

A boy reading in the dark using only a GravityLight

# GRAVITYLIGHT

2014 Nominet Trust 100 Winner

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## **SUPER-LOW-COST, CLEAN POWER**

*By Deciwatt*

Project URL: [deciwatt.org/the-challenge](http://deciwatt.org/the-challenge)

Project Twitter: [@GravityLight](https://twitter.com/GravityLight)

Organisation URL: [deciwatt.org](http://deciwatt.org)

- Economic Empowerment
- Environment & Sustainability
- Physical Computing

Here's an invention to make Sir Isaac Newton proud: a super-low-cost lamp powered by gravity alone.

Its goal is to render dangerous, polluting and expensive kerosene lamps obsolete. Not an explicitly digital invention, but we've let it slip in, because it's such a potentially revolutionary solution to the problem of inadequate electricity supply. A problem we simply must solve if more people are to benefit from the sorts of digital tools and services featured here on Social Tech Guide.

One fifth of the world population is forced to use biomass (kerosene) lighting because they lack access to mains electricity. Each year, kerosene fumes are linked to 1.5 million deaths in Africa alone and the lamps cause 1.5 million incidents of severe-burns injuries in India. Biomass depletes fossil fuel resources and a single lamp burned just four hours a day emits 150 kg of CO<sub>2</sub> into the atmosphere over the course of a year.

It was a charity contest to make a cheap sustainable alternative that inspired Martin Riddiford and Jim Reeves to try to harness gravity to power a lamp. His first prototype involved a bike wheel and an LED flashlight. Four years, and many iterations, later, GravityLight was among Time Magazine's 25 Best Inventions of 2013. Bill Gates called it 'a pretty cool innovation'.

Unlike batteries and kerosene, it has no operating costs. Value engineering is central to the design and the team are working to minimise unnecessary costs to ensure it's affordable for off-grid households, typically living on \$2.50/day.

All you do is lift a 25-pound weight (an empty bag you fill with earth, rocks or sand). As it falls six feet it generates enough kinetic electricity to drive a silent motor and power a lamp for up to 25 minutes or power appliances like radios and AA/AAA battery chargers.

1,000 lamps are being tested during a global trial for durability in different climates, in 25 developing countries across Africa, Latin America, Asia and the Middle East. The results of the trial will inform further development ahead of its planned launch in Spring 2015.

*Image courtesy of GravityLight*

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