

REMMPCASE STUDY

RENEWABLE ENERGY MICROFINANCE AND MICROENTERPRISE PROGRAM



SolarNow Brings Asset Finance for Solar to Rural Customers

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AFFORDABILITY MECHANISMS AND ENERGY ACCESS

A Turnkey Solution for Solar Distribution and Consumer Finance

SolarNow uses asset finance to provide electricity to off-grid rural communities through modular, expandable Solar Home Systems (SHSs). The SolarNow approach is to integrate an increasing range of energy efficient appliances into the company's product line, a tactic that

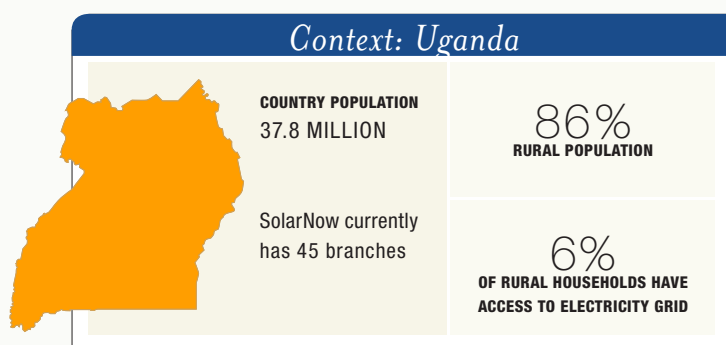
both improves lives and increases demand for its energy systems. Established as a social enterprise in May 2011, SolarNow grew out of the Rural Energy Foundation, a Dutch run NGO providing distribution and training support for the use of SHSs across Africa.



“At SolarNow we see a future where solar energy leaps past the era of centralized, high-cost power plant electricity distribution, just as mobile telephony overtook the development of land lines in Africa.”

—Ronald Schuurhuizen, Business Development Manager at SolarNow

SOLARNOW'S CUSTOMERS



SolarNow targets off-grid customers in rural areas across Uganda, Tanzania and Kenya. SolarNow sells in the range of 50W to 500W solar home systems with a price range of US\$475 – \$1,400, providing power for 10 to 20 years, depending on usage. It is targeted at off-grid customers in rural areas. The product is more expensive and offers higher levels of power than solar lamps and micro solar products (three lights or less), and requires installation and wiring in the home, which must be brick-built, with a solid roof. With these requirements, a SolarNow system represents a serious investment by the household, and this creates a certain degree of self-selection for rural families and businesses with established incomes.

To qualify for the entry-level 50W system, a household needs to have an available disposable income of US\$75 per month (three times the monthly installment cost) or US\$2 per day, per adult. Typical customers include rural professionals, institutions and small businesses, and households whose main income is from farming, supplemented by additional forms of income, such as microenterprise activities or remittances. The company estimates these groups constitute around 25 percent of Uganda's rural population, or 1.6 million households.

BOX 1. TECHNOLOGY

SolarNow's Home Systems

SERVICES: ELECTRICITY



ENERGY HARDWARE

PHOTOVOLTAICS
(MODULAR: 50 WATT)

SEALED, DEEP-CYCLE
LEAD ACID BATTERIES

UNIT OPERATING LIFE

10–20 YEARS, PANELS
3–5 YEARS, BATTERY



THE HARDWARE ©SOLARNOW 2014

SolarNow's modular approach minimizes cost and maximizes simplicity of installation and maintenance. Each system is formed by a combination of 50W panels, maintenance-free AGM battery, inverter (if AC power is required), charge controller, internal wiring and base station. All components are selected for performance, longevity, guarantee and price.

The modular approach is designed to align with all of the varied benefits that consumers seek from access to increased power capacity. At the 50W entry level, customers typically want solar lights to replace expensive and unhealthy kerosene lamps, but also want to be able to charge their mobile phones. A 50W system enables customers to achieve this and also power a radio.

After lights and phones, the next most desired appliance is a TV. With a 100W system, the additional power provided is sufficient for up to three hours of TV viewing. Power from the battery can be shared across all the appliances. One of the most difficult lessons for customers to learn is how to distribute the power among appliances and optimize usage in order to leave enough energy for the TV.

By the time a client reaches 200W, the power available can easily support seven hours of TV, multiple lights and other small appliances.

AFFORDABILITY MECHANISM: ASSET FINANCE INSTALLMENT PAYMENTS

Purchasing a SolarNow system represents a significant investment for low-income customers. For this reason, the business offers deferred payment through an 18-month credit facility, known as the “PayPlan,” to maximize potential reach across rural communities and to enable access for those at the bottom of the pyramid. This installment payment approach greatly improves the affordability of the system and reduces product risk for the customer. Ownership of the system upon purchase (when deposit is paid) is key to ensuring proper usage and maintenance by the customer.

Payment is structured as follows. Customers put down a cash deposit of around 20 to 25 percent of the selling price with the remaining balance paid in installments through the PayPlan, with a discount for up-front cash payment. To qualify for the PayPlan to buy the entry-level 50W system, a household needs to have US\$130 cash available for deposit and a disposable income of US\$75 per month (three times the monthly installment cost), or US\$1.7 a day (disposable income of US\$0.34 per day, per individual (assuming a five-person household)). With these requirements, a SolarNow system represents a serious household investment, which creates a certain degree of self-selection, as customers must have established incomes to qualify. Typical customers include rural professionals, institutions and small businesses, and households whose main income is from farming supplemented by additional forms of income, such as micro-enterprise activities or remittances. SolarNow estimates these groups constitute around 25 percent of Uganda’s rural population, or 1.6 million households.

The PayPlan is provided after a detailed credit assessment. This includes evaluating sources of income, recent investments, estimated net or surplus income and validating this with credible references. A customer puts down the initial payment before a system is dispatched, and installation is completed within 14 days. Within seven days of installation, the service team calls the client to confirm he or she

BOX 2. AFFORDABILITY



ASSEMBLING SOLARNOW PRODUCTS

To reach the millions of rural customers with limited financial resources, SolarNow has managed cost efficiencies to enable price reductions to make its products more affordable. These cost efficiencies have been achieved over two years in three phases:

In phase one, SolarNow worked with local Ugandan importers, assembling its systems and distributing them throughout Uganda.

In phase two, SolarNow reached the scale where it could order directly from manufacturers, thus benefiting from a lower unit cost and avoiding the importers’ charges. In fact, they were able to reduce cost by more than 20 percent by ordering containers of components from global manufacturers and packaging the components in ready-to-install boxes.

In phase three, SolarNow achieved sufficient scale to partner with a limited number of international suppliers who provide fully installation-ready, branded systems for shipping to any location. Ordering in cycles of every 2 to 3 months aims to maximize the capacity of contracts with these suppliers and minimize costs. At this level of purchasing, SolarNow has achieved further cost reductions, and has also established annual targets for even further reductions and improvements in credit terms. The company sees an additional future cost reduction potential of 10 to 15 percent.

is satisfied. Calls and visits are conducted subsequently on an ongoing basis to inspect and monitor quality of installation and service and to confirm the customer understands the repayment terms. Every

sale also comes with a two-year service guarantee. In an environment of pervasive distrust of solar systems due to poor quality and fraud, the guarantee and service commitment serve to reassure customers of their investment and to ensure good repayment performance.

An advantage of the PayPlan, combined with the company's modular approach to system upgrades, is that it makes transitioning to a product with additional power easy for all parties. Customers can upgrade once they have completed their first PayPlan successfully, which not only stimulates on-time payments, but also lowers underwriting risk and costs for the subsequent sales, since the customer has an established payment record.

SolarNow has enjoyed high repayment performance across the PayPlan portfolio (over 2,100 active PayPlans and over 3,000 completed PayPlans), with fewer than 2 percent of PayPlan customers more than 30 days delinquent at month end, and fewer than 0.3 percent actual write-offs.



Simple, Modular, High-Quality Technology

SolarNow does not manufacture solar equipment and so it is free to select the best and most appropriate technology on the market. The systems are sold in a modular configuration based on a 50W system unit, which can then be sold in singles or multiples (50W, 100W, 150W, 200W) with a minimum of sourcing and installation complexity. Product complexity for the client is also minimized, and clients can easily build up a system over time to adapt to changing needs.

The system configurations are designed around an expanding range of appliance packs (lights, radio, TV, fridge) that are powered by modular power packs consisting of a PV module and a battery. This model offers the flexibility needed to accommodate a wide range of customer appliance demands, while maintaining simplicity in stock, display and design.

Similarly, by using the same modular components across multiple systems, sourcing contracts has been scaled so as to secure the best price from manufacturers and suppliers. SolarNow partners with a limited number of international suppliers to provide branded packaged systems, which can then be shipped directly to any of its distribution hubs.

SolarNow's philosophy is to promote affordability by offering products that can be expanded based on a client's comfort level and income. The modular approach was adopted with upgrading in mind, so clients can adapt their systems as their needs change over time. As power consumption rises, and demand for new electrical products grows, customers can simply build their systems accordingly. With components such as the charge controller, wires, and inverters deliberately selected to facilitate this, upgrades are and will be a considerable source of additional business for SolarNow; currently, upgrades are 25 to 30 percent of new sales.

FIGURE 1. SYSTEM USAGE OPTIONS
A MODULAR APPROACH TO SELLING SOLAR

50 WATT	100 WATTS	250 WATTS	500 WATTS
4 HRS, X6 LIGHTS AND	4 HRS, X6 LIGHTS AND	4 HRS, X15 LIGHTS AND	4 HRS, X15 LIGHTS AND
4 HRS, X1 RADIO AND	4 HRS, X1 RADIO AND	4 HRS, X1 RADIO AND	4 HRS, X1 RADIO AND
2 HRS, X2 CELL PHONES	2 HRS, X2 CELL PHONES AND	2 HRS, X2 CELL PHONES AND	2 HRS, X2 CELL PHONES AND
	4 HRS, X1 TELEVISION	8 HRS, X1 TELEVISION AND	8 HRS, X1 TELEVISION AND
		24 HRS, X1 FRIDGE	24 HRS, X1 FRIDGE AND
			8 HRS, X1 LAPTOP AND
			8 HRS, X27 LIGHTS
120 TOTAL WATT HOURS	240 TOTAL WATT HOURS	600 TOTAL WATT HOURS	1200 TOTAL WATT HOURS

SolarNow's 2014 Product Line Marketing

Power your life



"I have good lights inside, but also lights outside for better security"

example



50W 3 lights + phone charging set & radio

Per month: 65,000
Deposit: 340,000

Total cost: 1,250,000
Total cost credit: 1,510,000

Pay early, save money



"We enjoy watching TV together, and we know what is happening in the world"

example



100W 6 lights, radio, DC LED TV/DVD

Per month: 135,000
Deposit: 690,000

Total cost: 2,580,000
Total cost credit: 3,120,000

Pay early, save money



"Using a generator was expensive. I can now run my cinema for free!"

example



100W 3 lights + 300W AC Inverter

Per month: 120,000
Deposit: 630,000

Total cost: 2,310,000
Total cost credit: 2,790,000

Pay early, save money

Uganda's no. 1 solar systems



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SolarNow's 2014 Product Line Marketing

Power your life



"I can now earn 350,000 with shaving & phone charging"

example



50W 3 lights + AC

Per month: 90,000
Deposit: 480,000

Total cost: 1,740,000
Total cost credit: 2,100,000

Pay early, save money



"I am the only shop here with decent light. My business has seen a sharp increase"

example



50W 3 lights + phone charging set & radio

Per month: 65,000
Deposit: 340,000

Total cost: 1,250,000
Total cost credit: 1,510,000

Pay early, save money



"School performance and safety improved thanks to bright SolarNow lights."

example



250W 15 lights

Per month: 225,000
Deposit: 1,140,000

Total cost: 4,290,000
Total cost credit: 5,190,000

Pay early, save money

Uganda's no. 1 solar systems



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Standardized Distribution, Installation and After-Sales Service

SolarNow's distribution model includes independent franchises that facilitate sales and system installation. These franchises are overseen and supported by dedicated head office teams, which ensure quality is maintained consistently across the network. Head office teams oversee sales, marketing, service and credit, provide ongoing support and training, and review and approve credit assessments.

Franchises are selected for their local contacts and technical skills. A key sales driver in a damaged market with a history of poor quality and fraud is the use of referrals from satisfied customers. The focus is therefore to train franchises to consistently install to standard, build strong customer relationships with high quality service support, and drive referral-led sales opportunities.

Given the level of investment needed by potential customers, SolarNow places a high value on maintaining service commitments. This encourages initial contact and creates a strong brand. Once a down payment is made, a system must be installed within two weeks, or else the payment scheme is modified to reflect the delay. Customers are encouraged to report any issues with systems using a central service number. Customer satisfaction and service standard metrics are monitored closely on an ongoing basis. During the first two years, any malfunctions are fixed for free if the problem is component or installation related, and after that, service is provided on a discretionary basis, and costs for this are deliberately low. Service rates are currently under 5% of units installed per month and surveys of the oldest systems (around 3 years) show service rates of only 10%.

Information Technology for Back Office Efficiency and Data

To manage the business efficiently and provide management with the information it needs, a robust information technology platform is important. For sales and distribution, an effective customer relations management system is required that can track leads and customer data, and produce the right documentation during the sales process. On the credit side, data must be collected and cross-referenced to ensure the right credit decision is made, and then payments must be tracked to trigger collection actions in the

event of default. For stock management, information is needed to manage ordering and distribution efficiently. Finally finance and reporting capabilities are needed to monitor and report activity and maintain internal controls as the business grows.

With grant funding and technical assistance from Arc Finance, SolarNow has developed a customized OpenERP system to support the sales, credit, stock management and finance processes for the company and to provide comprehensive reporting capabilities for management to monitor progress and manage credit and operational risk.

“SolarNow is proving that asset finance for rural customers can both be profitable and improve the lives of the poor.”

– Nicola Armacost, Managing Director
at Arc Finance

Large Scale Debt and Equity Raising

An asset financing business needs cash to refinance its credit portfolio, to manage working capital and to maintain optimum stock levels. To raise funds, the business requires credibility, skill and an effective business model, which in the case of SolarNow combines end-user financing, sourcing and installation in one company.

Based on the success of the business to date, SolarNow has secured an initial round of equity investment as well as a local Ugandan bank loan facility supported by a US\$1.5 million Development Credit Authority loan guarantee from USAID, facilitated by Arc Finance. The loan guarantee is the first of its kind in Uganda. Through partnership with a local bank, Centenary Rural Development Bank, both distribution and financing structures in Uganda are entering a new phase where credible and sustainable renewable energy companies can better access commercial funding. SolarNow has just finalized terms on its second equity round of €2 million with a group of new investors. This will be instrumental in leveraging more debt financing through late 2014 and into 2015.

“Our stakeholders and investors are extremely receptive to our combination of financing and distribution because it tackles the key challenges that have prevented the solar market from growing to scale.”

—Willem Nolens, General Manager at SolarNow

ANALYSIS: KEY SUCCESS FACTORS

Customers Respond to Quality

The solar market in Uganda has been severely damaged by a combination of poor quality product components and bad installation. The default sales model has been for small, poorly capitalized technology shops in local trading centers to persuade a customer to buy a solar system for cash. With rural customers having little cash to spend and hardly any access to credit, the installer has to acquire the cheapest possible system and install it in a less than optimal manner to ensure a profit is made. As the market is constantly seeking the least expensive, lowest-end products, it is vulnerable to dumping by unscrupulous manufacturers. The end result is a customer with inferior components, which even if installed correctly have a short lifespan. When issues arise after a few weeks or months into the lifecycle of a system that is supposed to last years, installers are able to avoid their responsibilities by claiming customer misuse, or simply by refusing to re-engage.

SolarNow has been able to overcome this substantial barrier through a combination of a two-year service guarantee, installment payments over 18 months, and a focus on quality and brand. Customers are more likely to take a chance with a more expensive system if they can see that they do not have to take the risk of the full purchase price on day one.

Credit Expertise and Point of Sale Delivery

The management team brings expertise in microfinance and point-of-sale credit. This has a number of operational and funding benefits, including that a standardized, best-practice credit methodology results in low delinquency levels and credit losses; that delivery of credit at the point of sale and working with franchise partners results in low transaction costs; and that high portfolio quality and credit performance combined with profitability provides a strong platform for raising funds.

BOX 3. MARKET CHALLENGES

Challenges of “Spoilage”



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BUILDING TRUST WITH RURAL CUSTOMERS

Solar distributors targeting the low income market in East Africa face widespread distrust of component and installation quality given market experience over recent years. There is broad awareness about solar technology, but there is often limited understanding of how it works. This, combined with a rising demand for the benefits of energy, leaves people vulnerable to unethical sales practices and incompetent installers. Low incomes also create an inevitable attraction to the cheapest product, which encourages cynical manufacturers to dump poor quality components on the market. This has resulted in a pervasive distrust by customers, which spoils the market for new entrants with quality products. This “spoilage” means that many potential customers are skeptical that solar energy products will work in the long term or that they will be worth the investment.

The most effective solution is providing a high quality product with a performance guarantee, backed up by local, high quality and reliable after-sales service. In doing so, SolarNow has built up a high level of trust in its customer relationships. Over time, trust in the brand builds a loyal customer base and an increase in referral sales. This is reflected in high repayment performance and an increasing level of referrals and upgrades from customers.

“Asset finance is probably the best way of offering credit to the rural segment in Africa.”

—Peter Huisman, Finance and Administration Manager at SolarNow

FACTORS INFLUENCING SCALE

Achieving large scale has been at the center of SolarNow's ambitions since it was first conceived. In Uganda alone, to significantly increase electrification rates, a large scale, off-grid renewable sector will be needed, with the involvement of several large companies. SolarNow aims to be one of these, and intends to build on its strong customer network to become a broader asset finance company that offers customers the range of solar appliances that are driving the increasing demand for energy. As of late 2014, SolarNow has installed more than 5,000 SHSs. The business currently has 45 branches in Uganda, with 64 targeted by the end of 2014, and expansion into Tanzania and Kenya with a similarly deep branch network in 2015 and 2016.

To achieve scale, the company must be able to deliver on three key goals:

1. Reduce Prices Over Time

Achieving scale means greater reach into rural populations, which need lower prices to afford the systems. This has been achieved principally by driving down costs from suppliers through simplification of the supply chain and by ordering larger quantities of product. As sales increase, branches reach higher levels of operating efficiency, which reduces the relative costs of management. The business is also adding additional higher margin products and services and potentially other energy technologies, which provides for greater flexibility on core product pricing.

2. Access Commercial Capital Markets

The SolarNow model is cash-intensive. With increased scale, greater funding will be required, both from the local and international capital markets. Management has experience raising funds in these markets, and has developed a strong pipeline of potential investors to support this both through equity and debt plays.

3. Develop a Strong Brand

Developing a strong brand has been key to addressing concerns about product risk and quality. The SolarNow brand has given customers the confidence to invest in solar energy and produced a network of satisfied customers, positioning the business for broader growth in the future. As rural communities gain access to electricity, their opportunities and demand for power and appliances will grow. Through its strong brand track record and customer network, SolarNow is well-positioned to build on this opportunity and work with its customers to develop their future long-term energy solutions.



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Closing Lessons Learned

Fundraising for a Cash Intensive Business is Slow and Timing is Everything

Despite a successful and ongoing fundraising program, delays in funding disbursements to date have created significant operational issues, in particular, increased costs from stock-outs. This has limited SolarNow's

ability to maximize the benefits of the international sourcing terms it has negotiated and has caused it to divert ordering to local, more expensive suppliers, which has eroded margin.

Stock Forecasting is Key to Cash Management

Cash is needed to access the benefits of ordering stock in large, discounted quantities. However, in a distribution and financing business, cash is not

recycled quickly from sales. Clear and accurate stock forecasting is required to avoid over-ordering or stock-outs and optimize stock levels and distribution.

Developing a Strong Distribution Network is Critical

SolarNow emerged from an NGO business model with limited sales expertise in 2011. The process of learning how to sell to rural customers while managing and motivating the franchisee network was difficult and time-consuming. With the lessons learned over the last three years and the develop-

ment of its model, the business has developed a strong network of customers and branches, and has increased levels of franchise sales productivity. Incentive programs for staff and for franchisees have helped to drive this, as has getting the right balance of training and oversight from head office teams.

Credit Decisions Must be Independent of Sales

Franchises combine both sales, and credit roles (gathering data on new customers for the application process), to provide one face to the customer. This works well; however, final credit assessment and approval needs to be managed independently to avoid conflict of interest. This is carried out by the head office

Credit Team, which verifies the information, and whose bonuses are not sales-dependent. Franchises, however, do retain a level of ownership for the credit process, with 50 percent of any credit losses resulting from credit assessment failure covered by franchise security deposits.

Ensure Clear and Regular Communication with Clients

Most issues in the credit portfolio are the result of insufficient, unclear client communication. Many clients are illiterate and not experienced in dealing with contracts, including warranties, and the resulting repayment and service obligations. Educa-

tion of customers needs to be clear and timely (well before the sale) and needs to be repeated frequently to manage expectations effectively and maintain both customer satisfaction and repayment performance.

Solar is a Competitive Consumer Market

A further lesson being learned is how to adapt to growing in a sector that is evolving to provide greater levels of energy, but also one which is providing a greater range of appliances to meet changing demands. This

requires the business to develop and maintain strong relationships with its customers, build data to understand customer behavior and needs, and maintain a strong brand to capitalize on these opportunities.

Avoid Over-Financing

Bigger solar systems earn the company a larger margin than smaller ones, so there is an obvious incentive to oversell. Before selling the asset, it

is important to conduct an impartial and thorough credit assessment to determine the client's ability and willingness to pay the monthly installment.

Focus on Good Clients to Prevent, Rather Than Just Solve, Delinquency

There is a tendency to focus on late payers. But it is more important to focus on good clients, and preventing, rather than

solving, delinquency. Good clients generate most good referrals and will return for system upgrades.

“It is one of the most satisfying elements of my work that we can roll out a model that is addressing three of the world’s top development challenges: depletion of fossil fuels, combating climate change, and poverty reduction.”

– Willem Nolens, General Manager at SolarNow

This case study series is a core offering under the Renewable Energy Microfinance and Microenterprise Program (REMMP), which is implemented by Arc Finance and funded by the US Agency for International Development (USAID). The central goal of REMMP is to increase access of underserved populations to clean energy products to improve livelihoods and quality of life, while minimizing climate-damaging emissions.

Thank you to the SolarNow team for their collaboration in writing this case study

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