# Technical Assistance to Connectivity in the Western Balkans - 2
# NEAR/2022/EA-RP/0081

ALBANIA

## Technical Assistance to the Vau i Dejes HPP Rehabilitation project

The subject sub-project is still ongoing. The description that follows is for information purposes only and subject to the sub-project's completion.

**Partners:**
- Albanian Power Corporation (KESH)
- Ministry of Infrastructure and Energy (MIE)
- KfW Development Bank (KfW)
- European Investment Bank (EIB)

**Budget of Technical Assistance:**
- Euro 370,000

**EU contribution[1]:**
- As above (100%)

**Technical Assistance provided by:**
- CONNECTA 2 (Technical Assistance to Connectivity in the Western Balkans - 2)

Energy

Vau i Dejes HPP is the third and last hydropower plant of the Drin River cascade. The works for its construction started in 1967 and the plant entered into operation between 1970 and 1972. The plant has 5 x 50 MW vertical Francis turbines with a design head of 52 m and a design discharge of 113 m3/sec.

The original electromechanical equipment of the plant was supplied from China and partially rehabilitated between 2003 and 2007, including replacement of several components with new equipment of mostly European origin. Turbines and generators were however only refurbished as part of this rehabilitation programme.

The key components of the plant are therefore in operation for approximately 50 years without major interventions. As a result, KESH with the financial cooperation of KfW are preparing a full rehabilitation of the plant including all works identified to be replaced or rehabilitated.

With a full rehabilitation, the technical lifetime of the plant can be extended for another 30 years in case of proper maintenance. This approach also ensures compatibility of components, minimizes the total accumulated outage time of the plant and provides the highest long-term availability and reliability of the equipment.

The long-term annual production of Vau i Dejes HPP between 1975 and 2021 was approx. 900 GWh. A full rehabilitation of the whole hydropower plant including penstocks, could lead, according to FICHTNER's study submitted in 2023, to an increase of the maximum turbine capacity of 4% and a total potential for yearly increase of energy production in the range of 74 GWh.

The **overall objective** of the CONNECTA 2 assignment is to develop the final strategy of the rehabilitation, precise the scope and make the necessary financial, environmental and social studies in order to prepare the rehabilitation project for acceptance by the financial institutions.

The **specific objective of CONNECTA 2's technical assistance** is to:

- Evaluate and update existing rehabilitation design;
- Update the cost-benefit analysis for all rehabilitation alternatives;
- Perform financial and economic analysis for the best options that are technically viable;
- Develop the detailed scope of supply;
- Develop the detailed implementation schedule;
- Recommend a clear procurement strategy;
- Develop a full Environmental and Social Impact Assessment (ESIA);
- Develop a full Climate Impact Assessment (CIA); and
- Sounding of possible suppliers.

**Results to be achieved:**

- Final rehabilitation strategy;
- Analyse of the power generation during the last 15 years;
- Detailed implementation schedule;
- Clear Procurement strategy;
- Detailed ESIA;
- Detailed CIA; and
- Assessment of the state of penstock, gates and draft tubes.

[1]EU contribution concerns only Technical Assistance services for project development

**Start date:** March, 2025

**Duration:** 9 months

**Key recommendations – further actions:**

*(to be updated after the sub-project is completed)*

## Benefits expected due to Technical Assistance:

- **Full Plant Rehabilitation of**:
  - Cranes;
  - Turbine;
  - Generator;
  - Intakes and bottom outlet;
  - Penstock;
  - Control equipment;
  - Electrical and Mechanical auxiliaries; and
  - Substation / Transmission line.

## Impacts anticipated:

- **Increased Efficiency**:
  - Improved Turbine and Generator performance; and
  - Reduced Energy Losses.
- **Enhanced Reliability and Safety**:
  - Reduced downtime; and
  - Improved Safety Systems.
- **Environmental Benefits**:
  - Lower Environmental Impact; and
  - Reduced Greenhouse gas emissions.
- **Economic Advantages**:
  - Cost savings;
  - Increased revenue; and
  - Attracting investments.
- **Integration with Modern Grid Systems**:
  - Enhanced automation; and
  - Support for renewables.
- **Extended Operational Lifespan**
- **Alignment with Regulatory Standards**

Energy