CONFIDENCE ORIENTATION

THE ROLE OF END-USER FOCUSING IN AN INTEGRATED FINANCING CONCEPT

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Abstract – While in the past the lack of financing was considered a major barrier to the widespread dissemination of solar applications, this situation has changed much for the better. Bilateral and international aid and funding agencies have become sensitive to green funding and offer a variety of financial assistance. However, the transformation of the available resources into actual applications is still seen to be slow. The integrated Financing Concept describes the roles of the various actors in a project cycle which is focused on the major driving force – establishing and maintaining the end-user's confidence. In this presentation, policy effects and lessons learned in many years of project experience will be analyzed and recommendations to sustainable project implementation given.

At the approach of the next millennium we see the world's economies consistently merging, demanding an ever higher degree of productivity and consolidation. At the same time, the gap between those who have and who have no access to electrical power as a basic infrastructural asset is widening. With rapidly depleting fossil resources and a growing concern for environmental sustainability, electricity is becoming a scarce commodity and the opportunities to fill the power gap by conventional means are diminishing. Today, already one third of mankind cannot even switch on a light when the night falls. Rural areas, already victimized by living on the periphery of economical development, are those hardest hit. Rural / urban development disparities are seen as leaving productivity potentials unused leading to out-migration and consequently, increasing poverty.

The application of PV systems in decentralized rural electrification schemes offers to improve rural living conditions by complementing conventional line electrification. It can open fresh opportunities with innovative project development and financing approaches that aggregate the market and allow customers to be served at affordable prices. Rural Photovoltaic Electrification projects demonstrated that technical, institutional, and financial barriers can be overcome. The barrier of high project development cost will be further pushed when photovoltaic electrification is implemented in large quantities. Focused actions of Governments, aid agencies, financing institutions and suppliers are now required to address people's needs in time.

The rewards are attractive for all parties concerned: The current overall potential for rural PV systems can be estimated to 5.7 GWp or about 200 Million systems, representing a financial volume of US$ 57 Billion [1] to be handled by manufacturers and financiers. Governments would take a significant step towards their mission of providing improved living conditions for their rural constituents and at the same time create rural employment for about 2 Million people in the supply and service structure.

These opportunities however, would only be realized if large numbers of rural families who continue to pressure their governments for access to highly valued lighting and electricity services would be ready to pick the bill. So, it is critical to develop undisputed confidence that the PV service is reliable and that it is wanted to stay.

Preparation

It is much to the credit of bilateral and international aid organizations that the opportunities of rural PV electrification were early envisaged. Demonstration programs served to determine the technical parameters and feasibilities and to create awareness on the side of the users and the administrative bodies.

While the granted assistance must be credited as a welcome and overall necessary tool to prepare a promising market, it may also have created an unwanted barrier. Suppliers, Banks, Government bodies and even the end users were seen to concentrate on carving a maximum share from the grant funds

while they lasted. So the focus sometimes drifted away from long-term customer satisfaction, which should eventually be driving the dissemination by rewarding the energy services with consistent payment.

Consequently, in the attempt to attain a sustainable market structure it is deemed inevitable to shift the center of activities back to the end-user. Intermediaries with the capability to perform all management tasks required in a project cycle (conduits) are envisaged to maintain the links between users, financiers and manufacturers.

The capabilities of these conduits need to encompass substantial qualities, such as

- Technical, to assure and maintain system quality
- Managerial, to develop, implement and operate projects
- Financial, to draw a business plan and present it for financing
- Bankable, i.e. financially sound to provide loan collateral
- Social integration and competence to interact with rural customers and political hierarchies
- Warranting a consistent and lasting presence in the area

The task of selecting suitable conduits can be very time consuming and sometimes painful, as in the case of the World Bank loan to India [2] and the most appropriate selection will depend much on the national conditions. The natural and first choice for these tasks are the electric utilities who have:

- The official mandate to provide electrical service
- Access to long-term financing at prime conditions
- Tax privileges for energy commodities
- Capability to procure in bulk
- Experienced electrification professionals
- Nationwide organizational network
- Familiarity with regional conditions

It has to be emphasized that there are very good experiences with utilities who enthusiastically embraced the concept and the tasks, like in the Philippines. However, other utilities may have institutional reservations and offer only polite interest, but may be willing to permit independent electrical service.

Example: **Rural Electric Cooperatives (RECs)**

Philippine RECs are mandated with the rural electricity distribution and have a natural interest in attaining a high coverage rate. In remote areas where line electrification is no longer feasible, which accounts for up to 50% of the franchise, SHS are welcomed as a quick and simple solution. The systems are operated and owned by the RECs, so later relocations remain possible. The service fees recover the full generator cost and are calculated at 12% interest over 10 years, resulting in $ 6,5 monthly payment. Service is done by the utility staff in the area and the operation is monitored monthly for the financial and technical performance. The activity started with selected RECs in focal areas and expanded to a degree which was only limited by the available financing.

Quite some experiences also exist with NGOs functioning as conduits. Again, well rooted and well managed associations or user groups were seen to perform very satisfactorily, like in the Gregorio del

Pilar project in the Philippines. In many other cases however, NGOs were hampered by their non-commercial status and became unstable once the investment was secured.

Example: **The Community Project Gregorio del Pilar**

An example of an entirely non-institutional approach is the Village of Gregorio del Pilar in the central mountains of the northern Philippines: The community formed an association which applied for a loan from the German SEP programme and received in three tranches a total of 120 systems. The loan at 16% interest for three years resulted in a monthly payment of $ 17,7 and discounts were granted for advanced payment. The interest included a 4% spread which was used for the service by the local trained staff. By the time the SEP phased out, the good financial performance of the association made it possible to find private investors who assumed the remaining loan and provided further support. The loan is meanwhile fully paid and the systems are owned and operated by the association who mastered also the difficult phase of battery replacements after four years.

High expectations are therefore focussed on private sector companies who have the business sense to handle projects and the stamina to complete the loan cycle. It is not an overall easy task to raise the interest of local companies for PV electrification activities. It has to be stressed that PV electrification projects are to-day rarely profitable and the private sector is currently involving primarily on the expectation of economically sound project scales. While cash sales give a reasonable profit at low risks involved, PVE demands elaborate and time consuming project development with many small customers in remote locations all of which reduces the profit margin and increases the risk to a degree, that also local banks are very reluctant to financing those endeavors. [3]

A positive measure employed by the World Bank when introducing their PV loans in India and Indonesia is to buy the risk down with concessional funds and to train the companies to develop and present bankable proposals to the local financiers. [4]

This assistance appears to be effective to get a first loan down. It is then a natural strategy that a company would like to roll over such a loan as often as possible. So, it may be observed that beneficiaries of these projects are well-to-do customers who can afford to pay in cash or on a very short period. As these cap the top of the customer pyramid, locations are often thinly spread which makes regular maintenance visits difficult and results in low satisfaction. It remains uncertain whether this more supply-pushed approach can in the long run result in the development of a sustainable market and achieve a tangible degree of electrification.

Transition

The transition to a dissemination which is demand-driven will have to focus on attaining the confidence of a broad base of end-users. This will require more strategic action and involve a higher risk, as systems become smaller and loan terms longer. In order to pay for the risk, system amortization has to carry an extra service fee which can only be reasonably low if the installations are clustered and well organized.

An efficient way to achieve more clustered and better serviceable installations is to select focal areas with a high growth potential. This selection has to be backed by the Government in development- and electrification plans. Any long-term involvement calls for very stable frame conditions which allow long-range planning and risk assessment. This requires also financing conditions to be stable and reliably available.

- **Private sector engagement needs dependable support of the Government and banking sector.**

To provide a lasting and efficient service, conduits have to understand their role as "Energy Service Corporations" which brings about to develop new qualities [5]. Micro management of parallel small projects over periods of time, cash flow management of several loans and development of more projects with more difficult clients down the customer pyramid are very demanding business challenges. Consequently, entrepreneurial support cannot be restricted to a start-up training. Business experience shows that continued coaching is required all through the implementation of a loan until it is fully served. Most companies experience their most critical time in the second and third year when first components fail and batteries need replacement, leading to strains in collection efficiency.

- **A regular coaching service by experienced project implementers, confidential and impartial, must be available whenever companies need assistance.**

The most efficient way to keep systems working and customers paying is a regular service call. The interesting fact, that the number of reported failures dramatically decreases when users are regularly addressed, is a common business experience. A Siemens executive formulated ”We want the customers to come back rather than the components”. The frequency of visits may vary with the type of customer and the system’s performance history, but users should never get the impression to be left alone with a new piece of technology. Although visits are also an excellent opportunity to expand business, this important customer relation is often neglected.

- **Regular service calls are mandatory for an efficient project management**

A very frequent question is that of subsidy. Subsidization is a fact both, in rural development and in the energy sector as a whole, which must be taken into account. It may be agreed however that any subsidy intended to support a certain process should state a definite phase out and be applied to goals which have a learning curve. Subsidies on hardware cost have not proven useful, as the elasticity is low i.e. interested users did not increase to the degree the price was reduced. More so, supply companies are skeptical to price manipulations which cannot be sustained when the support ceases. Training is a naturally subsidized task and also the risk of project development can be bought down with a subsidy on successfully completed projects. It may even be recommended to offer incentives for the regular performance of maintenance services.

- **Incentives for successful project implementation and maintenance are useful and can be phased out as the project cycle gains momentum**

In providing all the above support and coordination in planning, coaching and maintenance supervision, a central institution has to take the lead. As in most cases where public services are privatized, it is suggested that the Government retains a supervising role. In the case of PV Electrification, a concentrated initiative will require to maintain a consultative process between Government, utilities, banks and PV service providers.

This will result in improved information and consequently more calculable risks and better financing conditions.

Example: **The ProSolar Initiative** [6]

In cooperation with the Philippine Department of Energy the initiative *ProSolar* was designed to support rural PV project development by commercial suppliers. The DoE

- identified high-potential growth areas as focal points in order to achieve an increased installation density.
- prescribed system standards with type approval for PV components by the National Appliance Test Lab.
- required participating private sector companies to subscribe to the standards and regulations.
- waived all import tax on PV systems.
- installed a steering committee with representatives from banks and suppliers to coordinate the activities.
- offered a contribution to the development cost of projects in the form of an incentive, partly given upon successful project implementation, partly after one year of confirmed maintenance service.

In order to further improve business opportunities, it is inevitable to strengthen the links between manufacturers, financiers and conduits. Manufacturers will eventually have to consider integrating financial services into their product package. Globally operating corporations have a much better position than the local entrepreneur to negotiate favorable financial terms on the international money market. Their confidence in the product minimizes the technical risk and their ability to repossess eases the pressure of collateral. The integrated financing concept already works well e.g. in the car market, where sales representatives offer attractive loans along with the product and enjoy a significant competitive edge.

Conclusion

Rural Photovoltaic Electrification opens fresh and beneficial opportunities for rural households, Government, financiers, manufacturers and the local private sector. The full potential however will only be developed, when a wide range of rural users gains confidence in a service which is affordable and dependable. The Energy Service Corporations will have to prove that they can sustain and expand operations beyond the limited presence of initial support programs.

Confidence Orientation requires these support measures to be focussed towards the benefit of the end-user. This involves economical conditions which allow a continued presence and maintenance service of the ESCOs. It can be enhanced by area-focussing and must be sustained by service fees. Inasmuch as they aim at a satisfactory long-term operation, incentives may be considered for continued service and maintenance.

In combining the interest of the financial sector, the manufacturers and the Government, the Energy Service Corporations, in particular private sector companies, will have to receive initial training and continued advisory in the financial, technical and managerial development and in the handling of projects.

The integrated financing concept is a process where financiers, ESCOs and manufacturers cooperate in sharing the risks in order to arrive at loan procedures which are simpler, more rapid and more competitive.

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