



AALBORG UNIVERSITY
DENMARK

PhD Position within Transient, small signal and voltage stability issues in the transmission backbone network (HVAC) when integrating multiterminal HVDC-VSC

Within the programme Science without Borders, Aalborg University is offering a PhD position at the Department of Energy Technology.

The position is administrated by “Science without borders” and financed by stipends through CAPES. The overall theme is “Engineering and other technological areas”. Acceptance of employment is on condition of the grant from CAPES.

Hypothesis: The multiterminal HVDC-VSC technology can be used to improve HVAC transmission network stability.

Description: HVDC-VSC technology allows an independent control of active and reactive powers, allowing enhancing transient, small-signal and voltage stabilities. However, the complexity of the dynamics existent between AC systems and multiterminal DC systems typically requires the use of EMTP-type software, which does not allow the use of eigenvalue techniques that are usual in stability analysis. It is also possible to use the tools that are typically use for the study of stability phenomena, but then some of the phenomena have to be disregarded. Thus, it is necessary to design guidelines on how to perform the studies for the different types of stabilities (transient, small-signal and voltage).

Results: Practically applicable technical design guidelines for assessing transmission network stability issues when employing multiterminal HVDC – VSC in transmission networks.

Requirements:

Master in electric power systems

Language: Good skills in oral and written English

Other professional qualifications: Strong analytical skills, experience with computer simulations and some power electronics knowledge

Contact person: Professor Claus Leth Bak, e-mail: clb@et.aau.dk

To apply please see the link below:

<http://www.en.tek-nat.aau.dk/vacant+positions/Science+without+Borders/>

