

## Securing Power Supply

### 1. Boys' Centre

The Boys' Centre is in the midst of a Nairobi slum; its infrastructure is under strain from 50 years of wear and tear, rising costs and increased local demand from a rapidly expanding city.

To become more self sufficient, the Boys' Centre needs to replace its aging generator and install solar panels. **In July 2008 the cost of electricity on the national grid rose by more than 50%, which has meant that funds for other essentials for the students has had to be diverted to for electricity.** In addition to this, frequent power cuts regularly interrupt daily operations at the school. An investment into renewable energy sources will help to overcome these challenges and will also support a transition towards self-sufficiency and environmental sustainability.

Securing Power Supply	Item Breakdown	Qty	Unit Cost KShs	Total Cost KShs	Total Cost £
Replacement of old generator		2	3,973,000	<b>7,946,000</b>	<b>68,826</b>
Solar panels in dorm houses*				<b>3,574,000</b>	<b>30,957</b>
	115 watts panel	24	65,000	1,560,000	13,512
	100 AH solar battery	24	14,000	336,000	2,910
	Charge controllers	24	13,000	312,000	2,702
	Inverter	12	36,000	432,000	3,742
	Change over switch	12	18,000	216,000	1,871
	1 ft. fitting and tube	96	3,000	288,000	2,495
	Cables and switches	-	-	170,000	1,472
	Labour	-	-	260,000	2,252
<b>Sub-total</b>				<b>11,520,000</b>	<b>99,783</b>
Contingency at 5%				576,000	4,989
<b>Grand Total</b>				<b>12,096,000</b>	<b>104,772</b>

**Notes:** Prices based on exchange rate as of January 14th 2009 (£1 = KShs 115.45)

\*There are 12 dormitories in total, which accounts for the quantities of items shown in multiples of 12.

## 2. Girls' Centre

The Girls' Centre is in a relatively isolated rural location on a site spread across a hill with a lake. The site was a gift to Starehe but its physical geography presents considerable challenges. Much work is needed to build up the infrastructure to an acceptable level to accommodate up to 400 girls.

For both Centres power supply is erratic and unreliable. Frequent, prolonged and unannounced power cuts interrupt the children's' education and, in the evenings, reading or study are impossible. Worse still, **the cost of electricity on the national grid rose by more than 50% from July 2008.**

Inevitably money previously spent on educational essentials is diverted to electricity. The Girls' Centre needs to purchase a generator and undertake work to carry electricity efficiently to all corners of the site.

<b>Securing Power Supply</b>	<b>Unit Cost</b>	<b>Cost KShs</b>	<b>Cost £</b>
Purchase generator	1,000,000	1,000,000	8,662
Installation cost		90,000	780
Power reticulation (wiring around site)		1,500,000	12,993
<b>Sub-total</b>	<b>1,000,000</b>	<b>2,590,000</b>	<b>22,435</b>
<i>Contingency at 5%</i>		129,500	1,121
<b>Grand Total</b>		<b>2,719,500</b>	<b>23,556</b>

**Note:** Prices based on exchange rate as of January 14th 2009 (£1 = KShs 115.45)