

HydroPulse launches a new era of climate-resilient hydropower in Europe

Horizon Europe project unites leading organisations to accelerate the transition towards sustainable, intelligent and environmentally responsible hydropower systems.

Athens, Greece · 22 June 2026. As Europe faces the urgent challenges of climate change, biodiversity loss, water scarcity, and the growing demand for clean energy, a new Horizon Europe initiative is set to redefine the future of hydropower.

Today marks the official launch of HydroPulse, an ambitious four-year European research and innovation project that will develop and demonstrate next-generation hydropower solutions capable of delivering renewable energy while safeguarding river ecosystems, strengthening climate resilience, and creating long-term value for communities.

Funded under the European Union's Horizon Europe programme, HydroPulse brings together 16 leading organisations from 9 countries, combining expertise in engineering, hydrology, ecology, artificial intelligence, environmental sciences, digital technologies, policy, and stakeholder engagement.

The project officially commences with its kickoff meeting on 22–23 June 2026, hosted by the National Technical University of Athens (NTUA), Greece.

Transforming hydropower for a sustainable future

Hydropower currently represents Europe's largest source of renewable electricity and remains essential to achieving the continent's climate neutrality objectives. However, increasing environmental pressures, ageing infrastructure, changing hydrological conditions, and societal expectations require innovative approaches that can balance energy production with ecological sustainability.

HydroPulse has been designed to address these challenges by creating a new framework for climate-resilient hydropower systems that integrates advanced digital technologies, ecosystem restoration, environmental monitoring, and inclusive governance models.

Through a network of demonstration sites and case studies across Europe, the project will develop and validate innovative solutions including:

- Digital twins for hydropower optimisation and decision support

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- Artificial intelligence and advanced predictive analytics
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- Multi-dimensional environmental and socio-economic modelling
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- Real-time monitoring of ecosystem health and river dynamics
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- Nature-based solutions for enhanced resilience and biodiversity protection
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- Participatory governance approaches that actively involve stakeholders and local communities
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By combining technological innovation with environmental stewardship, HydroPulse aims to demonstrate how hydropower infrastructure can simultaneously support Europe's clean energy transition, biodiversity ambitions, and water resource sustainability goals.

A shared European vision

Professor Denis Istrati, Project Coordinator at the National Technical University of Athens, said:

"HydroPulse is built around a simple yet transformative principle: clean energy and healthy river ecosystems should reinforce one another rather than compete. By bringing together leading experts from across Europe, we are creating innovative solutions that integrate engineering excellence, environmental responsibility, and societal needs. The outcomes of HydroPulse will contribute to a more resilient, sustainable, and future-ready hydropower sector for Europe."

Professor Denis Istrati, Project Coordinator, National Technical University of Athens (NTUA)

The project reflects a growing recognition that achieving climate neutrality requires integrated solutions capable of addressing interconnected environmental, economic, and societal challenges.

From research excellence to real-world impact

As leader of Communication, Dissemination and Stakeholder Engagement, Brunel University London will ensure that HydroPulse's knowledge, innovations, and best practices reach policymakers, industry stakeholders, researchers, local communities, and citizens across Europe. Dr Pantea Foroudi commented:

"HydroPulse represents a powerful example of European collaboration at its best. By bringing together scientific excellence, technological innovation, industry expertise, and stakeholder engagement, the project will generate solutions that help reconcile renewable energy production with environmental protection and societal well-being. Our goal is not only to advance knowledge but also to create lasting impact for communities, ecosystems, and future generations."

Dr Pantea Foroudi, Communication, Dissemination and Stakeholder Engagement Lead, Brunel University London

The consortium's interdisciplinary approach will transform rivers, reservoirs, and hydropower assets into living laboratories where innovative solutions can be tested, refined, and scaled for broader European adoption.

University of Bucharest: advancing science for sustainable water systems

The University of Bucharest, one of the consortium partners, will contribute through a dedicated case study that strengthens the project's scientific understanding of ecosystem dynamics and sustainability challenges. Professor Geta Rîșnoveanu, Director of the Doctoral School in Ecology and member of the HydroPulse consortium, stated:

"HydroPulse is shaping the future of climate-resilient hydropower systems. Contributing through a local case study, the University of Bucharest bridges cutting-edge research and real-world impact, supporting innovative, science-driven solutions that promote environmental sustainability and long-term community well-being."

Professor Geta Rîșnoveanu, Director of the Doctoral School in Ecology, University of Bucharest

Project at a glance

PROGRAMME	Horizon Europe Research and Innovation Action
GRANT AGREEMENT NO.	101268715
DURATION	48 months
CONSORTIUM	16 partners across 9 countries
DEMONSTRATION	Multiple demonstration sites and case studies across Europe
KICKOFF MEETING	22–23 June 2026, Athens, Greece

Consortium partners

National Technical University of Athens (Coordinator), Aarhus University, HES–SO University of Applied Sciences and Arts Western Switzerland, CETAQUA, CARTIF, IREC, Inference, Jagiellonian University, HEAS AG, ISOTECH Ltd, Cuerva Energy, University of Bucharest, ARDITI, Alpiq AG, Brunel University London, and EMASAGRA.

About HydroPulse

HydroPulse is a Horizon Europe-funded research and innovation project dedicated to advancing sustainable, climate-resilient, and socially inclusive hydropower systems. By integrating engineering, ecology, digital innovation, environmental sciences, and stakeholder participation, HydroPulse seeks to accelerate Europe's transition towards a renewable energy future that supports both people and nature.

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**Powering Europe's future.
Protecting its rivers. Strengthening
its communities.**

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NOTES TO EDITORS

- HydroPulse stands for "Hydropower for Participatory Upscaling of Local Solutions and Ecosystem-based strategies."
- The project is funded by the European Union under Horizon Europe (call HORIZON-CL5-2025-D3-02-06, Grant Agreement No. 101268715) and is coordinated by the National Technical University of Athens (NTUA).
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