APPLICATION FORM
FOR
CREATION OF A WORKING GROUP

Study Committee: **A1**

WG number: A1. 32 **Name of Convener:** Alexander Gromow (Brazil)

Title : A Survey on Small Hydro Power Plants Considering Technical and Strategic Aspects: Present Status and Future Outlooks

Terms of reference

Background :

Small Hydro Power Plants (SHPP) are present in many countries and represent an important renewable and predictable energy source to help meeting the load growth. SHPP can either be connected to the grid or they can be used for independent and stand-alone applications in isolated remote areas. These two different configurations may have an impact on SHPP design.

The aim of this WG is to bring up technical and strategic aspects associated with the design, maintenance, monitoring, specification and performance of Small Hydro Power Plants on short, medium and long terms, based upon the existing experience from manufacturers, as well utilities and the improvements that may be forecasted for the future.

The definition of SHPP is also a regional aspect, here it has to be surveyed if a general classification and definition of SHPP can be made world wide, or if this aspect shall be kept as individual from country to country (this aspect may interfere in the possibility of cost reduction regarding the introduction of standard equipment).

Scope :

The first step will be to call participants to join the WG, a broad participation of countries with SHPP experience and/or potential is highly desired.

The next step will be to elaborate a questionnaire to survey the basic aspects of SHPP as described above, in short:
-Present status evaluation
-Future views

It is worthwhile to mention that in this WG, among others, the following aspects will be considered:
a) The necessity or not of having in small hydro plants a robust and simple design of the electromechanical equipments and its effects on reduce costs and decrease maintenance in order to assure profitability of investments.
b) The necessity or not of compactness of the electromechanical equipments for facilitating their installation and operation.
c) The advantages and disadvantages of using slow speed hydraulic wheel turbines with horizontal axis.
d) The type of generators: synchronous or asynchronous machines.
e) Means to assure a good intrinsic stability due to the low mechanical inertias that

characterize small generators.
f) The need or not for speed regulators in case of operation in a network where frequency is regulated by large conventional units.
g) etc…

The WG work shall be developed using Internet collaborative tools. The results obtained will give a detailed picture about SHPP and thus will open the possibilities for further specific investigations.

Deliverables: Report or Technical Brochure to be published in Electra.

Time schedule :

- Draft questionnaire: 3 month after WG formation (forecasted for February 2012);
- Forwarding of the questionnaire to A1 Experts for comments;
- Final version of the questionnaire: 2 months after receipt of the A1 Experts comments;
- Approval of the questionnaire by A1 Committee: in 2 months time;
- First draft report: in 3 months time after questionnaire approval (forecasted for 2012 Biennial Session);
- Second draft report: in 3 months time after first draft report approval questionnaire approval;
- Final report approval: 3 months after draft report issue.
- Report or Technical Brochure: 3 months after Final report approval (forecasted for May 2013)

Other SCs concerned by the work:

Approval by Technical Committee Chairman: Klaus Fröhlich Date : 09/08/2011