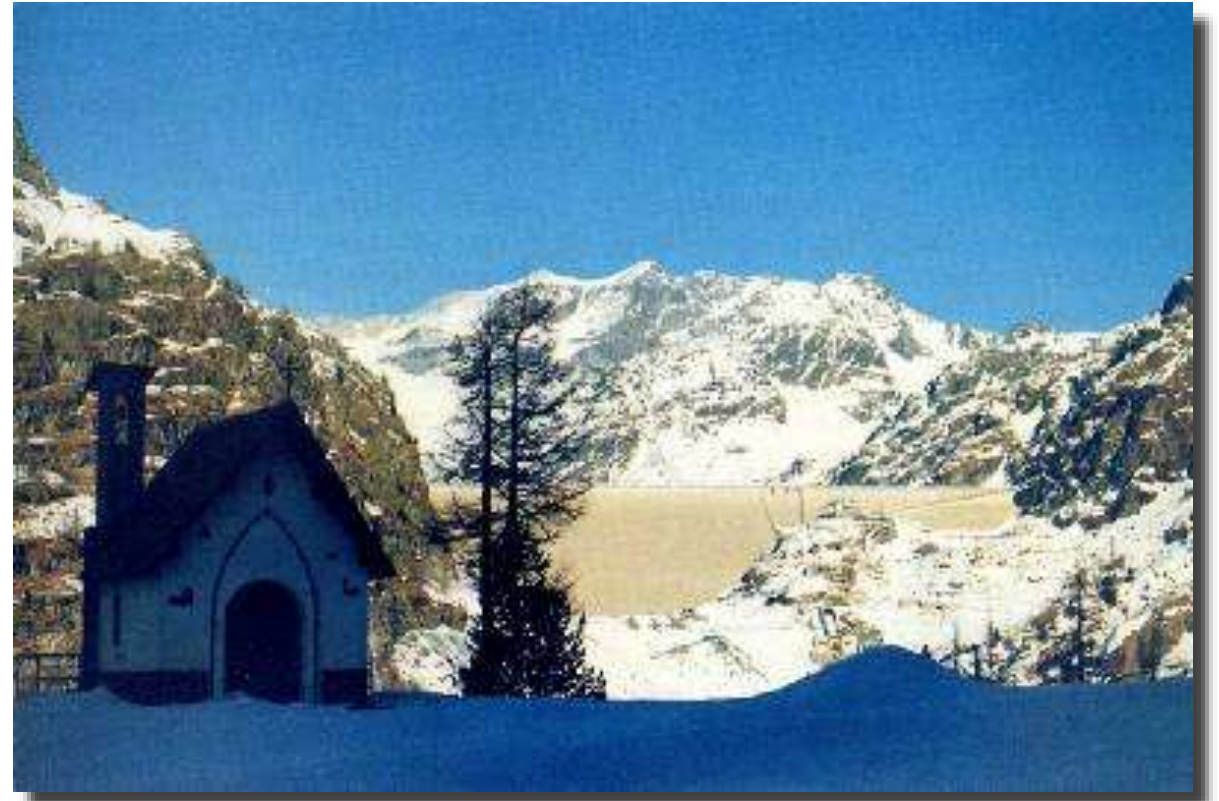


Tignes Dam, France, 180 m

# Hydropower as a catalyst for the energy transition in Europe

## VISION "HYDROPOWER EUROPE"

4. Strengthening the contribution of flexibility from **pumped-storage power plants** by developing and building innovative arrangements in combination with existing water infrastructure.



Alpe Gera Dam, Italy, 172 m

# Agenda of Event

- 9h30 - 9h40**      **Welcome and introduction**  
**(Anton Schleiss, Hydropower Europe)**
- 9h40h-9h50**      **Video « Hydropower as a key partner and catalyst for the clean energy transition »**
- 9h50-10h05**      **Importance of hydropower for the energy transition in Europe - view of the European Commission (Hélène Chraye, European Commission)**
- 10h05-10h15**      **Key results of the Research and Innovation Agenda (RIA)**  
**(Anton Schleiss, Hydropower Europe)**
- 10h15-10h25**      **Highlights of the Strategic Industry Roadmap (SIR)**  
**(Jean-Jacques Fry, Hydropower Europe)**
- 10h25 - 10h40**      **Feedback on the achievements of the HYDROPOWER EUROPE Forum**  
**(Sebastien Mortier and Thomas Schleker, European Commission)**
- 10h40 - 11h20**      **Roundtable discussion « What are the strategic actions to be deployed across all stakeholders? »**  
**(Speakers and all participants, moderation Janire García, Hydropower Europe)**
- 11h20 - 11h35**      **The future of the HYDROPOWER EUROPE Forum as a common and permanent voice in Europe (Mark Morris, Hydropower Europe)**
- 11h35 - 11h45**      **Closing remarks (Jean-Jacques Fry and Anton Schleiss, Hydropower Europe)**

**Enjoy the closing event of HYDROPOWER EUROPE**

**“ The important role of  
hydropower  
in the energy transition “**

# Video

**« Hydropower as a key partner and catalyst for the clean energy transition »**