



SUMMARY

**ENERGY MANAGEMENT IN A TELECOMMUNICATIONS  
ENVIRONMENT WITH ASSOCIATED ENERGY AND  
COST MODELLING OF HVAC**

by

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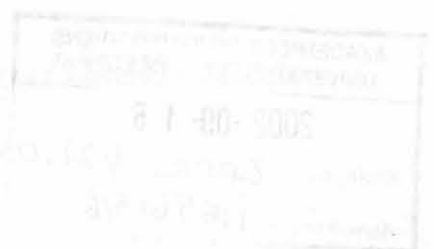
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KEYWORDS





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## SUMMARY

Johansson [1] mentions that in past years, pressure from governments have forced organizations to become environmentally friendly, this, in addition to increased global competition and the deregulation of energy markets is forcing companies to introduce energy-saving measures.

Until recently, companies have paid their electricity accounts without giving it a second thought – it has been assumed that what has been printed on the electricity bill is what has to be paid, and that very little can be done about it. Fortunately this is not the case; there are many ways in which companies can lower their accounts ranging from merely changing light bulbs, to a complete operational restructuring. According to Delport [2, p. 4] this process of optimising the energy consumption to reduce the energy costs has paved the way for what is now known as “Energy Management”.

This dissertation will investigate implementing energy management in a telecommunications environment (e.g. Telkom) in which methodologies for enhancing energy efficiencies in telephone exchanges are presented. These include assessing energy efficiency levels, classifying exchanges with respect to energy utilisation, and a financial analysis with respect to billing tariffs.

The bulk of the study will focus on HVAC (Heating Ventilation and Air Conditioning). According to Rabie [3, p. 6] HVAC constitutes the largest energy end-user in telephone exchanges; a large portion of the dissertation will thus be dedicated to this process. The study will comprise of developing energy conversion models that will enable cost-effective energy configurations, schedules and tariffs for the HVAC process.

## KEYWORDS

Energy Management, Telephone Exchanges, HVAC, Energy Conversion Models



Volgens Johansson [1] is organisasies die afgelope paar jaar onder groot druk gesit, deur regerings (onder andere) om omgewingsvriendelik te word. Hierdie druk, tesame met toenemende wereld-wye kompetisie en die deregulering van energiemarkte, forseer maatskappye om energiebesparende beperkings daar te stel.

Tot hede het maatskappye kragrekenings betaal sonder om twee keer daaroor te besin. Daar was geglo dat nie veel gedoen kon word om die bedrag te verminder nie. Dit is nie die geval nie, daar is verskeie maniere waardeur maatskappye hulle kragrekening kan verminder, van maniere so eenvoudig as om gloeilampe te vervang, tot 'n volledige operasionele herstrukturering. Delport [2, p. 4] noem dat hierdie optimalisering van energieverbruik om koste te bespaar die weg gelê het vir wat bekend staan as “Energiebestuur”

Hierdie verhandeling ondersoek die implementering van energiebestuur in 'n telekommunikasie-omgewing (b.v. Telkom) waarin die metodiek vir die bevordering van energievaardighede in telefoonsentrales voorgestel word. Energievaardigheidsvlakke, die klassifikasie van telefoonsentrales ten opsigte van energie verbruik en 'n finansiële analiese ten opsigte van tariewe word ondersoek.

Die grootse gedeelte van hierdie studie sal op die HVAC (Heating, Ventilation and Air Conditioning) fokus. Volgens Rabie [3, p. 6] is HVAC die grootse eind-gebruiker van energie in telefoonsentrales, daarom sal 'n groot gedeelte van hierdie verhandeling daaraan aandag gee. Hierdie studie bestaan uit die ontwikkeling van energie-omskakelingsmodelle, wat tot koste-effektiewe energiekonfigurasies, skedules en tariewe sal lei.

### **SLEUTELWORDE**

Energiebestuur, Telefoonsentrales, HVAC, Energie-omskakelingsmodelle



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