Energy poverty affects children by limiting access to safe heating, cooling, lighting, and digital learning opportunities, and children can be part of the solution by learning about energy conservation, sharing ideas with their communities, and advocating for more sustainable and equitable energy use.

Learning That Lights Up the World

Empowering Students to Fight for Energy and Climate Equity

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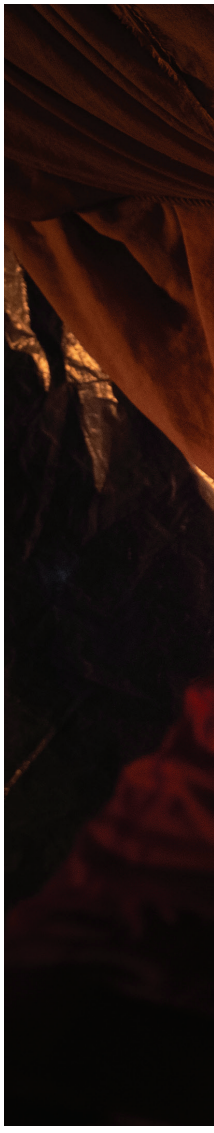
Across the world, millions of children end their day in darkness. More than 1.1 billion people live without reliable electricity, and over 660 million have no access at all. These conditions negatively and disproportionately affect children, as the loss of light with sunset cuts short their learning and compromises their safety. Often, the fuels that families burn to produce light are toxic and damaging to health and to the environment.

This is the reality of energy poverty: a global issue that is too often framed as a technical challenge, when in fact it is a human one. It determines who gets to learn, who feels safe, and who can dream of a future that isn't shaped by limitation.

Meanwhile, in classrooms across high-resource countries, students are opening their books and asking, "Why does this matter?" They want learning that is relevant and impactful. Yet for children living in energy poverty, education itself is constrained — homework can only be done in daylight hours, reading in the evening is difficult or unsafe, and academic progress depends on access to something as basic as reliable


SOLAR BUDDY



light. These realities highlight why we need more educational opportunities that recognize our global connectedness and responsibility.

A Local Story With Global Patterns

No single story can capture the whole truth of energy poverty.

In Cambodia, the national grid technically reaches many communities, yet power cuts are common, unpredictable, and often prolonged. Families who cannot afford backup lighting must ration their energy use, and learning doesn't take priority. Here, energy poverty is not the absence of power, but rather the instability of it.

Across the Pacific Islands, geography defines access. Remote schools and homes can be separated by rough terrain or open seas, and traditional grid power can cost exponentially more than in urban centers. Climate-driven storms and cyclones routinely damage infrastructure faster than it can be rebuilt. Energy poverty here is a battle of distance and weather.

In Sub-Saharan Africa, where two-thirds of the world's extreme poor live, energy poverty intersects with climate volatility and economic uncertainty. Drought affects crops, crop failure affects household income, and income collapse affects the ability to purchase even basic fuel. Children study beside open fires that fill homes with smoke. Here, energy poverty is an issue of access and cost.

In Bangladesh, one of the most climate-vulnerable countries globally, monsoon cycles, cyclones, and riverbank erosion force families to relocate again and again and again. Housing may be temporary or rebuilt repeatedly, making permanent wiring impractical. When rain falls and floodwaters rise, the home becomes dark long before the night begins. Threats of shock or fires rise, and schoolbooks remain unread. Energy poverty here is tied to impermanence.

In communities affected by conflict, displacement, or humanitarian crises – from

Myanmar to Sudan – darkness takes on a psychosocial dimension. Camps and temporary shelters may be close to international assistance sites, but children sleep without the comfort, safety, or reassurance that light brings. Trips to collect firewood amplify risks of harm or assault. Here, energy poverty is a lack of protection and dignity.

Despite their differences, these stories share a single truth: climate change deepens inequity most severely for those who already live without reliable power. And children living in energy poverty lose not only time, they lose potential.

Reframing Opportunity With the SolarBuddy Solution

SolarBuddy is a global impact organization dedicated to ending extreme energy poverty and illuminating the futures of children everywhere. SolarBuddy has built a mission around two core goals: gifting durable solar devices to children living in energy poverty and educating and inspiring individuals worldwide to become agents of change. We combine sustainable-innovation, education, and community partnership to deliver solar lighting solutions and spread awareness about the impacts of energy poverty.

Across the world, millions of children end their day without light, limiting their ability to learn, play, and stay safe after sunset. At the same time, students in well-resourced classrooms see the effects of a rapidly changing climate and are looking for opportunities to contribute in a tangible way.

SolarBuddy offers students an experience that turns their learning into impact. Through the SolarBuddy STEM program, students build a JuniorBuddy

— our child-friendly handheld solar light — and send it to a child living in energy poverty who will use it that very night. Designed for upper-elementary through high-school learners, the program slots easily into many class topics and requires no external facilitators.

In a single lesson or extended unit, students move through a purposeful, hands-on learning cycle:

1. **Learn** — Using curriculum-aligned lesson plans mapped to the UN Sustainable Development Goals, students explore energy poverty, renewable energy, and global citizenship. Resources include ready-made slides, worksheets, instructional videos, and differentiation options to support different learning levels.

2. **Build** — Working in pairs or small groups, students assemble a small, durable solar light called a JuniorBuddy, using step-by-step instructions. Along the way, they experiment with real engineering concepts: circuitry, electrical flow,

solar photovoltaic technology, energy conversion, component assembly, and basic tool use. Troubleshooting guides and student instruction cards support independent learning.

3. **Donate** — The completed lights are collected and delivered to children living in energy poverty around the world. Each light is sent with a personal letter from the student who built it, reinforcing social-emotional learning, literacy skills, and global empathy.

Because the program is fully self-facilitated, teachers can run it within a standard 45-60 minute class session or expand it into a multi-lesson STEM unit. All materials arrive pre-packed and classroom-ready, and every light is designed for child-safe, intuitive assembly. Students test their devices as part of a simple quality-assurance process, mirroring what real engineers do.

SolarBuddy also supports teachers after the workshop by sharing information about where their class's lights were delivered, along with impact data and, when available, stories or photos from partner communities. This provides authentic material for assessment tasks, reflective writing, and discussion. Most important, students see the tangible impact they have made on a real, urgent global issue.

The program can be funded in a variety of ways, depending on a school's context and community. Many schools choose to integrate the program into existing STEM or sustainability budgets, while others partner with a local company (particularly those in engineering, manufacturing, renewable energy, or technology fields) to underwrite a class or grade level as part of their community engagement.

A Buddy That's Got Your Back

When a child receives the light, the impact starts that night as they use their "buddies" to read and study after dark. Children have described feeling safer, more confident, and more hopeful. With a reliable, safe source of light, they can finish homework after evening chores, their families save money on fuel, and indoor toxins are reduced.

One student in Kenya shared, "I can now study to become a pilot. One day, I will invite the person who gave me this solar light on my plane."

In the last 10 years, SolarBuddy has illuminated the lives of 1.9 million people across 42 countries, enabled more than 2 million extra study hours for children, and prevented over 350,000 tons of CO_2 emissions by replacing polluting fuels with clean solar solutions.

SolarBuddy's work goes well beyond handheld lights. Our StudentBuddy provides a portable, modular solar-powered device that offers reliable lighting and USB charging. In many off-grid and energy-poor communities, StudentBuddy helps families power essential devices safely, reducing dependence on distant charging stations or generators.

Meanwhile, through K.L.I.C.K. (the Kerosene Lantern In-situ Conversion Kit), we transform

existing kerosene lanterns into clean solar lights. This not only reduces indoor air pollution and fuel costs, but also creates microenterprise opportunities.

Our community-lighting work extends to remote Indigenous communities across Australia through the Illuminating Communities program. We install solar-powered public lighting, improving safety and access to community facilities after dark.

SolarBuddy's work also extends to disaster and emergency relief through the Disaster Response & Recovery Fund. When natural disasters strike (e.g., cyclones in the Philippines), SolarBuddy can deliver emergency Disaster Response Kits, including solar lights, charging devices, and head torches, to families and communities cut off from power.

A Brighter, More Educated Future

In a rapidly changing world, the next generation will inherit challenges shaped by climate uncertainty, technological acceleration, and increasingly complex social systems. They will need to be problem-solvers.

Traditional STEM education often emphasizes technical capability (circuitry, algorithms, systems logic), but today's learners also need context and conscience. They must be able to ask: "Who is affected by the challenges we're trying to solve?"

Which is why SolarBuddy's mission includes global education – key to addressing many of the world's most pressing challenges, including energy poverty. Our programs are designed by teachers for teachers, aligned with sustainability priorities, and mapped to the United Nations Sustainable Development Goals. We believe learning is one of the most powerful tools for expanding young people's sense of responsibility, agency, and possibility. Because when students understand the systems that shape their world, and see themselves in the solutions, a brighter future becomes something we learn to build, together.

To bring SolarBuddy STEM to your school, visit www.solarbuddy.org or email us at hello@solarbuddy.org

If you're a business that would like to sponsor a local school in your community to deliver these life-changing lights to children around the world, please contact jess@solarbuddy.org

Disclosure Statement:
The author is an employee of SolarBuddy.