



Sustainability | Leadership | Innovation



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STEAMACO: Innovating to connect the unconnected

Winner: Innovative project award

What

Steamaco makes smart meters tailored to the needs of energy suppliers in rural Africa. Its innovative technology enables energy suppliers to provide power to underserved rural communities. Steamaco has sold 35,000 meters across ten countries in Africa and Asia, with a direct impact on about 100,000 people.

While Steamaco can meter any kind of electricity, it almost exclusively deals in solar energy: a practical energy choice for providing cost-efficient energy in remote areas.

At Steamaco, finance has played a critical role in driving efficiencies, winning investment and improving the product. The result has been data-efficient smart meters available at a price that compares with standard meters, and a \$2.9 million Series A investment from Shell.

'Energy, in order for it to be financially sustainable ... it has to produce revenues ... It's a really good place for the private sector to operate ... where profit and impact are both pointing in the same direction and you can have the incentives aligned.'

Emily Moder,
COO of Steamaco

Why

SteamaCo aims to address the negative social, economic and environmental outcomes caused by insufficient energy access. In rural areas of Africa and Asia, poor infrastructure – in transport, banking and accounting – has been a challenge for traditional energy markets. It is also estimated that suppliers lose 50% (\$12 billion) of revenues in Africa because of electricity that is used but not paid for.

In applying innovative technology to the challenge of bringing energy to an underserved market, SteamaCo has found an opportunity to combine profit with social and environmental impact. Its smart metering technology creates commercial incentives to bring renewable energy to even the most remote areas.

Key benefits for stakeholders:

- > Investors reduce their risk and realise a return on their investment.
- > Energy suppliers protect their revenues and get access to a new market.
- > End users receive all the benefits that come with reliable energy: businesses can engage in meaningful trade; children can study after dark; and families no longer have to risk their health by burning kerosene lamps indoors.



‘SteamaCo is ... connecting the unconnected to renewable supplies of electricity and improving their social and economic quality of life. The result is an end-to-end solution that provides revenue protection for energy suppliers, a return on capital for investors and the opportunity for consumers to manage their energy use.’

Finance for the Future Awards judges

How

SteamaCo developed, promoted and financed its innovative product in the following ways, with key involvement from finance throughout:

- > SteamaCo's initial work developing mini-grids in Kenya meant that when the company pivoted into selling its technology, it had direct **insight into the pain points** of potential customers.
- > By maintaining a few sites in Kenya to test out its technology, SteamaCo can make sure its designs are **useful on the ground**.
- > An **empowered finance function** was integral from the start. The CFO was given free rein to fully engage with all aspects of the business, including product development.
- > The finance function's **collaborative work** with operations and technology departments enabled SteamaCo to reduce costs, fundraise, improve controls and bring in product innovations, such as payment integration.
- > **Innovations are driven by data**. Finance led analysis that ultimately cut the amount of data used by SteamaCo's smart meters by 98%. This data efficiency improved margins and gave SteamaCo a competitive advantage over other smart meters.
- > In **keeping costs lean**, SteamaCo can compete with traditional meters on cost while offering additional services and innovations.
- > SteamaCo can collect demographic data from its smart meters and SMS surveys in multiple languages. It **monetises data** by applying insights from data analysis to improve the product and help customers improve the energy service offered to the end user.
- > SteamaCo engages in **external networks**, such as the Africa Mini-grid Developers Association (AMDA), to better understand its customers and build useful partnerships.



Data-driven innovation

Steamaco's smart meters include multiple innovations to address the challenges faced by energy suppliers operating in rural areas with poor infrastructure. These innovations boost market incentives for extending renewable electricity to underserved areas, aligning commercial interest with social and environmental benefits.

Challenge #1: energy theft

In rural Africa, energy suppliers lose revenues because people find ways to access electricity without paying.

With Steamaco's smart meters, suppliers have better data. End consumers pay for their exact usage – and supply can be turned off for non-paying consumers. This keeps energy supply economically viable.

Steamaco offers multiple payment options for end users. Finance researched and costed various payment methods and worked with the technology department to integrate this into the product.

Challenge #2: data loss

In rural contexts with unreliable data connections, smart metering data on energy usage can be lost if the connection drops. Lost data means lost revenues for energy suppliers.

Steamaco's technical architecture uses less computing power than alternatives. Each smart meter is connected to one central point using long-range radio technology.

Following a finance-led project to cut data costs, Steamaco reduced the amount of data used to megabytes rather than gigabytes. With smaller data sizes, more data can be transferred even on unreliable connections. The smart meters can also transfer data by SMS as a back-up option.

Combined, this innovative technology means that Steamaco's smart meters can be used anywhere with minimal data loss.

Challenge #3: low energy usage

Steamaco's data showed that people newly connected to the grid were using tiny amounts of power, limiting revenues for energy suppliers.

The company looked at consumption trends and could see that the first people in a community to rapidly increase energy use were always wealthy people. People who hadn't had electricity before didn't have electric appliances – and often didn't have the capital to buy them in the short-term.

Steamaco saw an opportunity to create an appliance leasing programme, using electricity connection in place of a credit score. Revenues immediately doubled from those taking up the scheme. Building in this consumer financing option meant that Steamaco could sharply ramp up energy use that would otherwise take a long time to build.

www.steama.co/





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