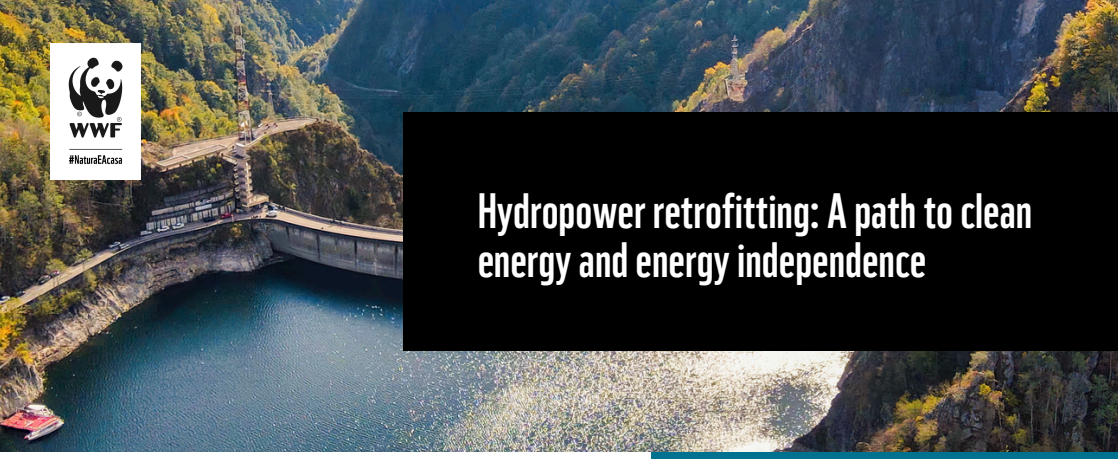

Hydropower retrofitting: A path to clean energy and energy independence

Hydropower accounts for approximately 28% of Romania's electricity mix. However, the sector faces outdated infrastructure, while it has seen few technological or operational improvements in recent years. Therefore, it could benefit from alternative solutions such as the modernization of existing hydropower plants.

Retrofitting

existing hydroelectric power plants could increase hydroelectric energy production by up to 7%, contributing to the EU's target of 32% renewable energy by 2030.

Benefits of retrofitting

Lower costs: Retrofitting is **40-50% cheaper** than building new plants.

Fast implementation: Modernization takes **3-5 years**, compared to 8+ years for a new plant.

Reduced environmental impact: Existing infrastructure is used, reducing additional river fragmentation and protecting biodiversity.

Increased efficiency: Upgrading turbines and equipment can increase energy production by **up to 1,100 GWh/year**.

What does retrofitting entail:

- **Equipment optimization**: replacement of inefficient turbines and generators.
- **Digitization and automation**: implementation of intelligent control systems.
- **Ecosystem protection**: solutions for fish migration and sediment management.

Find out more in the study:

Download the study