

Zambia



A full transition to energy efficient off-grid lighting would result in the following benefits:

Economic and Energy Benefits

219.8 million USD
annual savings*



6 months
payback period

36 million litres of kerosene,
1.7 billion candles and
13 million batteries annual savings*



0.6 million barrels of crude
oil energy equivalent

Climate Change Mitigation Benefits

Potential Savings:

285.4 thousand tonnes of carbon
dioxide emissions reduction annually



Equivalent to:

71.3 thousand mid-size cars
off the road

Environmental, Health and Social Benefits



Annual savings of 90 USD per household per year

2.3 million households with better quality light

Reduction or elimination of fuel-related health issues, fire hazards
and toxic fumes

* National savings estimate shown is based on the average, national end-user price for kerosene. In countries where kerosene is subsidised, the benefit accruing to the nation will be higher.



Off-Grid Lighting Assessment

Country Specific Data and Input Assumptions (2010)

General Information	
Total population	12.9 million
Off-grid population	10.5 million
On-grid, under-serviced population	0.7 million
Gross Domestic Product	16 billion
Gross Domestic Product per capita	1,253 USD
Percent of population on-grid	18.8%
Off-grid and under-serviced households	2.3 million

Pricing Information (in USD)	
Litre of kerosene	1.10 - 1.49
Candle	0.10 each
Kerosene lamp (glass cover)	2.50 each
Kerosene lamp (simple wick)	2.00 each
Torch (flashlight)	1.30 each
Batteries (for torch/flashlight)	0.50 per battery
Solar lantern (small)	18.00 each
Solar lantern (large)	35.00 each

Average Daily Operating Hours	
Off-grid and under-serviced households	3.9 hours/day
Off-grid and under-serviced small business	4.0 hours/day

Installed Stock Estimates* (millions)		
Light source	Households	Businesses
Kerosene lamp (glass cover)	0.4 (6.3%)	0.1 (14.3%)
Kerosene lamp (simple wick)	0.5 (8.3%)	0.1 (14.3%)
Torch (flashlight)	0.2 (3.1%)	0.1 (21.4%)
Candles (light points)	4.6 (82.3%)	0.2 (50.0%)
Total:	5.6 million	0.4 million

Average Household Monthly Consumption*		
Light energy source	Units	Cost
Kerosene	1.2 litres	1.27 USD
Candles	60.6 candles	6.06 USD
Batteries	0.3 batteries	0.16 USD
Total:		7.49 USD

Simple Payback Periods*		
Sectors evaluated	Households	Businesses
Kerosene lamp (glass cover)	0.7 years	0.7 years
Kerosene lamp (simple wick)	0.4 years	0.4 years
Torch (flashlight)	0.7 years	0.7 years
Candles	0.5 years	0.5 years
Weighted national average:	0.5 years	0.4 years

* Includes on-grid, under-serviced households and businesses, if applicable

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