Anita Roddick, Founder, Body Shop
It seems only yesterday I was trying to persuade the bank manager to hand me a few thousand pounds to finance my idea. Luckily he agreed but if I tried today and lived in the developing world the chances of getting funds would be a million to one. Banks are too nervous to back what they see as risky ventures.

So entrepreneurs who can deliver things like energy just can’t grow. Now, a new initiative called Rural Energy and Enterprise Development, REED, supported by the UN environment programme and the UN Foundation, is easing the bottleneck. REED offers seed money to small businesses keen to deliver green energy to people who otherwise could only dream of electric power.

Energetic tracks down businesses that are proof that venture capital can help spark sustainable energy for all.

NARRATOR
The streets of Accra, a commercial hub in West Africa. Local entrepreneurs are breaking new ground with dynamic businesses that offer cleaner energy at an affordable price. Liquid petroleum gas is proving a popular choice given a boost by finance from the Africa Rural Energy Enterprise Development Programme, AREED, for short. Ghana’s clean energy enterprises are taking off.

Worldwide two out of five people rely on bio-mass, vegetation and animal wastes for energy.

Klaus Toepfer Executive Director UNEP
Bio-mass is a very, very important contribution right now for the energy needs of developing countries and there renewable energy has a huge market chance, also decreasing the load of pollution to the atmosphere in line with our fight against climate change.

NARRATOR
Eighty percent of Ghana’s energy comes from wood. A traditional wood-burning stove is a familiar feature in most households.

Smoke is a killer in the home according to the Intermediate Technology Development Group. It’s blamed for 1.6 million deaths a year.

And firewood collection is contributing to the loss of forest cover and the wild species that depend on it.

In Ghana the government is promoting liquid petroleum gas or LPG as an alternative. The start-up finance is coming from AREED, a rural enterprise initiative with funds coming from the UN Foundation. So far AREED has invested $58,000 to help two small businesses sell the gas.

Relative to charcoal and kerosene, LPG is a clean fuel, it’s a bi-product of oil refining and it used to be burned off as waste.

Emmanuel Quarkey, Tema Oil Refinery
We used to flare LPG as a matter of fact so the policy, the directive was that, look let’s stop the flaring, right, get LPG into productive use. So we targeted the urban centres and at that point in time we gave away free stoves, free cylinders and then the LPG took off.
NARRATOR
LPG’s drawback is that it must be stored under pressure and can only be used in specially adapted equipment. The first generation of cooking stoves were based on a European design, unsuitable for the rounded pots used in Ghanaian kitchens.

One entrepreneur had a bright idea, an LPG stove using a traditional Ghanaian design.

Prosper Gatti, Translegacy
I thought of this model because it has been a coal pot which Ghanaians use at almost every home so my mind tells me that when I’m fixed on the coal pot business to attract more customers.

And this hob gives a very high flame.

NARRATOR
But Prosper needed help before he could live up to his name. He needed start-up capital.

William Ofori-Darko, Amalgamated Banks
Entrepreneurs who want to do start-ups really don’t have any venture capital to back them. Most banks and furthermore financial institutions will want to shy away from start-ups because the risk is quite high.

NARRATOR
With a bank loan out of the question, Prosper had to look elsewhere for finance working in partnership with the AREED programme, the Kumasi Institute of Technology and Environment gave Prosper a loan from AREED’s seed fund.

Harriette Amissah-Arthur
The entrepreneur approaches you with the idea, you are helping the entrepreneur think through the idea and present as a business plan so that an investor will be interested in looking at it.

NARRATOR
AREED seed money allows entrepreneurs to take a few risks.

Prosper Gatti, Translegacy
Even before the approval of the AREED finance they give us a lot of guidelines, how to run the business. They put, I mean they put it through a lot of process which today we feel is helping us a lot.

NARRATOR
Now Translegacy’s stoves are used in restaurants all over Accra and he says his business keeps on growing.

Cheap gas also persuaded canny motorists to convert their cars to burn LPG instead of petrol cutting fuel bills and cleaning up their emissions so another entrepreneur saw his chance to innovate.

Business savvy Seth had worked refilling LPG cylinders and his dream was to open his own vehicle filling station.

Kobla Nanemeh, Anasset Ltd
I started from a garage, but then I come and I packed the …garage because the demand was increasing, people who come and take it and exchange it with the cylinders and go and fill and come
back. So we realised that the demand was becoming greater, so we started looking for places to put up a plant.

**NARRATOR**
But finding a site was the easy bit. Financing the equipment proves tricky even for an established businessman like Seth.

**Kobla Nanemeh**
I was running a very good accounts you see and I don’t think with my turnover the bank see this or rejected my request for assistance, you see but on some flimsy excuse they threw my request out, overboard, I kind of was shocked.

**NARRATOR**
Again AREED stepped in with a loan to kick start the business. By paying back the loan Anisette would gain a good credit history, giving Seth more credibility when dealing directly with commercial banks in the future.

Seth used the money to buy a large gas tank and a vehicle fuel pump. He has been busy ever since.

More than 90% of Brazil’s electricity is generated from its six hundred dams but with a thriving economy and a growing demand for electric power, the country is struggling to meet its rising energy needs especially in rural areas.

Here too small enterprises help the keen to improved energy delivery, this time with a counter part fund, BEREED for short, the Brazilian Rural Energy Enterprise Development Programme.

Most farmers in Matto Grosso in South Western Brazil must manage without services that many take for granted. Foremost is no access to a national electricity grid, so technology that could boost food production is beyond the reach of ordinary farmers.

**Roberto Emilio Lopez**
In the five to six months of the year when it rains, during this period people can plant but then we have six months of the year when it doesn’t rain. If you haven’t got help of the technology for half the year, the small producers don’t generate income and barely have enough to survive.

**NARRATOR**
Local businessman Roberto Emilio Lopez set up Village Ambiental in 1999 to supply and maintain renewable energy systems for local farmers, but Roberto found it difficult to raise the money he needed to buy the equipment he planned to sell.

**Gina Rodolico E+Co**
One of the key barriers to clean energy enterprises growing and sustaining themselves is generally financing. They have the technology, they know the market, they know they can sell it but often they just don’t have the working capital to implement it on a wider scale basis.

**NARRATOR**
Roberto approached the BEREED fund manager Ian Coe and was loaned $55,000 to supply solar-powered irrigation systems to eight farming families

A solar panel generates electricity to power a pump that takes water from the river for irrigation.
Roberto Emilio Lopez
The complete system of the pump and all the equipment costs about $12,000. But the people of the community haven’t got the money to buy this equipment.

NARRATOR
The BEREEED loan means Roberto can offer credit to his customers so they can earn enough money to pay him back in affordable instalments.

Edson de Perreira da Silva, Association of Small Rural Producers
Before the solar system, we used to do the harvest once a year. Now we do it four times a year. Our expectation is that with the help of god, in a short period of time we will pay back the loan.

NARRATOR
Dona Maria was the first to receive the solar-powered irrigation system and repaid her loan within two years.

Maria Do Nacimento
Now we have income from the solar power, we plant, we collect, we have money for the expenses, healthy nutrition and also we have products to sell.

NARRATOR
Since installing the solar-powered irrigation system, Dona Maria has used her profits to build a new house and buy a second set of solar panels to supply electricity to her home.

Derek Gallo
Village has learned to walk the fine balance between trying to earn more money as an enterprise but also trying to make sure that its clients are earning as much money as possible and is growing as much as possible. The opportunity to scale this up, to replicate this throughout Brazil or even globally is really existent

NARRATOR
The mountains of Yunnan south west China. It’s a region that has not yet felt the impact of one of the world’s fastest growing economies.

And here again the rural microfinance approach promoting renewable energy is proving its worth.

Intersected by four river systems Yu Nan is a vital watershed for China. Severe flooding downstream has been blamed on deforestation, yet each villager still spends one month a year collecting firewood.

Xia Zuzhang, the Nature Conservancy
After the heavy floods in 1998 the government banned commercial logging, so today this major problem has been solved, but local people are still collecting wood for fuel and this is destroying the remaining forests. In fact the collection of wood for fuel is now the major threat to the ecological system.

NARRATOR
Working in partnership with REED the American Nature Conservancy is backing entrepreneurs who can offer cleaner energy using improved technology and alternative fuels.
Here is Haishi village. A small enterprise has developed a super efficient stove that burns up to 80% less wood than traditional ones.

The wood has to be chopped smaller than usual but it uses less fuel and smoke emissions are cut dramatically. This simple but efficient technology is catching on and the stoves are selling well. But reducing wood use isn’t enough. Finding other renewable energy sources is high on the agenda.

Like a bio-digester which turns organic waste into household fuel. This four in one system introduced by the nature conservancy combines a green house, a pig pen and a toilet with the bio-gas digester and underground concrete tank.

Animal and human waste ferments under ground producing a gas that’s used for cooking, heating and lighting.

The greenhouse above the bio-gas digester keeps in the heat and accelerates the fermentation process important during colder months. It also creates excellent conditions for growing vegetables and raising pigs.

People here still need wood but not as much as before.

**He Moa Jin**

But it’s a lot better now, and I have more time to work in the greenhouse and raise pigs. I sell some of the vegetables and almost all of the pigs at the market.

**NARRATOR**

Here in Senegal in West Africa technology is already in place to supply farmers with water. The problem is lack of maintenance. In the 1980s money from the donor countries was used to install hundreds of wind-powered water pumps but today 90% aren’t working.

**Klaus Toepfer**

We see again and again that it is fairly possible to have the hardware invested in solar, in wind but we don’t have the software of maintenance so we need a lot of smaller entrepreneurs especially also with regard to maintenance.

**NARRATOR**

Now with AREED back-up, small scale enterprises are offering a long-term solution.

**Boubacar Sy**

Life in the village depends on water. If water is available the gardens can be grown, if there are crops we can sell them to get money, it’s all good, but without water we are facing real troubles.

**NARRATOR**

A local entrepreneur who had previously worked for the organisation installing the pumps picked up where they left off.

**Michelle Tine**

We were leaving these 130 pumps to die for the lack of spares and the lack of expertise so we set up a local enterprise to continue to do the maintenance.
NARRATOR
But Michelle soon found the villagers didn’t have the cash to pay up front for vital spares and repairs. The answer was to offer credit but Michelle just didn’t have the capital. So he approached the local AREED plant NAENDA which helped him find a loan to buy essential equipment.

Secou Sarr, ENDA
This provides a window of opportunity for a mechanism of financing that gives poor people access to the services of private operators.

NARRATOR
A call’s come in and they’re off to the village of Teteni Bambala where the pump is broken. Corroded pipes and a worn piston seal need replacing.

Ibrahim Sankhare
We are waiting for great news that it’s fixed and then we can have a big feast in the village and we’ll invite everyone from VEV and all the villagers.

NARRATOR
Villagers pay for water by the bucket full and the proceeds help to pay for maintaining the pump.

If villagers have plenty of water, agriculture can flourish, there’s cash income and enough money to keep the well and pump in working order.

The palm-fringed beaches of Alagoas Brazil. Though rich in natural resources this region is energy-poor, jobs and land are scarce.

Here too BEREED the Brazil Rural Energy Enterprise Development Programme is creating a buzz, helping a local business make use of a natural resource that is freely available to all.

Alagoas is the smallest state in Brazil and also one of the poorest. Thousands of its inhabitants are forced to migrate each year in search of work.

Encouraging local enterprise is essential to creating jobs and keeping the economy afloat. Rubia Ababelo established Opearias Do Mel in 2000 to produce and sell dried bee pollen. Pollen is highly valued by the fast-expanding natural health industry.

Rubia Barbalho, Operarias Do Mel
Pollen is a natural product with an expanding domestic and international market. This is the market that Operarias Dumel chose to start its process of sustainable development.

NARRATOR
But when Rubia had decided to expand her business to dry the pollen herself she found it hard-going. So Rubia approached Eco Ingenio, the local REED partner.

Lucia Figueiredo, E +Co
We offered business plan development and within the business plan we develop analysis of the market, financial projections and we are going to analyse the impact that the business is gaining, environmental impacts, economic impacts and social impacts.

NARRATOR

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Rubia was approved for a $27,000 loan to make use of renewable energy resources.

The first step was outsourcing production. Local youths were trained in apiculture techniques and supplied with bee boxes.

Pollen is collected when bees pass through a trap. As they enter the hive, the small holes force them to drop the pollen they are carrying on their back legs.

Working with Solar Tech, a renewable energy company, the REED loan that Operarias Do Mel could invest in a specially customised solar drier.

Dr Gefson Pacheco
This is a solar drier composed of two parts, a heater and a drier. Partly this works on the sun’s rays and partly it runs on the gas which is used during the night or on cloudy days.

NARRATOR
An electric fan blows hot air into the drier, then it passes through a graphite panel and along to the drying unit where the heater dries the pollen. Moisture escapes through small holes.

Celso de Souza
With the taste and the characteristic of the pollen, we understand that the pollen is ready. The pollen cannot be humid or hard. It has to be at a certain point so that the pollen melts in the mouth.

NARRATOR
Finding markets for the pollen is essential if Operarias Do Mel is to succeed. Educating consumers about the health benefits is a key part of their marketing strategy.

Rubia Barbalho
It’s very good because it provides energy and it gives strength. You are going to see a big improvement in your physical activities.

NARRATOR
With the BEREED loan the business development services of Eco Ingenio and Solar technology, the future for Operarias is looking bright.

Derek Gallo
Apiculture has an incredible potential in the north east of Brazil and can represent a sustainable form of development, one more source of income to complement other more traditional sources of income.

NARRATOR
In rural Mali fewer than one percent of the population have access to electricity. Even in the city the main energy source is firewood. Once again this means mounting pressure on the country’s vegetation cover. One energy source Mali has in abundance is the sun. The challenge is how to use it to get a profitable business off the ground.

Solar power could be Mail’s holy grail. That’s why the government seems determined to deliver its potential to its citizens.

From a rooftop HQ one company USUS is turning sunlight into profits using solar drying.
Bamba Coulibaly, USISS
This drier is two metres wide and twenty metres long. Sunlight is concentrated by a system of sheets, a transparent sheet and a black sheet. The transparent sheet allows the light rays to penetrate but they are absorbed by the black sheet, then they are transformed from sunlight into heat.

NARRATOR
But Bamba had trouble finding the capital he needed to build his business.

Ibrahim Togola, Mali Folk Center
Most of the banks we have in Mali are commercial banks and they want to give a loan with the maximum of guarantee and low risk as possible and energy sector is something that they find as a really risky. They are not willing now to finance those business in the energy sectors.

NARRATOR
Fortunately for Bamba he went to a meeting organised by local AREED partner, Mali Folk Centre.

Bamba Coulibaly
There was a seminar for businesses involved in renewable energy and that’s how I got to know about AREED.

Ibrahim Togola, Mali Folk Center
The AREED programme is for Mali and Mali entrepreneurs, something that come at a very, very good timing as it gives this possibility to people first to assist them to develop their business idea to their really business concept and see if, about the feasibility or not the feasibility.

NARRATOR
Bamba was granted an AREED loan that’s given his business a boost.

Bamba Coulibaly
We only had one drier. Now we have two driers, and we even have three. The third is over there, it’s not yet installed, so the loan has allowed us to increase our capacity.

Klaus Toepfer
These are developments I believe they are sustainable because they are directly linked with the self-interest of people, of small stakeholders in the field. They are to the utmost then interested to make this investment a success,