

TECHNOLOGY FACTSHEET

ELECTRIC TRAIN¹

Introduction

An electric train locomotive is powered by electricity from overhead lines.

Technology Characteristics

The advantage of electrification is the lack of carbon dioxide emission, has higher performance, lower maintenance costs and lower energy costs. The source of power can be renewable e.g. geothermal power, hydroelectric power, nuclear power, solar power and wind turbines. Electric locomotives are also quiet compared to diesel locomotives since there is no engine and exhaust noise and less mechanical noise.

Country Specific Applicability and Potential

Electric locomotive have a high potential for development in Kenya. Currently diesel locomotives are in use. The electric locomotives will be ideal for commuter rail services in the urban centres. They could also be used for high speed lines to link the major cities.

Status of technology in country

Trains in Kenya are diesel powered. Plans are now underway to replace them with electric powered systems.

Benefits to economic/social and environmental development

Electric trains do not emit carbon dioxide, have high performance, lower maintenance costs, have no engine and exhaust noise.

¹ **This fact sheet has been extracted from TNA Report – Mitigation for Kenya. You can access the complete report from the TNA project website <http://tech-action.org/>**

Climate change mitigation benefits

As mentioned above, electric trains do not emit carbon dioxide to the atmosphere. A recent study by CES, 2011 indicated reductions of 6,020ktCO₂/year-equivalent per year for a light rail system in Nairobi.

Financial requirements and costs

The chief disadvantage of electrification is the cost of infrastructure (overhead power lines).