

Power roll: bringing cheap solar power to Africa and India

[Power Roll](#) has installed two mini solar grid systems in rural locations in Africa and India. These grids demonstrate the use of their innovative solar film and energy storage technologies that have the potential to disrupt the global solar power market.

Paul Laidler, project lead at Power Roll, explained:

The mini solar grid systems use flexible solar PV that is thin, light, easy to install and can be used off-grid. This makes it very attractive to communities who might struggle to get access to technology, particularly if their location is remote.

Power Roll's solar film will be produced as a roll and can be used on a variety of surfaces in off-grid settings; for example, curved around a technology pole or attached to a fragile roof. Its lightness and versatility give it numerous advantages over silicon solar panels not only where it can be deployed, but also in ease of transport.

The technology can be applied in a number of ways in off-grid settings, including lighting, charging laptops and mobile phones and pumping water for irrigation purposes.

Laidler said:

We want to make solar energy affordable and available to everyone – and that means having a low-cost solution that works in off-grid locations where people have previously found it difficult to access power.

At scale, Power Roll's [solar technology](#) will generate electricity at a cost which is at least 40% cheaper than silicon PV, and it weighs as little as 2% of current silicon PV products, which is a distinct advantage.

The technology will also help the UK achieve its target of becoming net zero by 2050.

Power Roll participated in two Energy Catalyst brokerage events and achieved funding as a result. It received £492,000 in grant funding from the FCD0 (Foreign, Commonwealth & Development Office) to develop, test and demonstrate its technology at an Energy Catalyst round 5 event.

It recently attracted a further £515,000 in grant funding from the Global

Challenges Research Fund (GCRF) in Energy Catalyst round 7. This second round requires the Sunderland-based company to include improvements to social inclusion and gender equality in its project scope.

Laidler explained:

Until now it's been about proving the technology, but now we are measuring what difference it can make to people's lives; for example, allowing women entrepreneurs to expand their business and making it easier for kids to learn because they can study at night.

Although the programme is concentrating on rural, off-grid locations in developing countries, Laidler says the mini grids could be installed anywhere in the world, including in developing countries, where they could open up the underdeveloped commercial rooftop market and enable solar power to be generated where it is not possible today.

As well as participating in the Energy Catalyst events, Power Roll was able to benefit from the government's Future Fund, which was launched in May 2020 in response to the Coronavirus pandemic. The Future Fund was designed to support firms across the UK to get through the pandemic by stimulating investment, so that they can continue to break new ground in technology and innovation.

Power Roll secured an initial £250,000 convertible loan from the Future Fund, which formed part of a £2.8 million funding round closed in August 2020.

Neil Spann, managing director at Power Roll, commented:

We were able to leverage the value of the Future Fund loan as part of our highly successful investment round in the summer of 2020. As of early 2021 we are close to completing a follow-up round that will raise a similar amount.

Spann continued:

The success of our funding round and the quality of our investors reflects the global commercial potential for our technology. Our investors are excited about the new markets we can exploit and disrupt. There's huge potential for solar and energy storage in a vast range of new applications including non-loadbearing rooftops, building integration, transport, off-grid and even powering Internet of Things sensors.

Through investment from Finance Durham and other investors, Power Roll is currently constructing a pilot plant in County Durham to further scale-up and commercialise its solar film technology.