

**CIGRE Study Committee C6, « Distribution Systems and Dispersed Generation »
PROPOSAL FOR CREATION OF A NEW WORKING GROUP**

WG C6.16	Name of Convenor: Trevor Gaunt (South Africa)
Title of the Group: Technologies employed in rural electrification	
<p>Scope, deliverables and proposed time schedule of the group</p> <p>Background:</p> <p>Energy poverty has been identified by various authorities as a pressing problem, yet energy policy and international finance organisations, and even electrical engineers, are unaware of the differences between the many technologies used in different countries. As a result, well-intended advice and assistance is sometimes inappropriate.</p> <p>Similar problems have surfaced in other SC-C6 working groups, for example different benchmark systems for different technologies are needed for studying variations of DG (C6.04.02) and there is overlap with the definition of 'active distribution networks' (C6.11). A systematic analysis of distribution technologies is needed as a foundation for future rural electrification studies, integration of DG and, possibly, to contribute to standardisation.</p> <p>The proposal extends the work started in a contribution to the C6 Colloquium in Malaysia in 2007: G Ledwich, P Martino, F Calderon, CT Gaunt: International practices in rural electrification.</p> <p>Scope:</p> <p>The working group shall identify all solutions currently applied to rural electrification without duplication (mutually exclusive, collectively exhaustive). Technologies that will be compared comprise network structure and configuration (such as network frequency, AC/DC solutions ...), typical components applied as well as protection and control aspects. The historical development of electricity systems leads to a relationship between some parameters and, in turn, the dependency of one part of a technology on other parts, such as the relationship between system earthing (grounding) and protection. The emphasis will be on grid/networks, but grid-tied DG and autonomous electrification must be included. Network topologies similar to those identified by C6.04.02 will be included and extended.</p> <p>The scope shall be achieved through five main steps:</p> <ol style="list-style-type: none"> 1. Description of the most prevalent technology approaches to electrification in up to 20 countries and their derivation from other systems, with particular attention to developing countries having effective electrification programmes and those characterised by energy poverty. Some of the data will be collected by a Cigré survey. 2. Categorisation of a hierarchy of technologies or other relationship between them, including approaches to earthing/grounding and protection. 3. Preliminary assessment of relative advantages and disadvantages of the various approaches. 4. Description and assessment of novel technologies that have been proposed. 5. Recognition of combinations of standard approaches, and identification of implications for integration of DG, conversion to active networks and/or opportunities for standardisation. <p>The expected result of the study should define appropriate combinations of technologies that can contribute to electrification, the scope for standardization, and the limits of combining various technologies.</p> <p>Risk: At this stage it has been assumed that the technologies can be identified separately from the institutions that gave rise to them or operate them. If it is discovered that the technologies and institutions are related, the hierarchy might become more complicated.</p> <p>Deliverables: The results shall be reported in a technical brochure with summary in Electra.</p> <p>Time Schedule: Begin: January 2009 (1st meeting July 2009, Canada) Final report: Mid 2011</p>	

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman: Klaus Fröhlich **Date:** 26/01/2009