

CALCULATION OF ELECTRICAL ENERGY CONSUMPTION FOR DC RAILWAY SYSTEMS

This project aims to provide a management tool for allocating and monitoring energy costs. In previous work a system comparison was completed in which the results from a first version of the energy allocating program have been compared with recordings taken on part of the Southampton – Bournemouth line. The detailed comparison is the subject of this report.

The results of the comparison are, in general, very good, but further development is required to enable the model to reach its full potential. In particular, little development is required to enable energy consumption to be allocated to individual profit centres such as accountant's group code, type of stock, or type of service. However, the present computer program can only simulate a small part of the railway; but this limitation could be removed with more extensive development. Thereafter, it could be used to estimate the energy consumption of future electrification projects, or to predict the reduction (or increase) in energy consumption which would result from a change in the type of stock or train service pattern, hence leading to a possible restructuring of the timetable to reduce service costs. These and other possibilities are discussed more fully in the report.