CIGRE Study Committee N° C1

PROPOSAL FOR CREATION OF A NEW WORKING GROUP

WG C1-23	**Name of Convenor: Ronald Marais (South Africa)**

Title of the Group: Transmission investment decision points and trees

Background:

Long-term transmission planning is required to ensure that reliability and security criteria are met for the future load growth. Target networks are often used to model the potential future network and assess the required voltage levels and technology. The target network is premised on a number of variables such as load growth and location, future generation expansion and location as well as technology selection.

Target networks represent the preferred network at the end of the specified period to meet all the necessary criteria and requirements. This can be used to look back and structure how the development should be phased from the existing network. The development can be broken down into main projects for which critical timelines can be established taking into account the necessary project approval process, EIA procedures, right-of-ways acquisition, detailed design, construction and commissioning. These timelines then provide the key decision points where approval is required in order to implement the projects in a timely fashion. Not meeting the timelines due to internal or external factors (e.g. investment uncertainties, political priorities) exposes the transmission network to increased risk of breaching the reliability and security criteria.

The uncertainty of future generation and its location results in multiple potential target networks. Each of the target network plans will have key decision points to expand the network to remain compliant. The various target networks may result in diverging network strengthening creating a number of decision trees. These decision trees will indicate the critical key decision points which can be communicated to the relevant stakeholders, both internally and externally.

This Working Group will establish if and how target networks are being used and if they are used to generate decision trees and key decision points. Of interest is what processes are used to determine the timelines of the decision points in the different countries and the methods used to illustrate them. Consideration will also be given to the difference between developed and developing nations and how they address these matters.

Deliverables:

1. Establish if and how target network are used to identify future scenarios and if decision points and decision trees for critical transmission expansion are generated per scenario.
2. Analyse how the decision trees and points are used to represent the network development requirements with critical approval dates.
3. Develop a general guideline on the various methods to determine decision points and create decision trees from target networks.
4. Publish the results in a Technical Brochure with Executive Summary in ELECTRA.

Time Schedule: Start April 2009
Final Report due: April 2011

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman : Klaus Fröhlich **Date** :03/06/2009