

An aerial photograph of a large, curved concrete dam. The dam is situated in a valley, with a reservoir of blue water on the left and a lush green forest on the right. A road runs along the top of the dam. The sky is clear and blue.

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**EU Hydropower:**

**Offers far more benefits than just  
renewable electricity and flexibility**



# Introduction

For decades, hydropower has served as the bedrock of Europe's renewable energy landscape. It remains the second-largest renewable energy source in the EU, generating an impressive 375 TWh of electricity annually.<sup>1</sup> However, hydropower's strength lies in **its unparalleled flexible electricity generation and storage capacity**. It provides all the services needed for safe and stable grid operation, making it by far the most crucial dispatchable renewable electricity source in the EU.

But hydropower is much more, offering **numerous additional advantages to society, the economy and the environment**.



# Hydropower is serving society, the economy and the environment

1

## Benefits for People

Many hydropower plants and their associated reservoirs provide **drinking water** and create **picturesque landscapes** that promote tourism. They also offer opportunities for **recreational activities** like swimming, sailing and surfing.

2

## Benefits for Industry

Hydropower provides **water for various industrial processes** including manufacturing, cooling, and processing. In addition, with hydropower, river discharges can be adapted to **ensure navigable water ways**. This can reduce the reliance on road transport, leading to cost savings and reduced carbon emissions.

3

## Benefits for Agriculture

Hydropower supports agricultural activities by supplying **water for irrigation**. Controlled releases from reservoirs can ensure crop yield and thereby provide **greater food security**.

4

## Benefits for Environment

The hydropower sector's endeavors to both mitigate its environmental impact and adopt measures to improve biodiversity have resulted in **creation of habitats** for endangered flora and fauna, which in some cases even become nature reserves. For examples, have a look at [Eurelectric's Power Plant and 2nd Hydropower Short Story](#).

5

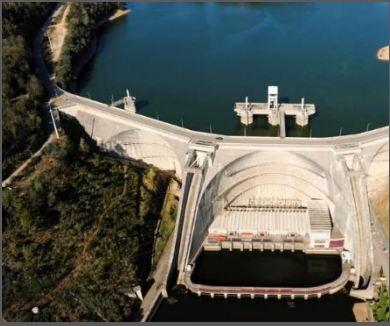
## Mitigation of extremes

Hydropower supports **flood and drought mitigation** by strategically managing water releases to safeguard society, industry and ecosystems. Furthermore, during wildfires, hydropower creates a **water source for firefighting** efforts.





Aguieira – Portugal  
336 MW | 190 GWh



Freudenau – Austria  
172 MW | 1100 GWh



Roßhaupten – Germany  
49 MW | 80 GWh



Schluchsee – Germany  
480 MW | 520 GWh



Serre Ponçon – France  
380 MW | 650 GWh



Susqueda – Spain  
86 MW | 140 GWh



Tokke Cascade – Norway  
1017 MW | 4400 GWh



Zlatoličje – Slovenia  
136 MW | 580 GWh



Water supply for  
households and industry



Flood and drought  
protection



Recreational  
activities



Water supply for  
agriculture



Water supply for  
firefighting



Water management  
for navigation

# 5 Key Actions to harness Hydropower's Potential

1

**Recognise the diverse benefits of hydropower for society, the economy, and the environment, extending beyond the electricity system.**

2

**Promote hydropower as a key contributor to the EU's decarbonisation objectives, facilitating large-scale, sustainable, and flexible renewable electricity generation and storage.**

3

**Leverage the strengths of hydropower in implementing effective climate change adaptation measures.**

4

**Acknowledge the sector's commitment to minimising environmental impact through habitat preservation, restoration, and river continuity enhancement.**

5

**Establish a stable legislative framework to bolster long-term visibility and investor confidence, crucial for large capital investments in hydropower.**





## References:

<sup>1</sup>EUROSTAT 2022 – Gross production of electricity [[NRG\\_IND\\_PEH](#)]; data basis 2021;

## Photo credits:

Introduction:

Kachlet – Uniper

Examples:

Aguieira – EDP

Freudenau – VERBUND

Roßhaupten – Uniper

Schluchsee – Schluchseewerk AG

Serre Ponçon – EDF / Franck Oddoux

Susqueda – ENEL

Tokke Cascade – Statkraft

Zlatoličje – HSE

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