Demo # 2: Technical factsheet

Demo title: BRATIA Hydroelectric Power Plant

The second demonstrator is a run-of-river (RoR) hydro power plant located on Bratia River in Argeș county, Romania. In the pilot site two the following use cases will be tested:

- **UC#1: Predictive maintenance and operational efficiency maximization in HPPs**
- **UC#4: Increasing HPPs' readiness for integration & operation into local smart grids**

Major Impact Factors:

- Lack of flexibility for RES, smart grids or VPP connection
- Improved predictive maintenance for cost reduction purposes
- New market options / strategies

DEMO LEADER

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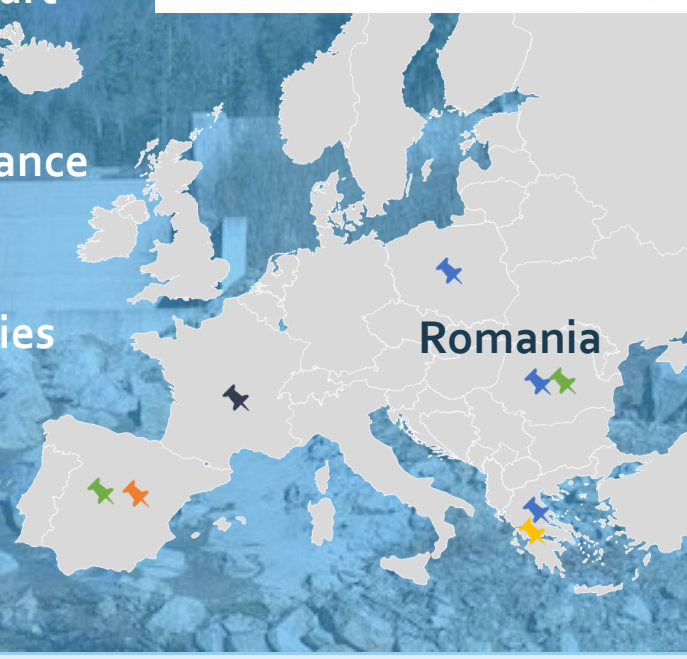

"The development of D-HYDROFLEX will provide useful tools to INTEX as demo owner for operation and preventive maintenance purposes" – Radu Ivașcu INTEX

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D-HYDROFLEX

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Technology Types:

- Bratia hydro power plant is a river flow HPP that has 1,56MW installed capacity. The hydropower development is a derivation type, with medium fall, operated by taking over and compensating the natural flow of the Bratia river.

Components:

- Bratia HPP has two Pelton turbines with an installed capacity of 503kW and 1087kW each and has a 4.000m supply pipeline, with an approx. 250m level difference. The grid connection is done via a 10km medium voltage cable to the nearest power station and the energy is supplied to the grid via a 2.000kVA 20/0,4kV transformer onsite.

Fields of Application:

- Fault detection and predictive maintenance based on advanced data processing.
- Energy production forecasting, based on available data related to the power station operation and heterogeneous and exogenous data.
- Hybridization of HPP for increased flexibility by facilitating connection to other renewable energy sources via local smart grids and/or VPP.

Expected Benefits:

- Increase smart readiness of the HPP for operation and preventive maintenance purposes.
- Readiness for hybrid future connection with other RES sources and/or VPP.
- Readiness for integration & operation into local smart grids.

Technology Readiness Level (TRL):

- Fault detection and predictive maintenance system TR4→TRL6
- Weather, flow and production forecasting TR4→TRL6

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