POWER FOR ALL FACT SHEET

Decentralized Renewables: Powering a Climate-Friendly Future

POWER FOR ALL

1Gt

CO2e COULD BE
AVOIDED EACH YEAR

300

EQUIVALENT NUMBER OF
COAL PLANTS OFFLINE

$4.5 billion
POTENTIAL CARBON SAVING

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By 2030, replacing toxic kerosene and diesel off-grid generation with decentralized renewable energy (DRE) could save almost a gigaton of CO_2 and CO_2 equivalent (e)[1] each year: the same as the annual CO_2 and CO_2e emissions of Germany.[2] Given the unprecedented opportunity DRE also presents to drive a sustainable development path and 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 CO_2e per year[5]—the same as taking 80 coal power plants offline[6]

» 4 million solar home systems in Bangladesh already save 1.5 million tons CO_2e per year due to a reduction in kerosene use[7]—equivalent to taking passenger cars off the road for 3.5 billion miles[8]

» Eliminating CO_2 and black carbon from diesel mini-grids can reduce emissions by 115 million tons of CO_2 per year[9]—the same as taking 38 coal-fired power stations offline[10]

» Millions more tons of CO_2 and black carbon will also be eliminated by replacing standalone diesel generators.[11] Per kWh, small diesel generators create 2x the CO_2 emissions of coal power plants[12]

» The potential avoided emissions per year globally by 2030 due to distributed renewables is estimated as 0.8–0.9 Gt CO_2e[13]—the same as taking 270-300 coal power plants offline[14]

» Using a common $15/t$CO_2$e carbon price to put a cost on emissions (a low but commonly used valuation) avoiding 0.8-0.9Gt Gt CO_2e is equal to an avoided carbon cost of $4-4.5 billion each year[15]

» Smaller, easily deployable and locally maintained distributed renewables are boosting climate-resilience. A month after the devastation of Hurricane Matthew, the grid was still down in areas of Southern Haiti. Solar mini-grids were running in 55 hours[16]

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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 CO_2e 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

Sources:

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11. Using Nigeria as just one example, estimates for the number of stand alone diesel generators range from 9 million to 100 million (9 million is noted as a low estimate). 9 million diesel generators have been calculated to produce 29 million tonnes of CO2, 100 million would create 320 million tonnes. Millions more generators are found in other countries around the world.
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15. Analysis by PEAK team at UC Berkeley - calculated using conservative carbon cost of $15/tCO2eq and a median value IPCC discount rate (8%)
16. Sigora International (2016)