

# Hospital LED Retrofit in Nigeria

FOLARIN COKER STAFF CLINIC - LAGOS, NIGERIA



The Clean Lighting Coalition (CLiC) aims to transition global markets to safe, cost-effective, and energy-saving LED lighting by supporting the removal of fluorescent lamp exemptions under the Minamata Convention on Mercury.

## Retrofitting Hospitals with Mercury-Free LEDs

CLiC partnered with organizations in Brazil, Nigeria, and the Philippines to retrofit hospitals with energy-efficient, mercury-free LEDs. **Retrofitting is the process of removing fluorescent light bulbs and installing new, higher-efficiency LEDs** into the same wiring and fixtures. The pilots aimed to demonstrate that institutional buildings can easily and cost-effectively transition to cleaner lighting.

### LED Retrofits...



- lower hospital energy costs,
- provide better quality lighting, and
- reduce the risk of mercury exposure for both patients and staff.

The pilots demonstrated practical steps hospitals—and other institutional buildings—can take to switch to LED lighting with minimal effort and significant economic and safety benefits.

Our partners provided data on the actual cost of purchasing and installing the lamps in three locations. They also estimated the “pay-back” period, or the time it will take to recover the initial cost of LED purchase through long-term electricity savings.

## Keeping the Lights on in Nigeria

Rising electricity costs and an unstable grid are leading to frequent black-outs and inconsistent electricity services across Nigeria. According to the World Bank, 55.4% of Nigeria’s population are connected to the national energy grid, but are **without power about 85% of the time**. To address these challenges, the government set a goal **to adopt 100% efficient lighting by 2030** and accelerate adoption by at least 50% for high-energy consuming sectors (transport, power, and industrial).

Because LEDs consume 50-60% less energy than fluorescent alternatives, transitioning large institutional buildings to these more energy-efficient alternatives will reduce strain on the overburdened grid.

The Clean Lighting Coalition partnered with **SRADev**, an environmental research non-profit, to support a LED retrofit pilot at **Folarin Coker Staff Clinic**.

Our pilot outcomes demonstrate the economic and energy benefits of LED retrofits.

#### Electricity Rate in Nigeria



NGN	USD
60/kWh	\$.014/kWh

#### Initial Bulb Costs



	NGN	USD
CFL	800	\$1.84
TLED	2000	\$4.60

Energy consumption cost & initial cost comparison between CFL and LED

Market data for cost collected between Q4 2021 and Q1 2022

## Quick, Easy Transition Plans

The LED retrofit involves fitting energy-efficient LED bulbs into existing fluorescent lighting fixtures throughout the facility. Folarin Coker Staff Clinci replaced **669** fluorescents with **452** LEDs, this will save **28,296 kWh** and **\$4,005 USD** per year. SRADev worked with a lighting auditor, an electrician, the facility manager, and infrastructural and energy management agencies to conduct the retrofit.

The retrofit process lasted 5 Months:

## Results of the LED Retrofit

CFL Lamps Removed	669
LED Lamps Installed	452
Payback Period (Months)	5.8
Annual Energy Savings (kWh)	28,296
Annual Financial Savings (USD)	\$4,005
Annual CO <sub>2</sub> Savings (MT CO <sub>2</sub> )	10.74
Mercury Avoided (g Hg)	10.74
Potential Water Polluted from Hg (liters)	5,370,000

\*MT= Metric Tons

\*g Hg = grams of mercury

### MARCH

*Project set-up,  
identify partner  
clinic, meet with  
stakeholders*

### APRIL - MAY

*Conduct retrofit  
lighting audit, lamp  
selection & purchase*

### JUNE

*Procurement  
team training*

### AUGUST

*Implementation &  
analysis*

## End Toxic Lighting Globally

For countries experiencing shortages in electricity supply and rising energy costs, switching to mercury-free LED bulbs offers a cost-effective and financially feasible solution to reduce energy.

As wealthy markets ban fluorescents, citing health risks and low-efficiency levels, un- and under-regulated countries will become targets for toxic lighting products. A global ban on fluorescents will ensure an equitable transition to mercury-free, LED lighting.

**A brighter, healthier future is as simple as changing a light bulb - it's time to take action.**



Folarin Coker Staff Clinic



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