

Projet FP7 – HYPERBOLE

| | |
|--------------------|--|
| Nom du projet | HYdropower plants PERformance and flexiBle Operation towards Lean integration of new renewable Energies – HYPERBOLE |
| Call | FP7-ENERGY-2013-1 |
| Type de projet | Collaborative project (generic) |
| Rôle de la HES-SO | Participant |
| Chercheur impliqué | C. Münch-Alligné (HES-SO//VS) |
| Participants | Ecole Polytechnique Fédérale de Lausanne (Switzerland) – Coordinateur ; Instituto De Engenharia De Sistemas E Computadores Do Porto (Portugal) ; Universität Stuttgart (Germany); Haute Ecole Spécialisée de Suisse Occidentale (Switzerland) ; Power Vision Engineering Sàrl (Switzerland) ; Alstom Hydro France (France); Andritz Hydro AG (Switzerland) ; Voith Hydro Holding GmbH & Co KG (Germany); Andritz Hydro GmbH (Austria); Universitat Politecnica De Catalunya (Spain) |
| Budget global | 6 232 785 euro / financement UE : 4 325 542 euro |
| Durée | 42 mois, début le 01.09.2013 |
| Résumé | <p>In the recent years due to tremendous development and integration of renewable energy resources in Europe, hydraulic turbines and pump-turbines are key technical components to contribute to renewable energy production and to compensate for the stochastic nature of the variable energy sources, preserving thus the electrical grid stability.</p> <p>As a result, the overarching objective of the project is the enhanced hydropower plant value by extending the flexibility of its operating range, while also improving its long-term availability. More specifically, the project aims to study the hydraulic, mechanical and electrical dynamics of several hydraulic machines configurations – fresh and seawater turbines, reversible pump-turbines – under an extended range of operations : from overload to deep part load. A two-pronged modelling approach will rely on numerical simulations as well as reduced-scale physical model tests. Upon suitable concurrence between simulations and reduced-scale physical models results, validation will take place on carefully selected physical hydropower plants properly equipped with monitoring systems.</p> <p>To address this ambitious research plan, a consortium has been assembled featuring three leading hydraulic turbines, storage pumps, reversible pump-turbine and electric equipment manufacturers, SME, as well as world-renowned academic institutions. Extensive tests both on both experimental rigs and real</p> |

power plants will be performed in order to validate the obtained methodological and numerical results.

Lien

<http://hyperbole.epfl.ch>