



# Goals of European Hydropower R&I Funding

HYPOSO Final Event

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# European Green Deal

## The EU will:



Become climate-neutral by 2050



Protect human life, animals and plants, by cutting pollution

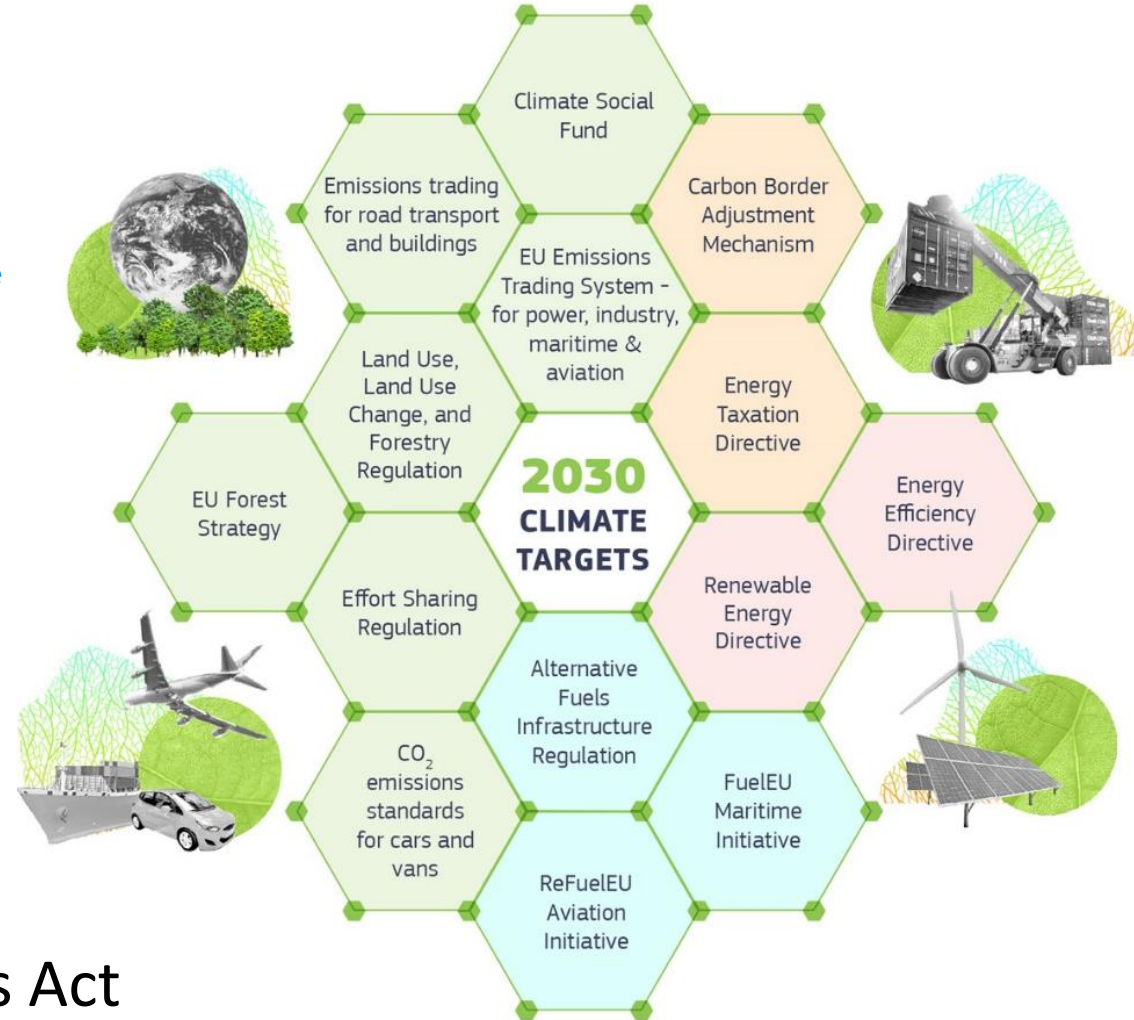


Help companies become world leaders in clean products and technologies



Help ensure a just and inclusive transition

- Fit for 55 Package
- REPowerEU
- EU Taxonomy
- Revision of the EU Electricity Market Design
- Net-Zero Industry Act/Critical Raw Materials Act



# EU SUSTAINABILITY POLICIES



- Long-term strategy to reach carbon neutrality by 2050
- EU Environmental Action Plan

# AU-EU High Level Policy Dialogue

## Climate Change and Sustainable Energy (CCSE) Partnership – Roadmap – Sustainable Energy

### Renewable Energy: Overarching objectives

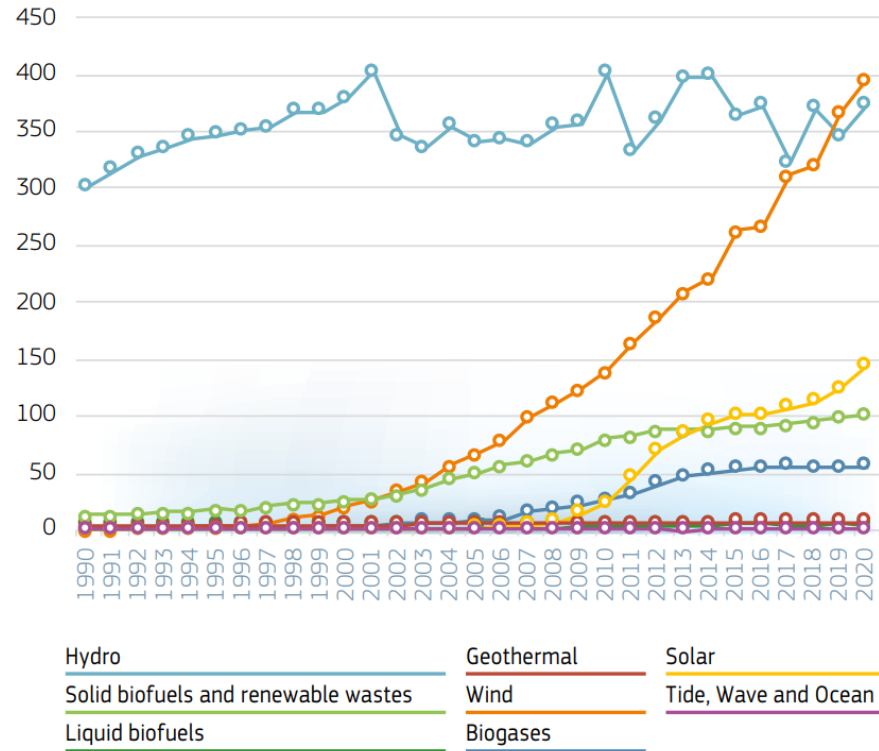
- Replacing fossil fuel-based energy supply by renewable energy sources is a mitigation measure to climate change and a valuable **sustainable solution to increasing energy access in Africa**. Renewable energy can be collected from a wide variety of sources including solar, wind, **hydro**, sustainable biomass (including waste), geothermal, wave, and tidal.

### LEAP RE project:

- It is a joint programme of activities with a long term perspective
- Pillar 1: Joint call for proposals (African and European agencies); Pillar 2: 8 research actions ; Pillar 3: Future long-term collaboration
- 31 countries: 20 from Africa and 11 from Europe
- 83 organisations: 39 from Africa and 44 from Europe
- Total project cost: 32,55M€
- Total EC Funding: 14,95M€

# Hydropower in Europe

BY FUEL: RENEWABLES – 1990-2020 (TWh)



source: Eurostat April 2022

- Limited potential of additional capacities, but high potential in energy system services
- Strong technology base

- **Challenges and opportunities:**

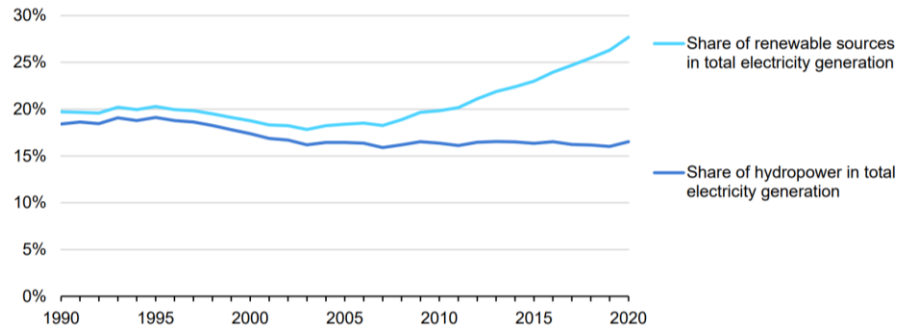
- Refurbishment
- Flexible operation / grid balancing
- Sustainability, e.g. water/river connectivity

- **Overall R&I strategy:**

- long-term challenges require continuous efforts
- maintain European hydropower research and industry value chains
- Global cooperation on sustainable hydropower

# Global Hydropower Developments

Figure 3.20 Shares of hydropower and total renewable sources in global electricity generation, 1990-2020

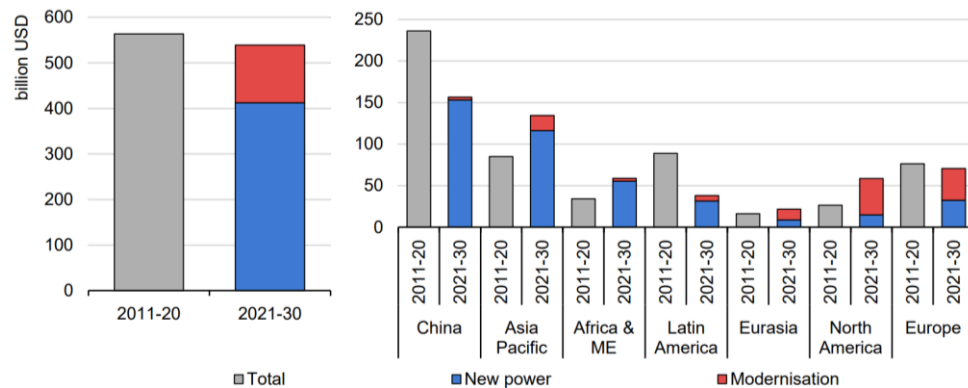


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Sources: Based on IEA (2020a), World Energy Statistics and Balances 2020 (database); IEA (2021c), Global Energy Review 2021.

Source: IEA Hydropower Special Market Report 2021

Figure 3.17 Hydropower capacity investment globally (left) and by region (right), 2011-2020 and 2021-2030

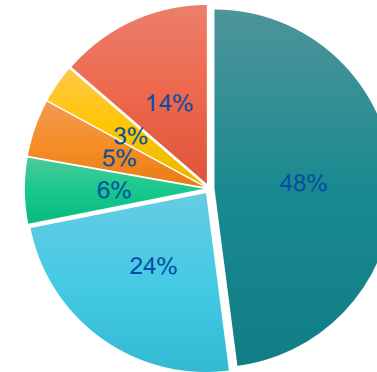


IEA. All rights reserved.

Notes: ME = Middle East.

Source: IEA Hydropower Special Market Report 2021

Global Exports in 2019 (878 M EUR)



■ EU ■ China ■ India ■ Brazil ■ USA ■ Other

Source: International Trade Center (ITC). Trade statistics for international business development 2020, in SWD(2020) 953 final.

Research articles on hydropower 01/2016 – 08/2020

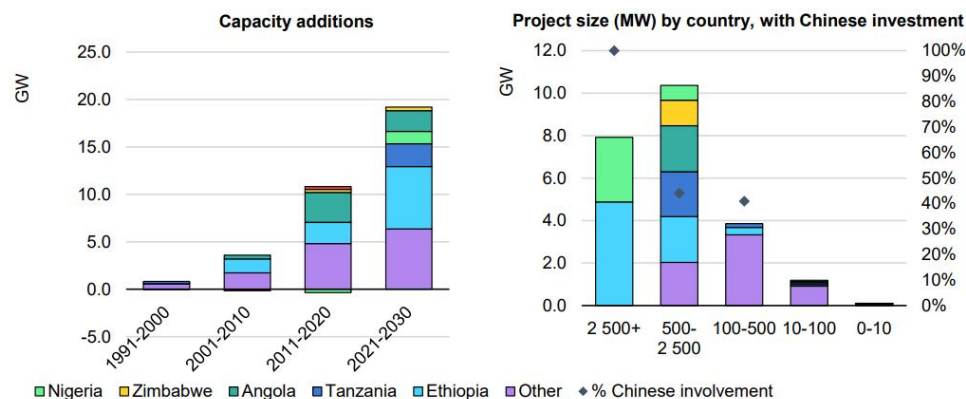


Source: ISI Web of Knowledge (jcr.clarivate.com), in SWD(2020) 953 final.



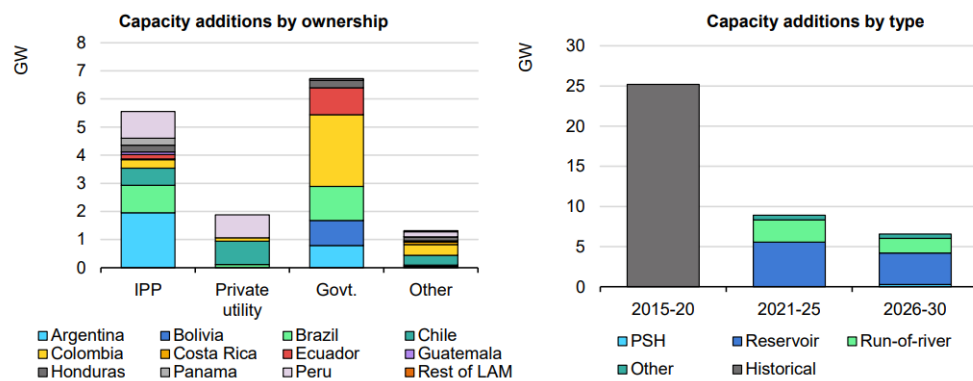
# What can European Hydropower Technology offer worldwide?

Figure 3.10 Sub-Saharan Africa hydropower capacity additions by size in selected countries, 2021-2030



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Figure 3.11 Latin America hydropower forecast summary



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Notes: IPP = independent power producer. LAM = Latin America. PSH = pumped-storage hydropower.

- Worldwide hydropower capacity is still growing
- Sub-Saharan Africa and Latin America have still high potential for capacity additions
- European technology providers have high competition, but can continue to be market leaders for sustainable hydropower technology

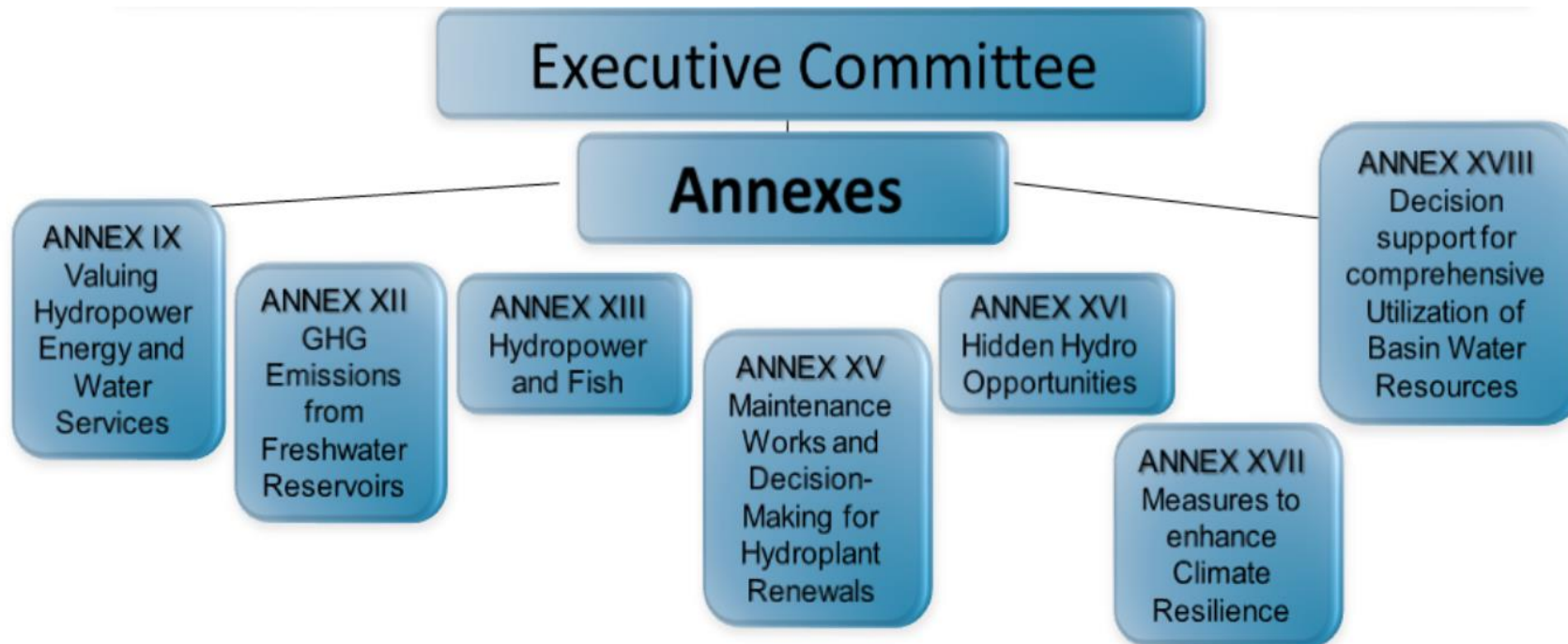


# Hydropower: Global cooperation



THE INTERNATIONAL ENERGY AGENCY TECHNOLOGY  
COLLABORATION PROGRAMME ON HYDROPOWER

## IEA Hydropower







# HORIZON EUROPE

THE EU  
RESEARCH &  
INNOVATION  
PROGRAMME 2021 – 27



This presentation is based on the political agreement of 11 December 2020 on the Horizon Europe. Information on some parts is pending revision.

19 March 2021

# Our Vision

The EU's key funding programme for research and innovation:

- Tackles climate change
- Helps to achieve the UN's Sustainable Development Goals
- Boosts the EU's competitiveness and growth
- Facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges
- Supports the creation and better diffusion of excellent knowledge and technologies
- Creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area.



Credits: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

# Hydropower in Horizon Europe Cluster 5

- **HORIZON-CL5-2021-D3-02-15** Support to the activities of the ETIPs and technology areas of the SET Plan
  - *ETIP HYDROPOWER*
- **HORIZON-CL5-2021-D3-03-11** Development of hydropower equipment for hidden hydropower (EUR 10M)
  - *H-HOPE*
- **HORIZON-CL5-2022-D3-03-08** Development of digital solutions for existing hydropower operation and maintenance (EUR 9M)
- **HORIZON-CL5-2023-D3-02-09** Demonstration of sustainable hydropower refurbishment (EUR 8M)
- **HORIZON-CL5-2024-D3-01-07** Development of hydropower equipment for improving techno-economic efficiency and equipment resilience in refurbishment situations (EUR 8M)
- **HORIZON-CL5-2024-D3-01-16** Demonstration of innovative pumped storage equipment and tools in combination with innovative storage management systems (EUR 8M)

# Thank you for your attention!

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