
POWER FOR ALL FACT SHEET

Decentralized Renewables: Improving Children's Welfare

POWER FOR ALL

500,000+

NUMBER OF PREMATURE DEATH
AMONG CHILDREN UNDER 5 DUE
TO INADEQUATE ENERGY

65%

PERCENTAGE OF SSA PRIMARY
SCHOOLS WITH NO ELECTRICITY

1 hr

AVERAGE ADDITIONAL DAILY
STUDY HOUR PROVIDED BY DRE
SOLUTIONS

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By increasing educational opportunity and safety, DRE solutions can play a key role in positively influencing children's welfare.

Poor indoor air quality drastically affects children's health.

- » Inadequately met energy needs, or unsafe and unsustainable energy sources contribute to over 500,000 children under 5 dying annually. Almost 50% of pneumonia deaths for children under 5, specifically, are caused by particulate matter from indoor air pollution.¹
- » Schools and hospitals also rely on conventional fuels for heating and cooking, extending the problem of indoor pollution far beyond the home into other spaces where children spend time.²
- » Indoor air pollution is also connected to low birth weight, tuberculosis, heart disease, and various types of cancer.³

DRE increases children in-door safety by replacing the dangerous use of indoor fuel such as kerosene and candles for lighting.

- » Unguarded candles and wick lamps are a particular danger to children. WHO lists fire-related deaths as one of the leading causes of deaths among children and young adults aged 5-29.⁴
- » Burns are the fifth most common cause of non-fatal childhood injuries. In Bangladesh alone, 173,000 children are moderately or severely burnt each year.⁵
- » DRE offers a cost-effective and safe alternative. Since 2010, more than 130 million DRE solutions have provided improved energy access and lighting for over 360 million people across the world. This has resulted in USD 5.2 billion in economic savings for these customers switching from kerosene and other conventional fuel sources.⁶

DRE increases study hours for children through improved availability of lighting and improves energy access for schools.

- » Only 35% of sub-Saharan African (SSA) primary schools, serving 90 million students, have access to electricity.
- » A case study from Bangladesh found that teachers point to low light as a major impediment to conduction lessons.⁸
- » Electricity access in schools can not only influence school attendance and teacher retention--through heating, cooling, and lighting--but also powers components essential to higher quality of instruction such as laptops, internet, and other ICT devices.⁹
- » A pilot project in the Philippines has found that electrifying schools through off-grid PV systems has enabled teachers to continue lessons through inclement weather, connect classrooms to internet resources, and reduced student absenteeism.¹⁰
- » Lack of lighting in the home can also directly result in reduced study hours that can in turn lead to reduced educational attainment.¹¹
- » DRE products provide critical lighting hours that enable additional studying hours for children. Acumen recently found that DRE products increased children's daily study by one hour on average.¹²

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By the Numbers:

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» Similarly, research conducted in Bhutan showed that children from electrified homes spend 274 more days in school and spend an additional 8-10 minutes in daily study time than children from unelectrified homes.¹³

DRE can reduce the risk of violence children face outside their homes.

- » Reliance on conventional fuel pushes children and especially girls to spend hours gathering fuel for lighting and other energy use, putting them at risk of injury and violence.¹⁴
- » Moreover, the lack of adequate lighting puts women and girls at increased risk of gender-based violence.¹⁵
- » Research conducted in Madagascar found that, while lighting through electrification helps children of both genders, it benefits girls more since they devote more time to household work and, therefore, can “earn back” more hours through electrification.¹⁶
- » When solar systems were installed in 8 primary schools in Uganda, the percentage of students feeling “scared” or “unsafe” declined from 85% to less than 1%. They also felt safer using latrines at night, leading to greater use of facilities and improved sanitation.¹⁷

Children deserve the resources to stay safe and pursue their dreams. DRE provides new ways for children to be safer and devote their time to new opportunities. Join Power for All and share the following message.

- » DRE can replace the use of dangerous indoor fuels and protect children from burns and injuries from fires.
- » Children can enjoy increased educational opportunities and study hours through lighting and electricity provided by DRE solutions.
DRE can reduce risk of injuries and violence against children, especially girls, that arise from fuel collection and inadequate lighting.

Sources:

1. UNICEF, *Why Sustainable Energy Matters to Children* (2015), p.6; p. 10
2. UNICEF, p. 10; 11; 13.
3. UNICEF, p. 10; 11; 13.
4. PPEO (2014), p.5; p.8
5. WHO (2018)
6. GOGLA (2018) p.2
7. *Practical Action, Poor People's Energy Outlook* (2014), p.41
8. *Practical Action, Poor People's Energy Outlook* (2013), p. 15
9. UNICEF, p. 14.
10. Devex, “The Link between Electricity and Education”, 6/30/2014
11. PPEO (2014), p.29
12. *Acumen, Energy Impact Report* (2017), p. 30
13. Rauniyar, Ganesh & Kumar, Santosh. (2015). Is electrification welfare improving?: non-experimental evidence from rural Bhutan. p. 13.
14. UNICEF (2015), p. 10.
15. UNICEF (2015), p. 15.
16. Rajaona Daka, Karen, & Ballet, Jerome (2011). “Children's education and home electrification: A case study in northwestern Madagascar”. *Energy Policy*, 39(5), 2866-2874.
17. *War Child/BBOXX* (2015) THE IMPACT OF SOLAR LIGHTING ON EDUCATIONAL OUTCOMES IN 8 PRIMARY SCHOOLS IN NORTHERN UGANDA, p. 2; p. 6