

## S-2-1 The hydro – and pumpstorage potential in Europe

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The speaker is advisor to Eurelectric Energy Policy and Power Generation Unit and will present a current research project within Eurelectric's WG hydro, on the hydro- and pumpstorage Potential in Europe.

### OVERVIEW ON THE PROJECT

#### **1. Scope**

Reports about the future electricity generation landscape in the EU and several policy scenarios refer extensively to the potential of hydro- and pump storage as a major means in balancing intermittent renewables (i-RES). Regions with such a potential are foremost the Scandinavian countries and the Alpine region.

**EURELECTRIC WG Hydro will contribute to the debate about the hydro- and pump storage potential capacities in Europe by presenting by July 2011 an exhaustive report on hydropower potential in Europe as well as the current investment and political framework.**

#### **2. Gathering facts- the first part**

There is no complete overview on hydro- and pump storage capacities and generation in Europe. Facts are available although easier for natural flow than for pump storage (i.e. Power Statistics EURELECTRIC 2010, the World Hydro Atlas, data from countries etc.). These data need to be gathered and compared/checked which will be done in a first factual part of the report.

The first part also includes definitions, based very much on Unipede terminology 1991: the way one would present them has certainly changed; the definitions are still valid for most of them (critical check).

#### **3. Flexibilities- assessing the potential contribution of hydro- and pump-storage to back-up i-RES**

There are different cases of flexibility in electricity generation: the business as usual flexibility is well known to the generators and has been practiced since long time. A need for a new type of flexibility is characterized by much more extreme power ramps, and especially when they occur repeatedly in a short period of time.

The second part of the report presents, in an introductory part, basics on functioning of hydro- and pump-storage flexibility. It then analyses different flexibility cases, from business as usual, power ramps and extreme case, with examples.

#### **4. Recommendations and Conclusions**

The report will show that there is significant potential for hydro- and pump storage in Europe, but the current political and investment climate, as well as public opposition prevents from making use of this important potential capacity. It goes without saying that the potential has to be linked up via new interconnections, an aspect which, for the sake of more focus is not dealt with in this report, but is referred to in the introduction and the conclusion parts of the report.