



The PBX-200 allows users in remote areas to easily install a power system specifically for their needs | Photo source Power-Blox

Innovation > Agriculture & Energy > Plug-and-play solar energy system for swarm electrification

PLUG-AND-PLAY SOLAR ENERGY SYSTEM FOR SWARM ELECTRIFICATION

 AGRICULTURE & ENERGY

A Swiss company has developed a maintenance-free, turnkey system designed to bring easy electrification to off-grid areas

Spotted: Swiss company Power-Blox hopes to revolutionise off-grid energy generation with its fully autonomous power grids that can be used and scaled up by almost anyone. The system is designed to be fully autonomous, and plug-and-play – allowing users to simply plug the system together with no configuration, specific know-how or maintenance needed.

The company’s PBX-200 series consists of intelligent energy cubes with an integrated lead or lithium-ion battery – which can be powered by a solar unit or from another external source, such as wind, hydrothermal, or biomass. Each cube provides 200 watts of alternating current. The cubes are designed to be used like building blocks – when more power is required, additional cubes can simply be plugged in.

Power-Blox’s extensibility and ease of use allows communities to scale-up their grid as needed and as they can afford. For example, in Angola, Power-Blox has partnered with Angolan telecommunications company Unitel S.A. to electrify a health centre in a rural area using ten PBX-200s. The system will supply enough electricity to cool vaccines, run diagnostic equipment and even produce antiviral disinfectant.

In fact, the company was founded explicitly for uses like the project in Angola. According to the company, they are, “convinced that easy and affordable access to energy can only be achieved by bridging the gap between simple solar home systems, which are not expandable, and larger mini-

grids, which are complex and maintenance-intensive.” They point out that many rural areas around the world are too remote for a maintenance-intensive operation such as a mini-grid.

Another benefit of the Power-Blox is that it is endlessly adaptable – allowing local users to create the exact size and configuration of system they need. Bringing reliable power to remote regions is also the goal of Lavo, which has developed a [hydrogen power plant](#) small enough for home use; and a [wind turbine](#) designed to be installed in the wall of a house and provide enough power for a typical family home.

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Takeaway:

According to the United Nations (UN), nearly 9 out of 10 people worldwide now have access to electricity. However, the UN points out that reaching that final 10 per cent will require greater complexity. This is because most of the remaining people without power live in rural areas, largely in sub-Saharan Africa – far from any power grids. At the same time, many people who do have electricity rely on generators, which are expensive to operate. The PBX-200 was designed to provide a solution to exactly this problem. By allowing users to install and scale up an energy generation system with no expertise and minimal investment, Power-Blox could pave the way for tremendous improvements in living standards.