

SunLight Power Maroc, Morocco



Short Info

Installation and maintenance of SHS in rural areas not connected to the national grid, through fee-for-service, cash sales and hire purchase.

Summary

SunLight Power Maroc, S.A. (SPM) was founded in 1998, in the beginning as a subsidiary of SunLight Power International Holdings, Inc. to become an independent Moroccan company in 2000. SPM sells solar home systems to rural households in Morocco, that lack access to grid-based power. The solar home systems are designed to supply energy for lighting and audio-visual equipment (TVs, Radio-cassettes). The distribution and maintenance network set-up by SPM also allows for the diffusion of equipment such as colour TVs, cellular phone charging systems, solar hot water collectors and water pumping systems.

Since the incorporation of the company, more than 2000 SHS have been installed.

SPM business is based on a permanent presence in the rural areas targeted through wholly owned branch offices in the mid-sized towns of Taza, Sefrou and Taounate, in the north-eastern part of Morocco, as well as regular presence at rural markets. On this basis, SPM offers continuous technical support and follow-up to the customer. They sell, install, operate and help to finance SHS.

SPM's core business is the sale of off-grid, solar-based electricity service on a fee-for-service scheme, which is chosen by approximately 80% of its clients. Additionally, SPM sells SHS on a cash and instalment basis, or more specifically on a cash sales or hire purchase base. To ensure the continuous functioning of the systems out of the service scheme, SPM offers these customers the possibility of entering a maintenance contract.

Contract Regulations

For all schemes, SunLight Power Systems (SPS) include PV panel(s), battery, charge controller, fluorescent lamps, wiring and accessories (e.g. switches, plug points); all local products except the solar panel. To meet the different demands of rural customers, SPM offers different system sizes, the first SPS digit indicating the number of lighting points:

| SPS | Wp | Battery | 10 W-Lamps | 15 W-Lamps | TV & RK7 outlet |
|----------|------------|---------|------------|------------|-----------------|
| SPS 200 | 25-30 Wp | 60 Ah | 1 | 1 | 1 |
| SPS 300 | 35-45 Wp | 60 Ah | 2 | 1 | 1 |
| SPS 400 | 50-60 Wp | 80 Ah | 2 | 2 | 1 |
| SPS 500 | 50-60 Wp | 80 Ah | 3 | 2 | 1 |
| SPS 700 | 70-80 Wp | 100 Ah | 4 | 3 | 1 |
| SPS 1000 | 100-110 Wp | 150 Ah | 5 | 5 | 1 |

A contract is signed between the customer and SPM including the system configuration and all mutual responsibilities.

In the fee-for-service scheme, the customer commits himself to respect the contract and allow SPM staff to undertake maintenance and control visits of the system, i.e. visit his house and check the equipment. The customer is responsible for keeping the system in good condition, in accordance with the directions included in the user manual. If the system breaks down, the customer must inform SPM and ask for repairs. In addition, the transfer of the SHS to another client must be allowed and is only realised by SPM staff.

SPM must install the system, hand over a user manual, including operation and maintenance steps to be carried out by the customer, and give the necessary explanations on this subject. After installation, SPM is responsible for the maintenance and repair of the system and the replacement of broken components, except for tubes and fuses, which have to be replaced by the customer. Break-downs that are the customer's fault, such as demolition and system manipulation, theft and fire are exempted from this regulation. In these cases, the customer bears the emerging costs for the damage.

In fee-for-service, ownership stays with SPM. The customer pays a service fee for the use of the system – the electricity service. The monthly instalment depends on the system size and ranges from US\$ 9 to 24. Before installation, the customer has to pay two monthly instalments, half of it used as guarantee, the other part an advance payment for the first service month. For late payments, a penalty is charged calculated on the amount due.

The customer can resolve the contract with one month's notice. In such a case, the customer will be charged a removal fee of US\$ 25. The guarantee payment will be used to cover the service costs of the last month.

Contract regulations for the cash sales and hire purchase scheme offered by SPM differ with respect to operation, maintenance and payment:

In these cases, SPM commits itself to do the installation, repair and regular maintenance during the first year under the same conditions as in the fee-for-service scheme. After this first year, only the manufacturer's warranty for the solar panel is honoured (usually ten years). For maintenance, customers may enter a maintenance agreement with SPM, for which they pay an annual fee of approximately 25 US\$, or pay for each repair and cover replacement and service costs.

In the cash scheme, the customer pays between US\$ 450 and 1200, depending on the system size (see above), and the ownership title is transferred after the payment. Conditions for the hire purchase contract are as follows: a down payment of approximately 30 %, terms of 6 to 36 months, according to customer preference, with an interest rate of 20 to 30 % and monthly payments. The total price is approximately of US\$ 570 to 2100. The ownership title is transferred to the customer after payment of the total amount due.

Project procedures

Promotion of the SPM system takes place weekly at the most important regional Souks (local markets). SPM staff is present at these Souks according to a Souk calendar for the region. To inform potential customers, the "marketing team" often takes a demonstration system. As most of the communication between SPM and (potential) customers is done at the Souks, they are of central importance for the whole business. Additionally, promotion is done through word of mouth and sometimes village demonstration events.

Contract negotiation, too, is mainly done at the SPM market stand in the Souk but also in the local SPM offices (SPM service centres), which are well known within the population. Customers targeted by SPM are regularly present at the Souks. Thus information and contract negotiation is spread over a longer period, furthering the establishment of a trustful relation between the customer and SPM staff. Also, SPM staff gets to know the customer and "judge" whether he will be reliable with payments. Hence, no contracts are concluded in the first meeting between the customers and SPM. When a customer is determined, the contract form is filled in and signed by the customer and the SPM staff. The customer has to certify his signature with the local authorities and pay the two first instalments before an appointment for installation is made.

Installation is done by an SPM technician on the set date. These SPM technicians are qualified from SPM's in-house workshops and on the job training of approximately three months in the local offices. Generally, teams of two people are established, and a new technician accompanies the more experienced one. With installation, a manual for use, operation and maintenance is handed over to the customer, and a short instruction of the family members that happen to be there is offered in parallel to the installation.

The same SPM staff is responsible for repairs and O&M. If the system breaks down, the customer has to inform the SPM staff. They try to remedy the problem within 48 hours of noticing the problem. Additionally, an inspection of the system is foreseen every six months. For each "technical" call on the SHS, the SPM technicians fill in a maintenance and repair form, which allows for a follow-up of installed systems and is signed by the technician and by the customer. Basic maintenance like cleaning the module, refilling the battery with distilled water, and exchanging fuses and broken tubes is done by the user.

Customers are asked to come to the Souks or the local SPM offices for payment as the customers do generally attend the important Souks. This offers an opportunity to decrease operation costs for fee collection. Generally, the repayment rate is very high as the customers are aware of their obligation. However, the recent years of drought have

worsened the economic situation of rural households and affected the repayment ratio. If a customer fails to pay, SPM staff will try to meet the customer at the following Souks or even visit him at home. Rules are that after one month of payment default the SHS should be repossessed and may be installed for another client. In practice, local staff try to make individual arrangements. SPM also uses the possibility of involving local authorities and NGOs to come to an agreement with the customer concerned.

No specific training of SPM staff is done for assessing the credit worthiness of potential customer, but a relationship prior to the business allows for a certain customer screening. As SPM staff is integrated in the regional society, knowing the customers and their social environment offers a possibility to react to payment default on an individual basis.

General Issues

In Morocco approximately 35% of the 30 million people lack access to grid based electricity. It is estimated that approximately 60 % of this population can afford a SHS on a fee-for-service base. Such market penetration is increased in the course of the Moroccan governmental electrification programme, in which approximately 90 % of the non-electrified households shall be connected to the electric grid and approximately 200,000 households will be electrified with SHSs. In this programme, ONE (the Moroccan state utility) co-operates with the private sector, pursues the fee-for-service approach and subsidises the investment cost of the SHS.

The SPM business is presently mainly based on three local offices, i.e. service centres (SCs), in Taza, Sefrou and Taounate with 15 employees. Further, central management and coordination are carried out at headquarters in Rabat. The SC staff is responsible for promotion, sales, installation, operation and maintenance, fee collection, customer follow-up, inventory management and reporting to headquarters. Generally, the staff consists of teams of two people with rotating activities to ensure a complete understanding of SPM work. In total, the service centres have got two vehicles and one motorcycle to undertake installation, O&M tours and fee-collection in case of payment failure. To quickly meet customer demand for installation and repair, a local stock is maintained in the service centres.

An intensive reporting and controlling system is set up between the service centres and headquarters. Daily reports are sent via e-mail from the service centres including the names of new customers, installations done, O&M activities and total fee collection of the day. Additionally, the service centres send a monthly report of the total number of installations, money collected, new installations, new orders, etc. The main office in Rabat, which is responsible for accounting and overall management, sends a monthly report with an overview per customer to enable the local team to easily recognise late payments and 'problematic' customers, but also stating the objectives of the following month for each service centre, e.g. the number of new installations. Generally, this reporting and controlling system focuses on the service aspect, i.e. quickness of response, which can be considered quality assurance for customer satisfaction. In contrast, technical quality assurance, e.g. for components, systems and installation, is not centrally structured.

There is intensive communication between SPM staff and customers at the Souks, also due to the Moroccan social-cultural context. As the customers normally pay on a monthly basis, regular communication is possible. The trust of the customers in the SPM staff shows that communication is working.

Initially, no recycling concept was realised by SPM. Presently, SPM has established contacts with battery recycling companies that buy used batteries for a fee covering at least the battery collection costs of SPM. This element is a decision parameter for the national electrification programme SPM envisions to enter.

Customer satisfaction is measured by demand: since the beginning, demand has been increasing and SPM has had to turn down many customers to stay in line with its present investment capabilities. Customer faithfulness is also a good indication of customer satisfaction.

The main **problem** is that this approach is highly capital-intensive: it is difficult to raise capital in the traditional financial sector. Even with PVMTI, experience has shown that this initiative has several similarities with the traditional financiers' criteria.

To overcome this problem, the break-even point is aimed for on the basis of private capital, and ONE's electrification program is applied for. Further, micro-credit organizations with PVMTI support are to be involved.

Advantages in the used approach include the adaptation to low-income rural households. Further, it is possible to build customer confidence specifically during the initial penetration in a new area. And finally, the fee-for-service approach enables customers to benefit from a guaranteed service for a long time as long as they choose to keep the system.

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