



Power & Water

Purification through Innovation



CASE STUDY

Potable Water Treatment

Using Renewable Energy



Client: Oxfam GB Global Humanitarian Team

powerandwater.com

Background

The United Nation's 'Sustainable Development Goals' (SDG) have made Water Accessibility a key issue in the fight to eradicate water poverty. Typically, the remotest areas of developing countries have the lowest accessibility to clean drinking water, but they often have the benefit of unlimited access to sunshine.

Power and Water's (P&W) innovative, Solar-Powered 'SP2' Water-Treatment system fits perfectly into the SDG agenda: it is fully autonomous and small in size, which makes it ideal for deployment to the remotest areas of the world, and is robust enough to withstand extreme conditions. Its potential for use in humanitarian relief work caught the attention of Oxfam GB's Global Humanitarian Team and led to our exciting, ongoing collaboration.

The team's Head of Water and Sanitation, Andy Bastable, outlined the need for effective technologies that are powered by renewable energy:

"As so many water treatment units, post emergency response or as part of longer term development, are lying idle in developing countries, Oxfam has been searching for a more sustainable water treatment technology that could be used for the long term and in rapid onset emergencies."

Solution

Power & Water's patented Soneco® technology is an ingenious combination of electrolysis and power ultrasound, providing unrivalled treatment performance. Soneco uses Solar-PV technology to convert natural sunlight into electrical energy which is used to electro-generate reactive agents, metering them directly into the process stream to remove contaminants from dirty water. The system will treat up to 2,000 litres per day and can even be operated remotely, so is ideal for isolated communities where road access and manual operation would be difficult.

Andy Bastable continues "The technology, developed by the collaboration between UWTSO and Swansea's Power & Water, means that, at a lower initial cost than other water treatment units, the operation and maintenance costs are reduced significantly as there are no water treatment chemicals beyond that of chlorine. The unit is also powered by solar energy reducing any diesel generator costs."

Benefits

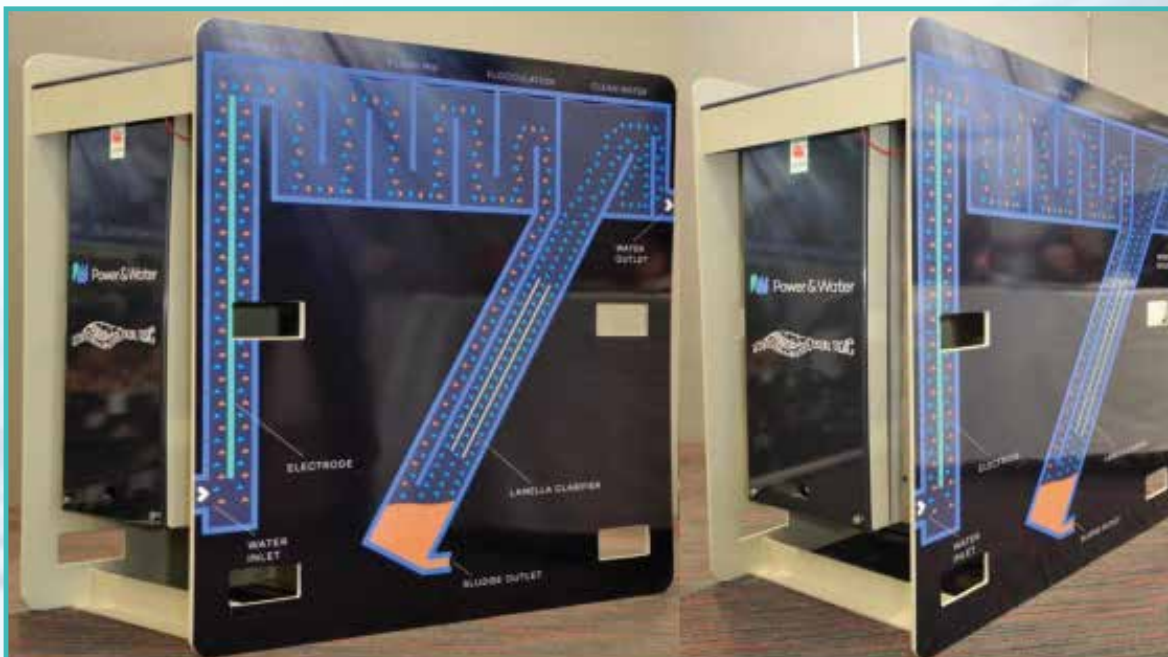
- Electro-based water purification that uses renewable energy sources;
- Treatment reaction is almost instantaneous, ideal for point-of-use water purification;
- Low operational/maintenance requirements for use in remote regions;
- Small footprint, yet capable of high flow rates;
- Robust design is ideal for transport and haulage, and suitable for rapid deployment;
- Remote operation allows performance monitoring, control and automation;
- Low voltage, low carbon systems.

Next Steps

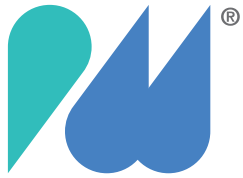
P&W's SP2 water treatment system will be used by Oxfam's GB Global Humanitarian Team as part of their 'In-country trial programme' for Water and Sanitation; their aim is to evaluate its capabilities in the field.

“Oxfam believes this will be the lowest cost most sustainable portable water treatment unit available anywhere in the world. Oxfam is excited to be working with this collaboration to enable this technology to reach communities in all the salinity affected regions of the world. It could have a huge impact.” **Andy Bastable**

For Power and Water, it has been a privilege to have established this working partnership with Oxfam; we have designed our cutting-edge treatment process to operate on renewable power sources, which fits Oxfam's specific requirements and allows us to be part of the world-wide programme to end water poverty.



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“Power & Water is a UK water technology company specialising in sono-electro chemistry. We aim to deliver Circular Economy solutions allowing recovery of waste products, and to produce clean, safe water for drinking, re-use or discharge back into the environment.”



The company knowledge and expertise is founded on more than 35 years' experience in the Water and Environmental industries. Our in-house expertise includes engineering, power electronics, software and MEICA.

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