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Open for Business

By Peter Fries

In rural Senegal, a disused windpump stands as a stark reminder to the challenge of sustainable development. Installed as part of a previous aid project, the windpump was definitely a better way than hauling water by hand. But without spare parts and trained people to install them, the windpump – along with 90% of the other windpumps in the country - stopped providing the water for cooking, washing and irrigating the vital fruits and vegetables in the village garden.

A former manager of the aid project, Mr Michel Tine, wasn't a businessman but saw the opportunity to create an enterprise repairing and servicing these defunct windpumps. He found a ready market, but quickly realized that to succeed, his new company, VEV, needed both capital and new business skills. By US or European standards these needs were modest – the capital needed was less than what an average US corporation spends on an annual report.

In another part of Africa, Mr Bamba Coulibally was also struggling with a new business idea. In a country short on refrigeration but long on hot days, Mr Coulibally was trying to preserve local foods using a solar drying technology developed, again, in a former aid project. He too saw the opportunity but realized without a good business plan and collateral, he faced little hope of obtaining capital from local banks.

Enter an unlikely trio: the United Nations Foundation, an innovative banker wearing a development hat called E+Co, and the United Nations Environment Programme (UNEP). Instead of simply throwing more “appropriate technology” into a field crowded with relics and high tech fiascos, the trio embarked on a far more ambitious and more difficult task – creating new types of enterprises that could deliver clean energy to the people who need it.

In Africa alone, that's a lot of people – 90% have no access to electricity and rely on dung, crop waste and wood collected increasingly from fragile, disappearing forests. Such poor quality energy sources have also created an indoor pollution problem that rivals the dirtiest air in some of the most polluted cities.

In response, the UNF has provided more than \$8 million to help UNEP and E+Co create the Rural Energy Enterprise Development Initiative – or just REED. At its core, REED combines small amounts of start-up capital with the training to create capable entrepreneurs and new clean energy enterprises based on energy efficiency and renewable energy.

It's a partnership the concept of 'sustainable development' has been waiting for.

“Technology is not the problem. Business models are not the problem. Demand for the product is not the problem. Ability to pay is not the problem. The problem is a shortage of seed finance that allows entrepreneurs the freedom and flexibility to innovate and take risks”.

That's Phil LaRocco, the “banker wearing the development hat”, and head of E+Co, whose directness could be confused with “attitude” when it comes to REED and the “problems” of sustainable development.

Although well-intentioned, he says the billions invested in development over the past two decades – investments that left windpumps rusting all over Senegal - were ultimately not able to break the cycle of poverty – a cycle linked directly with access to modern forms of energy. At his school of hard knocks, LaRocco says, “you don't give away – you invest”. It's philosophy he has applied investing \$10 million in 77 enterprises operating in 34 developing countries, 24 of which are now delivering clean and sustainable energy services to more than 200,000 people.

Coordinator of UNEP's Energy programme, Mark Radka, says that development agencies and investors have often ignored the potential of local enterprises to innovate in the area of essential energy services. This is because enterprises such as Mr Tine's were too small; they operated in remote, rural areas; they maintain no formal bookkeeping; and because development agencies and governments often believed that centralized agencies and programmes were the best means to deliver those services.

By contrast, REED is designed to help entrepreneurs offer some form of clean energy product or service in a commercially sustainable manner, such as fee-for-service PV electrification¹, efficient cookstoves or solar-dried crops. Radka notes that although REED is primarily focused on enterprises that deliver energy services via a renewable energy technology in rural areas, both non-renewable energy and non-rural enterprises can be supported. “In some cases, REED programmes target entrepreneurs in urban areas who can better deliver existing energy services and in ways that also produce substantial environmental benefits,” he says.

REED’s first investment stop was Africa (the program is called ‘AREED’) where they enlisted a number of local development organisations with a strong commercial bent. These ‘country partners’ are a key strength of the programme, delivering enterprise development services in the field to help entrepreneurs create and grow their clean energy businesses.

As the director of the Kumasi Institute of Technology and Environment (KITE) and AREED country partner in Ghana, Dr Abeeku Brew-Hammond says ‘rural’ has very different meaning there. “There is no telecom, no email and a typical rural person may not have the education to even write a business plan.” At the same time, he adds, people do have money to pay for improved energy services, especially if the cost of systems can be financed over extended periods.

To get the message out in Africa, local country partners such as KITE and E+Co literally take the concept to the streets – hawking AREED directly to entrepreneurs through seminars in Ghana, Mali, Senegal, Tanzania and Zambia. The seminars attracted both Mr. Coulibally and Mr Tine, who subsequently became some of the first entrepreneurs through the AREED “pipeline” – advancing in a process of one-on-one mentoring designed to refine their business ideas into solid business plans. Only then, when they had a viable business plan, did they receive start-up capital.

For Mr Tine and VEV, the \$17,000 AREED loan means he can create and expand an inventory of spare parts to provide a better service to more communities. Mr Coulibally is investing his \$18,000 loan in additional solar dryers to scale-up his business.

¹ Fee-for-service PV electrification is a business model where a PV system is installed at a premise, but the customer pays only a monthly or quarterly fee for the electricity it produces.

Head of REED programmes for E+Co, Christine Eibs Singer, says that one of the key differences between REED and a traditional development approach is the treatment of risk and risk-taking as an integral element of entrepreneurialism and a tool for leveraging greater returns in the long-term. In a traditional development programme, she says, the same money would be used to buy and install equipment, which would have amounted to a few windpumps and some solar dryers. By contrast, a REED programme uses funds to launch a business that could eventually install, service and maintain hundreds of pumps or solar dryers.

“We firmly believe that assisting entrepreneurs to take risks, to innovate the way they deliver goods and services, and to continuously refine their business models, is an effective way to gain public trust while attracting commercial investment into the sustainable energy sector,” she says.

REED support is typically in the range of \$20,000 - \$120,000 and is flexible enough to include taking an equity position; in essence, buying part of the company. However, a REED programme usually does not provide all of the finance an enterprise may require, so the terms of the financing package are usually designed with a ‘second stage’ investor in mind, someone who will invest once the business model is proven. Once other partners financially commit to a new company, REED's role diminishes.

During 2002, REED expanded into both Brazil and China. In Brazil (B-REED), the programme is focused in the northeast of the country where 20 million people do not have access to electricity. Ms Ebbs-Singer says that although the REED model is replicable, it is not a “cut and paste” model - what works in Zambia may not necessarily work elsewhere.

This is currently the case in China where REED has partnered with The Nature Conservancy (TNC), who believes the enterprise development model can ultimately help them protect one of the world’s biodiversity “hotspots” – China’s remote Yunnan province on the border with Tibet - where the unsustainable collection of fuelwood is creating a major environmental and social hazard. In a new programme called ‘CREED’, entrepreneurs are being trained to offer energy services that replace this wood fuel; particularly biogas digesters that convert human and animal waste into clean-burning methane gas for cooking and other energy needs.

REED is also “not just about seeking financial return on investment,” says Ms Eibs Singer. The potential benefits of each enterprise investment include not just the direct financial returns typically of interest to the entrepreneur and their commercial backers, but also indirect returns such as job creation, lower pollution levels, and improved rural livelihoods. The VEV investment is a good example. In one village with a repaired windpump, the extra water is irrigating a village garden, which supports 20 families with both extra income and better nutrition.

TNC’s China programme director, Ms Rose Niu, believes that the development of enterprises in the rural energy sector can have a major positive impact on other sectors, such as processing local exotic foods and traditional herbal medicines. “If we can build up enterprises in the rural energy sector, then other entrepreneurs will learn and hopefully copy this approach”.

All the REED partners agree that small energy enterprises – and the enterprise-centered development model - are not a quick fix or a panacea to deliver sustainable energy to the rural poor, only “one more approach that, in many circumstances, can cost-effectively deliver energy services – often in ways that complement the more traditional centralized utility model”.

For the rural village in Senegal, that approach simply means water in the fields and food on the table. And *that*, is the right combination for sustainable development.

Text Box: Sample of AREED Investments (below)

Sample of AREED Investments			
Enterprise Name, Country	Business Activity	Enterprise Description	AREED Financing
Rasma <i>Zambia</i>	Mfc. Efficient Cookstoves	Company produces and sells efficient cook stoves.	\$20,000 Equity
AME <i>Senegal</i>	Maintenance of Solar Water Heating Systems	The provision of maintenance services for solar water heaters in the residential and commercial sector, both urban and rural.	\$41,500 3 year local currency loan dispersed in 2 tranches
ABM <i>Ghana</i>	Power Factor Correction	Existing energy efficiency company that will develop power factor correction business.	\$120,000 5 year USD denominated loan
VEV <i>Senegal</i>	Wind pumps	Servicing existing wind pumps in rural areas	\$17,000 5 year local currency loan
USISS <i>Mali</i>	Solar Crop Drying	Drying meat, mangoes and onions	\$18,000 5 year local currency loan
KPBS <i>Zambia</i>	Charcoal Production	Company uses sawmill waste and efficient kilns to produce charcoal briquettes	\$74,000 5 year USD denominated loan dispersed in 3 tranches
Gladymannual <i>Ghana</i>	Energy Efficient Lighting	Company is a leading supplier of compact flourescent lights to the Ghanaian market.	\$70,000 5 year USD denominated loan
Bagani <i>Mali</i>	Multifunction Platform	Company runs a biofuel-powered diesel engine for grinding, milling and battery-charging	\$15,000 5 year local currency loan
BETL, <i>Tanzania</i>	Waste to Energy	Company supplies biomass waste to meet heating needs of cement production	\$50,000 4 year USD denominated loan
Anisset <i>Ghana</i>	LPG	Company operates a peri-urban LPG charging station; looking to expand to rural areas	\$38,000 4 year USD denominated loan