
POWER FOR ALL FACT SHEET

Decentralized Renewables: Powering a Climate-Friendly Future

POWER FOR ALL

2x

MORE POLLUTION PER
kWh THAN COAL PLANTS

300

EQUIVALENT NUMBER OF COAL
PLANTS OFFLINE

\$4.5 billion

POTENTIAL CARBON COST
AVOIDED

By 2030, replacing toxic kerosene and diesel off-grid generation with decentralized renewable energy (DRE) could save almost a gigaton of CO₂ and CO₂ equivalent (e)¹ each year: the same as the annual CO₂ and CO₂e emissions of Germany.² Given the unprecedented opportunity DRE also presents to lift 1+ billion people from fuel poverty, it has been dubbed the “low-hanging fruit” of the climate-world.³

Decentralized renewables can combat climate change

- » Eliminating black carbon from kerosene lamps globally can reduce emissions by 240 million tons CO₂e per year⁵—the same as taking 80 coal power plants offline⁶
- » 4 million solar home systems in Bangladesh already save 1.5 million tons CO₂e per year due to a reduction in kerosene use⁷—equivalent to taking passenger cars off the road for 3.5 billion miles⁸
- » Eliminating CO₂ and black carbon from diesel mini-grids can reduce emissions by 115 million tons of CO₂ per year⁹—the same as taking 38 coal-fired power stations offline¹⁰
- » Millions more tons of CO₂ and black carbon will also be eliminated by replacing standalone diesel generators.¹¹ Per kWh, small diesel generators create 2x the CO₂ emissions of coal power plants¹²
- » The potential avoided emissions per year globally by 2030 due to distributed renewables is estimated as 0.8–0.9 Gt CO₂e¹³—the same as taking 270-300 coal power plants offline¹⁴
- » Using a common \$15/tCO₂e carbon price to put a cost on emissions (a low but commonly used valuation) avoiding 0.8-0.9Gt Gt CO₂e is equal to an avoided carbon cost of \$4-4.5 billion each year¹⁵

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By the Numbers:

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Share the Message

DRE enhances climate security by providing a safe, sustainable alternative to the toxic kerosene and diesel used in hundreds of millions of unelectrified households. Switching to DRE will rapidly reduce emissions, improve lives, and set emerging economies on a critical low-carbon path to energy access. Share these messages with key stakeholders:

- » Switching to decentralized renewables from polluting energy such as kerosene lamps will save almost a Gt CO₂e each year by 2030—equal to the annual emissions of Germany
- » Due to the extraordinary benefits to the lives of those living in some of the world's poorest communities, replacing toxic kerosene with decentralized renewables has been termed the “low-hanging fruit” of the climate world
- » The energy that will rapidly increase energy access, is the same clean energy that will combat climate change—we must support a radical shift to decentralized renewables

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Sources:

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15. Analysis by PEAK team at UC Berkeley - calculated using conservative carbon cost of \$15/tCO₂e and a median value IPCC discount rate (8%)