



# JICABLE'07

## Rapporteur's Session Report

### **A.8 SESSION : CABLES & ENVIRONMENT**

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*The papers presented during this session have shown the strong will of the cable industry to minimize the impact of underground links on their environment and gave an overview of the different aspects of these impacts.*

Paper A.8.1 presented Weibull Reliability Analyses applied for buried pipelines. It should be necessary to include more rigorous statistical evaluations of high quality data in particular for the cable environment to improve the results of such analyses to establish better asset management programs,

In order to reduce strongly the pollution which could be caused by obsolete oil-filled power cables, paper A.8.2 developed a method based on several flushes with solvent and water to remove the bulk of the oil content of the cable. This method allowed removing nearly 80% of the oil content, not only in the channels but also in the paper. This solution could be proposed for utilisation on obsolete circuits.

Paper A.8.3 was a study in order to improve the knowledge of the real underground cable impact on the nature. The analysis of the middle term effects showed that measures can be foreseen and planned at an early stage to reduce or eliminate any damage caused by the project to the environment. To complete the obtained results, it will be necessary to conduct a long term effects study.

A way to mitigate the magnetic field generated by power cables, mentioned in paper A.8.4 developed an interesting method by using passive loops inside trench, manholes and joint bays. In order to reach the requested value of magnetic field, it's possible to change the conductor or the number of cables. This is obtained with a limited reduction of the current carrying capacity. The effectiveness of aluminium cables was illustrated and the shielding performance of the passive cables was compared with metallic plates shielding.

Paper A.8.5 presented the work done to complete ecoconception software databases (EIME) to make possible the study of the environmental impact of high voltage cable links from the raw materials using until the line operation. The paper showed that the main impact is due to the line operation and the best solution to limit it is to increase the conductor size. Moreover, for the cable design, aluminium conductor/screen minimize the impact. Another way to decrease the environmental impact is to use HDPE duct directly buried in controlled backfill.

The point of departure for paper A.8.6 was based on the utilization of the EIME software to optimize the cable design and to study alternative materials to lower the cable environmental impact. It demonstrated the techniques which can be used for the recycling and the reuse of the cables materials.