

بيانات البحث رقم (4) المقدم للترقية

4				رقم البحث في القائمة المعتمدة
تقييم تداعيات خطوط إمداد الكهرباء المجانية ذات السعة المحدودة ضمن برنامج الكهرباء الوطني المتكامل في دولة جنوب إفريقيا				عنوان البحث باللغة العربية
<b>Assessing the Implications of South Africa's Integrated National Electrification Programme's Restricted Electricity Supply Connections</b>				عنوان البحث باللغة الانجليزية
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<b>Proceedings of the International Conference on Industrial Engineering and Operations Management</b>				اسم المؤتمر + السنة والعدد ISSN +
Volume	2018	Issue	-	
Web of science	IF	Scopus	CiteScore	تصنيف المجلة
-	-	-	-	
October 2018				تاريخ النشر
البحث غير مشتق من رسالة علمية				هل البحث مشتق من رسالة علمية؟

ملخص البحث باللغة الإنجليزية:

South Africa's Integrated National Electrification Programme provides low-income households with a free 20-Ampere electricity supply connection. Many of these households persist in using solid and liquid fuels like wood, coal and paraffin for heating and to a lesser degree for cooking. It is generally held that the use of dirty, less convenient fuels persists because they are less more affordable, but the restricted electricity connection also limits the type and number of appliances which can be used simultaneously. The implications of these restricted connections are explored in this paper with a mixed integer programming optimization model. Household appliances are ranked according to their priority and scheduled according to the lifestyle and needs of the household members.

Three scenarios encompassing the range of appliance power ratings are considered. It is found that the 20-Ampere electricity supply does indeed restrict the use of appliances with medium and high-power ratings in peak evening periods. There is no such restriction for energy efficient or small appliances.

Increasing the electricity connection to a 40-Ampere supply alleviates all restrictions. As low-income households become more affluent, they need to upgrade their electricity connection in order to make use of more diverse energy services.