

## Proposal for the creation of a regional working group

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<b>Technical Issues:</b> <b>Promotion and backing the issuing of Technical Specifications of the material and of the control and protection schemes</b>	<b>Strategic Directions:</b> <b>OTLs capacity enhancement, congestion prevention, transmission system reliability improvement</b>	
<b>The WG applies to transmission and distribution networks</b>		
<b>Title of the WG:</b> <b>Regional perspective of shunt reactor introduction in the transmission system</b>		
<p><b>Scope, deliverables and proposed time schedule of the Group :</b></p> <p><b><u>Background :</u></b></p> <p>This document embraces and describes the objectives of and the reasons for establishing a working group aiming to increase the knowledge of technical issues concerning the use of Shunt Reactors necessary for better cooperation of SEER electric power transmission systems.</p> <p>Transmitted power of a line is related to its operating voltage. In a today's and it can be expected in the future power networks even much more, the reactive power will cause many serious problems which will be more severe in a heavily loaded transmission system. The cyclic nature of reactive power caused by new supply side facilities (some of renewable sources) as well as challenging demand side requirements are impacting on the network planning and invite to introduce new advanced methods to handle this problem. Maintaining of the highest allowed voltage (maximum operating voltage) in any of the network's location requires a suitable balancing of the reactive power in the system, taking care of the voltage profile, energy losses and reliability of the system. A most suitable solution to attain this target can be found through expanding the technical knowledge necessary to handle this issue and to coordinate the transmission system development in all this relating details.</p> <p>Many of technical issues concerning shunt reactors have been dealt in the past by the CIGRÉ WGs (Dealing with Reactive Power Compensation Analysis and Planning Procedures)</p> <p>The Working Group will seek to develop a Technical Report which provides Guidelines for the analysis, planning and commissioning of VSR projects for the interconnected transmission system in the SEER.</p> <ol style="list-style-type: none"> <li>1. Concepts of AC and DC interconnected transmission systems of SEER</li> <li>2. The impact of reactive power on utility grids and loads</li> <li>3. Consumption and production of reactive power</li> <li>4. The link between reactive power and system operating voltage</li> <li>5. Methods to compensate for system reactive power</li> <li>6. Regulation and compliances</li> <li>7. Shunt reactors general design concepts</li> <li>8. Shunt reactors operating characteristics</li> <li>9. Shunt reactor switching             <ul style="list-style-type: none"> <li>- Protection problems during shunt reactor switching</li> </ul> </li> </ol>		



- Shunt reactor behaviour during external faults
- Shunt reactor protection and control schemes
- 10. Regional circumstances and specificities
- 11. Report

**Deliverables :**

Technical brochure

**Time Schedule: Start : January 2015**

**Final report: August 2016**

**Approval by Chairman of TC CIGRE, Mark Waldron**

**Prepared by Maks Babuder**