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SOLAR NANOGRIDS BRING LIGHT TO DISASTER-HIT ZONES



AGRICULTURE & ENERGY

The systems are self-contained and completely off-grid, providing clean water as well as power

Spotted: As extreme weather events continue to increase in number and severity, analysts expect the global cost of [damage](#) caused by climate to reach between \$1.7 trillion (around €1.6 trillion) and \$3.1 trillion (around €2.9 trillion) per year by 2050. With such an increase in natural disasters, communities are being forced to strengthen and expand plans for contingencies and resilience. Clean water and electricity are two essentials that are frequently compromised after a storm, and the provision of power in an emergency is a difficult yet increasingly common challenge.

US-based Sesame Solar has created a mobile unit of solar nanogrids to power communities for weeks after a disaster. The nanogrids come in shipping containers or mobile trailers, making them extremely easy to transport. Once on-site, it takes a single operator only 15 minutes to set up the system before it begins generating power.

The company's nanogrids provide mobile communications connectivity, electricity, and water purification, and they can also double as mobile offices, pop-up stores, or health clinics. Run completely off-grid, the system can also incorporate a wind turbine for additional power generation. And when the battery capacity from solar and wind power drops to 35 per cent, a green hydrogen fuel cell kicks in to continue providing energy.

In order to help make use of a nanogrid as accessible as possible, Sesame Solar includes augmented reality and training modules in the structure itself. And because of the compact size, users do not need to build anything or apply for any sort of permit to run the system. The solar panels fold out from the main body of the structure, and the integrated HVAC system keeps the nanogrid running in a wide range of weather conditions. Multiple nanogrids can also be set up near each other to form a higher-output mini-grid to handle higher energy loads.

nt of nano and microgrid renewable energy systems is s. Two examples in Springwise's database include low-between homes and a new method for [restarting](#)

hydropower systems.

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Takeaway:

Over the last 50 years, it's estimated that the number of natural disasters in the world has increased [five-fold](#). One methodology, Extreme Event Attribution (EEA), "examines how anthropogenic greenhouse gas emissions ha[ve] changed the occurrence of specific extreme weather events." As the risk of experiencing an extreme weather event increases for many communities, innovators' on-the-ground solutions, like Sesame Solar's nanogrids, provide much-needed support and relief to some of the millions of people trying to survive and rebuild after a disaster.